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IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

TIVO, INC. . CIVIL ACTION NO. 2:04CV1  
VS. . TEXARKANA, TEXAS  
ECHOSTAR COMMUNICATIONS . FEBRUARY 17, 2009  
CORPORATION, ET AL. . 9:10 A.M.

PLAINTIFF'S MOTION FOR CONTEMPT

[TRANSCRIPT/SEALED TESTIMONY REDACTED]

BEFORE THE HONORABLE DAVID FOLSOM,  
UNITED STATES DISTRICT JUDGE.

APPEARANCES:

FOR PLAINTIFF:

MR. MORGAN CHU  
MR. ANDREI IANCU  
MR. ALEXANDER C. GIZA  
MR. BRIAN D. KRECHMAN  
MS. LAURA W. BRILL  
MR. PERRY M. GOLDBERG  
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MR. R. SCOTT FELDMANN  
CROWELL & MORING - IRVINE

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3 PARK PLAZA  
20<sup>TH</sup> FLOOR  
IRVINE, CA. 92614

MR. GARRET W. CHAMBERS  
MCKOOL SMITH  
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FOR DEFENDANTS:

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PROCEEDINGS RECORDED BY STENOMASK VERBATIM REPORTING,  
TRANSCRIPT PRODUCED BY CAT SYSTEM.

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P R O C E E D I N G S

TEXARKANA, TEXAS

FEBRUARY 17, 2009

(OPEN COURT)

THE COURT: PLEASE BE SEATED, LADIES AND GENTLEMEN,  
GOOD MORNING. WE ARE HERE ON TIVO'S CONTEMPT MOTION. I HAVE  
GIVEN EACH SIDE SEVEN AND A HALF HOURS, UP TO THIRTY MINUTES  
FOR AN OPENING STATEMENT THAT WILL COUNT AGAINST THE SEVEN AND  
A HALF HOURS. ARE THE PARTIES READY TO GO FORWARD?

MR. MCELHINNY: WE ARE, YOUR HONOR.

MR. CHU: YOUR HONOR, WE HAD JUST A COUPLE OF  
HOUSEKEEPING MATTERS, AND ARE WE OKAY ON THE TECHNOLOGY NOW?  
AND WE WILL BE ABLE TO LAUNCH INTO OPENING STATEMENT IN JUST A  
FEW MINUTES, IF I CAN RAISE A COUPLE OF HOUSEKEEPING MATTERS.

FIRST OF ALL, BOTH SIDES HAVE OBJECTIONS WITH RESPECT TO  
EXHIBITS AS WELL AS THE SUBSTANCE OF CERTAIN TESTIMONY, BUT WE  
HAVE AN AGREEMENT IN THE FOLLOWING SENSE. WE WOULD LIKE TO  
MOVE INTO EVIDENCE ALL OF THE EXHIBITS THAT HAVE BEEN  
PROFFERED BY BOTH SIDES, BUT EACH SIDE HAS A LIMITED NUMBER OF  
OBJECTIONS THAT THEY WANT TO PRESERVE, AND THEN YOUR HONOR CAN  
DECIDE AT THE END OF THE HEARING WHETHER TO ADMIT OR NOT ADMIT  
THOSE EXHIBITS. AND WE WILL FILE A JOINT STIPULATION  
IDENTIFYING THOSE EXHIBITS.

THE COURT: MR. MCELHINNY?

MR. MCELHINNY: IT'S VERY CLOSE, YOUR HONOR. I DON'T

1 WANT TO TAKE A LOT OF TIME. WE MET AND CONFERRED WITH THE  
2 GOOD OFFICES OF MR. PATTON. WE HAVE BEEN WORKING ON THIS. WE  
3 REACHED A STIPULATION THIS MORNING. YOUR HONOR HAS A COPY IN  
4 FRONT OF IT. IT RESOLVES -- OF ALL THE OBJECTIONS THAT WERE  
5 FILED, IT RESOLVES ALL OF THEM EXCEPT FOR TWO VERY SMALL  
6 CATEGORIES WHICH NEED TO BE HEARD. BUT THEY ARE -- I CAN JUST  
7 TELL YOU WHAT THEY ARE OFF THE TOP OF MY HEAD. I MEAN, ONE OF  
8 THEM IS WHETHER OR NOT EXPERT REPORTS ARE GOING TO BE HEARSAY.  
9 YOUR HONOR HEARS THIS IN EVERY -- AND THE OTHER IS THE LIST OF  
10 BAD ACTS FROM OTHER CASES FROM ECHOSTAR. THOSE -- THOSE TWO  
11 WERE PRESERVED, AND AT YOUR HONOR'S CONVENIENCE WE WOULD JUST  
12 LIKE TO BE HEARD ON THOSE.

13 THE COURT: THANK YOU.

14 MR. CHU: AND WE WANTED TO MENTION TWO CATEGORIES  
15 VERY BRIEFLY, YOUR HONOR, BUT WE ARE HAPPY IN EACH INSTANCE TO  
16 ALLOW YOUR HONOR TO HEAR WHATEVER EVIDENCE THEY WANT TO  
17 PROFFER AND TO DECIDE AT THE END OF THE HEARING. ONE HAS TO  
18 DO WITH --

19 THE COURT: AND I WOULD MENTION, MY PRACTICE WILL BE  
20 I AM GOING TO HAVE THE PARTIES ORDER A COPY OF THE TRANSCRIPT,  
21 AND THEN PUT EVERYONE ON A RATHER SHORT SCHEDULE WHEN THE  
22 TRANSCRIPT IS FILED FOR FINAL FINDINGS OF FACT, CONCLUSIONS OF  
23 LAW. SO A LOT OF THESE ARGUMENTS OBVIOUSLY CAN BE ADDRESSED BY  
24 THAT DOCUMENT, AND OBVIOUSLY IF YOU WANT TO MAKE YOUR RECORD  
25 YOU CAN DO IT HERE IN OPEN COURT.

1 MR. CHU: SO JUST TO MENTION THE TWO ISSUES, ONE HAS  
2 TO DO WITH A GREAT DEAL OF THE EVIDENCE THAT WE EXPECT TO BE  
3 PROFFERED BY THE OTHER SIDE. IT IS EVIDENCE AND TESTIMONY  
4 THAT RELATES TO CLAIM CONSTRUCTIONS THAT WERE NEVER MADE BY  
5 THIS COURT, RELATES TO CLAIM TERMS THAT ARE NOT IN THE CLAIMS,  
6 RELATES TO CONSTRUCTIONS THAT WERE NOT APPEALED TO THE FEDERAL  
7 CIRCUIT, ALL OF WHICH WE BELIEVE IS IRRELEVANT.

8 THE OTHER IS EVIDENCE THAT WILL BE PRESENTED WE BELIEVE  
9 THROUGH MORE THAN JUST ONE WITNESS ON THE ALLEGED GOOD FAITH  
10 OF ECHOSTAR, AND MR. PATTON WILL ADDRESS THAT VERY BRIEFLY.

11 MR. PATTON: MAY IT PLEASE THE COURT. YOUR HONOR,  
12 IT'S SELDOM THAT I SIT DOWN AND READ CASES, AS YOU KNOW, AND  
13 EVEN --

14 THE COURT: I WON'T COMMENT ON THAT, MR. PATTON.

15 MR. PATTON: -- AND EVEN MORE SELDOM THAT I FIND  
16 THAT THE LAW IS CRYSTAL CLEAR IN A GIVEN AREA, JUDGE. THE  
17 GOOD FAITH DEFENSE HAS BEEN RAISED IN THE PAPERS BY ECHOSTAR,  
18 AND THE PAPERS ON BOTH SIDES I THINK ARE VERY WELL WRITTEN,  
19 YOUR HONOR. BUT I DO THINK THAT BEGINNING IN 1949 THE *MCCOMB*  
20 CASE, IT'S CLEAR THAT THE INTENT OF THE PARTY DOESN'T MAKE ANY  
21 DIFFERENCE IN A SITUATION LIKE THIS.

22 THE COURT: WELL, MR. PATTON, MAYBE TO SHORTEN THIS,  
23 OBVIOUSLY I WILL LOOK AT THE PARTIES' ARGUMENTS, BOTH FINDINGS  
24 OF FACT, CONCLUSIONS OF LAW AND THE BRIEFING, BUT IF THEY WANT  
25 TO SPEND A LOT OF TIME ON PERHAPS AN ISSUE THAT IS NOT AN

1 ISSUE, I AM GOING TO ALLOW THEM TO DEVELOP THEIR RECORD, AND  
2 THEN OBVIOUSLY YOU CAN PRESERVE YOUR OBJECTION AND ADDRESS  
3 THIS IN FINDINGS OF FACT, CONCLUSIONS OF LAW.

4 MR. PATTON: I THINK THAT'S A GOOD WAY TO DO IT.

5 THE COURT: YOU MAY VERY WELL BE CORRECT, BUT I AM  
6 GOING TO ALLOW THEM TO DEVELOP THE RECORD IN THAT REGARD.

7 MR. PATTON: ALL RIGHT, YOUR HONOR.

8 MR. MCELHINNY: YOUR HONOR, WE DO HAVE TWO, I MEAN,  
9 TRULY HOUSEKEEPING ISSUES. THE PARTIES HAVE FILED A  
10 STIPULATION WITH YOUR HONOR ABOUT HOW TO DEAL WITH THE TRIAL  
11 TRANSCRIPT FROM THE ORIGINAL TRIAL. AND WHAT WE HAVE ASKED  
12 YOUR HONOR IS THAT WE JUST SIMPLY BE PERMITTED TO CITE TO IT.  
13 WE HAVE IT MARKED AS AN EXHIBIT, IF YOUR HONOR WOULD PREFER IT  
14 AS A SEPARATE EXHIBIT.

15 THE COURT: WELL, I MEAN OBVIOUSLY THE TRANSCRIPT IS  
16 PART OF THIS RECORD, AND IF YOU WANT TO REFER TO IT IN YOUR  
17 FINDINGS OF FACT, CONCLUSIONS OF LAW, YOU ARE CERTAINLY  
18 WELCOME TO DO SO IF BOTH PARTIES WANT TO DO THAT.

19 MR. MCELHINNY: THANK YOU, YOUR HONOR. THE SECOND  
20 THING IS WE WOULD LIKE TO KNOW YOUR PREFERENCE IN HOW TO -- WE  
21 HAVE THREE WITNESSES WHO WILL BE APPEARING -- I BELIEVE THREE,  
22 IT MAY BE SLIGHTLY MORE -- BY DEPOSITION.

23 THE COURT: I GUESS MY QUESTION IS, HOW LENGTHY IS  
24 THE DEPOSITION TESTIMONY? I DON'T WANT THE PARTIES TO END RUN  
25 MY TIME LIMIT BY ME BEING REQUIRED TO WATCH HOURS AND HOURS

1 AND HOURS OF DEPOSITIONS. IF THEY ARE SHORTER IN NATURE, I  
2 WILL CERTAINLY --

3 MR. MCELHINNY: OURS ARE 43 MINUTES, YOUR HONOR.

4 THE COURT: AND WHAT IS TIVO'S OFFER?

5 MR. CHU: THE ESTIMATE I JUST RECEIVED WAS AROUND 40  
6 MINUTES, YOUR HONOR. AS FAR AS I KNOW, AND I DON'T KNOW THAT  
7 THERE IS ANY DISAGREEMENT, THESE ARE DEPOSITIONS THAT CAN BE  
8 EASILY READ. I DON'T THINK THAT THERE IS AN AH HA MOMENT IN  
9 ANY OF THESE DEPOSITIONS WHERE BY BODY LANGUAGE OR OTHERWISE  
10 IT MAKES A HILL OF BEANS OF DIFFERENCE.

11 THE COURT: IT'S A LOT QUICKER FOR ME TO READ THEM  
12 VERSUS WATCH THEM. IS IT ANY PARTICULAR PREFERENCE ON  
13 ECHOSTAR'S PART?

14 MR. MCELHINNY: IT WOULD BE TERRIFIC WITH US, YOUR  
15 HONOR, IF YOU WOULD TAKE THEM IN A TRANSCRIPT FORM OR DVD,  
16 WHICHEVER IS EASIER FOR YOU.

17 THE COURT: THEN I WILL -- I WILL ALLOW YOU TO  
18 INTRODUCE THE TRANSCRIPT OF THESE DEPOSITIONS AND I WILL READ  
19 THEM AT MY PLEASURE, AND THE PARTIES CAN CITE THEM IN THE  
20 FINDINGS OF FACT, CONCLUSIONS OF LAW.

21 MR. MCELHINNY: THANK YOU, YOUR HONOR.

22 MR. CHU: THANK YOU.

23 MR. MCELHINNY: THE LAST MATTER IS JUST NOTICE TO  
24 EVERYONE THAT THERE ARE DOCUMENTS THAT DEAL WITH A THIRD  
25 PARTY, BROADCOM, WHICH ARE CONFIDENTIAL. AND IF THE PLAINTIFF

1 INTENDS TO USE THEM, AND WHEN WE DO, WE WILL HAVE TO ADDRESS  
2 WITH THE COURT ABOUT --

3 THE COURT: PROTECTIVE ORDER.

4 MR. MCELHINNY: -- EXACTLY, YOUR HONOR.

5 THE COURT: WELL --

6 MR. MCELHINNY: AND PERHAPS THE PEOPLE WHO CAN BE  
7 ALLOWED TO LEAVE THE COURTROOM.

8 THE COURT: BRING TO MY ATTENTION IF THERE ARE ISSUES  
9 CONCERNING THE PROTECTIVE ORDER THAT THOSE NOT SUBJECT TO THE  
10 PROTECTIVE ORDER NEED TO STEP OUTSIDE THE COURTROOM.

11 MR. CHU: AND ONE OTHER ITEM, I THINK WE HAVE  
12 AGREEMENT THAT FACT WITNESSES, OTHER THAN THE WITNESS  
13 TESTIFYING, ARE EXCLUDED, WITH THE EXCEPTION OF COURSE WITH  
14 ONE PARTY REPRESENTATIVE ON EACH OF THEM.

15 THE COURT: SO THE RULE IS INVOKED AS TO FACT  
16 WITNESSES.

17 MR. MCELHINNY: IT IS, YOUR HONOR. OUR CLIENT  
18 REPRESENTATIVE IS DAN MINNICK FROM ECHOSTAR.

19 MR. CHU: AND JUST TO INTRODUCE THE PEOPLE AT COUNSEL  
20 TABLE, OF COURSE YOUR HONOR KNOWS MR. PATTON. TO HIS RIGHT IS  
21 MR. GOLDBERG, YOU MAY REMEMBER FROM THE JURY TRIAL. JIM  
22 BARTON, ONE OF THE CO-FOUNDERS OF TIVO. LAURA BRILL, ONE OF  
23 MY PARTNERS, AND ANDREI IANCU.

24 THE COURT: WELCOME, EVERYONE.

25 MR. MCELHINNY: YOUR HONOR MAY KNOW JOHN PICKETT, MY

1 PARTNER, RACHEL KREVANS, MY PARTNER, CHUCK BARQUIST, MY  
2 PARTNER, SCOTT LLEWELLYN, AND MICHAEL UNA WHO IS DOING OUR  
3 GRAPHICS.

4 THE COURT: WELCOME.

5 MR. MCELHINNY: THANK YOU.

6 THE COURT: READY TO GO FORWARD WITH OPENING  
7 STATEMENT.

8 MR. CHU: YES, THANK YOU VERY MUCH, YOUR HONOR.

9 THE COURT: MRS. MARTIN, WE WILL START RUNNING THE  
10 CLOCK AT THIS STAGE.

11 MR. CHU: MORGAN CHU ON BEHALF OF TIVO. WHY ARE WE  
12 HERE? IN AUGUST OF 2006, AFTER A LONG HARD FOUGHT TRIAL,  
13 EXTENSIVE POST-TRIAL MOTIONS, THIS COURT ENTERED A PERMANENT  
14 INJUNCTION. IT REQUIRED ECHOSTAR, ITS OFFICERS, DIRECTORS,  
15 AND OTHERS ACTING IN CONCERT WITH THEM TO DISABLE CERTAIN  
16 SPECIFIED DVR PRODUCTS SPECIFIED BY EXACT PRODUCT NUMBERS.  
17 THAT WAS NOT DONE. INSTEAD, ECHOSTAR, ON AN EMERGENCY BASIS,  
18 WENT SCREAMING TO THE FEDERAL CIRCUIT ASSERTING GRIEVOUS ERROR  
19 AND ASKING FOR AN EMERGENCY STAY WHILE CONCEALING CERTAIN  
20 IMPORTANT INFORMATION.

21 THE CASE GOES UP TO THE FEDERAL CIRCUIT. THE FEDERAL  
22 CIRCUIT DECIDES IN JANUARY OF 2008. IN JANUARY OF 2008, THE  
23 FEDERAL CIRCUIT AFFIRMS YOUR HONOR'S JUDGMENT, AND IN DUE  
24 COURSE, THE STAY IS LIFTED. DOES ECHOSTAR THEN COMPLY WITH  
25 YOUR HONOR'S ORDER TO DISABLE THOSE CERTAIN SPECIFIED DVRS?

1 THE ANSWER IS NO. INSTEAD, IT REVEALS FOR THE FIRST TIME  
2 INFORMATION IT HAD CONCEALED FROM THIS COURT AND THE FEDERAL  
3 CIRCUIT IN CONNECTION WITH THE EMERGENCY STAY MOTION THAT IT  
4 HAD ALLEGEDLY COMPLETED A DESIGN-AROUND, AND IT HAD SOUGHT AND  
5 OBTAINED FROM THE FISH & RICHARDSON LAW FIRM OPINION LETTERS  
6 STATING THAT THE ALLEGED DESIGN-AROUND NO LONGER INFRINGED.

7 THOSE OPINION LETTERS WERE IN HAND AT ECHOSTAR, IN HAND  
8 WHEN THEY WENT SCREAMING TO THE FEDERAL CIRCUIT. THAT WAS NOT  
9 SHARED WITH THIS COURT, WITH THE FEDERAL CIRCUIT, AND THEIR  
10 ONLY STATEMENTS TO THE PUBLIC WERE ALONG THE LINES THAT THEY  
11 WERE MAKING EFFORTS TO DESIGN-AROUND. BUT WHEN THE FINAL  
12 JUDGMENT CAME --

13 THE COURT: WELL, PERHAPS A BETTER PRACTICE WOULD  
14 HAVE BEEN BROUGHT THIS TO THE ATTENTION OF THIS COURT AND THE  
15 FEDERAL CIRCUIT, BUT UNDER THE ORDER WERE THEY UNDER ANY  
16 OBLIGATION TO DO SO YOU FEEL?

17 MR. CHU: BY THE FOUR CORNERS OF THE ORDER, NO, BUT I  
18 BELIEVE, YOUR HONOR, WHEN SOMEONE IS ASKING FOR EMERGENCY  
19 ACTION FROM A COURT, OMITTING MATERIAL FACTS IS NOT THE PROPER  
20 COURSE OF CONDUCT. AND HOW DO WE KNOW THOSE FACTS ARE  
21 MATERIAL?

22 THE COURT: WELL, IS THAT BEST ADDRESSED BY THE  
23 FEDERAL CIRCUIT SINCE THAT MOTION WAS BROUGHT BEFORE THE  
24 FEDERAL CIRCUIT?

25 MR. CHU: IT MAY BE ADDRESSED I BELIEVE BY EITHER THE

1 FEDERAL CIRCUIT OR THIS COURT. BUT THE IMPORTANT POINT IS  
2 THIS: THOSE FACTS, THE ALLEGED DESIGN-AROUND AND THE FISH  
3 OPINION ARE NOW GOING TO BE OFFERED BY THE OTHER SIDE TO YOUR  
4 HONOR TO SAY THAT THEY HAVE DESIGNED AROUND AND THEY DON'T  
5 INFRINGE AND THAT THE ALLEGED CHANGES, THE CHANGES ARE MORE  
6 THAN COLORABLY DIFFERENT. BUT IF THAT WAS THE CASE, THEN ONE  
7 WOULD HAVE THOUGHT THAT THE APPROPRIATE COURSE OF ACTION WOULD  
8 HAVE BEEN TO SHARE THAT WITH YOUR HONOR AND WITH TIVO AND NOT  
9 TO OMIT IT IN MAKING THE EMERGENCY APPLICATION TO THE FEDERAL  
10 CIRCUIT.

11 WHY IS THAT PERTINENT? IT IS ABOUT TWO AND A HALF YEARS  
12 AFTER YOUR HONOR ENTERED THE PERMANENT INJUNCTION. AND DURING  
13 THAT PERIOD OF TIME ECHOSTAR HAS SAID TO THE FEDERAL CIRCUIT  
14 IF THE INJUNCTION BECAME EFFECTIVE, THEY WOULD LOSE \$90  
15 MILLION DOLLARS A MONTH. SO FOR THAT TWO AND A HALF YEARS  
16 THEY HAVE HAD THE BENEFIT OF \$90 MILLION DOLLARS A MONTH,  
17 WHILE CONCEALING THAT INFORMATION AND DELAYING THIS LAST  
18 JUDGMENT DAY.

19 SO WHAT ARE THE EXACT ISSUES THAT ARE GOING TO BE BEFORE  
20 THE COURT? LET'S LOOK AT SOME OF THE EVIDENCE. FIRST, THE  
21 FRAMEWORK. I'VE ALREADY MENTIONED THAT THE INJUNCTION HAS  
22 BEEN VIOLATED ON ITS FACE, AND THEN THEIR DEFENSE IS, WELL,  
23 EVEN THOUGH IT'S VIOLATED ON ITS FACE, AS LONG AS THE PRODUCTS  
24 ARE MORE THAN COLORABLY DIFFERENT AND DON'T INFRINGE WE SHOULD  
25 BE ABLE TO VIOLATE THE INJUNCTION. EITHER ONE OF THOSE TWO

1 GROUND IS SUFFICIENT TO HOLD THEM IN CONTEMPT, THAT IS, THE  
2 VIOLATION ON THE FACE AND IF THE CHANGES ARE NOT MORE THAN  
3 COLORABLY DIFFERENT.

4       THEY ESSENTIALLY ARE TRYING TO REWRITE THE COURT'S  
5 INJUNCTION. THIS IS THE COURT'S INJUNCTION: DISABLE THE DVR  
6 FUNCTIONALITY. THEY WOULD LIKE TO WRITE IN A NEW WORD,  
7 INFRINGEMENT, TO SUGGEST THAT THEY COULD DECIDE ON THEIR OWN  
8 AND USE SELF-HELP TO DETERMINE WHEN THINGS ARE OR ARE NOT  
9 INFRINGING RATHER THAN GIVING US OR YOUR HONOR AN OPPORTUNITY  
10 TO DECIDE THOSE ISSUES ON A FULL RECORD TWO AND A HALF YEARS  
11 AGO.

12       THE ISSUES ARE ACTUALLY RELATIVELY SIMPLE. WE THINK THAT  
13 ECHOSTAR WILL DO A LOT OF HAND-WAVING AND MAKE IT SOUND LIKE  
14 MULTIPLE ISSUES. THERE ARE ONLY TWO DIFFERENT SETS OF BOXES:  
15 THE ST CHIP, ST MICROELECTRONICS CHIP BOXES. WE CALL THEM THE  
16 DP-50X BOXES. AND THERE IS ONLY ONE ALLEGED CHANGE. AND THAT  
17 ALLEGED CHANGE IS THAT THEY HAVE MADE SOME CHANGES, SO THEY NO  
18 LONGER DO INDEXING, AND THEREFORE IT IS A MAJOR CHANGE AND  
19 THEY NO LONGER INFRINGE.

20       BUT THE PROBLEM WITH THAT ARGUMENT, AS WE WILL SEE WHEN  
21 WE HEAR THE EVIDENCE FROM EXPERT WITNESSES, IS THE WORD  
22 INDEXING DOES NOT APPEAR IN THE SOFTWARE CLAIMS 31 AND 61 THAT  
23 ARE BEFORE THE COURT. THE CLAIM TERM IS, QUOTE, "PARSING,"  
24 END QUOTE.

25       YOUR HONOR INTERPRETED THAT CLAIM TERM PARSING AFTER HARD

1 FOUGHT CLAIM CONSTRUCTION TO MEAN ANALYZE. THAT CLAIM  
2 CONSTRUCTION WAS NOT APPEALED TO THE FEDERAL CIRCUIT. IF THEY  
3 DISAGREED, THAT WAS THE POINT IN TIME WHERE THEY COULD HAVE  
4 SAID TO THE FEDERAL CIRCUIT, PARSING REALLY MEANS INDEXING.  
5 THEY DIDN'T DO THAT. AND NOW THE BULK OF THEIR EVIDENCE HAS  
6 TO DO WITH THE FACT THAT THEY ARE NOT INDEXING. IT'S NOT A  
7 CLAIM TERM, AND IT'S IRRELEVANT.

8         THEY MAKE THE SAME ARGUMENT WITH THE BROADCOM OR 522/625  
9 BOXES, AND THEY MAKE A SECOND ARGUMENT. THE SECOND ARGUMENT  
10 HAS TO DO WITH BUFFERING, OR A CLAIM TERM, AUTOMATIC FLOW  
11 CONTROL. AND WE WILL ALSO SEE THAT THEY NEITHER CHALLENGE THE  
12 INTERPRETATION OF THIS COURT AND THEY WILL BE PUTTING FORWARD  
13 EVIDENCE ON A CLAIM TERM OR CLAIM CONSTRUCTION THAT DOESN'T  
14 APPEAR IN THE CLAIMS AND DOESN'T APPEAR IN THIS COURT'S CLAIM  
15 CONSTRUCTION, AND INDEED WASN'T EVEN BROUGHT TO THE FEDERAL  
16 CIRCUIT.

17         THESE ARE THE SUBJECTS THAT I WILL BRIEFLY COVER: CHANGE  
18 MUST BE ON A CLAIM ELEMENT. THAT MAKES SENSE. AND HERE IS A  
19 BASIC AUTHORITY, ADDITIVE CONTROLS. WHEN THERE ARE NO  
20 SUBSTANTIAL OPEN QUESTIONS OF -- THERE ARE NO SUBSTANTIAL OPEN  
21 QUESTIONS OF INFRINGEMENT IF THERE ARE NO QUESTIONS ON THE  
22 ELEMENTS OF THE PERTINENT CLAIM.

23         AND THEN WE ARE GOING TO LOOK AT ECHOSTAR'S ALLEGED  
24 CHANGES AND HOW THEY ARE NOT ON THE CLAIM ELEMENTS. THE FIRST  
25 ONE IS PARSES. CLAIM 31 AND CLAIM 61 ARE BASICALLY THE SAME

1 IN THIS. THERE IS THE CLAIM TERM PARSES. THIS IS THE COURT'S  
2 CLAIM CONSTRUCTION. PARSE MEANS ANALYZES. AND THIS IS DR.  
3 RHYNE, ECHOSTAR'S EXPERT. HE IS BASICALLY SAYING THAT THOSE  
4 CLAIMS AT ISSUE, THE TWO CLAIMS AT ISSUE, REQUIRE AN INDEX OR  
5 INDEXING, A TERM NOT IN THE CLAIM, NOT IN THE COURT'S CLAIM  
6 CONSTRUCTION, NOT APPEALED.

7       HERE IS WHAT ECHOSTAR IS TRYING TO DO. THEY ARE TAKING  
8 THE CLAIM TERM AND THEY ARE TRYING TO REWRITE IT. THE TIME TO  
9 DO THAT WAS BEFORE YOUR HONOR AT CLAIM CONSTRUCTION OR BEFORE  
10 THE FEDERAL CIRCUIT. THE PRIOR FINDINGS AND CLAIM  
11 CONSTRUCTION ARE, OF COURSE, LAW OF THE CASE. THIS IS NOT  
12 LIKE A PLAYGROUND GAME AMONG TEENAGERS WHERE SOMEONE CAN CALL  
13 A DO-OVER.

14       NOW, WHERE DO THEY GET THIS INDEXING FROM? WE WILL HEAR  
15 ABOUT IT IN MORE DETAIL, BUT THEY GET IT FROM AN ARGUMENT, A  
16 DEBATE, EVIDENCE THAT WAS PROFFERED BY BOTH SIDES WITH RESPECT  
17 TO CLAIM 1, A HARDWARE CLAIM NOT BEFORE THIS COURT IN THIS  
18 HEARING.

19       NOW, THE EVIDENCE WILL SHOW THAT NOT ONLY PARSES MEANS  
20 ANALYZES BUT ALL THE EXPERTS AT TRIAL TESTIFIED THAT ECHOSTAR  
21 PARSES. AND THIS HAS TO DO WITH WHAT'S CALLED A PID FILTER.  
22 THE PID STANDS FOR PACKET IDENTIFICATION. IT IDENTIFIES TWO  
23 THINGS. FIRST, THE ACTUAL PROGRAM THAT THE CONSUMER WOULD  
24 WATCH. ESPN IS AN EXAMPLE. AND THEN SECOND, WHETHER THE  
25 PACKET CONTAINS INFORMATION THAT IS AUDIO OR VIDEO. THERE ARE

1 PID FILTERS IN ALL THE ECHOSTAR BOXES. THEY DO PARSING. THEY  
2 DO ANALYZING.

3 AND HERE IS THE EVIDENCE: DR. STORER AT THE FIRST JURY  
4 TRIAL STATED THAT THE PID FILTERING OPERATION IS PARSING. AND  
5 THIS WAS A POINT THAT ECHOSTAR WAS MAKING ON ITS CROSS  
6 EXAMINATION OF PROFESSOR STORER. DR. RHYNE, ECHOSTAR'S  
7 EXPERT, WHEN ASKED WHETHER THE ECHOSTAR PRODUCTS DO ACTUALLY  
8 PARSE, HE SAID THE PID FILTERS DO A PARSING. THERE IS NO  
9 ALLEGED CHANGE TO THE PID FILTERS. THE PID FILTERING THAT IS  
10 RESPONSIBLE FOR THE PARSING, IS THE QUESTION. YES. AND HE  
11 SPECIFICALLY SAID IT INCLUDED BOTH THE ST AND BROADCOM CHIPS  
12 THAT ARE AT ISSUE TODAY.

13 THE COURT: WELL, WAS THIS INDEXING ISSUE, WAS THAT A  
14 THEORY OF CLAIM CONSTRUCTION PUT FORTH BY ECHOSTAR IN THE  
15 INITIAL CONSTRUCTION, OR HAS THIS ARISEN AT THIS STAGE OF THE  
16 PROCEEDINGS?

17 MR. CHU: IT WAS NEVER PUT FORWARD WITH RESPECT TO  
18 THE SOFTWARE CLAIMS.

19 THE COURT: AND I AM TALKING IN TERMS OF THE SOFTWARE  
20 CLAIMS.

21 MR. CHU: IT WAS NEVER PUT FORWARD. IT WAS PUT  
22 FORWARD WITH RESPECT TO A WORD SEPARATED THAT APPEARED IN  
23 CLAIM 1, THE HARDWARE CLAIM.

24 AND HERE IS DR. POLISH, ECHOSTAR'S EXPERT AT THE JURY  
25 TRIAL. HE WAS ASKED WHETHER PID FILTERING IS PARSING WITHIN

1 THE MEANS OF CLAIM 31 AND 61, AND HE SAID, YES. AND THOSE ARE  
2 THE TWO CLAIMS AT ISSUE.

3 TWO OTHER EXPERTS, A DR. GIBSON FROM TIVO AND A DR.  
4 JOHNSON WHO WAS A SOFTWARE EXPERT FROM ECHOSTAR WHO IS NOT  
5 TESTIFYING AT THIS HEARING, BOTH REFER TO PID FILTERING AS  
6 BEING PART OF THE PHYSICAL DATA SOURCE. AND THE PHYSICAL DATA  
7 SOURCE IS WHAT DOES THE PARSING IN THE CLAIM.

8 SO ALL FIVE EXPERTS, THREE FROM ECHOSTAR, TWO FROM TIVO,  
9 ALL AGREE THAT PID FILTERING DOES PARSING. NOW, ECHOSTAR, IN  
10 DOING THEIR DESIGN-AROUND, THEY HAD THIS PARTICULAR DOCUMENT  
11 AND IT DESCRIBED THE EFFORTS OF THE SOFTWARE ENGINEERS AS  
12 DRAFTED BY THE ENGINEERS AS BEING SOMETHING THAT DOES PARSING.  
13 BUT, WA-LA, THEY MADE A CHANGE. THE SAME DOCUMENT CHANGED THE  
14 TITLE FROM PARSING TO BRUTE-FORCE DVR. I WONDER HOW THAT  
15 CHANGE CAME INTO BEING. SO THE INDEXING ARGUMENT IS  
16 IRRELEVANT FOR THE ST BOX, AND OF COURSE IRRELEVANT FOR THE  
17 BROADCOM BOXES.

18 NOW, LET'S GO TO THE BUFFERING OR AUTOMATIC FLOW CONTROL  
19 ISSUES. HERE IS THE ACTUAL CLAIM LANGUAGE. LET'S FOCUS FIRST  
20 ON, QUOTE, "A BUFFER," END QUOTE. NO ONE SOUGHT CLAIM  
21 CONSTRUCTION OF IT. BUFFER IS A KIND OF MEMORY. EVERYONE  
22 UNDERSTOOD THAT. BUT NOW THE FOCUS SUDDENLY IS ON WHAT THE  
23 MEANING IS OF, QUOTE, "A BUFFER."

24 WHAT ECHOSTAR IS ARGUING IS THAT A BUFFER HAS A  
25 PARTICULAR MEANING THAT REQUIRES MULTIPLE BUFFERS. A BUFFER

1 REQUIRES MULTIPLE BUFFERS. IT CAN'T BE A SINGLE BUFFER,  
2 ECHOSTAR CONTENDS. BUT WE KNOW THAT A BUFFER OR THE BUFFER BY  
3 A LEGION OF CASES MEANS ONE OR MORE. INDEED, THERE IS A  
4 FEDERAL CIRCUIT CASE REFERRING TO A BUFFER SAYING IT MEANS ONE  
5 OR MORE.

6 IN ADDITION TO THAT, THE FACTS ARE THAT THEY DO HAVE  
7 MULTIPLE BUFFERS. HERE IS THE SOFTWARE SOURCE CODE WRITTEN BY  
8 THE SOFTWARE ENGINEERS WHERE IT REFERS TO THE BUFFER COUNT  
9 TEN. AND WE WILL SEE EVIDENCE OF TEN BUFFERS. AND THEIR  
10 EXPERT WILL SAY, WELL, TEN REALLY MEANS ONE.

11 THE OTHER CLAIM TERM IS AUTOMATICALLY FLOW CONTROLLED.  
12 THAT WAS DEFINED BY YOUR HONOR TO BE SELF-REGULATED. THAT WAS  
13 NOT A POINT ON APPEAL TO THE FEDERAL CIRCUIT. THEY ARE MAKING  
14 AN ARGUMENT THAT BLOCKING MUST MEAN IT NEVER OVERFLOWS. AND  
15 WE WILL TAKE ONE PEEK AT SOME OF THE EVIDENCE THAT ECHOSTAR  
16 CREATED TRYING TO SHOW THAT THERE IS THIS HORRIBLE OVERFLOW  
17 CONDITION THAT CAUSES GRIEVOUS LOSS OF DATA.

18 THIS IS THEIR EVIDENCE. ECHOSTAR ANALYZED 5,400 UNITS.  
19 OUT OF THOSE, LESS THAN ONE PERCENT OF THE BOXES HAD ANY  
20 OVERFLOW. SO 99 PERCENT PLUS OPERATED AT ALL TIMES ABSOLUTELY  
21 PERFECTLY. AND I DON'T KNOW ABOUT YOUR HONOR'S CABLE OR  
22 SATELLITE TV SERVICE, BUT I KNOW WHEN I AM WATCHING AN HOUR I  
23 SEE SOME IMAGES MAYBE THAT ARE FLUTTERS OR WHATNOT. THERE ARE  
24 BIRDS OR PIGEONS THAT FLY IN FRONT OF THE DISH OR WHATEVER IT  
25 IS, BUT 99 PERCENT PLUS HAD NO PROBLEM AT ALL. AND OF THE ONE

1 PERCENT THAT HAD A BRIEF INSTANT, A MICROSECOND OF A PROBLEM,  
2 THE OVERFLOW ACCOUNTED FOR LESS THAN .00019 PERCENT DATA LOSS.  
3 THIS DATA LOSS SHOWS THAT THEY ARE DOING AUTOMATIC FLOW  
4 CONTROL, WHICH IS THEY ARE REGULATING THE FLOW OF DATA SO THE  
5 PRODUCT WORKS AS IT SHOULD. AND AS DR. RHYNE TESTIFIED,  
6 ECHOSTAR'S EXPERT, I WOULD NOT CONSIDER ONE PERCENT TO BE A  
7 SIGNIFICANT PERCENTAGE, AND THE SAME WOULD BE TRUE OF A TINY  
8 FRACTION OF ONE PERCENT.

9 SO, THE BUFFERING AND AUTOMATIC FLOW CONTROL ARGUMENT WE  
10 BELIEVE IS NOT RELEVANT. AND THE IMPORTANT POINT HERE IS,  
11 YOUR HONOR, ONE DOESN'T GET TO THE QUESTION OF WHETHER THE  
12 CHANGES ARE MORE THAN COLORABLY DIFFERENT OR NOT UNLESS THEY  
13 ARE RELEVANT TO A CLAIM ELEMENT. THEY CAN MAKE A THOUSAND  
14 CHANGES. THEY COULD BE MAJOR CHANGES. BUT IF THEY DON'T  
15 RELATE TO A CLAIM ELEMENT AND A CLAIM AT ISSUE, THEY ARE  
16 ABSOLUTELY IRRELEVANT AND THEREFORE ONE NEVER NEEDS TO GET TO  
17 THE QUESTION OF WHETHER THEY ARE COLORABLY DIFFERENT. AND, OF  
18 COURSE, IF THEY DON'T RELATE TO A CLAIM ELEMENT, SINCE THESE  
19 BOXES WERE FOUND ALREADY TO HAVE INFRINGED, THEY STILL  
20 INFRINGE. SO THE CLAIM ELEMENTS ARE MET. THE TWO SETS OF  
21 BOXES WERE AND ARE STILL INFRINGING.

22 NOW, JUST A BRIEF MOMENT, YOUR HONOR, WITH RESPECT TO  
23 THEIR SO-CALLED GOOD FAITH DEFENSE. HERE IS *ADDITIVE*  
24 *CONTROLS'* : A PARTY NEED NOT INTEND TO VIOLATE AN INJUNCTION TO  
25 BE FOUND IN CONTEMPT. IT'S HORNBOOK LAW. BUT HERE ARE SOME

1 KEY FACTS. ECHOSTAR, IN MAKING ITS ARGUMENT TO THE FEDERAL  
2 CIRCUIT, SAID THAT IT WOULD BE REQUIRED TO DISABLE THE DVR  
3 FUNCTIONALITY OF DVRS INSTALLED. THERE WAS NO EXCEPTION IN  
4 THE COURT'S ORDER AND NO EXCEPTION IN THIS STATEMENT. IT WAS  
5 FLAT OUT THEY WERE SAYING, GIVE US RELIEF BECAUSE WE HAVE TO  
6 DO THIS EVEN IF WE THINK WE HAVE A DESIGN-AROUND, EVEN IF, AS  
7 THEY DID AT THAT TIME HAD IN THEIR POCKET FISH OPINION  
8 LETTERS. BUT INSTEAD, HERE IS WHAT THEY DID.

9           THEY ASKED FOR THE STAY AFTER THEY HAD THE FISH OPINION  
10 OR OPINIONS. THEY NEVER DISCLOSED THIS TO THE FEDERAL CIRCUIT  
11 OR YOUR HONOR AT ANY TIME UP UNTIL LATER EVENTS AND THE  
12 FEDERAL CIRCUIT AFFIRMED. AND THEY DIDN'T ANNOUNCE THE  
13 SUPPOSED DESIGN-AROUND UNTIL AFTER THE FEDERAL CIRCUIT  
14 AFFIRMED THE INJUNCTION AND THEY WERE FACING AGAIN A JUDGMENT  
15 DAY.

16           IN SHORT, THE DVR FUNCTIONALITY HAS NOT BEEN DISABLED FOR  
17 THE LAST TWO AND A HALF YEARS. THEY SHOULD BE HELD IN  
18 CONTEMPT FOR THAT AS AN INDEPENDENT GROUND ALONE. AND  
19 FOCUSING ON THIS HEARING, YOUR HONOR, THE CHANGES, THE ALLEGED  
20 CHANGES, ARE IRRELEVANT TO THE CLAIM ELEMENTS AND THEY ARE IN  
21 CONTEMPT ON THAT INDEPENDENT GROUND AS WELL. THANK YOU.

22           THE COURT: WHAT RELIEF -- IF I SHOULD AGREE WITH  
23 YOUR CONCLUSIONS, WHAT RELIEF ARE YOU REQUESTING ON BEHALF OF  
24 YOUR CLIENT?

25           MR. CHU: THIS HEARING, YOUR HONOR, WILL OF COURSE

1 ADDRESS WHETHER THEY ARE IN CONTEMPT, AND RELIEF WILL BE  
2 ANOTHER PROCEEDING. OBVIOUSLY, WE WOULD WANT AN APPROPRIATE  
3 ORDER SO THAT THEY WOULD DISABLE THE DVRS AND THAT THE COURT'S  
4 ORIGINAL INJUNCTION WOULD BE ENFORCED. THAT WOULD BE A  
5 MINIMUM. WE THINK THAT MONETARY RECOVERIES WOULD ALSO BE  
6 APPROPRIATE. THERE MAY BE OTHER RECOVERIES APPROPRIATE AS  
7 WELL, BUT WE THINK THAT BOTH SIDES SHOULD HAVE A FULL  
8 OPPORTUNITY TO DEVELOP THE RECORD BEFORE YOUR HONOR.

9 THE COURT: THANK YOU. OPENING ON BEHALF OF  
10 ECHOSTAR.

11 MS. KREVANS: MORNING, YOUR HONOR. I WANT TO  
12 APOLOGIZE IN ADVANCE, I LOST MY VOICE FOR SEVERAL WEEKS AND I  
13 AM JUST GETTING IT BACK, SO I AM GOING TO TRY TO TALK CLOSELY  
14 IN THE MIC.

15 THE COURT: WELL, I AM AT THAT STAGE OVER THE  
16 WEEKEND, SO I WILL EXTEND THE SAME APOLOGY.

17 MS. KREVANS: YOUR HONOR, IMMEDIATELY AFTER THE JURY  
18 VERDICT IN APRIL 2006, ECHOSTAR BEGAN TAKING STEPS TO BRING  
19 ITS OPERATIONS INTO FULL COMPLIANCE WITH THAT VERDICT.  
20 ECHOSTAR BEGAN TO DETERMINE RIGHT AWAY IF IT COULD DESIGN-  
21 AROUND THE CLAIMS AS ADJUDICATED BY THE JURY. ECHOSTAR  
22 INVESTED CLOSE TO A MILLION DOLLARS OVER A YEAR'S WORTH OF  
23 TIME FROM APRIL 2006 IN DIRECT COST OF THAT EFFORT. ECHOSTAR  
24 PUT A TEAM OF 15 ENGINEERS TO WORK WITH LAWYERS IT RETAINED  
25 FROM FISH & RICHARDSON STARTING IMMEDIATELY SO THAT IT COULD

1 BEHAVE CONSISTENTLY WITH THAT VERDICT.

2 NOW, THE DESIGN-AROUND EFFORT TOOK A YEAR OVERALL. IF WE  
3 COULD PUT UP OUR TIME LINE, MICHAEL. THANK YOU. IMMEDIATELY,  
4 THE FIRST WEEK AFTER THE VERDICT, ECHOSTAR ENGINEERS STARTED  
5 TALKING ABOUT WHETHER THERE WAS A POSSIBLE WAY TO DESIGN-  
6 AROUND THE CLAIMS AS THEY HAD BEEN ADJUDICATED IN THE TRIAL OF  
7 THIS CASE. THEY CAME UP WITH SOME POSSIBLE IDEAS. THEY  
8 PROPOSED THEM TO FISH & RICHARDSON, A PREEMINENT NATIONAL  
9 PATENT LAW FIRM WHO ARE INDEPENDENT COUNSEL, AND THEN POSED  
10 THEM TO FISH IN MAY OF 2006. THEY DIDN'T KNOW YET WHETHER  
11 THEY COULD ACTUALLY MAKE THOSE IDEAS WORK IN THEIR BOXES, BUT  
12 THEY WANTED TO FIND OUT FROM INDEPENDENT LAWYERS WHETHER IF  
13 THEY COULD MAKE THEM WORK, THOSE LAWYERS THOUGHT THAT THEY  
14 WOULD TAKE THEM OUTSIDE THE SCOPE OF THE JURY VERDICT IN THIS  
15 CASE.

16 AND THE FISH LAWYERS WENT TO WORK THEMSELVES. THEY  
17 LOOKED AT A LOT OF INFORMATION. THEY HAD A LOT OF BACK AND  
18 FORTH WITH THE ECHOSTAR ENGINEERS, NUMEROUS MEETINGS AND PHONE  
19 CALLS. AND IN AUGUST OF 19 -- I AM SORRY -- OF 2006 THEY GAVE  
20 AN INITIAL OPINION THAT IF ECHOSTAR COULD IN FACT SUCCEED IN  
21 IMPLEMENTING THESE IDEAS IN ITS BOXES -- AT THAT TIME IN  
22 AUGUST, BY NO MEANS A FINAL CONCLUSION HAD BEEN REACHED -- BUT  
23 IF THEY COULD IMPLEMENT THEM, THEY WOULD TAKE THE BOXES  
24 OUTSIDE THE SCOPE OF THE JURY VERDICT.

25 NOW, ECHOSTAR, AS YOU KNOW, HAS MULTIPLE BOXES THAT WERE

1 THE SUBJECT OF THE JURY VERDICT. THEY HAVE DIFFERENT SETS OF  
2 CODE IN THEM, AND THAT DESIGN-AROUND HAD TO BE DEVELOPED  
3 INDEPENDENTLY FOR EACH SET OF CODE. THE VERY FIRST BOX FOR  
4 WHICH THERE WAS A TEST ROLLOUT THAT WAS AVAILABLE TO TRY TO  
5 SEE IF IT COULD WORK IN THE BOX WAS NOT UNTIL THE END OF  
6 OCTOBER OF 2006. AND YOU WILL HEAR FROM MR. MINNICK, WHO IS  
7 THE LEADER OF THIS EFFORT AND THE HEAD OF THE SOFTWARE TEAM AT  
8 ECHOSTAR ENGINEERING, THAT EVEN AT THE END OF OCTOBER OF 2006,  
9 THAT WAS A VERY RUSHED ROLLOUT AND IT CAUSED A LOT OF PROBLEMS  
10 BECAUSE THE CODE WAS NOT IN FACT READY EVEN AS OF THAT TIME,  
11 AND EVEN JUST IN THAT ONE PRODUCT. IT HAD TO BE REWRITTEN AND  
12 ROLLED OUT AGAIN TO ALL OF THOSE PRODUCTS, WHERE THE FIRST  
13 TEST ROLLOUT HAPPENED AT THE END OF OCTOBER 2006. AND IT  
14 WASN'T COMPLETE FOR ALL THE BOXES, INCLUDING ECHOSTAR'S  
15 BIGGEST PRODUCT AT THE TIME, WHICH WAS THE 50X GROUP OF BOXES,  
16 UNTIL APRIL OF 2007.

17 THIS EFFORT, WHICH TOOK A YEAR, WAS A VERY SUBSTANTIAL  
18 UNDERTAKING FOR ECHOSTAR SOFTWARE ENGINEERING TEAM, WITH  
19 SUBSTANTIAL COSTS, WITH SUBSTANTIAL DISRUPTION TO ITS  
20 BUSINESS, BUT ECHOSTAR DID IT AND THE EVIDENCE WILL SHOW THAT  
21 ECHOSTAR DID IT BECAUSE AS SOON AS THEY GOT THE JURY VERDICT,  
22 THEY SAID WE SEE THIS VERDICT, WE ACCEPT THIS VERDICT, WE MAY  
23 APPEAL, BUT WE DON'T KNOW WHAT WILL HAPPEN WITH THE APPEAL,  
24 AND SO WE ARE GOING TO TAKE THIS VERDICT AS THE BASELINE FOR  
25 OUR FUTURE BEHAVIOR AND WE ARE GOING TO FIGURE OUT IF WE CAN

1 MAKE PRODUCTS THAT DESIGN-AROUND THE SCOPE OF THE CLAIMS AS  
2 ADJUDICATED BY THE JURY.

3 AND IN FACT ON THE DAY THAT THE REMAND CAME DOWN IN 2008  
4 FROM THE FEDERAL CIRCUIT, ECHOSTAR VOLUNTARILY SENT TO TIVO,  
5 WITHOUT WAITING FOR A REQUEST, WITHOUT WAITING FOR DISCOVERY,  
6 A LETTER PROVIDING ITS OPINIONS OF COUNSEL ON THE DESIGN-  
7 AROUND, WHICH OF COURSE UP TO THAT TIME HAD BEEN PRIVILEGED,  
8 PROVIDING DETAILS ABOUT THE DESIGN-AROUND, AND OFFERING,  
9 WITHOUT REQUIRING ANY PROCESS FROM THE COURT, FOR TIVO TO BE  
10 ABLE TO COME LOOK AT THE CODE FOR THE DESIGN-AROUND. DID THAT  
11 RIGHT AWAY IN APRIL 2008.

12 ALL OF ECHOSTAR'S EFFORTS HAVE BEEN TO ACCEPT THE JURY  
13 VERDICT AND TO COMPLY WITH IT, AND TO PUT ITSELF IN A POSITION  
14 WHERE IF THE APPEAL WAS UNSUCCESSFUL, IT WOULD COMPLY WITH THE  
15 INJUNCTION AS WELL.

16 NOW, I WANT TO START WITH A COUPLE OF BASIC POINTS HERE  
17 ABOUT TIVO'S CONTEMPT CASE. WE CAN TAKE THE TIMELINE DOWN,  
18 MICHAEL. YOU JUST HEARD MR. CHU A FEW MOMENTS AGO IN HIS  
19 OPENING SAY THIS IS NOT A PLAYGROUND GAME WHERE SOMEONE CAN  
20 CALL A DO-OVER, SUGGESTING THAT ECHOSTAR IS TRYING TO DO THAT.  
21 YOUR HONOR, THE PARTY BEFORE YOU THAT IS TRYING TO CALL A DO-  
22 OVER HERE IS TIVO, NOT ECHOSTAR. TIVO PUT ON A CASE TO THE  
23 JURY THAT ITS CLAIMS WERE INFRINGED AND THAT THEY WERE NOT  
24 INVALID. ECHOSTAR CONTESTED MAJOR PARTS OF THAT CASE,  
25 INCLUDING THE ISSUES THAT ARE AT ISSUE TODAY. ECHOSTAR SAID

1 THAT THE CLAIMS WERE NOT INFRINGED. ECHOSTAR SAID THAT THE  
2 CLAIMS WERE INVALID. TIVO WON. ECHOSTAR LOST.

3 ECHOSTAR CAN'T KEEP CLINGING TO THE POSITIONS THAT IT PUT  
4 FORWARD TO THE JURY THAT WERE REJECTED. ECHOSTAR HAS TO  
5 ACCEPT TIVO'S POSITIONS, AND TIVO DOES, TOO. WHY IS THAT?  
6 BECAUSE THE TWO BASIC BEDROCK PRINCIPLES OF LAW TELL US SO.  
7 FIRST, THE KSM CASE. IF WE COULD PUT THAT SLIDE UP, MICHAEL,  
8 SLIDE 25, PLEASE.

9 I KNOW YOUR HONOR HAS RECEIVED A LOT OF BRIEFING ABOUT  
10 THE KSM CASE. IT'S THE LEADING FEDERAL CIRCUIT CASE ABOUT  
11 DESIGN-AROUNDS AND IN CONTEMPT PROCEEDING CONTEXT, AND IT  
12 SAYS: A PATENT OWNER MAY NOT IN CONTEMPT PROCEEDINGS, SEEK TO  
13 BROADEN THE SCOPE OF THE CLAIMS WHICH WERE ADJUDICATED AND,  
14 THEREBY, CATCH THE MODIFIED DEVICE. AND YET THAT'S EXACTLY  
15 WHAT TIVO IS DOING HERE TODAY. EVERYTHING THEY TELL YOU YOU  
16 SHOULD IGNORE AS IRRELEVANT ABOUT WHETHER PARSING AUDIO AND  
17 VIDEO IN THE CLAIMS OF THIS PATENT MEANS THE KIND OF PARSING  
18 THAT IS START CODE DETECTING AND INDEXING, THAT'S THEIR CASE.  
19 THAT'S THE CASE THEY PUT ON AT TRIAL, AND NOW THEY WANT YOU TO  
20 IGNORE IT AND SAY THAT IT'S IRRELEVANT. AND THEY WANT TO  
21 POINT TO SOMETHING DIFFERENT AS MEETING THE PARSING ELEMENT,  
22 SOMETHING THAT THEY DID NOT PUT ON AT TRIAL.

23 THE COURT: WELL, HOW, IN YOUR OPINION, HAVE THEY  
24 CHANGED THEIR CASE IN THAT REGARD?

25 MS. KREVANS: AT TRIAL, YOUR HONOR, IF WE COULD PUT

1 UP THE SLIDE WITH THE LITTLE TABLE OF COMPARISONS, MICHAEL.  
2 IT'S -- THAT'S THE ONE. THANK YOU. AT TRIAL, TIVO'S  
3 POSITIONS -- THIS IS JUST WITH RESPECT TO THE PARSING AUDIO  
4 AND VIDEO. I WILL GET TO FLOW CONTROL IN A MOMENT. TIVO'S  
5 POSITIONS WERE THAT PID FILTERING MET THE TUNING, SELECTING,  
6 AND CONVERTING ELEMENTS OF CLAIM 1, AND THEREFORE CLAIM 1 WAS  
7 INFRINGED, AMONG OTHER ARGUMENTS THEY MADE. ECHOSTAR  
8 CONTESTED THAT. ECHOSTAR SAID PID FILTERING DOES NOT MEAN  
9 TUNING AND CONVERTING. THAT WAS A CONTESTED ISSUE. ECHOSTAR  
10 SAID, WE DON'T PRACTICE THAT ON THE CLAIMS AND THEREFORE WE  
11 DON'T INFRINGE CLAIM 1. TIVO WON THAT ARGUMENT. ECHOSTAR  
12 LOST.

13 TIVO WON THAT PID FILTERING WAS TUNING, SELECTING, AND  
14 CONVERTING. TIVO TOOK THE POSITION -- AND THIS IS CONTRARY TO  
15 A QUOTE THAT MR. CHU JUST SHOWED YOU FROM THEIR EXPERT. TIVO  
16 TOOK THE POSITION THAT PID FILTERING IS NOT THE PARSING OF THE  
17 CLAIMS. IT TOOK THAT POSITION TO DEFEND AGAINST ECHOSTAR'S  
18 INVALIDITY CASE BECAUSE ECHOSTAR HAD PRIOR ART THAT HAD PID  
19 FILTERING BUT NOT INDEXING, AND TIVO WANTED TO SAY THAT THOSE  
20 PIECES OF PRIOR ART DID NOT INVALIDATE THE CLAIMS. ECHOSTAR  
21 TOOK THE POSITION -- THIS WAS A CORRECT THING THAT MR. CHU  
22 TOLD YOU, THAT THE PARSING OF ALL CLAIMS COULD BE MET BY PID  
23 FILTERING. ECHOSTAR LOST THAT ISSUE, YOUR HONOR. TIVO WON  
24 IT. TIVO WON THAT PID FILTERING IS NOT THE PARSING OF THE  
25 CLAIMS.

1 TIVO'S CASE, A MAJOR PART OF WHAT THEY SPENT THEIR TIME  
2 TALKING ABOUT AT TRIAL WAS THAT THE PARSING OF ALL THESE  
3 CLAIMS AND ONE OF THE KEYS TO THEIR INVENTION, THE ANALYSIS OF  
4 AUDIO AND VIDEO THAT THESE CLAIMS TALK ABOUT, IS FINDING START  
5 CODES FOR FRAMES, AND BUILDING AN INDEX OF THEM AND STORING IT  
6 SO THAT LATER ON PLAYBACK YOU CAN DO TRICKPLAY.

7 THAT WAS THE BASIC DISPUTE ABOUT PARSING AND PID  
8 FILTERING, BUT THIS WAS DISPUTED. THE CRUX OF WHAT WE ARE  
9 TALKING ABOUT TODAY WAS DISPUTED. TIVO TOOK THE OPPOSITE  
10 POSITIONS AT TRIAL THAT THEY ARE TAKING TODAY. THEY WON. WE  
11 HAVE TO ACCEPT THEIR POSITIONS, YOUR HONOR. WE CAN'T CLING TO  
12 THE ONES WE PUT FORWARD AND LOST. NOT JUST UNDER KSM WHICH  
13 SAYS IN CONTEMPT YOU GO BY THE SCOPE OF THE CLAIMS AS  
14 ADJUDICATED AND THIS IS WHAT WAS ADJUDICATED, BUT ALSO -- IF  
15 WE COULD PUT UP THAT OTHER SLIDE NOW -- THE JUDICIAL ESTOPPEL  
16 SLIDE, IT'S SLIDE 24, UNDER FIFTH CIRCUIT LAW, WHICH WE  
17 BELIEVE IS CONTROLLING, BUT FEDERAL CIRCUIT LAW AS WELL ON  
18 JUDICIAL ESTOPPEL, TIVO CANNOT TAKE POSITIONS AT TRIAL IN  
19 ORDER TO TRY TO WIN A JURY VERDICT. WIN, WHICH IT DID, GET A  
20 VERDICT FOR \$104 MILLION DOLLARS WITH INTEREST, ETCETERA,  
21 ADDED ON, COLLECT THE CHECK, WHICH THEY HAVE DONE, KEEP THE  
22 \$104 MILLION DOLLARS, AND NOW FOR PURPOSES OF CONTEMPT, TURN  
23 AROUND AND TAKE DIFFERENT POSITIONS. BOTH UNDER KSM AND UNDER  
24 THE LAW OF JUDICIAL ESTOPPEL, TIVO CANNOT DO THAT, BUT THAT IS  
25 EXACTLY WHAT THEY ARE DOING.

1           LET'S LOOK AT A LITTLE BIT OF THE EVIDENCE YOU WILL SEE  
2 ABOUT HOW IT IS THAT THEY ARE DOING THAT. WHAT DID TIVO IN  
3 FACT SAY AT TRIAL ABOUT WHAT PARSING OF ALL THE CLAIMS AND, OF  
4 COURSE, IN 31 AND 61 IT'S PARSING AUDIO AND VIDEO REQUIRES?  
5 IF WE COULD SEE DR. GIBSON, WHO WAS TIVO'S INFRINGEMENT  
6 EXPERT, SLIDES 47, PLEASE. HE WAS TALKING HERE ABOUT CLAIM 1.  
7 AND, BY THE WAY, YOUR HONOR, LET ME JUST SAY RIGHT NOW YOU  
8 HEARD FROM MR. CHU A FEW MINUTES AGO A SUGGESTION THAT PARSING  
9 MEANS SOMETHING DIFFERENT IN THE HARDWARE CLAIMS, WHICH ARE NO  
10 LONGER AT ISSUE, AND THE SOFTWARE CLAIMS THAT ARE.

11           TIVO NEVER EVER AT TRIAL IN THIS CASE WHEN THEY WERE  
12 ATTEMPTING TO SECURE THEIR JURY VERDICT SUGGESTED THAT THE  
13 WORD PARSING MEANT SOMETHING DIFFERENT IN THOSE CLAIMS. NEVER  
14 SUGGESTED THAT IT MEANT SOMETHING DIFFERENT IN THE CLAIM  
15 CONSTRUCTION PROCEEDINGS BEFORE THE COURT. THE COURT  
16 CONSTRUED THE WORD PARSE AS MEANING ANALYZE IN BOTH CLAIMS.  
17 THIS THEORY THAT EVERYTHING THAT WAS SAID ABOUT THE PARSING,  
18 IF IT WAS SAID IN THE CONTEXT OF CLAIM 1, IS IRRELEVANT, BRAND  
19 NEW THEORY WE ARE HEARING FOR THE FIRST TIME FROM THEM TODAY.

20           DR. GIBSON SAYS: OKAY, I AM GOING TO TALK ABOUT THE  
21 PARSING OF CLAIM 1. AND YOU SEE HE'S GOT A QUOTE DOWN BELOW  
22 THAT TAKES THE COURT'S INTERPRETATION OF PARSES, ANALYZE, AND  
23 PUTS IT INTO THAT CLAIM LIMITATION. WHAT DID HE IDENTIFY IS  
24 DOING THAT PARSING? IF WE COULD GO ON TO SLIDE 49. HE  
25 IDENTIFIED, AND NOW HE IS TALKING ABOUT ONE OF THE SETS OF

1 PRODUCTS, THE BROADCOM PRODUCTS, BUT HE SAID THE SAME THING  
2 FOR BOTH, HE SAID WHAT DOES THAT PARSING IS THIS PART OF THE  
3 CHIP CALLED THE START CODE DETECTOR. AND THE TESTIMONY WILL  
4 SHOW, YOUR HONOR, THERE IS NO DISPUTE ABOUT THIS, PIECE OF  
5 HARDWARE THAT GOES THROUGH ALL THE AUDIO AND VIDEO DATA, LOOKS  
6 THROUGH EVERY PIECE OF AUDIO AND VIDEO DATA, FINDS THE START,  
7 GOES TO THE START OF EACH FRAME AND MAKES A TABLE OR INDEX OUT  
8 OF THEM. THAT'S WHAT DR. GIBSON POINTED TO.

9 LET'S LOOK AT WHAT HE SAID ABOUT THE SOFTWARE CLAIMS.  
10 THIS IS SLIDE 92, PLEASE, MICHAEL. HE IDENTIFIED -- NOW, HERE  
11 WE HAVE GOT THE PHYSICAL DATA SOURCE ELEMENT OF THE SOFTWARE  
12 CLAIMS. MR. CHU SHOWED YOU A QUOTE FROM DR. GIBSON WHERE HE  
13 MENTIONS THE PID FILTER IS ONE OF THE THINGS IN THIS PHYSICAL  
14 DATA SOURCE. AND MR. CHU SAYS, WELL, THAT MEANS HE SAID THE  
15 PID FILTER DOES THE PARSING. THAT'S NOT RIGHT, YOUR HONOR,  
16 BECAUSE, OF COURSE, THE PHYSICAL DATA SOURCE, THIS IS -- THIS  
17 IS DR. GIBSON'S SLIDE, TIVO'S SLIDE FROM THE ORIGINAL TRIAL,  
18 THE PHYSICAL DATA SOURCE DOES MULTIPLE THINGS. IT DOESN'T  
19 JUST PARSE OR ANALYZE VIDEO AND AUDIO DATA. IT ALSO ACCEPTS  
20 IT FROM THE INPUT DEVICE AND TEMPORARILY STORES IT.

21 THIS IS THE SLIDE THAT DR. GIBSON SHOWED WHEN HE TALKED  
22 ABOUT THE PHYSICAL DATA SOURCE, AND HE MENTIONED NOT JUST PID  
23 FILTERING BUT PARSING. WHAT DID HE HIGHLIGHT ON THIS SLIDE,  
24 THAT GRAPHIC BEHIND -- THE CHART BEHIND HIS -- THE WORDS IS  
25 AGAIN A PIECE OF THE BROADCOM CHIP SPECIFICATION. IT'S A

1 LITTLE INDISTINCT, BUT WE WILL SHOW YOU IN THE EVIDENCE THE  
2 BOXES HE HIGHLIGHTED ON THE LEFT ARE A BUFFER. THAT'S WHAT HE  
3 SAID WAS THE TEMPORARY STORAGE REQUIRED IN THE BOTTOM PART OF  
4 THE CLAIM THERE. AND UP ON THE UPPER RIGHT: AGAIN, THAT'S  
5 START CODE DETECT, THAT THING THAT ANALYZES THE AUDIO AND  
6 VIDEO DATA, LOOKING AT EACH BIT AS IT GOES BY TO SAY, WHERE IS  
7 THE START OF THE FRAMES, JUST LIKE THE PATENT SAYS, JUST LIKE  
8 THE SPECIFICATION SAYS, AND MAKES A TABLE OUT OF THEM. THAT  
9 WAS DR. GIBSON'S ACTUAL TESTIMONY. THAT'S HIS ACTUAL GRAPHIC  
10 FROM THE TRIAL.

11 NOW, WHAT ABOUT THIS TESTIMONY FROM DR. STORER THAT MR.  
12 CHU SHOWED YOU THIS MORNING WHERE HE SAYS, OH, SURE, PID  
13 FILTERING IS PARSING? REMEMBER, DR. STORER WAS THEIR  
14 INVALIDITY EXPERT. THAT WAS TESTIMONY FROM CROSS. LET'S LOOK  
15 AT WHAT MR. CHU DID ON REDIRECT WITH DR. STORER AT TRIAL TO  
16 MAKE SURE THAT DR. STORER'S MEANING WAS COMPLETELY CLEAR.  
17 COULD WE LOOK AT THE STORER TESTIMONY FROM APRIL 11<sup>TH</sup>, THE P.M.  
18 SESSION? IF WE COULD BLOW THIS UP STARTING AT PAGE 2, LINE 8.  
19 THERE WE GO. STARTING AT LINE 8. MR. CHU -- THIS IS REDIRECT,  
20 YOUR HONOR, OF DR. STORER, THEIR INVALIDITY EXPERT. MR. CHU  
21 SAYS: YOU WERE ASKED SOME QUESTIONS ABOUT A PID FILTERING BY  
22 OPPOSING COUNSEL. DO YOU REMEMBER THAT? DR. STORER SAYS: I  
23 DO. QUESTION: AND WERE YOU GIVEN AN OPPORTUNITY TO EXPLAIN  
24 YOUR UNDERSTANDING OF THE PID FILTERING? DR. STORER: WELL,  
25 YOU MAY HAVE -- YOU COULD TELL I WAS A LITTLE BIT FRUSTRATED

1 WITH THE YES/NO FORMAT, SO, NO, I WASN'T.

2 THIS IS DR. STORER EXPLICITLY DISAVOWING THE TESTIMONY  
3 THAT MR. CHU SHOWED YOU THIS MORNING.

4 NOW, DR. STORER IS GOING TO SAY WHAT HE REALLY MEANT.  
5 THIS IS WHAT HE TOLD THE JURY. PLEASE EXPLAIN, SAYS MR. CHU.  
6 OKAY. A VERY IMPORTANT POINT TO REMEMBER IS THE DISTINCTION  
7 BETWEEN EARLIER PARTS OF THE CLAIM, THE INPUT SECTION, TUNING  
8 AND THE INPUT SECTION AND ALL THE STUFF THAT TAKES PLACE IN  
9 ORDER TO GET THAT MPEG STREAM, THE ONE FOR INTERNAL TRANSFER  
10 AND MANIPULATION THAT IS TALKED ABOUT IN THE CLAIMS, AND NOW  
11 YOU MOVE ON TO THE STEP THAT HAS THE MEDIA SWITCH.

12 THEY ARE TALKING HERE, OF COURSE, ABOUT CLAIM 1.

13 AND WHAT I WAS SAYING IS THAT, YES -- THIS GOES ON ON THE  
14 FOLLOWING PAGE -- INSIDE THE RECEIVER CARD -- AND THERE IS  
15 ACTUALLY A FIGURE IN MY PRESENTATION THAT WOULD BE WORTH  
16 PUTTING THAT UP. SO INSIDE THE RECEIVER CARD -- I DON'T KNOW  
17 IF I CAN DO IT WITH MY LASER PEN, ETCETERA, THERE IS THIS  
18 PROCESS OF TRANSLATION FROM THE MPEG-2 TO MPEG-1.

19 HE KEEPS TALKING ABOUT THIS RECEIVER CARD, AND HE GOES  
20 DOWN AND HE SAYS AT LINE 12: AND SO INSIDE THE RECEIVER CARD,  
21 THE INPUT SECTION, YES, THERE IS A LITTLE BIT OF WHAT YOU  
22 MIGHT CALL SEPARATION IN ORDER TO PERFORM THIS TRANSLATION, A  
23 LITTLE BIT OF WHAT YOU MIGHT CALL EVEN A TYPE OF PARSING IN  
24 ORDER TO PICK OUT THE CORRECT PACKETS AND TURN THEM AND  
25 CONVERT THEM INTO THE MPEG-1. BUT JUST BECAUSE THESE ARE

1 WORDS YOU USE TO DESCRIBE THIS CONVERSION PROCESS, YOU  
2 SHOULDN'T CONFUSE THAT WITH THE CLAIM TERMS.

3 HE IS SAYING DON'T CONFUSE PID FILTERING AS A PARSING  
4 THAT COULD MEAN THE PARSING OF THE CLAIM TERMS. THEN HE GOES  
5 ON AND HE SAYS: AND WHEN YOU ARE DONE WITH THE INPUT SECTION,  
6 IT'S AFTERWARDS THAT COMES THE PART OF THE CLAIM THAT TALKS  
7 ABOUT THE MEDIA SWITCH THAT PARSES AND SEPARATES.

8 HE EXPLAINED TO THE JURY HE DIDN'T THINK THAT PID  
9 FILTERING WAS THE PARSING OF THE CLAIMS. PID FILTERING IS  
10 SOMETHING THAT HAPPENED IN THE INPUT SECTION OF THE DEVICE.  
11 THAT PART OF THE DEVICE COMES BEFORE THE PART THAT DOES THE  
12 PARSING, WHETHER IT'S THE MEDIA SWITCH, THE EVIDENCE WILL  
13 SHOW, OR THE PHYSICAL DATA SOURCE. THAT WAS THEIR POSITION AT  
14 TRIAL.

15 PARSING AUDIO AND VIDEO WAS MAKING A FRAME INDEX, LOOKING  
16 THROUGH THE AUDIO AND VIDEO, FINDING THE STARTS OF THE FRAMES,  
17 MAKING AN INDEX. PID FILTERING WAS NOT THE PARSING OF THE  
18 CLAIMS. THAT WAS THEIR EVIDENCE ON THIS ISSUE OF THE PARSING  
19 LIMITATION. PLAINLY THE JURY ACCEPTED TIVO'S POSITION. THEY  
20 FOUND THE CLAIMS INFRINGED, AND THEY FOUND THEM VALID. NOW  
21 TIVO IS SEEKING TO EXPAND THE SCOPE OF THE CLAIMS BY SAYING  
22 SOMETHING THEY NEVER IDENTIFIED BEFORE, PID FILTERING COULD BE  
23 PARSING. IT'S WORSE, THOUGH, BECAUSE THEY SAID PID FILTERING  
24 WAS NOT PARSING, AND THEY SAID THAT TO DEFEAT ECHOSTAR'S  
25 INVALIDITY CLAIM.

1           NOW, THEIR THEORY IS, WE CAN MAKE A CASE FOR CONTEMPT  
2 TODAY BECAUSE ECHOSTAR TOOK THE POSITION AT TRIAL THAT PID  
3 FILTERING WAS PARSING, AND THAT'S AN ADMISSION. ECHOSTAR'S  
4 POSITION AT TRIAL WAS REJECTED BY THE JURY, YOUR HONOR. WE  
5 CAN'T START OVER HERE. WE HAVE TO BE LOOKING AT CONTEMPT IN  
6 THE SCOPE OF THE CLAIMS AS ADJUDICATED BY THE JURY. TIVO'S  
7 POSITION PREVAILED. WE HAVE TO ACCEPT IT. WE DID ACCEPT IT.  
8 WE DESIGNED AROUND IT. TIVO IS REFUSING TO ACCEPT IT NOW.

9           AND MOREOVER, THE POSITION THAT THEY ARE ARGUING NOW  
10 ABOUT THIS, WHETHER THIS PARSING AUDIO AND VIDEO LIMITATION IS  
11 MET, IS A POSITION THAT HAS NEVER BEEN ADJUDICATED BEFORE. IT  
12 CERTAINLY CAN'T BE THE BASIS FOR CONTEMPT, AND CERTAINLY THERE  
13 IS NO ARGUMENT THAT THESE CHANGES TO TAKE OUT THIS ANALYSIS OF  
14 AUDIO AND VIDEO TAKE OUT ALL OF THIS INDEX THAT THEY POINTED  
15 TO ON WHICH THEY RESTED THEIR ENTIRE INFRINGEMENT CASE. THERE  
16 CAN BE NO POSSIBLE ARGUMENT THAT THAT'S IRRELEVANT TO A CLAIM  
17 LIMITATION.

18           WHAT ABOUT FLOW CONTROL? I WANT TO JUST FIX ONE THING  
19 FIRST THAT MR. CHU SAID THIS MORNING. HE SAYS ECHOSTAR IS  
20 GOING TO ARGUE TO THE COURT THAT THE CLAIM REQUIRES MULTIPLE  
21 BUFFERS. ECHOSTAR IS NOT MAKING ANY SUCH ARGUMENT, YOUR  
22 HONOR. OUR ARGUMENT IS VERY STRAIGHTFORWARD. IT'S BASED ON  
23 THE EXACT LANGUAGE OF THE CLAIM ON THE FLOW CONTROL POINT. IF  
24 WE COULD PUT UP THE GRAPHIC OF THE CLAIM LANGUAGE, MICHAEL.

25           CLAIM 31, THE FRONT HALF OF THE CLAIM, THE RECORDING SIDE

1 OF THE CLAIM, REQUIRES A PHYSICAL DATA SOURCE THAT DOES THESE  
2 FUNCTIONS THAT WE JUST LOOKED AT ON DR. GIBSON'S SLIDE:  
3 ACCEPTING BROADCAST DATA FROM AN INPUT DEVICE, PARSING THE  
4 AUDIO AND VIDEO DATA FROM THE BROADCAST DATA, AND TEMPORARILY  
5 STORING THE VIDEO AND AUDIO DATA.

6 THEN IT GOES ON. THAT'S WHAT THE FIRST ARGUMENT IS  
7 ABOUT. NOW IT GOES ON. IT HAS A SERIES OF LIMITATIONS ABOUT  
8 SOMETHING CALLED A SOURCE OBJECT AND A TRANSFORM OBJECT. AND  
9 I WANT TO JUST WALK THROUGH THE CLAIM LANGUAGE BECAUSE I WANT  
10 YOUR HONOR TO UNDERSTAND THAT OUR ARGUMENT HERE IS BASED  
11 EXACTLY ON THE PLAIN LANGUAGE OF THE CLAIM. WHAT DOES THE  
12 SOURCE OBJECT HAVE TO DO HERE? SEVERAL THINGS. JOB ONE,  
13 EXTRACT VIDEO AND AUDIO DATA FROM THE PHYSICAL DATA SOURCE.  
14 JOB TWO -- WE'VE JUST SKIPPED THE TRANSFORM OBJECT FOR A  
15 SECOND HERE -- THE SOURCE OBJECT HAS TO OBTAIN A BUFFER FROM  
16 THE TRANSFORM OBJECT. SO IT HAS TO GET A BUFFER FROM THE  
17 TRANSFORM OBJECT. JOB THREE, THE SOURCE OBJECT HAS TO CONVERT  
18 THE VIDEO DATA THAT IT'S GOTTEN FROM THE PHYSICAL DATA SOURCE  
19 INTO DATA STREAMS. AND JOB FOUR, IT HAS TO FILL THE BUFFER  
20 WITH THE STREAMS. THAT'S THE SOURCE OBJECT. IT HAS TO DO  
21 FOUR THINGS: IT HAS TO EXTRACT DATA; IT HAS TO GET A BUFFER;  
22 IT HAS TO CONVERT THE DATA; IT HAS TO FILL THE BUFFER. THOSE  
23 ARE THE ONLY FOUR THINGS THAT THE SOURCE OBJECT OF THIS CLAIM  
24 DOES.

25 NOW, AS IT DOES THESE THINGS, THE CLAIM TELLS US, AND

1 THAT'S OUR BOTTOM THING HERE, THE SOURCE OBJECT IS  
2 AUTOMATICALLY FLOW CONTROLLED BY THE TRANSFORM OBJECT. NOW,  
3 WE NOTICE THIS BECAUSE IT HAPPENS TO BE IN THIS PART OF THE  
4 CLAIM LANGUAGE. TRANSFORM OBJECT HAS A COUPLE OF JOBS ITSELF.  
5 IT'S GOING TO AUTOMATICALLY FLOW CONTROL THE SOURCE. IT ALSO  
6 IS THE PIECE OF SOFTWARE HERE THAT IS GOING TO PUT DATA ONTO  
7 THE HARD DRIVE. SO AS YOU THINK OF DATA HERE AS MOVING FROM  
8 ONE PART OF THIS PRODUCT TO ANOTHER, YOU HAVE GOT A PHYSICAL  
9 DATA SOURCE, YOU GOT A BUFFER, AND YOU GOT A HARD DRIVE.

10 AND LET'S TALK ABOUT WHAT THE CLAIM SAYS ABOUT HOW YOU  
11 MOVE FROM ONE TO ANOTHER AND WHO IS GOING TO -- WHO IS  
12 RESPONSIBLE FOR IT. COULD WE HAVE THE GRAPHIC THAT MR. BARTON  
13 SHOWED THE JURY AT THE TRIAL ABOUT THIS? YOUR HONOR, THIS IS  
14 THE EVIDENCE WE WILL SHOW, A GRAPHIC THAT MR. BARTON SHOWED  
15 THE JURY AT THE ORIGINAL TRIAL AND HE DESCRIBED IT AS  
16 ILLUSTRATING THIS EXACT PART OF THE AUTOMATIC FLOW CONTROL OF  
17 HIS INVENTION. AND HE SAID, ON THE LEFT OFF THE SCREEN  
18 ACTUALLY IS THE PHYSICAL DATA SOURCE. YOU DON'T SEE IT. THEN  
19 YOU HAVE GOT THE SOURCE OBJECT, WHICH IS YOUR PIPE BRINGING  
20 THE DATA TO THE BUFFER SHOWN BY THE PITCHER. THAT'S ONE OF  
21 THE SOURCE OBJECT'S JOB IS TO FILL THAT PITCHER. YOU SEE THE  
22 HARD DISK DOWN THERE. THAT'S -- THAT'S THE BUCKET. IT'S NOT  
23 THE SOURCE OBJECT'S JOB TO FILL THE HARD DISK. THAT'S THE  
24 TRANSFORM OBJECT'S JOB. WE JUST SAW THAT FROM THE CLAIM.  
25 SOURCE OBJECT IS ABOUT GETTING THE DATA IN THAT PITCHER.

1           NOW, WHAT DID MR. BARTON TELL THE JURY, COMPLETELY  
2 CONSISTENT WITH THE CLAIM AND THE PLAIN LANGUAGE IN THE CLAIM  
3 INDEED ABOUT HIS FLOW CONTROL? HE SAID, OR THE CLAIM SAYS:  
4 THE SOURCE OBJECT IS AUTOMATICALLY FLOW CONTROLLED BY THE  
5 TRANSFORM. HE SAYS THE FLOW CONTROL IS THAT VALVE, THAT  
6 SPIGOT, ABOVE THE PITCHER. IT'S FLOW CONTROL OF THE DATA  
7 GETTING PUT INTO THE BUFFER BY THE SOURCE. THIS IS MR.  
8 BARTON'S OWN GRAPHIC THAT HE SHOWED THE JURY AT TRIAL. IT IS  
9 COMPLETELY CONSISTENT WITH THE LANGUAGE OF THE CLAIM.

10           SO, THIS WAS THEIR CASE. THEY SAID THIS IS FLOW CONTROL.  
11 IT'S A VALVE THAT CONTROLS THE FILLING OF THE BUFFER. THEY  
12 TALKED A LOT ABOUT WHY THAT WAS IMPORTANT. YOU WOULDN'T WANT  
13 A PRODUCT WHERE DATA IN THE BUFFER, SO WATER IN THAT PITCHER,  
14 COULD GET OVERWRITTEN, THE PITCHER COULD OVERFLOW. THAT WOULD  
15 BE BAD. MR. BARTON SAID I NEVER CONTEMPLATED AN INVENTION  
16 THAT DIDN'T HAVE THAT -- HAVE THAT VALVE. IN FACT, IF WE  
17 COULD SHOW SLIDE 17 THAT MR. BARTON SHOWED THE JURY, HE SAID,  
18 IF THERE IS NO FLOW CONTROL, IF IT'S NOT THE INVENTION OF MY  
19 PATENT, THIS IS WHAT IT WOULD LOOK LIKE. THAT VALVE WOULD BE  
20 GONE. AGAIN, TIVO'S OWN GRAPHIC. OKAY, SO THAT WAS THEIR  
21 CASE.

22           IF WE GO BACK TO SLIDE 16, THEIR CASE WAS THERE HAS TO BE  
23 THAT VALVE THERE.

24           THE COURT: HAS TO BE WHAT?

25           MS. KREVANS: HAS TO BE THAT VALVE THERE. SORRY, I

1 SHOULD'N'T GET TOO FAR OFF THE MIC. AND THEY IDENTIFIED -- IN  
2 ORDER TO PROVE INFRINGEMENT, THEY IDENTIFIED CODE THAT THEY  
3 SAID COMPRISED THE VALVE ABOVE THE PITCHER, THE CONTROL OVER  
4 THE SOURCE OBJECT'S FILLING OF THE BUFFER. ECHOSTAR CONTESTED  
5 WHETHER WE REALLY HAD THAT VALVE THERE, BUT WE LOST. THE JURY  
6 ACCEPTED TIVO'S POSITION.

7 NOW, WHAT IS TIVO GOING TO PUT ON AS EVIDENCE FOR YOU  
8 TODAY ABOUT HOW ECHOSTAR'S PRODUCTS STILL HAVE FLOW CONTROL  
9 EVEN THOUGH IN FACT WE TOOK THAT VALVE OUT? WHAT THEY ARE  
10 GOING TO PUT ON AS EVIDENCE IS VALVE IN A COMPLETELY DIFFERENT  
11 PLACE. THIS IS THEIR NEW CASE, YOUR HONOR. THEIR NEW CASE IS  
12 IT DOESN'T MATTER THAT YOU TOOK AWAY THAT VALVE ABOVE THE  
13 PITCHER. IT DOESN'T MATTER THAT YOU TOOK AWAY THE VALVE THAT  
14 CONTROLLED THE FILLING OF THE BUFFER, AND REMEMBER THE SOURCE  
15 OBJECT FILLS THE BUFFER, DOES NOT FILL A HARD DRIVE. THEY SAY  
16 YOU HAVE FLOW CONTROL ON THE MOVE FROM THE BUFFER TO THE HARD  
17 DISK AND THAT INFRINGES THIS PART OF THIS CLAIM.

18 YOUR HONOR, UNDER THE PLAIN LANGUAGE OF THE CLAIM THAT  
19 CAN'T BE RIGHT. BUT MUCH MORE IMPORTANT FOR PURPOSES OF  
20 UNDERSTANDING THE EVIDENCE YOU ARE ABOUT TO SEE, COMPLETE  
21 CHANGE OF POSITION BY TIVO. THIS IS NOT A QUESTION THAT HAS  
22 EVER BEEN ADJUDICATED. THIS CLEARLY GOES TO THE LANGUAGE OF  
23 THE CLAIM AS WRITTEN. IT CLEARLY GOES TO AN ELEMENT OF THE  
24 CLAIM. IT'S CLEARLY A NEW QUESTION. IT CLEARLY CAN'T BE THE  
25 BASIS OF A CONTEMPT.

1           NOW, WHAT DID ECHOSTAR ACTUALLY DO TO CHANGE ITS DEVICES?  
2 AS LONG AS WE STILL HAVE THIS GRAPHIC UP THERE, LET ME JUST  
3 START WITH THE FLOW CONTROL. ECHOSTAR IN ITS ORIGINAL  
4 PRODUCTS ACTUALLY HAD TWO PITCHERS THERE. IT HAPPENED TO HAVE  
5 TWO SEPARATE PITCHERS, TWO BUFFERS. AND, IN FACT, THEY BOTH  
6 HAD SOMETHING IN THEM THAT LOOKING AT THEM AFTER THE JURY  
7 VERDICT ECHOSTAR REALIZED COULD BE CHARACTERIZED AS THE KIND  
8 OF FLOW CONTROL OF THE FILLING OF THE BUFFERS THAT THAT VALVE  
9 REPRESENTED. SO WHAT DID ECHOSTAR DO? ECHOSTAR TOOK THE  
10 VALVE OUT OFF OF ONE OF THE BUFFERS AND IT TOOK THE OTHER  
11 BUFFER OUT ALTOGETHER. NOT BECAUSE ECHOSTAR'S POSITION IS  
12 THAT YOU NEED MULTIPLE BUFFERS TO INFRINGE THE CLAIM BUT  
13 BECAUSE WE WANTED TO TAKE OUT EVERY POSSIBLE INSTANCE WHERE  
14 THERE WAS ANY FLOW CONTROL OVER THE FILLING OF THE BUFFERS.  
15 IT'S GONE. AND BECAUSE IT'S GONE, TIVO IS NOW SAYING, OKAY,  
16 WE CAN FIND SOME FLOW CONTROL OVER HERE WHEN THE DATA GETS  
17 MOVED TO THE HARD DRIVE. THAT CANNOT BE INFRINGEMENT OF FLOW  
18 CONTROL, OF THE FLOW CONTROL OF THE SOURCE OBJECT LIMITATION  
19 BECAUSE THE SOURCE OBJECT DOESN'T FILL THE HARD DRIVE.

20           SO, WE NO LONGER HAVE WHAT THEY POINTED TO. WE NO LONGER  
21 HAVE ANYTHING THAT COULD BE WHAT THE CLAIM REQUIRES. PLAINLY  
22 THE PRODUCTS THAT HAD THIS CHANGE MADE, WHICH IS JUST THE  
23 BROADCOM PRODUCTS, YOUR HONOR, PLAINLY THESE PRODUCTS ARE FAR  
24 MORE THAN COLORABLY DIFFERENT, AND PLAINLY THEY DON'T INFRINGE  
25 ANYMORE, ALTHOUGH WE DON'T THINK YOUR HONOR NEEDS TO REACH THE

1 INFRINGEMENT QUESTION.

2           NOW, WHAT ABOUT THE PARSING ISSUE? WE CAN TAKE THAT  
3 SLIDE DOWN. NONE OF ECHOSTAR'S DVRS, EITHER 50X OR BROADCOM,  
4 ANY OF THEM ANYMORE DOES ANY ANALYSIS THAT COULD BE THE  
5 PARSING OF AUDIO AND VIDEO THAT THE CLAIM REQUIRES THAT HAS TO  
6 HAPPEN AT THE PHYSICAL DATA SOURCE STEP BEFORE STORAGE ON THE  
7 HARD DRIVE. ALL THE INDEXING WAS TAKEN OUT. ANYTHING THAT  
8 COULD BE THAT KIND OF ANALYSIS WAS TAKEN OUT. ECHOSTAR  
9 DEVELOPED A COMPLETELY DIFFERENT METHOD OF DOING ITS  
10 TRICKPLAY, ITS FAST FORWARD AND REVERSE ON PLAYBACK AFTER  
11 STORAGE. ECHOSTAR DOESN'T ANALYZE START CODES BEFORE STORAGE.  
12 ECHOSTAR DOESN'T FILL TABLES OF START CODES BEFORE STORAGE.  
13 THE PID FILTERS IN THE ECHOSTAR BROADCOM BOXES DON'T EVEN KNOW  
14 WHETHER THE DATA THEY ARE LOOKING AT IS AUDIO OR VIDEO.  
15 EVERYTHING IS DONE, CONTRARY TO WHAT THE PATENT SAYS AND  
16 CONTRARY TO TIVO'S CASE AT TRIAL, ON THE BACK END, ON THE FLY,  
17 AS THE TRICKPLAY IS BEING DONE. WE RIPPED OUT THE GUTS OF  
18 WHAT TIVO SAID THEIR INVENTION WAS, JUST TOOK IT OUT, AND THAT  
19 APPLIES TO EVERY PRODUCT.

20           THOUGH IT'S PLAIN THAT SUBSTANTIAL CHANGES HAVE BEEN MADE  
21 TO ALL THE PRODUCTS ON THE PARSING LIMITATION, THEY RELATE  
22 DIRECTLY TO THE CASE TIVO PUT ON AT TRIAL. THERE IS NO  
23 POSSIBLE ARGUMENT THAT THE CHANGES ARE IRRELEVANT TO THE  
24 CLAIMS, AND THEY PLAINLY TAKE ALL OF THE BOXES OUT OF  
25 INFRINGEMENT, ALTHOUGH, AS I SAID, WE DON'T THINK THAT YOUR

1 HONOR NEEDS TO REACH THAT ISSUE. THANK YOU.

2 THE COURT: THANK YOU. ANY FACT WITNESSES IN THE  
3 COURTROOM THAT WOULD BE SUBJECT TO THE RULE, EITHER PARTY'S  
4 STANDPOINT?

5 MR. MCELHINNY: NO, YOUR HONOR.

6 MR. CHU: NONE ON OUR SIDE, YOUR HONOR.

7 THE COURT: YOU MAY CALL YOUR FIRST WITNESS.

8 MR. IANCU: YOUR HONOR, TIVO CALLS JAMES STORER.

9 THE COURT: YOU NEED TO BE SWORN IN, PLEASE.

10 (WITNESS SWORN)

11 MR. IANCU: GOOD MORNING, YOUR HONOR. ANDREI IANCU  
12 FOR TIVO. WE HAVE HANDED OUT A BINDER OF SLIDES THAT DR.  
13 STORER WILL REFER TO. WE ALSO HANDED OUT A BINDER WITH  
14 SELECTED EXHIBITS. AND FOR SOME OF THE EXHIBITS THAT WERE  
15 VOLUMINOUS, WE ONLY INCLUDED IN THAT PARTICULAR BINDER JUST  
16 THE RELEVANT PAGES AND SURROUNDING CONTEXT. BOTH BINDERS HAVE  
17 BEEN DISTRIBUTED TO YOUR HONOR, THE CLERKS, AND OPPOSING  
18 COUNSEL. IF ANYBODY WOULD LIKE TO HAVE THE FULL EXHIBITS THAT  
19 DR. STORER -- THAT APPEAR IN DR. STORER'S PRESENTATION, WE  
20 HAVE THEM. THEY AMOUNT TO FOUR FULL BINDERS. IF THE COURT  
21 WOULD DESIRE THEM, WE WOULD BE HAPPY TO PROVIDE THEM.

22 JAMES A. STORER, PLAINTIFF'S WITNESS

23 DIRECT EXAMINATION

24 BY MR. IANCU:

25 Q DR. STORER, GOOD MORNING.

1 A GOOD MORNING. EXCUSE ME. GOOD MORNING.

2 Q PLEASE INTRODUCE YOURSELF.

3 A YES, I AM JIM STORER, AND THIS OPENING SLIDE, IT'S A GOOD  
4 THING IT'S HERE ON THE MONITOR BECAUSE THE LAMP IS ACTUALLY  
5 CENTERED BETWEEN ME AND THE SCREEN, SHOWS A LITTLE BIT OF MY  
6 BACKGROUND.

7 Q WHAT IS YOUR CURRENT OCCUPATION?

8 A SO AS YOU CAN SEE IN THE SLIDE, I AM CURRENTLY A  
9 PROFESSOR OF COMPUTER SCIENCE AT BRANDEIS UNIVERSITY. I AM  
10 ALSO A MEMBER OF WHAT THEY CALL THE VOLLEN CENTER FOR COMPLEX  
11 SYSTEMS. AND I'VE BEEN AT BRANDEIS FOR OVER 25 YEARS. BEFORE  
12 THAT, I RECEIVED MY PH.D. AT PRINCETON UNIVERSITY, SPENT SOME  
13 TIME AT BELL LABORATORIES. AS THE SLIDE ALSO SHOWS, I HAVE  
14 BEEN CHAIR OF THE IEEE DATA COMPRESSION CONFERENCE SINCE 1991.

15 Q WHAT DEGREES DO YOU HOLD?

16 A WELL, AS YOU CAN SEE FROM THE SLIDE, BASICALLY A PH.D.  
17 FROM PRINCETON. BEFORE THAT, I WENT TO CORNELL AND GOT A  
18 BACHELOR'S DEGREE. AND THERE IS ALSO -- THERE IS ALSO A  
19 MASTER'S DEGREE ALONG THE WAY AT PRINCETON AS WELL.

20 Q AND WHAT COURSES DO YOU CURRENTLY TEACH?

21 A WELL, AT BRANDEIS USUALLY WE TEACH ONE UNDERGRADUATE AND  
22 ONE GRADUATE COURSE EACH YEAR. SO AT THE GRADUATE LEVEL, I  
23 USUALLY TEACH COURSES RELATING TO MY RESEARCH, DATA  
24 COMPRESSION, IMAGE PROCESSING, IMAGE RETRIEVAL, WHICH IS  
25 RELATED IN MANY WAYS, SOME PARALLEL COMPUTING. AND THEN AT

1 THE UNDERGRADUATE LEVEL, DATA STRUCTURES AND ALGORITHMS,  
2 THEORY OF COMPUTATION, THINGS LIKE THAT.

3 Q DO YOU ALSO DO RESEARCH?

4 A SURE. YEAH.

5 Q AND WHAT IS THE FOCUS OF YOUR RESEARCH?

6 A SO I MENTIONED THAT EARLIER, THE FOCUS OF MY RESEARCH IS  
7 -- I DO A NUMBER OF THINGS, BUT A BIG THEME EVER SINCE I WAS  
8 AT PRINCETON IS DATA COMPRESSION, IN A BROAD WAY ALL KINDS OF  
9 DATA, WHETHER IT'S TEXT OR IMAGES OR VIDEO, AND ALSO RELATED  
10 THINGS LIKE IMAGE RETRIEVAL. AND I HAVE HAD THAT AS AN  
11 INTEREST EVER SINCE I DID MY THESIS WORK. THAT'S WHAT MY  
12 THESIS WAS ON AT PRINCETON. IT WAS THE DEPARTMENT OF  
13 ELECTRICAL ENGINEERING COMPUTER SCIENCE.

14 Q AND I ASSUME YOU ALSO PUBLISH, GIVEN THAT YOU ARE IN  
15 ACADEMIA?

16 A YEAH, YOU ALWAYS -- ACADEMICS ALWAYS PUBLISH, EITHER IN  
17 ACADEMIC JOURNALS OR AT CONFERENCES, TECHNICAL PAPERS.

18 Q HAVE YOU PUBLISHED BOOKS AS WELL?

19 A I BROUGHT A FEW OF THOSE. SO IN ADDITION TO YOUR -- I  
20 THINK YOUR MAIN KIND OF PUBLISHING ARE YOUR ACADEMIC PAPERS  
21 THAT ARE ABOUT YOUR RESEARCH, BUT THEN PERIODICALLY IT'S ALSO  
22 SOMETIMES A NICE THING TO PUBLISH A FEW BOOKS. I BROUGHT A  
23 FEW SAMPLES. THIS IS A RECENT BOOK THAT IS, I MENTIONED DATA  
24 STRUCTURES AND ALGORITHMS. THIS ONE ACTUALLY I USE AT BOTH  
25 THE UNDERGRADUATE AND THE GRADUATE LEVEL. AND I WROTE IT

1 BECAUSE I WANTED TO SORT OF HAVE A BOOK THAT PREPARED STUDENTS  
2 FOR THE KINDS OF RESEARCH I LIKE TO DO. SO THE BOOK ACTUALLY  
3 HAS A LOT OF THE UNDERPINNINGS OF THE THEORY YOU NEED TO DO  
4 THINGS, LIKE MPEG AND JPEG.

5 THIS ONE'S A RECENT BOOK ON -- IT'S CALLED *HYPERSPECTRAL*  
6 *DATA COMPRESSION*. AND UNLIKE THE OTHER BOOK, THIS IS AN  
7 EDITED BOOK, SO WHERE I AM THE EDITOR, AND THERE ARE  
8 RESEARCHERS IN THE FIELD THAT CONTRIBUTED CHAPTERS AND SO DID  
9 I. THIS ISN'T EXACTLY YOUR FIRESIDE READING, BUT  
10 HYPERSPECTRAL IMAGES ARE A VERY IMPORTANT KIND OF DATA THAT  
11 CAN BE AS BIG AS A TERABYTE IN SIZE THAT NASA USES. AND SO IT  
12 CREATES A LOT OF INTERESTING CHALLENGES.

13 THIS IS ANOTHER EXAMPLE OF A BOOK JUST ON DATA  
14 COMPRESSION I WROTE A WHILE BACK. I MENTIONED THAT  
15 CONFERENCE. SO EVERY YEAR THAT DATA COMPRESSION CONFERENCE  
16 HAS PROCEEDINGS, AND I EDIT THOSE PROCEEDINGS. SO THERE WOULD  
17 BE A LOT OF THESE, ONE FOR EACH YEAR. I DON'T WANT TO START  
18 ADVERTISING THEM TOO MUCH, BUT WE'LL STOP THERE. OKAY.

19 Q DR. STORER, DO YOU ALSO READ AND WRITE COMPUTER CODE?

20 A CERTAINLY.

21 Q IN WHAT CIRCUMSTANCES? IN WHAT CONTEXT DO YOU DO THAT?

22 A WELL, THERE ARE A COUPLE OF CONTEXTS. SOMETIMES IT'S IN  
23 THE CONTEXT OF TEACHING. I MEAN, OBVIOUSLY A LOT OF THE  
24 COURSES I TEACH INVOLVE PROGRAMMING ASSIGNMENTS AND PRESENTING  
25 CODE IN CLASS. A LOT OF IT COMES UP IN THE RESEARCH. NOT

1 JUST MYSELF BUT ALSO IN THE SUPERVISION OF SOME OF THESE PH.D.  
2 THESES AND MASTER'S THESES WHERE, SOMETIMES IN THE GRADUATE  
3 THESES AS WELL, WHERE THERE IS GENERALLY A LARGE PROGRAMMING  
4 COMPONENT. USUALLY, YOU HAVE A NEW THEORY AND YOU WRITE  
5 PAPERS ABOUT IT, BUT YOU ALSO WANT TO PROVE THAT IT WORKS; AND  
6 IT WILL GENERALLY BE A LARGE EXPERIMENTAL COMPONENT AND  
7 USUALLY A VERY LARGE PIECE OF CODE THAT'S DEVELOPED OVER MANY  
8 YEARS. IT ALSO COMES UP SOMETIMES IN MY CONSULTING WHERE YOU  
9 HAVE TO LOOK AT CODE OF OTHERS AS WELL.

10 Q DO YOU ALSO CONSULT OUTSIDE OF YOUR ACADEMIC WORK?

11 A SO I JUST MENTIONED THAT. PERIODICALLY, THAT'S A TYPICAL  
12 THING FOR ACADEMICS THAT ON THE SIDE YOU MIGHT DO OTHER KINDS  
13 OF WORK EITHER FOR INDUSTRY OR POSSIBLY IN A SITUATION LIKE  
14 THIS AS WELL.

15 MR. IANCU: YOUR HONOR, I NOW OFFER PROFESSOR STORER  
16 AS AN EXPERT FOR THE PURPOSES OF THIS CONTEMPT HEARING.

17 THE COURT: ANY OBJECTION TO THAT TESTIMONY?

18 MS. KREVANS: NO OBJECTION, YOUR HONOR.

19 THE COURT: HE WILL BE SO RECOGNIZED, OR SO RECEIVED.

20 Q (BY MR. IANCU:) DR. STORER, DID YOU ATTEND THE FIRST  
21 TRIAL IN THIS CASE BACK IN 2006?

22 A OF COURSE, YES.

23 Q WHICH PORTIONS OF THE TRIAL DID YOU ATTEND?

24 A I WAS PRETTY MUCH THERE THE WHOLE TIME, EXCEPT FOR A BIT  
25 OF I THINK THE FIRST DAY OF THE TRIAL.

1 Q SO WERE YOU IN COURT WHEN DR. GIBSON TESTIFIED?

2 A YES.

3 Q AND WHEN DR. RHYNE FOR ECHOSTAR TESTIFIED?

4 A YES.

5 Q HOW ABOUT DOCTORS JOHNSON AND POLISH?

6 A YES.

7 Q AND HOW ABOUT MR. MINNICK AND MR. BARTON?

8 A YES.

9 Q NOW, AT THE FIRST TRIAL YOUR TESTIMONY RELATED TO  
10 VALIDITY, NOT INFRINGEMENT, RIGHT?

11 A IT RELATED TO VALIDITY AND A FEW OTHER ISSUES AS WELL,  
12 BUT NOT INFRINGEMENT.

13 Q BUT DO YOU HAVE AN UNDERSTANDING OF HOW ECHOSTAR'S  
14 PRODUCTS WORK BOTH NOW AND AT TRIAL?

15 A CERTAINLY.

16 Q DOES YOUR SOFTWARE-RELATED EXPERIENCE HELP WITH YOUR  
17 UNDERSTANDING OF THEIR PRODUCTS, ESPECIALLY AS THEY APPEAR FOR  
18 THE PURPOSES OF THIS HEARING?

19 A CERTAINLY. I MEAN, IN FACT AS WE WILL SEE, THE HARDWARE  
20 HASN'T CHANGED. WHEN YOU TALK ABOUT PRODUCTS AS THEY WERE AT  
21 TRIAL AND PRODUCTS AS THEY ARE NOW, YOU ARE TALKING ABOUT  
22 SOFTWARE. YOU ARE -- REALLY THE CENTRAL PART OF MY WORK OR MY  
23 ANALYSIS IN THIS CASE HAS BEEN LOOKING AT THAT SOFTWARE, THE  
24 CURRENT SOFTWARE VERSUS THE SOFTWARE THAT WAS AT TRIAL.

25 Q SO IF WE GO TO THE NEXT SLIDE, DR. STORER, WHAT ARE THE

1 PRODUCTS AT ISSUE FOR THIS PARTICULAR HEARING?

2 A SO I THINK WE ALREADY SAW THIS IN SOME OF THE OPENING.  
3 THERE ARE TWO -- TWO BASIC PRODUCT LINES, IF YOU WILL.  
4 THERE'S THREE OF THESE 50X BOXES, SO TO SPEAK, AND THEY ARE  
5 BASED ON ONE TYPE OF HARDWARE, ONE PARTICULAR -- CENTERED  
6 AROUND ONE PARTICULAR CHIP. AND THERE'S THREE OF THOSE. AND  
7 THEN THERE IS ALSO THE WHAT ARE OFTEN CALLED THE BROADCOM  
8 BOXES BECAUSE OF IT'S ACTUALLY THE 522 AND 625 MODELS, BUT WE  
9 CALL THEM THE BROADCOM BOXES BECAUSE THE CHIP INSIDE IS, IT'S  
10 MADE BY BROADCOM. AND BASICALLY THEY PRETTY MUCH -- ALL  
11 PARTIES HAVE AGREED THAT THE INFRINGEMENT ISSUES ARE KIND OF  
12 THE SAME FOR EACH. YOU KNOW, THE THREE IN TOP CAN BE SORT OF  
13 VIEWED AS A GROUP, AND THE TWO ON THE BOTTOM CAN BE VIEWED AS  
14 A -- AS A GROUP.

15 Q WITH RESPECT TO THOSE PRODUCTS, DR. STORER, WHAT IS A  
16 SUMMARY OF YOUR OPINIONS AND CONCLUSIONS THAT YOU HAVE  
17 REACHED?

18 A WELL, MAY WE GO TO THE NEXT SLIDE? AND SO THE FIRST  
19 BULLET THAT THE CURRENT PRODUCTS ARE NO MORE THAN COLORABLY  
20 DIFFERENT, YOU KNOW, CERTAINLY AS WE WILL SEE LATER ON IN SOME  
21 OF MY OTHER SLIDES, THEY ARE REALLY THE SAME. THEY ARE  
22 DEFINITELY NO MORE THAN COLORABLY DIFFERENT. AND, WELL, ALSO  
23 THEY -- CLEARLY THEY STILL INFRINGE.

24 Q WHAT DID YOU DO TO REACH THESE CONCLUSIONS?

25 A SO IF YOU GO TO THE NEXT SLIDE, SO THERE ARE TREMENDOUS

1 AMOUNT OF DOCUMENTS IN THIS CASE, AND OF COURSE LOOKING AT  
2 THEM WAS A BIG PART. AS I JUST MENTIONED, LOOKING AT SOFTWARE  
3 WAS A REALLY BIG PART. THAT'S WHAT WE ARE REALLY TALKING  
4 ABOUT NOW, SOFTWARE THEN AND SOFTWARE NOW. LOOKED AT THE  
5 PRODUCTS THEMSELVES. AND, OF COURSE, I THINK WE HAVE ALREADY  
6 MENTIONED A LITTLE BIT, DEPOSITIONS, I ATTENDED SOME OF THE  
7 DEPOSITIONS AS WELL.

8 Q WHICH DEPOSITIONS DID YOU ATTEND IN PERSON?

9 A MR. MINNICK'S AND THEN ALSO DR. RHYNE'S.

10 Q YOU MENTIONED THAT YOU REVIEWED SOURCE CODE. WHAT  
11 SPECIFICALLY DID YOU DO TO REVIEW SOURCE CODE?

12 A SO, I THINK WE HAVE ANOTHER SLIDE IN THAT, OR SHOULD WE  
13 GO FORWARD YET? I DON'T KNOW. I CAN CERTAINLY DESCRIBE IT IF  
14 -- WHAT'S ON THE NEXT SLIDE? I DON'T REMEMBER RIGHT NOW. OH,  
15 OKAY, SO LET ME JUST TALK ABOUT THAT FIRST BULLET. SOURCE  
16 CODE, THERE IS A LOT OF CODE, AND THE SOURCE CODE WAS  
17 CONSTRUCTED IN A WAY WHERE MOST, FOR THE MOST PART THE NEW  
18 SOURCE CODE WAS THE OLD SOURCE CODE WITH ADDITIONAL STUFF  
19 ADDED.

20 SO YOU COULD SEE THE OLD AND NEW TOGETHER, IF YOU WILL,  
21 BY LOOKING AT THE NEW SOURCE CODE. YOU COULD SEE WHAT WAS  
22 THERE, AND NOW YOU CAN SEE THESE, BASICALLY PLACES WHERE IN  
23 THE CODE IT SAYS: IF I AM THE NEW CODE, DO THIS. IF I AM THE  
24 OLD CODE, DO THAT. SO, IN OTHER WORDS, THERE ARE LIKE  
25 SWITCHES PUT IN THERE WHICH BASICALLY CHANGE THE CODE TO BE

1 EITHER AS IT WAS OR AS IT IS NOW. SO YOU CAN LOOK AT THE NEW  
2 CODE AND SEE THE DIFFERENCE BETWEEN THE OLD AND THE NEW.  
3 THERE WAS A -- THERE WERE A FEW EXCEPTIONS WHERE YOU HAD TO GO  
4 BACK AND LOOK SPECIFICALLY AT THE OLD CODE AS WELL.

5 Q WHICH YOU DID, CORRECT?

6 A YES. AND I WAS ALSO GOING TO SAY THERE ARE A LOT OF  
7 OTHER ASPECTS TO LEARNING ABOUT THE CODE. OF COURSE, THERE IS  
8 A LOT OF TESTIMONY I REVIEWED FROM THE FIRST TRIAL, EXPERT  
9 REPORTS, THOSE SORTS OF THINGS AS WELL, DOCUMENTS THAT RELATED  
10 TO THE CODE.

11 Q OTHER THAN THE SOURCE CODE AND OTHER DOCUMENTS, DID YOU  
12 ALSO LOOK AT ACTUAL PHYSICAL PRODUCTS?

13 A YES. SO THIS IS JUST TO GIVE A SENSE OF WHAT THEY LOOK  
14 LIKE. IF YOU OPEN UP THE TOP OF THE -- OF THE BOX AND LOOK  
15 INSIDE, YOU KNOW, THIS IS KIND OF WHAT YOU WILL SEE. AND I  
16 LOOKED AT BOTH. I ACTUALLY HAD A CHANCE TO GO TO SOMEONE'S  
17 HOUSE AND ACTUALLY USE THE DVR IN A HOME SETTING, AND VERY  
18 POLITELY ASKED IF I COULD TAKE THE TOP OFF AFTERWARDS AND NOT,  
19 YOU KNOW, DO ANY HARM, AND GOT A CHANCE TO LOOK AT ONE IN THAT  
20 SETTING AS WELL.

21 Q DID YOU ALSO LOOK AT PRODUCTS AT ECHOSTAR'S FACILITIES IN  
22 COLORADO?

23 MS. KREVANS: OBJECTION, YOUR HONOR. THIS IS BEYOND  
24 THE SCOPE OF THE WITNESS'S REPORT.

25 THE COURT: WHAT -- WHAT'S YOUR RESPONSE?

1 MR. IANCU: THIS SPECIFIC QUESTION?

2 MS. KREVANS: AND THE ANSWER TO IT WOULD BE.

3 MR. IANCU: WELL, DR. STORER DID GO TO ECHOSTAR TO  
4 REVIEW PRODUCTS AFTER THE REPORT WAS DUE. AND HE DID -- HE  
5 DID THAT BECAUSE HE -- WHILE HE WAS IN COLORADO FOR MR.  
6 MINNICK'S DEPOSITION, HE SCHEDULED TO GO, BUT THERE WAS A HUGE  
7 STORM IN BOSTON AND HE HAD TO RETURN. AND THIS ISSUE IS  
8 ENTIRELY CONSISTENT --

9 THE COURT: WELL, I WILL ALLOW -- I WILL ALLOW HIM TO  
10 TESTIFY HE WENT TO THE PLANT, AND THEN WE WILL SEE WHERE IT  
11 GOES FROM THAT, SO OVERRULED.

12 A MAYBE JUST REPEAT YOUR QUESTION, WHERE WE WERE, OKAY.

13 THE COURT: I BELIEVE HE ASKED DID YOU GO TO  
14 ECHOSTAR'S PLANT.

15 A I DID. AND THEY HAVE MORE THAN ONE, BUT I WENT TO A  
16 FACILITY OUTSIDE OF DENVER, COLORADO.

17 Q AND WHAT DID YOU DO THERE?

18 A SO IF YOU GO TO THE NEXT SLIDE THERE'S A --

19 MS. KREVANS: YOUR HONOR, AGAIN I AM RENEWING MY  
20 OBJECTION. WE OFFERED AT THEIR REQUEST TO MAKE THESE BOXES  
21 AVAILABLE. WE ACTUALLY HAD TO RECREATE A BOX FOR DR. STORER  
22 TO LOOK AT BECAUSE WE DIDN'T HAVE ANY MORE BOXES BUILT. WE  
23 OFFERED TO MAKE IT AVAILABLE ORIGINALLY IN DECEMBER, ACTUALLY,  
24 AND AT THE LAST MINUTE THEY CANCELED BECAUSE OF THE WEATHER.  
25 THEY ASKED IF WE WOULD MAKE IT AVAILABLE AGAIN AT BEGINNING OF

1 JANUARY. WE SAID YES. THEY THEN CANCELED THAT ONE. THAT  
2 WOULD HAVE BEEN AFTER HIS REPORT, BUT AT LEAST BEFORE HIS  
3 DEPOSITION.

4 THE COURT: WELL, LET ME -- DID HE MAKE THE --

5 MS. KREVANS: NONE OF THIS IS DISCLOSED.

6 THE COURT: LET ME -- HAS ANY OF THIS BEEN COVERED BY  
7 A SUPPLEMENTAL REPORT? WAS HE DEPOSED AFTER HIS VISIT? IF  
8 SO, WAS THIS TOPIC COVERED AT THE DEPOSITION?

9 MS. KREVANS: HE WAS DEPOSED BEFORE THIS VISIT  
10 BECAUSE HE TURNED DOWN THE SECOND OPPORTUNITY WE GAVE HIM,  
11 WHICH WOULD HAVE BEEN BEFORE HIS DEPOSITION.

12 MR. IANCU: NEVERTHELESS, ALL THE CONCLUSIONS HE HAS  
13 BASED ON THAT VISIT ARE ENTIRELY CONSISTENT WITH WHAT HE  
14 ALREADY OPINED IN HIS REPORT. AND HE --

15 THE COURT: WELL, THEN LET'S JUST -- LET'S JUST LET  
16 HIM TESTIFY FROM THE MATTER CONTAINED IN THE REPORT, IF HE HAD  
17 THE SAME CONCLUSIONS. I DON'T KNOW, IF THE VISIT DIDN'T  
18 CHANGE THE OPINIONS, THEN LET HIM TESTIFY FROM THE INITIAL  
19 REPORT. SO I WILL SUSTAIN IT IN THAT REGARD.

20 Q (BY MR. IANCU:) OKAY. SO BASED ON YOUR REPORT, DR.  
21 STORER, AND THE TESTS YOU DID AS REPORTED IN YOUR REPORT, WHAT  
22 CONCLUSIONS DID YOU REACH AS TO THE ECHOSTAR PRODUCTS AS THEY  
23 EXIST NOW OR IN THE TRIAL?

24 A SO ACTUALLY TO GO AFTER THE SNOWSTORM INCIDENT AND I  
25 COULDN'T GO THAT DAY, I DID GO OVER TO SOMEONE'S HOUSE WHO HAD

1 A 625 AND SPENT AN HOUR OR SO JUST USING THE MACHINE AND  
2 SEEING WHETHER I COULD SEE ANYTHING THAT LOOKED UNUSUAL. I  
3 HAVE A DVR MYSELF AT HOME. IT'S ACTUALLY A COMCAST MACHINE,  
4 HAS TIVO SERVICE ON IT, BUT IT'S A COMCAST MACHINE, AND SO I'M  
5 QUITE FAMILIAR WITH USING THEM. AND IT LOOKED GREAT. SO AS I  
6 SAID IN MY REPORT, I WASN'T TOO WORRIED ABOUT LOOKING AT THE  
7 OLD VERSION OF THE SOFTWARE FOR THE 625. IF THE NEW ONE, IF  
8 THE CURRENT ONE WHICH SUPPOSEDLY MIGHT LOOK WORSE FOR SOME  
9 REASON, LOOKED GREAT. ALL RIGHT, SO IT LOOKED FINE. YOU  
10 COULD DO YOUR FAST FORWARD, DO REWIND, YOUR VIRTUAL PAUSE.  
11 YOU COULD PLAY RECORDED PROGRAMS, PLAY -- MOVE AROUND IN LIVE  
12 TV, AND IT LOOKED PERFECTLY GOOD.

13 SO I MENTIONED THAT IN THE REPORT. AND THEN AS I  
14 MENTIONED, THAT JUST FOR THE SAKE OF COMPLETENESS, I DID VERY  
15 CAREFULLY LOOK, TAKE OFF THE TOP OF THE BOX AND LOOK INSIDE A  
16 BIT AND PUT IT BACK ON IN A WAY THAT DIDN'T CAUSE ANY HARM.

17 Q BASED ON THAT INSPECTION, DID IT APPEAR TO YOU THAT THE  
18 CHANGES ECHOSTAR MADE WOULD MAKE A DIFFERENCE TO AN AVERAGE  
19 USER?

20 A I DON'T -- IT LOOKED TERRIFIC, SO THERE WAS NO REASON TO  
21 THINK AN AVERAGE USER WOULD EVER EVEN KNOW.

22 Q SO LET'S TURN IN SOME DETAIL TO YOUR ANALYSIS. WHAT IS  
23 IT, DR. STORER, THAT IN GENERAL YOU PLAN TO DISCUSS TODAY?

24 A SO THIS, THIS NEXT SLIDE JUST GIVES THREE SORT OF  
25 CATEGORIES, IF YOU WILL. THE PATENT ITSELF, PROBABLY THE BULK

1 OF THE TIME ON THE MIDDLE BULLET. THE QUOTE -- AND I PUT IN  
2 QUOTE, "CHANGES" IN QUOTES. THE REASON THAT IT'S IN QUOTES  
3 ALL THE TIME IS AGAIN I THINK THEY ARE CALLED CHANGES. THE  
4 QUESTION IS ARE THEY AT ALL RELEVANT TO THE CLAIMS AT ISSUE?  
5 SO, AS YOU WILL SEE FROM OTHER SLIDES, THERE HAVE BEEN SOME,  
6 QUOTE, CHANGES, BUT NOTHING THAT'S RELEVANT TO CLAIMS 31 AND  
7 61. AND THEN FINALLY THIS WAS MENTIONED IN THE OPENING. I  
8 WILL TALK A BIT ABOUT THOSE OPINION LETTERS THAT WERE  
9 DISCUSSED IN THE OPENING ARGUMENTS AS WELL.

10 Q SO LET'S TURN TO THE FIRST ISSUE, THE TIVO PATENT. ARE  
11 ALL OF THE CLAIMS IN TIVO'S PATENT DIRECTED TO THE SAME  
12 INVENTION?

13 A WELL, IF YOU THINK OF THIS, THIS PATENT REALLY IS IN SOME  
14 SENSE DESCRIBES A WHOLE SYSTEM. IT'S THE BASIS OF A MODERN  
15 DVR. AND IT HAS TWO COMPONENTS TO IT, THE HARDWARE AND THE  
16 SOFTWARE. THE HARDWARE CENTERS ON THIS WHOLE THING THAT WE  
17 MAY HAVE REMEMBERED FROM THE FIRST TRIAL, THE MEDIA SWITCH AND  
18 THE SEPARATION AND SOME OF THE INDEXING ISSUES, AND ALL THIS  
19 STUFF THAT'S THE HARDWARE AND VERY IMPORTANT ASPECT OF THE  
20 INVENTION. AND THEN ALSO YOU SEE DESCRIPTIONS OF SOFTWARE.  
21 SO SORT OF TWO BIG IDEAS THAT ARE CLAIMED DIFFERENTLY, THERE  
22 ARE HARDWARE CLAIMS AND THEIR DEPENDENTS, AND THERE ARE ALSO  
23 THE SOFTWARE CLAIMS THAT WE ARE TALKING ABOUT IN THIS CASE.

24 Q NOW, CLAIM 1 IN PARTICULAR WITH THE MEDIA SWITCH, WHICH  
25 ARCHITECTURE DOES THAT RELATE TO?

1 A SO, OF COURSE, AS I JUST MENTIONED, AND IF WE -- THIS IS  
2 -- THIS NEXT SLIDE ACTUALLY ILLUSTRATES THAT. FIGURE 1 IS,  
3 IT'S THE FIRST FIGURE, OBVIOUSLY, AND IT SHOWS AT THE BOTTOM  
4 THE HARD DISK. AND YOU SEE IN THE MIDDLE I HAVE HIGHLIGHTED  
5 IT. THE PATENT DOESN'T HAVE THE HIGHLIGHTING, MEDIA SWITCH.  
6 AND THIS IS HARDWARE, RIGHT? SO FIGURE 1 -- CLAIM 1 TALKS  
7 ABOUT HARDWARE AND CLAIM 1 REFERS TO FIGURE 1, WHICH IS GIVING  
8 A DIAGRAM OF THIS MEDIA SWITCH WHICH IS MEDIATING BETWEEN  
9 THESE THINGS. AND A LOT OF -- AND THIS MAY BRING TO MEMORY A  
10 LOT OF THE ISSUES WE TALKED ABOUT IN THE FIRST CASE.

11 Q IS CLAIM 1 AT ISSUE HERE FOR THIS PARTICULAR PROCEEDING?

12 A SO AS WE -- AS WAS MENTIONED IN THE OPENING, NO, IT'S  
13 NOT.

14 Q ALL RIGHT. NOW, CLAIMS 31 AND 61 WHICH ARE AT ISSUE,  
15 WHAT DO THEY GENERALLY RELATE TO?

16 A SO THIS IS FIGURE 8 FROM THE PATENT, AND THIS IS SORT OF  
17 THE BEGINNING OF THE FIGURES THAT RELATE TO THE SOFTWARE  
18 CLAIMS. AND AGAIN WE SEE HARD DRIVE DOWN AT THE BOTTOM. BUT  
19 NOW WHAT YOU SEE UP TOP IS DEPICTION OF THE SOFTWARE OBJECTS.  
20 AND THESE ARE THE THINGS AGAIN THAT HAVE ALREADY EVEN BEEN  
21 MENTIONED IN THE OPENING ARGUMENTS: THE SOURCES, THE  
22 TRANSFORMS, THE SINKS. THESE THREE OBJECTS AND HOW THEY  
23 INTERACT, THESE ARE THE SOFTWARE CLAIMS, SOFTWARE THAT  
24 CONTROLS HARDWARE.

25 Q DO THESE CLAIMS 31 AND 61 REQUIRE MEDIA SWITCH OR THE

1 SEPARATION DISCUSSED IN CLAIM 1?

2 A SO MEDIA SWITCH IN PARTICULAR, THIS WHOLE ISSUE OF  
3 SEPARATION AND SO ON IS NOT IN CLAIM 31 OR 61.

4 Q ALL RIGHT. GOING TO THE NEXT SLIDE, LET'S TURN NOW TO  
5 YOUR MORE DETAILED ANALYSIS. WHAT DO YOU PLAN TO ADDRESS IN  
6 THIS SECTION?

7 A SO WE'VE ALREADY SEEN A PREVIEW OF THIS IN THE OPENING --  
8 IN THE OPENINGS TODAY. THERE ARE TWO SORT OF ISSUES ON WHICH  
9 THE, QUOTE, AGAIN I AM PUTTING CHANGES IN QUOTES, IN WHICH THE  
10 CHANGES PERTAIN. THIS ISSUE OF INDEXING, WHICH AGAIN WAS THIS  
11 -- INDEXING WAS SOMETHING THAT WAS -- CAME UP WITH REGARD TO  
12 CLAIM 1. CLAIM 1 TALKED ABOUT PARSING AND SEPARATION, WHERE  
13 SEPARATION ADDED SOMETHING MORE. AND INDEXING WAS A BIG ISSUE  
14 FOR CLAIM 1 IN THE FIRST CASE, WHETHER IT -- HOW IT RELATED TO  
15 SEPARATION. AND ALSO THIS NOTION OF BUFFERING, IT WAS ALSO  
16 MENTIONED IN THE OPENINGS.

17 Q SO WE WILL GO THROUGH EACH ONE OF THOSE IN TURN, BUT  
18 FIRST, DID ECHOSTAR MAKE ANY CHANGES TO THE HARDWARE IN THE  
19 PRODUCTS FOUND TO INFRINGE AT TRIAL?

20 A SO, NO. THIS IS AN IMPORTANT POINT. IF YOU GO TO THE  
21 NEXT SLIDE YOU SEE IT CONFIRMED. I WAS AT DR. MINNICK'S  
22 DEPOSITION. THE BOXES IN THE FIELD, I MEAN THE ACTUAL BOXES  
23 LIKE, YOU KNOW, THE ONE I WENT TO OPEN UP OR SOMETHING, THE  
24 BOXES IN THE FIELD HAVEN'T BEEN REMOVED OR CHANGED OUT OR  
25 ANYTHING. THE SAME HARDWARE IS HERE NOW AS IT WAS THEN.

1 Q NOW, DR. STORER, ECHOSTAR DID ACTUALLY MAKE SOME CHANGES  
2 TO THE SOFTWARE, RIGHT?

3 A CERTAINLY. AGAIN, I PUT CHANGES IN QUOTES THROUGHOUT MY  
4 TESTIMONY BECAUSE I DON'T BELIEVE THAT CHANGES ARE RELEVANT TO  
5 CLAIMS 31 AND 61, BUT CERTAINLY THERE WERE CHANGES.

6 Q DR. STORER, HAVE YOU SEEN EVIDENCE IN THE RECORD THAT YOU  
7 HAVE REVIEWED SO FAR TO LET YOU KNOW FOR A FACT WHETHER ALL OF  
8 ECHOSTAR'S CUSTOMERS ACTUALLY RECEIVED THE CHANGES ECHOSTAR  
9 SAYS IT HAS MADE?

10 A NO, I'VE NOT BEEN ABLE TO DETERMINE THAT THE CUSTOMERS  
11 ACTUALLY GOT THE CHANGES, OR WHAT PERCENTAGE.

12 Q WHY NOT?

13 A WELL, THE PROBLEM IN MR. MINNICK'S DEPOSITION, THIS --  
14 THERE IS SOME TESTIMONY ABOUT THIS. BASICALLY THERE ARE A LOT  
15 -- MR. MINNICK WAS CERTAIN THAT -- HE FELT CERTAIN THAT THE  
16 CHANGES WERE BROADCAST, SO THEY COME DOWN FROM THE SATELLITE  
17 AND GO SOMEHOW OUT TO ALL THE USERS. BUT HE GAVE ALL THESE  
18 REASONS WHY A USER MIGHT NOT EITHER RECEIVE OR PERFORM THE  
19 CHANGE. AND ONE OF THE REASONS WAS A USER MIGHT BE RECORDING  
20 OR USING THE DVR AT THAT MOMENT, IN WHICH CASE HE SAID A  
21 CHANGE WOULD NOT TAKE PLACE.

22 HE ALSO HAD NO, COULDN'T PROVIDE ANY DATA WHERE THEY HAD  
23 POLLED USERS OR TRIED TO GET SOME KIND OF STATISTICS ABOUT  
24 WHETHER THE CHANGES HAD TAKEN PLACE, OR HOW MANY CHANGES HAD  
25 TAKEN PLACE. HE DIDN'T SEEM TO HAVE ANY INFORMATION ABOUT

1 WHEN THIS HAPPENED. HOW OFTEN WAS THIS BROADCAST DOWN? WHEN  
2 DID IT HAPPEN? THERE IS SOME CONCERN ON MY PART ABOUT IF IT'S  
3 SUPPOSED TO HAPPEN THE SAME TIME EVERY DAY AND I AM RECORDING  
4 THE SAME TIME EVERY DAY. AND THERE WAS A LOT OF CONFLICTING  
5 TESTIMONY LATER ON ABOUT JUST HOW THIS TAKES PLACE.

6 Q NEVERTHELESS, DR. STORER, FOR YOUR ANALYSIS AND TESTIMONY  
7 ARE YOU ASSUMING THAT THE CHANGES WERE ACTUALLY TRANSMITTED  
8 AND RECEIVED?

9 A FOR THE ANALYSIS, IT'S JUST ASSUMING THAT WE HAVE, THAT  
10 THE BOXES RECEIVED THE CHANGES, THAT'S CORRECT.

11 Q NOW, ASSUMING THAT THE SOFTWARE CHANGES YOU SAW WERE  
12 ACTUALLY DOWNLOADED AND UPDATED ON THE MACHINES, WHAT CHANGES  
13 DID ECHOSTAR MAKE TO THE SOFTWARE IN EACH PRODUCT FOUND TO  
14 INFRINGE AT TRIAL?

15 A SO THIS SLIDE HAS -- HAS -- HAS SUMMARIZED THAT, THAT IN  
16 THE CASE OF THE -- AND THIS WAS -- CAME UP IN THE OPENING,  
17 TOO. IN THE CASE OF THE 50X THE, QUOTE, CHANGE IS ONLY  
18 PERTAINING TO THIS INDEXING ISSUE. IN THE CASE OF THE  
19 BROADCOM PRODUCTS, THERE WERE TWO CHANGES, ONE SIMILAR TO THE  
20 50X INDEXING AND ONE RELATING TO THE ISSUE OF BUFFERING.

21 Q DR. STORER, ARE YOU REFERRING NOW TO SLIDE 15 IN THE  
22 PRESENTATION?

23 A I CAN'T -- THERE WE ARE. IT'S BEHIND THE LAMP. YES, MY  
24 MONITOR HERE DOESN'T LET ME LOOK DOWN TO THE 15, BUT I CAN SEE  
25 IT UP ON THE SLIDE, YES.

1 Q OTHER THAN THE CHANGES YOU SEE -- YOU MENTIONED, DID  
2 ECHOSTAR MAKE OTHER SOFTWARE CHANGES?

3 A NOTHING ELSE THAT'S, YOU KNOW, RELEVANT TO THE ISSUES IN  
4 THIS CASE.

5 Q NOW LET'S LOOK AT THE CLAIM. WHAT CLAIM LIMITATIONS ARE  
6 AFFECTED BY ECHOSTAR'S CHANGES, FIRST WITH RESPECT TO THE 50X  
7 BOXES?

8 A SO HERE IS ANOTHER OVERHEAD OF THE CLAIMS. WE SAW THIS  
9 ALREADY IN THE OPENINGS. AND I'VE HIGHLIGHTED THIS PHRASE:  
10 PARSES VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA. THIS IS  
11 THE PARSING ISSUE THAT'S ALREADY BEEN DISCUSSED A BIT.

12 Q FOR THE 50X PRODUCTS, ARE THERE ANY OTHER CLAIM  
13 LIMITATIONS THAT YOU BELIEVE HAVE BEEN PUT AT ISSUE FOR THIS  
14 HEARING?

15 A NO, THIS SEEMS TO BE THE ONLY ONE THAT'S AT ISSUE.

16 Q AND LET'S LOOK AT A CLAIM WITH RESPECT TO THE BROADCOM  
17 BOXES, THE 522 AND 625. WHAT CLAIM LIMITATIONS APPEAR TO BE  
18 IN DISPUTE FOR THOSE PRODUCTS?

19 A SO LET'S GO AHEAD AND PUT IN THE HIGHLIGHTING. SO FOR  
20 THE 522/625, AGAIN AS WE INDICATED ON THAT PREVIOUS SLIDE,  
21 THERE IS SORT OF REALLY TWO ISSUES. ONE IS THE SAME ISSUES  
22 RELATING TO PARSING AND WHETHER SOMEHOW INDEXING IS RELATED,  
23 AND THE OTHER RELATES TO THIS FLOW, AUTOMATIC FLOW CONTROL,  
24 AND PERHAPS AS WELL TO THE ELEMENT ABOVE IT IN ADDITION.

25 Q AND BY THE ELEMENT ABOVE IT, DO YOU MEAN ELEMENT E

1 REGARDING --

2 A YES.

3 Q -- SOURCE OBJECT?

4 A YES. THE ONE THAT BEGINS: WHEREIN SAID SOURCE OBJECT  
5 OBTAINS, ETCETERA, ETCETERA.

6 Q ALL RIGHT. SO LET'S TURN NOW TO THE INDEXING CHANGE.  
7 WHAT IS -- WELL, FIRST OF ALL, WHAT DO YOU PLAN TO ADDRESS  
8 WITH RESPECT TO THE INDEXING CHANGE?

9 A SO TWO BIG -- BASICALLY TWO BIG PICTURE ITEMS. ONE HAS  
10 ALREADY BEEN MENTIONED. IT'S HARD TO UNDERSTAND WHY IT'S  
11 RELEVANT TO THE CLAIMS. INDEXING WAS A BIG ISSUE THAT CAME UP  
12 RELATED TO THE SEPARATION ISSUE IN CLAIM 1. AND DOWN IN CLAIM  
13 1 THERE IS SOMETHING, PARSING AND SEPARATION, AND IT WAS AN  
14 ISSUE IN THE FIRST CASE, BUT NOWHERE DOES IT APPEAR IN CLAIMS  
15 31 AND 61. AND THEN THERE IS AN ISSUE THAT IN TERMS OF  
16 PARSING, THAT HASN'T CHANGED A BIT IN THE PRODUCTS FROM BEFORE  
17 TO NOW.

18 Q WHAT DO YOU UNDERSTAND ECHOSTAR'S ARGUMENT TO BE WITH  
19 RESPECT TO INDEXING AND HOW IT RELATES TO PARSING?

20 A EXCUSE ME, JUST GOING TO POUR A LITTLE MORE WATER HERE.  
21 SO THIS NEXT SLIDE IS A LITTLE BIT OF SUMMARY. AGAIN THERE IS  
22 A DIFFERENCE BETWEEN WHAT -- ECHOSTAR IS BASICALLY ARGUING, AS  
23 YOU SAW IN THE OPENING, THAT PARSING SHOULD BE EQUATED TO  
24 INDEXING RATHER THAN THE COURT CONSTRUCTION THAT WAS GIVEN AT  
25 THE FIRST TRIAL WHERE PARSING MEANS ANALYZING. AND AS I JUST

1 MENTIONED, THIS WHOLE BUSINESS OF PARSING AND SEPARATION WHICH  
2 IS IN CLAIM 1 BUT NOT IN CLAIM 31 WHERE SEPARATING --  
3 SEPARATION IS SOMETHING IN ADDITION TO THE PARSING, WAS ALL  
4 WITH RESPECT TO CLAIM 1. IT'S PERHAPS WORTH NOTING AS WELL  
5 THAT EVEN IF YOU SOMEHOW -- EVEN IF ONE WERE TO SOMEHOW DECIDE  
6 THAT INDEXING WAS SOMEHOW NEEDED OR INVOLVED IN CLAIM 31, THE  
7 PRODUCTS DO STILL INDEX. AND THE POINT THAT I MADE JUST  
8 BEFORE AT THE BEGINNING, WE WILL TALK A BIT MORE ABOUT IT, BUT  
9 THERE IS THIS PID FILTERING IN THE PRODUCT, IT WAS THERE  
10 BEFORE, IT'S THERE NOW THAT DOES THE PARSING, AND HASN'T  
11 CHANGED AT ALL.

12 Q SO LET'S LOOK AT THE CLAIM AGAIN. WHERE IN THE CLAIM  
13 DOES ECHOSTAR SAY THAT THERE IS THIS INDEXING REQUIREMENT?

14 A SO AGAIN WE'VE ALREADY HIGHLIGHTED THIS. THIS IS THE  
15 LIMITATION, THE PARSING LIMITATION IN ITEM B.

16 Q AND WHAT DID THE COURT SAY AS TO WHAT THAT PARTICULAR  
17 LIMITATION, PARSING, ACTUALLY MEANS?

18 A SO I THINK WE'VE ALREADY TALKED ABOUT THAT, BUT HERE IS  
19 THE -- HERE IS THE QUOTE AGAIN. THE COURT CONSTRUED PARSING  
20 TO BE ANALYZES, ANALYZES VIDEO AND AUDIO DATA FROM THE  
21 BROADCAST DATA, TO BE PRECISE.

22 Q BY THE WAY, DR. STORER, IN ALL OF YOUR TESTIMONY AND  
23 ANALYSIS, ARE YOU APPLYING THE COURT'S CONSTRUCTION?

24 A ABSOLUTELY. THAT'S TRUE NOW, THAT WAS TRUE AT TRIAL.

25 Q AND ARE YOU DEVIATING IN ANY WAY FROM THE COURT'S

1 CONSTRUCTION?

2 A NOT AT ALL.

3 Q YOU DID MENTION A BIT EARLIER THAT INDEXING WAS IN FACT  
4 DISCUSSED AT TRIAL, AND SPECIFICALLY WITH WHAT -- WITH RESPECT  
5 TO WHAT CLAIM ELEMENT WAS INDEXING DISCUSSED?

6 A SO I THINK WE HAVE A -- IF WE GO FORWARD TO THE NEXT  
7 SLIDE. SO, NOW HERE, REMEMBER THIS IS -- THIS IS CLAIM 1.

8 Q YOU ARE LOOKING AT SLIDE 22 FOR THE RECORD, BY THE WAY.

9 A RIGHT. AGAIN, IT'S IN THE LOWER RIGHT CORNER ON THE  
10 SCREEN. SO THIS IS CLAIM 1. AND THIS IS SORT OF THE, IF YOU  
11 WILL, THIS IS -- THIS PARTICULAR ELEMENT WAS -- WAS -- A LOT  
12 OF DISCUSSION, LET'S PUT IT THAT WAY, AT TRIAL WAS CENTERED  
13 AROUND THIS PARTICULAR ELEMENT WHERE THE MEDIA SWITCH, AND  
14 AGAIN WE ARE TALKING ABOUT HARDWARE NOW, AND THE MEDIA SWITCH  
15 PARSES SAID MPEG STREAM AND IT'S SEPARATED INTO ITS VIDEO AND  
16 AUDIO COMPONENTS. SO YOU'VE HAD THIS PARSING AND SEPARATION  
17 IN THIS CLAIM ELEMENT OF CLAIM 1.

18 Q AND IN THIS RESPECT, WHAT DID TIVO SAY AT TRIAL REGARDING  
19 INDEXING? AND PERHAPS YOU CAN START WITH DR. GIBSON.

20 A OKAY. SO THIS IS A PORTION OF HIS -- WHAT HE SAID. AND  
21 HE WAS ASKED: DO YOU CONSIDER THIS INDEX TABLE TO BE A  
22 SEPARATION INTO COMPONENTS? HE SAYS: YES. AND YOU -- CAN YOU  
23 EXPLAIN THAT? AND HE GOES ON TO TALK ABOUT THE NOTION OF  
24 SEPARATION, IT'S A LOGICAL THING, AND SO ON.

25 Q AND AGAIN, SEPARATION APPEARS IN CLAIM 1, THE MEDIA

1 SWITCH LIMITATION, NOT CLAIM 31, RIGHT?

2 A ABSOLUTELY. RIGHT. SO IT'S AN ADDITIONAL THING THAT  
3 GOES BEYOND PARSING IN THE CONTEXT OF CLAIM 1 IN THE CONTEXT  
4 OF THIS HARDWARE CLAIM.

5 Q WE WERE ON SLIDE 23. LET'S MOVE ON TO SLIDE 24. WHAT  
6 DID MR. BARTON SAY REGARDING INDEXING?

7 A SO AGAIN, A PORTION OF WHAT HE SAID, AND THIS IS SHORT SO  
8 LET ME JUST READ IT. IT SAYS: THE MEDIA SWITCH ANALYZED THE  
9 DATA COMING IN TO THE SYSTEM. AND IT SEPARATED OUT THE VIDEO  
10 PARTS AND THE AUDIO PARTS TO CREATE A TABLE, ETCETERA. SO  
11 IT'S ANALYSIS, PARSING, AND THEN THIS ADDITIONAL THING,  
12 SEPARATION.

13 Q AND IT WAS THE SEPARATION THAT WAS RESPONSIBLE FOR  
14 CREATION OF THE TABLE, RIGHT?

15 A THAT'S CORRECT. SO WHEN HE SAYS CREATE A TABLE, THIS IS  
16 THE -- THE INDEXING THAT WE ARE TALKING ABOUT.

17 Q AND DO YOU HAVE AN UNDERSTANDING OF WHAT ARCHITECTURE MR.  
18 BARTON'S TESTIMONY SHOWN ON SLIDE 24 HERE RELATED TO, THE  
19 HARDWARE OR THE SOFTWARE ARCHITECTURE IN THE PATENT?

20 A SO THIS IS ABSOLUTELY RIGHT, THERE IS NO QUESTION THIS IS  
21 THE HARDWARE, THIS IS THE MEDIA SWITCH HE IS TALKING ABOUT,  
22 CLAIM 1.

23 Q IN CONCLUSION ON THIS ISSUE, DR. STORER, DO YOU THINK THE  
24 INDEXING CHANGE THAT ECHOSTAR HAS MADE AMOUNTS TO A COLORABLE  
25 DIFFERENCE FOR CLAIMS 31 AND 61?

1 A WELL, I MEAN, ABSOLUTELY NOT, RIGHT. I MEAN, INDEXING  
2 ISN'T EVEN IN CLAIM 31.

3 Q NOW, WOULD YOUR OPINION CHANGE IF INDEXING WERE IN FACT  
4 SOMEHOW FOUND TO BE IN THE CLAIM?

5 A SO AGAIN, I THINK THIS IS ANOTHER -- ANOTHER THING THAT  
6 CAN BE POINTED OUT, NO, THE PRODUCTS DO STILL INDEX.

7 Q SO LET'S TAKE A LOOK AT WHAT WAS SLIDE 17 SHOWN AT TRIAL  
8 BY DR. GIBSON, WHICH IS THE NEXT SLIDE HERE. THIS IS A TRIAL  
9 SLIDE. CAN YOU PLEASE USE THIS GRAPHIC TO EXPLAIN WHAT  
10 ECHOSTAR'S INDEXING CHANGE IS?

11 A OKAY. SO THIS IS -- THIS IS FROM TRIAL, AND THIS AGAIN  
12 WE ARE TALKING ABOUT THE MEDIA SWITCH, THE HARDWARE, CLAIM 1.  
13 AND SO THIS WAS AN EXPLANATION GIVEN AT TRIAL HOW THIS INDEX  
14 IS ACTUALLY BUILT. AND YOU CAN ACTUALLY -- I THINK IT WAS --  
15 YOU CAN RUN THIS, RIGHT? WE CAN GO AHEAD AND -- WHAT IT'S  
16 DOING IS IT'S LOOKING AT FRAMES OF VIDEO AND IT'S NOW MAKING A  
17 RECORD, A TABLE, IF YOU WILL, AN INDEX THAT MAPS FRAME NUMBERS  
18 TO POINTS IN TIME. SO THIS IS A HANDY THING TO HAVE LATER ON  
19 WHEN, FOR EXAMPLE, YOU ARE DOING TRICKPLAY AND YOU'RE TRYING  
20 TO MOVE AROUND QUICKLY, YOU HAVE THIS TABLE GIVING YOU THIS  
21 INFORMATION.

22 MS. KREVANS: MR. IANCU, DID YOU PROVIDE US WITH THIS  
23 ANIMATION LAST EVENING WHEN WE DID THE GRAPHICS EXCHANGE?

24 MR. IANCU: I AM TOLD THAT WE DID.

25 MS. KREVANS: I AM TOLD THAT WE DIDN'T. I HAVEN'T

1 SEEN IT BEFORE.

2 THE COURT: I AM NOT SURE MRS. CRAWFORD CAN HEAR THE  
3 COMMENTS. IT WOULD BE NICE IF YOU SHARED YOUR COMMENTS WITH  
4 EVERYONE.

5 MS. KREVANS: I AM SORRY. THIS IS ABOUT AS LOUD AS I  
6 CAN TALK. I JUST WAS NOTING THAT THIS PARTICULAR ANIMATION IS  
7 NOT ONE THAT WE WERE PROVIDED IN THE EXCHANGE LAST NIGHT OF  
8 THE GRAPHICS.

9 MR. IANCU: WELL, I DIDN'T PERSONALLY DO THE  
10 EXCHANGE, BUT I AM TOLD BY SEVERAL PEOPLE ON MY TEAM RIGHT NOW  
11 THAT IT WAS. IN ANY EVENT, THIS IS AN ANIMATION FROM TRIAL  
12 WHICH YOU HAVE SEEN SEVERAL TIMES BEFOREHAND.

13 THE COURT: IF THAT'S AN OBJECTION, I WILL OVERRULE  
14 IT. I RECALL THIS FROM TRIAL AND I THINK WE ARE ALL FAMILIAR  
15 WITH IT.

16 Q (BY MR. IANCU:) OKAY. NOW, DR. STORER --

17 THE COURT: BUT IN THE EVENT YOU NEED TO REVIEW IT,  
18 WE WILL TAKE OUR MORNING BREAK FOR ABOUT 15 MINUTES. THAT  
19 WILL GIVE YOU A CHANCE TO LOOK AT IT. WE WILL BE IN RECESS.

20 (RECESS AT 10:40 A.M., UNTIL 10:55 A.M., OPEN COURT)

21 THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE YOUR  
22 DIRECT EXAMINATION.

23 DIRECT EXAMINATION CONTINUES

24 BY MR. IANCU:

25 Q ALL RIGHT. IF WE COULD PUT BACK UP SLIDE 26, PLEASE.

1 ALL RIGHT. SO, DR. STORER, THIS WAS SLIDE 17 FROM TRIAL THAT  
2 YOU DESCRIBED. LET ME ASK YOU NEXT IF ECHOSTAR STILL HAS AN  
3 INDEX TABLE?

4 A YES, THEY DO.

5 Q AND LET'S TAKE A LOOK AT EXHIBIT 3176 WHICH APPEARS IN  
6 PART ON THE NEXT SLIDE. CAN YOU PLEASE DESCRIBE WHAT YOU SEE  
7 THERE?

8 A SO THIS IS ONE OF MANY, MANY MEMOS AND EMAILS FROM  
9 ENGINEERS AND BETWEEN ENGINEERS I LOOKED AT. THERE ARE 11,000  
10 PAGES OF DOCUMENTS PRODUCED AT ONE POINT, MANY OF WHICH WERE  
11 THINGS LIKE THIS. AND HERE THERE IS AN EXCHANGE ABOUT INDEX,  
12 QUOTE, FILE REMOVAL WHERE THE ENGINEER IS SAYING THIS SECTION  
13 OF THE DOCUMENT CONTAINS MANY INACCURACIES. AND IT GOES ON TO  
14 SAY, WE STILL HAVE AN INDEX FILE, AND THEN DESCRIBES THE  
15 DIFFERENCES BETWEEN THE NEW INDEX FILE AND THE OLD ONE.

16 Q WAS MR. CARLSON HERE REFERRING TO AN INDEX THAT APPEARS  
17 IN BOTH PRODUCTS, 50X AND BROADCOM?

18 A IT IS TRUE THAT AN INDEX DOES APPEAR IN BOTH 50X AND  
19 BROADCOM, THAT'S CORRECT.

20 Q NOW, MR. CARLSON HERE REFERS TO WHAT'S CALLED A WTT FILE.  
21 WHAT DO YOU UNDERSTAND THAT TO BE?

22 A OKAY. SO THE WTT FILE IS THE NAME FOR THE INDEX. IT'S  
23 IN THE BROADCOM PRODUCTS, IF YOU WILL. AS I JUST MENTIONED,  
24 THERE IS ALSO A SIMILAR NAME IN THE 50X PRODUCTS AS WELL.

25 Q IS THE -- IS THIS INDEX THAT MR. CARLSON IS REFERRING TO

1 USED FOR TRICKPLAY?

2 A SO THIS INDEX ACTUALLY IS USED TO MAINTAIN -- I DON'T  
3 KNOW, PEOPLE, ANYONE WHO IS FAMILIAR WITH THE DVR KNOWS ABOUT  
4 THE BAR AT THE BOTTOM THAT SHOWS YOU YOUR PROGRESS AND SO ON  
5 WHEN YOU ARE DOING THE TRICKPLAY, AND THIS INDEX IS USED TO  
6 MAINTAIN THAT BAR.

7 Q ARE THE DIFFERENCES IN THE INDEXES, THE ONE MR. CARLSON  
8 IS REFERRING TO AND THE ONE IN THE PRODUCTS AT TRIAL, RELEVANT  
9 TO THE CLAIMS IN ANY WAY?

10 A NO. OF COURSE, AS WE'VE TALKED ABOUT, CLAIMS 31 AND 61  
11 DON'T EVEN CONTAIN THE WORD INDEXING OR HAVE INDEXING IN THEM.  
12 AND EVEN IF SOMEHOW ONE WANTED TO INCLUDE SOME NOTION OF  
13 INDEXING, IT'S HARD TO UNDERSTAND HOW SOME DETAILS OF THE  
14 DIFFERENCES COULD POSSIBLY BE IN THE CLAIM. BUT --

15 Q NOW, LET'S TAKE A LOOK AT EXHIBIT 3278 AND PAGE 10 OF  
16 THAT IN PARTICULAR WHICH AN EXCERPT APPEARS ON THE NEXT SLIDE.  
17 DO YOU UNDERSTAND THAT ECHOSTAR SAYS IT NOW USES A STATISTICAL  
18 ANALYSIS FOR TRICKPLAY?

19 A YES. SO IN ADDITION TO THE INDEX THAT I JUST MENTIONED  
20 THAT'S USED TO MAINTAIN THAT BAR, THERE ARE ALSO STATISTICS  
21 MAINTAINED THAT ARE USED TO -- FOR THE TRICKPLAY AS WELL.

22 Q DOES THE USE OF STATISTICS FOR TRICKPLAY MAKE THE  
23 ECHOSTAR PRODUCTS DIFFERENT FROM THE WAY THEY WERE AT TRIAL IN  
24 ANY WAY MEANINGFUL TO CLAIMS 31 AND 61?

25 A SO AGAIN, OF COURSE NOT, RIGHT? INDEXING ISN'T EVEN IN

1 CLAIM 31. AND SO THE ANSWER IS, YES, OF COURSE NOT, THEY  
2 DON'T.

3 Q GOING TO THE NEXT SLIDE, SO DOES ECHOSTAR'S INDEXING  
4 CHANGE MAKE THE CURRENT PRODUCTS MORE THAN COLORABLY DIFFERENT  
5 FROM THE PRODUCTS AT TRIAL?

6 A AGAIN, OF COURSE NOT. INDEXING ISN'T EVEN PART OF CLAIMS  
7 31 AND 61. AND EVEN IF SOMEHOW IT WAS REQUIRED IN SOME VAGUE  
8 WAY, WE JUST MENTIONED THEY STILL -- STILL HAVE IT.

9 Q OKAY. WE ARE -- STAY ON SLIDE 29, PLEASE. SO -- SO WE  
10 JUST SPOKE ABOUT INDEXING AND COLORABLE DIFFERENCES. WE ARE  
11 GOING TO COME BACK TO THE BUFFERING CHANGE, BUT FIRST WE  
12 SHOULD ADDRESS THE IMPACT ON INFRINGEMENT, IF ANY, CAUSED BY  
13 THE INDEXING CHANGE. SO NOW WE CAN GO TO SLIDE 30. DOES  
14 ECHOSTAR STILL MEET THE PARSING LIMITATION IN CLAIMS 31 AND  
15 61?

16 A ABSOLUTELY.

17 Q AND IS THAT TRUE FOR BOTH 50X AND BROADCOM PRODUCTS?

18 A ABSOLUTELY. YES.

19 Q OKAY. WHAT IS THE BASIS FOR YOUR OPINION?

20 A SO IF WE GO TO THE NEXT SLIDE, HOPEFULLY I'VE GOT A  
21 LITTLE SUMMARY HERE. WE'LL GO THROUGH THESE IN DETAILS, BUT  
22 WE'LL TALK ABOUT THIS NOTION OF A PID FILTER WHICH IS IN THE  
23 -- IN THE PRODUCT AND HOW IT PARSSES. THIS IS SOMETHING THAT  
24 WAS UNDISPUTED AND UNCHANGED SINCE TRIAL, SO THERE WILL BE  
25 THREE. THERE'S REALLY THREE ISSUES HERE.

1 Q SO LET'S FIRST TALK ABOUT PID FILTERS. IF YOU COULD  
2 EXPLAIN TO THE COURT WHAT PID FILTERS ARE AND WHAT THEY DO.

3 A SO IF WE GO TO THE NEXT SLIDE, YOU KNOW, THIS IS THE KIND  
4 OF THING WHERE YOU ARE WATCHING TV AND YOU'VE DECIDED -- LET'S  
5 SAY IT'S ME, I'VE DECIDED TO WATCH A NEWS CHANNEL OR  
6 SOMETHING, AND I DON'T REALLY CARE ABOUT MY DAUGHTER'S DISNEY  
7 CHANNEL, OR HANNAH MONTANA, OR ANYTHING ELSE. AND SO THE PID  
8 FILTER IS WHAT SELECTS FROM ALL THOSE CHANNELS COMING DOWN THE  
9 ONE THAT I WANT TO WATCH. AND WHAT I WANT TO WATCH MAY BE  
10 VERY DIFFERENT THAN MY DAUGHTER. WHEN SHE GOES TO WATCH TV,  
11 THE PID FILTER MAY BE SELECTING SOMETHING VERY DIFFERENT, SUCH  
12 AS HER DISNEY CHANNEL. BUT IT SELECTS ONE OUT OF THE MANY TO  
13 ACTUALLY COME OUT THE RIGHT-HAND SIDE, IF YOU WILL, FROM THE  
14 MANY THAT ARE COMING IN THE LEFTHAND SIDE.

15 Q DO ECHOSTAR'S PRODUCTS HAVE PID FILTERS BOTH NOW AND AT  
16 TRIAL?

17 A ABSOLUTELY. SO THAT THEY WERE THERE BEFORE, THEY ARE  
18 THERE NOW. NOTHING HAS CHANGED WITH REGARD TO THE PID FILTERS  
19 IN THE PRODUCTS.

20 Q BY THE WAY, WHERE ARE THEY IN THE PRODUCTS?

21 A SO THEY ARE BASICALLY AT THE FRONT END, AT THE VERY FRONT  
22 END OF THE PRODUCT IN THE HARDWARE THAT ACTUALLY DOES THIS  
23 FILTERING. AND IF WE -- HERE IS A PICTURE OF THE -- AGAIN OF  
24 INSIDES OF THE BROADCOM, OF THE BOX CONTAINING THE BROADCOM  
25 CHIP. HERE IS A BLOWUP OF THE BROADCOM CHIP. AND ON THAT

1 CHIP, ACTUALLY ON THAT CHIP ARE THE PID FILTERS. THAT'S PART  
2 OF THE HARDWARE ON THAT CHIP, CIRCUITRY, IF YOU WILL.

3 Q SO LET'S LOOK AT A SCHEMATIC FOR THAT CHIP. THIS IS TIVO  
4 EXHIBIT --

5 MR. IANCU: OKAY, TAKE IT DOWN FOR A SECOND, PLEASE.

6 MS. KREVANS: ARE YOU GOING TO SHOW THE SCHEMATIC?

7 MR. IANCU: YEAH, WE ARE GOING TO SHOW THAT  
8 SCHEMATIC, THAT ONE PAGE.

9 THE COURT: DO WE HAVE A PROTECTIVE ORDER ISSUE?

10 MS. KREVANS: YOUR HONOR, WE DO WITH THIS PARTICULAR  
11 SCREEN SHOT, YES.

12 THE COURT: EXCUSE ME?

13 MR. IANCU: ECHOSTAR INDICATES THAT THEY DO HAVE A  
14 PROBLEM WITH THIS PARTICULAR SCREEN SHOT AND THEY WOULD LIKE  
15 TO CLEAR THE COURTROOM.

16 THE COURT: VERY WELL. ALL THOSE INDIVIDUALS NOT IN  
17 THE COURTROOM NOT SUBJECT TO THE PROTECTIVE ORDER, I AM GOING  
18 TO HAVE TO ASK YOU TO LEAVE VERY BRIEFLY. WE'LL TRY TO --

19 MS. KREVANS: YOUR HONOR, THIS IS -- THIS IS THIRD  
20 PARTY INFORMATION, SO EVEN PEOPLE WHO ARE EMPLOYEES OF TIVO  
21 NEED TO LEAVE AT THIS POINT.

22 (INDIVIDUALS NOT UNDER PROTECTIVE ORDER EXITING  
23 COURTROOM)

24 THE COURT: VERY WELL. WE WILL TRY TO MAKE THIS AS  
25 BRIEF AS POSSIBLE, IF YOU WILL STAY NEARBY. JUDGE FAULKNER,

1 ARE YOU SUBJECT TO THE PROTECTIVE ORDER? DOES ANYONE HAVE ANY  
2 PROBLEM --

3 JUDGE FAULKNER: ACTUALLY, I THINK THEY --

4 MR. CHU: WE -- WE HAVE NO OBJECTION, YOUR HONOR, AND  
5 JUDGE FAULKNER I THINK THROUGH THE MEDIATION PROCESS HAS  
6 CERTAINLY BEEN PRIVY.

7 THE COURT: WHO HAS BEEN CONDUCTING MEDIATION, FOR  
8 THE RECORD.

9 MR. MCELHINNY: NO OBJECTION, YOUR HONOR.

10 THE COURT: SO WE KNOW WHO JUDGE FAULKNER IS, OR THE  
11 FEDERAL CIRCUIT KNOWS.

12 Q SEALED TESTIMONY

13

14

15 SEALED TESTIMONY

16 A

17

18 Q SEALED TESTIMONY

19 A SEALED TESTIMONY

20

21

22

23 Q SEALED TESTIMONY

24

25 A SEALED TESTIMONY

1 SEALED TESTIMONY

2 Q

3

4 A SEALED TESTIMONY

5

6

7 Q SEALED TESTIMONY

8

9

10 A SEALED TESTIMONY

11

12

13

14 SEALED TESTIMONY

15 MR. IANCU: OKAY. I BELIEVE THAT'S THE END OF THAT

16 SECTION, YOUR HONOR.

17 THE COURT: MR. LONG, IF YOU WILL INVITE EVERYONE

18 BACK IN.

19 (PEOPLE RETURNING TO COURTROOM)

20 MR. IANCU: CAN WE CONTINUE IN THE MEANTIME, YOUR

21 HONOR, OR --

22 THE COURT: EXCUSE ME?

23 MR. IANCU: SHOULD WE CONTINUE IN THE MEANTIME, OR

24 WAIT?

25 THE COURT: WELL, IT WON'T TAKE BUT A FEW SECONDS FOR

1 THEM TO --

2 MR. IANCU: OKAY.

3 THE COURT: -- STEP BACK IN. YOU MAY CONTINUE.

4 Q (BY MR. IANCU:) THANK YOU. DO THE PID FILTERS IN  
5 ECHOSTAR'S PRODUCTS MEET THE PARSING LIMITATION OF CLAIMS 31  
6 AND 61 FOR BOTH OF THE PRODUCTS?

7 A SO ABSOLUTELY RIGHT, THEY DO.

8 Q HAVE THOSE PID FILTERS CHANGED SINCE TRIAL?

9 A AND AGAIN AS WE SAID BEFORE, HARDWARE IN THE FIELD IS  
10 STILL THERE. THERE IS NO CHANGE TO THE HARDWARE. THEY ARE  
11 STILL THERE. THEY WERE THERE AT TRIAL. THEY ARE THERE NOW.

12 Q DID THE EXPERTS AT THE JURY TRIAL BOTH FOR TIVO AND  
13 ECHOSTAR DISCUSS PID FILTERS WITH RESPECT TO THIS LIMITATION?

14 A ABSOLUTELY. SO THIS, OF COURSE, IS A PICTURE OF THE  
15 EXPERTS AT THE FIRST TRIAL, TWO FOR TIVO, MYSELF, AND DR.  
16 GIBSON, AND THREE FOR ECHOSTAR, DR. RHYNE, DR. POLISH, AND DR.  
17 JOHNSON.

18 Q NOW, DO YOU REMEMBER WHAT YOU YOURSELF SAID AT TRIAL  
19 ABOUT PID FILTERING?

20 A I DO.

21 Q WHAT WAS THAT?

22 A IF WE GO TO THE NEXT SLIDE, I'VE GOT A QUOTE.

23 Q AND THE SLIDE SHOWS AN EXCERPT FROM APRIL 11, 2006 A.M.  
24 SESSION, 99, PAGE 99, LINE 17-100, LINE 23. IT'S AN EXCERPT  
25 FROM THERE.

1 A SO AGAIN I AM ASKED ABOUT THE PID FILTERING OPERATION,  
2 AND I CERTAINLY AGREE THAT THAT'S PARSING.

3 Q NOW, DID YOU -- WERE YOU IN THE COURTROOM, DR. STORER,  
4 FOR THE OPENING PRESENTATION BY ECHOSTAR?

5 A I WAS.

6 Q AND DID YOU SEE THE PORTION OF THE TRANSCRIPT MS. KREVANS  
7 PUT UP ON THE SCREEN --

8 A I DID.

9 Q -- IN THIS -- WITH REGARD TO THIS TESTIMONY?

10 A I DID, YES.

11 MR. IANCU: IF WE COULD BRING THAT UP, PLEASE, APRIL  
12 11, 2006 P.M., PAGES 2-4.

13 Q (BY MR. IANCU) OKAY, BEFORE WE DELVE INTO THE TRANSCRIPTS  
14 IN GRAVE DETAIL, GENERALLY SPEAKING, WHAT'S YOUR RECOLLECTION  
15 ABOUT THAT? WHAT WAS YOUR REACTION TO MS. KREVANS' STATEMENTS  
16 THIS MORNING?

17 A I THINK IT'S A BIT OF A MAYBE EITHER MISCHARACTERIZATION  
18 OR MISUNDERSTANDING. THIS IS THE TESTIMONY ABOUT PRIOR ART AS  
19 IT RELATES TO CLAIM 1, AND ALSO IT'S ABOUT A PARTICULAR ISSUE  
20 OF CONVERTING MPEG-2 TO MPEG-1. THIS PARTICULAR PIECE OF  
21 PRIOR ART WAS A VERY OLD OR VERY PRIMITIVE, IF YOU WILL,  
22 DEVICE, AND IT COULDN'T REALLY SPEAK, IF YOU WILL, THE MPEG-2  
23 LANGUAGE THAT THE BOXES AT THIS TRIAL SPEAK. SO THERE WAS AN  
24 ISSUE ABOUT THIS CONVERSION FROM MPEG-1 TO MPEG-2 AND THIS  
25 PRIOR ART PRODUCT AS IT RELATED TO CLAIM 1, AND HOW THAT

1 RELATED TO PARSING AND SEPARATION IN CLAIM 1, AND THE MEDIA  
2 SWITCH AND ALL THOSE THINGS.

3 Q NOW, IN THIS PORTION YOU SAID THAT THIS TESTIMONY RELATED  
4 TO CLAIM 1. IF YOU LOOK AT PAGE 2, WHICH IS UP ON THE SCREEN  
5 NOW AT ABOUT LINE 20, IT TALKS ABOUT INPUT SECTION, TUNING,  
6 AND SO FORTH. THOSE ARE ELEMENTS OF CLAIM 1?

7 A THAT'S CORRECT.

8 Q AND FURTHER DOWN AT LINE 24 YOU SEE IT TALKS ABOUT THE  
9 MEDIA SWITCH?

10 A CORRECT.

11 Q THAT'S ALSO AN ELEMENT OF CLAIM 1?

12 A OF COURSE, YES.

13 Q IF WE SCOOT DOWN TO PAGE 3, JUST THE NEXT PAGE DOWN AT  
14 ABOUT LINE 14 OR SO, YOU ARE TALKING THERE ABOUT THE  
15 SEPARATION?

16 A THAT'S CORRECT. SO THIS WHOLE ISSUE OF CONVERTING MPEG-1  
17 TO MPEG -- MPEG-2 TO MPEG-1 AND THIS LINE OF QUESTIONING  
18 RELATED TO TESTIMONY ABOUT WHETHER THAT WOULD SOMEHOW IN THE  
19 PRIOR ART CONSTITUTE THIS ADDITIONAL SEPARATION STEP THAT --  
20 OR SEPARATION ISSUE THAT IS MENTIONED IN CLAIM 1.

21 Q AND IF WE COULD HIGHLIGHT ALSO HERE ON PAGE 3 LINES 18-  
22 20, THERE YOU SAY, QUOTE: BUT JUST BECAUSE THESE WORDS YOU SEE  
23 TO DESCRIBE THIS CONVERSION PROCESS, YOU SHOULDN'T CONFUSE  
24 THAT WITH THE CLAIM TERMS. WHAT IS THIS AND WHAT IS THAT?

25 A SO I WAS CONCERNED HERE. AGAIN, THE ISSUE OF CONCERN WAS

1 NOT CLAIM 31 OR SOMETHING. THE ISSUE OF CONCERN WAS THIS  
2 PRIMITIVE DEVICE WHICH COULDN'T EVEN SPEAK MPEG-2 AND HAD TO  
3 PERFORM THIS CONVERSION FROM MPEG-2 TO MPEG-1, AND WHETHER  
4 THIS CONSTITUTED SEPARATION AND ALL THOSE KINDS OF THINGS THAT  
5 WERE AT ISSUE WITH CLAIM 1. THIS HAS NOTHING TO DO WITH, YOU  
6 KNOW, CLAIM 31, FOR EXAMPLE.

7 Q AND WHEN IT COMES TO THE PARSING LIMITATION -- WE CAN GO  
8 BACK TO OUR SLIDES, AND ON SLIDE 13 -- WHEN IT COMES IN  
9 PARTICULAR TO THE PARSING LIMITATION AS OPPOSED TO CONVERSION  
10 AND TUNING AND MEDIA SWITCH AND SEPARATION, JUST PARSING, WHAT  
11 WAS YOUR TESTIMONY AT TRIAL?

12 A I FEEL SILLY ANSWERING THE QUESTION AGAIN. WE SAID IT  
13 BEFORE. I WAS ASKED ABOUT PID FILTERING, AND I CERTAINLY  
14 AGREE THAT IT'S PARSING.

15 Q DR. STORER, WERE YOU IN THE COURTROOM WHEN DR. RHYNE  
16 TESTIFIED AT TRIAL?

17 A CERTAINLY, YES.

18 Q AND WHAT DID DR. RHYNE HAVE TO SAY ABOUT PID FILTERING  
19 AND PARSING?

20 A SO THIS IS AGAIN A PORTION OF WHAT HE SAID, AND HE WAS  
21 ASKED: SO YOU'LL AGREE THAT THE ECHOSTAR PRODUCTS DO ACTUALLY  
22 PARSE THE MPEG STREAM? AND HE ANSWERS: YES. THE COURT SAID  
23 ANALYZE, AND THERE ARE PID FILTERS IN THOSE PRODUCTS THAT  
24 EXAMINE THE MPEG TRANSPORT STREAM AND DO A PARSING.

25 SO, AND HE ACTUALLY GOES ON TO SPECIFICALLY MENTION IN

1 BOTH THE ST -- ST REFERS TO THE 50X SERIES, THAT CHIP THAT'S  
2 IN THERE -- OR THE BROADCOM CHIPS REFER TO THE 522/625 SERIES  
3 IN THIS CASE.

4 Q AND YOU -- YOU ARE ON SLIDE 40, AND FOR THE RECORD, THAT  
5 SHOWS A PORTION OF THE TRANSCRIPT FROM APRIL 7, 2006, PAGE  
6 110, LINE 10-20.

7 A THAT'S CORRECT.

8 Q WERE YOU -- APOLOGIES. WHAT DID DR. POLISH, ANOTHER ONE  
9 OF ECHOSTAR'S EXPERTS, HAVE TO SAY ABOUT PID FILTERING AND  
10 PARSING AT TRIAL?

11 A SIMILAR THING, HE AGREES AS WELL.

12 Q OKAY. AND WHAT DID DR. POLISH SAY ABOUT PID FILTERING  
13 AND PARSING IN HIS DEPOSITION? BEFORE WE GO THERE, HOLD ON  
14 FOR A SECOND. WITH RESPECT TO TRIAL AND DR. POLISH, WE ARE ON  
15 SLIDE 41. THE EXCERPT WAS AT PAGE 37, LINES 24 THROUGH PAGE  
16 38, LINE 8, APRIL 10, 2006 TRANSCRIPT.

17 A THAT'S CORRECT.

18 Q NOW, GOING TO SLIDE 42, WHAT DID DR. POLISH SAY AT  
19 DEPOSITION ABOUT PID FILTERING AND PARSING WITH RESPECT TO  
20 CLAIMS 31 AND 61 AT ISSUE HERE TODAY?

21 A SO AGAIN HE IS CONSISTENT WITH THIS NOTION THAT PID  
22 FILTERING IS PARSING. AND AT DEPOSITION HE SPECIFICALLY SAYS  
23 IN THE CONTEXT OF CLAIMS 31 AND 61, AND YOU SEE THAT HERE.  
24 THIS IS JUST A PORTION OF QUESTION AND ANSWER FROM THAT  
25 DEPOSITION.

1 Q AND DR. POLISH WAS ECHOSTAR'S EXPERT, CORRECT?

2 A THAT'S RIGHT. HE WAS ONE OF THE THREE EXPERTS FOR  
3 ECHOSTAR AT THE TRIAL.

4 Q AND YOU ARE READING FROM THE POLISH DEPOSITION, VOLUME 2  
5 AT PAGE 310, LINES 5-9.

6 A THAT'S CORRECT.

7 Q WERE YOU IN THE COURTROOM WHEN DR. GIBSON TESTIFIED ON  
8 THE PHYSICAL DATA SOURCE LIMITATION?

9 A YES, I WAS.

10 Q AND WHAT DID HE HAVE TO SAY ABOUT THAT?

11 A SO IF WE GO TO THE NEXT SLIDE, SO AGAIN NOW WE SEE THE  
12 CLAIM ON TOP, THIS PHYSICAL DATA SOURCE, AND HE IS NOW ASKED  
13 ABOUT THE PHYSICAL DATA SOURCE, AND SAID: AND WHAT SPECIFIC  
14 CIRCUITRY WITHIN THAT BROADCOM CHIP? AND HE POINTS, OKAY, HE  
15 SAYS: WHERE THERE'S PID FILTERING.

16 Q AGAIN, THIS MORNING MS. KREVANS SHOWED A SLIDE THAT SHE  
17 INDICATED TO THE COURT WAS SHOWN BY DR. GIBSON DURING THIS  
18 PORTION OF THE TESTIMONY. DO YOU RECALL THAT?

19 A I DO.

20 Q DO YOU HAVE A RECOLLECTION WHETHER IN FACT SLIDE 92 FROM  
21 THE GIBSON TESTIMONY, FROM THE GIBSON SLIDES AT TRIAL WAS  
22 ACTUALLY SHOWN IN COURT TO THE JURY?

23 A SO MY RECOLLECTION IS IT WAS NOT VIEWED BY THE COURT OR  
24 THE JURY. WE SEE THAT FROM THE TRANSCRIPT TESTIMONY AS WELL,  
25 I BELIEVE.

1 Q SO LET'S TAKE A QUICK LOOK AT THAT TRANSCRIPT, MARCH 31,  
2 2006 A.M. PORTION, AND LET'S GO TO PAGE 31. OKAY. AND LET'S  
3 SCOOT DOWN A LITTLE BIT. LET'S MAKE LINE 18 THE TOP OF THE  
4 PAGE. OKAY. AT LINE 18, PAGE 31 YOU CAN -- THE QUESTION WAS:  
5 ALL RIGHT. DO THE ECHOSTAR PRODUCTS HAVE THIS PHYSICAL DATA  
6 SOURCE? ANSWER BY DR. GIBSON: YES, THEY DO. SHOWN? YEAH.  
7 IT'S SHOWN ON THE NEXT SLIDE 92. AND COMMENT FROM ME, MR.  
8 IANCU: LET'S TAKE DOWN -- LET'S TAKE THAT SLIDE DOWN FOR A  
9 SECOND.

10 MR. IANCU: KEEP GOING DOWN IN THE TRANSCRIPT,  
11 PLEASE. LET'S GO BACK TO PAGE 31. SORRY, JUST I WANTED TO GO  
12 DOWN A LITTLE BIT ALL THE WAY TO THE BOTTOM. OKAY.  
13 APOLOGIES.

14 Q (BY MR. IANCU) QUESTION AT LINE 24 OF PAGE 31: OKAY.  
15 THIS IS ANOTHER REPRESENTATION OF THE BROADCOM CHIP. WE ARE  
16 GOING TO BE ON THE SLIDE JUST FOR 30 SECONDS, I BELIEVE.

17 SOME COLLOQUY ABOUT DR. GIBSON'S ALLERGIES. AND THEN  
18 QUESTION AT LINE 6: IN ANY EVENT, THOUGH, WITHOUT SHOWING THE  
19 SLIDE 92 ON THE SCREEN, CAN YOU PLEASE DESCRIBE WHAT THE  
20 PHYSICAL DATA SOURCE REQUIRES? AND THEN THERE IS AN ANSWER  
21 EXPLAINING THAT. DOES THAT REFRESH YOUR RECOLLECTION, DR.  
22 STORER, AS TO WHETHER THE SLIDE WAS ACTUALLY SHOWN?

23 A SO THIS IS WHAT I WAS REFERRING TO. I THINK IT'S KIND OF  
24 JUST WHAT WE HAD TODAY, THAT BASICALLY DO YOU WANT TO HAVE  
25 EVERYONE LEAVE THE ROOM FOR THIS ONE SLIDE, AND I THINK THE

1 CHOICE WAS, WELL, LET'S JUST TAKE IT DOWN AND SEE IF WE CAN DO  
2 THE TESTIMONY WITHOUT IT AND NOT HAVE TO BOTHER EVERYONE  
3 COMING AND GOING.

4 Q AND IF WE GO BACK TO OUR SLIDES THAT WE SHOWED, SLIDE 43,  
5 WITHOUT THE SLIDE SHOWN, WHAT WERE DR. GIBSON'S WORDS?

6 A SO --

7 Q LET ME ASK A DIFFERENT QUESTION.

8 A OKAY.

9 Q WITHOUT THE SLIDE, DID DR. GIBSON ACTUALLY IDENTIFY PID  
10 FILTERING WITH RESPECT TO THE PHYSICAL DATA SOURCE?

11 A SO THAT'S CORRECT, YES.

12 Q OKAY. GOING TO THE NEXT SLIDE, NOW WITHIN THAT TESTIMONY  
13 DR. GIBSON ALSO MENTIONS A START CODE DETECTOR AMONG OTHER  
14 THINGS, SUCH AS DMA AND DIRECT MEMORY ACCESS AND SO FORTH.  
15 WHAT DOES THAT TESTIMONY TELL YOU?

16 A MERELY THAT, HE DID MENTION SOME OTHER ITEMS AS WELL THAT  
17 RELATED TO HIS TESTIMONY AS A WHOLE.

18 Q NOW, WHAT DID DR. GIBSON SAY ABOUT PID FILTERING IN HIS  
19 EXPERT REPORTS?

20 A SO AGAIN I THINK WE -- YOU CAN GO TO THE NEXT SLIDE AND  
21 --

22 MR. IANCU: OKAY. TAKE THAT DOWN FOR A SECOND. IS  
23 THAT A PROBLEM? THAT'S AN ST CHIP.

24 MS. KREVANS: THAT ONE'S OKAY.

25 MR. IANCU: THAT ONE'S OKAY. OKAY. WE CAN PUT IT

1 BACK UP.

2 Q (BY MR. IANCU:) OKAY. WITH RESPECT TO THE 50X BOX, WHAT  
3 DOES HE SAY?

4 A SO HERE IS A FIGURE HE PRESENTED, AND IT GETS A LITTLE  
5 HARD TO READ, BUT DO I HAVE A -- DO WE HAVE AN ENLARGEMENT AT  
6 ALL? OR YOU DON'T HAVE AN ENLARGEMENT, IT'S OKAY. SO IT'S A  
7 LITTLE HARD TO READ, BUT AGAIN YOU SEE PID FILTER. A LITTLE  
8 HARD TO READ THE TEXT, AND SPECIFICALLY HIGHLIGHTS THAT.

9 Q WE JUST ENLARGED IT.

10 A OKAY.

11 Q AND SO HE IDENTIFIES IN HIS EXPERT REPORT THE PID FILTER  
12 AS PART OF THE PHYSICAL DATA SOURCE, CORRECT?

13 A THAT'S CORRECT.

14 Q WHAT DID DR. JOHNSON, ECHOSTAR'S EXPERT ON SOFTWARE, HAVE  
15 TO SAY ABOUT PID FILTERING AND THE PHYSICAL DATA SOURCE AT  
16 TRIAL?

17 A SO AGAIN CONSISTENT WITH ALL THE OTHER EXPERTS, SHE IS  
18 ASKED ABOUT THE PHYSICAL DATA SOURCE AND YOU SEE IN HER ANSWER  
19 SHE IS POINTING -- SHE IS DISCUSSING THE UPPER LEFT PORTION OF  
20 HER DIAGRAM WHICH IF YOU -- AGAIN A LITTLE HARD TO READ, BUT  
21 IF YOU ENLARGE IT IS A PID FILTER.

22 Q SO GOING TO THE NEXT SLIDE, IS IT THAT ALL TECHNICAL  
23 EXPERTS SAID AT -- SORRY. IS IT THAT ALL TECHNICAL EXPERTS  
24 SAID AT TRIAL THAT PID FILTERING SATISFIES PHYSICAL DATA  
25 SOURCE AND/OR PARSING?

1 A CORRECT.

2 Q AND WE ARE JUST NOW ON SLIDE 47, AND LET'S GO TO THE NEXT  
3 SLIDE. DID ECHOSTAR'S PID FILTERS CHANGE SINCE TRIAL?

4 A SO AS WE MENTIONED EARLIER, WE SAW THAT THE PID FILTERS  
5 ARE ACTUALLY LOCATED ON THE CHIP IN THE HARDWARE THAT'S IN THE  
6 FIELD THAT HASN'T CHANGED, AND THE PID FILTERS HAVE NOT  
7 CHANGED SINCE TRIAL.

8 Q AND OTHER THAN THE CONTEXT OF THIS PARTICULAR HEARING AND  
9 COURT, HOW DOES ECHOSTAR INTERNALLY REFER TO PID FILTERING?

10 A SO I THINK -- I THINK IF YOU GO TO THE NEXT SLIDE HERE  
11 IS, FOR EXAMPLE, CONFIRMATION AT MR. MINNICK'S DEPOSITION  
12 WHERE QUESTION: IN ANY EVENT, YOUR CODE REFERS TO THE PID  
13 FILTERING AS PARSING? AND: YES, THAT'S A COMMON ENGINEERING  
14 TERM. SO PID FILTERING, PID PARSING, THIS IS -- HE IS RIGHT  
15 HERE. THIS IS A COMMON ENGINEERING TERM. YOU SEE IT IN THE  
16 MPEG STANDARD. YOU WOULD SEE IT AS A STANDARD TERM.

17 Q AND THIS WAS AT HIS MOST RECENT DEPOSITION IN DECEMBER  
18 2008, CORRECT?

19 A YES, THE ONE THAT I ATTENDED, YES.

20 Q AND DID YOU ACTUALLY SEE THIS USE OF PARSING FOR PID  
21 FILTERING IN THE CODE?

22 A CERTAINLY. AND IF YOU GO TO THE NEXT SLIDE, HERE YOU SEE  
23 A PORTION OF CODE WHERE ACTUALLY PID PARSER IS BEING USED IN  
24 THE VARIABLE NAMES IN THE CODE.

25 Q AND YOU ARE LOOKING AT SLIDE 50 WHICH SHOWS TIVO EXHIBIT

1 3163, RIGHT?

2 A THAT'S CORRECT.

3 Q ALL RIGHT. LET'S TURN TO EXHIBITS 3277 AND 3278 WHICH  
4 ARE SHOWN TOGETHER, THE COVER PAGES AT LEAST ON SLIDE 51.  
5 WHAT ARE THESE?

6 A SO HERE YOU HAVE TWO VERSIONS OF A DESIGN DOCUMENT  
7 RELATING TO THIS ISSUE OF INDEXING, AND THEY ARE DATED SHORTLY  
8 AFTER THE TRIAL ABOUT A MONTH APART, JUNE -- ON THE LEFT YOU  
9 HAVE ONE DATED JUNE 13<sup>TH</sup>, 2006, AND ON THE RIGHT YOU HAVE ONE  
10 DATED JULY 28<sup>TH</sup>, 2006. AND I JUST NOTE AT THE BOTTOM JUST, I  
11 AM SURE WE ALL REMEMBER IT, BUT THAT THE TRIAL WAS IN APRIL OF  
12 2006.

13 Q IF YOU LOOK AT THE TITLES OF THE DOCUMENTS AND THEIR  
14 RESPECTIVE DATES, WHAT DO THEY SUGGEST TO YOU AS TO WHAT  
15 ECHOSTAR'S INTERNAL BELIEF IS AS TO WHETHER THEIR PRODUCTS  
16 PARSE?

17 A SO WE HAVE ALREADY -- IN FACT IF YOU LOOK AT NOT JUST THE  
18 CODE BUT I MENTIONED THOSE THOUSANDS OF PAGES OF DOCUMENTS, I  
19 MEAN, PARSING IS USED ALL OVER THE PLACE. AND YOU SEE THAT IN  
20 -- YOU SEE IT IN THE TITLE. OF COURSE, INDEXLESS, YOU'VE  
21 ALREADY SEEN THAT THERE IS AN INDEX, BUT THERE SEEMS TO BE A  
22 NAMING THING HERE WHERE NAMES ARE BEING CHANGED, ALTHOUGH THE  
23 UNDERLYING MATERIAL IS NOT. AND SO THERE'S BEEN A CHANGE  
24 WHERE THE NAME PARSING HAS BEEN REMOVED FROM THE TITLE AND  
25 INSTEAD THIS BRUTE-FORCE HAS BEEN PUT IN THE TITLE. AND AS

1 WE'LL SEE, THE PRODUCT IS ANYTHING BUT BRUTE-FORCE, BUT THE  
2 POINT BEING MADE HERE REALLY IS THAT PARSING HAS DISAPPEARED  
3 IN A -- MERELY IN A NAMING WAY IN THE TITLE OF THE DOCUMENT.

4 Q LET'S LOOK INSIDE THE DOCUMENT. IF WE COULD GO TO THE  
5 ACTUAL DOCUMENT OR THE DOCUMENTS. THAT'S GOOD. OKAY. LET'S  
6 BLOW UP THE INTRODUCTIONS. THE TOP ONE IS FROM THE EARLIER  
7 DOCUMENT 3277. THE BOTTOM ONE IS FROM THE LATER DOCUMENT,  
8 TIVO EXHIBIT 3278. WHAT DO THEY SHOW?

9 A THAT'S CORRECT. YOU HAVE THE UNDERLYING -- YOU HAVE THE  
10 LEFT, THE EARLIER ON THE LEFT, THE LATER ON THE RIGHT, AND  
11 SINCE THEY DIDN'T FIT I HAVE NOW GOT ABOVE AND BELOW. THE TOP  
12 IS THE EARLIER. THE BLOWOUT ON THE TOP IS THE EARLIER AND THE  
13 BLOWOUT ON THE BOTTOM IS THE BLOWOUT FROM THE LEFT -- FROM THE  
14 RIGHT SIDE.

15 Q AND DO THEY DELETE THE PHRASE PARSED AND THE ASSOCIATED  
16 WORDS?

17 A THAT'S CORRECT. SO ORIGINALLY YOU HAD TO SEE THE TITLE,  
18 RIGHT, AND THEN THERE WAS AN INTRODUCTION TALKING ABOUT WHAT  
19 THIS DOCUMENT IS ABOUT. AND NOT THAT WE ARE CHANGING THE  
20 MATERIAL BUT THE NAMING IS BEING REMOVED, THE WORD PARSING OR  
21 PARSED. PARSED AND PARSING BEING REMOVED FROM THE  
22 INTRODUCTION.

23 Q LET'S GO TO PAGES 11 AND 10 IN THE RESPECTIVE DOCUMENTS,  
24 AND LET'S BLOW UP SECTION FIVE. AGAIN, TOP SHOWS THE EARLIER  
25 DOCUMENT, THE BOTTOM THE LATER DOCUMENT. WHAT DOES THAT

1 INDICATE?

2 A SO THEY ARE PRETTY MUCH THE SAME THING. YOU SEE THIS  
3 CONSISTENTLY, RIGHT. GOING THROUGH, WELL, SOMEHOW  
4 CONSISTENTLY BETWEEN THE VERSION A MONTH EARLIER AND THE  
5 VERSION NOW, PARSING IS REMOVED AS THE WAY OF DESCRIBING --  
6 THE TERM PARSING IS REMOVED AS A WAY OF DESCRIBING WHAT'S  
7 GOING ON.

8 Q LET'S GO BACK TO OUR SLIDES, SLIDE 51 WHERE YOU LEFT OFF.  
9 AND WE SPOKE ABOUT THE TITLE WHERE THE NAME CHANGED FROM  
10 PARSING TO BRUTE-FORCE. LET'S TAKE A LOOK ACTUALLY AT EXHIBIT  
11 3170 WHICH APPEARS ON THE NEXT SLIDE. DID ECHOSTAR ACTUALLY  
12 BELIEVE THAT THEY WERE GOING TO A BRUTE-FORCE, A PURE BRUTE-  
13 FORCE SYSTEM?

14 A NO. AND I THINK AGAIN THIS IS MERELY EXEMPLARY. YOU SEE  
15 A LOT OF DISCUSSION ABOUT WHAT THE PRODUCT IS REALLY DOING IN  
16 THEIR OWN EMAILS AND THINGS, AND OF COURSE YOU SEE IT IN THE  
17 CODE. IT'S FAR FROM BRUTE-FORCE. AND HERE YOU EVEN HAVE  
18 ANOTHER EXAMPLE OF A NAME THAT NOW THEIR OWN ENGINEERS ARE  
19 DISAGREEING WITH. WE SAW THAT BEFORE WITH INDEX, RIGHT? THE  
20 ENGINEER SAID YOU MADE AN ERROR. THERE IS AN INDEX, BUT THEY  
21 CALL IT INDEXLESS. WELL, HERE THEY CALL IT BRUTE-FORCE, AND  
22 YOU SEE AN EXAMPLE OF AN ENGINEER SAYING THAT BRUTE-FORCE  
23 WON'T WORK. AND WE'LL SEE IN FACT WHAT THEY DO IS ANYTHING  
24 BUT BRUTE-FORCE. THEY ARE ATTEMPTING TO AVOID THAT.

25 Q IN ANY EVENT, DO ANY OF THESE CHANGES, WHETHER THEY

1 BELIEVE THEM OR NOT, HAVE ANYTHING TO DO WITH THE CLAIMS AT  
2 ISSUE HERE?

3 A SO AGAIN YOU HAVE TO BE CAREFUL, RIGHT? I MEAN,  
4 OBVIOUSLY WE ARE TALKING ABOUT ALL THESE THINGS, BUT AGAIN  
5 LET'S REMEMBER WHERE WE ARE GOING. INDEXING ISN'T EVEN IN  
6 CLAIM 31.

7 Q SO LET'S SHOW THE LIMITATIONS AT ISSUE IN THE NEXT SLIDE,  
8 SLIDE 53. DR. STORER, DOES ECHOSTAR'S CURRENT SOFTWARE  
9 IMPLEMENTATION MAKE ECHOSTAR'S PRODUCTS MORE THAN COLORABLY  
10 DIFFERENT FROM THE INFRINGING PRODUCTS AT TRIAL WITH RESPECT  
11 TO THE PARSING LIMITATION IN CLAIMS 31 AND 61?

12 A ABSOLUTELY NOT.

13 Q DO ECHOSTAR'S PRODUCTS WITH THE CURRENT SOFTWARE  
14 LITERALLY HAVE A PHYSICAL DATA SOURCE THAT ANALYZES THE VIDEO  
15 AND AUDIO FROM THE BROADCAST DATA AS REQUIRED BY CLAIMS 31 AND  
16 61?

17 A CERTAINLY.

18 Q ARE THESE CLAIM LIMITATIONS, DR. STORER, ALSO MET UNDER  
19 THE DOCTRINE OF EQUIVALENTS?

20 A YES.

21 Q WHY IS THAT?

22 A SO I MEAN EVEN IF YOU TRIED TO MAKE THEIR ASSUMPTION THAT  
23 SOMEHOW YOU NEED TO HAVE INDEXING AS PART OF CLAIM 31, IT'S  
24 HARD TO IMAGINE HOW. YOU STILL HAVE -- YOU CAN STILL SATISFY  
25 THE STANDARD THREE-PART TEST, SUBSTANTIALLY THE SAME FUNCTION,

1 SUBSTANTIALLY THE SAME WAY, AND SUBSTANTIALLY THE SAME RESULT.

2 Q BY THE WAY, WAS THERE ARGUMENT AT TRIAL THAT THIS  
3 LIMITATION WAS MET UNDER THE DOCTRINE OF EQUIVALENTS?

4 A I DON'T RECALL THAT THERE WAS THAT ARGUMENT AT TRIAL.

5 Q AND AT TRIAL THE EVIDENCE WAS WITH RESPECT TO LITERAL  
6 INFRINGEMENT FOR THESE LIMITATIONS 31(B) AND 61(B), CORRECT?

7 A I BELIEVE THAT'S CORRECT, YES.

8 Q LET'S LOOK AT THE ENTIRE CLAIM NOW. AND WE JUST TALKED  
9 ABOUT ELEMENT B, A PHYSICAL DATA SOURCE. BY THE WAY, THE  
10 PHYSICAL DATA SOURCE IS WHAT DOES THE PARSING IN THE CLAIMS,  
11 RIGHT?

12 A YES, THAT'S CORRECT.

13 Q OKAY. WITH RESPECT TO THE 50X PRODUCTS, ARE THERE ANY  
14 OTHER CHANGES OR LIMITATIONS IN DISPUTE?

15 A NO. ALL THE OTHER ELEMENTS ARE INFRINGED IN THE SAME WAY  
16 NOW AS THEY WERE BEFORE.

17 Q AND THEY ARE, ALL THE OTHER LIMITATIONS ARE MET FOR THE  
18 SAME REASONS AS AT TRIAL?

19 A THAT'S CORRECT.

20 Q ARE THERE ANY DIFFERENCES BETWEEN THE INFRINGING 50X  
21 PRODUCTS AT TRIAL AND THEIR CURRENT IMPLEMENTATIONS FOR THE  
22 REST OF THE LIMITATIONS IN CLAIM 31?

23 A NO, AS I INDICATE, AND BY THE CHECKMARKS UP HERE, NO,  
24 THEY ARE NOT.

25 Q AND IS ALL THAT WITH RESPECT TO CHANGES AND INFRINGEMENT

1 ALSO TRUE WITH RESPECT TO CLAIM 61 SHOWN ON SLIDE 56?

2 A YES.

3 Q SORRY, SLIDE 55. OKAY. LET'S GO TO THE NEXT SLIDE,  
4 SLIDE 56. LET'S TURN NOW TO THE BUFFERING ISSUE. BRIEFLY,  
5 WHAT IS THIS BUFFERING CHANGE?

6 A SO THERE --

7 Q LET ME ASK A DIFFERENT QUESTION.

8 A OH, OKAY.

9 Q IF YOU COULD BRIEFLY STATE WHAT IS THIS BUFFERING ISSUE  
10 IDENTIFIED BY ECHOSTAR?

11 A OKAY. SO BUFFERS ARE USED IN THE AUTOMATIC FLOW CONTROL;  
12 HOWEVER, THEY IDENTIFY A VERY, VERY PARTICULAR LOW-LEVEL  
13 IMPLEMENTATION DETAIL THAT REALLY HAS NOTHING TO DO WITH  
14 WHAT'S IN THE CLAIMS OR NOTHING THAT'S RELEVANT TO THE CLAIMS  
15 31 AND 61.

16 Q SO LET'S GO TO THE NEXT SLIDE. TO WHICH PRODUCTS DOES  
17 THE BUFFERING ISSUE APPLY?

18 A IT'S -- I MENTIONED THIS EARLIER. IT'S ONLY PERTAINING  
19 TO THE BROADCOM PRODUCTS, THE 522/625. THE WHATEVER -- AGAIN,  
20 I AM PUTTING CHANGES IN QUOTES, BUT WHATEVER CHANGES WERE MADE  
21 IN THIS REGARD ARE ONLY ON THIS RIGHT-HAND SIDE, IF YOU WILL.

22 Q WITH RESPECT TO INDEXING, WE HAVE ALREADY DISCUSSED IT  
23 FOR BOTH 50X AND BROADCOM PRODUCTS, RIGHT?

24 A THAT'S CORRECT. AND THEY'RE SORT OF NOW DIMMED IN THE  
25 BACKGROUND THERE, KIND OF DONE WITH THAT PORTION OF THE

1 SLIDES, IF YOU WILL.

2 Q SO LET'S GO TO THE CLAIM IN SLIDE 58. TO WHAT LIMITATION  
3 -- SORRY. WHAT LIMITATION IS AFFECTED BY THIS BUFFERING  
4 ISSUE, IF ANY?

5 A SO AGAIN IF ANY IS IMPORTANT, BUT THE ISSUE AT DISPUTE  
6 HERE WOULD BE ESSENTIALLY THIS AUTOMATIC FLOW CONTROL ISSUE OF  
7 F, AND AS I MENTIONED EARLIER, BEFORE IT RELATED CLAIM ELEMENT  
8 E POSSIBLY AS WELL.

9 Q WHAT ARGUMENTS DOES ECHOSTAR HAVE WITH RESPECT TO THE  
10 BUFFERING CHANGE THEY SAY THEY HAVE MADE?

11 A SO THIS GIVES SORT OF A HIGH-LEVEL SUMMARY.

12 Q YOU ARE ON SLIDE 59 NOW?

13 A THIS IS SLIDE 59. AND BASICALLY THEY -- IT'S KIND OF A  
14 -- THEY ARE SOMEHOW TRYING TO ARGUE THAT THERE IS -- THERE IS  
15 TWO BUFFERS TO START WITH. AND AS WE'LL SEE, THERE IS -- I  
16 MEAN, I AM NOT TRYING TO MAKE SENSE OF IT, BUT BASICALLY THERE  
17 ARE TEN -- THERE ARE THESE TEN BUFFERS IN BOTH BEFORE AND NOW.  
18 AND SOMEHOW IN THEIR 2-TO-1 ARGUMENT, TEN THEY ARE COUNTING AS  
19 ONE IN SOME WAY. AND I'LL TRY TO EXPLAIN THAT FURTHER.

20 THERE IS ALSO AN ISSUE ABOUT THAT THERE IS NO BLOCKING,  
21 EVEN THOUGH BLOCKING IS NOT REQUIRED BY THE CLAIM. BUT, AND I  
22 POINT OUT HERE IN THE CHART, AND WE'LL TALK ABOUT THIS, THAT  
23 THERE IS BLOCKING ANYWAY BUT IT'S NOT REQUIRED BY THE CLAIM.  
24 AND THERE IS THIS ISSUE OF OVERFLOW REGULATION, AND WE'LL TALK  
25 ABOUT THAT AS WELL.

1 Q OKAY. SO LET'S TURN -- TAKE EACH ONE IN TURN. IS THE  
2 TERM BUFFER -- LET'S LOOK AT THE CLAIM AGAIN. NEXT SLIDE. IS  
3 THE TERM BUFFER ACTUALLY IN THE AUTOMATIC FLOW CONTROL  
4 LIMITATION 31 AND 61F?

5 A NO, IT'S NOT IN THAT LIMITATION. THE TERM DOES APPEAR  
6 EARLIER IN SOME OF THE OTHER ELEMENTS.

7 Q SO IT DOES APPEAR IN LIMITATION E?

8 A THAT'S CORRECT. AND THIS BLOWOUT SIMPLY, YOU KNOW, IT'S  
9 PRETTY EASY TO READ ANYWAY, BUT THIS SHOWS YOU TWO THINGS IN  
10 E: OBTAINING A BUFFER AND THEN LATER ON THIS NOTION OF  
11 FILLING A BUFFER.

12 Q SO FIRST, WHAT DID THE COURT SAY THAT BUFFER IS IN THE  
13 TIVO PATENT? WHAT'S THE CLAIM CONSTRUCTION?

14 A SO AGAIN, THIS IS ANOTHER ONE OF THE TERMS THAT WAS  
15 SPECIFICALLY DEFINED OR CONSTRUED, BUFFER AS MEMORY WHERE DATA  
16 CAN -- WHERE DATA CAN BE TEMPORARILY STORED FOR TRANSFER.

17 Q SO LET'S TAKE A QUICK LOOK AT DEFENDANTS' EXHIBIT 5193,  
18 WHICH A COVER PAGE IS SHOWN ON THE NEXT SLIDE. DOES ECHOSTAR  
19 ACTUALLY CLAIM IN ITS DESIGN DOCUMENT THAT IT HAS ONLY ONE  
20 BUFFER?

21 A YES. SO WE'RE GOING BACK TO NAMES, RIGHT, AND AS WE'LL  
22 SEE SHORTLY, THERE DEFINITELY ARE THIS SET OF TEN BUFFERS, AND  
23 YET THE NAMING TALKS ABOUT SINGLE. SO THIS IS A THEME WE'LL  
24 SEE OVER AND OVER, A NAME THAT'S KIND OF DIFFERENT THAN WHAT'S  
25 ACTUALLY HAPPENING. AND THIS NEXT SLIDE --

1 Q LET'S -- BEFORE WE GO, WE --

2 A ALL RIGHT. OKAY.

3 Q WE HAD A GLITCH HERE. LET'S GO BACK TO SLIDE 64 WHERE WE  
4 WERE. OKAY. SO YOU MENTIONED SOURCE CODE. THAT IS SHOWN ON  
5 EXHIBIT 3161. SO NOW WE CAN GO TO THE NEXT SLIDE THAT'S AN  
6 EXCERPT FROM TRIAL EXHIBIT 3161. WHAT DOES THAT SHOW ABOUT  
7 THE NUMBER OF BUFFERS?

8 A SO AGAIN AS I WAS -- AS I WAS SAYING, WHEN YOU ACTUALLY  
9 LOOK AT THE CODE THERE ARE NO IF'S, ANDS, AND BUTS ABOUT THE  
10 FACT THAT THERE ARE TEN, TEN BUFFERS, TEN BUFFERS BEFORE OR  
11 TEN BUFFERS AT TRIAL, TEN BUFFERS IN THE CODE AS IT IS NOW.  
12 AND THE TITLE OF THAT DOCUMENT ON THE PREVIOUS PAGE -- GO BACK  
13 TO THE PREVIOUS PAGE JUST FOR A SEC -- I MEAN, IT'S JUST THE  
14 TITLE, RIGHT, THEY'RE JUST FOR SOME REASON ARE GOING TO CALL  
15 IT THAT AND THINK THAT SOMEHOW THAT CHANGES REALITY OR  
16 SOMETHING. IT'S JUST THE TITLE. THERE ARE ACTUALLY TEN  
17 BUFFERS.

18 Q SO LET'S LOOK AT THE NEXT SLIDE, SLIDE 66, WHICH IS AN  
19 EXCERPT FROM EXHIBIT 3167. WHAT DOES THAT DOCUMENT SAY ABOUT  
20 BUFFERS --

21 A SO --

22 Q -- IN THE NEW IMPLEMENTATION?

23 A YES. SO WE MENTIONED THAT OBVIOUSLY THE BROADCOM CHIP,  
24 AND THIS IS A MEMO I BELIEVE FROM SOMEONE AT BROADCOM THAT  
25 REFERS TO BUFFERS IN THE PLURAL WHEN REFERRING TO THE NEW,

1 QUOTE, IMPLEMENTATION.

2 Q AND IT SAYS, QUOTE, "THE DRIVER ALLOCATES RESOURCES SUCH  
3 AS BUFFERS," CLOSE QUOTE, RIGHT?

4 A EXACTLY.

5 Q IS THAT ALLOCATION, BY THE WAY, A SOFTWARE OPERATION?

6 A SO, YES, THERE'S THE DRIVER -- THERE'S DRIVER -- SOFTWARE  
7 DRIVER CODE THAT'S BEING DISCUSSED HERE.

8 Q WHERE IN ECHOSTAR'S BOXES ARE THESE BUFFERS?

9 A SO IF WE GO TO THE NEXT SLIDE, HERE AGAIN IS OUR  
10 PHOTOGRAPH OF THE BOX OPENED UP. AND AGAIN IT'S A LITTLE HARD  
11 TO SEE, BUT WE CAN BLOW IT UP HERE. THERE IS ACTUAL RAM  
12 MEMORY AND THE BUFFERS ARE STORED IN A PORTION OF THAT MEMORY.

13 Q HAS THAT RAM CHIP CHANGED SINCE TRIAL?

14 A NO. OF COURSE AS WE'VE SAID -- AS I SAID BEFORE, THE  
15 BOXES IN THE FIELD HAVE NOT CHANGED, THE HARDWARE HAS NOT  
16 CHANGED, AND, IN PARTICULAR, THAT MEMORY HAS NOT CHANGED.

17 Q BEFORE WE GO ON, DR. STORER, WHAT IS THE PURPOSE IN  
18 GENERAL OF THESE BUFFERS IN THE PRODUCTS?

19 A SO, I MEAN IN GENERAL AND WE -- LET'S -- THE BIG PICTURE,  
20 RIGHT, IS WE WANT TO HAVE THAT WHETHER IT'S MY DAUGHTER'S  
21 HANNAH MONTANA, OR DISNEY CHANNEL, OR WHETHER IT'S A NEWS  
22 CHANNEL I AM WATCHING, WE WANT TO GET IT DOWN FROM THE  
23 SATELLITE AND ONTO THE HARD DRIVE. AND, YOU KNOW, AS DATA,  
24 IT'S COMING DOWN FROM THE SATELLITE, IT'S GOING ONTO THE HARD  
25 DRIVE AND YOU WANT TO HAVE SOME KIND OF ELASTICITY, IF YOU

1 WILL, SOME KIND OF HEAD ROOM THAT ALLOWS YOU TO KIND OF ADAPT  
2 TO SLIGHTLY CHANGING CONDITIONS IN TERMS OF WHEN THE HARD  
3 DRIVE IS READY TO BE WRITTEN ON AND HOW FAST THINGS ARE AT  
4 THAT MOMENT COMING DOWN FROM THE SATELLITE, AND THE BUFFERS  
5 ARE GIVING YOU THIS ELASTICITY, IF YOU WILL. WE'LL SEE THAT  
6 MORE IN A FEW SLIDES.

7 Q HOW ARE THE BUFFERS ARRANGED IN THE ECHOSTAR PRODUCTS?

8 A SO IF WE GO TO THE NEXT SLIDE HERE, SO IN -- THIS IS  
9 SHOWING A PICTURE OF TEN BUFFERS. OKAY, IN BOTH THE PRODUCTS  
10 AT TRIAL AND THE PRODUCTS NOW, THERE ARE TEN BUFFERS EACH OF  
11 SIZE APPROXIMATELY 140,000 BYTES EACH. OKAY, AND YOU SEE THEM  
12 HERE NUMBERED 1 THROUGH TEN IN THIS PORTION OF THE MEMORY ON  
13 THIS RAM CHIP WE JUST SAW IN THE PREVIOUS SLIDE.

14 Q SO, BY THE WAY, WE ARE ON SLIDE 68. CAN YOU PLEASE  
15 EXPLAIN IN MORE DETAIL, DR. STORER, HOW THE BUFFERS ARE  
16 MANAGED IN THE BROADCOM PRODUCTS?

17 A SO I BROUGHT THE EASEL BECAUSE I THOUGHT IT MIGHT BE  
18 EASIER TO KIND OF WALK THROUGH IT A LITTLE BIT, IF IT'S OKAY  
19 THAT I GET UP AND USE THE EASEL. OKAY.

20 (WITNESS AT EASEL)

21 Q YOU ARE GOING TO HAVE TO KEEP YOUR VOICE UP, DR. STORER.

22 THE COURT: WELL, WE HAVE A HAND MIC THAT MIGHT BE OF  
23 HELP. WHERE IS THAT?

24 A OKAY. IS THIS PRETTY GOOD? I'LL HAVE TO TRY TO HOLD  
25 MARKERS AND THE MIC AT THE SAME TIME, OR COULD PEOPLE HEAR ME

1 OKAY LIKE THIS?

2 THE COURT: MRS. CRAWFORD, CAN YOU HEAR?

3 COURT REPORTER: IT DOESN'T GO INTO THE SOUND SYSTEM  
4 WELL.

5 A OKAY. I'LL GIVE IT A SHOT.

6 THE COURT: YOU ARE WELCOME TO COME AROUND, IF YOU  
7 LIKE.

8 MS. KREVANS: I CAN SEE FROM HERE, YOUR HONOR, IF I  
9 STAND UP.

10 THE COURT: THAT'S FINE.

11 A OKAY. SO LET'S JUST PUT ONTO THE EASEL THE BASIC  
12 SCENARIO WE HAVE UP THERE OF TEN BUFFERS. AND REMEMBER BEFORE  
13 WE SAID THE GOAL, RIGHT, IS TO GET ALL THE VIDEO FROM THE  
14 SATELLITE TO THE HARD DRIVE. SO LET'S PUT THE DATA, I DON'T  
15 KNOW, THE DATA COMING DOWN FROM THE SATELLITE HERE. AND THIS  
16 FIGURE SHOWS THIS THING CALLED W, WHICH IS THE POSITION OF THE  
17 WRITING OF WHERE THE DATA IS COMING IN FROM THE SATELLITE.  
18 AND HERE IT'S ON POSITION FIVE. THE DATA IS COMING IN FROM  
19 THE SATELLITE AND GOING INTO A PARTICULAR ONE OF THESE  
20 BUFFERS. AGAIN, THERE ARE TEN OF THEM. AND AGAIN, AT TRIAL  
21 AND NOW THERE ARE ABOUT 140,000 BYTES EACH. OKAY.

22 AND SO THE DATA COMES DOWN FROM THE SATELLITE, AND AT  
23 THIS MOMENT IN TIME THE DATA THAT'S COMING DOWN IS BEING  
24 PLACED IN BUFFER FIVE IN THE CASE OF THE FIGURE THAT'S UP  
25 THERE. AND SIMILARLY, WE HAVE -- NOW ALREADY HAVE DATA IN

1 BUFFERS TWO, THREE, AND FOUR, AND I AM GOING TO INDICATE THAT  
2 HERE WITH A LITTLE BLUE HERE. OKAY. SO THERE IS ALREADY --  
3 THERE IS ALREADY DATA IN BUFFERS TWO, THREE, AND FOUR. AND  
4 THIS R POINTER IS CURRENTLY THE PLACE WHERE DATA IS BEING READ  
5 OUT OF THE BUFFERS AND BEING PLACED INTO THE HARD DRIVE.

6 Q DR. STORER, WHAT DO YOU MEAN BY READ OUT?

7 A OKAY. SO THERE'S -- THESE ARE ACTUAL LOCATIONS IN  
8 MEMORY. SO THERE IS TEN BUFFERS, EACH OF THEM, LET'S SAY,  
9 140,000K, AND THIS DATA HAS TO ACTUALLY BE COPIED FROM HERE  
10 DOWN TO SOME PLACE ON THE HARD DRIVE FOR STORAGE SO THAT YOU  
11 COULD, FOR EXAMPLE, PLAY IT BACK LATER OR EVEN IT MIGHT BE  
12 DATA FROM THE LAST HALF HOUR WHERE YOU WANT TO DO SOME  
13 VIRTUAL. YOU WANT TO PAUSE IT AND GO TO THE FRONT DOOR TO  
14 ANSWER THE DOOR AND THEN COME BACK AND START PLAYING FROM THAT  
15 POINT ONWARD, THINGS LIKE THAT. SO YOU WANT TO BE SAVING THE  
16 DATA FROM THE SATELLITE TO THE HARD DRIVE.

17 AND IN THIS PARTICULAR CASE, IN THIS EXAMPLE THAT WE ARE  
18 STARTING WITH, THERE IS SOME DATA NOW THAT IS COMING IN FROM  
19 THE SATELLITE. THERE IS SOME DATA THAT IS CURRENTLY BEING  
20 DEPOSITED, REMOVED AND DEPOSITED, IF YOU WILL, ONTO THE HARD  
21 DRIVE, AND THERE IS SOME DATA THAT'S ALREADY COME IN. THIS IS  
22 IN POSITION, IN BUFFERS TWO, IN BUFFERS THREE AND FOUR, WHICH  
23 HAS COME IN, HAS ALREADY BEEN PLACED INTO THESE BUFFERS BUT  
24 HAS YET TO BE WRITTEN TO THE HARD DRIVE. SO THAT'S KIND OF  
25 OUR STARTING SITUATION.

1           AND NOW, THESE THINGS -- THERE'S SOME FLEXIBILITY BECAUSE  
2 THESE THINGS CAN HAPPEN INDEPENDENTLY, IF YOU WILL, A LITTLE  
3 BIT. SO RIGHT HERE, FOR EXAMPLE, MAYBE WE FINISH FILLING UP  
4 THIS BUFFER WITH MY NEW SHOW OR SOMETHING. WELL, OKAY, SO NOW  
5 WHAT HAPPENS IS INSTEAD WE'LL START FILLING THIS ONE. AND WE  
6 MIGHT GET A BUNCH OF DATA QUICKLY BEFORE ANYTHING HAS HAPPENED  
7 OVER HERE AND MAYBE WE'LL START FILLING THIS ONE. AT SOME  
8 POINT, THOUGH, LET'S ASSUME THAT THE PROCESS THAT'S COPYING  
9 THIS DATA TO THE HARD DRIVE IS FINISHED.

10           IN THAT CASE, I'LL JUST TAKE THIS TOP OFF HERE -- IN THAT  
11 CASE, WE'LL NOW CHANGE AND START COPYING THIS DATA TO THE HARD  
12 DRIVE. AND WHAT HAPPENS IS THESE TWO PROCESSES OF COPYING  
13 DATA TO THE HARD DRIVE AND NEW DATA COMING IN ARE GOING TO  
14 KEEP MOVING RIGHT. OKAY, SO EVERY TIME, FOR EXAMPLE, THE DATA  
15 FROM THE SATELLITE COMING IN IS FINISHED WRITING A BUFFER, IT  
16 WILL MOVE TO THE RIGHT AND START FILLING A NEW BUFFER. AND  
17 EVERY TIME THE DATA HAS -- WE FINISHED COPYING A BUFFER TO THE  
18 HARD DRIVE, WE'LL ALSO MOVE RIGHT.

19           AND WE JUST HAVE THIS PROGRESSION FROM LEFT TO RIGHT, THE  
20 READING, THE WRITING OF THE DATA FROM THE SATELLITE INTO A  
21 BUFFER, MOVING RIGHT TO LEFT EVERY TIME A BUFFER IS FULL GOING  
22 ON TO THE NEXT BUFFER, AND THE READING OF DATA EVERY TIME A  
23 BUFFER HAS BEEN FILLED. OH, I FORGOT ACTUALLY TO CROSS THIS  
24 ONE OFF, RIGHT, MOVING TO THE NEXT ONE TO THE RIGHT.

25 Q       DR. STORER, WHAT HAPPENS WHEN YOU GET TO THE END, BUFFER

1 NUMBER TEN?

2 A OKAY. SO -- SO LET'S DO THAT. LET'S ASSUME NOW THAT  
3 WE'VE DONE A LITTLE BIT MORE WORK AND MAYBE WE'VE WRITTEN ALL  
4 THE WAY TO THE END, RIGHT, SO WE ACTUALLY WENT HERE AND DIDN'T  
5 GO THERE, AND FINALLY WE ARE WRITING DATA RIGHT HERE. AND  
6 MAYBE THE READ -- MAYBE IN THAT TIME PERIOD TOO WE'VE ACTUALLY  
7 COPIED ANOTHER BUFFER TO THE HARD DRIVE AND WE ARE NOW AT THE  
8 POINT WHERE --

9 THE COURT: EXCUSE ME.

10 A THAT'S OKAY. I KNOW THE FEELING WELL. I'M FROM BOSTON,  
11 SO YOU GET THE WINTERTIME. WE ARE NOW AT THIS POINT WHERE WE  
12 ARE COPYING BUFFER FIVE TO THE HARD DRIVE, AND NOW WE ARE  
13 WRITING DATA INTO THE VERY LAST HERE BUFFER ON THE LIST,  
14 BUFFER NUMBER TEN. AND LET'S SUPPOSING THAT WE JUST FINISHED,  
15 COMPLETE THAT WRITE, SO WHAT DO WE DO? WELL, ALL WE DO IS THE  
16 NEXT ONE WE GO TO WILL BE BUFFER NUMBER ONE. SO INSTEAD,  
17 WE'LL NOW MOVE OVER AND WE'LL START WRITING OVER HERE.

18 Q DR. STORER, WHEN YOU FINISH GOING TO BUFFER NUMBER TEN,  
19 YOU GO BACK AND START PUTTING DATA INTO BUFFER NUMBER ONE?

20 A THAT'S CORRECT. SO AT THIS POINT IN TIME, DATA IS BEING  
21 COPIED OUT OF FIVE INTO THE HARD DRIVE.

22 MR. IANCU: YOUR HONOR, SHOULD WE TAKE A BREAK?

23 THE COURT: I DON'T THINK IT'S GOING TO HELP.

24 MR. IANCU: OKAY.

25 THE COURT: WE'LL TRY TO PLOW FORWARD. I APOLOGIZE,

1 BUT UNFORTUNATELY I DON'T HAVE A SUBSTITUTE JUDGE.

2 MR. IANCU: I'LL VOLUNTEER.

3 A YOU STOLE MY LINE. SO AT THIS POINT IN TIME THE DATA IN  
4 BUFFERS SIX, SEVEN, EIGHT, NINE, AND TEN HAS YET TO BE COPIED  
5 TO THE HARD DRIVE. AND NOW WE'VE CIRCLED AROUND, IF YOU WILL,  
6 AND THE DATA FROM THE SATELLITE IS GOING INTO ONE. AND THE  
7 POINT HERE IS THIS WILL ALSO HAPPEN WITH THE READING. THE  
8 READING WILL EVENTUALLY GO DOWN THE LINE. IN FACT, WE CAN  
9 DRAW THAT.

10 LET'S SUPPOSING NOW WE HAVE GONE ON FOR A WHILE AND WE'VE  
11 ACTUALLY COPIED ALL OF THESE BUFFERS TO THE HARD DRIVE, AND  
12 NOW WE ARE ACTUALLY COPYING THIS ONE TO THE HARD DRIVE. AND  
13 MAYBE IN THE MEANTIME THE RIGHT POINTER HAS GONE FORWARD AND  
14 NOW IT'S FILLED THIS DATA, IT'S FILLED THIS BUFFER WITH DATA.  
15 THIS ONE, OF COURSE, NOW IS BEING REUSED BECAUSE IT WAS READ  
16 QUITE A WHILE AGO.

17 Q YOU MEAN BUFFER NUMBER ONE IS BEING REUSED?

18 A BUFFER NUMBER ONE HAS BEEN FILLED AND NOW WE ARE REUSING,  
19 I'M SORRY, BUFFER NUMBER TWO.

20 Q AND DOES THIS PROCESS KEEP GOING TO THE RIGHT IN A  
21 CIRCLE?

22 A SO THAT'S WHAT'S HAPPENING NOW. SO WHAT'S HAPPENING IS  
23 THE WRITING IS ALWAYS MOVING TO THE RIGHT IN A CIRCLE AND THE  
24 READING IS ALWAYS MOVING TO THE RIGHT IN A CIRCLE, BUT THE  
25 READING IS CHASING THE WRITE ENDLESSLY HERE, RIGHT? THE

1 READING AND THE WRITE ARE ALL BOTH GOING IN A CIRCLE. EVERY  
2 TIME THE READING GETS TO THE RIGHT END, BOUNCES BACK TO THE  
3 LEFT. EVERY TIME THE WRITING GETS TO THE RIGHT END, BOUNCES  
4 BACK TO THE LEFT TO NUMBER ONE. AND THEY JUST CONSTANTLY  
5 FOLLOW EACH OTHER WHERE THAT DISTANCE BETWEEN THEM, HOW MUCH  
6 DATA HAS BEEN WRITTEN, COME DOWN FROM THE SATELLITE AND PLACED  
7 IN ONE OF THE BUFFERS BUT HAS YET TO GO TO THE HARD DRIVE,  
8 THAT DISTANCE CAN VARY. AND THAT CAN HELP ADAPT TO THE LOCAL  
9 CHANGES AND THE AMOUNT OF DATA COMING DOWN AND THE  
10 AVAILABILITY OF THE HARD DRIVE AND THINGS LIKE THAT.

11 Q DR. STORER, SO IS THIS ARRANGEMENT OFTEN CALLED A  
12 CIRCULAR BUFFER ARRANGEMENT?

13 A EXACTLY. AND THE CIRCULAR JUST COMES FROM THE FACT THAT  
14 YOU ARE CONSTANTLY GOING AROUND IN THIS, IF YOU WILL, IN THIS  
15 DIAGRAM IN THIS CLOCKWISE FASHION.

16 Q IS THIS BUFFER ARRANGEMENT FUNCTIONALLY THE SAME NOW AS  
17 IT WAS AT TRIAL IN THE BROADCOM PRODUCTS?

18 A THAT'S CORRECT. SO AS I MENTIONED BEFORE, BOTH NOW AND  
19 AT TRIAL THERE ARE TEN OF THESE THAT PARTICIPATED IN THIS  
20 CIRCULAR ARRANGEMENT, EACH OF THEM ABOUT SIZE 140,000 BYTES.

21 Q SO DOES ECHOSTAR HAVE SOFTWARE THAT MANAGES THESE BUFFERS  
22 AND THE READS AND THE WRITES IN THE CIRCLE?

23 A THAT'S CORRECT. SO WHEN YOU -- WHEN YOU ACTUALLY LOOK AT  
24 THE SOFTWARE YOU SEE THE CODE THAT ACTUALLY MANAGES THIS. AND  
25 THIS IS -- THIS WHOLE PROCESS AGAIN OF GETTING DATA FROM THE

1 SATELLITE TO THE HARD DRIVE VIA WRITING, DEPOSITING DATA INTO  
2 AND TAKING DATA OUT OF ONE OF THESE BUFFERS IN THIS CIRCULAR  
3 ARRANGEMENT.

4 Q IN THE ECHOSTAR CODE, WHAT ARE THESE READ AND WRITE  
5 POINTERS CALLED, GENERALLY SPEAKING, GENERAL TERMINOLOGY?

6 A SO, OKAY, SO THESE ARE -- THESE ACTUAL TEN POSITIONS IN  
7 MEMORY ARE ACTUALLY DESCRIBED BY THINGS CALLED DESCRIPTORS.  
8 AND DESCRIPTORS, THERE'S TEN OF THEM IN BOTH PRODUCTS, AND  
9 DESCRIPTORS BASICALLY TELL THE COMPUTER, THE COMPUTING DEVICE  
10 EXACTLY WHERE THIS MEMORY IS AND THINGS ABOUT IT. AND  
11 DESCRIPTOR COUNTS ARE WHAT ARE USED AS A WAY OF KEEPING TRACK  
12 OF, OH, I AM READING HERE, I AM WRITING THERE, THERE IS THIS  
13 MUCH SPACE IN BETWEEN, AND THAT SORT OF THING. SO, IN BOTH  
14 PRODUCTS THERE IS TEN DESCRIPTORS, AND IN BOTH PRODUCTS THERE  
15 ARE DESCRIPTOR COUNTS. I'LL PUT THIS -- THANKS.

16 (WITNESS RETURNING TO SEAT)

17 Q DR. STORER, DID YOU PREPARE AN ANIMATION THAT REVIEWS  
18 WHAT YOU JUST DESCRIBED?

19 A YEAH, BASICALLY THIS WHOLE -- THIS WHOLE EASEL NOW  
20 HOPEFULLY SETS US UP TO HAVE A -- TO WATCH THE ANIMATION AND  
21 GET SOMETHING FROM IT. SO IF WE COULD GO AHEAD AND RUN IT TO,  
22 SO TO SPEAK. NO.

23 Q THE PREVIOUS ONE.

24 A THE PREVIOUS ONE. THIS IS ALSO A GOOD ONE, BUT MAYBE IF  
25 WE COULD JUST RUN THIS ONE FIRST AND THEN I'LL GO THROUGH THE

1 WATER ANALOGY. SO THIS, THIS IS SHOWING HOW -- LET'S STOP FOR  
2 A SEC -- GREAT. SO IT'S SHOWED -- JUST NOW YOU SAW THE  
3 READING OF, THE COPYING OF DATA FROM A BUFFER TO THE HARD  
4 DRIVE PROGRESS FORWARD TO THE RIGHT. AND LET'S RUN THE  
5 ANIMATION SOME MORE.

6 Q BEFORE YOU GO ON, DR. STORER --

7 A OKAY.

8 Q -- THE ARROW AT THE TOP OF THE R THAT SAYS READ --

9 A RIGHT.

10 Q -- IS THAT THE COPYING THAT YOU JUST MENTIONED FROM THE  
11 BUFFER TO THE HARD DRIVE?

12 A EXACTLY. SO DATA IS FLOWING OUT OF -- AT THIS POINT IN  
13 TIME WHERE WE STOP THE ANIMATION, DATA IS BEING COPIED VIA THE  
14 R POINTER FROM FOUR INTO THE HARD DRIVE.

15 Q AND THE W AT THE ARROW AT THE BOTTOM IS WHERE THE DATA IS  
16 PLACED INTO THE BUFFER FROM THE PHYSICAL DATA SOURCE?

17 A SO AT THIS POINT WHERE WE STOP THE ANIMATION, DATA IS  
18 COMING IN FROM THE SATELLITE INDICATED BY THE W AND BEING  
19 PLACED INTO, IN THIS CASE, BUFFER NUMBER EIGHT.

20 Q OKAY.

21 A SO NOW GO AHEAD AND RUN IT SOME MORE. YOU KNOW, THE  
22 ANTICIPATION IS KILLING US, SO LET'S JUST DO IT. ALL RIGHT.  
23 AND NOW WE SEE HOW IN FACT, THIS IS WHAT I WAS TALKING ABOUT  
24 UP THERE, THE THINGS, THEY ARE CHASING EACH OTHER, RIGHT? AND  
25 EVERY TIME ONE OF THEM GETS TO NUMBER TEN, IT GOES BACK TO

1 POSITION ONE.

2 Q DR. STORER, DID YOU ALSO PREPARE AN ANIMATION, PERHAPS  
3 WITH AN ANALOGY, THAT DESCRIBES THIS CONCEPT?

4 A SO, YES, I DID. IF YOU GO TO THE NEXT SLIDE, AND JUST IF  
5 WE CAN FLIP FORWARD WITHOUT RUNNING IT YET. OKAY, I GUESS WE  
6 ARE GOING TO RUN IT. BUT I WAS GOING TO EXPLAIN THAT OFTEN  
7 PEOPLE USE WATER ANALOGIES, AND WE SAW WATER ANALOGIES AT THE  
8 FIRST TRIAL. AND IF YOU JUST THINK OF THESE CUPS AS BEING  
9 NUMBERED ONE THROUGH TEN, RIGHT, THAT'S EXACTLY WHAT WE SAW ON  
10 THE EASEL AND EXACTLY WHAT WE SAW ON THE PREVIOUS ANIMATION.  
11 DATA HERE IS WATER, RIGHT. WE ARE USING WATER AS THE ANALOGY  
12 FOR DATA, AND WE ARE USING LITTLE CUPS AS THE ANALOGY FOR THE  
13 BUFFERS. SO THIS WOULD BE TEN OF THEM, EACH ABOUT 140,000  
14 BYTES. AND WE ARE USING THE BUCKET AS AN ANALOGY FOR THE HARD  
15 DRIVE. AND BASICALLY DATA COMES IN AND KEEPS FILLING THE CUPS  
16 SEQUENTIALLY, BUT IT'S ALWAYS GOING RIGHT TO LEFT, OR IN THIS  
17 CASE IT'S GOING TO BE COUNTER CLOCKWISE. DATA IS ALWAYS BEING  
18 FILLED COUNTER CLOCKWISE, AND THE CUPS ARE ALWAYS BEING  
19 EMPTIED COUNTER CLOCKWISE. RUN IT ONE MORE TIME JUST FOR THE  
20 SAKE OF IT, RIGHT, WE'VE GOT THE NICE GRAPHIC.

21 AND REALLY THIS IS JUST TRYING TO GIVE SORT OF A NICE  
22 PICTURE USING THE COMMON WATER ANALOGY OF THIS CIRCULAR  
23 ARRANGEMENT WE SAW ON THE EASEL AND IN THE PREVIOUS ANIMATION  
24 AS WELL.

25 Q AND DO YOU SEE FLOW CONTROL AT THE TOP IN THE CIRCULAR

1 CUP ARRANGEMENT IN THIS ANALOGY?

2 A SO A GREAT THING TO POINT OUT HERE, AND THIS I COULD HAVE  
3 --

4 MS. KREVANS: YOUR HONOR, THIS IS BEYOND THE SCOPE OF  
5 WHAT HE DISCLOSED IN THE EXPERT'S REPORT.

6 MR. IANCU: YOUR HONOR, THIS IS JUST AN ANALOGY  
7 SUMMARIZING THE OPINION.

8 MS. KREVANS: HE ASKED HIM IF HE SAW FLOW CONTROL IN  
9 THIS ANIMATION.

10 THE COURT: I WILL OVERRULE IT.

11 A YEAH, I COULD HAVE ALSO DONE THIS UP AT THE EASEL, BUT  
12 ONE THING YOU REALIZE, AND MAYBE THE ANALOGY IS NICE FOR THIS.  
13 YOU SEE THAT MECHANICAL PIPE SPINNING, YOU KNOW, GOING AROUND,  
14 RIGHT, IT NEVER GOES BACKWARDS. AND THAT'S -- AND SAME THING  
15 WITH THE PIPE ON THE BOTTOM THAT'S DRAINING, IT NEVER GOES  
16 BACKWARDS EITHER. THEY ALL, THEY BOTH GO COUNTER CLOCKWISE,  
17 RIGHT. AND THAT'S EXACTLY ANALOGOUS TO THE LEFT TO RIGHT  
18 THING WE SHOW HERE ON THE EASEL. YOU NEVER -- IT NEVER IS THE  
19 CASE THAT WHEN YOU'RE FILLING A BUFFER YOU WOULD BACK UP AND  
20 FILL THE BUFFER JUST -- THAT YOU JUST FILLED. YOU ALWAYS MOVE  
21 ON TO THE RIGHT. YOU NEVER TRY TO GO BACKWARDS AND DUMP MORE  
22 WATER IN THIS ANALOGY INTO THE CUP YOU JUST FILLED.

23 MS. KREVANS: YOUR HONOR, I'D LIKE TO RENEW MY  
24 OBJECTION. I WAS NOT MAKING MYSELF CLEAR. IT WAS NOT TO THE  
25 FACT THAT HE WAS TALKING ABOUT AN ANIMATION THAT WAS NOT IN

1 HIS REPORT. HIS OPINION ABOUT CIRCULAR BUFFERS SOMEHOW BEING  
2 FLOW CONTROL IS NOT IN DR. STORER'S REPORT, WHETHER HE IS  
3 TALKING ABOUT IT WITH OR WITHOUT THE ANIMATION.

4 THE COURT: WHAT'S YOUR RESPONSE?

5 MR. IANCU: FIRST OF ALL, I DISAGREE WITH THE  
6 CHARACTERIZATION OF HIS OPINION BY MS. KREVANS. THE REPORT IS  
7 FULL ABOUT --

8 THE COURT: I TELL YOU WHAT, WE ARE GOING TO TAKE OUR  
9 NOON RECESS AND WHEN YOU START BACK UP YOU CAN LET THE GOOD  
10 DOCTOR SHOW WHERE HE HAS ADDRESSED THIS ISSUE IN HIS REPORT.

11 MR. IANCU: WE ARE ACTUALLY DONE WITH THIS  
12 ANIMATION --

13 THE COURT: WELL --

14 MR. IANCU: -- AND WE ARE GOING TO MOVE ON.

15 THE COURT: -- WE ARE GOING TO TAKE OUR NOON RECESS,  
16 NEVERTHELESS. WE WILL BE IN RECESS UNTIL, OH, 1:20.

17 (RECESS AT 11:55 A.M., UNTIL 1:20 P.M., OPEN COURT)

18 THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE.

19 DIRECT EXAMINATION CONTINUES

20 BY MR. IANCU:

21 Q GO AHEAD AND PUT UP SLIDE 12 FROM ECHOSTAR'S OPENING.

22 DR. STORER, FIRST OF ALL, WELCOME BACK. WERE YOU IN THE  
23 COURTROOM WHEN ECHOSTAR'S COUNSEL SHOWED THIS SLIDE, WHICH IS  
24 SLIDE 12, IN THEIR OPENING THIS MORNING?

25 A YES, I WAS.

1 Q DR. STORER, IS THIS SLIDE AN ACCURATE REPRESENTATION OF  
2 TIVO'S POSITION WITH RESPECT TO AUTOMATIC FLOW CONTROL  
3 CURRENTLY?

4 A NO, NOT AT ALL. REMEMBER, WE TALKED ABOUT THIS WHOLE --  
5 THE GOAL AT HAND OF COURSE IS TO GET THE DATA FROM THE  
6 SATELLITE DOWN TO THE HARD DRIVE. AND THERE IS A LOT THAT'S  
7 INVOLVED WITH FLOW CONTROL. WE HAVE ALREADY TALKED ABOUT THIS  
8 WHOLE MAINTENANCE OF THIS CIRCULAR ARRANGEMENT WE DISCUSSED  
9 EARLIER ON. THERE IS ALSO OTHER THINGS WE HAVEN'T TALKED  
10 ABOUT INCLUDING MONITORING OF AN EXCEPTIONAL OVERFLOW  
11 CONDITION, WHICH I WILL GET TO SHORTLY. AND THIS, IN ONE OF  
12 THE THINGS WE SAW, ONE OF THE DETAILS WE SAW EARLIER ON WAS  
13 THE NOTION THAT WHEN YOU FILL A BUFFER, RIGHT, AS SOON AS THAT  
14 BUFFER IS FULL, YOU GO ON AND START FILLING THE NEXT BUFFER.  
15 AND YOU DON'T EVER TRY TO BACK UP AND PUT MORE WATER INTO A  
16 FULL BUFFER.

17 THE COURT: YES?

18 MS. KREVANS: YOUR HONOR, BEFORE THE LUNCH BREAK YOU  
19 DIRECTED COUNSEL TO TRY TO FIND A PLACE IN THE REPORT WHERE  
20 THERE WAS A DISCLOSURE OF ANY FLOW CONTROL OPINIONS ABOUT  
21 CIRCULAR BUFFERS. I UNDERSTOOD THAT WAS GOING TO HAPPEN  
22 BEFORE ANY ADDITIONAL TESTIMONY ABOUT THOSE BUFFERS WAS  
23 ELICITED, AND THAT HAS NOT HAPPENED.

24 THE COURT: CAN YOUR EXPERT POINT TO HIS REPORT?

25 MR. IANCU: SURE.

1 MR. IANCU: DR. STORER'S REPORT FROM DECEMBER 2008,  
2 PARAGRAPH 156 WITHIN THE AUTOMATIC FLOW CONTROL LIMITATION  
3 SAYS, FOR EXAMPLE, EVEN IF THIS LIMITATION REQUIRED USING TWO  
4 BUFFERS INSTEAD OF ONE, USING ONE CIRCULAR BUFFER IS AT LEAST  
5 EQUIVALENT TO THIS LIMITATION.

6 PARAGRAPH 154 TALKS ABOUT ECHOSTAR, SORRY, THAT ECHOSTAR  
7 HAS TEN LOGICALLY SEPARATE BUFFERS ARRANGED IN A CIRCULAR  
8 FORMATION. LATER IN THAT PARAGRAPH, ALSO 154: EVEN IF WE  
9 CHARACTERIZE THE TEN BUFFERS AS A SINGLE CIRCULAR BUFFER, AND  
10 GOES ON. THESE ARE JUST SOME EXAMPLES.

11 FURTHERMORE, THIS ISSUE WAS FULLY BEFORE ECHOSTAR DURING  
12 THE DEPOSITION. THERE WAS EXTENSIVE QUESTIONING ON THIS ISSUE  
13 OF MR. STORER -- DR. STORER. JUST ONE EXAMPLE, VOLUME ONE OF  
14 HIS DEPOSITION, PAGE 186, QUESTION: WHAT'S YOUR UNDERSTANDING  
15 OF THE RELATIONSHIP, IF ANY, BETWEEN THE CODE THAT READS OUT  
16 OF THE SET OF CIRCULAR BUFFERS AND THE CODE THAT CONTROLS THE  
17 DMA AND SO FORTH? PART OF THAT ANSWER AT PAGE 186 SAYS,  
18 QUOTE: YOU OBVIOUSLY MOVE AROUND IN A CIRCLE. YOU CAN'T GO  
19 LEFT. NO WAY. YOU ARE GOING TO WRITE TO THE GUY YOU JUST  
20 WROTE TO, CLOSE QUOTE, WHICH IS ALMOST VERBATIM WHAT DR.  
21 STORER JUST SAID TODAY AND JUST AS HIS PREVIOUS ANSWER. I  
22 COULD GO ON.

23 MS. KREVANS: AND, YOUR HONOR, THAT OPINION WHICH DR.  
24 STORER CAME OUT WITH AT HIS DEPOSITION FOR THE FIRST TIME WAS  
25 NOT IN HIS REPORT AND IT'S NOT IN ANY OF THE PARAGRAPHS HERE

1 EITHER.

2 THE COURT: WELL, YOU KNOW, MY ATTITUDE HAS ALWAYS  
3 BEEN IF YOU ARE GIVEN FAIR NOTICE IN THE REPORT AND THE  
4 DEPOSITION, I AM GOING TO ALLOW THE TESTIMONY. NOW, YOU KNOW,  
5 THIS IS LIKE GOING BACK TO APRIL OF 2006, ALL THESE SAME  
6 ARGUMENTS. I HAVEN'T SEEN THE REPORT, OBVIOUSLY HAVEN'T SEEN  
7 THE DEPOSITION. I AM GOING TO NOTE YOUR OBJECTION, OVERRULE  
8 IT. IT APPEARS WE ARE GOING TO HAVE TO HAVE COPIES OF THE  
9 REPORTS FOR AT LEAST THE LIMITED PURPOSE OF WORKING THROUGH  
10 SOME OF THESE ISSUES JUST LIKE IN THE TRIAL THAT, I MIGHT ADD,  
11 POST-TRIAL NO ONE EVER RAISED AS AN ISSUE. I AM NOT GOING TO  
12 SIT HERE AND STOP THIS HEARING TO READ THE REPORT. SO I WILL  
13 NOTE YOUR OBJECTION, AND LIKEWISE, COUNSEL, IF IT'S NOT  
14 COVERED BY THE REPORT, I AM NOT GOING TO CONSIDER IT IN YOUR  
15 FINDINGS OF FACT, CONCLUSIONS OF LAW.

16 SO LET'S GO, AND WE WILL ADDRESS THIS HOUSEKEEPING-WISE  
17 AT THE CONCLUSION OF THE HEARING. BUT YOU ARE WELCOME TO RAISE  
18 YOUR OBJECTION, BUT I AM NOT GOING TO TAKE THE TIME TO READ  
19 HIS EXPERT REPORT AND HIS DEPOSITION TO TRY TO WORK THROUGH  
20 THIS ISSUE.

21 Q (BY MR. IANCU:) DR. STORER, BACK TO ECHOSTAR'S SLIDE 12  
22 FROM THE OPENING THIS MORNING, DO YOU HAVE AN UNDERSTANDING OF  
23 WHY ONE PITCHER LABELED BUFFER IS SHOWING THERE?

24 A SO, YES, THIS IS -- THIS IS ONE BUFFER, RIGHT. AND IT  
25 SHOWS, IN THIS PARTICULAR GRAPHIC WAS TALKING ABOUT FILLING A

1 BUFFER AND EMPTYING A BUFFER. AND THAT'S EXACTLY WHAT WE HAVE  
2 BEEN TALKING ABOUT, THE NOTION OF FILLING AND EMPTYING  
3 BUFFERS. THERE ARE TEN OF THEM IN THE CURRENT, AS THE PRODUCT  
4 AS IT IS NOW. THERE WERE TEN OF THEM BEFORE. AND YOU NEVER  
5 HAD THIS IDEA THAT WHEN YOU -- AFTER YOU FILL A BUFFER YOU  
6 ALWAYS GO ON AND START FILLING THE NEXT BUFFER. YOU DON'T GO  
7 AHEAD AND KEEP FILLING IT ONCE IT'S FULL. YOU MOVE ON TO THE  
8 NEXT BUFFER. SO THIS IS, YOU KNOW, THIS IS ONE ASPECT THAT WE  
9 ACTUALLY WENT THROUGH IN QUITE A BIT OF DETAIL HERE WITH THE  
10 EASEL AND ALSO THE GRAPHIC THAT'S PART OF THIS BIGGER SYSTEM  
11 OF FLOW CONTROL. SO, NO, I DON'T AGREE WITH THIS  
12 CHARACTERIZATION AT ALL.

13 Q ALL RIGHT. LET'S GO BACK TO DR. STORER'S SLIDES, AND WE  
14 CAN BEGIN AT SLIDE 71. SO LET'S LOOK AT THE AUTOMATIC FLOW  
15 CONTROL LIMITATION ITSELF, 31(F) AND SEE HOW ALL THIS RELATES  
16 TO THE ACTUAL CLAIM LIMITATION. FIRST, WHAT WAS THE COURT'S  
17 CONSTRUCTION OF THE TERM AUTOMATIC FLOW CONTROL?

18 A SO IF YOU GO ON TO THE NEXT SLIDE, HOPEFULLY WE'LL HAVE A  
19 BLOWUP OF THAT WHERE AUTOMATIC FLOW CONTROL WAS CONSTRUED AS  
20 SELF-REGULATED.

21 Q NOW, DO YOU UNDERSTAND THAT ECHOSTAR SAYS IT MADE A  
22 CHANGE TO THE BUFFERING SCHEME YOU DESCRIBED BEFORE LUNCH THAT  
23 AFFECTS THIS LIMITATION?

24 A I DO UNDERSTAND THAT, YES.

25 Q SO BEFORE LUNCH YOU EXPLAINED HOW THE PRODUCTS WORK. HOW

1 DID THE BROADCOM PRODUCTS WORK AT TRIAL?

2 A SO IF WE CAN GO ON TO THE NEXT SLIDE.

3 Q YOU ARE ON SLIDE 73 NOW.

4 A SLIDE 73.

5 Q THAT'S THE SLIDE NUMBER. IT'S -- IT'S --

6 A YEAH, BUT I DON'T ACTUALLY SEE THE NUMBER ON HERE, BUT I  
7 THINK THE ONE BEFORE WAS 74 SO IT WILL PROBABLY WORK OUT.

8 Q SEVENTY-TWO.

9 A OKAY. I'LL LET YOU HANDLE THE SLIDE NUMBERS THEN, AND  
10 LET ME MOVE ON TO THE FIGURE. SO HERE WE HAVE THE SAME  
11 FIGURE. BEFORE WE SEE THE SAME SET OF TEN BUFFERS UP THERE.  
12 AGAIN, IN BOTH THE PRODUCTS AT TRIAL AND THE PRODUCTS NOW  
13 ABOUT 140,000 BYTES EACH, AND IDENTICAL SIZE BUFFERS. AND ALL  
14 OF THE STUFF WE TALKED ABOUT BEFORE, THE CIRCLING AROUND, THE  
15 FILLING, THE READ POINTER, THE WRITE POINTER, IN THOSE TEN, NO  
16 DIFFERENCE.

17 THE ONLY DIFFERENCE AT TRIAL WAS THERE WAS AN ADDITIONAL  
18 COPY BUFFER WHICH ALWAYS HELD AN IDENTICAL COPY OF ONE OF THE  
19 TEN. AND EVERY TIME YOU WENT TO WRITE TO THE HARD DRIVE, YOU  
20 WOULD WRITE TO THE COPY, THEN IMMEDIATELY WRITE TO THE HARD  
21 DRIVE. AND THIS WAS SORT OF A PROGRAMMING CONVENIENCE. IT  
22 ALLOWED PROGRAMMERS TO DIVORCE THEMSELVES FROM THE DRIVER  
23 CODE, IF YOU WILL, SO YOU COULD HAVE A NICE CLEAN INTERFACE  
24 AND HAVE THIS COPY AS A CONVENIENCE.

25 SO THE COPY BUFFER, SAME SIZE AS THE TEN, AS ANY ONE OF

1 THE TEN. THERE'S TEN OF SIZE 140K IN THIS CIRCULAR  
2 ARRANGEMENT. IN ADDITION, THERE IS THIS EXTRA 140K COPY  
3 BUFFER. AND WHENEVER YOU WANT TO WRITE TO THE HARD DRIVE, THE  
4 COPY BUFFER WILL MAKE AN EXACT DUPLICATE OF THE APPROPRIATE  
5 ONE OF THE TEN, AND THAT GOES TO THE HARD DRIVE. SO THAT'S --  
6 THAT'S -- THAT'S IT. THAT'S THE ONE, IF YOU WANT TO CALL IT A  
7 DIFFERENCE, BETWEEN THE SOFTWARE AS IT IS NOW AND THE SOFTWARE  
8 AS IT WAS AT TRIAL.

9 Q DOES THIS COPY BUFFER HAVE ANYTHING TO DO WITH THE  
10 CLAIMS?

11 A SO, NO -- RIGHT, I MEAN, THE CLAIMS DON'T EVEN TALK ABOUT  
12 A NUMBER, YOU KNOW, A SPECIFIC NUMBER OF BUFFERS OR SOME  
13 REALLY LOW-LEVEL PROGRAMMING DETAIL THAT YOU ARE FOR A  
14 CONVENIENCE GOING TO MAKE A DUPLICATE AND THEN WRITE IT,  
15 INSTEAD OF JUST WRITING IT, SO, NO.

16 Q YOU SAID THAT IT PROVIDED A PROGRAMMING CONVENIENCE, AN  
17 INTERFACE FOR ENGINEERS. IT'S AN INTERFACE BETWEEN WHAT AND  
18 WHAT, WHAT COMPANIES, FOR EXAMPLE?

19 A WELL, SO WHEN PEOPLE TALK ABOUT DRIVER CODE, THIS IS CODE  
20 THAT'S GENERALLY FROM BROADCOM AND IT TENDS TO BE SORT OF VERY  
21 SPECIFIC TO THE ACTUAL HARDWARE AT HAND. YOU WOULD HAVE  
22 DIFFERENT DRIVER CODE FOR DIFFERENT CHIPS, FOR EXAMPLE. AND  
23 THEN YOU ALSO TALK ABOUT USER CODE, CODE THAT WOULD BE MAINLY  
24 WRITTEN BY ENGINEERS AT ECHOSTAR. AND YOU OF COURSE CAN, YOU  
25 KNOW, PROGRAMMERS CAN INTERMIX AND MAKE CHANGES IN BOTH, BUT

1 IT'S CONVENIENT TO SORT OF LET ONE SET OF PROGRAMMERS WORK  
2 OVER HERE, ONE SET WORK OVER HERE, AND THE COPY BUFFER WAS A  
3 CONVENIENCE TO AID THAT LARGE PROGRAMMING PROJECT.

4 Q HOW DID TIVO EXPLAIN THIS CONCEPT OF AUTOMATIC FLOW  
5 CONTROL AT TRIAL? DO YOU HAVE ANY EXAMPLES?

6 A SO AGAIN, THIS IS MERELY EXEMPLARY. IT'S A FAIRLY SHORT  
7 QUOTE. LET ME JUST READ IT. SO IT SAYS, THIS IS MR. GIBSON  
8 SPEAKING AT TRIAL: THE IDEA IS THAT WHILE YOU ARE READING FROM  
9 A BUFFER YOU ARE NOT TRYING TO WRITE ON TOP OF THE DATA IN THE  
10 BUFFER. SO YOU HAVE TO MAKE SURE THAT WHEN YOU ARE WRITING,  
11 YOU ARE NOT WRITING ON TOP OF THE DATA YOU NEED.

12 Q HOW DOES THIS COMPARE TO WHAT YOU DESCRIBED AT THE EASEL?

13 A SO IT'S SORT OF EXACTLY WHAT WE HAVE BEEN TALKING ABOUT.  
14 YOU -- YOU NOW HAVE COMPLETED FILLING ONE BUFFER AND NOW YOU  
15 MOVE OVER AND YOU GO TO THE NEXT EMPTY SPACE. YOU DON'T TRY  
16 TO BACK UP AND WRITE ON TOP OF SOMETHING YOU JUST WROTE. SO  
17 EXACTLY WHAT WE'VE BEEN TALKING ABOUT FOR THIS ASPECT OF THE,  
18 AND THIS IMPORTANT ASPECT OF THE WHOLE FLOW CONTROL MECHANISM.

19 Q DID TIVO REFERENCE THIS COPY BUFFER AT TRIAL?

20 A CERTAINLY.

21 Q SO LET'S TAKE A LOOK AT SLIDE 75 WHICH IS -- CONTAINS A  
22 COPY OF DR. GIBSON'S DIRECT SLIDE 121 FROM TRIAL. CAN YOU  
23 PLEASE EXPLAIN WHAT'S SHOWN THERE?

24 A SO, IT'S SHOWING WHAT WE WERE JUST TALKING ABOUT. IT'S  
25 SHOWING TWO ENLARGEMENTS FROM A PIECE OF CODE. ONE WHICH IS

1    L A B E L E D   H E R E   T H E   S O U R C E   O B J E C T   F I L L I N G   A   B U F F E R ,   A N D   O N E   W H I C H  
2    I S   L A B E L E D   W R I T E   T O   T H E   H A R D   D R I V E .   S O   Y O U   S E E   T W O   P I E C E S   O F  
3    C O D E   I N   T H E S E   E N L A R G E D   B O X E S .

4    Q       W H A T   I S   T H I S   M E M C P Y ,   M - E - M - C - P - Y ,   O P E R A T I O N   S H O W I N G   O N  
5    T H E   S L I D E ?

6    A       S U R E .   S O   M - E - M - C - P - Y   I S   S H O R T   F O R   M E M O R Y   C O P Y .

7    Q       W A S   T H I S   A N   E X A M P L E   O F   A U T O M A T I C   F L O W   C O N T R O L   A T   T R I A L ?

8    A       T H A T ' S   R I G H T .   T H I S   W A S   S H O W N   A S   A N   E X A M P L E   A T   T R I A L .

9    Q       A N D   I N   P A R T I C U L A R ,   W H A T   B U F F E R   W A S   B E I N G   F I L L E D   I N   T H I S  
10   E X A M P L E ?

11   A       S O   T H I S   I S ,   T H I S   M E M C P Y   I S   A C T U A L L Y   T A L K I N G   A B O U T   T H A T  
12   C O P Y   B U F F E R   W E   J U S T   W E R E   D I S C U S S I N G .

13   Q       D O E S   I T   M A K E   A   D I F F E R E N C E   T H A T   T H E   E X A M P L E   G I V E N   A T   T R I A L  
14   W A S   A B O U T   F I L L I N G   T H E   C O P Y   B U F F E R   A S   O P P O S E D   T O   O N E   O F   T H E   T E N  
15   B U F F E R S   Y O U   S H O W E D   A T   T H E   E A S E L ?

16   A       N O T   A T   A L L .   T H I S   I S   S H O W I N G   V E R Y   C L E A R L Y   T H A T   P R O C E S S   O F  
17   F I L L I N G   O N E   O F   T H E   B U F F E R S .   I T ' S   E X E M P L A R Y ,   O F   C O U R S E .   A N D  
18   O F   C O U R S E   R E M E M B E R   T H I S   C O P Y   B U F F E R   I S   A L W A Y S   A N   I D E N T I C A L  
19   D U P L I C A T E   O F   O N E   O F   T H O S E   T E N .

20   Q       D I D   Y O U   F I N D   T H E   S A M E   F O R M   O F   A U T O M A T I C   F L O W   C O N T R O L   I N  
21   T H E   C U R R E N T   C O D E ?

22   A       Y E S .

23   Q       A N Y   E X A M P L E S   S I M I L A R   T O   T H I S   I N   T H E   C U R R E N T   C O D E ?

24   A       Y E S .   A N D   S O   I F   W E   G O   O N   T O   T H E   N E X T   S L I D E ,   A G A I N   H E R E   A  
25   L I T T L E   H A R D E R   T O   R E A D ,   B U T   I T ' S   B L O W N   U P   A G A I N .   A G A I N ,   T W O

1 PIECES OF ANALOGOUS CODE THAT HAVE BEEN ENLARGED HERE FOR YOU.  
2 THE FIRST ONE AGAIN LABELED SOURCE OBJECT FILLS A BUFFER, AND  
3 THE SECOND ONE BELOW WHICH IS LABELED WRITE TO HARD DISK.

4 Q AND YOU ARE NOW READING FROM, LOOKING AT SLIDE 76 WHICH  
5 HAS EXCERPTS FROM TRIAL EXHIBIT 3164, RIGHT?

6 A YES, THIS ONE HAS THE NUMBER ON IT, 76.

7 Q HOW DOES THIS COMPARE TO WHAT WAS SHOWN AT TRIAL AS  
8 EXAMPLES OF FLOW CONTROL?

9 A WELL, YOU KNOW, VERY ANALOGOUS. IF YOU GO TO THE NEXT  
10 SLIDE, JUST PUT THE TWO SIDE BY SIDE. AND, YOU KNOW, IT GETS  
11 EXTREMELY ANALOGOUS. YOU SEE REALLY A DIRECT CORRESPONDENCE.

12 Q SO, DR. STORER, DID ECHOSTAR REDUCE THE NUMBER OF BUFFERS  
13 TO ONE?

14 A NO.

15 Q DID THE ELIMINATION OF THE COPY BUFFER MAKE THE CURRENT  
16 BROADCOM PRODUCTS MORE THAN COLORABLY DIFFERENT FROM THE  
17 PRODUCTS AT TRIAL?

18 A NO, NOT AT ALL.

19 Q LET'S GO TO THE NEXT SLIDE AND MAYBE YOU CAN EXPLAIN WHY  
20 NOT.

21 A SO THIS IS, YOU KNOW, IT'S ALWAYS NICE TO SORT OF FINISH  
22 WITH A BIG PICTURE. YOU REMEMBER THE BIG PICTURE IS WE ARE  
23 TRYING TO GET DATA FROM THE SATELLITE TO THE HARD DRIVE. AND  
24 IN BOTH THE OLD AND THE NEW, OR BOTH AT TRIAL AND CURRENTLY,  
25 THERE IS A CIRCULAR ARRANGEMENT OF TEN BUFFERS OF ABOUT THE

1 SAME, ALL EQUAL SIZE AND IN BOTH CASES OF ABOUT THE SAME SIZE  
2 OF 140K. AND ALL THAT'S DIFFERENT IS THERE'S THIS -- ALL THE  
3 ONLY DIFFERENCE, IF YOU WANT TO CALL IT ANY DIFFERENCE AT ALL,  
4 WAS, OKAY, THERE IS THIS NOTION THAT THERE WAS A LITTLE COPY  
5 BUFFER THAT ALWAYS WAS AN IDENTICAL COPY OF ONE OF THE TEN.  
6 AND THE ONLY DIFFERENCE, YOU KNOW, BETWEEN THEN AND NOW AND  
7 WHAT WE ARE TALKING ABOUT IS THAT COPY BUFFER HAS BEEN  
8 ELIMINATED. WE STILL HAVE THE CYCLE OF TEN. WE STILL HAVE  
9 THE WHOLE ARRANGEMENT THAT WE HAVE BEEN TALKING ABOUT.

10 Q SO GO TO THE NEXT SLIDE, SLIDE 79. DID THIS ADDITIONAL  
11 COPY BUFFER MAKE ANY DIFFERENCE, COLORABLE OR OTHERWISE, TO  
12 FLOW CONTROL OR THE OPERATION OF THE BROADCOM PRODUCTS?

13 A NOT AT ALL.

14 Q BY THE WAY, THIS -- THIS HAS TO DO ONLY WITH RESPECT TO  
15 THE BROADCOM PRODUCTS, RIGHT, AND NOT THE 50X?

16 A OF COURSE, YES. WE'VE DISCUSSED THIS BEFORE. INDEXING  
17 WAS FOR BOTH, BUT THIS IS ONLY A BROADCOM CHIP ISSUE.

18 Q LET'S GO TO THE NEXT SLIDE AND TURN TO ECHOSTAR'S NEXT  
19 ARGUMENT ABOUT BLOCKING. CAN YOU PLEASE EXPLAIN THAT?

20 A SO THEY DO RAISE SOME ISSUES OF BLOCKING. AND MAYBE JUST  
21 GO BACK TO THE OTHER SLIDE QUICKLY HERE BEFORE. OKAY. AND  
22 TWO POINTS I HAVE MADE ON THE RIGHT IS A BLOCKING SIGN IN THE  
23 CLAIM. AND, BY THE WAY, IT'S DONE ANYWAY IN THE PRODUCTS.

24 Q SO LET'S ACTUALLY TURN TO THE NEXT SLIDE NOW. IS  
25 BLOCKING IN THE CLAIM?

1 A SO, RIGHT. SO BLOCKING IS NOT -- AS I WAS SAYING JUST  
2 NOW, BLOCKING IS NOT IN THE CLAIM EXACTLY.

3 Q AND YOU SAID THAT ECHOSTAR IS BLOCKING NOW ANYWAY. CAN  
4 YOU PLEASE EXPLAIN THAT? WHAT DOES THAT MEAN?

5 A CERTAINLY. I DON'T KNOW IF WE HAVE A SLIDE ON IT. GO  
6 FORWARD, JUST DOUBLE-CHECK. I DON'T THINK THERE IS A SLIDE,  
7 RIGHT? IF I CAN EXPLAIN IT. CAN YOU CHECK IF THERE'S A  
8 SLIDE? OKAY. SO BASICALLY WE'VE ALREADY -- WE'VE ALREADY  
9 TALKED ABOUT THIS -- THIS ISSUE THAT EVEN NOW, RIGHT, YOU  
10 CANNOT, YOU DO NOT HAVE THE POSSIBILITY, FOR EXAMPLE, THIS IS  
11 FOR EXAMPLE, OF BACKING UP AND WRITING DATA ON THE -- INTO THE  
12 BUFFER THAT YOU JUST WROTE INTO, FOR EXAMPLE.

13 Q ONCE YOU HAVE FILLED A BUFFER, WHAT HAPPENS?

14 A ONCE YOU HAVE FILLED A BUFFER, YOU WILL ALWAYS MOVE ON TO  
15 THE NEXT BUFFER. YOU ARE NOT GOING TO GO AHEAD AND BACK UP  
16 AND TRY TO PUT MORE INTO A BUFFER THAT'S FULL.

17 Q IS THAT A CASE UNDER NORMAL OPERATING CONDITIONS?

18 A EXACTLY. AND IT IS POSSIBLE TO HAVE EXCEPTIONAL  
19 CONDITIONS, AND WE'LL TALK -- WE WILL BE TALKING ABOUT THAT  
20 SHORTLY.

21 Q SO LET'S GO TO THE NEXT SLIDE AND TURN TO ECHOSTAR'S NEXT  
22 ARGUMENT ABOUT OVERFLOW. CAN YOU PLEASE EXPLAIN THAT?

23 A CERTAINLY. AND LET'S GO ON TO THE NEXT SLIDE. SO  
24 REMEMBER WE TALKED ABOUT THE IDEA YOU GET TO THE END AND THEN  
25 YOU GO BACK TO THE BEGINNING, YOU HAVE THE CIRCULAR

1 ARRANGEMENT. IT'S KIND OF A NATURAL QUESTION TO ASK WHAT  
2 WOULD HAPPEN IF THE WRITE PROCESS OF FILLING THE BUFFERS,  
3 WE'LL SAY, WENT ALONG REALLY QUICKLY AND MANAGED TO CATCH UP  
4 WITH THE READ BUFFER? AND I THINK THERE IS AN ANIMATION HERE  
5 FOR THIS, OR NOT? OKAY.

6 SO HERE THINGS SORT OF LOOK LIKE THEY ARE GOING LIKE WE  
7 DESCRIBED UP THERE. BUT ALL OF A SUDDEN WE HAD THIS SOMETHING  
8 HAPPENED WHERE WE FILLED UP ALL TEN. SO I TALKED ABOUT THIS  
9 NOTION THAT THEY NORMALLY CHASE EACH OTHER IN A CIRCLE UNDER  
10 NORMAL OPERATION. AND THERE WAS ALWAYS SOME SORT OF GAP  
11 BETWEEN THEM, THE AMOUNT OF DATA THAT HAS BEEN PUT INTO THE  
12 BUFFERS BUT HAS YET TO HAVE BEEN READ OUT ONTO THE HARD DRIVE.  
13 BUT YOU COULD HAVE A SITUATION WHERE YOU FILL UP ALL TEN.  
14 THIS IS HIGHLY EXCEPTIONAL. IT COULD HAPPEN FOR A NUMBER OF  
15 REASONS. THERE COULD BE, AS MR. MINNICK TALKED ABOUT THIS,  
16 THERE COULD BE PROBLEMS WITH THE HARD DRIVE OR IT COULD BE  
17 THAT DATA COMING DOWN FROM THE SATELLITE IS OUTSIDE  
18 PARAMETERS, THAT THERE IS SOME GLITCH OR SOMETHING. YOU ARE  
19 GETTING WAY TOO MUCH DATA ALL AT ONCE. IT'S HIGHLY  
20 EXCEPTIONAL, BUT CERTAINLY YOU WOULD WANT TO MONITOR THIS AND  
21 REALIZE IF IT HAPPENED. AND THAT'S, AT LEAST AT A HIGH-LEVEL,  
22 WHAT OVERFLOW IS.

23 Q WHAT HAPPENS IN ECHOSTAR'S PRODUCTS WHEN AN OVERFLOW  
24 CONDITION IS DETECTED?

25 A SO THIS -- THIS ACTUAL STATEMENT, OVERFLOW HAPPENED,

1 EXPLANATION POINT, EXPLANATION POINT, EXPLANATION POINT,  
2 THAT'S ACTUALLY FROM THE CODE. IT'S A HIGHLY EXCEPTIONAL  
3 CIRCUMSTANCE, SO THE CODE IS KIND OF GOING WOW. AND THIS IS  
4 ACTUALLY AN ERROR DIAGNOSTIC STATEMENT THAT WOULD BE PRINTED,  
5 IT COULD BE PRINTED IF THIS HAPPENED. AND IF THIS DOES  
6 HAPPEN, THEN THIS IS -- THIS IS DETECTED AND THEN THE BUFFERS  
7 WILL BE CLEANED OUT, IF YOU WILL, AND THEN YOU GO BACK TO  
8 NORMAL OPERATION.

9 Q SO DOES ECHOSTAR MONITOR FOR AND HANDLE THE OVERFLOW  
10 CONDITIONS?

11 A EXACTLY. THAT'S SORT OF WHAT I WAS JUST DESCRIBING.  
12 THIS IS YOUR -- YOU ARE GOING TO -- IN FACT, I DON'T KNOW IF  
13 WE HAVE A -- IS THIS A BLOWUP OR ARE WE SUPPOSED TO READ THIS  
14 JUST -- THIS IS THE PART OF THE CODE I WAS JUST REFERRING TO.  
15 I THINK YOU CAN PRETTY MUCH SEE IT. BUT THIS CODE HAS SOME  
16 TEXT THAT -- THAT ACTUALLY DESCRIBES THIS UNUSUAL  
17 CIRCUMSTANCE, AND IT ACTUALLY HAS THAT OVERFLOW HAPPENED,  
18 EXPLANATION, EXPLANATION POINT THERE AS WELL. SO THERE IS A  
19 POINT IN THE CODE HERE WHERE IT IS TALKING ABOUT HOW THIS IS  
20 AN UNUSUAL CASE IF, FOR EXAMPLE, IF THE DATA RATE GOES  
21 EXTREMELY HIGH. THAT WOULD CORRESPOND, FOR EXAMPLE, TO THAT  
22 RIGHT POINTER RACING AROUND AND CATCHING UP TO THE READ  
23 POINTER. THEN YOU HAVE THIS EXCEPTIONAL CIRCUMSTANCE OF  
24 OVERFLOW HAPPENING, EXPLANATION POINT.

25 Q SO YOU ARE ON SLIDE 84 NOW WHICH IS AN EXCERPT FROM TRIAL

1 TIVO EXHIBIT 3164.

2 A YES.

3 Q IS THIS HANDLING OF OVERFLOW BY THE BROADCOM PRODUCTS  
4 PART OF ECHOSTAR'S AUTOMATIC FLOW CONTROL?

5 A SO ABSOLUTELY, RIGHT, I MEAN, FLOW CONTROL IS ONE OF THE  
6 THINGS YOU ALWAYS -- YOU NEVER -- ONE THING THAT CAME OUT IN I  
7 THINK AT THE FIRST TRIAL AND IS SOMETHING THAT ANY ENGINEER  
8 UNDERSTANDS, YOU CAN'T POSSIBLY CONTROL THE SATELLITE. THE  
9 DATA COMES DOWN. IF SUDDENLY THERE IS A PROBLEM AND TOO MUCH  
10 COMES DOWN AT ONCE BECAUSE OF YOUR OUTSIDE PARAMETERS, THERE  
11 IS NOTHING YOU CAN DO TO STOP IT. AND THIS IS IN -- MR.  
12 MINNICK ACKNOWLEDGES THIS IN HIS DEPOSITION. THIS WAS  
13 SOMETHING THAT CAME UP IN THE FIRST TRIAL.

14 SIMILARLY, YOU WOULD HAVE NO CONTROL, FOR EXAMPLE, OVER  
15 PROBLEMS TO THE HARD DRIVE AS WELL DUE TO HOW FULL IT WAS OR  
16 HOW MANY BAD BLOCKS THERE WERE. MR. MINNICK DISCUSSED THAT AS  
17 WELL, FOR EXAMPLE. SO THERE ARE THINGS THAT ARE OUTSIDE YOUR  
18 CONTROL, BUT IT'S VERY IMPORTANT THAT EVEN NO MATTER HOW RARE  
19 THEY ARE, THAT THAT PART OF FLOW CONTROL IS TO HANDLE THAT  
20 SITUATION SHOULD IT COME UP, AND THAT'S WHAT YOU ARE SEEING  
21 HERE IN THE CODE.

22 Q AND DID YOU ACTUALLY SEE -- ALSO SEE IN THE CODE COMPUTER  
23 SOFTWARE THAT REGULATES THE BUFFERS AND HOW FULL THEY CAN GET  
24 IN THE CURRENT BROADCOM PRODUCTS?

25 A SO IF WE GO FORWARD TO THE NEXT SLIDE, THIS IS ANOTHER

1 CODE EXCERPT THAT'S BEEN BLOWN UP BECAUSE IT'S PRETTY HARD TO  
2 SEE ON THE CODE ITSELF. AND IT TALKS ABOUT THIS NOTION OF 70  
3 PERCENT FULLNESS. SO IF YOU WANT TO THINK ABOUT IT, YOU KIND  
4 OF WANT TO MAYBE HAVE A LITTLE HEAD ROOM. YOU DON'T WANT TO  
5 NECESSARILY BE -- HAVING WHERE YOU HAVE ALMOST ALL THE BUFFERS  
6 FULL, LET'S SAY NINE OF THE TEN. YOU'D RATHER SORT OF HAVE A  
7 LITTLE BIT OF EXTRA PLAY SO YOU HAVE SOME OF THAT STRETCH I  
8 WAS TALKING ABOUT. YOU COULD HAVE A, YOU KNOW, A LITTLE  
9 HIGHER DATA RATE, LITTLE LOWER DATA RATE. AND SO ONE OF THE  
10 DESIGN PARAMETERS THEY DESIGNED THE SYSTEM FOR IS LET'S TRY TO  
11 KEEP THE AVERAGE NUMBER OF BUFFERS DOWN BELOW 70 PERCENT, SO  
12 SEVEN OUT OF THE TEN, LET'S SAY, AND SO WE HAVE A LITTLE EXTRA  
13 -- A LITTLE EXTRA PLAY. AND THIS IS, YOU KNOW, THIS WAS PART  
14 OF THE SYSTEM DESIGN TO GET THIS NICE FLOW CONTROL TO MAKE  
15 ESSENTIALLY THE OVERFLOW CONDITION BE -- HAPPEN NEVER OR VERY  
16 RARELY.

17 Q SO IS THIS BUFFER REGULATION ALSO PART OF ECHOSTAR'S  
18 AUTOMATIC FLOW CONTROL?

19 A SO ABSOLUTELY, YES.

20 Q DO YOU KNOW WHETHER ECHOSTAR ACTUALLY STUDIED HOW  
21 SUCCESSFUL THEIR FLOW CONTROL HAS BEEN?

22 A YES. IT --

23 Q AND, YES, YOU GO AHEAD AND EXPLAIN.

24 A I WAS JUST GOING TO SAY THAT WE -- IF YOU MOVE ON TO THE  
25 NEXT SLIDE I THINK WE HAVE SOME MATERIAL ON THIS. SO AS I

1 MENTIONED, I ATTENDED MR. MINNICK'S DEPOSITION AND THIS ISSUE  
2 CAME UP. AND MR. MINNICK DESCRIBED HOW THEY DID SAMPLE 5,400  
3 OF THE UNITS, 5,400 UNITS, TO SEE AND MAKE LOGS OF WHAT WAS  
4 HAPPENING, A RECORD OF WHAT WAS HAPPENING DURING RECORDINGS.  
5 AND AFTER DOING THAT SAMPLING, THEY FOUND THAT LESS THAN ONE  
6 PERCENT OF THEM HAD ANY OVERFLOW AT ALL. SO, IN OTHER WORDS,  
7 IN 99 PERCENT OF THEM IT NEVER HAPPENED. WE ARE TALKING ABOUT  
8 THIS BEING A HIGHLY EXCEPTIONAL CIRCUMSTANCE. THAT'S WHY IT  
9 SAID OVERFLOW HAPPENED, EXPLANATION POINT. SO IT TURNS OUT  
10 EVEN HAPPENING ONCE, IT COULD BE A WEEK OF RECORDING AND THERE  
11 IS A LITTLE BLIP IN THE MIDDLE OF THE NIGHT DURING A  
12 COMMERCIAL ON A PROGRAM YOU WEREN'T WATCHING, THAT WOULD STILL  
13 COUNT IN THAT ONE PERCENT. NINETY-NINE PERCENT HAD NOTHING.  
14 IT NEVER HAPPENED.

15 Q SO LET'S TALK ABOUT THE ONE PERCENT.

16 A OKAY.

17 Q HOW OFTEN DOES OVERFLOW HAPPEN IN THE ONE PERCENT THAT  
18 HAS IT AT ALL?

19 A SO IN THAT ONE PERCENT, MR. MINNICK SAID HE FELT THAT IT  
20 WAS ON THE ORDER OF 40 TO 50 TIMES TOTAL.

21 Q BY THE WAY, IS THAT A SIGNIFICANT PERCENTAGE?

22 A WELL, NO, OF COURSE NOT.

23 Q AND WHAT DOES DR. RHYNE THINK ABOUT THAT?

24 A THAT'S A PLACE THAT WE DO AGREE. DR. RHYNE AGREES THAT  
25 ONE PERCENT IS NOT SIGNIFICANT AS WELL.

1 Q OKAY. SO DID YOU HAVE A CHANCE TO LOOK AT THE ONE  
2 PERCENT OF THE UNITS OR SO THAT DID EXHIBIT THIS CONDITION?

3 A WELL, I HAD A CHANCE TO LOOK AT LOGS.

4 Q OKAY. AND WHAT DID YOU -- CAN YOU DESCRIBE WHAT YOU --

5 A SO AS I MENTIONED BEFORE, THESE THINGS, BASICALLY THE  
6 DATA WAS IN THE FORM OF THESE VERY LARGE LOG FILES THAT LOGGED  
7 WHAT WAS GOING ON DURING A RECORDING PERIOD. AND THIS SLIDE  
8 SUMMARIZES WHAT I LOOKED AT.

9 Q SO YOU ARE IN SLIDE 87 NOW.

10 A YES.

11 Q YOU JUST TURNED TO. CAN YOU PLEASE DESCRIBE WHAT YOU SHOW  
12 THERE?

13 A OKAY. SO AT MR. MINNICK'S DEPOSITION ONE LOG WAS  
14 MENTIONED, BUT SUBSEQUENT TO THAT 30 -- 38 LOGS WERE ACTUALLY  
15 MADE AVAILABLE. AND WHEN YOU WENT AND LOOKED AT THE LOGS,  
16 THEY TENDED TO BE -- EACH OF THEM TENDED TO BE A UNIT THAT WAS  
17 RECORDING FOR ABOUT A WEEK. SO THERE IS A -- ALL OF THIS DATA  
18 OVER A WEEK LONG PERIOD WAS WHAT WAS GOING ON IN THE MACHINE,  
19 IF YOU WILL. AND OVER THAT WEEK LONG -- OVER THOSE 38 UNITS,  
20 EACH FOR LET'S SAY ON THE ORDER OF A WEEK, THERE IS A TOTAL OF  
21 ALMOST 9,000 RECORDINGS MADE. SO 38 WEEKS' WORTH, IF YOU  
22 WILL, ROUGHLY.

23 AND OUT OF ALL THAT STUFF, SORT OF CONSISTENT WITH WHAT  
24 MR. MINNICK HAD SAID, OVERFLOW ONLY OCCURRED 46 TIMES TOTAL  
25 OUT OF -- SO OUT OF ALL THE 38 WEEKS' WORTH OF RECORDINGS, IF

1 YOU WILL, LITERALLY 46 TIMES TOTAL. SO YOU CAN DO SOME  
2 NUMBERS. AND AGAIN, WE'RE -- SO NOW WE ARE ONLY -- WE ARE  
3 ONLY TALKING ABOUT UNITS IN WHICH THIS -- YOU ARE NOT TALKING  
4 ABOUT THAT 99 PERCENT OF THE UNITS WHERE OVERFLOW NEVER  
5 OCCURRED. WE ARE ONLY TALKING ABOUT THIS ONE PERCENT, RIGHT?  
6 AND WITHIN THIS YOU WOULD HAVE THIS LOGGING OF LET'S SAY  
7 ALMOST 400,000 MINUTES IF YOU ADD UP ALL THE MINUTES OF THOSE  
8 RECORDINGS. AND IF YOU DO THE NUMBERS, IT COMES OUT TO LESS  
9 THAN ABOUT A MINUTE TOTAL LOST OVER THOSE 400,000 MINUTES.  
10 AND THIS IS OF COURSE ONLY IN THE ONE PERCENT THAT YOU EVEN  
11 HAD ANYTHING HAPPENING.

12 Q SO WHAT'S THE PERCENTAGE OF DATA LOSS IN THE ONE PERCENT  
13 THAT HAD ANY DATA LOSS?

14 A SO THAT'S THE POINT. WITHIN -- WE ARE NOT EVEN TALKING  
15 ABOUT 99 PERCENT OF THE UNITS, BUT WITHIN THE ONE PERCENT FOR  
16 WHICH THERE WAS ANY KIND OF OVERFLOW AT ALL, EVEN IF IT WAS  
17 JUST IN THE MIDDLE OF THE NIGHT DURING A COMMERCIAL, ONCE  
18 DURING THE WEEK, YOU ARE TALKING ON THE ORDER LESS THAN TWO  
19 TEN-THOUSANDTHS OF ONE PERCENT OF THE DATA THAT WOULD ACTUALLY  
20 HAVE BEEN LOST IN THAT ONE PERCENT FOR WHICH THERE IS ANY,  
21 ANYTHING THAT HAPPENED.

22 Q IS YOUR OPINION THAT ECHOSTAR'S AUTOMATIC FLOW CONTROL  
23 METHODOLOGY ACTUALLY ACHIEVED THIS PURPOSE BASED ON THIS DATA?

24 A ABSOLUTELY, YES.

25 Q WHAT IMPACT ON CONSUMERS DOES THIS DATA LOSS THAT YOU

1 SHOW IN SLIDE 87 HAVE?

2 A NONE. I MEAN, THIS IS CLEARLY INSIGNIFICANT.

3 Q DO YOU UNDERSTAND ECHOSTAR'S POSITION, DR. STORER, THAT  
4 IF OVERFLOW HAPPENS EVEN ONCE AT ANY TIME, YOU DO NOT HAVE  
5 FLOW CONTROL AT ALL?

6 A WELL, I DON'T SEEM TO UNDERSTAND THEIR POSITION. IT  
7 MAKES NO SENSE. WE JUST TALKED ABOUT THE FACT THAT ANYONE OF  
8 ORDINARY SKILL IN THE ART, ANYONE WHO READ THE PATENT, ANY  
9 ENGINEER IN THE FIELD, PEOPLE AT THE FIRST TRIAL UNDERSTAND  
10 YOU CAN'T CONTROL THE SATELLITE. YOU CAN'T CONTROL AN  
11 EXCEPTIONAL CONDITION. THE SATELLITE DATA JUST COMES DOWN.  
12 YOU CAN'T STOP IT. AND YOU CERTAINLY CAN'T CONTROL A PROBLEM  
13 WITH A HARD DRIVE OR SOMETHING LIKE THAT. THERE INEVITABLY IS  
14 GOING TO BE CASES WHERE THERE IS AN EXCEPTIONAL CONDITION,  
15 AND PART OF FLOW CONTROL IS TO MONITOR THAT. AND PART OF FLOW  
16 CONTROL IS TO MAKE SURE THAT'S EXTREMELY THE RARE, IF EVER.

17 SO HERE WE HAVE IT IN THIS WHOLE SAMPLING DATA, 5,000  
18 UNITS, 99 PERCENT OF THE TIME IT NEVER EVEN HAPPENED AT ALL.  
19 AND THEN IN ONE PERCENT OF THE TIME THAT IT DID HAPPEN, IT WAS  
20 CLEARLY AND TOTALLY INSIGNIFICANT. SO FLOW CONTROL WAS  
21 SUCCESSFUL. FLOW CONTROL CREATED THIS WONDERFUL WORKING  
22 SYSTEM, IF YOU WILL, AND MADE OVERFLOW EXTREMELY RARE AND DID  
23 MONITOR FOR IT IN THAT RARE CASE THAT IT TOOK PLACE.

24 Q SO DID THE CHANGES ECHOSTAR SAYS IT MADE TO THE BUFFERING  
25 SCHEME MAKE THE PRODUCTS MORE THAN COLORABLY DIFFERENT THAN

1 THE WAY THEY WERE AT TRIAL?

2 A NO.

3 Q SO LET'S GO TO THE CLAIM IN THE NEXT SLIDE, SLIDE 88 NOW.  
4 DO THE ECHOSTAR BROADCOM PRODUCTS, DP-522 AND 625, WITH THE  
5 CURRENT SOFTWARE LITERALLY MEET THE AUTOMATIC FLOW CONTROL  
6 LIMITATION OF CLAIMS 31 AND 61?

7 A YES.

8 Q DR. STORER, DO THEY ALSO MEET THE CLAIMS, THIS PARTICULAR  
9 -- THESE PARTICULAR CLAIM LIMITATIONS UNDER THE DOCTRINE OF  
10 EQUIVALENTS?

11 A YES. AGAIN, YOU CAN TAKE THE STANDARD THREE-PART TEST,  
12 SUBSTANTIALLY THE SAME FUNCTION, SUBSTANTIALLY THE SAME WAY,  
13 SUBSTANTIALLY THE SAME OUTCOME, CERTAINLY.

14 Q SO IF YOU GO TO THE NEXT SLIDE, SLIDE 89, CAN YOU PLEASE  
15 EXPLAIN YOUR BASIS FOR THAT?

16 A SO HERE YOU HAVE THIS ABSTRACT PICTURE, IF YOU WILL, OF  
17 THE -- OF THE TWO SITUATIONS, THE SOFTWARE AS IT WAS AT TRIAL  
18 WITH A COPY BUFFER AND THE SOFTWARE NOW WITHOUT THE COPY  
19 BUFFER. IN BOTH CASES YOU HAVE THE SAME TEN, THE SAME  
20 CIRCULAR ARRANGEMENT. IN FACT, EVEN THIS CASE, EVEN THE SAME  
21 PARAMETERS, YOU KNOW, THE SAME ABOUT 140,000 BYTES EACH. AND  
22 THE ONLY THING DIFFERENT IS THIS ONE PROGRAMMING CONVENIENCE  
23 WHERE THIS COPY BUFFER IS ALWAYS AN IDENTICAL DUPLICATE OF ONE  
24 OF THE TEN, AND DATA GOES TO THE COPY AND IMMEDIATELY WRITTEN  
25 TO THE HARD DRIVE.

1 Q LET'S JUMP TO SLIDE 107 AND LOOK BRIEFLY AT LIMITATIONS C  
2 AND E IN THE CLAIMS DEALING WITH A SOURCE OBJECT. AND GOING  
3 NOW TO SLIDE 108 WHICH ALSO SHOWS THE SAME LIMITATIONS FROM  
4 THE PATENT, WHAT DOES THE SOURCE OBJECT DO?

5 A SO IF YOU -- IF YOU LOOK AT THE PARTS THAT ARE  
6 HIGHLIGHTED THERE, YOU CAN SEE THEY ARE BASICALLY FOUR, FOUR  
7 THINGS IN TOTAL THAT IT DOES: THE EXTRACTING, THE OBTAINING,  
8 THE CONVERTING, AND THE FILLING. AND I'VE LISTED -- I HAVE  
9 LISTED THOSE FOUR ITEMS ON THE RIGHT-HAND SIDE FROM THE  
10 EXCERPT FROM THE PATENT.

11 Q DO THE ECHOSTAR PRODUCTS EXTRACT VIDEO AND AUDIO DATA  
12 FROM A PHYSICAL DATA SOURCE?

13 A YES.

14 Q AND IS THAT A SOFTWARE OPERATION?

15 A YES, IT'S HARDWARE CONTROLLED BY SOFTWARE.

16 Q LET'S GO TO THE NEXT LIMITATION. DO THE ECHOSTAR  
17 PRODUCTS OBTAIN A BUFFER?

18 A YES.

19 Q LET'S LOOK AT TRIAL EXHIBIT 3163, WHICH IS SOURCE CODE  
20 6.1 IN OUR SYSTEM HERE. DOES THAT SHOW AN EXAMPLE OF  
21 OBTAINING A BUFFER?

22 A YEAH, EXEMPLARY PART OF CODE THAT'S INVOLVED IN OBTAINING  
23 A BUFFER, THAT'S CORRECT.

24 Q LET'S TURN TO THE NEXT SLIDE, 111, CONVERTS VIDEO DATA  
25 INTO DATA STREAMS. SORRY, BEFORE WE DO THAT, BACK ON THE --

1 YOU CAN STAY HERE -- BUT BACK ON THE OBTAINS A BUFFER  
2 LIMITATION AND THE EXTRACT LIMITATION, DO THE CURRENT PRODUCTS  
3 HAVE THOSE TWO LIMITATIONS THE SAME WAY THEY DID AT TRIAL?

4 A YES.

5 Q SO NOW ON THE CONVERT LIMITATION, DO THE CURRENT PRODUCTS  
6 CONVERT VIDEO DATA INTO DATA STREAMS?

7 A YES.

8 Q AND IS THAT DONE IN THE SAME WAY AS IT WAS DONE AT TRIAL?

9 A THAT'S CORRECT.

10 Q SO LET'S GO TO TRIAL EXHIBIT 3161, WHICH IS 1.2 IN YOUR  
11 -- OKAY. IS THAT AN EXAMPLE OF CONVERTING VIDEO DATA INTO  
12 DATA STREAMS?

13 A AGAIN, EXEMPLARY -- EXEMPLARY CODE OF THAT PROCESS, YES.

14 Q LET'S SWITCH TO SLIDE 112 AND TALK ABOUT FILLING SAID  
15 BUFFER WITH SAID STREAMS. DO THE CURRENT PRODUCTS FILL THE  
16 BUFFER WITH DATA -- WITH STREAMS?

17 A YES, THEY DO.

18 Q AND DO THEY DO THAT THE SAME WAY NOW AS THEY DID AT  
19 TRIAL?

20 A YES.

21 Q LET'S LOOK AT TRIAL EXHIBIT 3164, 4.1 IN OUR SYSTEM. IS  
22 THAT AN EXAMPLE?

23 A AGAIN, SOME EXEMPLARY CODE OF THAT -- OF THAT PROCESS,  
24 YES.

25 Q LET'S GO TO SLIDE 115 -- 113 IF YOU DON'T MIND, PLEASE.

1 SO DO THE CURRENT PRODUCTS MEET LIMITATIONS C AND E IN CLAIMS  
2 31 AND 61 OF THE TIVO PATENT?

3 A YES, THEY DO.

4 Q LET'S TURN BACK TO SLIDE 94 NOW. SORRY, APOLOGIES.

5 LET'S TURN TO SLIDE 90. WITH RESPECT TO THE REMAINING CLAIM  
6 LIMITATIONS, DR. STORER, FOR THE BROADCOM PRODUCTS WHICH WE  
7 ARE DISCUSSING NOW, DO THE CURRENT PRODUCTS MEET THE OTHER  
8 LIMITATIONS OF CLAIM 31?

9 A YES, THEY DO IN THE SAME MANNER THEY DID AT TRIAL.

10 Q AND FOR THE SAME REASONS?

11 A YES.

12 Q IS THIS ALSO TRUE FOR CLAIM 61?

13 A YES.

14 Q AND AS A REMINDER, WE HAVE ALREADY TALKED ABOUT THE 50X  
15 PRODUCTS WITH RESPECT TO THE CLAIMS, RIGHT?

16 A YES.

17 Q DR. STORER, PLEASE TAKE A LOOK AT EXHIBITS 3008 AND 3009.  
18 THEY ARE ACTUALLY IN YOUR EXHIBIT LINE. THEY ARE JUST RIGHT  
19 UNDER YOUR --

20 A JUST ONE SEC, 3008 --

21 THE COURT: YES, DO YOU HAVE A --

22 MS. KREVANS: I WOULD JUST NOTE FOR THE RECORD, YOUR  
23 HONOR, THAT THESE ARE THE SUMMARIES THAT DR. STORER HIMSELF  
24 WROTE OF HIS REPORT AND THAT, IN OUR VIEW, THEY ARE HEARSAY  
25 THAT CANNOT COME IN.

1 MR. IANCU: WELL, THESE ARE SUMMARIES OF THE EVIDENCE  
2 AND OF HIS OPINIONS, APPROPRIATE UNDER RULE 1006 OF THE  
3 FEDERAL --

4 THE COURT: WHICH SLIDE ARE WE TALKING ABOUT NOW?

5 MR. IANCU: NO SLIDE. WE ARE IN THE EXHIBIT BINDER  
6 WHICH IS RIGHT IN FRONT OF YOUR HONOR, THE WHITE ONE. NO, IT  
7 -- I DON'T KNOW IF THAT'S IT. I ACTUALLY THINK IT'S RIGHT IN  
8 FRONT OF YOU THERE. RIGHT.

9 THE COURT: WHICH ONE?

10 MR. IANCU: 3008 AND 3009.

11 MS. KREVANS: AND, YOUR HONOR, THESE ARE PORTIONS OF  
12 DR. STORER'S EXPERT REPORT WHICH HE CHOSE TO WRITE IN A CLAIM  
13 CHART FORM, BUT THEY ARE WRITTEN BY HIM AND THEY ARE  
14 EXPRESSIONS BY HIM OF HIS OPINIONS. THEY ARE JUST AS MUCH  
15 HEARSAY AS THE PART OF HIS REPORT THAT HE WROTE IN A  
16 NARRATIVE.

17 MR. IANCU: WELL, YOUR HONOR, IF I MAY LAY A  
18 FOUNDATION, I CAN ESTABLISH THAT THESE ARE ACTUALLY SUMMARIES  
19 OF THE EVIDENCE HE REVIEWED. AND IT WOULD BE VERY TIME  
20 CONSUMING FOR EVERYBODY HERE TO SIT THROUGH AND GO THROUGH ALL  
21 THAT, ESPECIALLY ON NUMEROUS LIMITATIONS THAT ARE SIMPLY NOT  
22 IN DISPUTE HERE.

23 THE COURT: VERY WELL. I AM GOING TO ALLOW THE  
24 INTRODUCTION OVER THE OBJECTION.

25 MR. IANCU: THANK YOU. SO THAT'S WITH RESPECT TO

1 EXHIBITS 3008 AND 3009?

2 THE COURT: YES.

3 MR. IANCU: THANK YOU.

4 Q (BY MR. IANCU:) NOW, DR. STORER, IF WE TURN NOW TO SLIDE  
5 94. OKAY. SO SLIDE 94, WE ARE ON YOUR LAST BULLET THERE,  
6 OPINION LETTERS. HAVE YOU HAD THE CHANCE TO REVIEW OPINION  
7 LETTERS FROM THE LAW FIRM OF FISH & RICHARDSON FURNISHED TO  
8 ECHOSTAR IN 2006?

9 A YES, I HAVE.

10 Q LET'S GO TO THE NEXT SLIDE. GENERALLY SPEAKING, WHAT ARE  
11 YOUR VIEWS WITH RESPECT TO THE FISH OPINIONS?

12 A SO I -- THIS IS AT A HIGH-LEVEL, THREE, THREE THINGS. A  
13 MAJOR ISSUE DID NOT -- DID NOT REVIEW SOURCE CODE. THEY --  
14 THEY INCORRECTLY AND SORT OF MISCHARACTERIZED THE NOTION OF  
15 COMMUNICATION, AND WE'LL TALK A BIT ABOUT THAT I THINK. AND  
16 THEY ALSO HAVE AN ISSUE ABOUT TRANSFERRING NOTHING TO THE HARD  
17 DRIVE, WHICH IS -- WHICH IS JUST PLAIN WRONG.

18 Q AND LOOKING AT YOUR FIRST BULLET THAT THEY DID NOT REVIEW  
19 SOURCE CODE, HOW DO YOU KNOW THAT THE FISH FIRM DID NOT REVIEW  
20 SOURCE CODE?

21 A WELL, WHEN YOU LOOK AT THE CODE, WHEN YOU ACTUALLY LOOK  
22 AT THE CODE AND YOU LOOK AT THEIR DOCUMENTS, YOU REALIZE THERE  
23 IS SOME KIND OF DISCONNECT. I MEAN, THERE ARE JUST THINGS  
24 THAT ARE -- THAT ARE WRONG IN THEIR DOCUMENTS WHEN YOU LOOK AT  
25 THE CODE. HOWEVER, THE REAL CONFIRMATION OF THAT CAME DURING

1 MR. MINNICK'S DEPOSITION. I THINK I HAVE, IF YOU GO TO THE  
2 NEXT SLIDE, A QUESTION HE WAS ASKED. SO HE WAS ASKED ABOUT  
3 THIS, AND HE SAID: WE DID NOT PROVIDE SOURCE CODE TO THEM. SO  
4 THE REASON THEY DIDN'T REVIEW SOURCE CODE IS THEY WEREN'T  
5 GIVEN IT. AND WHAT'S REALLY GOING ON HERE IS THEY ARE WRITING  
6 THAT DOCUMENT BASED ON CHARACTERIZATIONS OF THINGS BY ECHOSTAR  
7 AND NOT ON AN INDEPENDENT EXAMINATION OF THE PRODUCT, OF THE  
8 SOFTWARE.

9 SO THIS IS A BIG ISSUE. LOOKING AT THE SOFTWARE WAS A  
10 BIG PART OF MY ANALYSIS AND A BIG PART OF THE WAY I GAINED  
11 UNDERSTANDING AS TO WHAT WAS ACTUALLY GOING ON IN THE PRODUCT.  
12 WE'RE TALKING ABOUT SOFTWARE NOW. WE'RE TALKING ABOUT  
13 SOFTWARE THAT WAS AT TRIAL VERSUS SOFTWARE NOW. SO THIS IS A  
14 BIG ISSUE, AND THIS KIND OF EXPLAINS IT. IT CONFIRMS IT.  
15 THEY DIDN'T PROVIDE IT AT ALL.

16 Q SO YOU ARE NOW ON SLIDE 96, THE DECEMBER 18, 2008 MINNICK  
17 DEPOSITION AT PAGE 86, LINES 15-20. LET'S GO TO THE NEXT  
18 SLIDE, 97. DID YOU IN FACT FIND SOME INACCURACIES IN THE FISH  
19 & RICHARDSON OPINION LETTER?

20 A A NUMBER OF THEM. I MENTIONED THAT EARLIER. AND ONE OF  
21 THESE IS THIS NOTION OF COMMUNICATION. IN FACT, THERE IS A  
22 KEY DATA STRUCTURE. YOU SEE WE LOOK AT THE CODE CALLED THE  
23 NOSYNC DATA STRUCTURE. THIS IS ANOTHER EXAMPLE OF OUR NAMING  
24 ISSUE, RIGHT. IT'S CALLED THE NOSYNC DATA STRUCTURE, BUT THE  
25 NO IS A LITTLE MISLEADING. IT'S ACTUALLY THE DATA STRUCTURE

1 THAT PROVIDES COMMUNICATION. AND IF YOU LOOK AT THE CODE,  
2 THIS IS AN IMPORTANT THING YOU IMMEDIATELY GRAVITATE TO. THIS  
3 STRUCTURE IS A WAY THAT COMMUNICATION MOVES AROUND THE CODE.  
4 FOR EXAMPLE, WE MENTIONED DRIVER CODE VERSUS USER CODE. AND  
5 YET THEY COME TO A CONCLUSION, YOU KNOW, OF COURSE THE POINT  
6 OF THEIR REPORTS ARE TO COME TO CONCLUSIONS ABOUT THINGS, AND  
7 THEY COME TO A CONCLUSION THAT THERE IS NO AUTOMATIC FLOW  
8 CONTROL BASED ON THIS SORT OF FAULTY INFORMATION, IF YOU WILL,  
9 OR BASED ON NOT HAVING LOOKED AT THE CODE AND SEEN THIS, I  
10 GUESS, SEEN THIS NOSYNC SYNC STRUCTURE. SO THEY COME TO AN  
11 INCORRECT CONCLUSION BASED ON INCORRECT INFORMATION, IF YOU  
12 WILL, OR ASSERTIONS. AND I'VE HIGHLIGHTED THAT AT THE BOTTOM  
13 WHERE THEY SAY NO COMMUNICATION BETWEEN THESE TWO THINGS.

14 Q SO LET'S GO TO SLIDE 97 WHICH IS AN EXCERPT -- SLIDE 98  
15 WHICH IS AN EXCERPT OF EXHIBIT 3164 SHOWING SOME CODE, AND AN  
16 EXAMPLE OF A NOSYNC STRUCTURE. IS THIS THE STRUCTURE YOU HAD  
17 IN MIND?

18 A YES. SO AGAIN, A CRITICAL -- A CRITICAL STRUCTURE WHICH  
19 IS THERE EXPLICITLY FOR THE PURPOSE OF PROVIDING  
20 COMMUNICATION.

21 Q AND IS THAT RELEVANT TO FLOW CONTROL?

22 A IT IS RELEVANT, AND IT'S ALSO RELEVANT IN THE CONTEXT I  
23 AM TALKING ABOUT IT HERE. THIS STRUCTURE IS THAT  
24 COMMUNICATION ON WHICH FISH & RICHARDSON IS BASING ITS OPINION  
25 WHEN THEY ARE SAYING THERE IS NO COMMUNICATION.

1 Q AND WHAT IS DR. RHYNE'S VIEW AS TO WHETHER THE DRIVER AND  
2 APPLICATION SOFTWARE COMMUNICATE?

3 A SO IF YOU CAN GO TO THE NEXT SLIDE, THIS IS JUST A  
4 PORTION, A QUOTE FROM HIS -- HIS RECENT DEPOSITION. SO THE  
5 QUESTION: SO THERE IS ECHOSTAR CODE THAT COMMUNICATES WITH THE  
6 DRIVER CODE REGARDING DESCRIPTOR COUNTS, RIGHT? AND HERE  
7 AGAIN, WE TALKED THE NOTION ABOUT DRIVER CODE, USER CODE.  
8 THESE ARE, IF YOU WILL, DIFFERENT SORT OF LAYERS OF THE CODE.  
9 AND HE ANSWERS: THERE'S ECHOSTAR CODE THAT USES PROGRAMMING  
10 INTERFACES PROVIDED BY THE BROADCOM PROPRIETARY DRIVERS,  
11 THAT'S CORRECT.

12 Q GOING TO THE NEXT SLIDE, DID YOU FIND ANY OTHER EXAMPLES  
13 OF TECHNICAL INACCURACIES IN THE FISH OPINIONS?

14 A SO THIS IS ANOTHER EXAMPLE. I MENTIONED THIS ISSUE.  
15 THEY TALK ABOUT THIS AT A NUMBER OF PLACES IN THEIR OPINION  
16 AND SEEM TO SOMEHOW IMPLY THAT WHEN THERE IS NOTHING TO WRITE  
17 TO THE HARD DRIVE, FOR EXAMPLE, THERE ISN'T A COMPLETED FILLED  
18 BUFFER RIGHT NOW THAT NEEDS TO BE WRITTEN OUT, THAT SOMEHOW  
19 SOMETHING STILL WILL BE TRANSFERRED, THAT THERE WILL BE SOME  
20 TOKEN OR POINTER OR ENTITY THAT DENOTES NOTHING. AND THIS IS  
21 JUST COMPLETELY INCORRECT. NOTHING IS WRITTEN TO THE DRIVE IF  
22 THERE IS NO DATA TO WRITE. AND AGAIN, THEY -- FROM THAT  
23 INCORRECT UNDERSTANDING, LET'S SAY, THAT THEY DIDN'T GET THIS  
24 UNDERSTANDING FROM THE CODE, WE KNOW THEY DIDN'T LOOK AT THE  
25 CODE, THEY DRAW THIS INCORRECT CONCLUSION.

1 THE COURT: YES?

2 MS. KREVANS: I WOULD JUST NOTE FOR THE RECORD, YOUR  
3 HONOR, THAT THE WITNESS' ENTIRE PREVIOUS ANSWER IS NOWHERE IN  
4 HIS EXPERT REPORT.

5 THE COURT: VERY WELL. AND WE'LL HAVE A METHOD TO  
6 ADDRESS THAT IN THE FINDINGS OF FACT, CONCLUSIONS OF LAW. I  
7 WILL NOTE YOUR OBJECTION. YOU MAY CONTINUE.

8 MS. KREVANS: YOUR HONOR, COULD I HAVE A STANDING  
9 OBJECTION SO I DON'T INTERRUPT THE TESTIMONY?

10 THE COURT: YES.

11 MS. KREVANS: THANK YOU.

12 THE COURT: AND I WILL PROVIDE SOME GUIDANCE TO THE  
13 PARTIES ON HOW TO TAKE UP THIS HOUSEKEEPING MATTER.

14 MR. IANCU: DR. STORER'S OPINIONS REGARDING THE FISH  
15 OPINIONS ARE INCLUDED AT LEAST IN PART AT PARAGRAPH 180 OF THE  
16 EXPERT REPORT.

17 THE COURT: YOU WILL HAVE A CHANCE TO POINT THAT OUT  
18 IF IT'S RAISED.

19 Q (BY MR. IANCU:) SO LET'S TURN TO SLIDE 102. AND THIS IS  
20 AN EXCERPT FROM TRIAL EXHIBIT 3135. DOES THAT IN FACT SHOW --  
21 WHAT DOES THAT SHOW?

22 A SO IN FACT THIS SHOWS A PORTION OF THE CODE WHERE YOU  
23 EXPLICITLY SEE THE FACT THAT NOTHING IS WRITTEN, THERE IS  
24 NOTHING TO WRITE.

25 Q AND LET'S LOOK --

1 A AGAIN, YOU SEE THIS BY LOOKING AT THE CODE, AND THE WHOLE  
2 POINT OF THIS IS OF COURSE THEY, AS MR. MINNICK SAID, THEY  
3 WEREN'T PROVIDED THE CODE.

4 Q AND LET'S GO TO SLIDE 101. WHAT WAS -- WHAT IS DR.  
5 RHYNE'S VIEW AS TO WHETHER THERE IS IN FACT TRANSFER TO THE  
6 HARD DRIVE WHEN THERE IS NOTHING TO TRANSFER?

7 A SO AGAIN, HE -- HE ALSO DISAGREES WITH FISH & RICHARDSON.  
8 IF THERE IS AN INDICATION THERE IS NO NEW DATA TO BE WRITTEN,  
9 THEN THEY DON'T WRITE ANY DATA. THEY DON'T HAVE ANYTHING TO  
10 WRITE.

11 Q LET'S GO TO SLIDE 103, PLEASE. DR. STORER, IN THE END,  
12 WHAT ARE YOUR OVERALL CONCLUSIONS WITH RESPECT TO THE ISSUES  
13 RELEVANT TO THIS CONTEMPT HEARING?

14 A SO I SUMMARIZED THEM HERE. I BASICALLY SAID ALL OF THIS,  
15 RIGHT? THESE CHANGES ARE AT A VERY LOW LEVEL IN THE CODE.  
16 NOTHING TO DO WITH THE LANGUAGE IN CLAIMS 31 AND 61. THEY  
17 CERTAINLY DON'T MAKE THE PRODUCTS DIFFERENT WITHIN THE SCOPE  
18 OF THE CLAIMS, AND THE PRODUCTS INFRINGE JUST AS THEY DID AT  
19 TRIAL. AND THIS IS --

20 Q THANK YOU VERY MUCH, DR. STORER.

21 THE COURT: CROSS EXAMINATION.

22 THE WITNESS: EXCUSE ME, WHILE WE ARE ON THE BREAK,  
23 CAN I GET MORE WATER, SOMEONE, ANOTHER PITCHER?

24 THE COURT: MR. LONG, CAN YOU HELP US WITH SOME  
25 ADDITIONAL WATER OR A BOTTLE? A BOTTLE OF WATER IS FINE. TAKE

1 THAT UP TO THE WITNESS. WE SEEM TO HAVE AN ABUNDANCE OF WATER  
2 AND COUGH DROPS.

3 THE WITNESS: THANK YOU VERY MUCH.

4 CROSS EXAMINATION

5 BY MS. KREVANS:

6 Q AFTERNOON, DR. STORER.

7 A GOOD AFTERNOON.

8 Q ARE YOU SITUATED THERE?

9 A I THINK I'M ALL SET, YES.

10 Q OKAY. I WANT TO GO BACK TO A COUPLE OF QUESTIONS THAT  
11 MR. IANCU ASKED YOU ON DIRECT. AND FIRST, WHY DON'T WE GO TO  
12 SOME OF DR. GIBSON'S TESTIMONY ABOUT THIS START CODE DETECT  
13 INDEXING PROCESS. YOU RECALL THAT ON DIRECT, IN RESPONSE TO  
14 QUESTIONS FROM MR. IANCU, YOU SAID: DR. GIBSON SAID THAT WAS  
15 THE SEPARATING OF CLAIM 1. THAT START CODE DETECT, THAT  
16 INDEXING, YOU SAID THAT WAS THE SEPARATING OF CLAIM 1 ON  
17 DIRECT TODAY, CORRECT?

18 A I SEEM TO RECALL. I SAID THAT THE INDEXING WAS RELATED,  
19 THAT WHOLE START -- THE WHOLE TABLE CONSTRUCTION, START CODE  
20 TABLE, INDEXING THING WAS RELATED TO ISSUES OF SEPARATION IN  
21 CLAIM 1 IN THE FIRST TRIAL, THAT'S CORRECT.

22 Q OKAY. WHY DON'T WE LOOK AT SOME ADDITIONAL TESTIMONY  
23 FROM DR. GIBSON FROM THE TRIAL MARCH 30 P.M., PAGES 7212 TO  
24 7313.

25 MS. KREVANS: COULD WE GET THAT, MICHAEL?

1 MR. IANCU: IS THIS IN THE BINDER, COUNSEL?

2 MS. KREVANS: DO YOU NEED A TRANSCRIPT BINDER? WE  
3 HAVE ONE TO GIVE TO YOU. WE WILL. MR. BEYER WILL BRING YOU  
4 ONE.

5 Q (BY MS. KREVANS:) THE QUESTION TO DR. GIBSON WAS: YOU  
6 SAID THAT THE MEDIA SWITCH DOES SOME ANALYSIS. CAN YOU PLEASE  
7 EXPLAIN WHAT THE MEDIA SWITCH DOES?

8 AND HE ANSWERS: YES, I THINK WE SHOW IN THE NEXT SLIDE  
9 HERE WHERE THE MEDIA SWITCH CREATES WHAT'S CALLED A FRAME  
10 INDEX. AND ALONG THE BOTTOM WE HAVE THE VIDEO AND AUDIO  
11 STREAMS, AND WE SHOW, SIMILAR TO BEFORE, KIND OF A FLASHLIGHT  
12 OPERATION. THE DATA NOW REPRESENTS THE VIDEO FRAMES AND THE  
13 MEDIA SWITCH LOOKS AT THOSE FRAMES, THE VIDEO, AND IT RECORDS  
14 THE BEGINNING OF EACH FRAME, FINDS THE BEGINNING OF EACH  
15 FRAME, VIDEO FRAME, AND THEN IT PUTS INTO THE FRAME INDEX THE  
16 VIDEO FRAME. IT'S TIME STAMPED SO WE KNOW HOW TO PLAY IT  
17 BACK. THEN ALSO THE ADDRESS WHERE WE CAN STORE IT ON THE HARD  
18 DRIVE.

19 MR. IANCU: COUNSEL, COULD --

20 THE COURT: WHAT'S THE OBJECTION?

21 MR. IANCU: I DON'T HAVE AN OBJECTION, BUT I WAS JUST  
22 HANDED A TRANSCRIPT AND I WOULD JUST LIKE TO KNOW WHAT THE  
23 CITE IS.

24 MS. KREVANS: IT'S MARCH 30 P.M., 7212-7313.

25 Q (BY MS. KREVANS:) QUESTION: WHY DOES THE MEDIA SWITCH

1 MAKE THIS FRAME INDEX?

2 DR. GIBSON ANSWERS: WELL, IT MAKES THIS FRAME INDEX SO  
3 THAT WHEN YOU START TO IMPLEMENT THE FUNCTIONALITY, SUCH AS  
4 THE TRICKPLAY WE'VE TALKED ABOUT, FAST FORWARD, FOR EXAMPLE,  
5 AND SO ON, YOU'LL -- YOU'LL KNOW WHERE TO GO SO YOU CAN  
6 QUICKLY REASSEMBLE FOR THE PLAYBACK.

7 QUESTION: HOW DOES THE BARTON PATENT REFER TO THIS  
8 PROCESS OF ANALYZING AND IDENTIFYING THE DATA IN AN INDEX  
9 TABLE?

10 ANSWER: HOW DOES IT REFER TO IT? IT REFERS TO IT AS  
11 PARSING AND SEPARATING THE CLAIMS.

12 THAT'S WHAT DR. GIBSON TOLD THE JURY, CORRECT?

13 A YES.

14 Q OKAY. AND IF WE LOOK AT FROM THE SAME AFTERNOON A LITTLE  
15 LATER IN DR. GIBSON'S TESTIMONY, PAGE 100, LINE 16 TO 1012,  
16 THE PREVIOUS TESTIMONY WE LOOKED AT REFERRED TO BOTH PARSING  
17 AND SEPARATION, CORRECT?

18 A I BELIEVE IT SAID PARSING AND SEPARATION, THAT'S CORRECT.

19 Q OKAY. NOW HERE DR. GIBSON IS ASKED A QUESTION JUST ABOUT  
20 PARSING, NOT ABOUT SEPARATING.

21 QUESTION: YOU SAID THAT THE MEDIA SWITCH ALSO PARSES,  
22 RIGHT?

23 ANSWER: YES.

24 CAN YOU PLEASE EXPLAIN WHAT THAT IS?

25 DR. GIBSON ANSWERS: PARSES MEANS ANALYZES. ON THE NEXT

1 SLIDE HERE WE HAVE THE COURT'S CLAIM CONSTRUCTION WHERE IT  
2 ANALYZES THE MPEG STREAM AND SEPARATES IT INTO ITS VIDEO AND  
3 AUDIO COMPONENTS. SO THIS IS WHAT I TALKED ABOUT BEFORE WHERE  
4 IT LOOKS FOR THE START CODE IN ORDER TO ANALYZE -- IF WE COULD  
5 GO ON -- THE STREAM. AND SO HERE IS THE ANIMATION WE HAD  
6 BEFORE.

7 DR. GIBSON GAVE THE JURY THAT TESTIMONY ABOUT THE MEANING  
8 OF PARSING IN CLAIM 1, RIGHT?

9 A I DON'T THINK HE WAS SAYING THAT WAS THE MEANING OF  
10 PARSING. HE IS I THINK GIVING A NICE EXPLANATION, AND ALSO IN  
11 THE PREVIOUS QUOTE YOU GAVE AS WELL, THIS ISSUE OF  
12 CONSTRUCTING START CODE TABLE AND THAT WAS AN IMPORTANT ISSUE,  
13 FOR EXAMPLE, WITH RESPECT TO CLAIM 1.

14 Q DR. STORER, DR. GIBSON TOLD THE JURY PARSSES MEANS  
15 ANALYZES: ON THE NEXT SLIDE HERE WE HAVE THE COURT'S CLAIM  
16 CONSTRUCTION WHERE IT ANALYZES THE MPEG STREAM AND SEPARATES  
17 IT INTO ITS VIDEO AND AUDIO COMPONENTS. SO THIS IS WHAT I  
18 TALKED ABOUT BEFORE WHERE IT LOOKS FOR THE START CODE IN ORDER  
19 TO ANALYZE THE STREAM.

20 THAT WAS DR. GIBSON'S TESTIMONY, CORRECT?

21 A CERTAINLY. YEAH, CERTAINLY.

22 Q AND THE SLIDE HE WAS REFERRING TO, IF WE COULD PUT UP  
23 SLIDE 47, THIS IS THE SLIDE THAT DR. GIBSON SHOWED THE JURY  
24 WHEN HE GAVE THAT TESTIMONY, RIGHT?

25 A SO THIS IS SHOWING ONE OF THE CLAIM ELEMENTS FROM CLAIM

1 1, THAT'S CORRECT.

2 Q AND THIS IS THE SLIDE THAT DR. GIBSON SHOWED WHEN HE GAVE  
3 THAT TESTIMONY, RIGHT?

4 A I DON'T HAVE -- I BELIEVE SO, CERTAINLY. IT SOUNDS  
5 REASONABLE, YES.

6 Q OKAY. NOW, YOU TALKED WITH MR. IANCU ON DIRECT ABOUT  
7 SOME THINGS THAT DR. GIBSON SAID ABOUT THE PARSING OF AUDIO  
8 AND VIDEO DATA IN CLAIMS 31 AND 61. LET ME JUST TAKE A STEP  
9 BACK HERE. ARE WE IN AGREEMENT THAT WE COULD JUST TALK ABOUT  
10 CLAIM 31 AND YOUR OPINIONS ABOUT THAT APPLY TO CLAIM 61 AS  
11 WELL?

12 A OH, CERTAINLY, YEAH.

13 Q OKAY. THANK YOU. LET'S LOOK AT WHAT -- AGAIN, AT WHAT  
14 DR. GIBSON --

15 THE COURT: WHAT WAS THAT LAST QUESTION DID YOU SAY?

16 MS. KREVANS: DR. GIBSON'S OPINIONS ABOUT CLAIM 31  
17 APPLY EQUALLY TO CLAIM 61, YOUR HONOR. AND, I'M SORRY, DR.  
18 STORER'S.

19 Q (BY MS. KREVANS:) DR. GIBSON'S DID AT TRIAL AS WELL,  
20 CORRECT?

21 A DR. GIBSON WAS THE FIRST TRIAL, YES.

22 Q YES. AND HIS OPINIONS ABOUT CLAIM 31 APPLIED TO CLAIM 61  
23 EQUALLY AS WELL, RIGHT?

24 A I BELIEVE SO, YES.

25 Q YES.

1 MS. KREVANS: SO FOR CONVENIENCE, YOUR HONOR, I THINK  
2 EVERYONE IS REFERRING OFTEN JUST TO CLAIM 31, BUT THEY MEAN  
3 BOTH.

4 Q (BY MS. KREVANS:) LET'S LOOK AT SOME MORE TESTIMONY THAT  
5 YOU DISCUSSED WITH MR. IANCU. THIS IS FROM MARCH 31<sup>ST</sup>. AGAIN,  
6 DR. GIBSON'S TESTIMONY, MORNING SESSION, PAGE 32, LINES 18  
7 THROUGH 33, LINE 3. AND THIS IS TESTIMONY THAT WAS PUT UP ON  
8 A SLIDE FOR YOU EARLIER BY YOUR COUNSEL.

9 QUESTION: AND DO ALL THE ECHOSTAR PRODUCTS -- I'M SORRY.  
10 CAN YOU DESCRIBE IN WORDS WHERE IN EXHIBIT 483 THE PHYSICAL  
11 DATA SOURCE RESIDES?

12 ANSWER: THE PHYSICAL DATA SOURCE IS ON THE BROADCOM CHIP.

13 QUESTION: AND WHAT SPECIFIC CIRCUITRY WITHIN THE BROADCOM  
14 CHIP?

15 ANSWER: IT RELIES ON THE INPUT BUFFER AND THE -- WHERE  
16 THERE'S PID FILTERING, AND THE START CODE DETECTION WOULD  
17 CREATE THE FRAME INDEX TABLE, AND THEN THERE IS ALSO A DMA,  
18 DIRECT MEMORY ACCESS, THERE.

19 THAT WAS DR. GIBSON'S TESTIMONY ABOUT THE PHYSICAL DATA  
20 SOURCE, CORRECT?

21 A THAT'S CORRECT, YES.

22 Q NOW, HE LISTS A WHOLE BUNCH OF THINGS THAT ARE COMPONENTS  
23 OF A PORTION OF THE BROADCOM CHIP IN HIS TESTIMONY THERE ABOUT  
24 THE PHYSICAL DATA SOURCE, RIGHT?

25 A IN HIS TESTIMONY ABOUT IT HE DID LIST A BUNCH OF THINGS,

1 THE FIRST OF WHICH OF COURSE WAS THE PID FILTER.

2 Q BUT HE ALSO LISTS THE START CODE DETECTION THAT WOULD  
3 CREATE A FRAME INDEX TABLE, RIGHT?

4 A AND DIRECT MEMORY ACCESS IS ALSO MENTIONED HERE.

5 Q OKAY. SO HE GIVES A LIST OF THINGS AND HE SAYS THEY ALL  
6 RELATE IN HIS VIEW TO THE PHYSICAL DATA SOURCE OF CLAIMS 31  
7 AND 61, RIGHT?

8 A WELL, I THINK AS LONG AS YOU UNDERSTAND WHAT YOU MEAN BY  
9 RELATE. I DON'T THINK HE IS SAYING THEY ALL HAVE TO BE THERE  
10 AT ONCE OR ANYTHING LIKE THAT. BUT HE CERTAINLY DOES MENTION  
11 A NUMBER OF ITEMS IN ADDITION TO PID FILTERING, IF THAT'S WHAT  
12 YOU'RE ASKING.

13 Q HE GIVES THIS LIST AND HE SAYS THAT IS WHERE THE PHYSICAL  
14 DATA SOURCE RESIDES IN THE BROADCOM CHIP, RIGHT?

15 A HE DOES SAY THAT THE PID FILTERING RESIDES IN THE  
16 PHYSICAL DATA SOURCE, THAT'S CORRECT.

17 Q HE GAVE A WHOLE LIST OF THINGS, DR. STORER, NOT JUST PID  
18 FILTERING. HE SAID PID FILTERING, START CODE DETECTION THAT  
19 WOULD CREATE THE FRAME INDEX TABLE, AND DMA ACCESS ALL WERE  
20 HIS DESCRIPTION OF WHERE IN THE BROADCOM CHIP THE PHYSICAL  
21 DATA SOURCE RESIDES, CORRECT?

22 A SO I GUESS MY ONLY CONCERN IS THAT WE'RE TALKING ABOUT  
23 CLAIM 1, AND SAYING THINGS CAN BE THERE IS NOT SAYING THAT  
24 THEY HAVE TO BE. THERE IS NOTHING THAT START CODE DETECTION  
25 HAS TO BE THERE, LET'S SAY, IN CLAIM 31. HE IS TALKING ABOUT

1 CLAIM 1, AND CERTAINLY MENTIONS PID FILTERING AND MENTIONS  
2 SOME OTHER THINGS THAT -- AS WELL. SO I GUESS AS LONG AS WITH  
3 THAT UNDERSTANDING, I CERTAINLY HAVE NO PROBLEM WITH THE  
4 TESTIMONY YOU'VE SHOWN ME.

5 Q DR. STORER, THE QUESTION HERE TO DR. GIBSON AT TRIAL WAS:  
6 CAN YOU DESCRIBE IN WORDS WHERE IN THE BROADCOM CHIP THE  
7 PHYSICAL DATA SOURCE RESIDES? PHYSICAL DATA SOURCE IS A TERM  
8 FROM CLAIM 31, NOT CLAIM 1, RIGHT?

9 A THAT'S CORRECT.

10 Q SO DR. GIBSON WAS NOT TALKING HERE ABOUT CLAIM 1, WAS HE?

11 A I'M SORRY. SO I DIDN'T -- IF YOU TOOK IT THAT WAY, I'M  
12 SORRY, I DIDN'T MEAN IT THAT WAY. WHAT I MEANT IS THAT THE  
13 INDEXING, RIGHT, IS SOMETHING THAT WOULD BE THERE, THAT'S  
14 TRUE. BUT HE IS NOT SAYING BUT INDEXING IS SOMETHING THAT  
15 CAME UP IN CLAIM 1, NOT CLAIM 31. THAT'S WHAT I MEANT. I  
16 DON'T KNOW HOW YOU TOOK THAT. AND HE IS MENTIONING SOME OTHER  
17 THINGS THAT ARE GOING TO BE THERE, BUT THE FIRST THING HE SAYS  
18 IS PID FILTERING, IT'S THERE.

19 Q DR. GIBSON WAS NOT BEING ASKED ABOUT CLAIM 1 WHEN HE GAVE  
20 HIS TESTIMONY, WAS HE, DR. STORER?

21 A NO. NO, AND I DIDN'T MEAN TO IMPLY THAT.

22 Q THANK YOU. NOW, YOU WERE TALKING THIS MORNING WITH YOUR  
23 COUNSEL ABOUT SLIDE 92. DO YOU RECALL THAT TESTIMONY? AND  
24 YOU -- HE ASKED YOU IF YOU RECALLED WHETHER SLIDE 92 WAS  
25 ACTUALLY SHOWN TO THE JURY. DO YOU RECALL THAT?

1 A I DO, YES, CERTAINLY.

2 Q OKAY. AND YOU LOOKED AT A PIECE OF THE TRANSCRIPT AND  
3 WHAT THAT TRANSCRIPT SHOWED YOU WAS THE SLIDE 92 IN FACT WAS  
4 PUT UP AND THEN IT WAS TAKEN BACK DOWN, AND DR. GIBSON TALKED  
5 ABOUT IT WITHOUT IT BEING UP ON THE SCREEN, CORRECT? SO IT'S  
6 UP AND THEN DOWN AND THEN HE TALKED ABOUT IT. IS THAT RIGHT?

7 A YES. I THINK, AND I MENTIONED IT WAS SORT OF LIKE TODAY,  
8 FLASHED UP ESSENTIALLY IT SOUNDS LIKE BY MISTAKE AND QUICKLY  
9 PUT DOWN, AND THEN HE TALKED WITHOUT IT IN FRONT OF HIM OR THE  
10 JURY, THAT'S CORRECT.

11 Q OKAY. IN FACT, WHAT'S HIGHLIGHTED -- SLIDE 92 IS A  
12 LITTLE INDISTINCT BUT THAT'S OKAY BECAUSE IT MAKES IT OKAY TO  
13 SHOW IN THE COURTROOM. WHAT'S HIGHLIGHTED ON SLIDE 92, IT WAS  
14 PUT UP AND THEN TAKEN DOWN AS BEING WHERE THE PHYSICAL DATA  
15 SOURCE RESIDES ON THE BROADCOM CHIP ARE SOME BLOCKS THAT  
16 INCLUDE AN INPUT BUFFER AND START CODE DETECT HARDWARE,  
17 CORRECT?

18 A THE THINGS HE HIGHLIGHTS IN THE GRAPHIC DO INCLUDE A  
19 NUMBER OF THINGS THAT YOU MENTIONED, THE PID FILTERING, AND  
20 THERE'S THREE AREAS OF HIGHLIGHTING HERE, THAT'S CERTAINLY  
21 TRUE. HE HIGHLIGHTS ON THE GRAPHIC.

22 Q THE PID FILTERS IN THIS SCHEMATIC ARE THE BOXES TO THE  
23 LEFT OF THE HIGHLIGHTED INPUT BUFFER THAT SAY PARSER ON EACH  
24 OF THEM, AREN'T THEY?

25 A IF YOU LOOK CLOSELY THERE, IT'S A LITTLE HARD TO SEE, BUT

1 IF YOU LOOK AT THAT BIG YELLOW ARROW POINTING IN TO THOSE,  
2 THERE IS ACTUALLY THOSE LITTLE BOXES. THAT'S -- THOSE ARE  
3 THE PID FILTERS, THAT'S CORRECT.

4 Q AND NONE OF THOSE BOXES THAT ARE LABELED PARSER THAT ARE  
5 THE PID FILTERS ARE HIGHLIGHTED IN THIS GRAPHIC, ARE THEY?

6 A WELL, DEPENDING ON HOW YOU INTERPRET THE BIG YELLOW ARROW  
7 GOING INTO THEM, BUT THE LITERAL BOXES THEMSELVES AREN'T  
8 HIGHLIGHTED, IF THAT'S WHAT YOU'RE ASKING. BUT OF COURSE THE  
9 -- I CERTAINLY UNDERSTAND LOOKING AT THE DIAGRAM THAT HE'S  
10 TALKING ABOUT THIS FRONT END WITH THE PID FILTERING AND THE  
11 TEMPORARY STORAGE.

12 Q OKAY. BUT YOU UNDERSTAND THAT HE DIDN'T HIGHLIGHT THE  
13 BOXES THAT ARE THE PID FILTERS, RIGHT?

14 A WELL, I GUESS THAT'S WHAT I WAS SAYING IS I DID  
15 UNDERSTAND THE BIG ARROW TO BE POINTING RIGHT INTO THE PID  
16 FILTERS, BUT I DID ALSO AGREE, I AM NOT TRYING TO DISAGREE  
17 WITH YOU, THAT IF YOU LITERALLY LOOK AT THE DIAGRAM, THE BOXES  
18 THEMSELVES ARE NOT YELLOW. SO I'M NOT TRYING TO DISAGREE WITH  
19 YOU, THERE MAY BE PERHAPS A LITTLE BIT IN TERMS OF YOUR  
20 CHARACTERIZATION OF THESE NOT SOMEHOW POINTING TO THOSE PID  
21 FILTERS WITH THAT GIANT YELLOW ARROW.

22 Q WELL, ON THIS SLIDE FROM DR. GIBSON FROM THE TRIAL HE'S  
23 GOT BOXES WITH THREE TEXT BULLETS IN THEM. DO YOU SEE THAT?

24 A EXCUSE ME, I'M SORRY. COULD YOU REPEAT THE QUESTION?

25 Q ON DR. GIBSON'S SLIDE 92 FROM THE TRIAL, HE HAS THREE

1 BOXES WITH TEXT BULLETS IN THEM, CORRECT?

2 A CERTAINLY.

3 Q AND THE FIRST BULLET SAYS: ACCEPTS BROADCAST DATA FROM AN  
4 INPUT DEVICE, RIGHT?

5 A THAT'S CORRECT.

6 Q SECOND BULLET: ANALYZES VIDEO AND AUDIO DATA FROM THE  
7 BROADCAST DATA, RIGHT?

8 A THAT'S CORRECT.

9 Q THIRD BULLET: TEMPORARILY STORES SAID VIDEO AND AUDIO  
10 DATA, CORRECT?

11 A THAT'S CORRECT.

12 Q NOW, ACCORDING TO THE LANGUAGE OF CLAIMS 31 AND 61, THOSE  
13 THREE THINGS ARE ALL THINGS THAT THE PHYSICAL DATA SOURCE OF  
14 CLAIMS 31 AND 61 HAS TO DO, CORRECT?

15 A THAT'S CORRECT.

16 Q IT DOESN'T JUST PARSE AUDIO, VIDEO, AND AUDIO DATA FROM  
17 THE BROADCAST DATA. THAT'S THE SECOND BULLET POINT HERE WHERE  
18 PARSE IS WRITTEN AS ANALYZE ACCORDING TO THE CLAIM  
19 CONSTRUCTION, RIGHT?

20 A THERE -- IT DOES DO THESE THREE THINGS, IF THAT'S WHAT  
21 YOU'RE ASKING, YES.

22 Q OKAY.

23 MR. IANCU: YOUR HONOR, IT OCCURS TO ME THAT THE  
24 COURTROOM WAS CLEARED DUE TO, LAST TIME, DUE TO THE FACT THAT  
25 THIS IS A THIRD PARTY DOCUMENT SHOWN UP HERE. IT'S BASICALLY

1 THE SAME UNDERLYING DOCUMENT, WHICH IS A BROADCOM DOCUMENT.

2 MS. KREVANS: AND, YOUR HONOR, THERE WERE SOME  
3 GRAPHICS THAT WERE SHOWN EARLIER THAT WERE SOMEWHAT LIKE THIS,  
4 INCLUDING THIS ONE, THAT I DID NOT ASK THE COURTROOM BE  
5 CLEARED FOR BECAUSE THEY ARE SO ILLEGIBLE THAT WE WERE  
6 COMFORTABLE THAT THE THIRD PARTY'S INFORMATION WAS PROTECTED.

7 THE COURT: I AGREE WITH THAT. I CAN'T READ IT.  
8 SO --

9 MS. KREVANS: WHEN WE -- IF WE SHOW THE UNDERLYING --  
10 THE COURT: SO ARE YOU REQUESTING THE COURTROOM BE  
11 CLEARED? ARE YOU REQUESTING FOR ECHOSTAR?

12 MR. IANCU: WELL, THIS IS A THIRD PARTY. IT'S NOT  
13 ECHOSTAR, IT IS A BROADCOM DOCUMENT, AND I'M JUST POINTING OUT  
14 THAT THE LAST TIME WE HAD IT UP WE HAD TO CLEAR AND NOW WE'RE  
15 NOT DOING IT.

16 THE COURT: WELL, ARE YOU MAKING THE REQUEST OR ARE  
17 YOU SIMPLY POINTING IT OUT?

18 MR. IANCU: I'M NOT GOING TO MAKE THE REQUEST WHEN  
19 BROADCOM --

20 THE COURT: VERY WELL. I AM ASSUMING, THEN, IF  
21 ECHOSTAR DOESN'T MAKE THE REQUEST, I AM NOT GOING TO BE  
22 CONCERNED ABOUT IT.

23 MS. KREVANS: YOUR HONOR, WHEN WE SHOW THE UNDERLYING  
24 DOCUMENT WHICH IS LEGIBLE --

25 THE COURT: I UNDERSTAND.

1 MS. KREVANS: -- WE DO HAVE TO CLEAR THE COURTROOM.

2 THE COURT: AND I TRUST ANY TIME YOU FEEL THE  
3 COURTROOM NEEDS TO BE CLEAR, YOU ARE GOING TO LET ME KNOW.

4 MS. KREVANS: THANK YOU, YOUR HONOR.

5 THE COURT: VERY WELL. WE ARE USING VALUABLE TIME.

6 Q (BY MS. KREVANS:) SO IN ADDITION TO THE REQUIREMENT OF  
7 THE CLAIM THERE IS A PHYSICAL DATA SOURCE PARSE THAT IS  
8 ANALYZE VIDEO AND AUDIO DATA FROM THE BROADCAST DATA, IT MUST  
9 ALSO ACCEPT BROADCAST DATA FROM INPUT DEVICE AND TEMPORARILY  
10 STORE IT, CORRECT?

11 A YES. THOSE THREE THINGS ARE PART OF THAT CLAIM ELEMENT,  
12 THAT'S CORRECT.

13 Q OKAY. NOW THE PHYSICAL DATA SOURCE OF THIS CLAIM 3161 IS  
14 ACTUALLY A PIECE OF HARDWARE, RIGHT?

15 A THE PHYSICAL DATA SOURCE IS A PIECE OF HARDWARE THAT'S  
16 CONTROLLED BY SOFTWARE, THAT'S CORRECT.

17 Q OKAY. AND SO CLAIMS 31 AND 61 DON'T RELATE SOLELY TO  
18 SOFTWARE, RIGHT?

19 A NO, THEY RELATE TO SOFTWARE THAT -- OBVIOUSLY ANY  
20 SOFTWARE. UNDERLYING IT THERE IS HARDWARE SOMEWHERE, RIGHT,  
21 AND OF COURSE THEY DO RELATE TO SOFTWARE THAT CONTROLS  
22 HARDWARE, THAT'S CORRECT.

23 Q AND IN FACT SEVERAL OF THE ELEMENTS OF CLAIMS 31 AND 61  
24 SPECIFICALLY REFER TO HARDWARE, INCLUDING THE PHYSICAL DATA  
25 SOURCE ELEMENT, RIGHT?

1 A YES, YOU ALSO SAW AN INPUT DEVICE ACCEPTING BROADCAST  
2 DATA FROM AN INPUT DEVICE, FOR EXAMPLE.

3 Q SO THE INPUT DEVICE WOULD BE ANOTHER PIECE OF HARDWARE  
4 CALLED FOR BY THIS CLAIM, CORRECT?

5 A YES, CERTAINLY IT COULD BE, AND SO AGAIN SOFTWARE  
6 CONTROLLING HARDWARE, I THINK THAT'S CORRECT.

7 Q OKAY. AND THERE'S A STORAGE DEVICE THAT THE TRANSFORM  
8 OBJECT STORES AND RETRIEVES DATA FROM ALSO CALLED FOR BY THIS  
9 CLAIM, ALSO HARDWARE, RIGHT?

10 A IT TALKS ABOUT TEMPORARILY STORING SAID VIDEO AND AUDIO  
11 DATA, SO AGAIN THIS COULD BE SOFTWARE CONTROLLING WHAT  
12 ULTIMATELY, AS WE MENTIONED, COULD BE HARDWARE OR THE CHIP  
13 ITSELF IS HARDWARE, MEMORY IN SOME FORM IS HARDWARE, ETCETERA.

14 Q IN FACT, THE PATENT, THE '389 PATENT, EQUATES THE  
15 PHYSICAL DATA SOURCE OF CLAIMS 31 AND 61 WITH THE MEDIA SWITCH  
16 THAT'S CALLED FOR SPECIFICALLY BY CLAIM 1, CORRECT?

17 A NO, THAT'S NOT CORRECT. IT DOES GIVE IT AS AN EXAMPLE,  
18 RIGHT, SO THERE ARE A LOT OF PREFERRED EMBODIMENTS DISCUSSED,  
19 AND CERTAINLY IT GIVES AN EXAMPLE AND GIVES THAT EXAMPLE, BUT  
20 I DON'T THINK YOU WOULD WANT TO SAY THAT IT EQUATES IT OR  
21 SOMETHING LIKE THAT.

22 Q WHY DON'T WE LOOK AT EXACTLY WHAT THE PATENT SAYS?

23 MS. KREVANS: MICHAEL, COULD WE HAVE COLUMN 8, LINES  
24 43-45? THAT'S NOT WHAT I'M LOOKING FOR. OH, YEAH, THERE WE  
25 ARE. OKAY. I AM SORRY, YOUR HONOR. I JUST LOST MY PLACE

1 HERE FOR A SECOND.

2 Q (BY MS. KREVANS) IN COLUMN 8 OF THE PATENT, LINES 43-45  
3 IT SAYS: THE SOURCE OBJECT 901 TAKES DATA OUT OF A PHYSICAL  
4 DATA SOURCE SUCH AS THE MEDIA SWITCH, RIGHT?

5 A THIS IS EXACTLY WHAT I'M SAYING. THIS IS A PREFERRED  
6 EMBODIMENT, AND SUCH AS THE MEDIA SWITCH, EXACTLY.

7 Q SO THE MEDIA SWITCH IS A PREFERRED EMBODIMENT OF THE  
8 PHYSICAL DATA SOURCE, RIGHT?

9 A THIS WHOLE SECTION IS TALKING ABOUT A PREFERRED  
10 EMBODIMENT, AND WITHIN THAT THE MEDIA SWITCH IS AN EXAMPLE OF  
11 SOMETHING.

12 Q OKAY. AND THE MEDIA SWITCH IS DESCRIBED IN DETAIL AT  
13 COLUMNS 5, 6, AND GOING OVER TO COLUMN 7 OF THE PATENT, RIGHT?

14 A THAT SOUNDS RIGHT. MY RECOLLECTION IS CORRECT THAT THERE  
15 IS QUITE A BIT OF DISCUSSION IN THAT AREA OF THE PATENT ABOUT  
16 THE MEDIA SWITCH.

17 Q OKAY. AND THE MEDIA SWITCH ALSO IS ILLUSTRATED IN QUITE  
18 A BIT OF DETAIL IN FIGURES 4, 5, AND 6, RIGHT?

19 A I BELIEVE -- CERTAINLY THE FIGURES, THERE WERE FIGURES  
20 IN, A NUMBER OF FIGURES IN THE PATENT THAT ILLUSTRATED THE  
21 MEDIA SWITCH, CORRECT.

22 Q OKAY. LET'S LOOK AT COLUMN 6 FOR SOME OF THE DESCRIPTION  
23 OF THE PATENT ABOUT WHAT THIS MEDIA SWITCH, WHICH IS AN  
24 EXAMPLE OF THE PHYSICAL DATA SOURCE OF CLAIMS 31 AND 61 DOES.

25 MS. KREVANS: COULD WE GO TO COLUMN 6, LINES ABOUT

1 37-46?

2 Q (BY MS. KREVANS) AND I APOLOGIZE IF THESE LINE REFERENCES  
3 AREN'T QUITE RIGHT, DR. STORER, BUT UNFORTUNATELY THIS PATENT  
4 IS ONE OF THE ONES WHERE THE NUMBERS SEEM TO APPEAR HALFWAY  
5 BETWEEN THE LINES.

6 A RIGHT. AND I SEE WHAT YOU MEAN. OKAY.

7 Q OKAY. AT COLUMN 6 OF THE PATENT IN DESCRIBING THIS MEDIA  
8 SWITCH WHICH IS AN EXAMPLE OF A PHYSICAL DATA SOURCE OF CLAIMS  
9 31 AND 61, THE PATENT SAYS: THE PARSER 705 PARSSES THE INPUT  
10 DATA STREAM FROM THE MPEG ENCODER 703, AUDIO ENCODER 704, AND  
11 VBI DECODER 702, OR FROM THE TRANSPORT DEMULTIPLEXOR IN THE  
12 CASE OF A DIGITAL TV STREAM. THE PARSER 705 DETECTS THE  
13 BEGINNING OF ALL THE IMPORTANT EVENTS IN A VIDEO OR AUDIO  
14 STREAM. THE START OF ALL THE FRAMES, THE START OF SEQUENCE  
15 HEADERS, ALL OF THE PIECES OF INFORMATION THAT THE PROGRAM  
16 LOGIC NEEDS TO KNOW ABOUT IN ORDER TO PROPERLY PLAY BACK AND  
17 PERFORM SPECIAL EFFECTS ON THE STREAM, E.G. FAST FORWARD,  
18 REVERSE, PLAY, PAUSE, FAST/SLOW PLAY, INDEXING, AND FAST/SLOW  
19 REVERSE PLAY.

20 IS THAT WHAT THE PATENT SAYS HERE ABOUT THE MEDIA SWITCH?

21 A YES.

22 Q AND THE PARSING THAT IT'S TALKING ABOUT THERE THAT'S DONE  
23 BY THE PARSER IS LOOKING THROUGH THE AUDIO/VIDEO DATA TO FIND  
24 THE STARTS OF THINGS LIKE VIDEO FRAMES AND AUDIO FRAMES AND  
25 THEN MAKING AN INDEX TABLE OF THEM, CORRECT?

1 A WELL, I DON'T THINK THAT'S A CORRECT CHARACTERIZATION.  
2 IT BEGINS BY TALKING ABOUT PARSING THE INPUT DATA STREAM FROM  
3 THE MPEG ENCODER WHICH IT SAYS COULD BE A TRANSPORT STREAM  
4 DEMULTIPLEXOR. AND SO THIS IS EXACTLY WHERE WE'RE TALKING  
5 ABOUT PID FILTERING, RIGHT, WHEN THE TRANSPORT STREAM COMES  
6 DOWN AND YOU HAVE ALL THESE CHANNELS, YOU HAVE TO -- YOU HAVE  
7 TO PICK ONE, ONE TV CHANNEL, OR WHATEVER, THE NEWS SHOW. SO  
8 IT'S TALKING ABOUT THAT. IT'S ALSO TALKING ABOUT OTHER THINGS  
9 THAT IN THIS CASE RELATE TO CLAIM 1 AS WELL.

10 Q THE FIRST SENTENCE OF THE PARAGRAPH WE ARE LOOKING AT,  
11 DR. STORER, SAYS: THE PARSER 705 PARSSES THE INPUT DATA STREAM  
12 FROM THE MPEG ENCODER, AUDIO ENCODER 704, AND VIDEO ENCODER  
13 702, OR FROM THE TRANSPORT DEMULTIPLEXOR IN THE CASE OF A  
14 DIGITAL TV STREAM. DO YOU SEE THAT SENTENCE?

15 A YES.

16 Q THE INPUT STREAM THAT THE PARSER IS PARSING IN THIS  
17 SENTENCE IS COMING FROM AN MPEG ENCODER OR FROM A TRANSPORT  
18 DEMULTIPLEXOR, RIGHT?

19 A EXACTLY.

20 Q SO THIS STREAM IS THE OUTPUT OF A TRANSPORT DEMULTIPLEXOR  
21 IN THE CASE OF A DIGITAL TV STREAM, CORRECT?

22 A WELL, IT'S -- I THINK IT'S CRYSTAL CLEAR WHAT IT SAYS.  
23 I'M NOT SURE THAT'S CORRECT THE WAY YOU CHARACTERIZE IT. IT  
24 SAYS THE PARSER PARSSES THE INPUT DATA STREAM FROM THE MPEG  
25 ENCODER OR IN THE CASE OF DIGITAL DATA, THE TRANSPORT

1 DEMULTIPLEXOR. THIS IS EXACTLY WHAT PID FILTERING IS, RIGHT.

2 Q RIGHT. SO LET'S SEE IF WE CAN BE CLEAR HERE. THERE IS A  
3 TRANSPORT DEMULTIPLEXOR. OUT OF IT COMES A DATA STREAM WHICH  
4 IS INPUT TO THE PARSER, RIGHT?

5 A IT SAYS IT PARSES IT FROM, SO THE FIRST THING IT TALKS  
6 ABOUT IS THIS WHOLE NOTION OF TRANSPORT DEMULTIPLEXING AND  
7 PARSING. AND IT GOES ON TO TALK ABOUT OTHER EVENTS THAT YOU  
8 COULD ALSO DETECT HERE, THE BEGINNING OF ALL IMPORTANT EVENTS  
9 IN VIDEO OR AUDIO STREAM, THE START OF ALL FRAMES, AND SO ON  
10 AND SO FORTH.

11 Q IF YOU LOOK AT FIGURE 7 IN THE PATENT -- COULD WE PUT  
12 THAT UP ON THE SCREEN, MICHAEL? ARE YOU FAMILIAR WITH THIS  
13 FIGURE, DR. STORER?

14 A YES.

15 Q OKAY. YOU SEE ON THE LEFTHAND SIDE OF THE FIGURE OUTSIDE  
16 -- WELL, LET ME START OVER. YOU SEE IN THE MIDDLE OF THE  
17 FIGURE THERE'S A BIG RECTANGLE AND INSIDE IT ARE A NUMBER OF  
18 BOXES, AND THE RECTANGLE IS LABELED 701. DO YOU SEE THAT?

19 A YES. YES.

20 Q OKAY. TO THE LEFT OF THAT BIG RECTANGLE THERE ARE THREE  
21 BOXES LABELED 702, 703, AND 704, RIGHT?

22 A YES.

23 Q 703 IS THE MPEG ENCODER THAT'S REFERRED TO IN THE  
24 PARAGRAPH THAT WE JUST TALKED ABOUT?

25 A YES.

1 Q OKAY. IT'S OUTSIDE THAT BIG BOX 701?

2 A IN THIS FIGURE, YES, IT'S A BOX THAT POINTS TO THE LEFT  
3 EDGE, IF YOU WILL, OF THAT BIG BOX.

4 Q OKAY. IN FACT WHAT THIS FIGURE INDICATES IS THAT THE  
5 MPEG ENCODER HAS OUTPUT, SHOWN BY THE ARROW, THAT GOES INTO  
6 BOX 701, RIGHT?

7 A I'M SORRY, YOU SAID THE MPEG ENCODER HAS AN ARROW THAT  
8 GOES INTO BOX 701?

9 Q CORRECT.

10 A THAT'S CORRECT.

11 Q AND THAT INDICATES THAT THE OUTPUT OF THE MPEG ENCODER  
12 FLOWS INTO BOX 701, CORRECT?

13 A THAT'S CORRECT.

14 Q AND THE FIRST THING IT COMES TO IN BOX 701 IS THE PARSER,  
15 RIGHT?

16 A THAT'S CORRECT.

17 Q NOW, THE TEXT OF THAT PARAGRAPH THAT WE WERE JUST LOOKING  
18 AT IN COLUMN 7, RIGHT ABOVE IT, IF YOU LOOK BACK AT COLUMN 7,  
19 AND IF YOU WANT THERE IS A PATENT IN THE BINDER IN FRONT OF  
20 YOU, THERE IS A PARAGRAPH THAT SAYS: REFERRING TO FIGURE 7 --  
21 THIS IS COLUMN 6, LINE 26 AT SEC -- THE INPUT SIDE OF THE  
22 MEDIA SWITCH 701 IS CONNECTED TO AN MPEG ENCODER. AND I AM  
23 JUST GOING TO SKIP A SENTENCE. IF A DIGITAL TV SIGNAL IS  
24 BEING PROCESSED INSTEAD, THE MPEG ENCODER 703 IS REPLACED  
25 WITH AN MPEG-2 TRANSPORT DEMULTIPLEXOR. DO YOU SEE THAT

1 SENTENCE?

2 A YES.

3 Q DO YOU UNDERSTAND THAT THAT MEANS IF YOU ARE RECEIVING A  
4 DIGITAL TELEVISION STREAM YOU WOULD TAKE FIGURE 7, TAKE OUT  
5 THE MPEG ENCODER AND PUT A TRANSPORT DEMULTIPLEXOR IN THE  
6 PLACE OF MPEG ENCODER 703?

7 A THAT'S -- I'M SORRY -- THAT'S CORRECT.

8 Q IS THAT CORRECT? BECAUSE IF WE GO BACK TO FIGURE 7 WE  
9 HAVE THAT CIRCUMSTANCE THAT BOX 703 ON THE LEFTHAND SIDE IS  
10 GONE AND NOW IS A TRANSPORT DEMULTIPLEXOR THERE INSTEAD,  
11 RIGHT?

12 A SO IT CAN BE REPLACED, THAT'S CORRECT.

13 Q OKAY. AND IT WOULD BE REPLACED IN THE CASE OF A DIGITAL  
14 TELEVISION STREAM, CORRECT?

15 A THAT'S CORRECT.

16 Q AND THEN IN THAT CASE, THE OUTPUT OF THAT TRANSPORT  
17 DEMULTIPLEXOR WOULD BE GOING INTO BOX 701, RIGHT?

18 A SO, WELL, IF YOU LOOK AT THIS FIGURE, YES, THAT'S  
19 CORRECT.

20 Q THAT'S WHAT THE FIGURE SHOWS, RIGHT?

21 A THE FIGURE DOES SHOW AN ARROW GOING FROM THE MPEG ENCODER  
22 BOX TO THE EDGE OF THE LARGE BOX, THAT'S CORRECT.

23 Q AND THE OUTPUT OF THAT TRANSPORT DEMULTIPLEXOR THEN WOULD  
24 BE INPUT THAT WOULD COME FIRST TO THE PARSER 705?

25 A IN THIS FIGURE, THAT'S CORRECT. THIS IS SHOWING THE MPEG

1 ENCODER BOX PUTTING AN ARROW TO THE EDGE OF THE LARGE BOX,  
2 AND FROM THERE AN ARROW GOES NEXT TO THE PARSER, THAT'S  
3 CORRECT.

4 Q OKAY. AND THAT TRANSPORT DEMULTIPLEXOR THAT WOULD  
5 REPLACE BOX 703, THAT'S THE PID FILTER, RIGHT?

6 A EXCUSE ME?

7 Q THE TRANSPORT DEMULTIPLEXOR THAT WOULD REPLACE BOX 703,  
8 THAT'S THE PID FILTER YOU HAVE BEEN TALKING ABOUT, RIGHT?

9 A SO PID FILTERING IS THE PROCESS OF SELECTING ONE CHANNEL  
10 FROM MANY, IF YOU WILL, WHEN THEY COME DOWN FROM THE  
11 SATELLITE.

12 Q DONE BY A TRANSPORT DEMULTIPLEXOR, RIGHT?

13 A WELL, THERE -- THE TRANSPORT DEMULTIPLEXOR, THERE'S --  
14 YOU NEED TO PARSE THE DATA. JUST LOOK WHAT THE TEXT SAID  
15 BEFORE, YOU PARSE THE DATA FROM THE SATELLITE AND YOU ARE  
16 CHOOSING ONE OF THOSE CHANNELS TO WATCH, THAT'S CORRECT.

17 Q AND THAT'S WHAT A TRANSPORT DEMULTIPLEXOR DOES, CORRECT?

18 A TRANSPORT DEMULTIPLEXOR USUALLY REFERS TO HARDWARE AND  
19 USUALLY -- AND THAT HARDWARE INVOLVES PARSING. YOU NEED TO DO  
20 PARSING IN ORDER TO GET -- TO SELECT THE CHANNEL THAT YOU  
21 WOULD LIKE TO WATCH.

22 Q DR. STORER, ACCORDING TO THIS FIGURE AND THE DESCRIPTION  
23 IN COLUMN 6, IN THE EVENT OF A DIGITAL STREAM WHERE 703 IS  
24 REPLACED BY A TRANSPORT DEMULTIPLEXOR, THE LOCATION OF THE PID  
25 FILTER IN THIS DIAGRAM WOULD BE IN THAT BOX LABELED 703 ON THE

1 LEFT, CORRECT?

2 A WELL, THIS IS THE HIGH LEVEL DIAGRAM REFERRING TO CLAIM  
3 1. THERE'S CERTAINLY -- I'M NOT -- I'M NOT TRYING TO DISAGREE  
4 WITH YOU, BUT IT'S CERTAINLY THE CASE THAT PID FILTERING IS  
5 WHAT YOU DO WHEN YOU ARE DOING TRANSPORT STREAM  
6 DEMULTIPLEXING. YOU ARE PARSING TO GET THAT CHANNEL THAT YOU  
7 WANT TO WATCH AND GET RID OF THE OTHER CHANNELS YOU DON'T WANT  
8 TO WATCH. SO I DON'T KNOW AS I AM TRYING TO DISAGREE WITH YOU  
9 IN ANY WAY. THERE IS SOME PRETTY CLEAR LANGUAGE IN THE CLAIM,  
10 AND THERE IS A HIGH LEVEL FIGURE HERE THAT SHOWS PARSING, THAT  
11 SHOWS THAT YOU HAVE AN MPEG TRANSPORT STREAM BEING  
12 DEMULTIPLEXED. IT SEEMS I'M NOT QUITE SURE WHAT THE PROBLEM  
13 IS. I THINK I AM AGREEING WITH YOU, GENERALLY SPEAKING.

14 Q LET'S BE CLEAR THEN, DR. STORER.

15 A OKAY.

16 Q ARE YOU AGREEING WITH ME THAT IN THE EVENT OF A DIGITAL  
17 TELEVISION STREAM, THE PLACE WHERE THE PID FILTER WOULD BE IN  
18 THIS DIAGRAM IS INSTEAD OF THAT BOX ON THE LEFT THAT SAYS 703?

19 A WELL, THE PID FILTER IS A PARSING OPERATION, AND THIS  
20 DIAGRAM IS TALKING ABOUT CLAIM 1, SO THERE'S LOTS OF PARSING  
21 THAT'S DONE IN CLAIM 1 ALL OVER THE PLACE. SO I'M NOT QUITE  
22 SURE EXACTLY HOW TO MAP THIS VERY HIGH LEVEL FIGURE TO YOUR  
23 DETAILS WHERE YOU'RE TRYING TO GET INTO THE PROCESS OF THE  
24 TRANSPORT STREAM DEMUX. IT CERTAINLY IS TRUE THAT TRANSPORT  
25 STREAM DEMULTIPLEXING IS SOMETHING THAT YOU -- THAT'S WHAT

1 YOU'RE USING PID FILTERING TO DO THAT. OKAY.

2 SO YOU'RE TRYING TO SELECT THE CHANNEL YOU WANT TO VIEW,  
3 BUT THIS IS A HIGH LEVEL DIAGRAM THAT'S TALKING ABOUT A LOT OF  
4 OPERATIONS THAT WOULD BE -- A LOT OF ANALYSIS BESIDES JUST THE  
5 PID FILTERING. AND, IN FACT, YOU SAW THAT IN THE LANGUAGE  
6 THAT ACTUALLY REFERS TO THIS FIGURE. THE FIGURE TALKED NOT  
7 ONLY ABOUT PID FILTERING OR THAT INITIAL PARSING. IT TALKED  
8 ABOUT THINGS LIKE LOOKING FOR START CODES AND ALL THOSE OTHER  
9 KINDS OF THINGS WHICH ARE ADDITIONAL ANALYSIS. SO AGAIN, I  
10 DON'T THINK I'M REALLY TRYING TO DISAGREE WITH YOU. IT'S A  
11 HIGH LEVEL FIGURE AND IT SHOWS ALL THESE THINGS WE'VE BEEN  
12 TALKING ABOUT AT A HIGH LEVEL, I THINK.

13 MS. KREVANS: MOVE TO STRIKE AS NONRESPONSIVE, YOUR  
14 HONOR.

15 THE COURT: REPEAT YOUR QUESTION. DOCTOR, IF YOU  
16 WILL LISTEN CAREFULLY TO THE QUESTION AND --

17 THE WITNESS: OKAY.

18 THE COURT: -- RESPOND TO IT, WE WILL MOVE ALONG  
19 MUCH QUICKER.

20 Q (BY MS. KREVANS:) DR. STORER, ACCORDING TO THE  
21 DESCRIPTION IN COLUMN 6 OF THIS FIGURE 7, IN THE EVENT OF A  
22 DIGITAL TELEVISION STREAM IN WHICH THE MPEG ENCODER 703 AT THE  
23 LEFTHAND SIDE OF THE FIGURE IS REPLACED WITH A TRANSPORT  
24 DEMULTIPLEXOR, THE PLACE IN THIS FIGURE WHERE THE PID FILTER  
25 WOULD BE LOCATED WOULD BE IN THAT BOX TO THE LEFT THAT'S

1 CURRENTLY LABELED 703, CORRECT?

2 A WOULD IT BE POSSIBLE TO PUT THE LANGUAGE UP AGAIN? YOU  
3 SAID ACCORDING TO THE LANGUAGE IN COLUMN 6. I GUESS I'M  
4 HAVING A HARD TIME UNDERSTANDING YOUR QUESTION. COULD YOU PUT  
5 THE LANGUAGE BACK UP YOU JUST REFERRED TO IN YOUR QUESTION?

6 Q COLUMN 6, LINES 27-36, PLEASE.

7 A SO IT BEGINS: REFERRING TO FIGURE 7 -- THIS IS THE FIGURE  
8 WE'RE TALKING ABOUT -- THE INPUT SIDE OF THE MEDIA SWITCH IS  
9 CONNECTED TO AN MPEG ENCODER. THERE ARE ALSO CIRCUITS,  
10 ETCETERA, ETCETERA, ETCETERA. IF DIGITAL TV SIGNAL IS BEING  
11 PROCESSED, INSTEAD THE MPEG ENCODER IS REPLACED WITH AN MPEG-2  
12 TRANSPORT DEMULTIPLEXOR.

13 Q THAT'S -- THAT'S WHAT WE ARE TALKING ABOUT.

14 A OKAY. AND --

15 Q OKAY. SO THE DEMULTIPLEXOR IS GOING TO BE IN THAT BOX TO  
16 THE LEFT THAT WAS PREVIOUSLY LABELED 703, MPEG ENCODER,  
17 CORRECT?

18 A SO IT DOES TALK ABOUT THIS -- I'M NOT DISPUTING THE FACT  
19 THAT THE BOXES ARE CONNECTED IN THE WAY YOU'RE SAYING. I  
20 AGREE THAT THEY ARE CONNECTED THAT WAY. I ALSO AGREE THAT THE  
21 TEXT YOU READ BEFORE TALKED ABOUT PARSING FROM THE MPEG  
22 TRANSPORT STREAM, AND PID FILTERING IS SOMETHING THAT DOES  
23 THAT. SO I -- SO I AGREE THE BOXES ARE CONNECTED THAT WAY IN  
24 FIGURE 7, IF THAT'S WHAT YOU ARE ASKING.

25 Q OKAY. SO THE BOXES ARE CONNECTED THAT WAY IN FIGURE 7.

1 MR. KREVANS: IF WE COULD GO BACK TO THE FIGURE,  
2 MICHAEL.

3 Q (BY MS. KREVANS) IN THE EVENT OF A DIGITAL STREAM, THE  
4 DEMUX -- THE PID FILTER IS GOING TO BE IN THE BOX TO THE LEFT  
5 OUTSIDE 701, THE ONE THAT'S CURRENTLY LABELED 703, AND THE BOX  
6 THAT THE PATENT LABELS PARSER IS INSIDE 701 AFTER THE PID  
7 FILTER, CORRECT?

8 A SO THE BOX LABELED PARSER IS INSIDE THE BIG BOX, THAT'S  
9 CORRECT, AND THE BOX LABELED MPEG ENCODER IS POINTING TO THE  
10 OUTSIDE. I'M NOT TRYING TO DISPUTE THAT AT ALL, DEFINITELY  
11 NOT.

12 Q NOW BACK BEFORE THE ORIGINAL TRIAL, DR. STORER, YOUR  
13 OPINION WAS THAT PARSING MEANT THE SAME THING IN CLAIM 1 AND  
14 CLAIM 31 AND 61, RIGHT?

15 A I TOOK PARSING TO BE ANALYZE AS THE COURT CONSTRUCTION,  
16 AND TOOK IT TO MEAN THE SAME THING, ABSOLUTELY.

17 Q IN ALL THE CLAIMS?

18 A IN ALL THE CLAIMS.

19 Q OKAY. NOW, I WANT TO FOCUS ON AN ISSUE OF TIMING, THAT  
20 IS, WHETHER START CODE DETECTION ANALYSIS IS DONE BEFORE  
21 STORAGE, THAT IS, DURING RECORDING, OR AFTER. YOU UNDERSTAND  
22 THE CONCEPT HERE?

23 A I DO.

24 Q OKAY. AT TRIAL DR. GIBSON TOLD THE JURY THAT IT WAS  
25 IMPORTANT TO MAKE AND STORE THE START CODE INDEX ALONG WITH

1 THE VIDEO DATA AS IT CAME IN, RIGHT?

2 A I DON'T REMEMBER HIS PRECISE TESTIMONY. CERTAINLY I  
3 UNDERSTOOD THE UPSHOT OF HIS TESTIMONY TO BE DESCRIBING IN  
4 FACT HOW THE START CODE IS VERY USEFUL FOR TRICKPLAY. AND YOU  
5 WANT TO -- YOU WANT TO GET THOSE START CODES AND MAKE THIS  
6 INDEX TABLE, AND NOW WHEN YOU DO TRICKPLAY YOU WILL HAVE THEM  
7 AVAILABLE TO SKIP FRAMES AND PERFORM AND DO THINGS, FOR  
8 EXAMPLE, NOT IN A BRUTE-FORCE FASHION.

9 Q IN FACT, HE TESTIFIED THAT YOU NEED TO STORE MORE THAN  
10 JUST THE AUDIO AND VIDEO DATA BECAUSE TO HAVE A VIABLE DVR,  
11 HAVE A VIABLE DIGITAL VIDEO RECORDER, YOU HAVE TO STORE THE  
12 START CODE INDEX TOO SO THAT LATER ON THOSE FRAMES START  
13 LOCATIONS ARE AVAILABLE TO DO TRICKPLAY, CORRECT?

14 A I -- I -- AGAIN, I DON'T HAVE RECOLLECTION OF THE  
15 SPECIFIC WORDS, BUT I CERTAINLY DO RECALL HIM DESCRIBING THE  
16 IMPORTANCE AND THE VALUE OF THE START CODES FOR THE PURPOSES  
17 OF TRICKPLAY, ABSOLUTELY.

18 Q AND SPECIFICALLY THE IMPORTANCE OF HAVING FOUND THEM AS  
19 THE DATA WAS COMING IN AND STORE THEM ON THE HARD DRIVE SO  
20 THAT THE MOMENT YOU ARE READY TO DO TRICKPLAY THEY ARE THERE  
21 AVAILABLE FOR YOU, CORRECT?

22 A I DON'T KNOW. I MEAN, CERTAINLY HE -- CERTAINLY HE  
23 TALKED ABOUT THE ACTUAL -- CERTAINLY VERY SPECIFIC EMBODIMENTS  
24 AND PRODUCTS THAT WOULD -- THAT WOULD STORE THEM AT CERTAIN  
25 TIMES. I THINK THE IMPACT OF WHAT HE SAID OVER HIS WHOLE

1 TESTIMONY WAS CLEARLY THE REASON YOU'RE DOING THIS. THE  
2 REASON YOU WANT START CODES IS SO THAT YOU CAN ACTUALLY DO THE  
3 TRICKPLAY MORE EFFICIENTLY, MORE QUICKLY WITH LESS RESOURCES.  
4 SO YOU DEFINITELY WANT THOSE THINGS AVAILABLE FOR WHEN YOU'RE  
5 DOING TRICKPLAY. TO ME, THAT WAS REALLY THE OVERALL IMPACT OF  
6 THE TESTIMONY, IF YOU WILL.

7 MS. KREVANS: COULD WE LOOK AT DR. GIBSON'S  
8 TESTIMONY FROM THE AFTERNOON OF MARCH 30, 2006, PAGE 75 LINE  
9 25 THROUGH 76, LINE 25?

10 Q (BY MS. KREVANS) DR. GIBSON IS ASKED: IS THIS INDEX  
11 TABLE, THE PARSING AND SEPARATING, IS THAT IMPORTANT?

12 AND HE ANSWERS: WELL, THIS IS THE PART THAT I TALKED  
13 ABOUT. IF YOU DIDN'T HAVE THE INDEX TABLE AND YOU SIMPLY  
14 STORED THE MPEG STREAMS WITH THE VIDEO AND AUDIO COMING IN AND  
15 NOW YOU DECIDE, THE USER DECIDES TO PRESS FAST FORWARD AT SOME  
16 SPEED AND THE PROCESSOR WOULD SOMEHOW HAVE TO FIND THE STREAM  
17 ON THE DISK, GO IN AND FIND THE -- FIND THE LOCATIONS OF ALL  
18 THIS INFORMATION, PUT IT TOGETHER. IF SOMEONE CHOSE REGULAR  
19 PLAYER, SOMEONE CHOSE FAST FORWARD, THEY WOULD HAVE TO DECIDE  
20 HOW TO PUT IT TOGETHER, THROW AWAY WHAT THEY DIDN'T NEED, AND  
21 THEN REASSEMBLE IT. SO THE MEDIA SWITCH ALLOWS THAT TO HAPPEN  
22 BECAUSE IT'S CREATED THIS FRAME INDEX.

23 QUESTION: BUT WHY DO YOU NEED TO KNOW EXACTLY WHERE  
24 EVERYTHING IS? ISN'T IT JUST STORED ON THE HARD DRIVE?

25 ANSWER: IT'S STORED ON THE HARD DRIVE BUT YOU HAVE TO

1 FIND IT. AND SINCE YOU ARE GOING TO HAVE MORE THAN ONE  
2 PROGRAM THERE AND YOU HAVE ALL THIS DATA, YOU HAVE TO KNOW NOT  
3 ONLY WHERE TO FIND IT, YOU HAVE TO KNOW IF SOMEONE PRESSES  
4 FAST FORWARD, WHERE TO FIND THE FRAMES YOU WANT.

5 QUESTION: IS THE TECHNOLOGY IN MR. BARTON'S PATENT  
6 REQUIRED FOR A VIABLE DVR?

7 ANSWER: I -- YES, I THINK THAT IT IS.

8 THAT WAS DR. GIBSON'S TESTIMONY TO THE JURY, CORRECT?

9 MR. IANCU: YOUR HONOR, I AM GOING TO ASK FOR A  
10 RUNNING OBJECTION TO THIS WHOLE LINE OF QUESTIONING, AND THE  
11 BASIS IS AS FOLLOWS. AS IS CLEAR FROM THIS TESTIMONY AND  
12 PRIOR LINE OF QUESTIONS, IT'S ALL ABOUT THE MEDIA SWITCH,  
13 PARSING AND SEPARATING, WHICH IS CLEAR FROM THE CONTEXT OF  
14 WHAT MS. KREVANS JUST READ WHICH IS CLAIM 1. CLAIM 1 IS NOT  
15 AT ISSUE HERE, SO --

16 THE COURT: I UNDERSTAND YOUR POSITION. I WILL  
17 OVERRULE IT AND ALLOW HER TO CONTINUE THIS LINE OF  
18 QUESTIONING.

19 MR. IANCU: CAN I HAVE A CONTINUING OBJECTION, YOUR  
20 HONOR.

21 THE COURT: YES.

22 MR. IANCU: THANK YOU.

23 Q (BY MS. KREVANS:) THAT WAS DR. GIBSON'S TESTIMONY TO THE  
24 JURY, WASN'T IT, DR. STORER?

25 A YES, IT WAS.

1 Q AND IF WE GO BACK TO COLUMN 6 IN THAT SAME PARAGRAPH WE  
2 WERE LOOKING AT, LINES 37-46 --

3 MS. KREVANS: I'M SORRY, 37-46, MICHAEL, SO THE  
4 HIGHLIGHTED ONE.

5 Q (BY MS. KREVANS) THE PATENT SAYS: THE STARTS OF ALL THE  
6 FRAMES AND THE SEQUENCE HEADERS ARE THE PIECES OF INFORMATION  
7 THE PROGRAM LOGIC NEEDS TO KNOW ABOUT IN ORDER TO BOTH  
8 PROPERLY PLAY FORWARD AND PERFORM SPECIAL EFFECTS ON A STREAM,  
9 RIGHT?

10 A SO, THAT'S WHAT IT SAYS THERE, THAT'S CORRECT.

11 Q THE REASON THAT THE PATENT TEACHES FOR WHY YOU FIND THESE  
12 FRAMES ON THE INPUT SIDE AND STORE THEM IS SO THAT THEY CAN BE  
13 USED LATER ON TRICKPLAY, CORRECT?

14 A SO JUST TO BE CLEAR, I THINK WHAT I SAID IS, AND I THINK  
15 THAT THE PASSAGE YOU JUST QUOTED FROM TRIAL WAS EXCELLENT.  
16 YES, THE REASON YOU WANT TO HAVE THIS INFORMATION, THE REASON  
17 IT'S USEFUL, IS NOW WHEN YOU DO TRICKPLAY IT CAN AID AND  
18 AVOID, FOR EXAMPLE, THE BRUTE-FORCE ISSUE WE DESCRIBED  
19 EARLIER. SO WE'RE, OF COURSE, TALKING ABOUT CLAIM 1. WE'RE  
20 TALKING ABOUT THE MEDIA SWITCH. AND WE'RE TALKING ABOUT THE  
21 IDEA THAT THE MEDIA SWITCH COULD GO AHEAD AND GATHER THIS  
22 INFORMATION. FOR EXAMPLE, THAT'S ONE OF THE PREFERRED  
23 EMBODIMENTS. IT GATHERS THIS INFORMATION, AND BY GATHERING  
24 THIS INFORMATION YOU ACTUALLY DO EXACTLY HAVE THIS BETTER  
25 ABILITY LATER ON EXACTLY AS MR. GIBSON WAS DESCRIBING IN THAT

1 PREVIOUS TEXT THAT YOU READ.

2 Q AND THE MEDIA SWITCH, AS WE KNOW, IS AN EXAMPLE OF A  
3 PHYSICAL DATA SOURCE OF CLAIMS 31 AND 61, RIGHT?

4 A AGAIN, WE SAW EARLIER A PREFERRED EMBODIMENT, AND WITHIN  
5 THAT PREFERRED EMBODIMENT GIVING THAT AS AN EXAMPLE.

6 Q OKAY. LET'S GO BACK TO PID FILTERING FOR A MOMENT. DR.  
7 GIBSON ACTUALLY TESTIFIED AT TRIAL THAT PID FILTERING  
8 SATISFIED A DIFFERENT ELEMENT OF CLAIM 1, TUNING AND SELECTING  
9 AND CONVERTING, CORRECT?

10 A HE DID TESTIFY AT TRIAL THAT PID FILTERING COULD BE USED  
11 FOR TUNING, THAT'S CORRECT.

12 Q IN FACT, ECHOSTAR DISPUTED WHETHER IT TUNED ACCORDING TO  
13 CLAIM 1 FOR INFRINGEMENT PURPOSES, AND DR. GIBSON TESTIFIED  
14 THAT ECHOSTAR DEVICES MET THE TUNING REQUIREMENT DESPITE THAT  
15 DISPUTE BECAUSE THEY PID FILTERED, RIGHT?

16 A I CERTAINLY -- I DON'T HAVE A SPECIFIC RECOLLECTION, BUT  
17 I CERTAINLY WOULDN'T DOUBT THE FACT THAT ECHOSTAR DISPUTED  
18 SOMETHING HE SAID, AND THAT SOUNDS -- THAT SOUNDS FAMILIAR,  
19 THAT'S CORRECT.

20 Q AND HE USED PID FILTERING AS THE REASON WHY TIVO SHOULD  
21 WIN THAT DISPUTE OVER THE TUNING ELEMENT, RIGHT?

22 A HE -- HE DID SAY THAT PID FILTERING COULD BE USED FOR  
23 TUNING, THAT'S -- THAT'S CORRECT. IN THE CONTEXT OF CLAIM 1,  
24 I SHOULD ADD. WE'RE OF COURSE TALKING STRICTLY ABOUT CLAIM 1  
25 AND NOT CLAIM 31, BUT HE DID SAY THAT IN THAT CONTEXT OF CLAIM

1 1.

2 Q OKAY. IN MPEG DECODING CHIPS, DR. STORER, TYPICALLY THE  
3 PURPOSE OF PID FILTERING IS TO THROW AWAY THE DATA THAT'S  
4 IRRELEVANT TO THE PROGRAM OF INTEREST, RIGHT?

5 A WELL, WE GAVE THIS EXAMPLE EARLIER. THAT'S BASICALLY  
6 EITHER YOU CAN THINK OF THROWING AWAY THE STUFF YOU DON'T WANT  
7 OR KEEPING THE STUFF YOU DO WANT. BUT BASICALLY IF I'M  
8 WATCHING MY NEWS SHOW, I DEFINITELY DON'T WANT MY DAUGHTER'S  
9 DISNEY CHANNEL. I JUST WANT MY NEWS SHOW. SO ALL THE DISNEY  
10 CHANNEL AND OTHER THINGS ARE THROWN OUT, IF YOU WILL, AND  
11 SELECTED ARE THE THINGS THAT I ACTUALLY -- THE CHANNEL THAT I  
12 WANT TO WATCH.

13 Q OKAY. ARE YOU FAMILIAR ENOUGH WITH THE ECHOSTAR DEVICES  
14 THAT WERE ADJUDGED TO BE INFRINGING AT TRIAL TO ANSWER  
15 QUESTIONS ABOUT HOW THEY DID OR DIDN'T MEET THE CLAIMS?

16 A YES.

17 Q OKAY. DID THE ORIGINAL ECHOSTAR DEVICES THAT WERE FOUND  
18 TO INFRINGE AT TRIAL ANALYZE THE PAYLOADS OF VIDEO PACKETS  
19 THAT CAME OUT OF THEIR PID FILTERS TO IDENTIFY VIDEO START  
20 CODES DURING THE RECORDING OF TELEVISION DATA?

21 A OKAY, NOW ARE YOU TALKING ABOUT 50X BOXES OR ARE YOU  
22 TALKING ABOUT ONES LIKE USING THE BROADCOM CHIP? THERE ARE A  
23 NUMBER OF BOXES, INCLUDING THE 522 AND 625.

24 Q MY QUESTION RELATED TO ALL OF THEM.

25 A OKAY. SO COULD YOU REPEAT THE QUESTION?

1 Q SURE. DID THE ECHOSTAR DEVICES THAT WERE FOUND TO  
2 INFRINGE AT TRIAL ANALYZE THE PAYLOADS OF THE VIDEO PACKETS  
3 THAT WERE OUTPUT BY THE PID FILTERS TO IDENTIFY VIDEO START  
4 CODES DURING THE RECORDING OF TELEVISION DATA?

5 A SO THE -- IN THE CASE, FOR EXAMPLE, IN THE CASE OF THE  
6 50X PRODUCT, THE UP FRONT WITH THE PID FILTER, IN ADDITION TO  
7 THE PID FILTERING THERE WAS ANALYSIS THAT TOOK PLACE RIGHT  
8 THERE, OKAY. IN THE CASE OF THE BROADCOM CHIP, WE'VE ALSO  
9 SEEN, YOU CAN'T PUT IT UP HERE, BUT WE'VE SEEN DIAGRAMS  
10 SHOWING A SECTION OF THE CHIP THAT LOOKED FOR START CODES AS  
11 WELL.

12 Q SO YOU ARE TALKING ABOUT IN THE BROADCOM DEVICES THE  
13 START CODE DETECT PORTION OF THE CHIP?

14 A THERE WAS A START CODE DETECTION PORTION IN THE BROADCOM  
15 CHIP, THAT'S CORRECT.

16 Q AND IN THE 50X BOXES YOU ARE TALKING ABOUT SOFTWARE THAT  
17 ANALYZED THE PAYLOAD OF THE VIDEO PACKETS AFTER THEY WERE  
18 SELECTED BY THE PID FILTER TO LOOK FOR START CODES IN THOSE  
19 VIDEO PACKETS, CORRECT?

20 A SO THAT'S CORRECT. THE 50X BOXES DID LOOK FOR START  
21 CODES AS WELL.

22 Q AND THE CODE THAT WAS IN THE 50X BOXES THAT LOOKED FOR  
23 THOSE START CODES IN THE PAYLOAD OF VIDEO AND AUDIO PACKETS  
24 DURING RECORDING HAS BEEN SWITCHED OUT OF THE PRODUCTS,  
25 CORRECT?

1 A WELL, REMEMBER I MENTIONED THAT THERE'S PID FILTERING. I  
2 AM NOT SAYING THAT'S BEEN SWITCHED OUT, BUT THE PORTION THAT  
3 LOOKS FOR START CODES, THAT'S CORRECT.

4 Q THE PORTION THAT LOOKS FOR START CODES BEFORE STORAGE IS  
5 GONE, RIGHT?

6 A THE PORTION THAT LOOKED FOR START -- THE PORTION THAT  
7 LOOKED -- THAT PORTION WE WERE JUST REFERRING TO, IT CAME  
8 RIGHT AFTER THE PID FILTERING, HAS NOT -- IS NO LONGER USED.

9 Q AND THE PORTION THAT BUILT AN INDEX OF START CODE  
10 LOCATIONS BEFORE STORAGE IN THE 50X DEVICES IS GONE, RIGHT?

11 A THAT BUILT -- THE SPECIFIC INDEX THAT WAS BUILT BEFORE,  
12 AND WE TALKED ABOUT THE FACT THERE'S STILL INDEXING IN THE  
13 PRODUCTS, BUT THAT, EXCUSE ME, THAT SPECIFIC INDEX YOU ARE  
14 REFERRING TO IS NO LONGER USED.

15 Q AND THE START CODE DETECT HARDWARE THAT WAS PREVIOUSLY  
16 USED IN THE BROADCOM BOXES TO ANALYZE THE PAYLOAD OF VIDEO  
17 PACKETS TO LOOK FOR THE STARTS OF FRAMES AND TO BUILD AN INDEX  
18 OF THEM BEFORE STORAGE IN THE BROADCOM DEVICES IS GONE, RIGHT?  
19 IT'S TURNED OFF.

20 A THAT'S A BETTER WAY TO CHARACTERIZE IT. SO, OBVIOUSLY AS  
21 WE MENTIONED BEFORE, THE HARDWARE IN THE FIELD HASN'T BEEN  
22 CHANGED. THE CHIP HASN'T -- IS STILL THERE. BUT THAT PORTION  
23 OF THE CHIP THAT AFTER -- IT COMES LATER AFTER THE PID  
24 FILTERING AND THE TEMPORARY STORAGE YOU TALKED ABOUT, THERE IS  
25 A PORTION OF THE CHIP THAT ACTUALLY DOES -- IN HARDWARE THE

1 START CODE DETECTION, THAT HAS BEEN DISABLED, IF YOU WILL.

2 Q OKAY. YOU MENTIONED A COUPLE OF TABLES WHEN YOU WERE  
3 ANSWERING QUESTIONS FROM MR. IANCU, IN PARTICULAR, A TABLE  
4 THAT WAS REFERENCED IN AN EMAIL FROM AN ECHOSTAR ENGINEER  
5 NAMED JAY CARLSON.

6 MS. KREVANS: COULD WE SEE TIVO'S SLIDE 27,  
7 PLEASE?

8 Q (BY MS. KREVANS) DO YOU RECALL BEING ASKED A COUPLE OF  
9 QUESTIONS ABOUT THIS SLIDE BY MR. IANCU?

10 A YES.

11 Q OKAY. MR. CARLSON IS COMMENTING ON TECHNICAL  
12 DESCRIPTIONS THAT ARE GOING TO GO INTO THE OPINION LETTERS  
13 FROM FISH & RICHARDSON, RIGHT?

14 A I DON'T RECALL SPECIFICALLY THE -- ALL THE CONTEXT OF  
15 THESE COMMENTS. AS I SAID BEFORE, IT BEGINS WITH THEIR  
16 INACCURACIES, AND THEN HE AFFIRMS THAT WE STILL HAVE AN INDEX  
17 FILE.

18 Q YOU DON'T KNOW WHAT DOCUMENT HE'S TALKING ABOUT THAT HE  
19 SAYS HAS INACCURACIES IN IT, DR. STORER?

20 A IT APPEARS TO BE EXACTLY WHAT YOU'RE SAYING. I'M JUST  
21 SAYING THERE ARE QUITE A FEW. AS I MENTIONED EARLIER,  
22 ACTUALLY THERE ARE QUITE A FEW DOCUMENTS THAT ACTUALLY TALK  
23 ABOUT THE INDEX FILE AND SO ON. SO I THINK I -- GENERALLY, I  
24 JUST WANT TO BE SAFE TO SAY THAT YOU'D PROBABLY WANT TO LOOK  
25 AT IT FULLY, BUT THAT'S MY GENERAL RECOLLECTION. I'M NOT

1 TRYING TO DISAGREE WITH YOU ON THAT.

2 Q OKAY. AND WHEN MR. CARLSON'S EMAIL SAYS: FIRST, WE WILL  
3 STILL HAVE AN INDEX FILE. YOU DIDN'T READ THE REST OF WHAT HE  
4 SAYS IN THIS DOCUMENT. HE WENT ON TO SAY: IT WILL CONTAIN THE  
5 SECONDS AND WRITE OFFSET RECORDS FOR EACH CHUNK OF TSP WRITTEN  
6 TO THE DRIVE. ISN'T THAT WHAT IT SAYS?

7 A ABSOLUTELY.

8 MR. IANCU: I --

9 A I'M SORRY.

10 MR. IANCU: LET ME OBJECT TO THE QUESTION AS  
11 COMPOUND. THERE IS CLEARLY IN THE DIRECT TESTIMONY HE DID  
12 READ QUITE A BIT OF IT, SO WHEN -- IT SHOULD BE CLEAR FOR THE  
13 RECORD WHAT MS. KREVANS MEANS WHEN SHE SAYS SHE DIDN'T READ  
14 THE REST OF IT. HE READ QUITE A BIT OF IT. THE QUESTION IS,  
15 WHAT SPECIFICALLY DIDN'T HE READ? OBJECTION IS COMPOUND.

16 THE COURT: REPHRASE YOUR QUESTION. I THOUGHT SHE  
17 SIMPLY ASKED DID THE SECOND OR THIRD SENTENCE SAY WHAT AS SHE  
18 READ IT, BUT REPEAT YOUR QUESTION.

19 Q (BY MS. KREVANS:) IN THE -- IN THE SENTENCE AFTER, FIRST,  
20 WE WILL STILL HAVE AN INDEX FILE, MR. CARLSON WENT ON TO SAY:  
21 IT WILL CONTAIN THE SECONDS AND WRITE OFFSET RECORDS FOR EACH  
22 CHUNK OF TSP DATA WRITTEN TO THE DRIVE, CORRECT?

23 A THAT IS CORRECT.

24 Q AND YOU TESTIFIED THAT THIS MEMO WAS ACTUALLY ABOUT THE  
25 WTT FILE IN THE BROADCOM DEVICES. IS THAT RIGHT?

1 A THAT'S CORRECT.

2 Q AND IS THIS AN ACCURATE DESCRIPTION FROM MR. CARLSON  
3 ABOUT THE CONTENTS OF THE WTT FILE?

4 A THIS IS -- THIS IS A REASONABLE DESCRIPTION, SECONDS AND  
5 WRITE OFFSET RECORDS FOR CHUNKS WRITTEN TO THE HARD DRIVE,  
6 YES.

7 Q OKAY. AND THEN MR. CARLSON GOES ON IN HIS DOCUMENT HERE  
8 TO CONTRAST THAT WITH WHAT THE OLD INDEX CONTAINED, WHICH WAS  
9 RECORDS DESCRIBING VIDEO FRAMES, CORRECT?

10 A HE GOES ON. IN FACT, SINCE YOU WERE WORRIED THAT I DIDN'T  
11 READ IT BEFORE, LET ME READ IT. THE OLD INDEX CONTAINED  
12 RECORDS DESCRIBING VIDEO FRAMES. AND THEN HE FINISHES WITH:  
13 THE NEW INDEX WILL CONTAIN RECORDS DESCRIBING RAW .TSP DISK  
14 WRITE OPERATIONS.

15 Q NEW INDEX DOESN'T HAVE ANY INFORMATION, ANY RECORDS ABOUT  
16 VIDEO FRAMES, RIGHT?

17 A WELL, NO, THAT'S NOT AT ALL TRUE. THERE IS A LOT OF --  
18 WHAT IT'S PUTTING IN ON THE HARD DRIVE ARE IT'S ACTUALLY  
19 MAPPING TIME TO DATA. SO IT DOES NOT HAVE -- IT'S NOT EXACTLY  
20 THE SAME AS THE OLD INDEX. THE OLD INDEX WAS FRAME NUMBER AND  
21 TIME, AND THIS ONE IS -- IS THIS OFFSET AND TIME. BUT  
22 CERTAINLY SAYING THAT THERE IS NO INFORMATION ABOUT THE VIDEO  
23 DATA WOULD NOT BE A CORRECT CHARACTERIZATION. IN FACT, AS I  
24 MENTIONED, THIS TABLE IS ACTUALLY USED FOR MAINTAINING THAT  
25 BAR DURING TRICKPLAY.

1 Q THIS TABLE DOES NOT HAVE INFORMATION ABOUT THE START, THE  
2 LOCATION OF THE START OF ANY VIDEO FRAME IN IT, CORRECT, DR.  
3 STORER?

4 A I THINK -- I THINK WHAT I'D LIKE TO DO IS, TECHNICALLY I  
5 THINK YOU'RE WRONG, BUT I THINK THE GENERAL ANSWER TO YOUR  
6 QUESTION IS MORE POSITIVE. IN OTHER WORDS, IT'S -- IT'S NOT  
7 SPECIFICALLY STORING THE STARTS OF FRAMES. IT COULD BE THAT  
8 WHEN IT WROTE A CHUNK OF DATA IN FACT IT WAS THE START OF A  
9 FRAME. SO IN TERMS OF YOUR QUESTION, I THINK IT'S TECHNICALLY  
10 THE ANSWER IS NO, BUT I'M NOT TRYING TO DISAGREE WITH THE  
11 GENERAL TENOR OF YOUR QUESTION, IF YOU WILL.

12 Q THE INFORMATION IN THE FILE IS TIME AND SIMPLY THE FILE  
13 LOCATION OF THE NEXT CHUNK OF DATA THAT'S BEEN WRITTEN, SO  
14 TIME AND THE SIZE OF THE CHUNK OF DATA, RIGHT?

15 A SO IT'S -- IT'S TIME AND, AS HE SAID, A PARTICULAR  
16 POSITION IN THE DATA, IF YOU WILL, YES.

17 Q OKAY. AND YOU SAID ON DIRECT THAT THERE WAS AN ANALOGOUS  
18 FILE IN THE OTHER PRODUCTS. THE SAME THING IS TRUE OF THAT  
19 ANALOGOUS FILE. IT CONTAINS TIME AND INFORMATION ABOUT THE  
20 SIZE OF THE CHUNK OF DATA, CORRECT?

21 A THAT'S CORRECT. SO THERE'S THIS NOTION OF TIME AND  
22 INFORMATION ABOUT THE DATA, THAT'S CORRECT.

23 Q AND IT'S JUST USED TO CREATE A GRAPHIC ON THE SCREEN THAT  
24 SHOWS HOW LONG SOMEONE'S PAUSED, FOR EXAMPLE?

25 A WELL, I'M NOT CERTAIN ABOUT JUST USED. THE -- WHEN

1 YOU'RE DOING TRICKPLAY, AND I THINK YOU HAVE TO USE A DVR, BUT  
2 IF YOU ARE DOING TRICKPLAY, THAT -- THE MAINTENANCE OF THAT  
3 BAR AND KNOWING WHERE YOU ARE AND SORT OF SEEING HOW FAST  
4 YOU'RE GOING FORWARD, AND LOTS OF ISSUES OF THAT BAR IS -- IS  
5 A VERY -- PEOPLE WOULD BE VERY UPSET, FOR EXAMPLE, IF YOU TOOK  
6 IT AWAY. LET'S PUT IT THAT WAY.

7 Q IF YOU TOOK THOSE FILES OUT AND TOOK THAT BAR OUT OF THE  
8 ECHOSTAR DEVICES, THEY COULD STILL PERFORM ALL THE TRICKPLAY  
9 FEATURES THAT THEY PERFORM NOW, CORRECT?

10 A THEY WOULD BE PERFORMING THEM WITHOUT THE BAR.

11 Q THEY'D BE PERFORMING THEM, THEY JUST WOULDN'T HAVE THE  
12 GRAPHIC ON THE SCREEN WITH IT, RIGHT?

13 A THEY WOULD BE PERFORMING THEM WITHOUT THE BAR. YOU WOULD  
14 HAVE NO SENSE OF WHERE YOU WERE IN THE PROGRAM, OTHER THAN  
15 TRYING TO LOOK AT THE CONTENT.

16 Q LET'S TALK ABOUT FLOW CONTROL FOR A MOMENT.

17 MS. KREVANS: COULD WE PUT UP THE START OF CLAIM 31,  
18 PLEASE?

19 Q (BY MS. KREVANS) NOW, CLAIM 31 AND 61 HAVE SEVERAL  
20 LIMITATIONS HAVING TO DO WITH FLOW CONTROL, BUT WE ARE FOCUSED  
21 HERE ONLY ON THE FLOW CONTROL OF THE SOURCE OBJECT, CORRECT?

22 A WE ARE FOCUSING ON, YES, THIS RECORDING PROCESS, IF YOU  
23 WILL.

24 Q OKAY. AND UNDER THE CLAIM THE SOURCE OBJECT HAS TO DO  
25 FOUR THINGS, RIGHT?

1 A YES, I MENTIONED -- IN FACT, I LISTED THEM ON A SLIDE  
2 EARLIER ON.

3 Q OKAY. SO JUST SO WE ARE ON THE SAME PAGE, HAS TO EXTRACT  
4 VIDEO AND AUDIO DATA FROM THE PHYSICAL DATA SOURCE, OBTAIN A  
5 BUFFER FROM THE TRANSFORM OBJECT, CONVERT THE VIDEO DATA INTO  
6 DATA STREAMS, AND FILL THE BUFFER THAT IT OBTAINED FROM THE  
7 TRANSFORM OBJECT WITH THOSE CONVERTED DATA STREAMS, RIGHT?

8 A YES, FOUR THINGS.

9 Q THOSE ARE THE JOBS OF THE SOURCE OBJECT?

10 A YES.

11 Q NOW, THE CLAIM ALSO SAYS THAT THERE IS A STEP THAT  
12 REQUIRES THAT THE DATA STREAMS BE STORED AND THEN RETRIEVED  
13 ON/OFF A STORAGE DEVICE, RIGHT, AND WE SEE THAT UP ON THE  
14 SCREEN?

15 A YOU'RE REFERRING TO WHERE IT SAYS: PROVIDING A TRANSFORM  
16 OBJECT WHEREIN SAID TRANSFORM OBJECT STORES AND RETRIEVES DATA  
17 STREAMS ONTO A STORAGE DEVICE?

18 Q CORRECT. THAT STEP, STORAGE ON AND OFF THE STORAGE  
19 DEVICE IS DONE BY THE TRANSFORM OBJECT, NOT THE SOURCE OBJECT,  
20 RIGHT?

21 A THAT'S CORRECT.

22 Q OKAY. AND AT THE ORIGINAL TRIAL IN THIS CASE BOTH MR.  
23 BARTON AND DR. GIBSON EXPLAINED THE FLOW CONTROL OF THE TIVO  
24 INVENTION WITH RESPECT TO THE SOURCE OBJECT AS CONTROL OF THE  
25 FLOW OF DATA INTO THE BUFFER INTO WHICH THE SOURCE OBJECT PUTS

1 THE CONVERTED DATA STREAMS, RIGHT?

2 A I THINK THAT'S A REASONABLE CHARACTERIZATION. THE FLOW  
3 -- COULD YOU REPEAT THE QUESTION? THERE'S A LOT OF WORDS IN  
4 THE QUESTION.

5 Q SURE. AT TRIAL BOTH DR. GIBSON AND MR. BARTON EXPLAINED  
6 TO THE JURY THAT THE FLOW CONTROL OF THIS INVENTION WITH  
7 RESPECT TO THE SOURCE OBJECT WAS CONTROL OF THE FLOW OF DATA  
8 INTO THE BUFFER THAT THE SOURCE OBJECT FILLS, CORRECT?

9 A WELL, I CERTAINLY RECALL THAT. THERE IS A GENERAL -- AS  
10 WE MENTIONED BEFORE, THERE IS A GENERAL FLOW OF THE DATA FROM  
11 THE SATELLITE AS IT MAKES IT COMING INTO THE HARD DRIVE. AND  
12 THERE IS THIS PIPELINE, IF YOU WILL, OF DATA GOING IN AND IT'S  
13 BEING FLOW CONTROLLED IN A NUMBER OF WAYS INCLUDING THESE  
14 BUFFERS. SO CERTAINLY THAT WAS PART OF WHAT THEY DESCRIBED.

15 Q WELL, LET'S LOOK AT THE FLOW CONTROL GRAPHIC THAT TIVO  
16 USED AT TRIAL.

17 MS. KREVANS: THIS IS SLIDE 16 IN DX-5003, MICHAEL.

18 Q (BY MS. KREVANS) IS THIS THE GRAPHIC THAT TIVO SHOWED AT  
19 TRIAL?

20 A THIS IS ONE OF THE GRAPHICS TIVO SHOWED AT TRIAL, THAT'S  
21 CORRECT, WITH THE --

22 Q IN FACT, THIS WAS KIND OF THE FRONT PAGE OF A NICE LITTLE  
23 ANIMATION THAT RAN, RIGHT?

24 A IT'S, YEAH, IT'S ACTUALLY A NICE ANIMATION, YES, GOT THE  
25 WATER AND THE PITCHERS.

1 Q OKAY. AND ALL THE LABELS ON THIS SLIDE ARE EXACTLY THE  
2 LABELS ON THE SLIDE THAT TIVO SHOWED AT TRIAL, RIGHT?

3 A THIS LOOKS -- THIS LOOKS CORRECT, YES.

4 Q OKAY. FLOW CONTROL IS AN ARROW POINTING TO THE SPIGOT OR  
5 VALVE ABOVE THE PITCHER IN THE PICTURE, CORRECT?

6 A CERTAINLY. IN THIS DIAGRAM THE WORDS FLOW CONTROL  
7 APPEAR, AND IT'S POINTING TO THE LITTLE HANDLE ON THE -- THE  
8 VALVE GRAPHIC THERE, YES.

9 Q AND THE PITCHER REPRESENTS THE BUFFER OF CLAIMS 31 AND  
10 61, RIGHT?

11 A WELL, YOU USE THE TERM THE BUFFER, RIGHT. AS WE KNOW,  
12 THIS REPRESENTS A BUFFER AND THAT'S WRITTEN ON THE JAR THERE.

13 Q AND SPECIFICALLY THE CLAIMS CALL FOR A BUFFER TO BE  
14 FILLED BY THE SOURCE OBJECT, CORRECT?

15 A SO A BUFFER TO BE FILLED, AND YOU SEE THE LITTLE PITCHER  
16 THERE IN THE DIAGRAM.

17 Q OKAY. AND THE PITCHER IN THIS GRAPHIC REPRESENTS THAT  
18 BUFFER THAT THE SOURCE OBJECT IS GOING TO FILL, RIGHT?

19 A THE PITCHER IN THIS GRAPHIC, FOR EXAMPLE, I THINK I  
20 TALKED ABOUT THIS EVEN IN MY DIRECT. THIS IS, FOR EXAMPLE, WE  
21 TALKED ABOUT THESE BUFFERS WHEN WE DID THE -- AT THE EASEL  
22 HERE. THIS IS A BUFFER BEING FILLED. IN THIS CASE THE WATER  
23 IS ANALOGOUS TO BITS OF DATA, FOR EXAMPLE.

24 Q AND THE FLOW CONTROL IS THE SPIGOT OR VALVE I THINK AS  
25 DR. GIBSON AND MR. BARTON CALLED IT IN THEIR TESTIMONY?

1 A WELL, THIS GRAPHIC IS DEPICTING AT LEAST AN ASPECT OF  
2 FLOW CONTROL, AND IT'S SHOWING THE PROCESS OF WATER COMING  
3 DOWN AND FILLING -- AND WE HAD THIS ALSO ON MY EASEL HERE,  
4 WATER COMING DOWN AND FILLING UP A BUFFER.

5 Q AND, IN FACT, AT TRIAL TIVO ALSO SHOWED THE JURY GRAPHIC  
6 DEPICTING LACK OF FLOW CONTROL, RIGHT?

7 A SO THEY SHOWED -- THIS IS A GRAPHIC SHOWING -- IT'S IF NO  
8 FLOW CONTROL. IT'S SHOWING AN EXAMPLE OF NO FLOW CONTROL, AND  
9 IN THIS GRAPHIC YOU SEE THE LITTLE SLIGHTLY DIFFERENT GRAPHIC  
10 WHERE THE VALVE IS NOT THERE.

11 Q OKAY. AND JUST FOR THE RECORD, THIS IS TIVO'S ORIGINAL  
12 GRAPHIC 210-17 FROM THE TRIAL. IT'S IN CURRENT EXHIBIT DX-  
13 5003. AND JUST SO WE ARE CLEAR FOR THE RECORD, DR. STORER, IN  
14 THIS GRAPHIC WHICH TIVO SHOWED TO THE JURY THAT'S TITLED "IF  
15 NO FLOW CONTROL," THAT SPIGOT OR VALVE ABOVE THE PITCHER  
16 REPRESENTING THE BUFFER IS GONE, RIGHT?

17 A IN THIS GRAPHIC THE VALVE IS NOT THERE.

18 Q OKAY. DR. GIBSON POINTED TO CODE IN THE ECHOSTAR DEVICES  
19 THAT BLOCKED WRITING INTO A BUFFER IN RAM UNTIL SOFTWARE HAD  
20 FINISHED READING OUT OF THAT BUFFER AS AN EXAMPLE OF FLOW  
21 CONTROL THAT HE FOUND IN THE '721 PRODUCT AT TRIAL, RIGHT?

22 A HE DID -- HE DID SHOW A CODE OF THAT NATURE, THAT'S  
23 CORRECT.

24 Q AND HE POINTED TO THAT MEMCPY CODE THAT YOU REFERRED TO  
25 IN YOUR DIRECT, CORRECT?

1 A SO MY DIRECT DID ACTUALLY SHOW ONE OF THESE SLIDES FROM  
2 DR. GIBSON WITH THAT M-E-M-C-P-Y COMMAND, WHICH WAS SHORT FOR  
3 MEMORY COPY.

4 Q OKAY. AND IN FACT AT TRIAL DR. GIBSON DID NOT TALK TO  
5 THE JURY ABOUT ANY SPECIFIC CODE IN THE OTHER BROADCOM DEVICES  
6 THAT SIMILARLY IN HIS VIEW PERFORMED THE AUTOMATIC FLOW  
7 CONTROL OF THE SOURCE, BUT HE SAID THERE WAS ANALOGOUS CODE IN  
8 THE OTHER ONES, RIGHT?

9 A THAT'S RIGHT. THIS IS -- HE WAS USING -- IT'S SIMILAR TO  
10 WHAT WE'RE DOING NOW. HE HAD A -- HE SAID THIS WAS  
11 REPRESENTATIVE CODE OF THE WAY THAT THE OTHER INFRINGING  
12 PRODUCTS ALSO WORKED.

13 Q OKAY. AND THE JURY FOUND THAT ALL THE DEVICES MADE BY  
14 BROADCOM INFRINGED, SO THEY OBVIOUSLY BELIEVED HIM THAT THERE  
15 WAS ANALOGOUS CODE, RIGHT?

16 A THEY DID FIND THAT THEY INFRINGED AND, YES, I THINK  
17 THAT'S A FAIR CHARACTERIZATION.

18 Q AND IN FACT IN PERFORMING YOUR ANALYSIS, YOU'VE GONE TO  
19 LOOK AT THE OTHER BROADCOM DEVICES TO SEE IF YOU COULD FIND  
20 WHAT DR. GIBSON HAD IN MIND AS THE CODE THAT WAS ANALOGOUS TO  
21 THIS MEMCPY TYPE OF CODE IN THE '721, RIGHT?

22 A YEAH, I GUESS THAT'S -- AGAIN, AS I MENTIONED EARLIER, IN  
23 THE CASE OF THE 522/625 IT'S ACTUALLY BASICALLY THE SAME CODE.  
24 AND THEN WITHIN THAT CODE YOU SEE THE OLD CODE AND THEN YOU  
25 SEE ADDITIONAL CODE ADDED WITH SWITCHES TO TURN IT ON, IF YOU

1 WILL, AND TURN OFF PARTS OF THE OLD CODE TO GET THE, QUOTE,  
2 NEW OR CURRENT DESIGN.

3 Q AND YOU THINK YOU SUCCEEDED IN FIGURING OUT WHICH CODE IN  
4 THE OTHER BROADCOM DEVICES WAS THE ANALOGOUS CODE THAT DR.  
5 GIBSON WAS REFERRING TO, RIGHT?

6 A THERE WAS -- THERE WAS A SLIGHT -- THERE WAS A SLIGHT  
7 DIFFERENCE IN THE '721 THE WAY IT DID IT'S COPY BUFFER AND THE  
8 WAY COPY BUFFER IS DONE IN 522/625, BUT I THINK ANALOGOUS IS A  
9 FAIR -- IS A FAIR STATEMENT.

10 Q AND YOU HAVE LOOKED TO SEE WHETHER ECHOSTAR TOOK OUT THAT  
11 ANALOGOUS CODE, THAT IS, SWITCHED IT OUT OF THE BROADCOM  
12 DEVICES, RIGHT?

13 A THE -- THE NEW -- AND AGAIN, NOW WE'RE JUST FOCUSED JUST  
14 ON THE 522/625, AND THE 522/625 DO NOT HAVE THE -- THIS  
15 CONVENIENCE, BUT IT'S A MINOR THING, BUT THIS COPY BUFFER,  
16 THAT'S CORRECT.

17 Q ECHOSTAR TOOK OUT THE THINGS IN THE 522/625 THAT WERE  
18 ANALOGOUS TO THE CODE THAT DR. GIBSON POINTED TO AT TRIAL,  
19 RIGHT?

20 THE COURT: IF THIS IS A CONVENIENT BREAKING POINT,  
21 WHY DON'T WE --

22 MS. KREVANS: OF COURSE, YOUR HONOR.

23 THE COURT: I AM ALL BROKEN UP OVER THIS TESTIMONY.

24 (RECESS AT 3:09 P.M., UNTIL 3:24 P.M., OPEN COURT)

25 THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE YOUR

1 CROSS EXAMINATION.

2 CROSS EXAMINATION CONTINUES

3 BY MS. KREVANS:

4 Q I'VE LOST TRACK A LITTLE, DR. STORER, SO I AM JUST GOING  
5 TO ASK YOU THE QUESTION AGAIN. BEFORE THE BREAK WE WERE  
6 TALKING ABOUT THE FACT THAT YOU HAD GONE TO THE 522 AND 625  
7 BROADCOM DEVICES AND IDENTIFIED WHAT YOU BELIEVED TO BE THE  
8 CODE THAT WAS ANALOGOUS TO THE CODE THAT DR. GIBSON POINTED TO  
9 AT TRIAL FOR THE '721, CORRECT?

10 A YES, WE TALKED ABOUT THAT ISSUE. YOU USED THE WORD  
11 ANALOGOUS PLACES, I BELIEVE, YES.

12 Q AND IN FACT YOU HAVE LOOKED AT ECHOSTAR'S REDESIGNED  
13 CODE, AND IN THAT REDESIGNED CODE ECHOSTAR SWITCHED OUT, THAT  
14 IS, TURNED OFF THAT ANALOGOUS CODE, CORRECT?

15 A SEE THAT'S -- THAT MAY BE NOT QUITE CORRECT. THERE IS A  
16 DIFFERENCE BETWEEN ANALOGOUS, RIGHT, AND WE CERTAINLY HAVE THE  
17 ANALOGOUS THING HERE. WE ARE CERTAINLY STILL FILLING BUFFERS  
18 AND THINGS LIKE THAT. BUT I AM TAKING YOUR QUESTION EVEN MORE  
19 LITERALLY THE NOTION THAT THERE WAS CODE SPECIFICALLY  
20 PERTAINING TO THIS COPY BUFFER, THAT NO LONGER IS IN THE COPY  
21 BUFFER THAT IS NO LONGER BEING IMPLEMENTED IN THE NEW CODE,  
22 AND I CERTAINLY DO, YOU KNOW, AGREE WITH THAT, IF THAT'S WHAT  
23 YOU ARE ASKING.

24 Q YOU AGREE IT'S GONE?

25 A WELL, AGREE THAT THEY ARE NO LONGER DOING -- USING THE

1 COPY BUFFER, THAT'S CORRECT.

2 Q ONE OTHER THING, DR. STORER, TIVO DIDN'T INVENT CIRCULAR  
3 BUFFERS, DID THEY?

4 A CIRCULAR BUFFERS, PER SE. OF COURSE, WE'RE TALKING ABOUT  
5 THEM IN A MUCH BIGGER CONTEXT HERE WITH ALL KINDS OF OTHER  
6 STUFF, BUT A CIRCULAR Q IN ITS OWN RIGHT IS A DATA STRUCTURE  
7 THAT IS NOT -- THAT PREDATES THE PATENT IN QUESTION HERE.

8 Q THANK YOU.

9 THE COURT: REDIRECT.

10 MR. IANCU: IF WE COULD PUT UP THE PATENT, PLEASE.

11 REDIRECT EXAMINATION

12 BY MR. IANCU:

13 Q DR. STORER, WITHIN CLAIM 31 OF THE PATENT, AND I DON'T  
14 THINK WE NEED TO LOOK AT IT JUST THIS MINUTE, I'M SURE YOU  
15 HAVE THIS MEMORIZED, BUT IS IT THE -- WHAT IS IT THAT DOES THE  
16 PARSING?

17 A THE PHYSICAL DATA SOURCE.

18 Q AND IF YOU LOOK AT THE PATENT, DOES THE WRITTEN  
19 DESCRIPTION OF THE PATENT IDENTIFY SEVERAL EXAMPLES OF A  
20 PHYSICAL DATA SOURCE?

21 A YES, IT DOES. FOR EXAMPLE, WE SAW WHAT WE WERE JUST  
22 TALKING ABOUT, ONE PREFERRED EMBODIMENT EARLIER ON WHERE THE  
23 MEDIA SWITCH WAS AN EXAMPLE.

24 Q LET'S GO TO A SLIDE, ACTUALLY REBUTTAL 1. OKAY. SO HERE  
25 IS FIGURE 8 FROM THE PATENT, RIGHT?

1 A YES.

2 Q DOES THIS FIGURE IDENTIFY ANOTHER EXAMPLE OF A PHYSICAL  
3 DATA SOURCE?

4 A YES. YOU CAN SEE IF YOU LOOK OFF DOWN TO THE LOWER LEFT  
5 THERE IS SOMETHING CALLED THE ENCODER COMING IN. AND WE, IN  
6 FACT, WE JUST WERE DISCUSSING THIS EARLIER ON. THE ENCODER,  
7 THE PATENT SAYS, COULD BE, FOR EXAMPLE, AN MPEG TRANSPORT  
8 STREAM DEMUX.

9 Q AND, OF COURSE, WE SAW DURING YOUR CROSS EXAMINATION THE  
10 LANGUAGE THAT IN THE CASE OF A DIGITAL -- OF A DIGITAL SIGNAL  
11 -- IF WE CAN CLICK NOW -- OKAY. IN THE CASE OF A DIGITAL TV  
12 SIGNAL, THE MPEG TO TRANSPORT, THE, I AM SORRY, THE ENCODER IS  
13 REPLACED WITH AN MPEG-2 TRANSPORT DEMULTIPLEXOR, CORRECT?

14 A EXACTLY. SO THIS IS THE THING I'VE BEEN TALKING ABOUT  
15 SEVERAL TIMES HERE WATCHING TELEVISION, AND I WANT MY NEWS  
16 CHANNEL, NOT MY DAUGHTER'S HANNAH MONTANA OR SOMETHING.

17 Q SO, IN OTHER WORDS, IF WE CAN CLICK AGAIN, THIS ENCODER  
18 BECOMES A DEMULTIPLEXOR?

19 A EXACTLY. SO, IN OTHER WORDS, THAT'S ONE OF THE THINGS IT  
20 COULD BE -- THE PATENT SAYS COULD BE THE ENCODER.

21 Q AND THAT IS WHAT CAN BE A PID FILTER, RIGHT?

22 A AS I SAID BEFORE, THAT'S RIGHT, THE PURPOSE OF THE PID  
23 FILTER OR THE PID PARSER, THE TERMS ARE USED INTERCHANGEABLY  
24 IN THE LITERATURE, IS TO SELECT AND NOT -- AND NOT SELECT THE  
25 ONES YOU WANT OR NOT SELECT THE ONES THAT YOU ARE NOT

1 INTERESTED IN WATCHING.

2 Q SO NOW WE HAVE SEEN THREE EXAMPLES OF A PHYSICAL DATA  
3 SOURCE, RIGHT?

4 A THAT'S CORRECT.

5 Q AND THESE EXAMPLES WE ARE SEEING THEM WITH RESPECT TO  
6 FIGURE 8, FOR EXAMPLE, FIGURE 8 BEING SPECIFICALLY ON THE  
7 SOFTWARE ARCHITECTURE?

8 A YEAH, IF YOU READ THE PATENT YOU CAN THINK OF FIGURE 8 AS  
9 SORT OF THE BEGINNING OF THE FIGURES THAT PERTAIN TO CLAIM 31,  
10 AND PRIOR TO THAT THE FIGURES STARTING AT FIGURE 1 PERTAIN TO  
11 CLAIM 1.

12 Q LET'S GO TO THE PATENT, FIGURE 7. SO ON THE OTHER HAND,  
13 QUITE THE OPPOSITE OF FIGURE 8, FIGURE 7 WHICH WAS BEING  
14 DISCUSSED DURING YOUR CROSS EXAMINATION IN THE EXAMPLES THERE,  
15 WHAT IS THE BIG BOX, ITEM 701?

16 THE COURT: DO YOU HAVE AN OBJECTION?

17 MS. KREVANS: HE IS LEADING HIM, YOUR HONOR.

18 Q (BY MR. IANCU:) WHAT IS --

19 THE COURT: WELL, HE FOLLOWED UP WITH WHAT, WHAT WAS  
20 YOUR LAST PART OF THE QUESTION, WHAT IS?

21 MR. IANCU: WHAT IS THE BIG BOX, ITEM 701?

22 THE COURT: VERY WELL. I WILL OVERRULE IT.

23 A SO THE BIG BOX IS DENOTING THE MEDIA SWITCH.

24 Q AND WHICH OF THE TWO ARCHITECTURES DOES THIS FIGURE  
25 RELATE TO?

1 A SO THIS FIGURE OF COURSE IS RELATING TO CLAIM 1.

2 MR. IANCU: ARE WE ABLE TO SHOW THE SLIDES ECHOSTAR  
3 SHOWED DURING CROSS EXAMINATION?

4 MS. KREVANS: YES.

5 MR. IANCU: OKAY. SO LET'S SHOW -16 FIRST, D5003-16.  
6 IT'S THE ONE IN THE PICTURE, 16. D5003-16. OKAY. ITEM 16,  
7 PLEASE. THANK YOU.

8 Q (BY MR. IANCU) YOU TESTIFIED ABOUT THIS DURING CROSS  
9 EXAMINATION. THIS IS A SLIDE THAT MR. BARTON SHOWED DURING  
10 HIS TESTIMONY AT TRIAL, RIGHT?

11 A YES, THAT'S CORRECT.

12 Q AND IF WE COULD GO TO -17, HE ALSO TESTIFIED ABOUT THIS  
13 SLIDE WITH NO FLOW CONTROL THAT MR. BARTON SHOWED DURING CROSS  
14 EXAMINATION?

15 A ALSO CORRECT, YES.

16 Q AS BETWEEN THESE TWO, DR. STORER, WHICH IS MORE  
17 REPRESENTATIVE OF THE WAY ECHOSTAR'S PRODUCTS WORK TODAY?

18 A WELL, OF COURSE AS WE DISCUSSED THE FIRST ONE, IF YOU GO  
19 BACK, CAN YOU FLIP BACK, THIS IS TALKING ABOUT THE PROCESS OF  
20 FILLING A BUFFER, RIGHT. AND WE JUST -- WHEN WE WENT UP TO  
21 THE EASEL HERE WE TALKED ABOUT THE IDEA THAT ONCE YOU FILL A  
22 BUFFER, YOU DON'T KEEP TRYING TO DUMP MORE DATA INTO IT. YOU  
23 STOP AND YOU MOVE TO THE NEXT BUFFER. AND SO THIS SLIDE IS  
24 VERY NICELY SHOWING THE PROCESS OF FILLING ONE OF THOSE  
25 BUFFERS. OF COURSE IN THIS CASE WE HAVE TEN, BUT THE SAME

1 PRINCIPLE APPLIES. YOU FILL A BUFFER AND THEN NOW THAT THAT  
2 BUFFER IS FULL, IT EVENTUALLY WILL BE TRANSFERRED TO THE HARD  
3 DRIVE, WHICH IN THE CASE OF THIS GRAPHIC IS SHOWN BY THE LARGE  
4 BUCKET ON THE LOWER RIGHT. SO THIS IS REALLY EXACTLY WHAT I  
5 WAS TALKING ABOUT IN THE CASE OF SHOWING THE PROCESS OF  
6 FILLING ONE OF THOSE BUFFERS.

7 Q AND IS THIS TRUE FOR THE PRODUCTS, THE BROADCOM PRODUCTS  
8 AS THEY EXIST TODAY?

9 A TODAY AND AT TRIAL, YES.

10 Q THANK YOU, DR. STORER. NOTHING FURTHER AT THIS TIME.

11 THE COURT: RE CROSS.

12 MS. KREVANS: NOTHING FURTHER, YOUR HONOR.

13 THE COURT: YOU MAY STEP DOWN. CALL YOUR NEXT  
14 WITNESS.

15 MR. CHU: YOUR HONOR, WE HAD PROVIDED NOTICE FOR TWO  
16 WITNESSES, PROFESSOR STORER AND JIM BARTON. WE HAVE DECIDED  
17 THAT WE DO NOT NEED TO CALL MR. BARTON IN OUR CASE-IN-CHIEF,  
18 AND SO SUBJECT TO THE EXHIBITS TO BE ADMITTED AND THE  
19 DEPOSITION TRANSCRIPTS THAT WE HAVE DESIGNATED, WE REST.

20 THE COURT: VERY WELL. ECHOSTAR A LITTLE RUSHED FOR  
21 WITNESSES? DO YOU NEED SOME TIME?

22 MR. MCELHINNY: WE ARE READY TO GO, YOUR HONOR.

23 THE COURT: VERY WELL. CALL YOUR FIRST WITNESS.

24 MS. KREVANS: ECHOSTAR CALLS DAN MINNICK, YOUR HONOR.

25 I THINK WE HAVE BINDERS TO GIVE OUT. I THINK WE DO NEED A

1 MOMENT, YOUR HONOR, JUST TO GIVE OUT SOME BINDERS OF EXHIBITS  
2 AND THINGS.

3 THE COURT: TAKE YOUR TIME.

4 MS. KREVANS: I THINK I NEED ONE OF THOSE BINDERS  
5 MYSELF, MR. LLEWELLYN.

6 (WITNESS SWORN)

7 DAN MINNICK, DEFENDANTS' WITNESS, SWORN

8 DIRECT EXAMINATION

9 BY MS. KREVANS:

10 Q GOOD AFTERNOON, MR. MINNICK.

11 A GOOD AFTERNOON.

12 Q COULD YOU PLEASE TELL US WHAT YOUR CURRENT JOB TITLE IS?

13 A I AM THE VICE PRESIDENT OF SOFTWARE FOR ECHOSTAR.

14 Q WHEN DID YOU START WORKING AT ECHOSTAR?

15 A APPROXIMATELY THIRTEEN YEARS AGO.

16 Q AND CAN YOU GIVE ME A BRIEF DESCRIPTION OF YOUR  
17 BACKGROUND BEFORE YOU JOINED ECHOSTAR?

18 A WELL, I GRADUATED FROM HIGH SCHOOL LIKE MOST OF US, WENT  
19 TO THE ARMY FOR THREE YEARS, SERVED IN THE RANGER BATTALION  
20 AND GOT OUT WITH THE GI BILL AND WENT TO COLLEGE, ENDED UP  
21 GETTING A MASTER'S OF ELECTRICAL ENGINEERING FROM RENESSELAER  
22 POLYTECHNIC INSTITUTE WITH THE EMPHASIS IN CONTROL SYSTEMS  
23 ENGINEERING. AND FOR THE PAST TWENTY-THREE YEARS I'VE EITHER  
24 BEEN WORKING AS A SOFTWARE DEVELOPER OR A SOFTWARE DEVELOPMENT  
25 MANAGER.

1 Q OKAY. MR. MINNICK, SOMETIMES YOU TALK KIND OF SOFTLY.

2 A WAS I SOFT?

3 Q AND YOU ARE SITTING A LITTLE FAR AWAY FROM THE MIC, SO IF  
4 YOU COULD JUST MAKE SURE THE MIC IS TOWARD YOU --

5 A IT'S AS FAR AS IT WILL GO.

6 Q -- AND THAT YOU DON'T LEAN BACK, THAT WILL HELP THE COURT  
7 REPORTER.

8 A I TRIED TO MOVE THIS SEAT, BUT IT'S FIXED.

9 Q JUST DON'T LEAN BACK IN THE CHAIR OR ELSE YOU WILL GET  
10 OFF THE SCREEN. WHAT ARE YOUR CURRENT JOB RESPONSIBILITIES AT  
11 ECHOSTAR?

12 A WELL, I AM IN CHARGE OF SOFTWARE DEVELOPMENT IN OUR  
13 DENVER OFFICE FOR OUR SET-TOP BOX DEVELOPMENT.

14 Q WERE YOU PRESENT AT THE ORIGINAL TRIAL IN THIS CASE?

15 A YES, I WAS THE CORPORATE REPRESENTATIVE.

16 Q WERE YOU THERE WHEN THE JURY VERDICT CAME BACK?

17 A YES, I WAS.

18 Q WHAT -- WHAT DID ECHOSTAR DO IN RESPONSE TO THE JURY  
19 VERDICT THAT YOU WERE PERSONALLY INVOLVED IN?

20 A WELL, WITHIN A MATTER OF A COUPLE OF DAYS FROM RETURNING  
21 FROM THE JURY WE STARTED GETTING TOGETHER TO SEE IF THERE WAS  
22 A WAY TO CHANGE OUR BOXES SO THEY NO LONGER INFRINGED BASED ON  
23 THE JURY VERDICT.

24 Q CAN YOU DESCRIBE TO THE COURT THE LEVEL OF EFFORT THAT  
25 ECHOSTAR WENT TO, TO TRY TO AVOID INFRINGING THE '389 PATENT

1 AFTER THE JURY VERDICT CAME OUT?

2 A WELL, WE DID A LOT OF ANALYSIS OF THE TRIAL TESTIMONY.  
3 TIVO WON THE TRIAL, SO WE LOOKED AT MR. BARTON'S TESTIMONY,  
4 DR. GIBSON, AND LOOKED AT THEIR TESTIMONY AND THEIR GRAPHICS.  
5 WE ALSO WENT BACK AND LOOKED TO SEE -- AND LOOKED AT THE  
6 PATENT TO SEE HOW THE PATENT DESCRIBED THE INVENTION. AS PART  
7 OF THAT PROCESS, WE LOOKED AT THE PRIOR METHODS, SUCH AS THE  
8 MPEG SPEC, TO SEE HOW THE PATENT DISTINGUISHED ITSELF FROM  
9 THAT. WE ALSO LOOKED AT HOW THE PATENT DISTINGUISHED ITSELF  
10 FROM THE PRIOR ART THAT THE PATENT ITSELF REFERENCED. AND WE  
11 SPENT A LOT OF TIME LOOKING AT THIS INFORMATION, THE  
12 TESTIMONY, AND FINDING OUT WHAT WAS THE KEY ASPECTS OF THE  
13 INVENTION AS TIVO PRESENTED IT AT TRIAL SO WE COULD FOCUS ON  
14 FIGURING OUT A WAY TO REMOVE THOSE ASPECTS AND REPLACE IT WITH  
15 NON-INFRINGEMENTAL FUNCTIONALITY.

16 Q AND WHAT WAS THE NATURE OF YOUR PERSONAL INVOLVEMENT IN  
17 THAT EFFORT?

18 A I LED THE ENGINEERING DEVELOPMENT AND THE DESIGN --  
19 DESIGN EFFORT.

20 Q WHAT DIRECTION WERE YOU GIVEN BY MANAGEMENT AT ECHOSTAR  
21 ABOUT A TIME FRAME IN WHICH YOU WERE TO TRY TO SEE IF YOU  
22 COULD DESIGN-AROUND THE '389 PATENT AS ADJUDICATED BY THE  
23 JURY?

24 A WELL, THEY SAID WE NEEDED TO GET THIS DONE AS SOON AS  
25 POSSIBLE. WE NEEDED TO REMOVE THE INFRINGING DEVICES FROM THE

1 FIELD, AND WE ALSO WERE AWARE THAT THERE COULD BE FINANCIAL  
2 PENALTIES FOR THE BOXES AS LONG AS THEY ARE IN THE FIELD AND  
3 STILL INFRINGING.

4 Q IN APRIL OF 2006 WHEN YOU BEGAN THIS ANALYSIS, DID YOU  
5 KNOW IF YOU COULD SUCCEED?

6 A NO, WE DIDN'T.

7 Q DID YOU KNOW --

8 THE COURT: DID YOU KNOW WHAT? I AM SORRY.

9 MS. KREVANS: I AM SORRY, YOUR HONOR. I'M DOING MY  
10 BEST.

11 THE COURT: WE MAKE FOR A BAD COMBINATION, YOU'VE  
12 LOST YOUR VOICE AND I'VE LOST MY HEARING.

13 MS. KREVANS: DON'T MAKE ME LAUGH, BECAUSE THEN I  
14 START COUGHING AND THEN IT GETS REALLY BAD.

15 Q (BY MS. KREVANS:) IN APRIL OF 2006, MR. MINNICK, WHEN YOU  
16 STARTED THIS PROCESS, DID YOU KNOW IF YOU COULD SUCCEED?

17 A NO, WE WEREN'T SURE THAT WE COULD SUCCEED AT THAT POINT.

18 Q DID YOU KNOW HOW LONG IT WOULD TAKE IF YOU COULD SUCCEED  
19 IN ORDER TO ACTUALLY DEVELOP A DIFFERENT WAY OF DOING IT THAT  
20 WOULDN'T INFRINGE THE PATENT?

21 A NO, AT THAT EARLY STAGES WE WEREN'T SURE OF WHAT EXACTLY  
22 WE HAD TO REMOVE TO NO LONGER INFRINGE, AND THEN HOW WE WOULD  
23 DO THAT FUNCTIONALITY IN A DIFFERENT WAY TO NO LONGER  
24 INFRINGE. SO WE DIDN'T EVEN HAVE THE DESIGN COMPLETE AT THAT  
25 POINT, SO THERE'S NO WAY I COULD GIVE ANY KIND OF ESTIMATE.

1 Q HOW MANY PEOPLE WORKED ON THIS EFFORT?

2 A WELL, THE INITIAL EFFORT TO COME UP WITH A REDESIGN WAS  
3 ABOUT SIX TO EIGHT OF US.

4 Q WERE OTHER PEOPLE INVOLVED AFTER THAT?

5 A WELL, YEAH, THEN ONCE WE CAME UP WITH A DESIGN AND  
6 STARTED IMPLEMENTING IT, THAT GREW TO ABOUT 15 ENGINEERS.

7 Q AND YOU SAID YOU DID THIS INITIAL ANALYSIS OF THE PATENT  
8 AND THE TRIAL AND WHAT HAPPENED AT THE TRIAL. DID YOU  
9 IDENTIFY ANYTHING THAT GAVE YOU IDEAS FOR A POSSIBLE DESIGN-  
10 AROUND?

11 A YEAH, WE IDENTIFIED THE TWO KEY ASPECTS THAT TIVO  
12 PRESENTED AT TRIAL AS THE KEY ASPECTS OF THEIR INVENTION AND  
13 THAT WE INFRINGED.

14 Q AND WHAT WERE THOSE TWO KEY ASPECTS, IN YOUR VIEW?

15 A WELL, THE FIRST KEY ASPECT WAS TIVO INVENTED A WAY OF  
16 ANALYZING THE AUDIO/VIDEO DATA BEFORE STORAGE TO THE HARD  
17 DRIVE TO DETECT THE LOCATIONS OF DIFFERENT FRAMES, AND THEN  
18 THEY WOULD CREATE AN INDEX THAT YOU WOULD USE LATER ON  
19 PLAYBACK SO THAT WHEN YOU'RE DOING THE TRICK MODES YOU WOULD  
20 KNOW EXACTLY WHERE THOSE FRAMES WERE LOCATED WHICH WOULD  
21 REDUCE THE BURDEN ON THE CPU. AND THAT WAS AN IMPORTANT  
22 FEATURE TO REDUCE THE BURDEN ON THE CPU. THAT WAS ONE OF THE  
23 REASONS IT DISTINGUISHED ITSELF FROM THE PRIOR ART IS GETTING  
24 RID OF THE BURDEN ON THE CPU FROM HAVING TO ON PLAYBACK FIND  
25 THE FRAMES WITHOUT KNOWING WHERE THEY ARE, SO THAT MEANS YOU

1 HAVE TO SEARCH THIS LARGE DATA STREAM ON PLAYBACK WITHOUT  
2 TIVO'S INVENTION.

3 Q AND YOU SAID THAT YOU LOOKED AT THE PATENT ITSELF. DID  
4 YOU IDENTIFY ANYTHING IN THE PATENT THAT SUPPORTED THIS NOTION  
5 YOU HAD ABOUT THIS KEY ASPECT OF TIVO'S INVENTION?

6 A YEAH, I MEAN, MOST OF THE PATENT, A LARGE MAJORITY WAS  
7 DEVOTED TO THE DESCRIPTION OF HOW TO DO THIS INDEX CREATION,  
8 THIS START CODE ANALYSIS, AND THEN HOW TO USE IT. AND SO WE  
9 -- AND THERE IS SEVERAL PLACES IN THE PATENT WE IDENTIFIED.

10 Q AND WAS THERE TESTIMONY FROM WITNESSES AT TRIAL THAT ALSO  
11 PLAYED INTO THIS ANALYSIS?

12 A YEAH, THERE WAS -- ONCE AGAIN, THAT WAS ONE OF THEIR KEY  
13 ASPECTS THAT THEY SPENT MOST OF THE TRIAL TALKING ABOUT THIS,  
14 FROM THE TECHNICAL STANDPOINT DESCRIBING THIS. I THINK MR.  
15 BARTON GAVE TESTIMONY.

16 Q AND YOU SAID THERE WERE TWO KEY ASPECTS. WHAT WAS THE  
17 SECOND KEY ASPECT?

18 A THE SECOND KEY ASPECT WAS TIVO INVENTED A WAY OF DOING  
19 AUTOMATIC FLOW CONTROL. AND AS THEY DESCRIBED IT AT TRIAL,  
20 BOTH MR. BARTON AND DR. GIBSON, AND HOW IT'S DESCRIBED IN THE  
21 PATENT IS AUTOMATIC FLOW CONTROL IS THE ABILITY TO BASICALLY  
22 MANAGE THE USE OF THIS BUFFER. AND WHAT'S IMPORTANT, IT'S NOT  
23 JUST THE BUFFER, IT'S HOW YOU USE THAT BUFFER. AND THE IDEA  
24 IS THIS BUFFER IS USED BY SOFTWARE TO TAKE AUDIO/VIDEO DATA  
25 FROM THE PHYSICAL DATA SOURCE, IT WRITES IT INTO THIS BUFFER,

1 AND THEN THAT BUFFER IS WRITTEN BY OTHER SOFTWARE TO THE HARD  
2 DRIVE. AND THE IDEA OF THIS AUTOMATIC FLOW CONTROL IS TO  
3 PREVENT BOTH PEOPLE FROM USING THAT BUFFER AT THE SAME TIME,  
4 BECAUSE YOU DON'T WANT ONE PERSON TRYING TO READ FROM IT TO  
5 WRITE IT TO THE DRIVE WHILE THE OTHER PERSON IS WRITING DATA  
6 INTO IT BECAUSE YOU'LL LOSE DATA.

7 Q NOW, ONCE YOU IDENTIFIED THESE TWO KEY ASPECTS, DID YOU  
8 PROCEED TO SEE IF YOU THOUGHT YOU COULD DEVELOP A DVR DESIGN  
9 THAT WOULD NOT DO THESE THINGS?

10 A YES. WE, YOU KNOW, AS MR. BARTON CORRECTLY IDENTIFIED THE  
11 FACT THAT YOU DON'T HAVE THIS INDEX THAT PRECISELY CAN LOCATE  
12 THE I-FRAMES ON PLAYBACK, WE WOULD HAVE TO GO THROUGH AND  
13 SEARCH THE TRANSPORT STREAM ON PLAYBACK TO FIND THE I-FRAMES.  
14 AND THAT'S VERY CPU-INTENSIVE. AND THAT WAS ONE REASON HE  
15 CAME UP WITH THIS INVENTION TO ALLEVIATE THAT.

16 AND SO WE HAD TO -- WE WEREN'T SURE IF OUR CPU'S WOULD  
17 HAVE ENOUGH CPU POWER TO DO THAT, AND YOU STILL HAVE TO DO  
18 OTHER THINGS IN THE BOX BEYOND JUST DOING THAT FUNCTION OR  
19 NOT. IF THE USER IS DOING OTHER THINGS, THERE'S OTHER THINGS.  
20 SO WE HAD TO GO MAKE SURE WE HAD THE CPU BANDWIDTH TO DO THAT.  
21 SO WE STARTED DOING SOME ENGINEERING TESTING ON ONE OF OUR  
22 MODELS TO REMOVE THE USE OF THE INDEX THAT WAS BEING CREATED  
23 IN THE INFRINGING DEVICES, AND THEN GO THROUGH AND SEE IF WE  
24 COULD ACTUALLY FIND THE FRAMES BY SEARCHING THE TRANSPORT  
25 STREAM ON PLAYBACK.

1 Q WHAT DO YOU MEAN FIND THE FRAMES BY SEARCHING THE  
2 TRANSPORT STREAM ON PLAYBACK?

3 A WELL, WE'VE RECORDED THE TRANSPORT STREAM. THE TRANSPORT  
4 STREAM HAS AUDIO/VIDEO DATA. AND THERE IS SOMETHING CALLED --  
5 MOST OF INTEREST IN TRICK MODES IS I-FRAMES. TO DO TRICK  
6 MODES YOU NEED TO FIND THE I-FRAMES. AND WHAT THE INFRINGING  
7 DEVICE IS USING THIS INDEX TABLE THAT IDENTIFIED EXACTLY WHERE  
8 IN THE TRANSPORT STREAM ON THE FILE EACH FRAME WAS LOCATED, SO  
9 YOU DIDN'T HAVE TO SEARCH THE FILE. YOU DID WHAT MR. BARTON  
10 SAID WAS YOU USE THIS SMALL INDEX FILE AND JUST FOUND THE  
11 FRAME YOU NEEDED, AND YOU COULD GO RIGHT TO THAT PLACE IN THE  
12 TRANSPORT FILE.

13 SO WITHOUT THAT INFORMATION, IT'S JUST A GLOB OF DATA AND  
14 WE DON'T KNOW WHERE THEY ARE. SO YOU HAVE TO START SEARCHING  
15 THROUGH THE FILE UNTIL YOU FIND ONE OF THESE FRAMES AND THEN  
16 DECIDE IF THAT'S THE RIGHT ONE OR NOT AND DO MORE SEARCHES.  
17 AND THIS IS ALL DONE ON PLAYBACK.

18 Q DID TIVO OFFER ANY TESTIMONY AT TRIAL ABOUT WHETHER YOU  
19 COULD HAVE A VIABLE DVR IF INSTEAD OF INDEXING UP FRONT AND  
20 STORING THE INDEX YOU TRIED TO DO THIS ANALYSIS ON PLAYBACK?

21 A YES, THEY DID.

22 Q WHAT DID THEY TELL THE JURY ABOUT THAT?

23 A THEY SAID WITHOUT HAVING THIS INDEX FILE TO MAKE IT MORE  
24 EFFICIENT TO FIND THESE FRAMES, YOU WOULDN'T HAVE A VIABLE  
25 DVR.

1 Q NOW, WHY WOULD THAT BE?

2 A WELL, BECAUSE YOU HAVE TO -- YOU KNOW, BACK WHEN THE  
3 INVENTION WAS DONE IT WOULD TAKE A POWERFUL CPU TO DO THAT,  
4 AND BACK IN 1998 CPU'S WERE VERY EXPENSIVE. AND I THINK THE  
5 POINT WAS YOU WOULD HAVE TO SPEND A LOT OF MONEY TO BUY A  
6 POWERFUL ENOUGH CPU TO DO THAT.

7 Q NOW, YOU SAID YOU CAME UP WITH SOME IDEAS. HOW MANY  
8 DIFFERENT IDEAS DID YOU COME UP WITH ABOUT POSSIBLE DESIGN-  
9 AROUNDS IN THIS APRIL/MAY 2006 TIME FRAME?

10 A WE CAME UP WITH FOUR DIFFERENT IDEAS. ONE WAS JUST  
11 REMOVE THE CREATION OF THAT TABLE SO WE GOT RID OF THE  
12 ANALYSIS OF THE AUDIO/VIDEO DATA PRIOR TO STORAGE AND THE  
13 CREATION OF THAT TABLE, AND THEN YOU WOULDN'T HAVE THAT SO YOU  
14 COULDN'T USE IT. SO, YOU WOULD REMOVE THE USE OF IT. ANOTHER  
15 IDEA WAS TO REMOVE TIVO'S WAY OF DOING AUTOMATIC FLOW CONTROL.  
16 WE ALSO THOUGHT ABOUT STILL HAVING AN INDEX FILE, BUT THIS  
17 WOULD BE CREATED UP AT OUR UPLINK WHEN THEY DO THE ENCODING OF  
18 THE CONTENT. THEY COULD CREATE IT THERE, AND THEN THAT WOULD  
19 BE BROADCAST OVER THE SATELLITE AND THEN WE WOULDN'T ACTUALLY  
20 BE CREATING THAT IN THE BOX BUT IT WOULD BE AVAILABLE FOR USE  
21 ON PLAYBACK.

22 AND THE THIRD OPTION WAS SINCE THIS ANALYSIS AND CREATION  
23 HAD TO BE DONE PRIOR TO STORAGE, WE SAID, WELL, WE CAN GO  
24 AHEAD AND RECORD THE EVENT AND THEN WHEN THE EVENT IS  
25 COMPLETELY RECORDED YOU COULD THEN GO BACK AND GO THROUGH THE

1 EVENT AND FIND THE FRAMES AND CREATE THIS INDEX AND HAVE IT  
2 AVAILABLE FROM THAT POINT ON TO DO TRICK MODES ON PLAYBACK.

3 Q AND DID YOU DO FURTHER INVESTIGATION OF ALL OF THESE  
4 IDEAS?

5 A WELL, YEAH, WE INVESTIGATED WHETHER IT WAS FEASIBLE TO DO  
6 THE UPLINK. AND WE ALSO, AS I SAID, WE WERE LOOKING INTO THE  
7 WAS OUR SET-TOP BOXES GOING TO BE POWERFUL ENOUGH TO DO WHAT  
8 WE CALL THIS BRUTE-FORCE SEARCH ON PLAYBACK. AND --

9 Q SORRY, GO AHEAD.

10 A -- WELL, WE ENDED UP GOING WITH JUST TWO OF THE IDEAS.

11 Q WHICH TWO?

12 A WE ENDED UP GOING WITH JUST THE COMPLETE REMOVAL. WE  
13 JUST SAID, WELL, YOU KNOW, THEY TALKED ABOUT, THIS IS WHAT  
14 THEY SPENT TIME AT THE TRIAL ON WAS THIS ANALYSIS OF THE  
15 AUDIO/VIDEO DATA TO CREATE THIS TABLE AND THE USE OF IT. SO WE  
16 WOULD -- THE SAFEST THING IS JUST GET RID OF IT ALTOGETHER.  
17 YOU KNOW, AND IF WE STILL DIDN'T THINK THE OTHER IDEAS WERE  
18 INFRINGING, BUT THE SAFEST APPROACH TO GET FARTHEST AWAY WAS  
19 JUST NOT CREATE OR USE THAT INFORMATION AT ALL. SO WE WENT  
20 WITH THAT IDEA WHICH WE ENDED UP CALLING THE INDEXLESS, AND  
21 THEN WE ALSO DECIDED TO REMOVE TIVO'S AUTOMATIC FLOW CONTROL.

22 Q WHAT WAS THE TIME FRAME IN WHICH YOU CAME UP WITH THESE  
23 INITIAL IDEAS AND THEN NARROWED IT DOWN TO THESE TWO POSSIBLE  
24 DESIGN-AROUNDS?

25 A THIS WAS ALL DONE IN THE LAST FEW WEEKS OF APRIL WHERE WE

1 WERE DOING WHICH IDEAS TO USE IN THE INITIAL INVESTIGATION.

2 Q WHAT DID YOU DO TO SEE IF THESE IDEAS MIGHT ACTUALLY WORK  
3 IN YOUR BOXES?

4 A WELL, AS I SAID, WE TOOK ONE OF OUR MODELS, IT'S CALLED A  
5 942. THAT HAPPENS TO BE A HIGH DEFINITION BOX. AND WE DID  
6 SOME ENGINEERING WORK. WE REMOVED THE USE OF THE INDEX TABLE  
7 AND THEN JUST DID SEARCH IN THE I-FRAMES ON PLAYBACK AND FOUND  
8 THAT FOR ST STREAMS WE COULD KEEP UP WITH THOSE. IT TOOK A  
9 LOT OF CPU BANDWIDTH, AS MR. BARTON HAD THOUGHT, AND IT DID  
10 TAKE A LOT. AND ON THE HD STREAMS WE COULDN'T KEEP UP OR IT  
11 WAS -- ESSENTIALLY IT WAS USING SO MUCH CPU THERE WASN'T  
12 ANYTHING LEFT FOR THE REST OF THE BOX TO OPERATE FOR HIGH DEF  
13 STREAMS.

14 Q SO LET ME STOP YOU FOR A SECOND. SD AND HD, WHAT ARE  
15 THOSE?

16 A SD IS A STANDARD DEFINITION STREAM, AND HD IS A HIGH  
17 DEFINITION STREAM. A HIGH DEFINITION STREAM HAS GOT ABOUT  
18 EIGHT TO TEN TIMES THE AMOUNT OF DATA PER SECOND THAN A  
19 STANDARD DEFINITION STREAM. AND THE 522/625 AND THE 50X ARE  
20 ALL STANDARD DEFINITION BOXES.

21 Q NOW WHEN YOU SAY YOU WERE WORKING ON THIS IN THE 942  
22 CODE, WAS THAT A REAL BOX IN A CUSTOMER'S HOUSE THAT YOU HAD  
23 MADE WITH THIS TEST 942 CODE?

24 A WELL, NO, THIS WAS AN ENGINEER'S DEVELOPMENT BOX SITTING  
25 IN HIS CUBE AT OUR PLACE.

1 Q OKAY. WHAT DID THOSE TESTS REVEAL TO YOU ABOUT WHETHER  
2 YOUR FIRST IDEA ABOUT TAKING OUT THE PRE-STORAGE START CODE  
3 ANALYSIS WOULD WORK?

4 A WELL, WE, AS I SAID, WE -- ON THE HIGH DEFS WE HAD -- WE  
5 WERE BURNING UP TOO MUCH CPU. ON THE STANDARD DEFS IT WAS  
6 WORKING, BUT IT WAS STILL TAKING A LOT OF CPU. AND SO WE  
7 LOOKED AT THE PROBLEM JUST LIKE MR. BARTON DID, AND HE CAME UP  
8 WITH HIS INVENTION TO SOLVE THAT PROBLEM OF DOING THIS  
9 CREATION PRIOR TO STORAGE. AND WE LOOKED AT IT AND SAID,  
10 WELL, WHAT CAN WE DO WITHOUT KNOWLEDGE OF WHERE THE FRAMES  
11 ARE? CAN WE MAKE IT SO WE DON'T HAVE TO SEARCH QUITE AS MUCH  
12 DATA, BECAUSE IT IS A LOT OF DATA AND TAKES A LOT OF TIME. SO  
13 WE INVENTED THIS WAY OF USING STATISTICS THAT WE GATHERED  
14 DURING PLAYBACK TO HELP MAKE EDUCATED GUESSES TO AT LEAST GIVE  
15 US A STARTING POINT OF WHERE TO SEARCH FOR THE FRAMES THAT WE  
16 HAD TO FIND. YOU KNOW, ONCE WE GOT THERE, WE STILL HAD TO  
17 SEARCH AND FIND THEM.

18 Q CAN YOU EXPLAIN TO THE COURT WHAT YOU MEAN BY YOU  
19 DEVELOPED A METHOD FOR USING STATISTICS DURING PLAYBACK TO  
20 FIND FRAMES?

21 A WELL, AS I SAID, WHAT WE CALLED THE BRUTE-FORCE, A LOT OF  
22 PEOPLE HAVE MENTIONED IS THAT'S JUST SEARCHING THE DATA FOR  
23 THE I-FRAME THAT YOU NEED TO FIND. YOU NEED TO FIND AN I-  
24 FRAME, SO YOU HAVE TO SEARCH IT. AND SO, I MEAN, FOR  
25 INSTANCE, IF -- IF I'M PLAYING A STREAM HERE AND THE USER

1 WANTS TO JUMP 30 SECONDS AHEAD, WELL, THIS IS 30 SECONDS OUT  
2 IS HUNDREDS OF THOUSANDS OF BYTES OF DATA, AND WE DON'T KNOW  
3 WHERE A FRAME IS OUT HERE, BUT WE HAVE TO GET AN I-FRAME OUT  
4 THIS FAR. AND SO THAT IS AN IMMENSE AMOUNT OF DATA TO HAVE TO  
5 WADE THROUGH. SO WE'VE BEEN MONITORING HOW MUCH DATA HAS BEEN  
6 GOING THROUGH THE SYSTEM AS WE PLAY IT BACK, SO WE HAVE AN  
7 AVERAGE DATA RATE FOR THAT STREAM. SO WE KNOW THAT FOR 30  
8 SECONDS THE AVERAGE DATA RATE, FOR INSTANCE, WAS 300 KILOBYTES  
9 PER SECOND. WE KNOW THAT 30 SECONDS OF DATA SHOULD BE ABOUT  
10 900 KILOBYTES OUT THERE.

11 SO WHAT WE DO IS WE SAY, OKAY, WELL, WE'LL JUST MOVE  
12 FORWARD IN THE FILE 900 KILOBYTES WHICH GETS US OUT HERE, AND  
13 THEN FROM THIS POINT WE START SEARCHING THE AUDIO/VIDEO DATA  
14 TO FIND A START CODE FOR AN I-FRAME. AND THEN EVENTUALLY  
15 WE'LL FIND ONE. AND IT -- IT MAY BE CLOSE TO WHERE WE NEEDED  
16 TO GO 30 SECONDS OR -- OR NOT. AND ONCE WE FIND THE I-FRAME,  
17 WE CAN GET THE TIME AND COMPARE IT TO WHERE WE NEEDED TO GO;  
18 AND THEN WE MIGHT TAKE ANOTHER JUMP TO GET CLOSER, BECAUSE  
19 USUALLY THE FIRST TIME WE AREN'T WITHIN BUT JUST TWO OR THREE  
20 SECONDS. WE TRY TO GET CLOSER.

21 Q WHEN DID YOU COME UP WITH THIS IDEA OF TRYING TO USE  
22 THESE EDUCATED GUESSES TO JUMP AROUND IN THE DATA RATHER THAN  
23 HAVING TO SEARCH THROUGH ALL OF IT ON PLAYBACK?

24 A WE DID THAT EARLY. THAT WAS GOING ON DURING MAY AND  
25 JUNE, AND WE KEPT REFINING IT.

1 Q OKAY. AT SOME POINT DID YOU START WORKING WITH COUNSEL  
2 FROM A FIRM CALLED FISH & RICHARDSON ON THESE DESIGNS?

3 A YES, WE DID.

4 Q WHEN DID THEY GET INVOLVED?

5 A IT WAS EARLY JUNE THAT THEY STARTED GETTING INVOLVED. SO  
6 WE STARTED HAVING A SERIES OF MEETINGS WITH THEM, ENDED UP  
7 HAVING FACE-TO-FACE WITH THEM. WE HAD PHONE CALLS. THERE  
8 WERE EMAILS EXCHANGED THROUGHOUT THE PROCESS.

9 Q AND WERE YOU PERSONALLY INVOLVED IN THAT PROCESS?

10 A YES, I WAS.

11 Q WHAT WAS THE PURPOSE, AS YOU UNDERSTOOD IT, OF YOUR  
12 MEETINGS AND CALLS, INTERACTION WITH THE FISH & RICHARDSON  
13 LAWYERS?

14 A WELL, I MEAN, WE WERE TASKED WITH FINDING A WAY TO  
15 DESIGN-AROUND SO OUR BOXES NO LONGER INFRINGED, AND WE WERE  
16 TRYING TO BE AS CAREFUL AS POSSIBLE. WE WANTED TO MAKE SURE  
17 WE GOT THAT RIGHT. SO WE HAD TO MAKE SURE THAT FISH &  
18 RICHARDSON HAD THE CORRECT IDEA AND AN ACCURATE IDEA OF HOW  
19 OUR BOXES WORKED WHEN THEY INFRINGED, AND THEN WE HAD TO  
20 EXPLAIN TO THEM AND MAKE SURE THEY UNDERSTOOD HOW THE CHANGES  
21 THAT WE WERE GOING TO DO, AND THEN WHAT THE BOXES WOULD LOOK  
22 LIKE ONCE THOSE CHANGES WERE MADE.

23 SO, THERE WAS A LONG PROCESS OF GOING BACK AND FORTH  
24 WHERE WE DESCRIBED IT, AND THEN THEY ACTUALLY WOULD WRITE UP  
25 THEIR UNDERSTANDING AND WE WOULD LOOK AT THEIR DOCUMENTS AND

1 MAKE CORRECTIONS UNTIL WE AGREED THAT THAT'S HOW THEY USED TO  
2 OPERATE AND THEY WOULD OPERATE.

3 Q ALL RIGHT. AND AT THE TIME WHEN YOU STARTED INTERACTING  
4 WITH THE FISH & RICHARDSON LAWYERS, DID YOU KNOW FOR SURE THAT  
5 YOUR DESIGN-AROUND WOULD WORK IN CUSTOMER'S BOXES IN THEIR  
6 HOMES?

7 A WELL, WE DIDN'T KNOW FOR SURE BECAUSE WE WERE STILL  
8 DEVELOPING IN OUR BOXES OR OUR 942, AND WE HADN'T ACTUALLY  
9 MOVED THAT SOFTWARE OVER TO THE 522/625, WHICH ISN'T AS --  
10 EVEN THOUGH IT'S STANDARD DEFINITION, THE CPU ISN'T AS  
11 POWERFUL AS THE 942. SO WE HADN'T EVEN DONE THAT WORK. SO WE  
12 WEREN'T POSITIVE THAT IT WOULD WORK, BUT WE, YOU KNOW, WERE  
13 CONFIDENT THAT IT SHOULD WORK AT THAT POINT.

14 Q HAD YOU STARTED WORKING AT THAT POINT ON THE 50X BOXES AT  
15 ALL?

16 A NO, WE DIDN'T START THE 50XS UNTIL I THINK IT WAS LATE  
17 JULY, MAYBE EARLY AUGUST.

18 Q OKAY. LET'S -- LET'S SET ASIDE THE INTERACTION WITH THE  
19 LAWYERS FOR A FEW MINUTES AND JUST TALK ABOUT THE OUTCOME OF  
20 THE TECHNICAL SIDE OF THE PROCESS. AT SOME POINT DID YOU  
21 SUCCEED IN DEVELOPING CODE THAT YOU BELIEVED DID IN FACT  
22 IMPLEMENT YOUR DESIGN-AROUND PROPOSALS THAT WOULD WORK IN EACH  
23 OF YOUR BOXES?

24 A YES.

25 Q OKAY. WHAT ARE THE DESIGN CHANGES THAT ECHOSTAR ACTUALLY

1 MADE TO THE BOXES THAT WERE ADJUDGED TO INFRINGE BY THE JURY  
2 IN ORDER TO TAKE THEM OUTSIDE THE JURY VERDICT?

3 A WELL, AS I SAID, OUR FIRST OPTION WAS REMOVING THE  
4 ANALYSIS OF THE AUDIO/VIDEO DATA PRIOR TO STORAGE THAT WAS  
5 USED TO CREATE THIS TABLE OF START CODES THAT IDENTIFIED THE  
6 LOCATION OF THE I-FRAMES, AND THEN USING THAT ON PLAYBACK FOR  
7 TRICK MODES. WE REMOVED THE SOFTWARE THAT WAS INVOLVED IN THE  
8 CREATION OF THAT AND THE USE OF IT, AND WE MODIFIED HOW THE  
9 HARDWARE PERFORMED ON THE BROADCOM PARTS SO THAT THAT HARDWARE  
10 NO LONGER OPERATED THAT CREATED THE INDEX TABLE. THAT WAS  
11 TRUE OF THE 522/625. IF I SAY 522/625, THEY ARE THE SAME. SO  
12 I JUST SAY 522, BUT SO THAT'S TRUE OF THE 522/625S, AND IN THE  
13 50X, WE ALSO DID THAT. AND THEN ON THE BROADCOM'S WE ALSO  
14 REMOVED THE AUTOMATIC FLOW CONTROL THAT TIVO PRESENTED AND  
15 ACTUALLY IDENTIFIED IN OUR BOXES.

16 Q OKAY. LET'S TAKE THOSE THINGS ONE AT A TIME. IN THE 50X  
17 BOXES, WHAT DID ECHOSTAR DO TO REMOVE THIS ANALYSIS OF  
18 AUDIO/VIDEO DATA THAT FOUND START CODES AND BUILT A TABLE OUT  
19 OF IT?

20 A WELL, IN THE 50X BOXES THE ANALYSIS OF THE AUDIO/VIDEO  
21 DATA WAS ACTUALLY DONE IN SOFTWARE. SO WE REMOVED THE  
22 SOFTWARE THAT DID THAT, AND I THINK DR. STORER TALKED ABOUT WE  
23 HAVE COMPILE TIME SWITCHES THAT ALLOW US TO DETERMINE WHAT  
24 CODE IS USED OR NOT USED WHEN WE DO A BUILD TO MAKE SOFTWARE  
25 THAT GOES IN THE SET-TOP BOX.

1           AND THEN WE ALSO REMOVED THE USE OF THAT ON THE PLAYBACK  
2 SIDE.   AND SO THEN WE HAD TO REPLACE THAT WITH OUR BRUTE-  
3 FORCE, MODIFIED BRUTE-FORCE, WITH OUR STATISTICS FOR MAKING  
4 GUESSES.   SO WE HAD TO ADD THAT SOFTWARE.   AND THEN THERE WAS  
5 OTHER PIECES OF SOFTWARE THAT USED TO RELY ON THE FACT THAT  
6 THAT INFORMATION WAS THERE FROM THE INDEX FILE, LIKE THE PAUSE  
7 BUFFER.   SO THERE WERE SOME OTHER PIECES THAT USED THAT AND WE  
8 HAD TO MODIFY THAT SOFTWARE, TOO.

9           AND THEN ON THE BROADCOM BOXES WE HAD BROADCOM DISABLED.  
10 THEY NO LONGER ENABLED THAT PART OF THE CHIP THAT DID THE  
11 START CODE DETECTION THAT'S BEEN TALKED ABOUT.   THEY ALSO --  
12 WHEN YOU'RE DOING THAT START CODE DETECTION, BECAUSE YOU'RE  
13 ANALYZING THE VIDEO DATA TO FIND THE I-FRAMES, YOU HAVE TO  
14 KNOW WHICH ONE OF THOSE -- WE'VE TALKED ABOUT THE PID FILTERS  
15 -- YOU HAVE TO KNOW WHICH PID IS FOR VIDEO.   AND SO WHEN YOU  
16 HAVE THE START CODE DETECTION ENGINE WORKING, YOU NEEDED TO  
17 TELL THE HARDWARE WHICH PID WAS AUDIO OR VIDEO.

18           SO SINCE THAT'S NO LONGER USED, THE CHANGE WAS MADE THAT  
19 NOW THE HARDWARE IS NOT TOLD WHICH PID IS WHICH.   IT'S JUST  
20 GIVEN IF I'M INTERESTED IN AUDIO/VIDEO, I JUST GIVE IT TWO  
21 PIDS.   IT DOESN'T KNOW WHICH, WHAT THAT DATA IS.   IT JUST  
22 KNOWS WE'RE INTERESTED IN THAT DATA.   AND THEN ONCE AGAIN IN  
23 OUR SOFTWARE WE HAD THOSE SWITCHES TO REMOVE THE USE OF WHAT  
24 USED TO BE THE INDEX FILE FOR TRICK MODE DURING PLAYBACK, AND  
25 THEN ADDED CODE TO DO OUR MODIFIED BRUTE SERVICE.

1 Q THAT WAS A LONG ANSWER, MR. MINNICK.

2 A YES, IT WAS.

3 Q LET ME JUST GO BACK OVER ONE PIECE OF IT. YOU SAID IN

4 THE BROADCOM DEVICES YOU CHANGED SOMETHING ABOUT THE WAY THE

5 PID FILTER WORKED?

6 A WELL, THE INFORMATION THAT WAS GIVEN TO THE PID FILTER.

7 Q COULD YOU EXPLAIN THAT TO US?

8 A RIGHT. THE PIDS TAKE THE MULTI-PROGRAM TRANSPORT STREAM

9 AND FILTER IT DOWN TO A SINGLE PROGRAM TRANSPORT STREAM.

10 YOU'RE INTERESTED IN MORE THAN JUST A COUPLE OF PIDS, BUT HERE

11 LET'S -- WE'LL JUST TALK ABOUT THE AUDIO/VIDEO. YOU NEED THE

12 AUDIO AND YOU NEED THE VIDEO. AND SO YOU HAVE TO TELL IT I

13 WANT THE AUDIO/VIDEO FOR THIS PROGRAM. SO YOU GIVE IT TWO

14 PIDS. AND THOSE ARE JUST NUMBERS, 130 AND 140. AND THEN THE

15 PID FILTER TAKES THOSE TWO NUMBERS AND DOES A COMPARISON AND

16 SAYS, IF I SEE THOSE TWO NUMBERS, I AM GOING TO KEEP THAT

17 DATA, THROW THE REST AWAY. AND AS I SAID BEFORE, THE CHIP WAS

18 TOLD WHICH PID WAS VIDEO SO THAT IT COULD ROUTE THE VIDEO PIDS

19 THAT IT FOUND TO THIS START CODE DETECTION ENGINE. WE NO

20 LONGER DO THAT. NOW WE JUST SAY WE JUST WANT THESE TWO PIDS

21 AND THE HARDWARE DOESN'T KNOW WHAT THEY MEAN, OTHER THAN THEY

22 ARE JUST PID VALUES.

23 Q OKAY. WHAT DID YOU DO IN THE ACTUAL BOXES AFTER YOU

24 REMOVED ALL THIS UP FRONT ANALYSIS IN ORDER TO STILL BE ABLE

25 TO DO TRICKPLAY?

1 A WELL, THAT'S WHERE WE DO --

2 MR. IANCU: YOUR HONOR, I WOULD REQUEST A RUNNING  
3 OBJECTION, JUST LIKE LAST TIME, REGARDING ANY TESTIMONY WITH  
4 RESPECT TO INDEXING, WHICH IS NOT RELEVANT TO THIS CLAIM. IT  
5 ALL RELATES TO CLAIM 1.

6 THE COURT: YOU MAY HAVE THAT RUNNING OBJECTION.

7 MR. IANCU: THANK YOU.

8 THE COURT: YOU MAY CONTINUE.

9 A COULD YOU --

10 MS. KREVANS: OKAY.

11 A -- ASK THE QUESTION AGAIN?

12 THE COURT: WHY DON'T YOU REPHRASE YOUR QUESTION?

13 MS. KREVANS: CERTAINLY, YOUR HONOR.

14 Q (BY MS. KREVANS:) IN THE ACTUAL DEVICES THAT ARE NOW  
15 OPERATING IN THE FIELD THAT HAVE THE RELAY IN THEM, WHAT DID  
16 YOU DO IN ORDER TO BE ABLE TO DO TRICKPLAY GIVEN THAT YOU NO  
17 LONGER DID THE PRE-STORAGE ANALYSIS OF THE AUDIO/VIDEO DATA TO  
18 FIND THE START OF FRAMES?

19 A OKAY. SO NOW ON PLAYBACK WE NO LONGER KNOW WHERE THE  
20 FRAMES ARE LOCATED IN THIS MASSIVE STREAM THAT'S BEEN RECORDED  
21 WHICH MAKES A PROGRAM. A PROGRAM THAT'S AN HOUR LONG ON AN SD  
22 STREAM COULD BE ABOUT A GIGABYTE OF DATA, WHICH IS AN IMMENSE  
23 AMOUNT OF DATA. AND SO WE, SINCE WE DON'T KNOW WHERE THEY ARE  
24 WE JUST HAVE TO SEARCH THAT STREAM FOR THEM. SO WHEN YOU'RE  
25 DOING TRICK MODES, LIKE IF YOU'RE DOING A FAST FORWARD, WE

1 HAVE TO START AND START SEARCHING FOR FRAMES TO FIND AN I-  
2 FRAME.

3 BUT, AS I SAID, WE HAVE SOME STATISTICS THAT LET US GUESS  
4 ON WHERE THEY MIGHT BE LOCATED SO WE DON'T HAVE TO SEARCH  
5 EVERY BIT OF DATA. WE GET CLOSER. AND THAT'S -- OUR  
6 INVENTION IS THIS WAY OF DOING STATISTICS TO DO THIS BRUTE-  
7 FORCE SEARCHING ON PLAYBACK. SO WE JUST HAVE TO SEARCH WITH  
8 OUR LITTLE INVENTION OF USING STATISTICS TO NARROW DOWN THE  
9 SEARCH.

10 Q NOW IN THE ACTUAL DEVICES YOU BUILT USING YOUR NEW  
11 METHOD, IS YOUR FIRST GUESS ALWAYS THE RIGHT GUESS WHEN YOU  
12 ARE LOOKING FOR A PARTICULAR FRAME?

13 A NO. MPEG IS -- THESE I-FRAMES, THEY ARE NOT SPACED OUT  
14 EVENLY. THERE'S NOT A SET NUMBER OF BYTES BETWEEN THEM. AN  
15 I-FRAME IS ABOUT 40 TO 50 KILOBYTES OUT OF THIS GIGABYTE.  
16 THERE'S MANY I-FRAMES, BUT THERE ARE ABOUT 40 TO 50 KILOBYTES,  
17 AND ON AVERAGE THERE'S ABOUT 300 KILOBYTES IN OUR SYSTEM  
18 BETWEEN I-FRAMES, WHICH IS A LOT OF DATA. BUT THAT'S THE  
19 AVERAGE THAT WE, YOU KNOW, THAT'S THE AVERAGE. IT CAN BE AS  
20 SMALL AS 60 AND IT CAN BE AS LARGE AS A MEGABYTE. SO THAT'S A  
21 BIG RANGE FOR ME TO GUESS AND HIT. SO I AM ONLY GOING BY THE  
22 AVERAGE, AND WHEN THEY ARE NOT AVERAGE, I DON'T EVEN GET  
23 CLOSE.

24 Q WHAT HAPPENS IF YOU GUESS WRONG?

25 A WELL, I -- IN THE CASE OF A SKIP FORWARD, I SEARCH UNTIL

1 I FIND IT AND I KNOW THAT I'M -- AND AN I-FRAME HAS A WHAT'S  
2 CALLED A PTS VALUE, SO I KNOW I'M TRYING TO GO TO A CERTAIN  
3 TIME, SAY, 30:30. AND I CAN GET THE PTS VALUE OF THAT AND  
4 SAY, OH, THAT'S 28, IT'S FARTHER AHEAD. AND SO WE MAY JUST  
5 KEEP LINEAR SEARCHING OR WE MAY TRY TO MAKE ANOTHER GUESS AND  
6 JUMP SO WE CAN REDUCE THE AMOUNT OF SEARCH.

7 IN THE CASE OF FAST FORWARD WHERE WE ARE JUST TRYING TO  
8 SKIP FRAMES, SOME FAST FORWARD MODES YOU JUST WANT TO SKIP  
9 DISPLAY FRAMES, SKIP THREE, DISPLAY ONE. WE MAY -- WE WILL GO  
10 AHEAD AND TRY TO MAKE A JUMP AND WE JUST FIND A FRAME. AND WE  
11 DON'T KNOW IF WE HAVE ONLY SKIPPED ONE, TWO, OR THREE. WE  
12 JUST SAY, HEY, WE FOUND ONE, WE'LL PUT IT UP. SO THAT'S PART  
13 OF HOW OUR PLAYBACK ON THE FAST FORWARDS IS DIFFERENT, BECAUSE  
14 WE REALLY AREN'T SKIPPING ON AVERAGE THE NUMBER WE INTEND TO.  
15 BUT WE DON'T TRY TO FIND ANOTHER ONE, WE JUST TAKE THAT ONE.

16 Q ARE YOU AWARE OF ANY ACTUAL WORKING DIGITAL VIDEO  
17 RECORDERS OTHER THAN ECHOSTAR'S REDESIGN RECORDERS THAT  
18 PERFORM DVR FUNCTIONS IN THIS WAY?

19 A NONE THAT USE OUR STATISTICAL GUESSING TO DO THE BRUTE-  
20 FORCE.

21 Q AND BASED ON YOUR WORK ON THIS REDESIGN AND YOUR TESTING  
22 OF IT, COULD YOUR NEW METHOD HAVE WORKED IF YOU'D TRIED TO  
23 IMPLEMENT IT WITH THE CHIPS THAT HAD BEEN AVAILABLE BACK IN  
24 1998 THAT WERE IN YOUR SET-TOP BOXES BACK THEN?

25 A NO. THE CPU'S BACK THEN THAT WE ARE USING IN OUR SET-TOP

1 BOXES WITHOUT SPENDING MORE MONEY, THE ONES IN OUR SET-TOP  
2 BOXES WOULD NOT WORK. THEY WEREN'T POWERFUL ENOUGH. AND IN  
3 FACT WE STARTED DEVELOPING THE 50X AROUND THE YEAR 2001 AND WE  
4 HAD, YOU KNOW, SOME NON-DVR PLATFORMS IN THE FIELD THAT WE'D  
5 ALREADY DEVELOPED SOFTWARE, AND WE WERE GOING TO TAKE ONE OF  
6 THOSE AS OUR BASIS, WHICH CUTS DOWN OUR DEVELOPMENT TIME,  
7 BECAUSE THERE IS ALREADY SOFTWARE FOR IT.

8 THE VAST MAJORITY OF THE SOFTWARE HAS NOTHING TO DO WITH  
9 DVR, AND IT HELPS WITH THE HARDWARE LAYOUT. AND AS WE GOT  
10 INTO THAT, WE FOUND THAT THAT CPU DIDN'T HAVE ENOUGH  
11 HORSEPOWER TO EVEN DO THE METHOD WHERE WE WERE USING AN INDEX  
12 TO FIND THE FRAMES. SO WE HAD TO GO TO ST AT THAT TIME. AND  
13 THEY HAD ANOTHER CHIP THAT THEY WERE WORKING ON THAT WE HAD TO  
14 WAIT A LITTLE BIT FOR CALLED A 5508, AND THAT WAS THEIR NEXT  
15 GENERATION CHIP. AND THAT ONE GENERATIONAL CHANGE GAVE US  
16 ALMOST A 50 PERCENT INCREASE IN CPU POWER. AND EVEN WITH  
17 THAT, WE HAD TO DO SOMETHING CALLED -- WE HAD TO -- THERE'S A  
18 CLOCK THAT SAYS HOW FAST THE CPU RUNS, AND YOU DO THAT WITHIN  
19 THE SPECIFICATION FOR THAT CHIP. WELL, ST SAID WE COULD RUN  
20 IT A LITTLE FASTER THAN SPEC AND STILL BE OKAY, AND THAT  
21 IMPROVED THE PERFORMANCE A LITTLE BIT.

22 AND THEN WHEN WE DID THE 522, WHEN WE ACTUALLY GOT OUR  
23 NEW SOFTWARE, THE WORK AROUND SOFTWARE ON THE 522, WE FOUND  
24 THAT IT DIDN'T HAVE ENOUGH CPU BANDWIDTH. THERE IS SOMETHING  
25 CALLED A READ AHEAD CACHE AND THAT'S ONE OF THE THINGS THAT

1 CAN HELP CPU PERFORMANCE, AND WHEN WE FIRST DEVELOPED THE 522,  
2 BROADCOM COULDN'T GET THAT TO WORK. AND WE FINALLY SAID, YOU  
3 KNOW, WE HAVE TO SHIP THIS THING. WE'RE GOING TO SHIP IT  
4 WITHOUT IT BECAUSE FOR THE WAY IT WAS WORKING IT WAS FAST  
5 ENOUGH. I MEAN, YOU KNOW, WE DECIDED IT WAS FAST ENOUGH FOR  
6 THE CUSTOMER TO USE. IT WAS FINE. BUT THEN ONCE WE ADDED  
7 THIS ADDITIONAL BURDEN ON THE CPU, WE DIDN'T HAVE ENOUGH CPU  
8 THROUGH-PUT, SO WE HAD TO GO BACK TO THEM AND HAVE THEM TURN  
9 ON THIS READ AHEAD CACHE TO IMPROVE THE PERFORMANCE IN THE 522  
10 TO MAKE IT WORK WITH OUR MODIFIED BRUTE-FORCE SEARCH.

11 Q DO ANY OF THE REDESIGNED ECHOSTAR BOXES NOW HAVE ANY  
12 HARDWARE OR SOFTWARE THAT ANALYZES AUDIO AND VIDEO DATA TO  
13 FIND VIDEO FRAME START CODES PRIOR TO STORAGE OF THE DATA ON  
14 THE HARD DISK DRIVE?

15 A NO, THEY DO NOT.

16 Q ARE YOU AWARE OF SOMETHING CALLED A WRITE TIME TABLE IN  
17 THE BROADCOM BOXES?

18 A YES.

19 Q CAN YOU TELL THE COURT IF YOU -- ACTUALLY, WHY DON'T YOU  
20 LOOK AT EXHIBIT 5058 WHICH SHOULD BE IN THAT BINDER IN FRONT  
21 OF YOU.

22 MS. KREVANS: AND IF WE COULD PULL THIS UP, MICHAEL.

23 Q (BY MS. KREVANS) PAGE 9 OF THE INDEX IN THE BINDER, MR.  
24 MINNICK, 5058. I THINK THIS CODE MAY ACTUALLY START ON THE  
25 PAGE BEFORE, SO WHY DON'T WE LOOK AT PAGE 8 FIRST. COULD YOU

1 TELL US WHAT WE ARE LOOKING AT HERE ON PAGES 8 AND 9 OF  
2 EXHIBIT 5058, MR. MINNICK?

3 A THIS IS SOME SOURCE CODE THAT'S WHAT'S CALLED A .H FILE.  
4 AND .H FILES CONTAIN BASICALLY DATA DEFINITIONS.

5 Q DOES THIS SOURCE CODE RELATE TO THE WRITE TIME TABLE?

6 A YES, IT HAS AN ENTRY OR SO IN THERE.

7 Q OKAY. COULD YOU LOOK AT PAGE 9, AND COULD YOU TELL US  
8 WHETHER THIS CODE TELLS YOU WHAT DATA IS STORED IN THE WRITE  
9 TIME TABLE IN THE BROADCOM BOXES?

10 A YEAH, ON LINE 334 IT STARTS WITH FIRST WTT ELEMENT. I'M  
11 SORRY. I READ IT WRONG. IT'S DIFFERENT ON THIS ONE. IT'S  
12 ON, YEAH, 334, I'M SORRY. TYPEDEF STRUCT, THAT'S A STRUCTURE  
13 DEFINITION AND THIS IS THE TYPE OF STRUCTURE THAT'S WRITTEN TO  
14 THE WTT FILE. AND YOU'LL SEE ON LINE 336 IT SAYS UINT32 WHICH  
15 SAYS HOW MANY BYTES THIS VARIABLE IS. IT SAYS VERSION AND  
16 VERSION JUST TELLS US WHAT -- BASICALLY WHAT VERSION OF THIS  
17 DATA STRUCTURE IT IS, SO IF WE EVER CHANGE IT WE CAN NOTICE  
18 THAT SO WE KNOW TO CHANGE HOW THE SOFTWARE OPERATES ON IT.

19 THE NEXT LINE IS 337, UINT32 IS SECOND, AND THE COMMENT  
20 SAYS THE TIME IN SECONDS WHEN THE CORRESPONDING WRITE TO THE  
21 TSP FILE IS MADE. THE TSP FILE IS THE TRANSPORT FILE THAT'S  
22 BEING RECORDED WHEN YOU'RE DOING THE RECORDING. THE NEXT LINE  
23 SAYS F\_SIZE FILE OFFSET. AND THIS SAYS THE SIZE OF THE TSP  
24 FILE AT THE GIVEN TIME. ONCE AGAIN, THE TSP FILE IS THE  
25 TRANSPORT FILE.

1 Q SO FOR THOSE OF US WHO ARE NOT SOFTWARE ENGINEERS, WHAT  
2 ARE THE TWO PIECES OF DATA THAT ARE STORED IN THE WRITE TIME  
3 TABLE?

4 A WELL, THERE'S ACTUALLY THREE BECAUSE WE HAVE THE VERSION,  
5 BUT EACH ENTRY CONTAINS THE VERSION AND THE SECONDS. AND THE  
6 SECONDS IS JUST THE TIME AFTER WE WRITE A BLOCK OF DATA. AS  
7 WE'RE MOVING IT FROM THE BUFFER, THAT BLOCK OF DATA IS WRITTEN  
8 TO THE DRIVE, AND WE JUST GO TO OUR RUNNING CLOCK AND SAY,  
9 WHAT TIME IS IT? AND THAT'S THE TIME IN SECONDS. AND THEN WE  
10 GO TO THE FILE SYSTEM, WHICH DID THE ACTUAL WRITE INTO THE  
11 FILE, AND SAY, WHAT'S YOUR CURRENT FILE POINTER? SO IN A FILE  
12 SYSTEM EACH TIME IT WRITES A BLOCK OF DATA TO THE FILE, THAT  
13 FILE POINTER ADVANCES BY HOW MANY BYTES YOU WROTE. SO IF  
14 YOU'VE WRITTEN 500 BYTES, THE FILE POINTER WILL SAY 500. AND  
15 WE TAKE THAT VALUE AND WRITE THAT TO THE WTT.

16 Q IS THERE ANY INFORMATION IN THE WTT TABLE THAT HAS  
17 INFORMATION ABOUT START CODE LOCATIONS?

18 A NO. AS I SAID, WE DON'T ANALYZE ANY OF THE AUDIO/VIDEO  
19 DATA PRIOR TO STORAGE. WE DON'T LOOK AT IT. WE'RE JUST  
20 MOVING IT AND WRITING IT TO THE DRIVE. IT'S A BLOB OF DATA.  
21 IT COULD BE PURE AUDIO. WE DON'T KNOW WHAT IT IS BECAUSE IT'S  
22 JUST A WRITE. IT'S A BLOB OF DATA.

23 Q IS THERE ANY CORRELATION BETWEEN THE PIECES OF DATA  
24 STORED IN THE WRITE TIME TABLE AND THE LOCATION OF VIDEO START  
25 FRAMES?

1 A NO, THAT'S IMPOSSIBLE BECAUSE WE'VE NEVER LOOKED INSIDE  
2 THAT DATA. WE HAVE JUST MOVED IT AND WRITTEN IT TO THE DRIVE.  
3 THAT'S IMPOSSIBLE TO KNOW ANYTHING ABOUT IT.

4 Q IF YOU TOOK THE WRITE TIME TABLE OUT OF YOUR BOXES, WOULD  
5 ALL THE TRICKPLAY FUNCTIONS BEHAVE THE SAME WAY THAT THEY DO  
6 NOW?

7 A YEAH, THEY WOULD BEHAVE EXACTLY THE SAME WAY BECAUSE IT'S  
8 NOT USED FOR TRICKPLAY. IT'S USED TO DISPLAY THE TIME TO THE  
9 USER. AND IN FACT, ON THE 50X HAS A SIMILAR FUNCTION. IT  
10 DOESN'T EVEN USE IT ON PLAYING BACK AN EVENT. WE DON'T PUT  
11 THE TIME UP. WE ONLY PUT THE TIME UP ON A PLAYBACK ON THE  
12 522. SO WE ONLY USE IT TO DISPLAY THE TIME TO A USER, AND  
13 IT'S AFTER YOU'VE DONE A TRICK MODE. SO IF I JUMP AHEAD 30  
14 SECONDS, THE SOFTWARE HAS TO GO DO EVERYTHING I'VE BEEN  
15 TALKING ABOUT, JUMP AHEAD, AND THEN AFTER THE TRICKPLAY IS  
16 DONE, THEN WE PUT UP THE TIME BECAUSE THAT'S WHERE YOU ARE.  
17 YOU CAN'T PUT UP THE TIME UNTIL AFTER YOU'VE DONE THE  
18 OPERATION.

19 Q WHEN IS THE WRITE TIME TABLE CREATED IN THE BROADCOM  
20 PRODUCTS?

21 A WELL, AS WE ARE RECORDING THE TRANSPORT DATA TO THE FILE  
22 IS WHEN THAT'S CREATED, BUT AFTER EACH TIME WE DO A WRITE WE  
23 GET THE VALUE.

24 Q SO WHEN YOU SAY AFTER EACH TIME WE DO A WRITE WE GET THE  
25 VALUE, WHAT DO YOU MEAN?

1 A WELL, WE WRITE A BLOCK OF DATA AND AFTER THAT BLOCK IS  
2 WRITTEN, THAT'S WHEN WE HAVE TO GET THE FILE POINTER BECAUSE  
3 IT DOESN'T MOVE UNTIL AFTER YOU'VE WRITTEN THE BLOCK OF DATA.  
4 SO WE GET FILE POINTER VALUE AND THE CURRENT TIME.

5 Q OKAY. IS THERE SOMETHING SIMILAR TO THE WRITE TIME TABLE  
6 IN THE 50X PRODUCTS?

7 A YES, IT'S CALLED THE TBK FILE.

8 Q IS THERE ANY INFORMATION ABOUT START CODE LOCATIONS IN  
9 THE TBK FILE?

10 A NO.

11 Q IF YOU TOOK THE TBK FILE OUT OF THE 50X PRODUCTS, WOULD  
12 ANY OF THE OPERATIONS, THE TRICKPLAY FEATURES, CHANGE IN ANY  
13 WAY?

14 A NO. ONCE AGAIN, IT'S ONLY THE DISPLAY OF THE TIME TO THE  
15 USER, AND THAT'S ONLY USED FOR PAUSE ON THE 50X.

16 Q OKAY. AND WHEN YOU SAY WRITE TIME TABLE, WHAT IS THE  
17 WRITE THERE REFERRING TO?

18 A WELL, IT'S THE WRITE OF THE TRANSPORT DATA TO THE HARD  
19 DRIVE.

20 Q TO THE HARD DISK DRIVE?

21 A THE HARD DISK DRIVE, YES.

22 Q OKAY. COULD YOU LOOK AT PLAINTIFF'S EXHIBIT 3031, WHICH  
23 IS IN YOUR BINDER?

24 MS. KREVANS: AND WHY DON'T YOU JUST BLOW UP THE VERY  
25 TOP OF THE DOCUMENT FOR A MOMENT? THANK YOU, MICHAEL.

1 Q (BY MS. KREVANS) DO YOU SEE WHERE IT SAYS JAY CARLSON?

2 A YES.

3 Q WHO IS MR. CARLSON?

4 A HE'S AN ENGINEER THAT WORKS INDIRECTLY FOR ME AND WAS  
5 WORKING ON THIS DEVELOPMENT EFFORT.

6 Q OKAY.

7 MS. KREVANS: COULD YOU GO DOWN, MICHAEL, AND  
8 HIGHLIGHT THE PORTION OF THE DOCUMENT THAT WE LOOKED AT  
9 EARLIER TODAY THAT SAYS UNDER THE HEADING: DOC:B PROPOSED  
10 IMPLEMENTATION? THERE YOU GO.

11 Q (BY MS. KREVANS) DO YOU SEE THIS PORTION OF THIS  
12 DOCUMENT, MR. MINNICK?

13 A YES.

14 Q COULD YOU TELL US WHAT DOCUMENT MR. CARLSON WAS  
15 COMMENTING ON IN THIS JULY -- IN THIS JULY EMAIL?

16 MR. IANCU: YOUR HONOR, PERHAPS WE CAN LAY A  
17 FOUNDATION THAT MR. MINNICK KNOWS.

18 THE COURT: VERY WELL. I'LL SUSTAIN THE OBJECTION,  
19 AND THAT YOU NEED TO ESTABLISH A FOUNDATION IF HE IS GOING TO  
20 GIVE AN OPINION IN THAT REGARD, OR TESTIMONY.

21 Q (BY MS. KREVANS:) MR. MINNICK, HAVE YOU SEEN THIS  
22 DOCUMENT BEFORE?

23 A YES, I HAVE.

24 Q ARE YOU FAMILIAR WITH WHAT MR. CARLSON WAS COMMENTING ON  
25 WHEN HE WROTE THE COMMENTS THAT ARE IN THIS DOCUMENT?

1 A YES.

2 Q CAN YOU TELL THE COURT WHAT MR. CARLSON WAS COMMENTING  
3 ON?

4 MR. IANCU: WELL, THAT -- THAT DOES NOT ESTABLISH  
5 FOUNDATION.

6 THE COURT: WELL, LET HER -- SHE HASN'T FINISHED YET.  
7 YOU CAN RENEW YOUR OBJECTION WHEN SHE FINISHES ESTABLISHING  
8 THE FOUNDATION.

9 MR. IANCU: WELL, SHE WAS NOW BEGINNING TO ASK WHAT  
10 MR. CARLSON MEANT, AND THERE IS NO FOUNDATION THAT MR. MINNICK  
11 KNOWS WHAT MR. CARLSON MEANT. HE IS NOT LISTED AS THE  
12 RECIPIENT OF THIS EMAIL OR AN AUTHOR.

13 THE COURT: WELL, I THOUGHT HE WAS GOING TO ESTABLISH  
14 A FOUNDATION, SO IF YOU'LL -- I AGREE AT THIS POINT THERE IS  
15 NOT AN APPROPRIATE FOUNDATION. SO IF YOU WERE ABOUT TO ASK  
16 HIS OPINION ON WHAT HE MEANT, YOU NEED TO ESTABLISH MORE OF A  
17 FOUNDATION.

18 MS. KREVANS: THE QUESTION ON THE TABLE, YOUR HONOR,  
19 WAS NOT WHAT MR. CARLSON MEANT. IT WAS CAN MR. MINNICK TELL  
20 US WHAT DOCUMENT MR. CARLSON WAS GIVING COMMENTS TO IN EXHIBIT  
21 3031.

22 MR. IANCU: WELL, SAME OBJECTION. WHAT'S THE BASIS  
23 FOR MR. MINNICK'S KNOWLEDGE OF THAT?

24 MS. KREVANS: THE FIRST QUESTION, YOUR HONOR, IS DOES  
25 HE KNOW. THAT'S THE QUESTION ON THE TABLE.

1 THE COURT: VERY WELL.

2 Q (BY MS. KREVANS:) DO YOU KNOW, MR. MINNICK?

3 THE COURT: I'LL ALLOW YOU TO -- HIM TO ANSWER DOES  
4 HE KNOW, AND THEN IF HE KNOWS, YOU NEED TO ESTABLISH HOW.

5 A YES, I DO.

6 Q HOW DO YOU KNOW WHAT DOCUMENT MR. CARLSON WAS COMMENTING  
7 ON HERE?

8 A BECAUSE IT'S IN THE EMAIL. IT SAYS FROM INDEX  
9 FILE REMOVAL TECHNICAL DESCRIPTION DOCUMENT. .DOC IS  
10 DOCUMENT.

11 Q AND ARE YOU ARE FAMILIAR WITH WHAT THAT DOCUMENT WAS?

12 A YEAH, THAT'S OUR DESIGN DOCUMENT FOR OUR WHAT WE CALL THE  
13 INDEXLESS DESIGN-AROUND.

14 Q AND WHO WROTE THE DESIGN DOCUMENT?

15 A JAY CARLSON AND SOME OF THE OTHER ENGINEERS THAT WORKED  
16 ON THAT PART OF THE FEATURE.

17 Q AND IF YOU TURN THE PAGE IN EXHIBIT 3031, JUST GO TO THE  
18 NEXT PAGE OF IT, IS THIS PART OF A WHOLE CHAIN OF EMAILS, MR.  
19 MINNICK?

20 A YES, EVERYBODY IS REPLYING TO IT.

21 Q OKAY. ARE YOU ON THIS CHAIN?

22 A YES.

23 Q OKAY. IF YOU LOOK AT THE MIDDLE OF PAGE -- THE SECOND  
24 PAGE OF 3031, SEE THERE IS AN EMAIL TO YOU FROM A MR. DAVID  
25 ST. JOHN LARKIN ON JULY 24<sup>TH</sup>?

1 A YES.

2 Q AND UNDERNEATH THAT THERE IS AN EMAIL FROM A MR. AARONSON  
3 TO MR. ST. JOHN LARKIN. DO YOU SEE THAT?

4 A YES.

5 Q SUBJECT OF BOTH TECHNICAL DESCRIPTIONS?

6 A YES.

7 Q CAN YOU TELL US WHAT THIS EMAIL CHAIN WAS ABOUT, MR.  
8 MINNICK?

9 MR. IANCU: SAME OBJECTION, YOUR HONOR. THIS  
10 PARTICULAR BLOWUP HERE ON THE SCREEN DOES NOT ESTABLISH THAT  
11 MR. MINNICK WAS THE AUTHOR OR RECIPIENT OF THAT PARTICULAR  
12 EMAIL. NO FOUNDATION.

13 MS. KREVANS: YOUR HONOR, IN THE MIDDLE OF PAGE 3031  
14 WE SEE THAT MR. MINNICK WAS INDEED THE RECIPIENT OF THIS EMAIL  
15 JULY 24<sup>TH</sup> FROM MR. ST. JOHN LARKIN.

16 THE COURT: ASK HIM IF HE RECEIVED IT.

17 Q (BY MS. KREVANS:) DID YOU RECEIVE THIS EMAIL FROM MR. ST.  
18 JOHN LARKIN IN JULY OF 2006?

19 A YES.

20 Q AND WHAT DID YOU UNDERSTAND WAS THE PROCESS FOR WHICH MR.  
21 ST. JOHN LARKIN WAS SENDING YOU THIS EMAIL HEADED TECHNICAL  
22 DESCRIPTIONS?

23 MR. IANCU: IF WE COULD ESTABLISH THE BASIS OF MR.  
24 MINNICK'S KNOWLEDGE. HE IS COPIED ON AN EMAIL, A COUPLE OF  
25 EMAILS ABOVE IN THE CHAIN OR ONE EMAIL ABOVE IN THE CHAIN.

1 THERE IS NO FOUNDATION THAT MR. MINNICK KNOWS WHAT MR.  
2 AARONSON HAD IN MIND, WHAT MR. ST. JOHN LARKIN HAD IN MIND,  
3 AND SO FORTH.

4 THE COURT: WELL, CONTINUE WITH ESTABLISHING A  
5 FOUNDATION, THEN WE'LL SEE WHERE YOU ARE GOING FOR THIS LINE  
6 OF QUESTIONING.

7 Q (BY MS. KREVANS:) IN JULY OF 2006, MR. MINNICK, DID MR.  
8 ST. JOHN LARKIN FORWARD AN EMAIL FROM MR. AARONSON TO YOU?

9 A YES.

10 Q AND THE SUBJECT OF THE EMAIL WAS TECHNICAL DESCRIPTIONS?

11 A YES.

12 Q WHO IS MR. ST. JOHN LARKIN?

13 A HE WAS A ECHOSTAR IN-HOUSE ATTORNEY.

14 Q OKAY. DID YOU HAVE AN UNDERSTANDING OF WHY MR. ST. JOHN  
15 LARKIN FORWARDED THIS EMAIL TO YOU?

16 A YES.

17 Q WHAT WAS YOUR UNDERSTANDING?

18 A WELL, AS PART OF THIS PROCESS OF WORKING WITH THE OPINION  
19 ATTORNEYS, THEY ARE WRITING DOCUMENTS TO DESCRIBE OUR SYSTEM  
20 AS WE DESCRIBED IT TO THEM. THAT'S THESE DOCUMENTS WE TALKED  
21 ABOUT EARLY. AND THEN THEY ARE ALSO WRITING DOCUMENTS ON OUR  
22 PROPOSED MODIFICATIONS, AND SO THEY WANT US TO REVIEW SOME OF  
23 THESE DOCUMENTS THAT THEY HAVE WRITTEN.

24 Q AND WHEN YOU SAY US, WHO ARE YOU TALKING ABOUT?

25 A SORRY. ECHOSTAR, AND, IN PARTICULAR, MY -- MY ENGINEERS.

1 Q OKAY. WAS MR. CARLSON ONE OF THOSE ENGINEERS?

2 A YES.

3 Q WORKING FOR YOU AT THE TIME?

4 A YES.

5 Q AND DID YOU, AFTER YOU RECEIVED THIS TECHNICAL  
6 DESCRIPTION FROM MR. AARONSON, SEND IT ON TO THE ENGINEERS IN  
7 YOUR GROUP AND ASK THEM TO LOOK AT IT TO SEE IF IT WAS  
8 ACCURATE?

9 A YES.

10 Q OKAY. COULD YOU LOOK BACK AT THE FIRST PAGE WHERE MR.  
11 CARLSON MADE THE COMMENT THAT WE SAW ON THE SCREEN FROM TIVO  
12 EARLIER TODAY? HE SAYS: FIRST, AFTER IT SAYS JAY, THIS  
13 SECTION OF THE DOCUMENT CONTAINS MANY INACCURACIES. FIRST, WE  
14 WILL STILL HAVE AN INDEX FILE. IT WILL CONTAIN THE SECONDS  
15 AND WRITE OFFSET RECORDS FOR EACH CHUNK OF TSP WRITTEN TO THE  
16 DRIVE. THE OLD INDEX CONTAINED RECORDS DESCRIBING VIDEO  
17 FRAMES. THE NEW INDEX WILL CONTAIN RECORDS DESCRIBING RAW TSP  
18 DISK WRITE OPERATIONS. DO YOU SEE THAT?

19 A YES.

20 Q WAS MR. CARLSON CORRECT IN THIS DESCRIPTION OF THE NEW  
21 INDEX FILE AND THE OLD INDEX FILE IN THIS DOCUMENT?

22 MR. IANCU: OBJECTION, YOUR HONOR, THERE IS NO BASIS  
23 ESTABLISHED FOR MR. MINNICK KNOWING WHAT MR. CARLSON HAD IN  
24 MIND. HE IS NOT COPIED ON THAT EMAIL, HASN'T WRITTEN THE  
25 EMAIL, AND THERE IS NO FOUNDATION THAT --

1 THE COURT: OVERRULED.

2 Q (BY MS. KREVANS:) YOU UNDERSTAND, MR. MINNICK, I'M NOT  
3 ASKING YOU WHAT MR. CARLSON WAS THINKING. I AM ASKING YOU IF  
4 YOU BELIEVE THE STATEMENTS HE ACTUALLY WROTE DOWN HERE WERE  
5 CORRECT.

6 A YES, THEY WERE CORRECT.

7 Q WELL, WHAT -- WHAT HAPPENED WITH THESE COMMENTS THAT YOU  
8 ASKED THE ENGINEERS IN YOUR GROUP TO MAKE ON THE TECHNICAL  
9 DESCRIPTION THAT YOU RECEIVED FROM FISH & RICHARDSON?

10 A WELL, THEIR COMMENTS WERE GIVEN BACK TO FISH &  
11 RICHARDSON.

12 Q AND WHAT WAS YOUR UNDERSTANDING OF THE PURPOSE OF  
13 PROVIDING THE FISH & RICHARDSON TECHNICAL DESCRIPTION TO YOU  
14 FOR COMMENTS AND THEN GIVING YOUR COMMENTS BACK TO THEM?

15 A NO, THIS IS THAT BACK AND FORTH PROCESS. WE ARE TRYING  
16 TO MAKE SURE THAT THEY WERE ACCURATE, AND THAT'S WHY ALL THE  
17 ENGINEERS INVOLVED WERE REVIEWING THEM FOR ACCURACY.

18 Q OKAY. NOW, LET'S GO BACK TO THE ACTUAL DESIGN-AROUNDS  
19 THAT YOU MADE. THE SECOND ONE YOU HAD SAID WAS A FLOW CONTROL  
20 RELATED DESIGN-AROUND. WHAT CHANGES DID YOU MAKE IN YOUR  
21 PRODUCTS THAT HAD BROADCOM CHIPS THAT WERE DESIGNED TO  
22 ELIMINATE THE AUTOMATIC FLOW CONTROL, THE SOURCE OBJECT FROM  
23 THE INFRINGING PRODUCTS?

24 A WELL, THE AUTOMATIC FLOW CONTROL IS ABOUT THE CONTROL OF  
25 THE USE OF A BUFFER. IT'S NOT ABOUT THE BUFFER ITSELF. IT'S

1 ABOUT THE USE. SO WE STARTED WITH LOOKING AT DR. GIBSON'S  
2 TESTIMONY AND TO SEE WHAT CODE HE ACTUALLY IDENTIFIED. AND WE  
3 REMOVED THAT CODE THAT HE IDENTIFIED AND WE -- ACTUALLY, FIRST  
4 WHAT WE DID IS HE TALKED ABOUT THE 721, AND WE FOUND THE  
5 ANALOGOUS CODE IN THE 522 AND REMOVED THAT CODE. AND THAT'S  
6 THE CODE THAT DID THE FLOW CONTROL ON A BUFFER. AND WE  
7 REMOVED THAT CODE, AND WE ENDED UP REMOVING THE BUFFER BECAUSE  
8 WITHOUT THE FLOW CONTROL OPERATION ON THE BUFFER, THERE WAS NO  
9 NEED FOR THE BUFFER. IT WAS JUST WASTING A MEMORY MOVE.

10 Q OKAY.

11 MS. KREVANS: COULD WE LOOK AT DX-5004, SLIDE 121,  
12 PLEASE?

13 Q (BY MS. KREVANS) YOU SAID DR. GIBSON GAVE TESTIMONY ABOUT  
14 THE 721. IS THIS THE CODE HE IDENTIFIED THAT YOU WERE  
15 REFERRING TO?

16 A YES.

17 Q AND WHAT DID THIS CODE THAT'S IDENTIFIED ON THIS SLIDE  
18 THAT SAYS PART OF SOURCE OBJECT FILLS BUFFER DO?

19 A WELL, THE MEMCPY, AS DR. STORER SAID, TAKES AND COPIES  
20 DATA FROM ONE SD RAM LOCATION TO THE OTHER. SO THAT SOFTWARE  
21 -- MEMCPY IS A SOFTWARE OPERATION, SO THE SOFTWARE IS COPYING  
22 THE DATA. IN THIS CASE THE SOURCE IS WHERE THE PHYSICAL DATA  
23 SOURCE WROTE THE AUDIO/VIDEO DATA. IT'S COPYING THAT TO A  
24 BUFFER. AND THEN YOU'LL SEE THE NEXT THING INDICATED IS THE  
25 CALL TO THE TRANSFORM OBJECT WRITE TO THE HARD DISK, AND THE

1 DVR FILE WRITE TAKES THIS DATA THAT THE SOURCE OBJECT FILLED  
2 WITH THAT MEMCPY AND WRITES IT TO THE DRIVE. AND WHILE THE  
3 WRITE IS GOING ON OF THAT BUFFER TO THE DRIVE, THE MEMCPY IS  
4 BLOCKED FROM HAPPENING AGAIN SO IT CAN'T PUT MORE DATA INTO  
5 THAT BUFFER WHILE THE DVR FILE WRITE IS WRITING IT TO THE  
6 DRIVE.

7 Q NOW, HERE ARE YOU TALKING ABOUT THE OLD PRODUCTS THAT  
8 WERE ADJUDGED TO INFRINGE OR YOUR NEW PRODUCTS?

9 A NO, THAT'S THE 721 AT TRIAL.

10 Q OKAY. IS THERE ANY CODE IN THE NEW PRODUCTS LIKE THE  
11 CODE THAT'S IN THE OLD PRODUCTS THAT DR. GIBSON IDENTIFIED  
12 THAT BLOCKS THE FILLING OF THE BUFFER WHILE WRITES TO THE HARD  
13 DISK ARE HAPPENING?

14 A NO.

15 Q OKAY. HAVE YOU PREPARED -- WELL, STRIKE THAT. DID YOU  
16 REMOVE FROM THE BROADCOM PRODUCTS ALL OF THE CODE THAT DR.  
17 GIBSON IDENTIFIED AT TRIAL AS BEING AUTOMATIC FLOW CONTROL OF  
18 THE SOURCE OBJECT?

19 A YES.

20 Q AND YOU DID THAT IN PRODUCTS IN ADDITION TO THE 721?

21 A WE DID THAT IN THE 522/625.

22 Q OKAY. HAVE YOU PREPARED A GRAPHIC EXPLAINING THE  
23 DIFFERENCE BETWEEN HOW YOUR OLD PRODUCTS WORKED ON THIS POINT  
24 AND YOUR NEW ONES?

25 A YES, IF YOU COULD PUT THAT UP.

1 Q OKAY.

2 MS. KREVANS: COULD WE SEE MINNICK GRAPHIC 2, PLEASE?

3 Q (BY MS. KREVANS) COULD YOU EXPLAIN THE DIFFERENCE BETWEEN  
4 THE OLD AND THE NEW TO THE COURT USING THIS GRAPHIC, DR.  
5 MINNICK?

6 A YES. ON THE LEFT IT STARTS WITH THE BROADCOM HARDWARE AND  
7 THEN IT'S WRITING DATA INTO THAT TRANSPORT BUFFER, AND THEN  
8 THAT DATA IS MOVED FROM THE TRANSPORT BUFFER TO WHAT'S CALLED  
9 THAT RECORD BUFFER, AND THEN ULTIMATELY IT'S WRITTEN FROM THE  
10 RECORD BUFFER TO THE HARD DRIVE.

11 Q AND THIS IS THE OLD PRODUCTS?

12 A THIS IS THE OLD PRODUCTS. THIS IS THE ARCHITECTURE FOR  
13 THE 721, AND IT'S THE SAME ARCHITECTURE FOR THE 522 AS FAR AS  
14 THE DATA FLOW AND THE BUFFERS, HOW IT FLOWS TO THE BUFFERS.

15 Q OKAY. LET'S JUST GET A LITTLE TERMINOLOGY CLEAR HERE FOR  
16 THOSE OF US WHO ARE NOT ENGINEERS. UNDER THE HEADING  
17 TRANSPORT BUFFER, THE RECTANGLE IS LABELED LINEAR BUFFER SD  
18 RAM. FIRST OF ALL, WHAT DO YOU MEAN BY SDRAM IN YOUR GRAPHIC?

19 A WELL, SDRAM IS MEMORY IN A SET-TOP BOX. AND THAT'S THE  
20 LOCATION THAT THE PHYSICAL DATA SOURCE, THE BROADCOM HARD  
21 DRIVE OR HARDWARE WOULD WRITE THE AUDIO/VIDEO DATA INTO.

22 Q OKAY. WHAT DID YOU MEAN IN YOUR DIAGRAM WHEN YOU CALLED  
23 YOUR OLD TRANSPORT BUFFER A LINEAR BUFFER?

24 A WELL, IN THE 522 THAT WAS ACTUALLY MANAGED AS TEN BUFFERS  
25 BY THE BROADCOM DEVICE DRIVERS, AND IT WAS A POOL OF BUFFERS

1 THAT THEY WOULD MANAGE AND GIVE TO THE DRIVE; AND WHEN THEY  
2 GOT FILLED UP, THEY WOULD PICK THEM OUT OF THE POOL AND GIVE  
3 THEM TO US OR PUT BACK EMPTY ONES. AND THE REASON IT'S CALLED  
4 LINEAR IS THE WAY THOSE BUFFERS OPERATED, THE HARDWARE GOT THE  
5 STARTING ADDRESS, SO THE FIRST BUFFER, AND IT WOULD WRITE  
6 THROUGH IT; AND THEN IT WOULD HAVE THE ADDRESS OF THE NEXT  
7 ONE, SO THEN IT WOULD GO THERE AND START WRITING TO THAT ONE.  
8 BUT IF IT WROTE THROUGH ALL THE BUFFERS AND FILLED THEM UP,  
9 AND THE SOFTWARE, THE DEVICE DRIVERS, HADN'T GOTTEN BACK AND  
10 HANDED THEM ANY EMPTY MEMORY, IT WOULD STOP WRITING ONCE IT  
11 HIT THE END.

12 Q WHEN YOU SAY IT WOULD STOP WRITING, WHAT'S THE IT YOU ARE  
13 TALKING ABOUT?

14 A THE HARDWARE WOULD.

15 Q THE BROADCOM CHIP?

16 A YES.

17 Q THERE'S BEEN SOME TALK IN COURT TODAY ABOUT A CIRCULAR  
18 BUFFER. COULD YOU EXPLAIN TO THE COURT WHAT THE DIFFERENCE IS  
19 BETWEEN A CIRCULAR BUFFER AND THE KIND OF LINEAR BUFFER YOU  
20 HAD THERE IN YOUR OLD PRODUCTS?

21 A WELL, THERE'S A COUPLE OF DIFFERENCES BETWEEN WHAT WE  
22 HAVE IMPLEMENTED NOW AND WE CALL CIRCULAR BUFFER. LIKE I  
23 SAID, ON THIS ONE, IT'S A POOL OF BUFFERS AND INITIALLY  
24 THEY'LL GIVE THE HARDWARE THIS LIST OF ADDRESSES TO WRITE  
25 INTO. AND THEN SOME GET FILLED, AND SO IT TAKES THEM OUT AND

1 HANDS THEM OFF AND THEY GET COPIED INTO THAT BUFFER. SO  
2 THERE'S THIS BACK AND FORTH MOVEMENT OF WHETHER A BUFFER IS  
3 FULL OR NOT. SO IT'S NOT JUST THIS STATIC LIST OF TEN BUFFERS.  
4 IT'S A MANAGED POOL. AND THEY HAVE TO GIVE EMPTY ONES BACK TO  
5 IT SO THE HARDWARE HAS A PLACE TO WRITE. AND AS I SAID, IF  
6 THEY DON'T GET BACK BEFORE IT'S FILLED UP ALL THE ONES IT HAS,  
7 IT STOPS WRITING.

8 THE WAY THE CIRCULAR BUFFER WORKS THAT WE HAVE NOW, IF  
9 YOU WANT TO CALL IT TEN BUFFERS OR ONE BUFFER, IT DOESN'T  
10 MATTER. WE HAVE THIS ADDRESS BASE AND WE CALL IT LOGICALLY  
11 SEPARATED INTO TEN DESCRIPTORS, BUT IT DOESN'T MATTER BECAUSE  
12 THE DIFFERENCE IS THAT ADDRESS SPACE, IF IT'S -- IT'S LIKE 1.3  
13 MEGABYTES, IT'S JUST FROM BEGINNING TO THE END OF THAT SIZE.  
14 AND THE HARDWARE GETS THAT ONCE, AND THE SOFTWARE IS NEVER  
15 INVOLVED IN THAT MANAGEMENT OF THAT MEMORY AT ALL AGAIN. AND  
16 WHAT THE HARDWARE DOES IS WHY IT'S A CIRCULAR IS IT STARTS AT  
17 THE BEGINNING, WRITES A BYTE, WRITES A BYTE, WRITES A BYTE,  
18 AND JUST KEEPS WRITING A BYTE AT A TIME 'TIL IT HITS THE END.  
19 AND WHEN IT HITS THE END, IT JUST AUTOMATICALLY GOES BACK TO  
20 THE BEGINNING AND STARTS WRITING FROM THE BEGINNING AGAIN. SO  
21 ANYTHING THAT IT WROTE THERE BEFORE, IT WILL OVERWRITE.

22 NOW THE REASON IT'S LOGICAL, WE CALL IT LOGICAL, IS WE  
23 HAVE THESE SEPARATORS SO THAT WE CAN TELL HOW MUCH DATA IS  
24 WRITTEN. SO EVERY TIME HE WRITES A TENTH OF THAT BUFFER,  
25 WHICH I THINK IS LIKE 140 KILOBYTES, THE HARDWARE NOTIFIES US

1 AND A COUNTER IS INCREMENTED. SO FIRST TIME IT'S ONE, TWO,  
2 THREE, THAT'S A RUNNING COUNTER. SO IF HE IS LOOPED AROUND  
3 THREE TIMES, THAT COUNTER WILL BE THIRTY.

4 Q NOW, IN YOUR OLD LINEAR BUFFER IF THE BROADCOM CHIP HAD  
5 WRITTEN INTO ALL OF THE BUFFERS IN THAT POOL YOU DESCRIBED AND  
6 IT HADN'T YET RECEIVED ANY WORD BACK FROM THE ECHOSTAR  
7 SOFTWARE THAT ANY OF THOSE BUFFERS HAD NOW BEEN EMPTIED AND  
8 WERE RE-AVAILABLE, WHAT WOULD THE BROADCOM CHIP DO?

9 A IT WOULD STOP WRITING.

10 Q OKAY. YOUR SECOND BUFFER DEPICTED IN YOUR OLD PRODUCT  
11 ALSO SAYS LINEAR BUFFER. WHAT DOES THAT MEAN?

12 A WELL, THAT'S -- IT'S THE BUFFER THAT THE SOFTWARE  
13 ACTUALLY CONTROLS THE MOVEMENT OF DATA INTO AND OUT OF AND  
14 ACTUALLY CONTROLS THE ACCESS TO. THE ACCESS TO IT IS THE  
15 ACTUAL FLOW CONTROL. BUT IT'S JUST LINEAR BECAUSE IT'S  
16 TREATED THAT THE SOFTWARE WRITES, DOES A MEMCPY WHICH STARTS  
17 AT THE BEGINNING AND JUST WRITES LINEARLY INTO IT. IT DOESN'T  
18 START OVER. IT JUST FILLS IT UP AND STOPS IF IT HAS ENOUGH  
19 DATA TO FILL IT.

20 Q OKAY. NOW THAT WE'VE HURDLED THESE TERMS, CAN YOU JUST  
21 TELL US BRIEFLY WHAT THE NATURE OF THE FLOW OF DATA WAS IN THE  
22 OLD PRODUCTS?

23 A WELL, IN THE OLD PRODUCTS, AS I SAID, THE HARDWARE, LET'S  
24 SAY YOU HAVE ONE BYTE OF VIDEO DATA, RIGHT, SO THE HARDWARE  
25 WOULD WRITE THAT BYTE OF VIDEO DATA INTO SOME LOCATION IN THAT

1 LINEAR BUFFER. IT WOULD THEN BE MOVED, THAT BYTE WOULD THEN  
2 BE MOVED FROM THE TRANSPORT BUFFER BY THE SOFTWARE INTO THE  
3 RECORD BUFFER. AND NOW THAT BYTE IS SITTING THERE IN THE  
4 RECORD BUFFER, AND THERE'S A COPY RIGHT UP ABOVE BUT IT'S BEEN  
5 -- THE VALUE OF IT'S BEEN MOVED DOWN THE CHAIN INTO THE RECORD  
6 BUFFER, AND THEN THE DVR FILE WRITE WOULD THEN WRITE THAT BYTE  
7 TO THE DRIVE SO THAT ANY BYTE OF VIDEO DATA WOULD BE WRITTEN  
8 INTO SDRAM TWICE AND THEN TO THE DRIVE.

9 Q IN YOUR OLD PRODUCTS THAT WERE FOUND TO INFRINGE,  
10 INCLUDING FOUND TO INFRINGE THE FLOW CONTROL OF THE SOURCE  
11 OBJECT BY THE JURY, COULD THE BROADCOM CHIP OVERWRITE DATA IN  
12 THE TRANSPORT BUFFER?

13 A NO.

14 Q IN YOUR OLD METHOD THAT WAS FOUND BY THE JURY TO  
15 INFRINGE, COULD THE SOFTWARE THAT MOVED THE DATA FROM THE  
16 LINEAR BUFFER THAT WAS THE TRANSPORT BUFFER TO THE LINEAR  
17 BUFFER THAT WAS THE RECORD BUFFER OVERWRITE DATA IN THE RECORD  
18 BUFFER?

19 A NO. THAT BUFFER WAS FLOW CONTROLLED AND THAT WAS  
20 GUARANTEED NOT TO HAPPEN, AND IT WAS IMPOSSIBLE.

21 Q DO YOU SHOW ON THIS SLIDE THE CODE THAT DR. GIBSON  
22 IDENTIFIED AT TRIAL AS THE AUTOMATIC FLOW CONTROL OF THE  
23 SOURCE OBJECT?

24 A YEAH, THE IOCTL AND THE MEMCPY PERFORM THAT.

25 Q OKAY. UNDERNEATH YOU HAVE HAL READ IN PARENS. WHAT DOES

1 THAT REFER TO?

2 A THAT'S THE CODE IN THE 522 THAT DOES THE SAME FUNCTION.

3 Q OKAY.

4 A NOW THAT'S -- THAT'S ONE LINE, BUT THAT'S ACTUALLY A  
5 FUNCTION THAT HAS A LOT OF CODE IN IT TO ACCOMPLISH THIS.

6 Q IN REDESIGN, WHAT HAPPENED TO THAT CODE IN THE MIDDLE?

7 A IN THE REDESIGN, THE HAL READ CODE, ALL OF THAT CODE WAS  
8 SWITCHED OUT AND NO LONGER USED.

9 Q OKAY. DO YOU HAVE A GRAPHIC THAT SHOWS THE REDESIGN?

10 A YES, I DO.

11 Q OKAY. CAN YOU EXPLAIN TO US WHAT WAS CHANGED IN THE  
12 REDESIGN?

13 A OKAY. WE TALKED ABOUT THIS CIRCULAR BUFFER AND HOW ITS  
14 OPERATION IS CHANGED, THE FACT THAT NOW THE DATA WRITES INTO  
15 IT CONTINUALLY. IT DOESN'T STOP. THE SOFTWARE CAN'T CONTROL  
16 IT. AND WE ALSO REMOVED, AS I SAID, THE HAL READ  
17 FUNCTIONALITY, AND THAT'S THE CODE THAT DID THE FLOW CONTROL  
18 OF THE DATA IN THAT BUFFER, AND THAT IS GONE. AND SO ONCE WE  
19 REMOVED THE FLOW CONTROL OF THE DATA IN THAT BUFFER, WE NO  
20 LONGER NEEDED THAT BUFFER BECAUSE IT WASN'T PROTECTING THE  
21 DATA, SO WE GOT RID OF THE BUFFER, TOO.

22 Q IS THERE ANYTHING LEFT IN THESE REDESIGNED BROADCOM  
23 PRODUCTS THAT PREVENTS THE OVERWRITING OF DATA IN THAT  
24 CIRCULAR BUFFER OR SET OF BUFFERS THAT'S STILL IN THE PRODUCT?

25 A NO, THERE'S NOTHING THAT CAN STOP THAT. IT CAN'T STOP

1 THE OVERWRITING OF THE DATA.

2 Q NOW, YOU SAID IN THE OLD PRODUCTS THAT THE CHIP DID GET  
3 STOPPED FROM WRITING INTO THE BUFFER IN THAT LOCATION. HOW  
4 DID YOU MAKE THE CHANGE SO THAT NOW THAT THAT -- NOW THAT DATA  
5 CAN BE OVERWRITTEN?

6 A WELL, BECAUSE BROADCOM HAD TO RECONFIGURE HOW THE  
7 HARDWARE WORKED.

8 Q AND DID THEY DO THAT?

9 A YES, THEY DID.

10 Q OKAY. YOU'VE HEARD SOME TALKING ABOUT DESCRIPTOR COUNT.  
11 WHAT IN THIS SYSTEM PROVIDES A DESCRIPTOR COUNT?

12 A THAT CIRCULAR BUFFER, AS I SAID, IS APPROXIMATELY 1.3  
13 MEGABYTES LARGE, AND WE -- THE WAY THE HARDWARE IS SET UP IS  
14 YOU SAY I WANT TEN REGIONS IN THAT MEMORY AREA, AND THAT'S  
15 CALLED DESCRIPTORS. AND THE REASON WE DO THAT IS IT'S LIKE  
16 THE NUMBERS ON A CLOCK. THIS THING IS GOING AROUND AND  
17 AROUND, AND SO BY PUTTING THOSE DESCRIPTORS IN, WE HAVE THE  
18 NUMBERS 1 O'CLOCK, 2 O'CLOCK, 3 O'CLOCK. SO WE CAN SEE WHERE  
19 THE HARDWARE IS WRITING TO. IT TREATS IT AS ONE LINEAR  
20 BUFFER. IF YOU WANT TO CALL IT TEN, THAT'S OKAY, BUT IT  
21 DOESN'T STOP. IT WRITES A BYTE, BYTE, BYTE, BYTE, AND IT  
22 DOESN'T STOP WRITING WHEN IT GETS TO THE END OF ONE OF THOSE  
23 REGIONS AND NOT WRITE. IT JUST KEEPS WRITING. THE ONLY THING  
24 IT DOES IS GENERATE AN INTERRUPT WHICH INCREMENTS A COUNTER  
25 VALUE TO SAY IT'S GONE PAST THAT MARK.

1 Q NOW YOU UNDERSTAND THAT TIVO'S EXPERT, DR. STORER, SAYS  
2 EVEN THOUGH YOU CHANGED ALL THIS STUFF, YOU STILL HAVE FLOW  
3 CONTROL?

4 A YES.

5 Q OKAY. I WANT TO ASK YOU ABOUT ONE OF THE SPECIFIC THINGS  
6 HE POINTED TO.

7 MS. KREVANS: COULD WE PULL UP STORER SLIDE 76 FROM  
8 THE NEW GRAPHICS? NO, THE NEW GRAPHICS, THE ONES WE GOT LAST  
9 NIGHT. THANK YOU.

10 Q (BY MS. KREVANS) DO YOU SEE THAT BOX ON THE TOP, IT  
11 POINTS DOWN TO SOME CODE AND SAYS: PART OF SOURCE OBJECT FILLS  
12 BUFFER?

13 A YES.

14 Q DO YOU AGREE THAT THE CODE THAT IS PUT INTO THERE BY DR.  
15 STORER IS PART OF A SOURCE OBJECT THAT FILLS A BUFFER?

16 A NO.

17 MR. IANCU: WE OBJECT, YOUR HONOR. SHE IS ASKING FOR  
18 OPINION TESTIMONY, SPECIFICALLY FROM A FACT LAY WITNESS, ABOUT  
19 WHETHER CODE MEETS A CERTAIN CLAIM LIMITATION. THAT'S OPINION  
20 TESTIMONY.

21 MS. KREVANS: YOUR HONOR, THIS WITNESS HAS BEEN PART  
22 OF THE PROCESS AT ECHOSTAR ANALYZING THE PATENT AND THE JURY  
23 VERDICT AND COMING UP WITH WHAT HE BELIEVES TO BE A DESIGN-  
24 AROUND OF THIS EXACT LIMITATION OF THE CLAIM. AND --

25 THE COURT: I'LL OVERRULE THE OBJECTION.

1 A WELL, THAT'S IMPOSSIBLE.

2 Q CAN YOU TELL US WHAT'S ACTUALLY GOING ON HERE, MR.

3 MINNICK?

4 A IT CAN'T BE, BECAUSE IT SAYS PART OF THE SOURCE OBJECT

5 FILLS THE BUFFER. SOURCE OBJECT HAS TO BE SOFTWARE. THE

6 SOFTWARE IS NO LONGER WRITING DATA TO A BUFFER. IT DOESN'T DO

7 IT. THE HARDWARE WRITES IN TO THAT CIRCULAR DATA BUFFER. SO

8 NUMBER ONE, THAT CAN'T HAPPEN BECAUSE WE DON'T HAVE ANY

9 SOFTWARE ON THE RECORD SIDE THAT FILLS THE BUFFER WITH

10 AUDIO/VIDEO DATA. AND THE OTHER PROBLEM WITH IT IS, I MEAN,

11 CODE IS VERY COMPLEX AND IT'S HARD TO UNDERSTAND, AS WE'VE ALL

12 FOUND, BUT THAT ONE'S ACTUALLY PRETTY SIMPLE BECAUSE IF YOU

13 SEE ON THE LEFT IT SAYS REC\_WRITE POINTER EQUALS, A DESCRIPTOR

14 COUNT IS A NUMBER REC\_AV, BLAH, BLAH, BLAH, IS A NUMBER AND SO

15 WAS THE LAST THING. THOSE ARE JUST NUMBERS, SOME NUMBER. AND

16 THE ASTERISK IN THIS CODE IS A TIMES. IT'S DOING

17 MULTIPLICATION. THE PERCENT IS WHAT'S CALLED A MODULO. AND

18 WHAT -- SO THAT LINE OF CODE IS DOING ARITHMETIC STATEMENT.

19 SO EVEN IF I DID HAVE SOFTWARE THAT FILLED A BUFFER, THAT

20 LONG A CODE JUST DOES A CALCULATION. AND THE SAME IS TRUE

21 WITH THE REC LOOP COUNTER. THOSE ARE TWO -- THAT DOES A

22 DIVISION. THAT IS CERTAINLY NOT MOVING DATA, AUDIO/VIDEO

23 DATA, INTO A BUFFER. AND ALL THAT'S BEING DONE HERE IS WE'VE

24 TALKED ABOUT THE DESCRIPTOR COUNT. WELL, IT'S -- THAT CODE IS

25 JUST GETTING THE DESCRIPTOR COUNT NUMBER, AND REMEMBER I SAID

1 THAT NUMBER JUST KEEPS GOING AND GOING. BUT WE NEED TO HAVE A  
2 NUMBER BETWEEN ONE AND TEN BECAUSE THAT'S HOW THE BUFFER IS  
3 DIVIDED UP. SO YOU TAKE THAT NUMBER OF 365 AND YOU CAN MODULO  
4 IT AND THAT OPERATION WILL GET THAT NUMBER DOWN BETWEEN ONE  
5 AND TEN, SO WE CAN THEN GET A NUMBER BETWEEN ONE AND TEN AND  
6 SAY THAT'S THE LAST PLACE THAT THE HARDWARE WROTE TO.

7 SO, IN FACT, EVEN HERE THE DATA WAS ALREADY IN THE BUFFER  
8 THAT THE HARDWARE IS WRITTEN BECAUSE WE'RE LOOKING AT THE  
9 DESCRIPTOR COUNT THAT THE HARDWARE INCREMENTED BECAUSE HE  
10 WROTE DATA INTO THE BUFFER. SO THE DATA, EVEN BY THE  
11 HARDWARE, HAS ALREADY BEEN WRITTEN TO THE BUFFER. HE IS JUST  
12 FINDING OUT WHERE HE LAST WROTE.

13 AND THEN THE LOOP COUNTER, REAL QUICKLY, IS JUST -- IT'S  
14 A CIRCULAR BUFFER. IT'S JUST GOING AROUND AND AROUND, AND THE  
15 LOOP COUNTER IS JUST HOW MANY TIMES THE HARDWARE HAS GONE  
16 ROUND AND AROUND. AND WE USE THAT TO TRY TO SEE IF HE HAS  
17 OVERWRITTEN DATA. THAT'S ONE OF THE THINGS WE NEED.

18 Q IS THERE ANYTHING IN THAT CODE THAT CAN START OR STOP THE  
19 BROADCOM CHIP PUTTING MORE DATA INTO THE BUFFER?

20 A NO. IT CAN'T CONTROL THE HARDWARE AND, LIKE I SAID, THAT  
21 CODE JUST DOES ARITHMETIC.

22 Q OKAY.

23 MS. KREVANS: CAN WE GO BACK TO THE SLIDE THAT WAS  
24 THE SECOND ONE OF THE GRAPHIC SHOWING THE NEW PRODUCTS?  
25 MINNICK, THERE WE GO.

1 Q (BY MS. KREVANS) CAN THE BROADCOM CHIP IN YOUR NEW SYSTEM  
2 WRITE DATA INTO THAT CIRCULAR BUFFER AT THE SAME TIME THAT THE  
3 ECHOSTAR SOFTWARE IS READING DATA OUT OF THAT BUFFER IN ORDER  
4 TO WRITE IT TO THE HARD DRIVE?

5 A YES, IT CAN. AND IT CAN DO THIS BECAUSE THE SOFTWARE IS  
6 EXECUTING ON THE CPU, AND THE HARDWARE, THE BROADCOM HARDWARE  
7 THAT'S DOING THE WRITE OF THE AUDIO/VIDEO DATA INTO THAT  
8 SDRAM IS A COMPLETELY DIFFERENT PIECE OF HARDWARE. SO THEY  
9 ARE TWO INDEPENDENTLY OPERATING PIECES OF HARDWARE, SO THEY  
10 CAN BOTH READ AND WRITE TO THAT BUFFER AT THE SAME TIME.

11 Q CAN THE SOFTWARE IN THE BROADCOM RECEIVERS DO ANYTHING TO  
12 STOP THE BROADCOM CHIP FROM WRITING INTO THAT CIRCULAR BUFFER?

13 A NOT DURING THE RECORD PROCESS, IT CANNOT.

14 Q IF THE SOFTWARE THAT'S READING DATA OUT OF THE BUFFER IN  
15 ORDER TO SEND IT ON TO THE HARD DRIVE IS NOT KEEPING UP, AND  
16 DATA COMES INTO THAT CIRCULAR BUFFER AND OVERWRITES DATA  
17 THAT'S ALREADY THERE, CAN THE SOFTWARE SEE THAT ABOUT TO  
18 HAPPEN IN ADVANCE AND STOP IT?

19 A NO.

20 Q WHAT HAPPENS IF THAT DOES HAPPEN?

21 A IF IT OVERWRITES IT, IT OVERWRITES IT. THE DATA JUST IS  
22 LOST. THE DATA THAT HE HAS WRITTEN IS OVERWRITTEN AND GONE,  
23 THE OLD DATA.

24 Q AND HAVE YOU BUILT SOMETHING INTO THE BOXES TO REACT TO  
25 THAT OVERFLOW PROBLEM?

1 A WE DETECT IT, AND WHEN WE SEE THAT THE DATA HAS BEEN  
2 OVERWRITTEN, THIS DATA CAN BE OVERWRITTEN IN KIND OF TWO WAYS.  
3 YOU CAN -- WE ARE MOVING A BLOCK OF DATA THAT'S IN THAT RAM  
4 AND THAT'S BEING COPIED DOWN TO THE DRIVE. WHILE WE'RE DOING  
5 THAT, HE CAN WRITE RIGHT OVER IT. OR WHILE WE ARE DOWN  
6 WRITING A BLOCK, HE WRITES OVER SOME THAT WE HAVEN'T EVEN  
7 STARTED TO WRITE YET. BUT ANYWAY, HE CAN OVERWRITE THAT DATA  
8 AND WE DETECT THAT HE HAS OVERWRITTEN IT, AND WE FLUSH THE  
9 BUFFER BECAUSE THE DATA HAS BEEN OVERWRITTEN AND WE DON'T KNOW  
10 HOW MUCH OF IT'S BAD, SO WE JUST FLUSH THE BUFFER.

11 Q WHEN YOU SAY FLUSH A BUFFER, WHAT DO YOU MEAN?

12 A FLUSH A BUFFER IS THROW AWAY ANYTHING THAT'S IN THERE AND  
13 START ANEW, AND START WHERE HE JUST LAST WROTE AND WAIT 'TIL  
14 HE FILLS IN NEW DATA.

15 Q OKAY.

16 A BUT AT THE SAME TIME THAT WE'RE DOING THE FLUSH AND WE'RE  
17 DOING THOSE, HE CONTINUES TO WRITE. HE'S WRITING DATA IN THE  
18 WHOLE TIME. HE NEVER STOPS EVEN WHEN I DETECT IT.

19 Q WHEN YOU SAY HE, WHO ARE YOU TALKING ABOUT, MR. MINNICK?

20 A THE HARDWARE. MR. HARDWARE JUST KEEPS WRITING OVER AND  
21 OVER WHILE WE'RE EVEN DOING THAT DETECTION.

22 Q THE BROADCOM CHIP?

23 A THE BROADCOM CHIP.

24 Q OKAY. IS THERE SOMETHING IN YOUR CODE THAT MONITORS THE  
25 BUFFERS, THESE CIRCULAR BUFFERS, TO SEE HOW FULL THEY GET?

1 A WELL, WE, LIKE WE SAID, WE DETECT THE OVERFLOW AND WE CAN  
2 TELL WHEN THE BUFFER IS 70 PERCENT FULL BY LOOKING AT THOSE  
3 DESCRIPTOR COUNTS AND WHERE WE LAST WROTE. SO WE CAN TELL HOW  
4 FULL THE BUFFER IS.

5 Q DOES THE CODE THAT YOU'VE WRITTEN THAT CAN TELL HOW FULL  
6 THE BUFFER IS DO ANYTHING IF THE BUFFER GETS OVER 70 PERCENT  
7 OR OVER 80 PERCENT?

8 A ALL IT DOES IS, I THINK DR. STORER TALKED ABOUT IT, IT --  
9 ALL IT DOES IS WRITE A LINE OF TEXT TO A FILE. THAT'S IT.  
10 THAT'S ALL IT CAN DO. IT CAN'T DO ANYTHING WITHOUT THE  
11 HARDWARE. IT JUST WRITES A LINE OF TEXT TO THE FILE, AND  
12 SOMETIME IN THE FUTURE IF WE GET A USB KEY BACK FROM THAT BOX  
13 THAT SOMEBODY SENT US, AN ENGINEER AT HIS DESK CAN READ THAT  
14 LINE OF TEXT.

15 Q SO JUST SO WE'RE CLEAR, THIS MONITORING OF HOW FULL THE  
16 BUFFERS GET DOESN'T IN ANY WAY LEAD TO ACTION IN THE BOXES TO  
17 PREVENT THEM FROM GETTING ANY MORE FULL THAN THE MONITORING  
18 DETECTS?

19 A NO, IT DOESN'T DO ANYTHING, JUST WRITES A LINE OF TEXT.

20 Q OKAY. WHY DIDN'T YOU MAKE THIS SOURCE OBJECT FLOW  
21 CONTROL REDESIGN IN THE 50X BOXES AS WELL, MR. MINNICK?

22 A WELL, WE WANTED TO AND WE TRIED TO, BUT BECAUSE OF  
23 LIMITATIONS IN THE ST HARDWARE, AS I SAID, BROADCOM HAD TO  
24 MAKE CHANGES TO THEIR HARDWARE TO MAKE THE BUFFERS BEHAVE  
25 DIFFERENTLY, AND ST WASN'T ABLE TO DO THAT.

1 Q OKAY. YOU MENTIONED EARLIER AN INTERACTION WITH A LAW  
2 FIRM, FISH & RICHARDSON, IN CONNECTION WITH THIS DESIGN-AROUND  
3 PROJECT. WHAT WAS YOUR -- WELL, DO YOU HAVE AN UNDERSTANDING  
4 OF WHY FISH & RICHARDSON WAS RETAINED?

5 A WELL, WE WERE TRYING TO BE AS CAREFUL AS POSSIBLE. WE  
6 HAD INFRINGING DEVICES. WE ALREADY LOST ONE TRIAL. AND I WAS  
7 GIVEN DIRECTION TO FIGURE OUT HOW TO WRITE NEW SOFTWARE THAT  
8 WOULD NO LONGER INFRINGE, AND THAT'S WHAT WE WANTED TO DO. I  
9 DON'T WANT TO WRITE SOFTWARE AND HAVE IT INFRINGE AGAIN AND  
10 END UP IN COURT, AND WE WERE TRYING TO BE AS CAREFUL AS WE  
11 COULD. AND SO WE HAD OUR OPINIONS WITH OUR IN-HOUSE  
12 ATTORNEYS, BUT WE WANTED AN OUTSIDE, INDEPENDENT PERSON TO  
13 LOOK AT IT AND TELL US IF WE ARE RIGHT OR WRONG. AND IF WE  
14 ARE WRONG, WE'LL GO MAKE CHANGES AND TRY A NEW DESIGN. BUT WE  
15 WERE TRYING TO GET AN OUTSIDE OPINION TO TELL US ARE YOU RIGHT  
16 OR WRONG.

17 Q OKAY. COULD YOU LOOK AT EXHIBIT 3173 IN YOUR BINDER?

18 MS. KREVANS: IT'S PLAINTIFF'S EXHIBIT 3173, YOUR  
19 HONOR.

20 A YES.

21 Q CAN YOU TELL US WHAT PLAINTIFF'S EXHIBIT 3173 IS, MR.  
22 MINNICK?

23 A YEAH, IT'S AN EMAIL FROM DAVID ST. JOHN LARKIN. HE WAS  
24 ONE OF OUR IN-HOUSE ATTORNEYS AT THAT TIME, TO MYSELF, DAVID  
25 MOSKOWITZ, AND JEFF BLUM.

1 Q AND WHO WERE DAVID MOSKOWITZ AND JEFF BLUM?

2 A AT THE TIME, DAVID WAS OUR GENERAL COUNSEL, AND JEFF BLUM  
3 IS AN IN-HOUSE ATTORNEY.

4 Q OKAY. AND WHAT DID MR. ST. JOHN LARKIN TELL YOU AND THE  
5 OTHERS IN THIS EMAIL ON JUNE 28, 2006?

6 A WELL, HE WAS GIVING THEM AN UPDATE ON WHERE WE WERE ON  
7 THIS DEVELOPMENT, THIS ACTUAL ENGINEERING TEST THAT WE WERE  
8 DOING ON THE 942 AND THEN WE STARTED PORTING IT TO THE 622.  
9 AND HE WAS SAYING THAT THE SINGLE BUFFER AND THE INDEX FILE  
10 REMOVAL DESIGN-AROUND PROPOSALS ARE CURRENTLY IMPLEMENTED  
11 SEPARATELY FUNCTIONING ON THE 942 AND 622. AND WHAT HE SAID,  
12 WHAT HE MEANS BY THEY ARE IMPLEMENTED SEPARATELY IS WE HAD ONE  
13 BOX THAT WAS DOING THE WHAT WE CALL THE INDEXLESS, THE BRUTE-  
14 FORCE SEARCH TO DO TRICK MODES, AND THEN ANOTHER BOX WAS THE  
15 CHANGES WERE MADE TO DO THE REMOVAL OF THE AUTOMATIC FLOW  
16 CONTROL.

17 Q NOW WHEN YOU SAY YOU HAD AT THE TIME, WE HAD ONE BOX  
18 DOING THIS ONE AND ANOTHER BOX DOING THAT ONE, ARE YOU TALKING  
19 ABOUT BOXES WITH FULL CODE IN CUSTOMER'S HOUSES?

20 A NO. ONCE AGAIN, THIS IS ENGINEERS DEVELOPING SOFTWARE AT  
21 THEIR CUBICLE ON A DEVELOPMENT BOX.

22 Q OKAY. AT THIS POINT, AT THE END OF JUNE 2006, DID YOU  
23 HAVE THIS CODE READY TO GO IF YOU NEEDED TO, TO ROLL IT OUT TO  
24 EITHER THE DP942 OR THE DP622 IN CUSTOMER'S BOXES?

25 A WELL, NO. FOR ONE THING, THEY WERE OPERATING SEPARATELY.

1 WE HADN'T INTEGRATED IN THE SAME SET-TOP BOX BOTH OF THOSE  
2 FUNCTIONS TOGETHER WHICH TOOK AN IMMENSE AMOUNT OF WORK, PLUS  
3 THIS IS PART OF THE DEVELOPMENT PROCESS IS WRITING THE CODE,  
4 DO THE DESIGN, WRITE THE CODE. THAT'S STILL ONLY ABOUT 20  
5 PERCENT OF YOUR DEVELOPMENT PROCESS. TO GET THIS TO  
6 CUSTOMER'S HOUSES WE HAVE TO DO A TEST PROCESS, A  
7 CERTIFICATION PROCESS, AND THE CODE WASN'T COMPLETELY WRITTEN.  
8 WE HADN'T FLESHED OUT EVERYTHING. THERE WAS CORNER CASES. AS  
9 WE SAID, THE OTHER PIECES OF THE CODE USES THAT INFORMATION,  
10 AND WE HADN'T FOUND ALL THOSE YET.

11 Q OKAY. AND THEN MR. ST. JOHN LARKIN ASKED YOU TO SPEAK TO  
12 THE TIMELINE FOR INTEGRATION AND EXTENSION OF THESE PROPOSALS  
13 TO THE OTHER BROADCOM PRODUCTS. WHAT DID YOU UNDERSTAND HIM  
14 TO BE TALKING ABOUT AT THE END OF JUNE 2006?

15 A WELL, WE HADN'T STARTED WORKING ON THE 522 OR THE 625 OR  
16 THE 50X, SO HE WAS ASKING ME TO GIVE HIM AN ESTIMATE OF WHEN  
17 WE WOULD START THAT PROCESS.

18 Q OKAY. DID ECHOSTAR ULTIMATELY RECEIVE OPINIONS OF  
19 COUNSEL FROM FISH & RICHARDSON WITH RESPECT TO THE BROADCOM  
20 AND 50X DESIGN-AROUND PROPOSALS?

21 A YES.

22 Q DO YOU RECALL ABOUT WHEN THEY WERE FIRST RECEIVED?

23 A IT WAS SOMETIME IN MID AUGUST.

24 Q OKAY. DID YOU READ THE LETTERS AT THE TIME?

25 A YES.

1 Q AND DID THEY, IN YOUR VIEW, ACCURATELY DESCRIBE THE  
2 CONCEPT THAT YOU HAD PROPOSED TO FISH OF HOW YOU WOULD TRY TO  
3 DESIGN-AROUND YOUR BOXES?

4 A YES.

5 Q NOW ARE YOU AWARE THAT DR. STORER HAS EXPRESSED OPINIONS  
6 IN THIS CASE ABOUT INACCURACIES IN THE TECHNICAL DESCRIPTIONS  
7 IN THE FISH LETTERS AS COMPARED TO THE FINAL VERSIONS OF THE  
8 CODE THAT ENDED UP IN BOXES AT PEOPLE'S HOMES?

9 A YES.

10 Q I WANT TO ASK YOU A COUPLE OF QUESTIONS ABOUT THAT.  
11 FIRST OF ALL, AT THE TIME THAT FISH & RICHARDSON ISSUED THE  
12 LETTERS IN AUGUST OF 2006, WERE THE TECHNICAL DESCRIPTIONS IN  
13 THEM ACCURATE DESCRIPTIONS OF YOUR PROPOSED IMPLEMENTATION OF  
14 THE DESIGN-AROUNDS?

15 A YES.

16 Q WAS THERE A POINT FROM AUGUST 2006 TO FINAL  
17 IMPLEMENTATION WHERE YOU CHANGED SOME THINGS ABOUT THE  
18 IMPLEMENTATION?

19 A YES.

20 Q DID ANY OF THE THINGS YOU CHANGED, ACCORDING TO THE  
21 ANALYSIS THAT YOU DID, MAKE ANY DIFFERENCE WITH RESPECT TO THE  
22 BASIC DESIGN-AROUND CONCEPT THAT YOU PROPOSED TO FISH &  
23 RICHARDSON?

24 A NO, I MEAN, WE HAD IDENTIFIED WHAT TIVO HAD PRESENTED AT  
25 TRIAL AND WHAT THEY ACTUALLY IDENTIFIED AS OUR CODE THAT WERE

1 DOING THOSE FUNCTIONS. AND IT WAS VERY SPECIFIC ABOUT  
2 AUTOMATIC FLOW CONTROL, THE BLOCKING TO PREVENT TWO PIECES OF  
3 SOFTWARE USING THE SAME BUFFER AT ONCE AND RESULTING IN A LOSS  
4 OF DATA, AND THEN THE ANALYSIS OF THE AUDIO/VIDEO DATA BEFORE  
5 STORAGE TO CREATE THIS INDEX TABLE SO YOU COULD USE IT ON  
6 PLAYBACK.

7 WHEN WE WERE GOING THROUGH OUR PROCESS, WE IDENTIFIED  
8 SOME OTHER THINGS THAT TIVO DIDN'T SAY. WE JUST SAID, YOU  
9 KNOW, WE'RE TRYING TO GET AS FAR AWAY AS WE CAN. YOU KNOW,  
10 WE'RE TRYING TO BE VERY CAREFUL, AND WE THOUGHT, YOU KNOW,  
11 THAT COULD EVEN LOOK LIKE IT. AND SO THERE WERE SOME OTHER  
12 THINGS THAT WE ADDED BEYOND WHAT WAS IDENTIFIED AT TRIAL AND  
13 WHAT'S IN THE PATENT, AND WE JUST SAID WE ARE JUST TRYING TO  
14 GET FAR AWAY. SO THERE WERE SOME OTHER ITEMS THAT WE ADDED,  
15 SOME WE ENDED UP IMPLEMENTING, AND SOME WE DIDN'T.

16 Q NOW, ONE OF THE POINTS THAT DR. STORER EXPRESSED IN HIS  
17 REPORT ABOUT THIS WAS THAT THE LETTERS SAID THERE WAS NO  
18 COMMUNICATION BETWEEN THE RIGHT TSP THREAD AND THE BROADCOM  
19 DRIVERS. AND HE SAID THAT STATEMENT IN THE LETTER WAS  
20 INACCURATE. COULD YOU EXPLAIN THE ACTUAL LEVEL OF INTERACTION  
21 IN THE PRODUCTS AS FINALLY DELIVERED TO CUSTOMERS?

22 A YEAH. I MEAN, THIS WAS ONE OF THOSE ITEMS WHERE WE HAD  
23 SAID IT WASN'T IDENTIFIED. IT REALLY DOESN'T APPLY BUT, YOU  
24 KNOW, WE JUST SAID LET'S JUST GET RID OF EVERYTHING THAT WE  
25 EVEN THINK. AND THIS WAS IN THE OLD CODE TO DO THAT MOVE FROM

1 THE BUFFER THAT THE HARDWARE IS WRITING INTO TO THE SOFTWARE  
2 TO FIND OUT WHAT DATA WAS IN THE BUFFER THAT THE HARDWARE IS  
3 WRITING TO AND HOW MUCH, WE WOULD ACTUALLY HAVE TO DO A CALL  
4 TO THE DRIVER CODE. KIND OF LIKE A -- KIND OF LIKE A MESSAGE,  
5 WE WOULD SEND THEM A MESSAGE. THEIR CODE WOULD HAVE TO GET  
6 THAT MESSAGE. AND THEY GO, AH, THEY WANT TO KNOW WHERE THE  
7 BUFFER HAS WRITTEN OR WHAT DATA IS IN THE BUFFER AND WHERE AND  
8 HOW MUCH. SO THEY GO DO WHAT THEY HAD TO DO TO GET THAT, AND  
9 THEN THEY'D HAVE TO RESPOND TO US.

10 SO IT'S THIS TWO-WAY COMMUNICATION BACK AND FORTH TO  
11 FIGURE OUT WHERE THAT WAS. SO WE THOUGHT LET'S JUST GET RID  
12 OF THAT COMMUNICATION AND JUST GO TO THIS DESCRIPTOR COUNT  
13 WHERE IT'S ONLY A RUNNING COUNTER AND WE ONLY READ IT, AND  
14 WE'VE GOT TO FIGURE OUT WHAT WE WROTE AND WE'LL DO THE  
15 CALCULATIONS, SO WE JUST READ. IT'S JUST ONE WAY AND THAT  
16 WAS THE --

17 Q ONE WAY IN WHICH DIRECTION? WHO IS COMMUNICATING TO WHO?

18 A WELL, WE JUST READ THAT VARIABLE. WE'RE JUST READING A  
19 VALUE. WE'RE NOT SENDING A MESSAGE BACK AND FORTH. WE READ A  
20 VALUE.

21 Q BUT WHEN YOU SAY WE, MR. MINNICK --

22 A OH, I'M SORRY.

23 Q -- WHAT DO YOU MEAN?

24 A THE ECHOSTAR SOFTWARE.

25 Q OKAY. AND WHO IS PROVIDING THE VALUE?

1 A NOW THE BROADCOM HARDWARE DOES WHAT'S CALLED AN  
2 INTERRUPT, AND THERE'S A LITTLE PIECE OF BROADCOM SOFTWARE  
3 THAT JUST INCREMENTS A COUNTER AND RESPONDS TO THAT.

4 Q DOES GETTING THAT DESCRIPTOR COUNT FROM THE BROADCOM  
5 HARDWARE CONTROL OR REGULATE IN ANY WAY THE FLOW OF DATA INTO  
6 THE CIRCULAR BUFFER THAT YOU -- IN THE GRAPHIC THAT YOU SHOWED  
7 THE COURT?

8 A NO. IT CAN'T BECAUSE THAT COUNT IS INCREMENTED AFTER THE  
9 DATA IS WRITTEN. SO THE DATA WAS ALREADY THERE. IT'S JUST  
10 SEEING WHERE IT WAS LAST WRITTEN.

11 Q NOW ANOTHER THING THAT DR. STORER POINTED OUT IS A  
12 STATEMENT IN THE BROADCOM OPINIONS THAT SAYS THE DEVICE WILL  
13 WRITE TO THE HARD DISK DRIVE EVEN IF THERE IS NO DATA. DID  
14 YOU ORIGINALLY TELL FISH & RICHARDSON THAT IN YOUR PROPOSED  
15 IMPLEMENTATION THE DEVICE WOULD WRITE TO THE HARD DISK DRIVE  
16 EVEN IF THERE WAS NO DATA IN THE BUFFER?

17 A RIGHT. AND ONE THING, THAT'S SIMPLICITY. WE JUST ARE  
18 GOING UP, GETTING THAT DESCRIPTOR, GETTING THE VALUE OF WHERE  
19 WE LAST WROTE, AND WEREN'T CHECKING THAT AND JUST DOING A  
20 WRITE. AND IT WAS GOING TO WRITE THROUGH DOWN BELOW AND  
21 THAT'S -- ORIGINALLY WE HAD DECIDED TO IMPLEMENT, BUT AS IT  
22 TURNS OUT, IT ENDS UP THAT AN ENGINEER LEFT A CHECK IN WHERE  
23 THEY STILL CHECKED FOR A ZERO VALUE AND ENDED UP NOT ACTUALLY  
24 DOING A WRITE WHEN THERE ARE ZERO BYTES. BUT ONCE AGAIN, THE  
25 DATA IS ALREADY IN THE BUFFER. THIS IS ACTUALLY WRITING DATA

1 TO THE BUFFER.

2 Q DOES -- DOES THIS ISSUE OF WHETHER THERE IS A WRITE TO  
3 THE HARD DRIVE, EVEN IF THERE IS NO DATA IN THE BUFFER, IN ANY  
4 WAY CONTROL OR REGULATE FLOW OF DATA INTO THE CIRCULAR BUFFER  
5 IN YOUR PRODUCTS?

6 A NO, IT DOESN'T. I JUST WANT TO CORRECT MYSELF. I SAID  
7 IT ACTUALLY WRITES TO THE BUFFER. THAT WRITE IS GOING TO THE  
8 HARD DRIVE.

9 Q OKAY. DO YOU RECALL ALSO IN AUGUST OF 2006 THAT THERE  
10 CAME A TIME WHEN THE COURT ISSUED ITS JUDGMENT AND INJUNCTION  
11 IN THIS CASE?

12 A YES.

13 Q AND THAT WAS AUGUST 17<sup>TH</sup>, 2006, RIGHT?

14 A CORRECT.

15 Q REMEMBER THAT DAY, MR. MINNICK?

16 A YES.

17 Q WHY DO YOU REMEMBER THAT DAY?

18 A BECAUSE I WAS UNDER A LOT OF PRESSURE TO TRY TO GET THIS  
19 STUFF DONE AND OUT IN THE FIELD. I MEAN, LIKE I SAID, WE HAD  
20 INFRINGING BOXES, IT COULD BE COSTING US MONEY, AND I WAS TOLD  
21 THIS IS HIGH PRIORITY, TRY TO GET IT OUT. AND I WAS BEING  
22 ASKED, IS IT READY? AND I DON'T LIKE TO DISAPPOINT, BUT I  
23 SAID, NO, IT'S NOT READY. WE'D JUST STARTED THE 50X NOT THAT  
24 LONG BEFORE, AND THE 522 WAS STILL BEING DEVELOPED AND WE  
25 HADN'T EVEN STARTED BETA TESTING IT.

1 Q BUT LET'S GO BACK FOR A SECOND TO THE FISH & RICHARDSON  
2 LETTERS. WHAT WAS THEIR ULTIMATE CONCLUSION ABOUT YOUR  
3 PROPOSED DESIGN-AROUNDS THAT YOU AND YOUR ENGINEERS HAD COME  
4 UP WITH?

5 A WELL, THEY HAD -- THEY HAD ONE OPINION LETTER FOR THE  
6 BROADCOM WHAT WE CALLED THE INDEXLESS, THE REMOVAL OF THE  
7 ANALYSIS AND THE AUDIO/VIDEO DATA TO CREATE START CODE, AND  
8 THEN THEY HAD ANOTHER OPINION FOR THE BROADCOM FOR THE REMOVAL  
9 OF TIVO'S AUTOMATIC FLOW CONTROL. AND IN BOTH CASES THEY SAID  
10 IF WE IMPLEMENTED WHAT WAS IN OUR DESIGN DOCS, THE CORE  
11 FUNCTIONALITY OF DOING THOSE TWO THINGS, THAT THOSE BOXES  
12 WOULDN'T INFRINGE. FOR THE 50X IT WAS JUST REGARDING THE  
13 REMOVAL OF THE ANALYSIS OF THE AUDIO/VIDEO DATA TO CREATE THE  
14 TABLES, AND IF WE REMOVED THAT FUNCTIONALITY, THE 50X'S  
15 WOULDN'T INFRINGE.

16 Q DID YOU REVIEW LETTERS ABOUT THE BROADCOM BOXES AND THE  
17 50X BOXES WHEN THEY ARRIVED FROM FISH & RICHARDSON?

18 A YES.

19 Q DID OTHERS AT ECHOSTAR REVIEW THEM AS WELL?

20 A YES.

21 Q WAS IT SIGNIFICANT TO YOU PERSONALLY THAT FISH &  
22 RICHARDSON APPROVED YOUR PROPOSED DESIGN-AROUNDS?

23 A YES. I MEAN, WE ARE THE ONES THAT CAME UP WITH IT, AND  
24 AS AN ENGINEER, ENGINEERS LIKE TO BE, YOU KNOW, RIGHT. AND IT  
25 WAS SATISFYING THAT WE'D DONE A GOOD, THOROUGH JOB AND CAME UP

1 WITH A WAY TO DO IT, BECAUSE THERE WAS A LOT -- THERE WERE  
2 PEOPLE OUT THERE SAYING IT'S IMPOSSIBLE TO DO, AND WE ACTUALLY  
3 CAME UP WITH A WAY.

4 Q NOW, DO YOU RECALL THAT THERE WAS A REQUEST BY ECHOSTAR  
5 AFTER THE AUGUST 17<sup>TH</sup> INJUNCTION ISSUED THAT THE COURT STAY  
6 THAT INJUNCTION, THAT IS, KEEP IT FROM GOING INTO EFFECT  
7 DURING THE APPEAL?

8 A YES.

9 Q DO YOU RECALL THAT THE APPEAL COURT DID IN FACT ISSUE AN  
10 ORDER STAYING THE INJUNCTION?

11 A YES.

12 Q THAT ORDER WAS IN EARLY OCTOBER 2006?

13 A YES.

14 Q AS OF THE TIME OF THAT ORDER IN EARLY OCTOBER 2006, WAS  
15 THE ECHOSTAR PROPOSED DESIGN-AROUND READY TO GO?

16 A NO. WE HAVE 5 MILLION PEOPLE THAT USE THESE BOXES, AND  
17 THAT'S A LOT OF CUSTOMERS THAT THEY AFFECT. THE 50X WAS STILL  
18 IN DEVELOPMENT. THE 522 WAS WHAT WE CALL BETA TESTING, AND  
19 THAT'S WHERE WE FIND A SIGNIFICANT AMOUNT OF PROBLEMS BECAUSE  
20 YOU GET A LARGER NUMBER OF PEOPLE USING THOSE BOXES IN REAL  
21 HOME ENVIRONMENTS, AND WE FIND A LOT OF PROBLEMS THERE. SO  
22 WE'RE STILL GOING THROUGH BETA TESTING, AND THEY STILL HAVE TO  
23 GO WHAT WE CALL OUR FTS, OUR FINAL TEST GROUP, HAS TO  
24 BASICALLY CERTIFY THEM, AND THAT HADN'T BEEN DONE BECAUSE THE  
25 SOFTWARE WASN'T IN A POSITION TO EVEN SUBMIT TO OUR FINAL TEST

1 GROUP AT THAT POINT.

2 Q DID YOU KEEP WORKING ON THE DESIGN-AROUND CODE EVEN AFTER  
3 THE APPEALS COURT STAYED THE INJUNCTION?

4 A OH, YEAH, WE HAD EVERY MOTIVATION TO GET THIS OUT,  
5 COSTING US MONEY TO HAVE INFRINGING BOXES IN THE FIELD, AND WE  
6 HAD INFRINGING BOXES THAT WE NEEDED TO REMOVE. I MEAN, I WAS  
7 UNDER A LOT OF PRESSURE TO GET THIS SOFTWARE OUT.

8 Q WHEN WAS THE FIRST TIME THAT YOU DID A TEST ROLLOUT OF  
9 THE DESIGN-AROUND CODE FOR ANY OF YOUR BOXES?

10 A I THINK IT WAS OCTOBER 24<sup>TH</sup>, 2006 IS WHEN WE STARTED WHAT  
11 WE CALL THE 522 ROLLOUT.

12 Q OKAY. COULD YOU LOOK AT EXHIBIT 5040 IN YOUR BINDER?

13 THE COURT: HOW MUCH MORE DIRECT DO YOU FEEL YOU HAVE  
14 LEFT?

15 MS. KREVANS: I'D SAY ABOUT TEN MINUTES, YOUR HONOR.

16 THE COURT: DO YOU WANT TO FINISH, OR IS THIS A  
17 CONVENIENT BREAKING POINT?

18 MS. KREVANS: I'M SORRY?

19 THE COURT: I SAID WOULD YOU LIKE TO FINISH HIS  
20 DIRECT EXAMINATION OR IS THIS A CONVENIENT BREAKING POINT?

21 MS. KREVANS: THIS WOULD BE A VERY CONVENIENT  
22 BREAKING POINT, YOUR HONOR.

23 THE COURT: WHY DON'T WE RECESS FOR THE DAY.  
24 OBVIOUSLY, AFTER MR. MINNICK'S DIRECT AND CROSS, WHO DO YOU  
25 HAVE LEFT FOR TOMORROW WITNESS-WISE?

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MR. MCELHINNY: WE HAVE MR. AARONSON, MR. HILLMAN,  
AND MR. ERGEN AND DR. RHYNE, YOUR HONOR.

THE COURT: THEN WE'LL BE IN RECESS UNTIL 9:00 A.M.  
TOMORROW.

(ADJOURNED AT 4:59 P.M.)

REPORTER'S CERTIFICATION

I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT FROM  
THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.

DATE: FEBRUARY 26, 2009

/S/LIBBY CRAWFORD  
LIBBY CRAWFORD, CSR  
OFFICIAL COURT REPORTER

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IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

TIVO, INC. . CIVIL ACTION NO. 2:04CV1  
VS. . TEXARKANA, TEXAS  
ECHOSTAR COMMUNICATIONS . FEBRUARY 18, 2009  
CORPORATION, ET AL. . 9:00 A.M.

PLAINTIFF'S MOTION FOR CONTEMPT  
[TRANSCRIPT/SEALED TESTIMONY REDACTED]  
BEFORE THE HONORABLE DAVID FOLSOM,  
UNITED STATES DISTRICT JUDGE.

APPEARANCES:

FOR PLAINTIFF  
TIVO, INC.:

MR. MORGAN CHU  
MR. ALEXANDER C. GIZA  
MR. ANDREI IANCU  
MR. BRIAN D. KRECHMAN  
MS. LAURA W. BRILL  
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P.O. BOX 5398  
TEXARKANA, TX. 75505-5398

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MR. R. SCOTT FELDMANN  
CROWELL & MORING - IRVINE  
3 PARK PLAZA  
20<sup>TH</sup> FLOOR  
IRVINE, CA. 92614

MR. GARRET W. CHAMBERS  
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DALLAS, TX. 75201

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MS. LIBBY CRAWFORD, CSR  
OFFICIAL COURT REPORTER  
500 STATE LINE AVENUE  
TEXARKANA, TEXAS 75501  
903/794-4067

PROCEEDINGS RECORDED BY STENOMASK VERBATIM REPORTING,  
TRANSCRIPT PRODUCED BY CAT SYSTEM.

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P R O C E E D I N G S

TEXARKANA, TEXAS

FEBRUARY 18, 2009

(OPEN COURT)

THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE YOUR DIRECT EXAMINATION OF MR. MINNICK. MR. MINNICK, YOU RECALL YOU ARE STILL UNDER OATH.

THE WITNESS: YES, YOUR HONOR.

MS. KREVANS: MORNING, YOUR HONOR.

THE COURT: GOOD MORNING.

DIRECT EXAMINATION CONTINUES

BY MS. KREVANS:

Q MORNING, MR. MINNICK.

A GOOD MORNING.

Q A COUPLE OF FOLLOW-UP QUESTIONS ABOUT WHERE WE ENDED UP YESTERDAY. ON YOUR CHANGES THAT YOU MADE TO THE BROADCOM BOXES WITH RESPECT TO YOUR FLOW CONTROL RELATED DESIGN-AROUND, IS THERE ANY KIND OF SEMAPHORE ON THE RECORD SIDE OF THE PROCESS IN YOUR NEW DESIGN?

THE COURT: ON WHICH SIDE?

MS. KREVANS: IS THERE ANY KIND OF SEMAPHORE?

THE COURT: ON WHICH SIDE OF THE --

MS. KREVANS: ON THE RECORD SIDE OF YOUR NEW DESIGN.

THE COURT: RECORD.

A YES.

1 Q WHAT DOES THAT SEMAPHORE DO?

2 A THAT SEMAPHORE RUNS PERIODICALLY, DEPENDENT ON THE TYPE  
3 OF DATA IT IS, AND IT PACES THE WRITES TO THE DRIVE, HOW OFTEN  
4 WE WRITE TO THE DRIVE.

5 Q DOES THAT SEMAPHORE IN ANY WAY AFFECT THE TRANSFER OF  
6 DATA FROM THE BROADCOM CHIP INTO THE CIRCULAR BUFFER?

7 A NO.

8 Q COULD YOU BRIEFLY DESCRIBE TO THE COURT THE METHOD YOU  
9 USED TO REMOVE THE CODE THAT YOU TOOK OUT OF THE 50X AND  
10 BROADCOM BOX?

11 A WELL, IN OUR COMPUTING LANGUAGE THERE IS SOMETHING CALLED  
12 COMPILER SWITCHES, COMPILER DIRECTIVES. AND IT'S -- YOU CAN  
13 PUT THOSE IN AND THERE'S LOGIC, SO IF YOU SAY IF DEFINED A  
14 SWITCH NAME, AND THEN THERE IS ANOTHER THING AT THE END TO SAY  
15 WHERE YOU WANT THAT TO STOP. SO IF YOU HAD IF DEFINED AND  
16 THEN AN END DEF, IF THAT WAS DEFINED IT WOULD PUT THAT IN. IF  
17 IT SAYS NOT DEFINED, IT WOULD NOT PUT IT IN WHEN YOU DO THE  
18 COMPILE.

19 SO THE SWITCHES ARE -- BRACKET THE CODE THAT YOU WANT TO  
20 EITHER HAVE ADDED TO THE BUILD OF THAT SOFTWARE OR NOT ADDED  
21 SO IT WOULD BE REMOVED, NOT COMPILED INTO THAT IMAGE.

22 Q IF CODE IS NOT COMPILED, DOES IT END UP IN THE SET-TOP  
23 BOXES IN PEOPLE'S HOUSES?

24 A NO, IT DOES NOT.

25 Q OKAY. DO YOU RECALL YESTERDAY YOU GAVE SOME TESTIMONY

1 ABOUT OPINION LETTERS THAT ECHOSTAR RECEIVED ON ITS DESIGN-  
2 AROUND?

3 A YES.

4 Q OKAY. WHEN ECHOSTAR ACTUALLY RECEIVED THE OPINION  
5 LETTERS FROM THE FISH & RICHARDSON FIRM, DID YOU PERSONALLY  
6 REVIEW THEM?

7 A YES.

8 Q AND WHAT WAS YOUR PURPOSE IN REVIEWING THEM?

9 A WELL, TO MAKE SURE THAT THEY WERE ACCURATE AND FOLLOWED  
10 THE DESIGN THAT WE ARE GOING TO DO, AND REPRESENTED OUR OLD  
11 AND NEW SYSTEM CORRECTLY, AND THEN TO SEE WHAT THEIR OPINION  
12 WAS.

13 Q AND WERE THE LETTERS ACCURATE WITH RESPECT TO THE DESIGN  
14 THAT YOU HAD IN MIND WHEN YOU RECEIVED THEM?

15 A YES.

16 Q COULD YOU LOOK IN YOUR BINDER AT EXHIBIT 5074? WHAT IS  
17 EXHIBIT 5074, MR. MINNICK?

18 A IT'S ONE OF THE OPINIONS FROM FISH & RICHARDSON DATED  
19 AUGUST 24<sup>TH</sup>, 2006.

20 Q OKAY. YOU RECALL THAT YESTERDAY WE TALKED ABOUT A  
21 PROCESS THAT YOU WENT THROUGH WITH YOUR ENGINEERS TO GIVE  
22 COMMENTS TO THE FISH & RICHARDSON LAWYERS ON THEIR DRAFT  
23 TECHNICAL DESCRIPTIONS?

24 A YES.

25 Q YOU RECALL WE LOOKED AT THAT EMAIL THAT JAY CARLSON WAS

1 ON ALONG WITH YOU AND SOME OTHERS?

2 A YES.

3 Q AND THAT WAS IN LATE JULY OF 2006?

4 A YES.

5 Q OKAY. WHAT IS THE DATE OF THIS LETTER FROM FISH &  
6 RICHARDSON?

7 A AS I SAID, AUGUST 24<sup>TH</sup>, 2006.

8 Q COULD YOU LOOK AT PAGE 30 OF THE LETTER, PLEASE?

9 A OKAY.

10 Q ARE YOU THERE, MR. MINNICK?

11 A YES.

12 Q OKAY. I'M SORRY, I SHOULD HAVE ASKED YOU TO LOOK AT THE  
13 5074.

14 MS. KREVANS: EXCUSE ME, YOUR HONOR.

15 A THAT'S WHERE I AM.

16 Q OH, OKAY. ALL RIGHT. ON PAGE 30 OF EXHIBIT 5074, UNDER  
17 SECTION B, SECOND PARAGRAPH, DO YOU SEE THE TEXT THERE THAT  
18 DISCUSSES THE WRITE TIME TABLE?

19 A YES.

20 Q IS THIS DESCRIPTION OF THE WRITE TIME TABLE IN THE AUGUST  
21 30 LETTER FROM FISH & RICHARDSON TECHNICALLY CORRECT?

22 A YES, IT IS.

23 Q THANK YOU. I'D LIKE TO TURN TO WHEN ECHOSTAR BEGAN THE  
24 PROCESS OF ACTUALLY ROLLING OUT ITS NEW CODE TO BOXES IN THE  
25 FIELD, MR. MINNICK. COULD YOU LOOK AT EXHIBIT DEFENDANTS'

1 5040? DO YOU HAVE THAT IN FRONT OF YOU?

2 A YES, I DO.

3 Q CAN YOU TELL US WHAT 5040 IS?

4 A THAT'S A DOCUMENT THAT DESCRIBES THE DIFFERENT SOFTWARE  
5 VERSIONS AND WHEN THEY WERE ROLLED OUT AND WHAT SET-TOP BOXES,  
6 THE NUMBER OF BOXES THEY WERE TARGETED. SO THIS DESCRIBES IT  
7 FOR THE 50X, THE 522/625, AND INCLUDES THE 622. AND THESE ARE  
8 THE VERSIONS OF SOFTWARE THAT CONTAINED THE DESIGN-AROUND  
9 SOFTWARE.

10 Q AND WHO PREPARED EXHIBIT 5040?

11 A A GENTLEMAN NAMED DAVE MUTTON WHO IS OUR MANAGER OF OUR  
12 SOFTWARE PROGRAM MANAGER GROUP.

13 Q IS PREPARING DOCUMENTS LIKE THIS ONE PART OF MR. MUTTON'S  
14 JOB RESPONSIBILITIES?

15 A YES, IT IS. HE IS RESPONSIBLE FOR DOING THE ROLLOUTS AND  
16 MANAGING THE ROLLOUTS OF THE SOFTWARE.

17 Q OKAY. COULD YOU BRIEFLY WALK US THROUGH MR. MUTTON'S  
18 TABLE HERE AND EXPLAIN TO THE COURT WHEN THE NEW SOFTWARE WAS  
19 ROLLED OUT TO EACH OF THE 50X BOXES, THE 522, AND THE 625?

20 A WOULD YOU LIKE ME TO START WITH THE 50X OR, OR THIS ONE?

21 Q I WOULD JUST DO IT -- IF YOU COULD JUST DO IT  
22 CHRONOLOGICALLY --

23 A CHRONOLOGICALLY, OKAY.

24 Q -- I THINK THAT WOULD BE EASIEST FOR THE COURT TO FOLLOW,  
25 MR. MINNICK.

1 A OKAY. IF YOU LOOK ABOUT IN THE MIDDLE WHERE IT SAYS  
2 522/625, L4-11 IS THE SOFTWARE VERSION, AND ON OCTOBER 24<sup>TH</sup>,  
3 2006 WE TARGETED 20,000 522S. THAT MEANS 20,000 522S WERE  
4 TARGETED BY THAT SOFTWARE AT A TIME. AND THEN WE ROLLED OUT  
5 ON THE 31<sup>ST</sup> OF 2006 TO 100,000; NOVEMBER 1<sup>ST</sup>, 2006, 250,000;  
6 NOVEMBER 2<sup>ND</sup> 500,000; AND NOVEMBER 7<sup>TH</sup> SAYS FULL, AND SO FULL  
7 TARGETS ALL OF THE BOXES THAT ARE OUT THERE. SO IT'S CALLED  
8 WIDE OPEN TARGETING.

9 AND THEN ON THE L4-13, WHICH IS ANOTHER VERSION OF  
10 SOFTWARE THAT WE HAD TO DO TO FIX PROBLEMS THAT WAS IN THE 411  
11 THAT WE WERE FINDING IN THE FIELD, WE HAD TO START ROLLING  
12 THAT OUT ON DECEMBER 7<sup>TH</sup>. AND THAT SAYS NEW INSTALL, SO THAT'S  
13 NEW BOXES THAT ARE BEING INSTALLED 522/625. ON DECEMBER 7<sup>TH</sup> WE  
14 ALSO TARGETED 100,000 522S, SO PEOPLE THAT ALREADY TOOK THE  
15 411 WOULD TAKE THIS 413 AND REPLACE THAT TOO. AND ON THE 12<sup>TH</sup>  
16 WE DID 500,000; THE 13<sup>TH</sup> OF DECEMBER IT WENT FULL. AND THEN ON  
17 JANUARY 9<sup>TH</sup> WE STARTED TARGETING EXISTING 625S AND CONTINUED TO  
18 TARGET 522S FULL; JANUARY 10<sup>TH</sup> 1,000,000 625S; AND JANUARY 11<sup>TH</sup>  
19 FULL FOR 625S.

20 THE 50X, THAT ROLLOUT BEGAN DECEMBER 7<sup>TH</sup> WITH P364, AND WE  
21 JUST TARGETED NEW INSTALLS. AND THEN ON JANUARY 9<sup>TH</sup> WE STARTED  
22 TARGETING 25,000 50XS; THE 11<sup>TH</sup> 100,000. WE HAD TO ROLL THAT  
23 SOFTWARE BECAUSE OF ALL THE PROBLEMS WE WERE FINDING WITH THAT  
24 SOFTWARE. THE P365, WHICH WENT OUT JANUARY 18<sup>TH</sup>, 2007  
25 TARGETING 140,000 50XS; JANUARY 30<sup>TH</sup> 200,000; FEBRUARY 1<sup>ST</sup>

1 500,000; FEBRUARY 7<sup>TH</sup> 800,000; AND ONCE AGAIN, WE HAD TO FIX  
2 THE SOFTWARE, START ROLLING OUT NEW SOFTWARE; MARCH 8<sup>TH</sup> NEW  
3 INSTALLS WITH P367; AND 100,000 EXISTING 50XS.

4 A NEW VERSION OF SOFTWARE WAS ROLLED OUT STARTING MARCH  
5 13<sup>TH</sup>, P368; IT SAYS NEW INSTALLS, AND ALL OF THE RECEIVERS THAT  
6 HAD TAKEN THAT P367, BECAUSE WE FOUND ADDITIONAL PROBLEMS WITH  
7 IT. MARCH 13<sup>TH</sup> WAS ALSO 500,000 EXISTING; MARCH 14<sup>TH</sup> WE WENT  
8 FULL; AND THEN ON MARCH 28<sup>TH</sup> IT TARGETED 1,000,000. THERE'S --  
9 TALKS ABOUT SOME P366 IN THERE THAT I COULD DISCUSS. BUT BY  
10 APRIL 4<sup>TH</sup> IT WAS FULL, SO ALL 50XS WERE TARGETED WITH 368.

11 Q WHAT ABOUT THE 721, 921, AND 942 BOXES, MR. MINNICK? I  
12 DON'T SEE THEM ON YOUR CHART HERE.

13 A RIGHT. THEY DID NOT RECEIVE THE DESIGN-AROUND SOFTWARE  
14 BECAUSE THEY WERE EXCLUDED AS PART OF A 192,000-AND-SOME  
15 RECEIVERS THAT COULD BE EXCLUDED.

16 Q OKAY. COULD YOU LOOK AT EXHIBITS 5182 AND 5078 IN YOUR  
17 BINDER?

18 MR. IANCU: YOUR HONOR, BEFORE WE MOVE ON FROM THIS  
19 EXHIBIT, I'D LIKE TO NOTE FOR THE RECORD THIS IS ONE OF OUR  
20 OBJECTIONS TO THE DOCUMENTS. SUBJECT OF CROSS EXAMINATION ON  
21 THIS DOCUMENT, I WOULD LIKE TO HAVE THE OBJECTION IN THE  
22 RECORD.

23 THE COURT: WHAT'S YOUR OBJECTION TO THE DOCUMENT?

24 MR. IANCU: OBJECTION IS LACKING FOUNDATION.

25 A I NEED YOU TO GIVE ME THOSE NUMBERS AGAIN. I'M SORRY.

1 Q 5182 AND 5078.

2 A OKAY.

3 Q COULD YOU EXPLAIN TO THE COURT WHAT EXHIBITS 5078 AND  
4 5182 ARE?

5 A 5078 IS THE NUMBER OF ACTIVE 721S, 921S, AND 942S IN THE  
6 FIELD -- AM I ON THE RIGHT ONE? YEAH, 5078 -- FROM SEPTEMBER  
7 8<sup>TH</sup>, 2006 TO 11-28-2008. AND THEN 5182 IS THE NUMBER OF ACTIVE  
8 721S, 921S, AND 942S THAT WERE ACTIVE IN THE FIELD THE THREE  
9 WEEKS PRIOR TO SEPTEMBER 8<sup>TH</sup>, 2006.

10 Q WHAT DO THOSE NUMBERS ACROSS THE TOP OF EACH OF THESE  
11 CHARTS INDICATE? SO, FOR EXAMPLE, IN THE SHORTER ONE WHERE IT  
12 SAYS 33, 34, AND 35, ON THE TOP LINE OF THE CHART.

13 A OH, THOSE ARE THE WEEK NUMBERS FOR THE YEAR OF 2006.

14 Q CAN YOU TELL US BASED ON THESE DOCUMENTS HOW MANY 721,  
15 921, AND 942 BOXES THERE WERE IN THE FIELD AS OF AUGUST OF  
16 2006?

17 A WELL, THAT WOULD BE THE ONES THAT ARE IN THE SMALLER ONE  
18 WITH THE WEEK 33, 34, AND 36. AND QUICKLY IN MY HEAD, THE  
19 MATH LOOKS LIKE IT'S ABOUT -- IT'S 42 TO -- OR 82 TO 83,000  
20 TOTAL IN WEEK 33.

21 Q OKAY. AND SO SPECIFICALLY IN WEEK 33, WHAT WERE THE  
22 NUMBERS FOR EACH OF THE 721, 921, AND 942?

23 A 721 WAS 13,696; 921 WAS 27,574; AND THE 942 HAD 42,117.

24 Q WERE THERE ANY NEW PLACEMENTS OF 721, 921, AND 942 BOXES  
25 AFTER AUGUST 17<sup>TH</sup>, 2006?

1 A NO, THERE WERE NOT.

2 Q WAS THERE ANY TIME AFTER AUGUST 17<sup>TH</sup>, 2006 WHEN THE NUMBER  
3 OF MODELS OF THOSE THREE BOXES COMBINED IN THE FIELD EXCEEDED  
4 192,000?

5 A NO, THERE WAS NOT.

6 Q NOW, HOW DID YOU ACTUALLY GET THE DESIGN-AROUND CODE INTO  
7 THE 50X, 522, AND THE 625 BOXES, MR. MINNICK?

8 A WELL, AS I SAID IT STARTS WITH THE SOURCE CODE THAT  
9 DEFINES WHAT CODE IS GOING TO BE COMPILED IN AND NOT COMPILED  
10 IN, AND YOU BUILD A SOFTWARE IMAGE. ONCE THAT'S DONE, THERE  
11 IS A DOWNLOAD STREAM CREATED AND THAT IS THEN SENT UP TO THE  
12 UPLINK. AND THE SATELLITE TRANSMITS THAT OVER THE SATELLITE,  
13 AND OUR SET-TOP BOXES WHEN THEY GO INTO STANDBY WHEN EITHER  
14 THE USER POWERS THEM OFF OR THEY HAVE A MECHANISM TO GO INTO  
15 STANDBY ON THEIR OWN, ONE OF THE THINGS THEY DO AND WE CALL  
16 STANDBY IS LOOK FOR A NEW SOFTWARE DOWNLOAD, SO WE HAD THAT  
17 TARGETING THING.

18 SO IF IT -- IF I AM RECEIVER 52, MODEL 50X, IT WILL SAY,  
19 HEY, RECEIVER 52, THIS IS TARGETED FOR YOU. SO IT WILL THEN  
20 TRY TO TAKE THAT SOFTWARE, IF IT HASN'T ALREADY DONE IT. AND  
21 IF IT TAKES THAT SOFTWARE, THEN WHAT HAPPENS IS THAT THE  
22 SOFTWARE THAT RUNS IN THE BOX IS STORED IN FLASH. THIS NEW  
23 SOFTWARE OFF THE SATELLITE WILL OVERWRITE THE EXISTING  
24 SOFTWARE THAT'S WRITTEN IN FLASH WITH THE NEW SOFTWARE  
25 DOWNLOAD. ONCE THAT OCCURS, THE BOX RESETS AND THEN CAN START

1 EXECUTING, AND IT STARTS EXECUTING THE NEW SOFTWARE THAT IT  
2 JUST DOWNLOADED.

3 Q WHAT HAPPENED TO THE OLD SOFTWARE THAT WAS IN THE BOX?

4 A AS I SAID, IT'S OVERWRITTEN WITH THE NEW SOFTWARE AND  
5 PERMANENTLY GONE. THE FLASH IS A PERMANENT STORAGE,  
6 SEMIPERMANENT.

7 Q DID ECHOSTAR TAKE STEPS THAT IT BELIEVED WOULD DOWNLOAD  
8 ITS REDESIGNED SOFTWARE TO ALL 50X, 522, AND 625 BOXES  
9 ACCORDING TO THE SCHEDULE THAT YOU DESCRIBED TO THE COURT A  
10 FEW MOMENTS AGO?

11 A YES, THIS IS OUR NORMAL PROCESS FOR DOING DOWNLOADS.

12 Q HOW DO YOU KNOW THAT THE BOXES ACTUALLY RECEIVED THE  
13 DOWNLOAD THAT YOU BROADCAST ON THE SATELLITE?

14 A WELL, THERE'S MANY WAYS. I MEAN, WE'VE -- OUR CALL  
15 CENTER IS WHERE PEOPLE CALL WHEN THEY HAVE PROBLEMS AND THE  
16 CALL CENTER KNOWS WHAT SOFTWARE IS THE CURRENT SOFTWARE FOR  
17 ANY GIVEN MODEL. AND WHEN THE CUSTOMER CALLS THAT'S ALWAYS  
18 THE FIRST THING THEY CHECK. AND SO THEY NOTIFY US IF THEY SEE  
19 BOXES THAT ARE SUPPOSED TO HAVE THE CURRENT SOFTWARE THAT  
20 AREN'T TAKING THEM, OR THAT THEY CAN'T GET TO TAKE AND WE  
21 NEVER WERE NOTIFIED OF THAT. WE MONITOR THAT.

22 ANOTHER BIG THING IS PART OF THAT CHART, I THINK IT WAS  
23 THE -- IN MARCH OF 2007 THE GOVERNMENT CHANGED DAYLIGHT  
24 SAVINGS TIME, SO ALL OF THIS NEW SOFTWARE FOR THE WORK-AROUND  
25 ALSO INCLUDED THIS CHANGE FOR DAYLIGHT SAVINGS TIME. AND ONCE

1 THAT NEW TIME TOOK PLACE, IF THE BOXES DIDN'T HAVE THAT NEW  
2 SOFTWARE, THEY WOULDN'T OPERATE PROPERLY, SO THE CUSTOMER  
3 WOULD HAVE BEEN CALLING TO SAY MY BOX TIME IS OFF, AND THAT  
4 DIDN'T OCCUR.

5 Q IF AN ECHOSTAR BOX WAS IN NORMAL OPERATING ORDER AT THE  
6 TIME THAT YOU MADE THESE DOWNLOADS, WOULD IT HAVE RECEIVED AND  
7 IMPLEMENTED THE NEW CODE?

8 A YES, BECAUSE THE CODE IS ALWAYS ON THE SATELLITE. ONCE  
9 IT'S PUT UP, IT'S THERE ALL THE TIME UNTIL IT'S REPLACED WITH  
10 NEW SOFTWARE. SO THEY HAVE -- ESSENTIALLY THE WORK-AROUND  
11 SOFTWARE HAS BEEN ON THE SATELLITE SINCE THE END OF 2006 ON  
12 SOME MODELS 'TIL NOW.

13 Q IT'S THERE TODAY?

14 A YES. DIFFERENT VERSION, BUT, YES.

15 Q WERE THERE PROBLEMS WITH THAT FIRST OCTOBER 24<sup>TH</sup>, 2006  
16 DOWNLOAD THAT YOU TOLD US ABOUT TO 20,000 DP522S?

17 A YES, THERE WERE.

18 Q WHAT KINDS OF PROBLEMS, BRIEFLY?

19 A WE FOUND THAT WE WERE GETTING EXCESSIVE WHAT WE CALL  
20 REBOOTS. YOU KNOW IF YOU'VE HAD YOUR PC WHERE IT JUST RESETS  
21 ITSELF FOR SEEMINGLY NO REASON, THE BOXES WERE DOING THAT. WE  
22 HAD WHAT WE CALL BLACK SCREEN ISSUES. INSTEAD OF GETTING  
23 VIDEO THE CUSTOMERS WOULD GET BLACK SCREEN AND COULDN'T GET  
24 RID OF IT. THERE WERE PROBLEMS WITH THE TRICK MODE  
25 FUNCTIONALITY, TOO.

1 Q COULD YOU TAKE A MOMENT TO LOOK AT EXHIBITS 5025 THROUGH  
2 5034 IN YOUR BINDER, MR. MINNICK?

3 A OKAY.

4 Q HAVE YOU SEEN THAT COLLECTION OF DOCUMENTS BEFORE?

5 A YES, I HAVE.

6 Q WHAT ARE THEY?

7 A THEY ARE INTERNET CHAT FORUMS ON THE INTERNET, AND  
8 THERE'S TWO MAIN FORUMS OUT THERE THAT HAD TO DO WITH  
9 SATELLITE PROVIDERS LIKE US AND DIRECTV. AND THEY'RE -- THESE  
10 PARTICULAR FORUMS ARE TALKING ABOUT THIS NEW SOFTWARE THAT'S  
11 BEEN DOWNLOADED TO BOTH THE 50X AND THE 522, SO THESE ARE  
12 REALLY USERS THAT, IT MUST BE THEIR HOBBY, BECAUSE THEY SPEND  
13 A LOT OF TIME DOING THIS. THEY ALWAYS REPORT BACK ON WHAT'S  
14 GOING ON AND TALK ABOUT OUR BOXES.

15 Q AND WHAT DID THEY SAY ABOUT THESE NEW DOWNLOADS IN THE  
16 FALL OF 2006?

17 A WELL, UNFORTUNATELY THIS TIME THEY WEREN'T TALKING VERY  
18 NICELY ABOUT OUR BOXES. THEY WERE COMPLAINING ABOUT HOW THE  
19 BOXES BEHAVED. NOT ONLY ISSUES UNRELATED TO DVR, BUT THEY  
20 DIDN'T LIKE HOW THE DVR WORKED NOW.

21 Q WHAT DID ECHOSTAR DO IN RESPONSE TO THE PROBLEMS AND  
22 COMPLAINTS WHEN THESE DOWNLOADS BEGAN?

23 A WELL, OUR NORMAL PROCESS NO MATTER WHAT THE SOFTWARE IS,  
24 IS WE TRY TO REPRODUCE THE PROBLEMS, AND ONCE WE CAN REPRODUCE  
25 THEM THEN THE ENGINEERS CAN FIND WAYS TO FIX THEM; AND THAT

1 WAS ALL THOSE DIFFERENT SOFTWARE VERSIONS THAT WE HAD TO PUT  
2 UP WERE DIFFERENT TIMES WHEN WE COULD FIX IT. WE COULDN'T GO  
3 BACKWARDS WITH THIS SOFTWARE BECAUSE IT REMOVED ALL THE  
4 INDEXING, SO WE HAD TO FIX THE SOFTWARE AND DO IT QUICKLY  
5 BECAUSE IT WAS CAUSING CALLS TO THE CALL CENTER.

6 Q AFTER ECHOSTAR HAD FIXED ALL THE PROBLEMS THAT IT COULD  
7 FIX, DID IT END UP WITH REDESIGNED BOXES THAT COULD PERFORM  
8 ALL THE SAME BASIC DVR FUNCTIONS AS ITS OLD BOXES?

9 A YES, IT DID.

10 Q DID THE TRICKPLAY MODES IN THOSE BOXES BEHAVE THE SAME  
11 WAY FROM A USER STANDPOINT?

12 A WELL, YOU HAD THE SAME FUNCTIONS, BUT AS THESE GUYS WERE  
13 TALKING ABOUT, IT DOESN'T NECESSARILY LOOK THE SAME WAY TO ALL  
14 USERS.

15 Q HAVE YOU COMPARED THE OLD AND NEW VERSIONS YOURSELF TO  
16 SEE IF THEY LOOK THE SAME?

17 A YES. I THINK WE TALKED ABOUT THAT TIVO REQUESTED TO HAVE  
18 THIS COMPARISON DONE, SO WE GOT THE OLD SOFTWARE, HAD TO DO A  
19 BUILD AND PUT THAT IN A BOX, AND THEN WE HAD THE NEW SOFTWARE  
20 THAT ALL THE BOXES HAD. SO, WE TOOK TWO 522S, TWO 50XS, ONE  
21 WITH THE OLD, ONE WITH NEW, AND LOOKED AT THEM SIDE BY SIDE.

22 Q CAN YOU GIVE THE COURT A COUPLE OF EXAMPLES OF THE KINDS  
23 OF DIFFERENCES THAT YOU YOURSELF HAVE SEEN?

24 A WELL, THE 50X, THAT CPU IS REALLY UNDER STRESS BECAUSE OF  
25 ITS AGE AND THE AMOUNT OF WORK IT HAS TO DO. AND THE TRICK

1 MODES, YOU KNOW, ONE OF THE THINGS YOU DO IS FAST FORWARD. IF  
2 YOU'VE DONE IT ON A VCR, IT LOOKS SMOOTH. I MEAN, YOU'VE SEEN  
3 -- WE'VE ALL SEEN IT, AND IT'S A SMOOTH THING. IT'S LIKE ME  
4 KIND OF TALKING REALLY FAST. AND IN THE 50X, INSTEAD OF  
5 LOOKING LIKE THAT, IT LOOKS LIKE A SLIDE SHOW FOR TWO REASONS.  
6 ONE IS BECAUSE THE CPU JUST CAN'T KEEP UP. AND AS I DESCRIBED  
7 EARLIER, WE DON'T KNOW EXACTLY WHERE THE FRAMES ARE. SO EVEN  
8 THOUGH I'M TRYING TO SKIP THREE, SOMETIMES I SKIP TWO,  
9 SOMETIMES I SKIP FOUR. WE DON'T KNOW. SO IT MAKES IT LOOK  
10 JERKY.

11 THE TIMES THAT IT TAKES TO FAST FORWARD OR REWIND THROUGH  
12 EVENTS IS NOW DIFFERENT BECAUSE WE JUST CAN'T DO IT AS FAST.  
13 AND WE COULD -- IF WE SAID, ALL RIGHT, WE WANT TO DO IT IN A  
14 MINUTE AND MAKE IT A MINUTE, WE'D HAVE TO THROW OUT EVEN MORE  
15 INFORMATION AND MAKE IT EVEN JERKIER. THE FAST FORWARD AND --  
16 OR SKIP BACK AND SKIP FORWARD AREN'T QUITE AS RESPONSIVE.  
17 THAT'S LESS NOTICEABLE, BUT WHEN THEY'RE SIDE BY SIDE YOU WILL  
18 ALWAYS SEE THE OLD ONE COME UP FIRST AND THE NEW SOFTWARE  
19 COMES UP SECOND.

20 Q ARE THESE THE KINDS OF THINGS THAT EVERY USER IS GOING TO  
21 NOTICE OR CARE ABOUT?

22 A NO, THE AVERAGE USER DOESN'T NOTICE IT. I MEAN, A LOT OF  
23 PEOPLE DON'T EVEN USE FAST FORWARD. MY WIFE JUST USES FAST  
24 FORWARD. I ONLY USE SKIPS TO SKIP COMMERCIALS. AND SOME  
25 PEOPLE DON'T USE THEIR BOXES AS MUCH AND SOME PEOPLE JUST

1 DON'T NOTICE IT. BUT AS WE SAW ON THE INTERNET FORUMS, THOSE  
2 GUYS CERTAINLY NOTICED IT.

3 MR. IANCU: OBJECTION. I MOVE TO STRIKE THE LAST  
4 PART OF THE ANSWER AS HEARSAY. HE IS TESTIFYING ABOUT WHAT  
5 OTHER PEOPLE HAVE SEEN AS REPORTED IN A DOCUMENT.

6 THE COURT: WELL, I'LL -- I'LL --

7 MS. KREVANS: YOUR HONOR --

8 THE COURT: -- SUSTAIN THAT OBJECTION. OBVIOUSLY,  
9 ARE THE EXHIBITS INTRODUCED FOR --

10 MS. KREVANS: -- EXHIBITS ARE INTRODUCED, YOUR  
11 HONOR.

12 THE COURT: THEY ARE INTRODUCED, SO THEY SPEAK FOR  
13 THEMSELVES. SO I AGREE AS FAR AS HIS OPINION.

14 Q (BY MS. KREVANS:) AND YOU MENTIONED CPU USAGE. ARE THERE  
15 ANY DIFFERENCES IN HARD DISK DRIVE READ/WRITE USAGE BETWEEN  
16 THE OLD AND THE NEW PRODUCTS?

17 A YES. NOW BECAUSE WE HAVE TO DO THIS SEARCH AND WE DON'T  
18 KNOW EXACTLY WHERE THE I-FRAMES ARE, SO WE -- WHEN WE KNEW  
19 EXACTLY WHERE THEY WERE USING THE CIRCULAR INDEX TABLE, WE  
20 COULD GO RIGHT TO THAT POSITION IN THE FILE, WE KNEW HOW MUCH  
21 DATA TO READ, AND WE COULD READ OUT THAT FRAME. AS I  
22 DISCUSSED YESTERDAY, NOW WE'RE TAKING A GUESS. WE READ SOME.  
23 YOU MAY NOT FIND IT, SO IT TAKES MORE DISK ACCESSES TO FIND  
24 EVEN A GIVEN FRAME. SO THE DRIVE IS USED MORE NOW THAN IT WAS  
25 BEFORE.

1 Q CAN YOU GIVE US AN ESTIMATE OF HOW MUCH TIME AND MONEY  
2 WAS SPENT IN THE DIRECT COST OF THIS SOFTWARE REDESIGN EFFORT,  
3 MR. MINNICK?

4 A YEAH, FROM MY ENGINEERING SIDE, IT WAS ABOUT FOUR MAN  
5 YEARS OF EFFORT, AND COSTS ABOUT THREE-QUARTERS OF A MILLION  
6 DOLLARS.

7 Q WHAT DO YOU MEAN WHEN YOU SAY A MAN YEAR?

8 A WE ADD UP THE NUMBER OF -- YOU KNOW, THERE'S 12 MONTHS IN  
9 A YEAR. SO IF AN ENGINEER WORKED ON IT FOR 12 MONTHS, THAT'S A  
10 MAN YEAR. USUALLY YOU USE I THINK IT'S 2,000 HOURS A YEAR,  
11 BUT WE DON'T TEND TO WORK JUST 2,000 HOURS A YEAR.

12 Q HOW MUCH CODE DID YOU HAVE TO ACTUALLY CHANGE?

13 A WELL, IN THE CORE DVR SOFTWARE THAT ACTUALLY DID THE  
14 RECORDING, THE PLAYBACK, AND DID THE TRICK MODES, WE VIRTUALLY  
15 REWROTE THAT SOFTWARE. WE CHANGED, ADDED, DELETED TENS OF  
16 THOUSANDS OF LINES OF CODE.

17 Q COULD YOU LOOK AT EXHIBIT 5024 IN YOUR BINDER, PLEASE?  
18 WHAT IS EXHIBIT 5024, MR. MINNICK?

19 A IT'S SHOWING SOME CODE, THE FILES FROM THE 50X MODEL, AND  
20 IT SHOWS WHAT CODE WAS MODIFIED, INSERTED, AND DELETED GIVEN  
21 BETWEEN TWO DIFFERENT VERSIONS OF SOFTWARE. AND IT SHOWS THE  
22 FILES THAT WERE AFFECTED. SOME OF THEM HAVE TO DO WITH  
23 UTILITY STUFF, LIKE THE EXPLAINING OF THE TIME TO THE USER,  
24 AND THEN THERE'S THE CORE FUNCTIONALITY.

25 Q IS THERE A PORTION OF EXHIBIT 5024 THAT RELATES TO THE

1 522/625 PRODUCTS?

2 A I'M SORRY. SAY THAT AGAIN.

3 Q IS THERE A PORTION OF EXHIBIT 5024 THAT RELATES TO THE  
4 522 AND 625 PRODUCTS?

5 A YES, ON THE SECOND PAGE.

6 Q OKAY. WHO PREPARED EXHIBIT 5024?

7 A WELL, THE 50X PART WAS PREPARED BY JOHN HAMRICK, AND THE  
8 522 WAS PREPARED BY MARK TEMPLEMAN.

9 Q WHO ARE MR. HAMRICK AND MR. TEMPLEMAN?

10 A EACH ARE THE RESPECTIVE MANAGERS FOR THOSE SET-TOP BOXES.

11 Q AND DID YOU ASK THEM TO PREPARE THIS DOCUMENT FOR YOU?

12 A YES.

13 Q OKAY. COULD YOU BRIEFLY JUST EXPLAIN TO THE COURT IN  
14 TERMS OF FORMAT WHAT THAT LIST OF THINGS IS ON THE LEFTHAND  
15 SIDE OF EACH OF THE PAGES OF THIS DOCUMENT?

16 A THAT'S A LIST OF CODE FILES.

17 Q AND WHAT -- WHAT DO WE SEE IN THE COLUMNS GOING ACROSS ON  
18 EACH PAGE OF THE DOCUMENT?

19 A WELL, MODIFIED B, THAT IS LINES OF CODE MODIFIED.  
20 MODIFIED A ACTUALLY IS LINES OF CODE AND COMMENTS THAT ARE  
21 MODIFIED. INSERTED AND DELETED ARE LINES OF ONLY CODE THAT  
22 WAS EITHER INSERTED OR DELETED. DOESN'T COUNT COMMENT, LINES  
23 THAT JUST HAVE COMMENTS OR WHITE SPACE, AND THEN IT GIVES THE  
24 UNCHANGED AND THEN THE TOTAL REFERENCE.

25 Q WAS THIS A SIGNIFICANT REDESIGN EFFORT FOR YOUR SOFTWARE

1 ENGINEERING GROUP, MR. MINNICK?

2 A YEAH, THIS WAS -- THIS WAS THE LARGEST EFFORT WE HAVE  
3 EVER UNDERTAKEN TO REPLACE EXISTING SOFTWARE IN THE FIELD IN  
4 THE THIRTEEN YEARS I'VE BEEN THERE. AND WE'VE NEVER DONE THIS  
5 LARGE OF A CHANGE TO EXISTING BOXES. YOU KNOW, THAT'S WHAT WE  
6 DO IS MAINTAIN BOXES IN THE FIELD AND ADD NEW FEATURES AND FIX  
7 PROBLEMS.

8 Q ARE THERE ADVANTAGES, IN YOUR VIEW, TO THE NEW WAY THAT  
9 YOU CAME UP WITH OF DOING DVR FUNCTIONS?

10 A YEAH, THERE'S SOME. WE SAVED A LITTLE BIT OF MEMORY BY  
11 GETTING RID OF THAT BUFFER. ON THE 522, THE TRICK -- THE SKIP  
12 BACK AND SKIP FORWARD IS ACTUALLY MORE ACCURATE. IT'S LESS  
13 RESPONSIVE BECAUSE -- THE REASON IT'S MORE ACCURATE, WE NOW,  
14 LIKE I SAID BEFORE, WE'LL TRY UP TO THREE TIMES TO FIND THE  
15 EXACT TIME. AND SO THAT ACTUALLY TURNS OUT TO BE A LITTLE  
16 MORE ACCURATE THAN THE OLD WAY WE WERE DOING IT.

17 Q DID ECHOSTAR FILE A PATENT APPLICATION ON THIS NEW WAY OF  
18 DOING TRICKPLAY?

19 A YES, WE DID.

20 Q COULD YOU LOOK AT EXHIBIT 5036?

21 MR. IANCU: YOUR HONOR, THIS IS ONE OF THE EXHIBITS  
22 THAT WE HAVE AN OBJECTION ON, SO I NOTE MY OBJECTION FOR THE  
23 RECORD.

24 THE COURT: AND WHAT'S THE OBJECTION?

25 MR. IANCU: THE OBJECTION IS RELEVANCE. THE PATENT

1 APPLICATION IS NOT RELEVANT TO THESE PROCEEDINGS.

2 THE COURT: VERY WELL. I WILL OVERRULE YOUR  
3 OBJECTION AT THIS TIME.

4 MS. KREVANS: THANK YOU, YOUR HONOR.

5 Q (BY MS. KREVANS:) ARE YOU AT EXHIBIT 5036, MR. MINNICK?

6 A YES, I AM.

7 Q IS THIS THE PATENT APPLICATION?

8 A YES, IT IS.

9 Q AND WHO ARE THE INVENTORS?

10 A MYSELF AND THE OTHER ENGINEERS THAT WERE INVOLVED IN  
11 COMING UP WITH THE DESIGN-AROUND IDEA.

12 Q ARE YOU PROUD OF THIS WORK, MR. MINNICK?

13 A YES, I AM. I MEAN, WE -- WE INVENTED SOMETHING. I MEAN,  
14 WE SOLVED THE PROBLEM. MR. BARTON LOOKED AT THE PROBLEM OF  
15 THE EXISTING DVRS AND SAID THAT'S NOT THE WAY TO DO IT, SO HE  
16 CAME UP WITH HIS INVENTION, VERY GOOD INVENTION ON THE FRONT  
17 END TO FIND THE FRAMES SO THAT YOU COULD USE THAT INFORMATION  
18 ON PLAYBACK.

19 WE LOOKED AT THE SAME PROBLEM WITH THE EXISTING DVRS AND  
20 SAID, HEY, HOW CAN WE ALLEVIATE SOME OF THAT BURDEN? AND WE  
21 CAME UP WITH OUR OWN INVENTION THAT WE USE ON THE PLAYBACK  
22 SIDE. THERE ARE A LOT OF PEOPLE THAT SAID THIS COULDN'T BE  
23 DONE AND -- AND WE MANAGED TO DO IT.

24 Q THANK YOU. NOTHING FURTHER, YOUR HONOR.

25 THE COURT: CROSS EXAMINATION.

1 CROSS EXAMINATION

2 BY MR. IANCU:

3 Q GOOD AFTERNOON, MR. MINNICK. GOOD MORNING.

4 A GOOD MORNING.

5 THE COURT: IT ONLY SEEMS LIKE AFTERNOON.

6 Q IT DOES. JUST NOW, MR. MINNICK, YOU SAID THAT YOU CAME  
7 UP WITH SOMETHING TO LOOK AT FRAMES AT THE PLAYBACK, ON THE  
8 PLAYBACK END, RIGHT?

9 A YES, I DID.

10 Q THAT RELATES TO YOUR INDEXLESS CHANGE, CORRECT?

11 A WELL, THAT'S HOW WE DO IT WITHOUT HAVING THOSE FRAMES  
12 IDENTIFIED PRIOR TO STORAGE, YES.

13 Q AND THIS RELATES TO YOUR CHANGE TO THE INDEXING FUNCTION?

14 A NO, THIS RELATES TO OUR CHANGE THAT WE DON'T HAVE THE  
15 INDEXING FUNCTION.

16 Q THAT'S RIGHT. SO THIS CHANGE, THIS RELATES TO THE -- TO  
17 YOU TAKING OUT WHAT YOU THINK IS THE INDEXING FUNCTION?

18 A THIS IS HOW WE DO IT WITHOUT HAVING THE PRIOR CREATED  
19 INDEX, YES.

20 Q YOU ALSO SAID THAT A LOT OF PEOPLE SAID IT COULDN'T BE  
21 DONE, RIGHT?

22 A YES.

23 Q HOW MANY PEOPLE?

24 A WELL, I REMEMBER I THINK IT WAS YOUR CEO THAT SAID THEY  
25 COULDN'T DO IT, AND HE SAID HE TALKED TO ENGINEERS, SO IT'S

1 PLURAL. I DON'T KNOW HOW MANY HE TALKED ABOUT, BUT THERE WAS  
2 MORE THAN ONE.

3 Q THAT WAS MR. BARTON?

4 A NO, I THINK THAT WAS MR. ROGERS. HE'S NOT THE CEO, I  
5 DON'T BELIEVE.

6 Q MR. ROGERS SAID IT COULDN'T BE DONE?

7 A RIGHT.

8 Q WHO ELSE SAID IT COULDN'T BE DONE?

9 A WELL, HE SAID HE TALKED TO ENGINEERS.

10 Q WHO ELSE SAID IT COULDN'T BE DONE?

11 A WELL, I DON'T THINK HE SPECIFIED THEIR NAMES.

12 Q DO YOU HAVE ANYBODY ELSE OTHER THAN MR. ROGERS?

13 A NO.

14 Q OKAY. DID YOU YOURSELF SPEAK WITH MR. ROGERS?

15 A NO.

16 MR. IANCU: SO I MOVE TO STRIKE THE PREVIOUS ANSWER  
17 AS LACKING FOUNDATION.

18 THE COURT: VERY WELL, OVERRULED.

19 Q (BY MR. IANCU:) MR. MINNICK, YOU ARE ECHOSTAR'S VICE  
20 PRESIDENT OF SOFTWARE, CORRECT?

21 A YES.

22 Q YOU ARE IN CHARGE OF SOFTWARE DEVELOPMENT?

23 A YES.

24 Q THE CHANGES YOU MADE THAT YOU TESTIFIED ABOUT AFFECTED  
25 SOME AMOUNT OF COMPUTER CODE?

1 A YES.

2 Q FOR THE 50X PRODUCTS, YOU SAID THAT YOU MODIFIED ABOUT  
3 5,000 LINES OF CODE?

4 A WHEN DID I SAY THAT? I MEAN --

5 Q IS THAT YOUR TESTIMONY?

6 A I -- I DON'T -- I DON'T REMEMBER IF IT WAS -- THAT CHART  
7 SHOWS HOW MANY WE MODIFIED, BUT IT WAS MODIFIED. I'D HAVE TO  
8 LOOK TO REFRESH MY MEMORY, BUT THERE WAS SOMEWHERE AROUND  
9 5,000.

10 Q LET ME POINT YOU TO YOUR DEPOSITION TRANSCRIPT VOLUME 1,  
11 VOLUME 1, PAGE 194, LINES 19-25.

12 A I'M HAVING TROUBLE FINDING WHAT -- IS THIS -- DOES THIS  
13 VOLUME 1 SAY 4505?

14 Q DO YOU HAVE THE NOTEBOOK WITH DEPOSITION TRANSCRIPTS?

15 A IT SAYS DEPOSITION TRANSCRIPTS.

16 Q OKAY.

17 A YES.

18 Q ON THE FIRST PAGE IT SHOULD SAY VOLUME 1, DECEMBER 17,  
19 2008.

20 A OKAY, I FOUND THAT.

21 Q PAGE 194, LINES 19-25 -- 19-25:

22 QUESTION: HOW MANY LINES OF CODE WERE CHANGED,  
23 ALTERED IN ANY WAY FOR THE 50X BOX?

24 ANSWER: THE 50X WE MODIFIED, IT'S THE SAME  
25 FUNCTIONALITY EXCEPT IT DOESN'T INCLUDE THE MMAP\_DVR. THIS IS

1 JUST WHAT IT TOOK TO IMPLEMENT THE INDEXLESS SOLUTION, SO THAT  
2 WAS ABOUT 5,000 LINES OF CODE.

3 AND YOU KNOW HOW MANY LINES OF CODE WERE CHANGED, MR.  
4 MINNICK, BASED -- BASED IN PART ON YOUR WORK IN YOUR CAPACITY  
5 AS VICE PRESIDENT OF SOFTWARE AT ECHOSTAR, TRUE?

6 A YES, THERE WAS TWO DIFFERENT METHODS USED WHEN WE CAME UP  
7 WITH THOSE TWO NUMBERS, BUT, YES.

8 Q IN YOUR VIEW, THIS CHANGE, 5,000, ABOUT 5,000 LINES OF  
9 CODE OR SO, AMOUNTS TO ABOUT 50 PERCENT OF THE DVR CODE?

10 A OF THE CORE DVR CODE. THE DVR CODE IS THE CODE THAT DOES  
11 THE RECORD, PLAYBACK, AND TRICK MODES.

12 Q AND THAT IS SO BECAUSE YOU BELIEVE THAT THERE IS A TOTAL  
13 OF ABOUT 10,000 LINES OF CODE FOR THE DVR?

14 A THAT DOES THAT CORE FUNCTIONALITY.

15 Q YOU BELIEVE THAT THERE IS A TOTAL FOR THE DVR OF ABOUT  
16 10,000 LINES OF CODE?

17 A YES, THAT DOES THAT CORE FUNCTIONALITY, YES.

18 Q MY QUESTION, IS THE TOTAL FOR THE DVR, LINES OF CODE FOR  
19 THE ENTIRE DVR THAT DOES DVR FUNCTIONALITY, YOUR TESTIMONY IS  
20 THAT THE TOTAL FOR THE DVR IS ABOUT 10,000, CORRECT?

21 A YES, AS I SAID.

22 Q SO, IF YOU CHANGED 5,000 LINES OF CODE, AND YOU BELIEVE  
23 THAT THERE IS 10,000 LINES OF CODE, IN YOUR VIEW THIS IS A  
24 SUBSTANTIAL AMOUNT OF A CHANGE. YOU TESTIFIED THIS MORNING  
25 THAT IT WAS A SUBSTANTIAL AMOUNT.

1 A YES.

2 Q BUT AT TRIAL YOUR TESTIMONY WAS THAT THE DVR SOFTWARE IS  
3 HUNDREDS OF THOUSANDS OF LINES OF CODE, TRUE?

4 A YES.

5 Q AND, IN FACT, YOU TESTIFIED THAT THE TOTAL FOR THE ENTIRE  
6 BOX WAS OVER 1 MILLION LINES OF CODE?

7 A THAT WOULD BE ABOUT RIGHT.

8 Q SO THE CHANGE NOW INSTEAD OF 50 PERCENT, IT'S REALLY LESS  
9 THAN ONE PERCENT?

10 A WELL, LESS THAN ONE PERCENT OF THE TOTAL CODE IN THE BOX,  
11 THAT WOULD BE ACCURATE, BUT THE VAST MAJORITY OF THE CODE OF  
12 THOSE MILLION LINES HAVE NOTHING TO DO WITH DVR.

13 Q WELL, IF WE LOOK AT THE TOTAL MILLION LINES, IT'S  
14 ACTUALLY LESS THAN .5 PERCENT?

15 A I HAVEN'T DONE THE MATH BUT, AS I SAID, MOST OF THE CODE  
16 HAVE NOTHING TO DO WITH DVR.

17 Q BUT YOUR TESTIMONY AT TRIAL WAS THAT THE DVR SOFTWARE  
18 ITSELF IS HUNDREDS OF THOUSANDS OF LINES OF CODE?

19 A YES, I MIGHT HAVE SAID THAT.

20 Q AT TRIAL IT WAS IMPORTANT FOR YOU TO SUGGEST THAT  
21 ECHOSTAR DID A LOT OF PROGRAMMING TO TELL THE JURY THAT YOU  
22 DID A LOT OF WORK OF YOUR OWN DEVELOPMENT TO DEVELOP THE DVR,  
23 RIGHT?

24 A I DON'T KNOW THE ANSWER TO THAT. I DON'T KNOW IF THAT'S  
25 IMPORTANT OR NOT.

1 Q YOUR DVRS AT TRIAL HAD -- YOUR PRODUCTS AT TRIAL HAD DVR  
2 FUNCTIONALITY, RIGHT?

3 A YES.

4 Q AND THEY HAVE DVR FUNCTIONALITY NOW?

5 A YES.

6 Q ALL THE PRODUCTS DO TRICK MODES?

7 A YES.

8 Q THEY DID TRICK MODES THEN, THEY DO TRICK MODES NOW?

9 A YES.

10 Q THEY DO FAST FORWARDS. THEY DID IT THEN, THEY DO IT NOW?

11 A YES.

12 Q PAUSE, REWIND, SKIP, THEY DO ALL THAT NOW, THEY DID IT  
13 BEFORE?

14 A YES.

15 Q IN FACT, ALL TRICK MODES AVAILABLE BEFORE TRIAL ARE STILL  
16 AVAILABLE NOW?

17 A STILL AVAILABLE BUT DONE IN A VERY DIFFERENT WAY WITH THE  
18 NEW SOFTWARE.

19 Q AND THEY ARE AVAILABLE NOW?

20 A YES.

21 Q IN FACT, THE AVERAGE USER PROBABLY WOULD NOT NOTICE THE  
22 DIFFERENCE BETWEEN ECHOSTAR'S DVRS BEFORE TRIAL AND AFTER,  
23 RIGHT?

24 A YEAH, THE VISUAL DIFFERENCE, THE AVERAGE USER WOULDN'T,  
25 BUT HOW IT'S DONE IS COMPLETELY DIFFERENT NOW. BUT THE AVERAGE

1 USER VISUALLY WOULDN'T NOTICE IT.

2 Q AND CUSTOMERS DID NOT CALL ECHOSTAR ABOUT ANY DIFFERENCES  
3 IN GREAT NUMBERS, DID THEY?

4 A NO.

5 Q YOU TESTIFIED THIS MORNING THAT ECHOSTAR TARGETED THE  
6 DOWNLOAD, THE CHANGE TO A NUMBER OF DVRS IN CUSTOMER'S HOMES,  
7 RIGHT?

8 A YES, I DID.

9 Q BUT IN FACT YOU DO NOT KNOW IF ALL THE CUSTOMERS RECEIVED  
10 THE CHANGES, CORRECT?

11 A WELL, AS I SAID IN OUR NORMAL COURSE, THIS IS HOW WE FIND  
12 OUT, AND UNLESS A BOX -- WE'VE BEEN DOING THIS FOR THE  
13 INCEPTION OF OUR SERVICE. WE DO HUNDREDS OF DOWNLOADS A YEAR.  
14 THIS IS SOMETHING WE HAVE GONE THROUGH MANY, MANY TIMES, AND  
15 WE HAVE PROCESSES THAT DETECT WHEN BOXES AREN'T TAKING IT.

16 AS I SAID, THE CALL CENTER, THAT'S ONE OF THEIR JOBS IS  
17 TO ALERT US IF THERE IS DOWNLOAD ISSUES. AND AS I SAID WITH  
18 THE DAYLIGHT SAVINGS TIME, IF BOXES HADN'T OF TAKEN THAT, THE  
19 CUSTOMERS MOST LIKELY WOULD HAVE CALLED BECAUSE YOUR TIME'S  
20 OFF. THE GOVERNMENT CHANGED THE TIME WHEN THAT HAPPENED AND  
21 OUR BOXES COULDN'T HANDLE THAT CHANGE WITHOUT SOFTWARE TO  
22 HANDLE THAT CHANGE, AND THAT WAS INCLUDED AS PART OF THIS DVR  
23 REWORK SOFTWARE.

24 SO UNLESS A BOX WASN'T OPERATING NORMALLY, AND WHERE THE  
25 USER PROBABLY COULDN'T USE IT AT ALL AND THEY CALL, OR IF IT'S

1 NOT CONNECTED TO THE SATELLITE, IT WOULD HAVE TAKEN THE  
2 DOWNLOAD.

3 Q ECHOSTAR IN FACT DOES NOT HAVE A WAY TO CHECK THAT EVERY  
4 UNIT ACTUALLY RECEIVED THE NEW SOFTWARE?

5 A THERE IS NO WAY FOR US TO KNOW EVERY UNIT DOES IT,  
6 BECAUSE, ONE IS WE DON'T HAVE TWO-WAY COMMUNICATION. BUT  
7 WE'VE GONE THROUGH THIS FOR YEARS AND YEARS AND WE'VE GOT THIS  
8 PROCESS IN PLACE THAT DOES THIS, SO UNLESS THEY'RE NOT WORKING  
9 OR CONNECTED TO THE SATELLITE, THEY'RE GOING TO TAKE THE  
10 DOWNLOAD.

11 Q BUT IN FACT YOU DO NOT HAVE A WAY TO CHECK IF EVERY UNIT  
12 ACTUALLY RECEIVED THE NEW SOFTWARE. IS THAT TRUE OR NO, MR.  
13 MINNICK?

14 A WE DO NOT HAVE A WAY TO CHECK TO SEE THAT EVERY UNIT HAS  
15 IT WITHOUT GOING TO THEIR HOUSE, CORRECT.

16 Q THANK YOU. AND IN FACT YOU DON'T RECALL IF ANYBODY  
17 VERIFIED THE PERCENTAGE OF UNITS THAT ACTUALLY RECEIVED THE  
18 NEW SOFTWARE, CORRECT?

19 A CORRECT. WE WOULDN'T GO -- WE WOULDN'T GO LOOK AT THAT  
20 UNLESS WE ARE -- IF THE CALL CENTER CALLED.

21 Q OKAY.

22 A WE'VE HAD THAT HAPPEN BEFORE. THEY WOULD -- THEN WE  
23 WOULD GO LOOK AND WE CAN LOOK AT SOME PENETRATION LEVELS. SO  
24 NO ONE ACTUALLY DID THAT IN THIS CASE.

25 MR. IANCU: MOVE TO STRIKE, YOUR HONOR.

1 THE COURT: I BELIEVE HE ANSWERED IT. LET'S MOVE ON.  
2 I UNDERSTAND BOTH OF YOUR POSITION ON THIS POINT. I DON'T  
3 THINK IT'S GOING TO DETERMINE MY DECISION IN THIS CASE. SO  
4 OVERRULED. MOVE ALONG.

5 Q (BY MR. IANCU:) THE JURY VERDICT IN THIS CASE WAS ON  
6 APRIL 13, 2006, CORRECT?

7 A YES.

8 Q SHORTLY THEREAFTER, STILL IN APRIL OF 2006, ECHOSTAR HAD  
9 A CONCRETE ANSWER AS TO WHAT WAS IDENTIFIED AS INFRINGING?

10 A WHAT DO YOU MEAN CONCRETE?

11 Q WELL, LET ME POSE A DIFFERENT QUESTION. BY APRIL 2006  
12 ECHOSTAR HAD IDENTIFIED WHAT WAS IDENTIFIED AT TRIAL AS  
13 INFRINGING?

14 A YES, AFTER LOOKING AT THE TRIAL TESTIMONY AND THE PATENT,  
15 WE HAD AN IDEA WE KNEW IT WAS FOCUSED ON, YES.

16 Q AND THAT WAS IN APRIL 2006?

17 A YES, I BELIEVE SO. TOOK US A COUPLE OF WEEKS.

18 Q ALSO IN APRIL 2006, ECHOSTAR DECIDED IT CAN CHANGE THE  
19 DESIGN FEATURES WITHOUT DISABLING THE DVR FUNCTIONALITY IN  
20 CUSTOMER'S HOMES?

21 A WELL, AS I SAID, IN APRIL 2006 WE HAD -- WE IDENTIFIED  
22 WHAT WAS IDENTIFIED BY TIVO AT TRIAL TO INFRINGE. WE KNEW  
23 WHAT THEY SAID WERE THEIR CORE CONCEPTS OF THE INVENTION SO WE  
24 KNEW WHAT TO LOOK FOR IN THE CODE ADDITIONALLY OUTSIDE WHAT  
25 THEY IDENTIFIED, BUT WE HADN'T DONE ANYTHING YET. WE HADN'T

1 IMPLEMENTED THAT. AND WE HAD SOME IDEAS ON WHAT WE COULD DO  
2 TO REMOVE THAT FUNCTIONALITY AND THEN HOW TO REPLACE IT, BUT,  
3 AS I SAID, ONE OF THE PROBLEMS IS, AS MR. BARTON SAID, THE CPU  
4 USAGE IS HIGH. AND WE WEREN'T SURE THAT WE COULD DO THIS  
5 UNTIL WE DID FURTHER TESTING, SO THAT'S NOT ACCURATE.

6 Q IN APRIL 2006, SHORTLY AFTER THE JURY TRIAL YOU DECIDED  
7 THAT YOU COULD MAKE THE CHANGES YOU THOUGHT WERE REQUIRED AND  
8 NOT RECALL THE BOXES, CORRECT?

9 A YEAH, IF THEY WERE SUCCESSFUL THAT WOULD BE TRUE, YES.

10 Q AND BY MAY 2006, ECHOSTAR CAME UP WITH A SO-CALLED  
11 INDEXLESS APPROACH?

12 A YES.

13 Q AND BY MAY 2006, ECHOSTAR ALSO CAME UP WITH WHAT'S CALLED  
14 THE SINGLE BUFFER APPROACH?

15 A YEAH, WE HAD THE INITIAL CONCEPTS OF WHAT WE WERE GOING  
16 TO DO, YES.

17 Q AT SOME POINT YOU WENT TO GET OPINIONS FROM THE FISH  
18 FIRM?

19 A YES.

20 Q YOU SAID YESTERDAY THAT ONE OF THE REASONS YOU GOT AN  
21 OPINION FROM FISH IS THAT YOU WANTED TO BE AS CAREFUL AS  
22 POSSIBLE?

23 A YES, I BELIEVE I SAID THAT YESTERDAY.

24 Q AS PART OF THIS EFFORT TO BE AS CAREFUL AS POSSIBLE, YOU  
25 GAVE THE FISH FIRM A NUMBER OF DOCUMENTS TO REVIEW?

1 A YES.

2 Q YOU GAVE THE FISH FIRM THREE DOCUMENTS?

3 A I REMEMBER THERE WAS THE DESIGN DOCUMENTS. I THINK THERE  
4 WAS TWO. THERE MIGHT HAVE BEEN THREE. I REMEMBER THE TWO,  
5 ESPECIALLY THE TWO THAT THERE WERE -- THAT WE HAD BECAUSE WE  
6 HAD THE -- THERE MAY HAVE BEEN THREE. YEAH, I THINK THERE WAS  
7 THE DESIGN DOCUMENT FOR REMOVING THE AUTOMATIC FLOW CONTROL ON  
8 THE 522/625S. THERE WAS A DESIGN DOCUMENT FOR THE WHAT WE  
9 CALL THE INDEXLESS ON THE 522/625S, AND THEN THERE WAS A  
10 SIMILAR ONE FOR THE 50X.

11 Q OTHER THAN THOSE TWO OR THREE DOCUMENTS, YOU DID NOT GIVE  
12 ANY OTHER DOCUMENTS TO THE FISH FIRM?

13 A NOT THAT I REMEMBER. NO, I DON'T THINK SO.

14 Q ECHOSTAR DID NOT PROVIDE SOURCE CODE TO THE FISH FIRM?

15 A WELL, THAT WOULD HAVE BEEN IMPOSSIBLE BECAUSE THE SOURCE  
16 CODE WASN'T WRITTEN AT THAT TIME.

17 Q AND YOU NEVER GAVE SOURCE CODE TO THE FISH FIRM?

18 A NO.

19 Q YESTERDAY, YOU ALSO SAID THAT THIS WAS A LENGTHY PROCESS,  
20 BACK AND FORTH WITH OPINION COUNSEL?

21 A YES.

22 Q ECHOSTAR GAVE FISH THOSE THREE, TWO OR THREE DOCUMENTS,  
23 IN JULY OR AUGUST OF 2006?

24 A YEAH, I BELIEVE THAT'S THE TIME FRAME BETWEEN THE THREE.

25 Q THE OPINIONS WERE DELIVERED TO YOU IN FINAL FORM IN

1 AUGUST 2006?

2 A YES.

3 Q YESTERDAY, YOU ALSO SAID YOU GOT AN OPINION FROM AN IN-  
4 HOUSE LAWYER?

5 A YES.

6 Q WHO WAS THAT?

7 A JEFF BLUM WAS INVOLVED AND DAVID ST. JOHN-LARKIN.

8 Q LET ME DIRECT YOU TO EXHIBIT 3022, ECHOSTAR'S RESPONSES  
9 AND OBJECTIONS TO THE FIRST SET OF INTERROGATORIES FOR  
10 CONTEMPT. AND IF WE GO TO PAGE 6, PLEASE, INTERROGATORY  
11 NUMBER 2:

12 QUESTION POSED IN INTERROGATORY: IDENTIFY EACH OPINION,  
13 INVESTIGATION, OR STUDY, WRITTEN OR ORAL, WRITTEN FROM APRIL  
14 13, 2006 TO THE PRESENT RELATING TO THE ALLEGED  
15 NON-INFRINGEMENT OF THE '389 PATENT BY THE INFRINGING PRODUCTS  
16 AS MODIFIED OR POTENTIALLY MODIFIED.

17 THE RESPONSE, IF WE COULD HIGHLIGHT THE RESPONSE TO  
18 INTERROGATORY NUMBER 2:

19 ANSWER: SUBJECT TO AND WITHOUT WAIVING THE FOREGOING  
20 OBJECTIONS, ECHOSTAR REFERS TIVO TO DOCUMENTS PREVIOUSLY  
21 INTRODUCED INCLUDING: (1) THE FISH & RICHARDSON OPINION  
22 LETTERS, (2) THE WHITE PAPERS WRITTEN BY ECHOSTAR ENGINEERS,  
23 AND (3) THE EXPERT REPORT OF DR. RHYNE, ALL AS SET FORTH IN  
24 RESPONSE TO INTERROGATORY NUMBER 1 ABOVE.

25 ECHOSTAR FURTHER REFERS TO THE JUNE 30, 2008 DECLARATION

1 OF DAN MINNICK AND DECEMBER 17 AND 18, 2008 DEPOSITION OF DAN  
2 MINNICK.

3 LET'S TURN, MR. MINNICK, TO THE INDEXING FUNCTION THAT  
4 YOU DISCUSSED YESTERDAY. THIS WAS ONE CHANGE YOU MADE AS PART  
5 OF YOUR EFFORTS TO AVOID THE TIVO PATENT, RIGHT?

6 A WELL, ONE CHANGE, THE INDEXING FUNCTION.

7 Q YOU -- YOU MADE A CHANGE, AS YOU TESTIFIED YESTERDAY,  
8 THAT YOU WANTED TO REMOVE THE INDEXING FUNCTION IN ORDER TO  
9 GET AROUND THE TIVO PATENT?

10 A THAT WE REMOVE THE ANALYSIS OF THE AUDIO/VIDEO DATA TO  
11 CREATE THE INDEX, YES, TO AVOID THAT PART OF THE PATENT.

12 Q YOU CALL THIS THE INDEXLESS APPROACH?

13 A YEAH, THAT'S HOW WE DESCRIBE IT.

14 Q IN ANY EVENT, YOU AGREE THAT YOUR PRODUCTS STILL ACTUALLY  
15 HAVE AN INDEX?

16 A YES, WE STILL HAVE INDEXES. THAT'S PART OF SOFTWARE.  
17 THAT'S HOW SOFTWARE FINDS THINGS AND ORGANIZES DATA BUT, YOU  
18 KNOW, THE -- WE CALL IT THAT BECAUSE WE REMOVED THE ANALYSIS  
19 OF THE AUDIO/VIDEO DATA TO CREATE THE INDEX THAT'S OF START  
20 CODES OF I-FRAMES AND OTHER FRAMES AND THE USE OF THAT. SO  
21 THAT'S JUST, YEAH, THAT'S A DESCRIPTION. WE STILL HAVE  
22 INDEXES.

23 Q SO WHAT YOU REMOVED IS A VERY SPECIFIC INDEX, THE START  
24 CODE INDEX?

25 A YEAH, THE KIND OF INDEX, THE INFORMATION AND THE CREATION

1 OF THAT WAS FOUND TO INFRINGE AT TRIAL, THAT'S WHAT WE  
2 REMOVED.

3 Q AND YOU REMOVED IT BECAUSE YOU THOUGHT THAT THIS WAS A  
4 KEY ASPECT OF TIVO'S PATENT, THIS START CODE INDEX?

5 A YES, THAT'S WHAT THEY SPENT MOST OF THE TRIAL ON IN THE  
6 PATENT.

7 Q AND YOU BELIEVE THAT THAT'S THE CASE EVEN WITH RESPECT TO  
8 THE SOFTWARE CLAIMS, CLAIM 31 AND 61?

9 A YES.

10 Q YOU ARE AWARE, OF COURSE, THAT THIS COURT HAS RULED THAT  
11 THE PARSING FUNCTION MEANS ANALYZING?

12 A YES, THE COURT CONSTRUED IT TO ANALYZING THE AUDIO/VIDEO  
13 DATA.

14 Q AND THAT THE COURT'S CONSTRUCTION IS SILENT AS TO AN  
15 INDEX?

16 A THE COURT CONSTRUED IT TO ANALYZE AUDIO/VIDEO DATA, BUT  
17 THEN WHEN YOU GO BACK AND LOOK AT TESTIMONY AND THE PATENT  
18 ITSELF AND, YES, THAT'S WHERE YOU GET WHAT THE PATENT DOES.  
19 ANALYZE HAS TO MEAN SOMETHING. THEY INVENTED SOMETHING, AND  
20 THAT'S HOW WE FOUND OUT.

21 Q SIR, IF IT'S FAIR TO ANSWER MY QUESTION YES OR NO, I  
22 WOULD APPRECIATE IT. LET ME TRY IT AGAIN. THE COURT'S  
23 CONSTRUCTION OF PARSE IS SILENT AS TO INDEX, CORRECT?

24 A THE COURT'S CONSTRUCTION IS ANALYZE. SILENT, I DON'T  
25 KNOW WHAT THAT MEANS, BUT ANALYZE.

1 Q AND THAT CONSTRUCTION WAS NOT APPEALED TO THE COURT OF  
2 APPEALS FOR THE FEDERAL CIRCUIT, CORRECT?

3 A I BELIEVE THAT'S CORRECT.

4 Q NOW YOUR TESTIMONY YESTERDAY AND TODAY ABOUT STATISTICS  
5 AND THE EFFORTS YOU'VE UNDERTAKEN WITH RESPECT TO STATISTICS  
6 ALL RELATES TO THIS WHAT YOU CALL INDEXLESS FEATURE?

7 A THAT RELATES TO HOW YOU DO TRICKPLAY WITHOUT THAT  
8 INFORMATION AVAILABLE.

9 Q WITHOUT THE INDEXING INFORMATION?

10 A WITHOUT THE INDEX OF START CODES, YES.

11 Q YOUR TESTIMONY YESTERDAY AND TODAY ABOUT THE WTT FILE,  
12 THE WRITE TIME TABLE, ALSO RELATES TO HOW YOU DO DVR  
13 FUNCTIONALITY WITHOUT THE START CODE INDEX?

14 A NO, I WOULDN'T SAY THAT'S ACCURATE.

15 Q THE WTT FILE IS AN INDEX?

16 A IT'S AN INDEX, BUT IT'S NOT USED AS AN INDEX, BUT IT'S  
17 NOT USED TO DO TRICKPLAY.

18 Q IT IS USED IN THE PAUSE FUNCTION?

19 A IT'S USED IN THE PAUSE AND TO DISPLAY THE TIME TO THE  
20 USER. AND ACTUALLY ON THE 522S WHEN YOU ARE PLAYING BACK  
21 SOMETHING, IT CAN DISPLAY TIME UP THERE ALSO.

22 THE COURT: CAN DISPLAY WHAT?

23 THE WITNESS: THE TIME UP THERE ALSO, HOW -- WHERE  
24 THEY ARE IN THE STREAM.

25 Q AND YOUR TESTIMONY ABOUT THE BUFFER BAR ALSO RELATES TO

1 THIS WTT WRITE TIME TABLE INDEX?

2 A THE BUFFER BAR IS ON THE 522 WHERE THAT TIME IS DISPLAYED  
3 TO THE USER.

4 Q ALL YOUR TESTIMONY ABOUT BRUTE-FORCE AND WHAT YOU CALL  
5 BRUTE-FORCE ANALYSIS ALSO RELATES TO HOW YOU DO THIS FEATURE  
6 WITHOUT A START CODE INDEX?

7 A YES.

8 Q SO YOU BELIEVE THAT BY ELIMINATING THE CREATION OF A  
9 START CODE TABLE AND USING THAT FOR TRICKPLAYS, YOU NO LONGER  
10 PRACTICE THE PATENT?

11 A WELL, IT'S MORE THAN THAT. IT'S WE'RE REMOVING THE  
12 ANALYSIS OF THE AUDIO/VIDEO DATA. AND BY TIVO'S DESCRIPTION  
13 AT TRIAL AND WHAT'S IN THE PATENT, IT'S REMOVING THE ANALYSIS  
14 OF THE AUDIO/VIDEO DATA THAT IS THE PART THAT ACTUALLY THEN  
15 GOES ON TO CREATE THE START CODE TABLE BECAUSE YOU'RE  
16 ANALYZING THE AUDIO/VIDEO DATA. THAT'S WHAT WE REMOVED AND  
17 THE USE UP THERE.

18 Q AND AS A RESULT, YOU DO NOT BELIEVE YOU PRACTICE THE  
19 CLAIMS IN THE PATENT?

20 A CORRECT.

21 Q NOW, OF COURSE, ECHOSTAR HAS DESIGN DOCUMENTS THAT  
22 DESCRIBE THIS SO-CALLED INDEXLESS APPROACH, RIGHT?

23 A SO-CALLED, YES. WE HAVE DESIGN DOCUMENTS THAT -- HOW WE  
24 IMPLEMENTED OUR NEW DESIGN.

25 Q SO LET'S PUT UP EXHIBIT 3088, TIVO EXHIBIT 3088, AND THIS

1 IS THE MAIN DOCUMENT THAT DESCRIBES YOUR INDEXLESS, IN QUOTES,  
2 APPROACH?

3 A TO BE ACCURATE, THIS IS -- WHEN YOU SAY MAIN DOCUMENT I'M  
4 NOT SURE WHAT YOU MEAN, BUT THIS IS THE DOCUMENT FOR THE 522.

5 Q THIS IS ONE OF THE -- THIS IS AN IMPORTANT DOCUMENT,  
6 RIGHT?

7 A YES.

8 Q IT'S ONE OF THE THREE, TWO OR THREE DOCUMENTS YOU GAVE TO  
9 THE FISH FIRM?

10 A YES.

11 Q THIS DOCUMENT IS AUTHORED BY JAY CARLSON?

12 A IT'S JAY AND -- I'M NOT SURE. I'D HAVE TO LOOK. I CAN'T  
13 REMEMBER, BUT THERE MAY HAVE BEEN SOME OTHER PEOPLE WHO MADE  
14 CHANGES. BUT IT MAY JUST BE JAY, BUT THERE WAS OTHER PEOPLE  
15 WHO WORKED ON IT. I'D HAVE TO LOOK. USUALLY THEY PUT IT IN  
16 THE AUTHOR SECTION.

17 Q LET'S GO TO PAGE 4, PLEASE. MARK TEMPLEMAN AND JAY  
18 CARLSON ARE IDENTIFIED AS THE AUTHORS?

19 A THAT -- THAT DOESN'T REALLY SAY WHO THE AUTHOR IS. IT  
20 SAYS THE FOLLOWING PERSONS HAVE ACCEPTED AND RELEASED THIS  
21 DOCUMENT FOR USE. THAT'S PART OF A SIGN-OFF THAT THEY NEVER  
22 DID. BUT I BELIEVE THE DOCUMENT WAS MOSTLY WRITTEN BY JAY.  
23 IF ANYBODY ELSE MODIFIED, I DON'T THINK IT MATTERS.

24 Q OKAY. SO LET'S GO BACK TO THE FIRST PAGE. THE TITLE  
25 HERE IS: INDEXLESS BRUTE-FORCE DVR?

1 A IS THAT A QUESTION?

2 Q YES.

3 A YES, IT IS.

4 Q NOW, THIS DOCUMENT AUTHORED BY JAY CARLSON WAS ORIGINALLY  
5 -- ORIGINALLY HAD A DIFFERENT TITLE, RIGHT?

6 A I THINK MR. STORER SHOWED THAT YESTERDAY, OR DR. STORER.

7 Q SO IF YOU WOULD PUT UP EXHIBIT 3092, IT WAS FIRST CALLED  
8 INDEXLESS DVR AND TS PARSING, CORRECT?

9 A THAT'S WHAT IT SAYS, YES.

10 Q TS STANDS FOR TRANSPORT STREAM, RIGHT?

11 A YES.

12 Q THIS IS THE STREAM THAT COMES INTO THE BOX FROM THE  
13 SATELLITE?

14 A CORRECT.

15 Q DO YOU RECALL BEING DEPOSED IN THIS CASE IN DECEMBER  
16 2008?

17 A YES.

18 Q ONE OF YOUR FUNCTIONS FOR THAT DEPOSITION WAS TO TESTIFY  
19 AS ECHOSTAR'S CORPORATE DESIGNEE ON A NUMBER OF TOPICS?

20 A YES, I WAS.

21 Q ONE TOPIC WAS ALL CHANGES MADE TO THE INFRINGING  
22 PRODUCTS, RIGHT?

23 A YES.

24 Q YOU DO NOT KNOW AND DID NOT KNOW WHY ECHOSTAR CHANGED THE  
25 NAME OF THE DOCUMENT?

1 A CORRECT.

2 Q THIS DOCUMENT WAS DISCUSSED AT VARIOUS MEETINGS AT  
3 ECHOSTAR, RIGHT?

4 A I DON'T RECALL, YOU KNOW, WHICH VERSION, BUT THIS  
5 DOCUMENT, ONE OF THE DOCUMENTS THAT HAVE BEEN DISCUSSED AT  
6 MEETINGS, YES.

7 Q LAWYERS WERE PRESENT AT SOME OF THESE MEETINGS WHERE THIS  
8 INDEXLESS DOCUMENT WAS DISCUSSED?

9 A YES.

10 Q ECHOSTAR'S PRODUCTS CURRENTLY STILL HAVE A FRAMES LIST?

11 A SOME OF THEM DO. NOT ALL OF THEM.

12 Q THIS FRAMES LIST IS ALSO CALLED A TRICK LIST, RIGHT?

13 A YES.

14 Q AND THAT'S TRUE NOW AND IT WAS TRUE AT TRIAL?

15 A YES.

16 Q ECHOSTAR'S PRODUCTS HAVE A PID FILTERING OPERATION,  
17 RIGHT?

18 A THEY HAVE SINCE DAY ONE.

19 Q AND ECHOSTAR -- INTERNALLY, ECHOSTAR CODE REFERS TO PID  
20 FILTERING AS PARSING?

21 A YEAH, PARSING. PID FILTERING HAS BEEN AROUND SINCE THE  
22 MPEG SPEC, AND PARSING IS A COMMON TERM, AS I SAID, YES.

23 Q IT IS A COMMON ENGINEERING TERM. IT IS -- IT IS --  
24 SORRY. PARSING IS IN FACT A COMMON ENGINEERING TERM FOR PID  
25 FILTERING?

1 A YES, IT IS, CAN BE.

2 Q LET'S TURN NOW TO THE BUFFERS. IF WE COULD PUT UP THE  
3 SLIDE YOU SHOWED YESTERDAY, YOUR SLIDE NUMBER 2. THIS IS A  
4 SLIDE YOU SHOWED YESTERDAY, RIGHT?

5 A YES.

6 Q YOU PREPARED THIS SLIDE?

7 A WELL, I DIDN'T MAKE THE NICE ONE THERE. I MADE A DRAWING  
8 AND SOMEONE ELSE MADE IT, BUT IT REPRESENTS IN A NICER FASHION  
9 WHAT I DREW, YES.

10 Q AND YOU ENSURED IT'S ACCURACY?

11 A YES.

12 Q YOU WANT THE DEPICTION TO BE AS ACCURATE AS POSSIBLE?

13 A IT'S A HIGH LEVEL PICTURE, YES, ACCURATE.

14 Q NOW THE FIRST BUFFER YOU SHOW THERE, IT'S CALLED A  
15 TRANSPORT BUFFER, AND THE SECOND IS CALLED A RECORD BUFFER,  
16 RIGHT?

17 A THAT'S HOW WE NAMED IT, TO TEST SOMETHING TO IDENTIFY AND  
18 TALK ABOUT.

19 Q THIS IS A REPRESENTATION OF HOW YOUR PRODUCTS WORKED AT  
20 TRIAL, RIGHT?

21 A YES.

22 Q NOW THE FIRST -- THIS RELATES TO BROADCOM ONLY, RIGHT?

23 A CORRECT.

24 Q BECAUSE YOU DIDN'T MAKE THE CHANGE TO THE BUFFERING  
25 SCHEME IN THE 50X?

1 A CORRECT.

2 Q NOW THE FIRST MEMORY SPACE SHOWING THERE IN THE TRANSPORT  
3 BUFFER IS ACTUALLY SUBDIVIDED INTO TWO COMPARTMENTS, RIGHT?

4 I'M SORRY, INTO TEN COMPARTMENTS, RIGHT?

5 A YES. IN THE OLD BOXES THOSE WERE -- THAT LINEAR BUFFER  
6 WAS A POOL OF TEN DIFFERENT BUFFERS THAT WERE MANAGED BY THE  
7 SOFTWARE.

8 Q EVEN NOW YOUR SINGLE BUFFER DESIGN, OR WHAT YOU CALL A  
9 SINGLE BUFFER, IS ACTUALLY DIVIDED INTO TEN BUFFERS, RIGHT?

10 A THAT'S WHERE IT DEPENDS ON HOW YOU SAY IT, BECAUSE IF YOU  
11 COMPARE IT TO THIS, THIS WAS -- THIS ONE WAS A POOL OF TEN  
12 DIFFERENT BUFFERS. AND THE WAY THE HARDWARE WORKED IS IT WAS  
13 GIVEN -- BECAUSE THERE IS A DIFFERENCE. THIS IS --

14 Q SIR --

15 A -- WHAT EXPLAINS THE DIFFERENCE IS WHY WE CALL IT A  
16 SINGLE OR A MULTIPLE.

17 MR. IANCU: MOVE TO STRIKE, YOUR HONOR.

18 THE COURT: VERY WELL. MR. MINNICK, IF YOU'LL LISTEN  
19 CAREFULLY TO THE QUESTION, ANSWER HIS QUESTION, THEN I AM  
20 CONFIDENT YOUR ATTORNEY WILL TAKE YOU ON REDIRECT.

21 THE WITNESS: OKAY.

22 THE COURT: THIS WILL MOVE ALONG MUCH QUICKER.  
23 REPHRASE YOUR QUESTION.

24 Q (BY MR. IANCU:) CURRENTLY YOUR -- SORRY. CURRENTLY WHAT  
25 YOU HAVE CALLED A SINGLE BUFFER IS ACTUALLY DIVIDED INTO TEN

1 BUFFERS, RIGHT?

2 A THERE'S TEN LOGICAL SEGMENTS, YES.

3 Q THANK YOU. BACK TO THE OLD PRODUCT HERE AND LOOKING AT  
4 THE TRANSPORT BUFFER WHICH IS ACTUALLY SUBDIVIDED INTO TEN  
5 BUFFERS, THE SIZE OF EACH ONE OF THOSE TEN BUFFERS WAS  
6 APPROXIMATELY EQUAL, ABOUT 141,000 OR SO, RIGHT?

7 A I BELIEVE THAT'S WHAT IT IS.

8 Q NOW THIS OTHER BUFFER THAT YOU SHOWED TO THE RIGHT OF IT  
9 IN THE OLD PRODUCT, THE RECORD BUFFER, THAT IS ACTUALLY THE  
10 SIZE OF ONLY ONE OF THOSE TEN BUFFERS, ALSO APPROXIMATELY  
11 141,000 OR SO?

12 A YES.

13 Q SO THE TWO SIZES, UNLIKE THE DIAGRAM HERE, ARE TOTALLY  
14 DIFFERENT. IN OTHER WORDS, THE FIRST TRANSPORT BUFFER SHOWN  
15 THERE SHOULD BE TEN TIMES AS LARGE AS THE RECORD BUFFER?

16 A I DON'T THINK THIS BOX SIZE HAS ANYTHING TO DO WITH  
17 RELATIVE SIZES, BUT THEY ARE DIFFERENT SIZES.

18 Q OKAY. AND YOU SHOW THESE BUFFERS ON THE DIAGRAM AS  
19 SEPARATE, RIGHT, TWO DIFFERENT BOXES?

20 A YES.

21 Q IN FACT, MR. MINNICK, THESE TWO BUFFERS IN THE OLD  
22 PRODUCT WERE ON THE SAME PIECE OF PHYSICAL MEMORY, CORRECT?

23 A YES, IT'S IN THE SAME SDRAM.

24 Q THANK YOU.

25 A ALL BUFFERS ARE.

1 Q AND ECHOSTAR DID NOT GO TO PEOPLE'S HOMES TO CHANGE THE  
2 SDRAM CHIP?

3 A NO, WE DID NOT.

4 Q NOW THE -- BACK TO YOUR DIAGRAM HERE IN THE OLD PRODUCT,  
5 YOU CALL IT THE TRANSPORT BUFFER AND LINEAR BUFFER, RIGHT?

6 A YES.

7 Q THE TERM LINEAR BUFFER IS REALLY NOT ACCURATE, IS IT?

8 A IT IS TO ME.

9 Q ECHOSTAR'S OWN DOCUMENTS DO NOT REFER TO THIS TRANSPORT  
10 BUFFER AS A LINEAR BUFFER, DO THEY?

11 A I DON'T KNOW, BUT THAT'S THE DESCRIPTION THAT WE USED AND  
12 EXPLAINS HOW THE BUFFER IS USED.

13 Q YOU SAID YOUR DOCUMENTS CALLED THIS BUFFER IN THE OLD  
14 PRODUCT A RING BUFFER?

15 A IT MIGHT.

16 Q IN FACT THE SOURCE CODE CALLS IT A RING BUFFER?

17 A IT MIGHT.

18 Q IF YOU COULD GO OVER TO YOUR SLIDE 3, YOU SUGGESTED --  
19 YOU SUGGESTED TO THE COURT YESTERDAY THAT YOU CHANGED THE  
20 LINEAR BUFFER TO A CIRCULAR BUFFER, RIGHT?

21 A YES.

22 Q IN FACT, THAT LINEAR SHOULD BE RING. SO YOUR SUGGESTION  
23 IS NOW THAT YOU CHANGED A RING BUFFER TO A CIRCULAR BUFFER?

24 A THOSE TWO DESCRIPTIONS, AS I DESCRIBED, THEY DO TWO  
25 DIFFERENT FUNCTIONS AND SO THAT'S WHY THERE IS A DISTINCTION.

1 SO IF IT SAID RING BUFFER, IF YOU LIKE I CAN EXPLAIN HOW THAT  
2 BUFFER WORKED AND HOW THIS CIRCULAR BUFFER WORK AND WHAT'S THE  
3 DIFFERENCE. BUT THERE IS A DIFFERENCE, AND THAT'S WHY THEY  
4 ARE NAMED DIFFERENTLY.

5 Q BUT THE NAME REALLY SHOULD BE A RING BUFFER, AND THE RING  
6 BUFFER -- IN FACT, YOUR SOURCE CODE REFERS TO THE TRANSPORT  
7 BUFFER AS A RING BUFFER BOTH IN THE OLD PRODUCTS AND THE NEW  
8 PRODUCTS. BOTH ARE RING BUFFERS, CORRECT?

9 A IT MIGHT SAY RING BUFFER, AND THAT ONE SAYS CIRCULAR,  
10 CORRECT.

11 Q BUT YOUR DOCUMENTS CALL IT A RING BUFFER. BOTH BEFORE  
12 TRIAL, BOTH IN THE PRODUCT AT TRIAL IN 2006 AND TODAY, BOTH  
13 ARE CALLED A RING BUFFER, TRUE?

14 A YEAH, THAT MIGHT BE TRUE.

15 Q IN YOUR VIEW, MR. MINNICK, THE CURRENT SOFTWARE IN  
16 BROADCOM DVRS CANNOT PREVENT BUFFERS FROM BEING OVERWRITTEN,  
17 RIGHT?

18 A WELL, THERE'S A LOT OF BUFFERS IN THE BOX, SO YOU'D HAVE  
19 TO BE MORE SPECIFIC, FOR ONE.

20 Q WELL, I'M SPEAKING ABOUT WHAT'S AT ISSUE IN THIS CASE,  
21 YOUR TRANSPORT BUFFER THAT WE SAW IN YOUR FIGURE, THE RECORD  
22 BUFFER, THOSE BUFFERS. IN THE CURRENT PRODUCT, SOFTWARE  
23 CANNOT PREVENT BUFFERS FROM BEING OVERWRITTEN, RIGHT?

24 A WELL, NUMBER ONE, IT CERTAINLY CAN'T ON THE RECORD  
25 BECAUSE THAT BUFFER IS GONE, THAT'S TRUE. AND ON THE BUFFER

1 THAT'S LEFT, IT CAN'T PREVENT THE DATA THAT THE HARDWARE IS  
2 WRITING IN. THE DATA HARDWARE WRITES THAT DATA IN, AND IT  
3 CAN'T STOP THE HARDWARE FROM OVERWRITING THE DATA, THAT IS  
4 CORRECT.

5 Q THIS IS A SECOND CHANGE YOU MADE FOR THE BROADCOM  
6 PRODUCTS. WE DISCUSSED INDEXLESS. THIS IS A SECOND CHANGE  
7 THAT YOU MADE IN ORDER TO AVOID THE PATENT, RIGHT?

8 A THE REMOVAL OF TIVO'S AUTOMATIC FLOW CONTROL IS A SECOND  
9 CHANGE.

10 Q AUTOMATIC FLOW CONTROL WAS DEFINED BY THIS COURT AS SELF-  
11 REGULATED, RIGHT?

12 A YES.

13 Q THE COURT'S CONSTRUCTION SAYS NOTHING ABOUT OVERWRITING  
14 DATA INTO BUFFERS?

15 A THE ACTUAL CLAIM ITSELF DOESN'T, BUT WHEN YOU LOOK AT  
16 WHAT'S PROVIDED AT TRIAL --

17 Q SIR, MY QUESTION IS, THE COURT'S CONSTRUCTION IS SILENT  
18 AS TO OVERWRITING DATA INTO BUFFERS?

19 A IF SILENT MEANS SELF-REGULATED, THAT'S WHAT THE COURT  
20 CONSTRUCTION IS, YES.

21 Q AND THAT CLAIM CONSTRUCTION WAS NOT APPEALED BY ECHOSTAR  
22 AT THE FEDERAL CIRCUIT LEVEL?

23 A I DON'T THINK SO. I DON'T RECALL, BUT I DON'T THINK SO.

24 Q NOW, THE BROADCOM DVRS DISCUSSED AT TRIAL, IN YOUR VIEW  
25 AS THE ENGINEER RESPONSIBLE FOR THOSE PRODUCTS, PREVENTED

1 BUFFERS FROM BEING OVERWRITTEN. IS THAT TRUE?

2 A IT PREVENT -- THE OLD SOFTWARE, IF I CAN REFER TO THE  
3 RECORD, THE OLD SOFTWARE BECAUSE IT WAS -- HAD TIVO'S  
4 AUTOMATIC FLOW CONTROL THAT CONTROLLED THE ACCESS TO THAT  
5 BUFFER, GUARANTEED THAT DATA IN THAT BUFFER WOULD NEVER BE  
6 OVERWRITTEN BECAUSE THAT WAS THE BUFFER THAT WAS AUTOMATICALLY  
7 FLOW CONTROLLED, AS TIVO DESCRIBED. SO THE DATA IN THAT  
8 BUFFER IS -- WAS GUARANTEED NEVER TO BE OVERWRITTEN. IT WAS  
9 IMPOSSIBLE.

10 Q SO YOUR TESTIMONY TODAY IS THAT IN THE BROADCOM PRODUCTS  
11 THAT WERE BEING DISCUSSED AT TRIAL, IN YOUR TECHNICAL OPINION,  
12 ECHOSTAR'S SOFTWARE WAS WRITTEN TO ASSURE THAT THE DVR DOES  
13 NOT OVERWRITE DATA IN ANY BUFFER THAT IT NEEDS TO USE AT A  
14 LATER TIME, CORRECT?

15 A I'M SORRY. THAT WAS LONG AND I LOST YOU, BUT DO IT ONE  
16 MORE TIME.

17 Q YOUR TESTIMONY IS --

18 A OKAY.

19 Q -- THAT IN THE BROADCOM PRODUCTS THAT WERE BEING  
20 DISCUSSED AT TRIAL, ECHOSTAR'S SOFTWARE WAS WRITTEN TO ASSURE  
21 THAT A DVR DOES NOT OVERWRITE DATA IN ANY BUFFER THAT IT NEEDS  
22 TO USE AT A LATER TIME, CORRECT?

23 A AT TRIAL WE HAD THE ONE BUFFER THAT WAS GUARANTEED NOT TO  
24 BE. AND AT TRIAL THE OTHER BUFFER, WE COULD LOSE DATA UP  
25 THERE, AND WE ARGUED THAT. IS THAT YOUR QUESTION? BECAUSE WE

1 COULD LOSE DATA, BECAUSE AT TRIAL WE ARGUED THAT UPSTREAM THE  
2 HARDWARE COULD LOSE DATA, BUT THE RECORD BUFFER WAS GUARANTEED  
3 NOT TO LOSE DATA.

4 Q SIR, IF YOU COULD FAIRLY ANSWER MY QUESTION YES OR NO,  
5 PLEASE. LET ME TRY IT AGAIN. IN THE BROADCOM PRODUCTS THAT  
6 WERE BEING DISCUSSED AT TRIAL, ECHOSTAR'S SOFTWARE WAS WRITTEN  
7 TO ASSURE THAT THE DVR DOES NOT OVERWRITE DATA IN ANY BUFFER  
8 THAT IT NEEDS TO USE AT A LATER TIME, TRUE?

9 A YEAH, THAT WOULD HAVE BEEN -- I THINK THAT'S TRUE AS I  
10 LOOK AT THE TWO BUFFERS. THE ONE BUFFER DIDN'T GET  
11 OVERWRITTEN AND THE SECOND DIDN'T, SO, YES, ON THE RECORD  
12 SIDE.

13 Q THAT'S TRUE, CORRECT?

14 A I BELIEVE SO.

15 Q THANK YOU. AT TRIAL, HOWEVER, YOU TOLD THE JURY AND THIS  
16 COURT THE PRECISE OPPOSITE OF WHAT YOU JUST SAID. LET'S TAKE  
17 A LOOK AT A TRIAL TRANSCRIPT FROM APRIL 6, 2006, PAGE 75.

18 PAGE 75, LINES 11-15. THIS IS ON THE SCREEN RIGHT NOW --

19 A I WAS JUST LOOKING TO SEE --

20 Q -- UNDER QUESTION FROM MS. KREVANS, YOUR LAWYER.

21 QUESTION: AND BACK TO THE BUFFERS, YOUR SOFTWARE,  
22 ECHOSTAR'S SOFTWARE IS WRITTEN AND ASSURES THAT A DVR DOES NOT  
23 OVERWRITE DATA IN ANY BUFFER THAT IT NEEDS TO USE AT A LATER  
24 TIME?

25 ANSWER: NO, THAT IS NOT TRUE.

1 LET'S TURN TO A SEPARATE SUBJECT, MR. MINNICK. IF WE  
2 COULD PUT UP, PLEASE, TIVO EXHIBIT 3195.7.1. WELL, LET'S  
3 START AT 3195, ECHOSTAR'S AMENDED DISCLOSURES IN THIS CASE,  
4 3195.

5 SO THIS IS ECHOSTAR'S AMENDED DISCLOSURES MADE IN THIS  
6 CASE FOR THE CONTEMPT PROCEEDING. THEY STATED, QUOTE, ON PAGE  
7 6, QUOTE: THE BUFFER IS NOT FILLED WITH DATA BY A SOURCE  
8 OBJECT OR OTHER SOFTWARE. INSTEAD, HARDWARE MOVES DATA INTO A  
9 BUFFER. DO YOU SEE THAT?

10 A YES.

11 Q AND THIS IS WHAT YOU TOLD THIS COURT YESTERDAY AS WELL?

12 A YES.

13 Q NOW, IN DEPOSITION YOU SAID, QUOTE: "THE SOFTWARE WRITES  
14 INTO THOSE BUFFERS AND IT IS CONTINUOUSLY WRAPPING," CLOSE  
15 QUOTE.

16 A I'M SORRY. WHEN DID I SAY THAT?

17 Q IN DEPOSITION IN DECEMBER, ON DECEMBER 17, 2008, YOU SAID  
18 THE SOFTWARE WRITES INTO THOSE BUFFERS.

19 A WHICH BUFFERS?

20 Q YOU, AFTER THAT, SO THIS IS IN DEPOSITION, VOLUME 1, PAGE  
21 156, LINE 2-16. BUT LET'S JUST GO TO YOUR ERRATA SHEET. DO  
22 YOU RECALL SUBMITTING AN ERRATA SHEET IN THIS CASE TO YOUR  
23 DEPOSITION?

24 MS. KREVANS: YOUR HONOR, COULD I REQUEST THAT IF MR.  
25 IANCU IS GOING TO DIRECT THE WITNESS TO HIS DEPOSITION, GIVE

1 HIM A MOMENT TO LOOK AT IT BEFORE HE THEN ALSO ASKS HIM TO  
2 LOOK AT HIS ERRATA SHEET.

3 THE COURT: VERY WELL.

4 MR. IANCU: SURE.

5 THE COURT: LET HIM REVIEW IT.

6 MR. IANCU: LET'S --

7 THE COURT: WHICH PAGE? DO YOU HAVE IT ON THE  
8 OVERHEAD?

9 MR. IANCU: YES. DECEMBER 17, 2008 -- THE  
10 TRANSCRIPT, PLEASE -- PAGE 156, 2-16.

11 THE COURT: WHICH LINES ARE WE TALKING ABOUT?

12 MR. IANCU: AND SPECIFICALLY LINE 9 AND 10. IF WE  
13 COULD BLOW UP 9 AND 10, PLEASE.

14 Q (BY MR. IANCU:) NOW, YOU RECALL SUBMITTING AN ERRATA  
15 SHEET IN THIS CASE FOLLOWING YOUR DEPOSITION, MR. MINNICK?

16 THE COURT: WELL, LET HIM READ -- WHY DON'T YOU LET  
17 HIM READ THIS?

18 MR. IANCU: YEAH, SURE, APOLOGIES.

19 A TARTER, I'M TRYING TO FIGURE OUT WHAT TARTER IS. AND WE  
20 DO POST-TRIALS.

21 Q YEAH, THIS IS DECEMBER 17.

22 A OKAY. I SEE THAT.

23 Q DO YOU RECALL THE ERRATA SHEET?

24 A THAT'S THE CHANGES THAT WE MADE TO MY DEPOSITION.

25 Q CORRECT.

1 A YES.

2 Q AND IN THE ERRATA SHEET YOU CHANGED THESE LINES, IF WE  
3 COULD GO TO THE SECOND PAGE THERE, LINE 6-7. IT'S ON THE  
4 SCREEN NOW. YOU CHANGED IT TO: THE HARDWARE WRITES INTO THOSE  
5 BUFFERS.

6 A I'M SORRY. IS THAT A QUESTION?

7 Q I'M JUST POINTING OUT THAT YOU MADE THOSE CHANGES.

8 A YES, WE DID THAT FOR ACCURACY. THAT'S THE PURPOSE OF  
9 REVIEWING THE DEPOSITION IS TO MAKE SURE IT'S ACCURATE.

10 Q MR. MINNICK, THERE ARE SIGNIFICANTLY MORE BROADCOM  
11 PRODUCTS OUT THERE THAN 50X PRODUCTS, TRUE?

12 A YES.

13 Q IN FACT, IT'S ABOUT A TWO-TO-ONE OR A THREE-TO-ONE RATIO  
14 ACTUALLY, CORRECT?

15 A I THINK IT MIGHT BE FOUR-TO-ONE, BUT, YEAH, IT'S  
16 CERTAINLY IN THAT RANGE.

17 Q THANK YOU, SIR. NOTHING FURTHER AT THIS TIME.

18 THE COURT: REDIRECT.

19 REDIRECT EXAMINATION

20 BY MS. KREVANS:

21 Q MR. MINNICK, YOU RECALL THAT MR. IANCU ASKED YOU A COUPLE  
22 OF QUESTIONS ABOUT SOMETHING CALLED A FRAMES LIST?

23 A YES.

24 Q WHAT PRODUCTS HAVE SOMETHING CALLED A FRAMES LIST?

25 A THE 522/625S.

1 Q WHEN IS THE FRAMES LIST CREATED IN THOSE PRODUCTS?

2 A IT'S ON PLAYBACK. AS EVERYBODY HAS DONE, ALL DVRS HAVE  
3 TO DO, YOU HAVE TO FIND THE FRAMES ON -- AT SOME POINT, AND WE  
4 DO IT ON PLAYBACK. AND THOSE ARE ONLY FOUND DURING PLAYBACK,  
5 AND THOSE ARE ACTUALLY THE ONES THAT WE HAVE ACTUALLY GIVEN TO  
6 WHAT'S CALLED THE DECODER. AND IT'S A CIRCULAR LIST THAT HAS  
7 ABOUT FIVE SECONDS OF INFO.

8 Q OKAY. WITH RESPECT TO THE DOWNLOADS THAT YOU DID OF YOUR  
9 DESIGN-AROUND SOFTWARE, DID YOU CONSIDER THE LEVEL OF CUSTOMER  
10 COMPLAINTS THAT YOU GOT IN RESPONSE TO THEM SERIOUS?

11 A YES, BECAUSE WE GOT CUSTOMER COMPLAINTS ABOUT THE REBOOT  
12 ISSUES, THE BLACK -- THOSE ARE THE ONES THAT REALLY SPIKED AND  
13 WHERE WE ARE NOTIFIED BY THE CALL CENTER.

14 Q AND DID YOU REWRITE THE SOFTWARE AND DOWNLOAD MORE  
15 SOFTWARE IN RESPONSE TO THOSE COMPLAINTS?

16 A AS YOU CAN SEE, WE HAD TO DO IT MANY TIMES. AND THAT'S A  
17 LOT OF WORK. AND EVERY TIME YOU DO A DOWNLOAD IT'S A RISK  
18 THAT YOU INTRODUCE NEW BUGS BECAUSE ENGINEERS AREN'T PERFECT.  
19 BUT, YES, WE REDID IT MANY TIMES.

20 Q OKAY. A COUPLE OF QUESTIONS ABOUT THE WTT FILES. IS THE  
21 GRAPHIC CREATED USING THE DATA IN THOSE FILES NECESSARY IN ANY  
22 WAY TO PERFORM THE TRICKPLAY FUNCTIONS IN YOUR BOXES?

23 A NO.

24 Q WHAT ABOUT THE TBK FILES?

25 A NO. IT'S NOT USED, NOT NECESSARY.

1 Q IS THE INFORMATION STORED IN EITHER OF THOSE FILES USED  
2 IN ANY WAY TO PERFORM THE TRICKPLAY FUNCTIONS IN YOUR BOXES?

3 A NO, IT'S NOT. IT COULDN'T HELP.

4 MS. KREVANS: NOTHING FURTHER, YOUR HONOR.

5 THE COURT: RE CROSS.

6 MR. IANCU: NOTHING FURTHER, YOUR HONOR.

7 THE COURT: YOU MAY STEP DOWN, MR. MINNICK. CALL  
8 YOUR NEXT WITNESS.

9 MR. MCELHINNY: THANK YOU, YOUR HONOR. WE ARE  
10 GETTING HIM FROM THE WITNESS ROOM. YOUR HONOR, ECHOSTAR CALLS  
11 MR. LAWRENCE AARONSON.

12 THE COURT: MR. AARONSON, IF YOU WILL PLEASE COME  
13 AROUND AND BE SWORN.

14 (WITNESS SWORN)

15 MR. MCELHINNY: MAY I PROCEED, YOUR HONOR?

16 THE COURT: YES, YOU MAY.

17 LAWRENCE A. AARONSON, DEFENDANTS' WITNESS, SWORN

18 DIRECT EXAMINATION

19 BY MR. MCELHINNY:

20 Q GOOD MORNING, MR. AARONSON. WOULD YOU STATE YOUR FULL  
21 NAME FOR THE RECORD, AND WOULD YOU SPELL YOUR LAST NAME,  
22 PLEASE?

23 A SURE. I AM LAWRENCE ALLEN AARONSON, LAST NAME IS  
24 A-A-R-O-N-S-O-N.

25 Q MR. AARONSON, WHAT IS YOUR PROFESSION?

1 A I AM A PATENT ATTORNEY.

2 Q THAT WAS MY PARTNER, RACHEL KREVANS, IN THE HALLWAY. SHE  
3 IS VERY INTERESTED IN THIS BUT SHE HAD TO TAKE A CALL. HAVE  
4 YOU EVER TESTIFIED IN COURT BEFORE, SIR?

5 A NO, I HAVE NOT.

6 Q OKAY. HOW LONG HAVE YOU BEEN PRACTICING LAW?

7 A SINCE 1994, SO COMING UP ON ABOUT 15 YEARS.

8 Q ARE YOU A REGISTERED MEMBER OF THE PATENT AND TRADEMARK  
9 OFFICE?

10 A YES, I AM.

11 Q CAN YOU TELL US A LITTLE BIT ABOUT YOUR EDUCATIONAL  
12 BACKGROUND?

13 A I HAVE A BACHELOR'S OF SCIENCE IN ELECTRICAL ENGINEERING  
14 FROM LEHIGH UNIVERSITY IN BETHLEHEM, PENNSYLVANIA. AND MY LAW  
15 DEGREE IS FROM TEMPLE UNIVERSITY IN PHILADELPHIA,  
16 PENNSYLVANIA.

17 Q MR. AARONSON, THE CHARMING WOMAN IN FRONT OF YOU IS  
18 TRYING TO TAKE DOWN EVERY WORD THAT YOU SAY, SO IF YOU COULD  
19 JUST SLOW IT DOWN JUST A TOUCH, THAT WILL MAKE IT EASIER FOR  
20 HER.

21 HAVE YOU EVER WORKED, SIR, AS AN ENGINEER?

22 A YES, I DID.

23 Q AND CAN YOU TELL US A LITTLE BIT ABOUT THAT?

24 A I WORKED FOR GENERAL ELECTRIC AND WAS ATTACHED TO THEIR  
25 AEROSPACE GROUP. WORKED THERE FROM JANUARY OF 1989 THROUGH

1 1991 WHEN I WENT TO LAW SCHOOL AS A SYSTEMS ENGINEER.

2 Q AND WHAT IS A SYSTEMS ENGINEER?

3 A THEY ARE ENGINEERS THAT ARE CHARGED WITH OVERLOOKING THE  
4 ENTIRETY OF A BIG SYSTEM. THE END RESULT OF WHAT MIGHT --  
5 WHAT THE JOB DETAILS WERE, WERE TO PROVIDE REQUIREMENT  
6 DOCUMENTS, SPECIFICATIONS, NOT ACTUALLY TO BUILD SOMETHING,  
7 BUT TO SPECIFY HOW A SYSTEM WOULD OPERATE.

8 Q AND WHAT KIND OF PROJECTS DID YOU WORK ON WHEN YOU WERE  
9 EMPLOYED FOR GENERAL ELECTRIC?

10 A I WAS TASKED WITH COMMUNICATION SYSTEMS. IN PARTICULAR, I  
11 WROTE SOFTWARE THAT ANALYZED AND SIMULATED SATELLITE  
12 COMMUNICATION SYSTEMS THAT WOULD COMMUNICATE BETWEEN  
13 SATELLITES, AND THEN SATELLITE TO GROUND AND GROUND TO  
14 SATELLITE.

15 Q SO, YOU ACTUALLY WROTE SOME OF THIS SATELLITE  
16 COMMUNICATION SOFTWARE, IS THAT RIGHT?

17 A YES.

18 Q AND IN WHAT LANGUAGES DID YOU WRITE IN, SIR?

19 A IT WAS PRIMARILY FORTRAN BECAUSE I INHERITED THE CODE  
20 FROM PRIOR PROJECTS. BUT TOWARDS THE END OF MY TERM THERE, WE  
21 WERE CONVERTING IT TO C.

22 Q SIR, HAVE YOU EVER HELD AN IN-HOUSE LEGAL POSITION?

23 A YES, I DID.

24 Q AND COULD YOU TELL US ABOUT THAT?

25 A I WORKED FOR MOTOROLA BROADBAND COMMUNICATION SYSTEMS.

1 IT'S ONE OF THE SECTORS OF MOTOROLA INCORPORATED. AND THEIR  
2 PRIMARY PRODUCT WAS DIGITAL CABLE SET-TOP EQUIPMENT.

3 Q AND JUST, WE ARE ALL FAMILIAR WITH THIS, BUT WHAT DO YOU  
4 MEAN WHEN YOU SAY SET-TOP EQUIPMENT?

5 A IT'S THE DEVICE THAT SITS ON TOP OF YOUR -- IN YOUR  
6 LIVING ROOM NEXT TO YOUR TELEVISION SET THAT HELPS TUNE AND  
7 BRING IN CABLE TV.

8 Q AND WHAT WAS YOUR JOB WORKING FOR MOTOROLA IN THIS AREA  
9 OF SET-TOP?

10 A I WAS THE PATENT ATTORNEY IN CHARGE OF THEIR DIGITAL SET-  
11 TOP GROUP, VOICE OVER IP GROUP, AND CABLE MODEM GROUP.

12 Q SIR, HAVE YOU EVER BEEN A PARTNER WITH THE LAW FIRM OF  
13 FISH & RICHARDSON?

14 A YES, I HAVE.

15 Q IN WHAT OFFICE, SIR?

16 A IT WAS THE ATLANTA OFFICE.

17 Q AND FOR WHAT PERIOD OF TIME WERE YOU A PARTNER THERE?

18 A IT WAS EARLY 2006 THROUGH THE END OF 2007.

19 Q MR. AARONSON, YOU SHOULD HAVE A BINDER OF EXHIBITS IN  
20 FRONT OF YOU.

21 A YES, I DO.

22 Q IF YOU WOULD OPEN THAT, PLEASE, TO THE TAB 5062.

23 A OKAY.

24 Q CAN YOU TELL US WHAT THAT DOCUMENT IS, PLEASE?

25 A THIS IS A COPY OF MY RESUME.

1 Q AND ARE YOU THE AUTHOR OF THAT?

2 A YES, I AM.

3 Q AND IS IT ACCURATE?

4 A YES, IT IS.

5 Q AS OF WHAT TIME, SIR?

6 A AS OF SUMMER OF 2008.

7 Q THANK YOU. WHILE YOU WERE EMPLOYED AT FISH & RICHARDSON,  
8 WERE YOU EVER RETAINED TO PROVIDE OPINIONS TO ECHOSTAR IN  
9 CONNECTION WITH TIVO'S '389 PATENT?

10 A YES, I WAS.

11 Q CAN YOU TELL US WHEN THAT OCCURRED?

12 A IT WAS MARCH OF 2006.

13 Q MARCH, SIR?

14 A MARCH OR APRIL 2006. IT WAS APRIL 2006.

15 Q CAN YOU TELL US WHAT IT WAS EXACTLY THAT YOU WERE ASKED  
16 TO DO?

17 A WE WERE ASKED TO TAKE A LOOK AT THE '389 PATENT AND  
18 SEVERAL PROPOSED DESIGN-AROUND OPTIONS THAT ECHOSTAR WAS IN  
19 THE PROCESS OF DEVELOPING AS A RESULT OF THE ADVERSE JURY  
20 VERDICT HERE IN TEXAS.

21 Q AS PART OF THE WORK THAT YOU WERE DOING, WERE POTENTIAL  
22 DESIGNS EVER COMMUNICATED TO YOU BY ECHOSTAR?

23 A THERE WERE MANY POTENTIAL DESIGNS THAT WERE COMMUNICATED.  
24 INITIALLY, ECHOSTAR HAD SEVERAL THAT THEY PROVIDED TO ME TO  
25 ANALYZE WITH RESPECT TO THE CLAIMS OF THE '389 PATENT.

1 Q SIR, IF YOU WOULD LOOK IN YOUR BINDER AT EXHIBIT 5158.

2 DO YOU HAVE THAT DOCUMENT IN YOUR BINDER?

3 A YES, I DO.

4 Q CAN YOU TELL US WHAT THAT DOCUMENT IS, SIR?

5 A THESE ARE SOME OF THE ORIGINAL PROPOSED DESIGNS THAT WERE  
6 FORWARDED TO ME BY ECHOSTAR.

7 Q AND CAN YOU TELL US THE DATE OF THAT, PLEASE?

8 A THE DOCUMENT IS DATED MAY 18<sup>TH</sup> OF 2006.

9 Q THANK YOU. SIR, APPROXIMATELY HOW LONG DID YOU SPEND  
10 WORKING ON THIS PROJECT FOR ECHOSTAR?

11 A WELL, WE BEGAN IT IN THE END OF APRIL AND WORKED ON THIS  
12 ALL THE WAY THROUGH AUGUST, SO THAT WAS ROUGHLY FOUR OR FIVE  
13 MONTHS' WORTH OF WORK, FIVE MONTHS.

14 Q AND CAN YOU DESCRIBE FOR US, PLEASE, IN SOME LEVEL OF  
15 DETAIL, WHAT THE PROCESS THAT YOU ENGAGED IN LOOKED LIKE?  
16 WHAT HAPPENED?

17 A SURE. THE -- IT BEGAN WITH ECHOSTAR PROVIDING ME TRIAL  
18 TESTIMONY, EXHIBITS, THE EXPERT REPORTS, A LOT OF THE  
19 BACKGROUND MATERIAL, AND THAT WAS AT THE EARLY STAGES OF THE  
20 PROCESS. THEY SENT THEIR PROPOSED DESIGNS, WHICH YOU CAN SEE  
21 EVIDENCED BY THE EXHIBIT 5158, BASICALLY TO GIVE ME TIME TO  
22 LEARN ABOUT THE THINGS THAT WERE -- THAT TRANSPIRED AT THE  
23 TRIAL, AS WELL AS THEIR THINKING IN TERMS OF POTENTIAL DESIGN-  
24 AROUNDS.

25 THE PROCESS MOVED ON FROM THERE WHERE I ACTUALLY MET WITH

1 THE ECHOSTAR ENGINEERS AND LAWYERS IN COLORADO AT THEIR  
2 FACILITIES IN JUNE OF 2006 WHERE WE DISCUSSED SEVERAL OF THESE  
3 PROPOSED DESIGN-AROUNDS, AND THEY GAVE ME SOME MORE DETAIL AS  
4 THEY WERE IN THE PROCESS OF WORKING ON THESE DESIGN-AROUNDS.  
5 THEY WERE WORKS IN PROGRESS CLEARLY AT THE TIME.

6 FROM THERE I WAS ABLE TO GATHER MORE TECHNICAL DETAILS AS  
7 THEY BECAME AVAILABLE, AND THIS WAS A VERY MUCH BACK AND FORTH  
8 PROCESS BETWEEN MYSELF AND THE ECHOSTAR LAWYERS MEETING REALLY  
9 THROUGHOUT THE SUMMER OF 2006. THAT PROCESS INVOLVED RANKING  
10 OR SEEING IF CERTAIN PROPOSED DESIGNS WERE BETTER THAN OTHERS.  
11 THOSE THAT WE CONSIDERED TO BE BETTER, AND THIS WAS REALLY  
12 THROUGH MY ANALYSIS, BECAME THE SUBJECT MATTER OF THE OPINIONS  
13 THAT WERE ULTIMATELY RENDERED IN AUGUST OF 2006. BUT AGAIN,  
14 IT WAS A VERY BACK AND FORTH PROCESS, VERY INTERACTIVE BETWEEN  
15 MYSELF, THE LAWYERS AT ECHOSTAR, AS WELL AS THEIR TECHNICAL  
16 PERSONNEL.

17 Q WAS THIS INTERACTION SIMPLY IN WRITING, SIR?

18 A NOT ALWAYS. SOMETIMES IN WRITING, BUT MANY TELEPHONE  
19 CONFERENCES WERE INVOLVED AS WELL.

20 Q THE WITNESS JUST BEFORE YOU TESTIFIED TO THREE PIECES OF  
21 WRITTEN COMMUNICATION, AND I AM TRYING TO FIGURE OUT IN MY  
22 MIND WHY YOU ARE DESCRIBING A LOT OF BACK AND FORTH IF THERE  
23 WERE ONLY SORT OF THREE LETTERS THAT WENT BACK AND FORTH.

24 A YES, THE MAIN BACK AND FORTH IS WITH REGARD TO ONE  
25 PARTICULAR PIECE, ONE PARTICULAR WRITING. IT WAS THE

1 TECHNICAL DESCRIPTION THAT I HAD PREPARED THAT WAS  
2 INCORPORATED INTO THE OPINIONS THAT WAS SENT TO ECHOSTAR, AND  
3 I ASKED FOR COMMENTS BECAUSE CLEARLY I WANTED TO MAKE SURE  
4 THAT EVERYTHING WAS CORRECT AND ACCURATE AS ECHOSTAR VIEWED  
5 ITS PROPOSED DESIGNS AND THE FUNCTIONALITY OF THOSE DESIGNS.

6 Q I BELIEVE YOU SAID YOU REVIEWED THE ENTIRE TRIAL  
7 TRANSCRIPT. IS THAT CORRECT?

8 A I DID.

9 Q DID YOU REVIEW THE COURT'S CLAIM CONSTRUCTION ORDER?

10 A YES, I DID.

11 Q DID YOU EVER REVIEW ACTUAL SOURCE CODE OF THE PROGRAM,  
12 WHAT WAS ACTUALLY ENDED UP BEING DOWNLOADED TO THE CUSTOMERS?

13 A NO, ACTUALLY I DID NOT. AT THE POINT AT WHICH I WAS --  
14 THE CLAIMS WERE REALLY FUNCTIONAL IN NATURE, SO REALLY WHAT I  
15 WAS EXAMINING WAS THE PROPOSED FUNCTIONALITIES THAT ECHOSTAR  
16 INTENDED TO IMPLEMENT. ULTIMATELY, THEY WOULD BE REDUCED TO  
17 SOURCE CODE, BUT AT THE TIME AT WHICH WE WERE ANALYZING IT,  
18 REALLY WHAT MATTERED WAS THE FUNCTIONALITIES THAT THEY WERE  
19 PROPOSING, SO THE SOURCE CODE WAS UNNECESSARY.

20 Q AT THE TIME THAT YOU RENDERED WRITTEN OPINIONS, WERE YOU  
21 CONFIDENT THAT YOU WERE CAPABLE TO RENDER A COMPETENT OPINION  
22 BASED ON THE MATERIAL AND INFORMATION THAT HAD BEEN PROVIDED  
23 TO YOU?

24 A YES, AN EXTREME LEVEL OF FUNCTIONAL DESCRIPTION OF THE  
25 PROPOSED DESIGN-AROUNDS WAS PROVIDED TO ME, SO I FELT THAT WAS

1 MORE THAN ADEQUATE TO PREPARE THE OPINIONS.

2 Q I THINK I MAY HAVE TIPPED OFF THE ANSWER TO THIS NEXT  
3 QUESTION. DID YOU ACTUALLY PRODUCE WRITTEN OPINIONS, SIR?

4 A YES, WE DID.

5 Q OKAY. WERE YOUR -- AND WERE YOU THE DRAFTS PERSON ON  
6 THOSE OPINIONS?

7 A YES, I WAS.

8 Q WERE THOSE OPINIONS REVIEWED BY ANYONE ELSE AT FISH &  
9 RICHARDSON BEFORE THEY WERE ISSUED?

10 A THEY WERE REVIEWED BY MR. HILLMAN AS HE WAS PART OF THE  
11 TEAM IN PREPARING THIS OPINION.

12 Q THIS IS ROBERT HILLMAN?

13 A ROBERT HILLMAN.

14 Q AND WHAT POSITION DID MR. HILLMAN HOLD IN THE FIRM?

15 A ROBERT HILLMAN, HE IS ONE OF THE MOST SENIOR PRINCIPALS  
16 IN THE FIRM. HE IS IN THE BOSTON OFFICE, AND HE HAS EXTENSIVE  
17 EXPERIENCE, SO THEREFORE HE WAS A PERFECT FIT FOR WORKING ON  
18 THE OPINIONS WITH ME.

19 Q AND DO YOU RECALL HOW OR WHY HE WAS CHOSEN TO WORK ON  
20 THIS PROJECT?

21 A MY UNDERSTANDING WAS THAT THE CLIENT REALLY WANTED A  
22 VERY, VERY SENIOR PERSON WITH LOTS OF LITIGATION EXPERIENCE  
23 AND UNDERSTANDING OF THE NUANCES OF LITIGATION, AND AGAIN, HE  
24 HAS 40 YEARS EXPERIENCE SO HE WAS A GOOD FIT AND WAS VERY  
25 HELPFUL THROUGH THE PROCESS.

1 Q TO YOUR KNOWLEDGE, DID MR. HILLMAN ACTUALLY REVIEW THE  
2 WRITTEN OPINIONS?

3 A OH, YES.

4 Q DID HE MAKE ANY SUGGESTIONS TO YOU ABOUT MATERIAL THAT  
5 SHOULD BE INCLUDED IN THOSE OPINIONS?

6 A YES, HE DID. A COUPLE OF SUGGESTIONS, ONE DEALING  
7 SPECIFICALLY WITH THE ISSUE OF JUDICIAL ESTOPPEL, AND SEVERAL  
8 OTHER SUGGESTIONS REGARDING THE LEGAL ANALYSIS.

9 Q SIR, IF YOU LOOK IN YOUR BINDER TO EXHIBIT 5070.

10 A OKAY.

11 Q CAN YOU TELL US WHAT THAT DOCUMENT IS?

12 A THIS IS THE FIRST OPINION DIRECTED TO WHAT WERE CALLED  
13 THE SOFTWARE CLAIMS, CLAIMS 31 AND 61, AND ANALYZED PROPOSED  
14 DESIGN-AROUNDS THAT ELIMINATED ANYTHING THAT COULD BE  
15 CONSIDERED AUTOMATIC FLOW CONTROL OR REGULATION OF THE  
16 BROADCOM CHIP AS IT RECEIVED INPUT OR BROADCAST DATA.

17 Q SIR, THE DOCUMENT IS IN THE RECORD SO I AM NOT GOING TO  
18 HAVE YOU WALK THROUGH IT, BUT JUST COULD YOU TELL US AT A HIGH  
19 LEVEL WHAT --

20 THE COURT: WHY DON'T, BEFORE WE START THIS  
21 TESTIMONY, WE TAKE OUR MORNING BREAK.

22 MR. MCELHINNY: THANK YOU, YOUR HONOR.

23 THE COURT: WE WILL BE IN RECESS ABOUT 15 TO 20  
24 MINUTES.

25 (RECESS AT 10:29 A.M., UNTIL 10:49 A.M., OPEN COURT)

1 THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE YOUR  
2 DIRECT EXAMINATION.

3 MR. MCELHINNY: THANK YOU.

4 DIRECT EXAMINATION CONTINUES

5 BY MR. MCELHINNY:

6 Q MR. AARONSON, WE WERE AT EXHIBIT 5070.

7 A YES.

8 Q AND AGAIN, CAN YOU JUST TELL US SO THAT WE HAVE IT WHAT  
9 THE SUBJECT MATTER OF THAT OPINION IS?

10 A SURE. THIS OPINION WAS DIRECTED TO WHAT WERE CALLED THE  
11 SOFTWARE CLAIMS, CLAIMS 31 AND 61, WITH RESPECT TO SEVERAL  
12 ECHOSTAR DVR MODELS. AND IT WAS AN ANALYSIS OF THE PROPOSED  
13 DESIGN-AROUNDS THAT REMOVED AUTOMATIC FLOW CONTROL.

14 Q AND WHEN YOU SAY SEVERAL MODELS, JUST SO WE HAVE THE  
15 SHORTHAND, WERE YOU TALKING ABOUT THE BROADCOM BOXES HERE?

16 A THESE WERE THE BROADCOM BOXES, YES.

17 Q IF YOU WOULD LOOK, SIR, AT EXHIBIT 5071.

18 A OKAY.

19 Q WHAT IS THIS EXHIBIT, SIR?

20 A THIS OPINION IS DIRECTED TO ALL CLAIMS OF THE '389 PATENT  
21 WITH REGARD TO THE INDEXING PARSING LIMITATION, AND IT WAS THE  
22 REMOVAL OF ANY ANALYSIS OF THE INCOMING BROADCAST OR INPUT  
23 DATA BY THE PROPOSED DESIGN-AROUNDS BEFORE RECORDING TO THE  
24 HARD DRIVE, SO IT WAS REMOVAL OF INDEXING AND PARSING.

25 Q AND WHEN YOU SAY PARSING, YOU MEAN PARSING OF AUDIO AND

1 VIDEO DATA. IS THAT CORRECT?

2 A PARSING OF THE AUDIO AND VIDEO DATA, YES.

3 Q THANK YOU. YOU MENTIONED THAT YOU HAD REVIEWED THE  
4 ENTIRE TRIAL TRANSCRIPT BEFORE YOU ISSUED THESE OPINIONS,  
5 CORRECT?

6 A CORRECT.

7 Q WERE YOU AWARE AT THE TIME THAT YOU ISSUED THESE OPINIONS  
8 THAT AT TRIAL ECHOSTAR'S EXPERTS HAD TESTIFIED THAT PID  
9 FILTERING MET THE PARSING LIMITATION OF THE '389 PATENT?

10 A I AM AWARE OF THAT.

11 Q AND DID YOU CONSIDER THAT IN FORMING YOUR OPINION?

12 A YES, I DID.

13 Q AND WAS IT DETERMINATIVE IN ANY WAY?

14 A NO, IT WAS NOT BECAUSE ULTIMATELY AT THE END OF THE DAY  
15 THAT WAS NOT THE CONSTRUCTION ADOPTED BY THE JUDGE, NOR WAS IT  
16 THE POSITION ADVOCATED BY TIVO AT TRIAL.

17 Q SIR, IF YOU WOULD LOOK AT EXHIBIT 5073.

18 A OKAY.

19 Q CAN YOU TELL US WHAT THIS DOCUMENT IS?

20 A THIS IS A REVISED OPINION WITH REGARD TO CLAIMS 31 AND  
21 61, THE SOFTWARE CLAIMS. IT INCLUDED SOME CLARIFICATIONS TO  
22 TECHNICAL DESCRIPTIONS. UPON DELIVERING THE FIRST OPINION,  
23 ECHOSTAR HAD REVIEWED IT AND COME BACK WITH SOME  
24 CLARIFICATIONS WITH REGARD TO THE PROPOSED MODIFICATIONS.

25 Q AND WHAT WERE THE NATURE OF THE PROPOSED CLARIFICATIONS?

1 A IT WAS REALLY WITH REGARD ONLY TO THE TECHNICAL  
2 DESCRIPTIONS THAT I HAD PUT IN THE ORIGINAL OPINION.

3 Q AT ANY TIME DID ECHOSTAR ATTEMPT TO WRITE FOR YOU YOUR --  
4 OR TELL YOU WHAT LEGAL OPINION TO RENDER IN THIS CASE?

5 A ABSOLUTELY NOT.

6 Q IF YOU WOULD LOOK, PLEASE, AT EXHIBIT 5074.

7 A OKAY.

8 Q CAN YOU TELL US WHAT THAT DOCUMENT IS?

9 A THIS IS A REVISED OPINION WITH REGARD TO THE BROADCOM  
10 BOXES AND THE HARDWARE CLAIMS. AND AGAIN IT WAS PROVIDED --  
11 IT INCLUDED SOME TECHNICAL CLARIFICATIONS THAT WERE PROVIDED  
12 TO ME BY ECHOSTAR AFTER THEIR REVIEW OF THE FIRST OPINION.

13 Q SIR, IF YOU LOOK AT EXHIBIT 5076.

14 A OKAY.

15 Q CAN YOU TELL US WHAT THAT DOCUMENT IS?

16 A THIS IS AN OPINION WITH REGARD TO ALL OF THE TIVO CLAIMS  
17 IN THE '389 PATENT AND WHAT WERE CALLED THE ECHOSTAR 50X DVRS.  
18 THIS IS A DIFFERENT PRODUCT THAN THE BROADCOM PRODUCTS.

19 Q AND DID YOU ANALYZE THAT PRODUCT SEPARATELY?

20 A THIS WAS A SEPARATE ANALYSIS.

21 Q SIR, IN RENDERING THESE OPINIONS, DID YOU DEPART IN ANY  
22 WAY FROM JUDGE FOLSOM'S CONSTRUCTION OF THE CLAIM TERMS?

23 A NO, NOT AT ALL.

24 Q AFTER YOU ISSUED THESE WRITTEN OPINIONS, DID YOU HAVE  
25 FURTHER DISCUSSIONS WITH ECHOSTAR?

1 A WE DID, YES.

2 Q AND COULD YOU JUST TELL US BRIEFLY ABOUT THAT PROCESS?

3 A AFTER WE DELIVERED THE FIRST OPINION ON AUGUST 11<sup>TH</sup>, A  
4 CALL WAS SCHEDULED WITH MYSELF, MR. HILLMAN, AND SEVERAL  
5 INDIVIDUALS AT ECHOSTAR TO ACTUALLY ORALLY DELIVER THE WRITTEN  
6 OPINION, FIELD THEIR QUESTIONS. IN A SENSE, THEY PLAYED  
7 DEVIL'S ADVOCATE TO CHALLENGE US WITH OUR LEGAL CONCLUSIONS TO  
8 MAKE SURE THAT EVERYBODY WAS COMFORTABLE WITH WHAT WE HAD PUT  
9 IN THE WRITTEN OPINION.

10 Q DID MR. BLUM PARTICIPATE IN THAT CONVERSATION?

11 A YES.

12 Q DID MR. ST. JOHN-LARKIN PARTICIPATE IN THAT CONVERSATION?

13 A YES, HE DID.

14 Q SIR, AT THE TIME YOU PREPARED THESE WRITTEN OPINIONS,  
15 WERE YOU AWARE THAT ECHOSTAR HAD PREVIOUSLY BEEN FOUND TO  
16 INFRINGE THE '389 PATENT?

17 A YES, I WAS.

18 Q WERE YOU AWARE THAT ECHOSTAR WAS ATTEMPTING TO DESIGN, TO  
19 INVENT AND DESIGN A NEW DVR SOFTWARE THAT WOULD NOT INFRINGE  
20 THE '389 PATENT?

21 A THAT WAS THE SUBJECT MATTER OF ALL THE PROPOSED  
22 MODIFICATIONS, YES.

23 Q AT THE TIME THAT YOU ISSUED THESE OPINIONS, DID YOU  
24 INTEND THAT ECHOSTAR WOULD BE ABLE TO RELY ON THEM?

25 A OH, ABSOLUTELY.

1 Q DO YOU STAND BEHIND YOUR WORK HERE, SIR?

2 A YES, I DO.

3 MR. MCELHINNY: NO FURTHER QUESTIONS, YOUR HONOR.

4 THE COURT: CROSS EXAMINATION.

5 MR. CHU: THANK YOU, YOUR HONOR.

6 CROSS EXAMINATION

7 BY MR. CHU:

8 Q GOOD MORNING.

9 A GOOD MORNING.

10 Q I THINK YOU HAVE A NOTEBOOK WITH SOME MATERIALS,  
11 EXHIBITS, AND OTHER THINGS. WE MIGHT REFER TO THEM. DO YOU  
12 HAVE THAT?

13 A YES.

14 Q NOW, YOUR OPINION LETTERS DEAL WITH TWO ISSUES. ONE HAS  
15 TO DO WITH AUTOMATIC FLOW CONTROL. IS THAT RIGHT?

16 A THAT'S CORRECT.

17 Q AND ONE HAS TO DO WITH PARSING?

18 A RIGHT, YES.

19 Q AND WITH RESPECT TO AUTOMATIC FLOW CONTROL, YOU WERE  
20 INVOLVED IN COMING UP WITH A DESIGN OF AN ALLEGED DESIGN-  
21 AROUND. IS THAT CORRECT?

22 A I WAS NOT PERSONALLY INVOLVED IN COMING UP WITH THE  
23 DESIGNS. THE ECHOSTAR ENGINEERS WERE THE ONES PROPOSING THE  
24 DESIGNS.

25 Q AND SO EARLY ON WHEN YOU FIRST GOT INVOLVED THEY HAD

1 ALREADY FORMULATED THE PROPOSED DESIGN-AROUND FOR AUTOMATIC  
2 FLOW CONTROL. IS THAT RIGHT?

3 A NOT ENTIRELY. THEY HAD SEVERAL PROPOSED IDEAS, DESIGNS.  
4 THESE WERE AT A VERY HIGH LEVEL, NOT VERY COMPLETE, BUT THEY  
5 WERE JUST PROPOSED IDEAS THAT THEY KNEW WERE TECHNICALLY  
6 FEASIBLE.

7 Q AND ONE OF THOSE PROPOSED DESIGNS, I JUST WANT TO FOCUS  
8 ON THE ONE THAT RELATES TO AUTOMATIC FLOW CONTROL, WAS CALLED  
9 BY THE PEOPLE AT ECHOSTAR, QUOTE, "SINGLE BUFFER," END QUOTE?

10 A THAT'S HOW WE REFERRED TO IT, YES.

11 Q AND YOU AND MR. HILLMAN ALSO REFERRED TO IT AS, QUOTE,  
12 "THE SINGLE BUFFER," END QUOTE, ALLEGED DESIGN-AROUND?

13 A WE MAY HAVE REFERRED TO IT IN THAT IN THE SHORTHAND, BUT  
14 CLEARLY THE END GOAL OF THE DESIGN-AROUNDS WAS TO ELIMINATE  
15 FLOW CONTROL.

16 Q AND YOU THOUGHT THAT WHEN YOU AND OTHERS REFERRED TO IT  
17 AS THE SINGLE BUFFER DESIGN-AROUND, THAT THAT WAS AN ACCURATE  
18 STATEMENT?

19 A IT WAS -- AGAIN, SINGLE BUFFER WAS A SHORTHAND  
20 TERMINOLOGY FOR A COUPLE OF PROPOSED DESIGN-AROUNDS, SO IT WAS  
21 ACCURATE WITH RESPECT TO THE DESIGNS THAT WERE PRESENTED TO  
22 ME.

23 Q THERE WAS A DESIGN-AROUND THAT SO FAR AS YOU KNOW THAT  
24 WAS IMPLEMENTED THAT WAS CALLED THE SINGLE BUFFER DESIGN-  
25 AROUND. IS THAT CORRECT?

1 A THAT WAS THE SHORTHAND TERM FOR IT, YES.

2 Q AND AS FAR AS YOU ARE CONCERNED, WHEN YOU USE THAT PHRASE  
3 AND OTHER PEOPLE USE THAT PHRASE IT WAS ACCURATE, CORRECT?

4 A IT WAS ACCURATE AS A REPRESENTATION OF THE PROPOSED  
5 DESIGN-AROUNDS.

6 Q NOW, IS THE FOLLOWING CORRECT THAT THE CLAIMS AT ISSUE,  
7 31 AND 61, REFER TO, QUOTE, "A BUFFER," END QUOTE?

8 A THE CLAIMS DO RECITE A BUFFER, YES.

9 Q AND YOU ARE FAMILIAR WITH THE FACT THAT A BUFFER MEANS  
10 AND WAS INTERPRETED TO MEAN ONE OR MORE BUFFERS, CORRECT?

11 A I DON'T RECALL THAT NOW, NO.

12 Q WELL, AS SOMEONE WHO PRACTICES PATENT LAW, WHEN THERE IS  
13 A TERM THAT IS A CAR, A SOMETHING, UNLESS THERE IS SOMETHING  
14 MORE SPECIFIC SAID, YOU UNDERSTAND IT MEANS ONE OR MORE?

15 A YES, IT COULD BE INTERPRETED THAT WAY, YES.

16 Q AND WITH THAT IN MIND, DID YOU EVER SAY TO THE PEOPLE AT  
17 ECHOSTAR, HOW CAN A SINGLE BUFFER BE A DESIGN-AROUND WHEN THE  
18 CLAIM ITSELF HAS THE PHRASE, QUOTE, "A BUFFER," END QUOTE?  
19 DID YOU ASK THAT QUESTION? DO YOU RECALL SPECIFICALLY ASKING  
20 THAT QUESTION?

21 A THAT WASN'T THE QUESTION TO BE ASKED.

22 Q SO YOU DID NOT ASK THE QUESTION, SIR?

23 A NO, BECAUSE THAT WAS --

24 Q THANK YOU.

25 A -- NOT RELEVANT.

1 Q THANK YOU. AND YOU REVIEWED ALL OF THE TRIAL TESTIMONY,  
2 SO YOU REVIEWED TESTIMONY TO THE EFFECT THAT THERE WERE TEN  
3 BUFFERS IN THE PRODUCTS AT TRIAL, CORRECT?

4 A I WOULD HAVE REVIEWED IT. I DON'T RECALL IT AT THIS  
5 STAGE.

6 Q BUT THERE WERE MULTIPLE BUFFERS?

7 A THERE WERE MULTIPLE BUFFERS, YES.

8 Q AND YOU ARE JUST NOT SURE WHETHER IT WAS EIGHT, OR TEN,  
9 OR SOME OTHER NUMBER LIKE THAT?

10 A RIGHT NOW I COULD NOT TELL YOU.

11 Q AND YOU DECIDED BASED ON YOUR REVIEW OF THE TRIAL  
12 TRANSCRIPTS THAT A SINGLE BUFFER SOLUTION WOULD BE A DESIGN-  
13 AROUND, CORRECT?

14 A I DECIDED BASED ON MY REVIEW OF THE TRANSCRIPTS THAT THE  
15 REMOVAL OF AUTOMATIC FLOW CONTROL WAS A DESIGN-AROUND.

16 Q LET ME ASK THIS VERY SPECIFICALLY. BASED ON THE REVIEW  
17 OF THE TRANSCRIPTS YOU THOUGHT THE, QUOTE, "SINGLE BUFFER,"  
18 END QUOTE, SO-CALLED DESIGN-AROUND WOULD BE AN EFFECTIVE  
19 DESIGN-AROUND, CORRECT?

20 A AS I TESTIFIED EARLIER, THAT WAS A SHORTHAND --

21 Q SIR, IF YOU CAN FAIRLY ANSWER THE QUESTION YES OR NO.

22 THE COURT: COULD YOU ANSWER THAT YES OR NO?

23 A I -- YES.

24 Q THANK YOU. NOW WHEN YOU REVIEWED THE TRANSCRIPTS YOU  
25 REVIEWED THE TRANSCRIPTS THAT INCLUDED THE TESTIMONY OF THE

1 FIVE EXPERT WITNESSES ON TECHNICAL ISSUES FROM BOTH SIDES,  
2 CORRECT?

3 A YEAH, I DID.

4 Q AND PART OF YOUR ANALYSIS INCLUDED WHAT YOU THOUGHT THAT  
5 DR. GIBSON'S APPLICATION WAS OF THE COURT'S CLAIM  
6 CONSTRUCTION. IS THAT RIGHT?

7 A YES.

8 Q AND IT WAS ALSO YOUR INTERPRETATION OF WHAT OTHER  
9 WITNESSES, WHETHER IT WAS MR. BARTON, PROFESSOR STORER, DR.  
10 RHYNE, DR. JOHNSON, OR DR. POLISH, WHATEVER THEIR  
11 INTERPRETATIONS WERE OF THE COURT'S CLAIM CONSTRUCTION. IS  
12 THAT CORRECT?

13 A THAT WAS INCORPORATED INTO MY ANALYSIS, YES.

14 Q AND YOU REMEMBER THAT IN READING THE TRIAL TRANSCRIPT  
15 ECHOSTAR ATTEMPTED TO HAVE DR. POLISH TESTIFY AS TO HIS VIEW,  
16 HIS INTERPRETATION OF WHAT HE THOUGHT THAT DR. GIBSON'S  
17 INTERPRETATION WAS. DO YOU REMEMBER THAT?

18 A NO, THAT I DON'T REMEMBER.

19 Q I'LL REPRESENT TO YOU THAT THAT TOOK PLACE. LET ME SEE  
20 IF I CAN REMIND YOU A LITTLE BIT MORE. THEN THERE WERE SOME  
21 OBJECTIONS AND THEY WERE SUSTAINED. AND THEN ECHOSTAR'S  
22 LAWYER CONTINUED TO ASK DR. POLISH QUESTIONS ABOUT HIS VIEW OF  
23 WHAT SUPPOSEDLY DR. GIBSON'S INTERPRETATION WAS, AND THOSE  
24 WERE ALSO SUSTAINED. AND THE QUESTIONS CONTINUED UNTIL HIS  
25 HONOR THREATENED ECHOSTAR'S LAWYER BY SAYING IF YOU DO THAT

1 AGAIN, IN ESSENCE, I AM GOING TO LEVY SANCTIONS. DO YOU  
2 RECALL THAT NOW?

3 A I HONESTLY DO NOT, NO.

4 Q DO YOU HAVE THE VIEW THAT IT IS PROPER FOR AN EXPERT  
5 WITNESS AT TRIAL FOR ONE SIDE TO GIVE HIS VIEW OF WHAT HE  
6 THINKS THE OTHER EXPERT WITNESSES' VIEW ON THE COURT'S CLAIM  
7 CONSTRUCTION IS AS OPPOSED TO TESTIFYING WITH RESPECT TO THE  
8 COURT'S CLAIM CONSTRUCTION AND ONLY THE COURT'S CLAIM  
9 CONSTRUCTION?

10 A I DON'T KNOW. I MEAN, MY UNDERSTANDING IS --

11 Q THANK YOU, SIR. BUT YOU DID CONSIDER WHAT YOUR VIEW IN  
12 YOUR MIND WAS OF WHAT DR. GIBSON'S, OR PROFESSOR STORER'S, OR  
13 MR. BARTON'S, OR THE OTHER EXPERTS' VIEW OF THE COURT'S CLAIM  
14 CONSTRUCTION, CORRECT?

15 A AGAIN, I REVIEWED EVERYTHING, YES.

16 Q AND SO YOUR ANALYSIS DIDN'T STOP WITH THE ACTUAL CLAIM  
17 TERM AUTOMATIC FLOW CONTROL, CORRECT?

18 A IT WAS AN ANALYSIS --

19 Q IS THAT CORRECT, SIR?

20 A NO, IT DID NOT, RIGHT.

21 Q AND IT WOULD BE FAIR TO TAKE THE COURT'S CLAIM  
22 CONSTRUCTION BECAUSE THE COURT'S CLAIM CONSTRUCTION WAS IT  
23 MEANS SELF-REGULATED, THAT'S CORRECT?

24 A UH-HUH.

25 Q THE ANSWER IS YES?

1 A YES.

2 THE COURT: IS THAT A YES?

3 THE WITNESS: THAT'S A YES.

4 THE COURT: MRS. CRAWFORD IS TAKING DOWN YOUR  
5 COMMENTS, SO IT'S A LITTLE HARD TO --

6 THE WITNESS: I APOLOGIZE.

7 THE COURT: - FOR HER TO FOLLOW A NOD OR A UH-HUH.

8 THE WITNESS: I APOLOGIZE.

9 Q (BY MR. CHU:) BUT YOU DIDN'T STOP WITH THE COURT'S CLAIM  
10 CONSTRUCTION. YOU WENT BEYOND IT BASED ON YOUR INTERPRETATION  
11 OF WHAT YOU THOUGHT WERE THE INTERPRETATIONS OF THE OTHER  
12 EXPERT WITNESSES BASED ON YOUR REVIEW OF THE TRIAL TRANSCRIPT,  
13 CORRECT?

14 A I LOOKED AT EVERYTHING, BUT THE CLAIM CONSTRUCTION --

15 Q THANK YOU.

16 A -- RULED THE TODAY.

17 Q SIR, YOU --

18 A I LOOKED AT EVERYTHING.

19 Q -- YOU LOOKED AT THE COURT TRIAL TRANSCRIPTS OF ALL THE  
20 EXPERT WITNESSES, CORRECT?

21 A THAT'S CORRECT.

22 Q AND YOU TOOK THAT INTO CONSIDERATION IN RENDERING YOUR  
23 OPINION, CORRECT?

24 A ABSOLUTELY.

25 Q OKAY. NOW, YOU SAID THE COURT'S CLAIM CONSTRUCTION RULED

1 THE DAY. IS THE FOLLOWING FAIR? THERE IS NO PLACE IN THE  
2 CLAIM ITSELF, THE ACTUAL CLAIM TERMS, THAT SUGGEST OR STATE --  
3 LET ME BACK UP. I'M JUST REFERRING TO THE ACTUAL CLAIM TERMS,  
4 NOT THE COURT'S CLAIM CONSTRUCTION FOR NOW. THERE IS NO CLAIM  
5 TERM THAT STATES CLAIM 31 AND 61 ARE LIMITED TO A SINGLE  
6 BUFFER SOLUTION, CORRECT?

7 A THERE IS NO CLAIM TERM FOR THAT, THAT'S CORRECT.

8 Q AND THE CLOSEST CLAIM TERM THAT REFERS TO THE NUMBER OF  
9 BUFFERS IS THE PHRASE, QUOTE, "A BUFFER," END QUOTE, WHICH  
10 MEANS ONE OR MORE BUFFERS, CORRECT?

11 A RIGHT.

12 Q NOW, LET'S GO TO THE COURT'S CLAIM CONSTRUCTION. YOU  
13 STUDIED THAT CAREFULLY, AND THERE IS NOTHING IN THE EXPRESS  
14 WORDS OF THE COURT'S CLAIM CONSTRUCTION THAT SAYS AUTOMATIC  
15 FLOW CONTROL IS LIMITED TO AUTOMATIC FLOW CONTROL THAT HAS  
16 MORE THAN ONE BUFFER OR MULTIPLE BUFFERS, CORRECT? THERE IS  
17 NOTHING EXPLICIT IN WHAT THE COURT STATED?

18 A I DON'T KNOW WITHOUT LOOKING RIGHT NOW.

19 Q WELL, LET ME REFRESH. AUTOMATIC FLOW CONTROL WAS DEFINED  
20 BY THE COURT TO MEAN SELF-REGULATED. IS THAT CORRECT?

21 A THAT'S WHAT I RECALL.

22 Q AND THAT WAS IT?

23 A UH-HUH, YES.

24 Q SO WITH THAT DEFINITION IT WOULD BE FAIR TO SAY, JUST  
25 READING THAT DEFINITION, WHETHER YOU ARE A LAWYER, A LAYMAN, A

1 JUDGE, OR ANYONE ELSE, LOOKING JUST AT THOSE WORDS, NO ONE  
2 WOULD SAY, AH-HA, THIS REQUIRES MULTIPLE BUFFERS, CORRECT?

3 A NO.

4 Q THANK YOU. NOW, YOU HAD ANOTHER SOLUTION THAT BECAME THE  
5 SUBJECT OF YOUR FINAL OPINION LETTERS, AND IT REFERRED TO A  
6 CLAIM TERM, QUOTE, "PARSING," END QUOTE. IS THAT CORRECT?

7 A THAT'S CORRECT.

8 Q AND PARSING IS THE TERM THAT ACTUALLY APPEARS IN CLAIMS  
9 31 AND 61, CORRECT?

10 A CORRECT.

11 Q AND THE COURT CONSTRUED PARSING, CORRECT?

12 A THEY DID, THE COURT DID.

13 Q AND THE COURT SAID PARSING MEANS ANALYZING, CORRECT?

14 A CORRECT.

15 Q IS IT CORRECT THAT IN THE TOTALITY OF THE CLAIM LANGUAGE  
16 OF 31 AND 61, YOU NEVER SEE THE WORD INDEXING, CORRECT?

17 A THAT IS CORRECT.

18 Q YOU NEVER SEE THE WORD INDEX OR ANY VARIATION OF INDEXING  
19 OR INDEX, CORRECT?

20 A NOT AT ALL.

21 Q YOU NEVER SEE WORDS STATING A LIMITATION OR A CLAIM  
22 ELEMENT THAT START CODES MUST BE DETECTED, CORRECT?

23 A THAT'S CORRECT.

24 Q YOU NEVER SEE ANYTHING SUGGESTING THAT A TABLE HAS TO BE  
25 BUILT AS A RESULT, CORRECT?

1 A THAT IS CORRECT.

2 Q WE ARE ONLY FOCUSED ON THE WORD PARSING, CORRECT?

3 A PARSING AND ITS MODIFICATION OF OTHER TERMS.

4 Q YES. BUT WE ARE FOCUSED ON THE TERM PARSING, CORRECT?

5 A PARSING IS THE KEY TERM.

6 Q AND THE ECHOSTAR PROPOSAL TO YOU WAS THAT THEY WOULD

7 DESIGN-AROUND THE TERM PARSING BY HAVING THE INDEX FILE

8 REMOVED, CORRECT?

9 A THE DESIGN-AROUND WAS TO REMOVE ANALYZING OF THE AUDIO

10 AND VIDEO DATA.

11 Q LET ME BACK UP. DID THEY CALL IT INDEX FILE REMOVAL?

12 A THAT WAS A SHORTHAND TERM, YES.

13 Q DID YOU ALSO CALL IT INDEX FILE REMOVAL?

14 A I'M SURE I DID.

15 Q AND YOU WOULD AGREE WITH ME IF THERE WAS A CLAIM ELEMENT

16 THAT REQUIRED AN INDEX FILE AND YOU REMOVED IT, THEN ONE WOULD

17 NO LONGER INFRINGE THE CLAIM, RIGHT?

18 A I AGREE, YES.

19 Q OKAY. AND IF THERE WAS ANOTHER CLAIM ELEMENT THAT SAID

20 SUPERCALIFRAGILISTIC, AS AN EXAMPLE, BUT IT WAS INTERPRETED BY

21 THE COURT TO MEAN INDEX FILE, AN INFRINGER WHO REMOVED THE

22 INDEX FILE WOULD IN GENERAL NO LONGER INFRINGE THE CLAIM,

23 CORRECT?

24 A FOR THAT TERM, YES.

25 Q THE TOTALITY OF THE CLAIM TERM AND THE COURT'S

1 INTERPRETATION FOR PURPOSES OF INFRINGEMENT AT THE ORIGINAL  
2 TRIAL WAS THAT PARSING MEANS ANALYZING, RIGHT?

3 A THAT IS CORRECT.

4 Q AND YOU HAD THE UNDERSTANDING THAT ECHOSTAR DECIDED NOT  
5 TO APPEAL THAT CLAIM CONSTRUCTION AT ALL, CORRECT?

6 A I -- I DON'T KNOW THAT NOW.

7 Q WELL, YOU WOULD AGREE WITH ME, ASSUMING THAT'S THE CASE,  
8 THAT ECHOSTAR OUGHT NOT TO BE ABLE TO ARGUE FOR SOME BRAND NEW  
9 CLAIM CONSTRUCTION IN THIS PROCEEDING IF IT WAS A PIVOT POINT  
10 FOR ITS ARGUMENTS OF NON-INFRINGEMENT?

11 A MY UNDERSTANDING IS THE COURT HAS RENDERED ITS CLAIM  
12 CONSTRUCTION.

13 Q THANK YOU.

14 THE COURT: REDIRECT?

15 MR. CHU: NO, I'M NOT --

16 THE COURT: OH, EXCUSE ME.

17 MR. CHU: -- JUST PUTTING A NOTEBOOK DOWN, YOUR  
18 HONOR.

19 MR. MCELHINNY: YES, YOUR HONOR.

20 THE COURT: I WAS BEING OPTIMISTIC, OVERLY  
21 OPTIMISTIC. YOU MAY CONTINUE.

22 Q (BY MR. CHU:) MR. AARONSON, YOU THINK YOU RENDERED AN  
23 INDEPENDENT OPINION. IS THAT CORRECT?

24 A OH, YES.

25 Q YOU KNEW FROM BEGINNING TO END THAT ECHOSTAR WANTED AN

1 OPINION THAT THEY DIDN'T INFRINGE BY THE CHANGES THAT THEY  
2 WOULD MAKE LATER?

3 A THEY NEVER CAME OUT AND SAID WE WANT AN OPINION OF NON-  
4 INFRINGEMENT. THEY ASKED ME TO --

5 Q SIR, CAN YOU FAIRLY ANSWER THE QUESTION? DID YOU HAVE  
6 THE UNDERSTANDING THAT THEY WOULD WANT A WRITTEN OPINION THAT  
7 THEY DIDN'T INFRINGE?

8 A YES.

9 Q THANK YOU. AND IS IT FAIR TO SAY THAT YOU DID ALMOST ALL  
10 THE WORK FOR THE OPINION?

11 A I DID A BULK OF IT, YES.

12 Q MAYBE TWENTY TIMES MORE THAN MR. HILLMAN?

13 A PROBABLY, YES.

14 Q AND MR. HILLMAN RELIED ON YOUR WORK. IS THAT CORRECT?

15 A I'M NOT SURE WHAT YOU MEAN BY RELIED.

16 Q DO YOU KNOW WHAT THE WORD RELY MEANS?

17 A I DO BUT --

18 Q HE COUNTED ON YOUR WORK?

19 A OH, YES, HE DID, YEAH.

20 Q HE TRUSTED YOUR WORK?

21 A YES.

22 Q YOU SPENT OVER 180 HOURS. HE SPENT NINE HOURS. HE  
23 DIDN'T REPLICATE ALL OF YOUR WORK?

24 A OH, NO, NOT AT ALL.

25 Q MR. HILLMAN RELIED ON YOUR WORK?

1 A YES.

2 Q THANK YOU. NOW, YOU UNDERSTAND WHAT'S MEANT BY A PRIMARY  
3 SOURCE MATERIAL VERSUS A SECONDARY? LET ME GIVE YOU AN  
4 EXAMPLE FOR A LAWYER. A PRIMARY SOURCE MATERIAL IF WE ARE  
5 TALKING ABOUT CASE LAW IS TO READ THE ACTUAL DECISION OF A  
6 COURT, OR A STATUTE TO READ THE ACTUAL STATUTE. DO YOU HAVE  
7 THAT IN MIND?

8 A YES.

9 Q AND THEN IF SOMEONE IS MAKING A COMMENTARY SAYING, WELL,  
10 THE FEDERAL CIRCUIT IN X VERSUS Y REALLY DECIDED ABCD, WE  
11 OFTEN REFER THAT TO A SECONDARY AUTHORITY, CORRECT?

12 A RIGHT, RIGHT.

13 Q AND YOU HAVE THE VIEW THAT IF YOU'VE GOT A REALLY TOUGH  
14 ISSUE AND YOU WANT TO GET IT RIGHT, YOU WANT TO SEE THE  
15 PRIMARY SOURCE MATERIALS, CORRECT?

16 A YES.

17 Q YOU DON'T WANT TO TRUST WHAT SOMEONE ELSE TELLS YOU,  
18 CORRECT?

19 A SOMETIMES YOU CAN.

20 Q IF SOMEONE HAS A REASON TO BE BIASED, WHO HAS A LOT OF  
21 SELF-INTEREST RIDING ON IT, AND YOU WANT TO RENDER AN  
22 INDEPENDENT OPINION, YOU WANT TO LOOK AT THE PRIMARY SOURCE  
23 MATERIALS. IS THAT CORRECT?

24 A I DID, YES.

25 Q IN THE END, FOR HOW SOFTWARE ACTUALLY OPERATES, THE

1 PRIMARY SOURCE MATERIAL IS THE SOURCE CODE, CORRECT?

2 A THAT'S THE FINAL IMPLEMENTATION, YES.

3 Q THANK YOU. AND SO IF SOMEONE, WHETHER IT'S FOR THIS CASE  
4 OR ANY OTHER CASE, WITH SOME ABILITY TO READ SOURCE CODE  
5 WANTED TO KNOW HOW THE ACTUAL SOFTWARE WORKED, WHETHER IT HAD  
6 ONE BUFFER OR TEN BUFFERS, WHETHER IT WAS PARSING OR NOT  
7 PARSING, WHETHER A BUFFER WAS A RING BUFFER OR SOMETHING ELSE,  
8 THEY COULD LOOK AT AND READ THE ACTUAL PRIMARY SOURCE  
9 MATERIAL, THE SOURCE CODE, CORRECT?

10 A HE COULD. THAT'S ONE OPTION.

11 Q YES. AND MR. HILLMAN DOESN'T REALLY HAVE THE ABILITY TO  
12 READ SOURCE CODE, CORRECT?

13 A I DON'T KNOW THAT.

14 Q TO THE BEST OF YOUR KNOWLEDGE, HE DID NOT READ AND  
15 INTERPRET ANY OF THE SOURCE CODE INVOLVED IN THIS CASE,  
16 CORRECT?

17 A TO THE BEST OF MY KNOWLEDGE, YES.

18 Q IN YOUR DEPOSITION YOU WERE ASKED ABOUT A PORTION OF THE  
19 ECHOSTAR SOURCE CODE THAT RELATES TO THE ALLEGED DESIGN-  
20 AROUNDS. IS THAT RIGHT?

21 A I DO RECALL, YES.

22 Q AND YOU WERE ASKED ABOUT PARTICULAR FUNCTIONS. IS THAT  
23 CORRECT?

24 A YES.

25 Q AND AFTER LOOKING AT THIS PRIMARY SOURCE MATERIAL, THE

1 SOURCE CODE, YOU SAID YOU DIDN'T UNDERSTAND HOW THAT FUNCTION  
2 WORKED, CORRECT?

3 A THAT IS CORRECT, YES.

4 Q AND YOU ALSO HAD TO ADMIT THAT INSTEAD OF YOUR TRYING TO  
5 INTERPRET THE PRIMARY SOURCE MATERIAL, IT WOULD BE BETTER TO  
6 HAVE AN ENGINEER, SUCH AS AN ENGINEER FROM ECHOSTAR, DO IT,  
7 CORRECT?

8 A NOT EXACTLY.

9 Q WELL, YOU DIDN'T CONSIDER YOURSELF QUALIFIED TO DISCUSS  
10 AND WALK THROUGH THE ECHOSTAR SOURCE CODE. IS THAT CORRECT?

11 A IT'S BECAUSE I DIDN'T HAVE ALL OF IT.

12 Q I WOULD LIKE TO READ FROM YOUR DEPOSITION TRANSCRIPT,  
13 PAGE 57, LINE 24 THROUGH 58, 20. I THINK, SIR, THERE IS A  
14 COPY OF THE TRANSCRIPT THERE FOR YOU.

15 MR. MCELHINNY: WHAT PAGE?

16 MR. CHU: 57, 24; 58, 20.

17 MR. MCELHINNY: THANK YOU.

18 Q (BY MR. CHU) QUESTION: ASSUME THAT THIS IS THE ROUTINE  
19 THAT THE SOURCE CODE CALLS TO WRITE SOMETHING TO THE DISK.

20 ANSWER: ALL RIGHT. I'M NOT REALLY THE RIGHT PERSON  
21 QUALIFIED TO DISCUSS -- AND THEN YOU HAVE TO WALK THROUGH THE  
22 CODE. I'M SURE THAT ONE OF THE ENGINEERS WOULD BE BETTER  
23 SUITED TO DO THIS. I DON'T WANT TO SAY ANYTHING THAT'S  
24 INACCURATE BECAUSE MY EXPERIENCE AS AN ENGINEER GOES BACK TO  
25 1990 AND THAT'S IT. I HAVEN'T CODED REALLY SINCE THEN, SO I

1 JUST DON'T WANT TO SAY ANYTHING INACCURATE. CONCERN THAT I  
2 WANT TO MAKE SURE IT'S RIGHT. SO I THINK, I MEAN, YOU WERE  
3 PROBABLY BETTER OFF TALKING TO OR ASKING A SOFTWARE ENGINEER  
4 OR ACTUALLY THE CODER. MR. ANDERSON IS THE RIGHT PERSON.

5 QUESTION: SO YOU CAN'T ANSWER THE QUESTION --

6 I -- NOT WITH -- THERE'S AN OBJECTION. NOT WITH ANY  
7 DEGREE OF CERTAINTY THAT I WOULD BE CORRECT.

8 WHEN YOU WERE ASKED WHO YOU RELIED UPON AT ECHOSTAR IN  
9 YOUR DEPOSITION, YOU NAMED A NUMBER OF PEOPLE. IS THAT  
10 CORRECT?

11 A YES.

12 Q ONE WAS DAN MINNICK. IS THAT RIGHT?

13 A YES.

14 Q AND HE'S SOMEONE WHO HAS BEEN DESIGNATED AS THE OFFICIAL  
15 ECHOSTAR REPRESENTATIVE ON LEGAL ISSUES TO TESTIFY ABOUT THE  
16 LEGAL ISSUES IN THIS CASE, CORRECT?

17 A YES.

18 Q AND YOU ALSO MENTIONED JEFF BLUM, CORRECT?

19 A I DID.

20 Q AND A DAVID ST. JOHN-LARKIN, CORRECT?

21 A YES.

22 Q AND YOU MENTIONED NO OTHER PERSONS?

23 A THOSE ARE THE NAMES THAT I RECALLED.

24 Q WELL, YOU SAID THAT THE NAMES OF OTHER PEOPLE ARE IN THE  
25 LETTERS, BUT THEY ARE NOT. IS THAT FAIR?

1 A YES.

2 Q SO WHEN ASKED TO NAME ALL THE PEOPLE THAT GAVE YOU  
3 INFORMATION, YOU NAMED MR. MINNICK, THE FELLOW WHO WAS  
4 DESIGNATED TO TESTIFY OFFICIALLY ON THE LEGAL ISSUES. JEFF  
5 BLUM IS THE SECOND PERSON WHO IS IN CHARGE OF LITIGATION,  
6 INCLUDING PATENT LITIGATION INCLUDING THIS CASE, CORRECT?

7 A RIGHT.

8 Q AND THE THIRD PERSON YOU RELIED UPON WHO TOLD YOU  
9 INFORMATION BECAUSE HE DIDN'T READ THE SOURCE CODE WAS DAVID  
10 ST. JOHN-LARKIN, AND HE IS A PATENT LAWYER, CORRECT?

11 A UH-HUH, YES.

12 Q IN-HOUSE AT ECHOSTAR?

13 A AT THE TIME, YES.

14 Q AND YOU RELIED ON WHAT EACH OF THOSE PERSONS TOLD YOU,  
15 CORRECT?

16 A ALONG WITH SOME OTHERS, YES.

17 Q DO YOU KNOW WHAT A DESCRIPTOR COUNT IS?

18 A I DO NOT.

19 Q DO YOU KNOW WHAT A DESCRIPTOR IS?

20 A I DON'T THINK IT HAS A MEANING IN THE ART, SO I DON'T --  
21 I REALLY DON'T KNOW.

22 Q YOU DON'T KNOW WHETHER INFORMATION IS BEING COMMUNICATED  
23 BETWEEN BROADCOM DRIVERS AND THE ECHOSTAR APPLICATION. IS  
24 THAT CORRECT?

25 A IN THE FINAL IMPLEMENTATIONS?

1 Q CORRECT. LET'S START WITH THE FINAL IMPLEMENTATION.

2 A I DON'T KNOW HOW THE FINAL IMPLEMENTATIONS WERE ACTUALLY  
3 IMPLEMENTED.

4 Q WELL, WHEN YOU WERE ASKED IN GENERAL, WITHOUT LIMITING IT  
5 TO THE FINAL IMPLEMENTATION, IN YOUR DEPOSITION YOU SAID THAT  
6 YOU JUST DIDN'T KNOW WHAT INFORMATION IS BEING COMMUNICATED  
7 BETWEEN THE BROADCOM DRIVERS AND THE ECHOSTAR APPLICATION. IS  
8 THAT CORRECT?

9 A AS WE -- AS I WROTE IN THE OPINION, IT WAS POINTER  
10 VALUES.

11 Q I'M ASKING IF YOU CAN RECALL YOUR TESTIMONY FOR THE  
12 MOMENT.

13 A I DON'T KNOW WHAT'S BEING COMMUNICATED, NO.

14 Q NOW, JUST SO WE CAN SEE WHETHER THIS HAS ANY RELEVANCE.  
15 WHEN INFORMATION IS COMING DOWN FROM THE SATELLITE, IT'S  
16 RECEIVED BY THE SET-TOP BOXES, CORRECT?

17 A UH-HUH, YES.

18 Q AND THEN AFTER SOME PROCESSING OF VARIOUS KINDS, IT  
19 EVENTUALLY GETS WRITTEN TO ONE OR MORE BUFFERS. I'M NOT  
20 FOCUSED ON THE NUMBER OF BUFFERS RIGHT NOW, CORRECT, JUST IN  
21 GENERAL?

22 A THERE IS AN INTERMEDIATE BUFFER, YES.

23 Q AND THEN EVENTUALLY FROM THE BUFFERS THAT INFORMATION IS  
24 WRITTEN TO THE HARD DRIVE, CORRECT?

25 A THAT'S CORRECT.

1 Q AND THE BROADCOM CHIP WASN'T ORIGINALLY DESIGNED JUST FOR  
2 ECHOSTAR, IT COULD BE USED BY OTHERS, CORRECT?

3 A THAT'S CORRECT.

4 Q AND THE BROADCOM CHIP THEREFORE HAS PLACES IN THE WAY  
5 IT'S DESIGNED AND THE WAY ITS SOFTWARE DESIGNED TO HAVE A  
6 HANDOFF FROM WHAT THE BROADCOM CHIP DOES AND THE SOFTWARE FROM  
7 THE BROADCOM ENGINEERS, SO THE ECHOSTAR ENGINEERS WHO ARE  
8 RESPONSIBLE FOR DESIGNING THE REST OF THE SET-TOP BOX CAN TAKE  
9 THE HANDOFF, CORRECT?

10 A YEAH, WE DESCRIBE THAT IN THE OPINION.

11 Q AND THIS HANDOFF TAKES PLACE BETWEEN THE CIRCUITRY THAT  
12 RECEIVES THE SATELLITE SIGNAL, PUTS IT TO THE BUFFER, AND THEN  
13 WHEN IT GOES FROM THE BUFFER TO THE HARD DRIVE, IT'S AT THAT  
14 POINT THAT THERE IS A HANDOFF, CORRECT?

15 A I -- THAT I DON'T KNOW EXACTLY HOW THE BROADCOM CHIP  
16 OPERATES.

17 Q IF YOU DON'T KNOW, THAT'S OKAY.

18 A NO.

19 Q DID YOU HAVE ANY UNDERSTANDING THAT THE COPY BUFFER, THE  
20 ELEVENTH BUFFER THAT WAS ORIGINALLY IN THE BROADCOM CHIP AND  
21 USED, WAS TO FACILITATE, TO MAKE EASY THAT HANDOFF SO THAT THE  
22 ECHOSTAR ENGINEERS COULD JUST WRITE CODE TO TAKE THE HANDOFF,  
23 AND THE BROADCOM ENGINEERS COULD JUST WRITE CODE TO PUT THE  
24 BALL, SO TO SPEAK, IN THE COPY BUFFER SO THAT THERE WOULD BE A  
25 DOORWAY WHERE THEY COULD MEET WITHOUT WORRYING ABOUT EACH

1 OTHER'S CODE? DID YOU UNDERSTAND THAT?

2 A YEAH, AND THAT WAS THE INTENTION OF ONE OF THE PROPOSED  
3 DESIGN-AROUNDS IN THE OPINION, YES.

4 Q SO UNDERSTANDING THE PURPOSE OF THE COPY BUFFER AND HOW  
5 IT ACTUALLY OPERATED MIGHT HELP YOU UNDERSTAND THE SUBSTANCE  
6 OF THE CHANGE THAT WAS MADE WHERE ONLY THE COPY BUFFER, WHICH  
7 WAS THE EXACT SAME SIZE AS EACH OF THE OTHER TEN COMPARTMENTS  
8 IN THE BUFFER WHERE IT WAS NO LONGER BEING USED, CORRECT?

9 A AS -- I'M NOT SURE HOW THE HARDWARE WAS CHANGED --

10 Q THANK YOU.

11 A -- BY THE SOFTWARE CHANGES.

12 Q NOW, I WANT TO BE CERTAIN OF THIS. I THINK YOU MAY HAVE  
13 ALREADY ANSWERED IT. ARE YOU ABSOLUTELY CERTAIN THAT YOU  
14 DIDN'T PROVIDE ANY PROPOSED MODIFICATIONS TO ECHOSTAR?

15 A I DID NOT, NO.

16 Q DID MR. HILLMAN PROVIDE ANY PROPOSED MODIFICATIONS TO  
17 ECHOSTAR?

18 A NO, I BELIEVE HE DID NOT.

19 Q THANK YOU. NOW, LET ME CALL UP FISH SLIDE NUMBER 1 FOR  
20 THE MOMENT AND JUST LET YOU LOOK AT THIS. ON THE LEFTHAND  
21 SIDE THAT IS A QUOTE FROM YOUR OPINION LETTER. WE CAN FIND IT  
22 FOR YOU. COULD YOU JUST READ WHAT'S ON THE LEFTHAND SIDE?

23 A THIS PROCESS IS COMPLETELY ASYNCHRONOUS AND --

24 Q GO AHEAD.

25 A -- AND NO COMMUNICATION BETWEEN THE WRITE\_TSP\_THREAD AND

1 THE BROADCOM DRIVER IS PERFORMED.

2 Q AND THAT'S PART OF YOUR OPINION LETTER?

3 A THAT IS CORRECT.

4 Q NOW, JUST TAKE A MOMENT. YOU CAN -- WELL, READ IT ALOUD,  
5 DR. RHYNE'S TESTIMONY, WOULD YOU?

6 A QUESTION: SO THERE IS ECHOSTAR CODE THAT COMMUNICATES  
7 WITH THE DRIVER CODE REGARDING DESCRIPTOR COUNTS, RIGHT?

8 ANSWER: THERE IS ECHOSTAR CODE THAT USES PROGRAMMING  
9 INTERFACES PROVIDED BY THE BROADCOM PROPRIETARY DRIVERS,  
10 THAT'S CORRECT.

11 Q AND YOU WOULD AGREE THAT DR. RHYNE WAS CORRECT AND YOU  
12 WERE WRONG?

13 A I THINK THESE ARE BOTH ACCURATE STATEMENTS.

14 Q THANK YOU. LET ME PUT UP SLIDE NUMBER 2. READ WHAT'S ON  
15 THE LEFTHAND SIDE.

16 A THE WRITE\_TSP\_THREAD ALWAYS WRITES TO THE HARD DRIVE WHEN  
17 IT PULLS THE BROADCOM DRIVER, EVEN IF THERE ARE ZERO BYTES TO  
18 BE TRANSFERRED.

19 Q AND DR. RHYNE'S TESTIMONY ON THAT?

20 A QUESTION: LIKewise, IF THERE IS NO FRESH DATA TO WRITE,  
21 IF THERE IS NO FRESH DATA, THEN IN THAT CIRCUMSTANCE, LIKewise  
22 THERE IS NO DATA WRITTEN TO THE HARD DRIVE, CORRECT?

23 ANSWER: THAT'S MY UNDERSTANDING. IN THAT SITUATION IF  
24 THERE'S AN INDICATION THAT THERE IS NO NEW DATA TO BE WRITTEN,  
25 THEN THEY DON'T WRITE ANY DATA. THEY DON'T HAVE ANYTHING TO

1 WRITE.

2 Q AND YOU WOULD AGREE THAT DR. RHYNE IS CORRECT AND YOU  
3 WERE INCORRECT. IS THAT SO?

4 A I BELIEVE DR. RHYNE IS CORRECT.

5 Q THANK YOU. NO FURTHER QUESTIONS.

6 THE COURT: REDIRECT.

7 MR. MCELHINNY: NO REDIRECT, YOUR HONOR.

8 THE COURT: YOU MAY STEP DOWN. CALL YOUR NEXT.

9 MR. MCELHINNY: YOUR HONOR, ECHOSTAR CALLS MR. ROBERT  
10 HILLMAN.

11 (WITNESS SWORN)

12 MR. MCELHINNY: MAY I PROCEED, YOUR HONOR?

13 THE COURT: YES.

14 ROBERT E. HILLMAN, DEFENDANTS' WITNESS, SWORN

15 DIRECT EXAMINATION

16 BY MR. MCELHINNY:

17 Q GOOD MORNING, MR. HILLMAN.

18 A MORNING, SIR.

19 Q WOULD YOU PLEASE STATE YOUR FULL NAME FOR THE RECORD, AND  
20 SPELL YOUR LAST NAME?

21 A ROBERT E. HILLMAN, H-I-L-L-M-A-N.

22 Q THANK YOU. MR. HILLMAN, HAVE YOU EVER BEEN IN A FEDERAL  
23 COURTROOM BEFORE?

24 A MANY TIMES.

25 Q WHAT IS YOUR PROFESSION, SIR?

1 A I AM A -- I AM A PATENT LAWYER, SPECIALIZING THESE DAYS  
2 IN PATENT LITIGATION.

3 Q AND HOW LONG HAVE YOU BEEN A PATENT ATTORNEY?

4 A SINCE 1962, WHICH IF MY ARITHMETIC IS CORRECT, IS ABOUT  
5 47 YEARS. I HATE TO SAY IT, BUT THAT'S THE TRUTH.

6 Q SIR, COULD YOU TELL US A LITTLE BIT ABOUT YOUR  
7 EDUCATIONAL BACKGROUND?

8 A YES. I -- I WENT TO M.I.T. UNDERGRADUATE, GOT A DEGREE  
9 THERE IN PHYSICS AND ECONOMICS. AND THEN I DECIDED TO BECOME  
10 A LAWYER, WENT TO HARVARD LAW SCHOOL, GOT OUT IN 1962.

11 Q AND CAN YOU TELL US JUST A LITTLE BIT ABOUT THE SCOPE OF  
12 YOUR PRACTICE?

13 A IN THE EARLY DAYS, WE PATENT LAWYERS WERE JACKS OF ALL  
14 TRADE, SO I HAD A NUMBER OF YEARS WHERE I DID ALL PARTS OF THE  
15 PRACTICE, YOU KNOW, FILED PATENT APPLICATIONS, ADVISED  
16 CLIENTS, DID LITIGATION. AND THEN PROBABLY, I'D SAY, TEN  
17 YEARS OR SO INTO MY PRACTICE, I BEGAN TO SPECIALIZE IN  
18 LITIGATION, AND BASICALLY HAVE DONE THAT EVER SINCE.

19 Q ALL RIGHT. I APOLOGIZE. I MAY HAVE MISSED IT. CAN YOU  
20 TELL US WHAT FIRM YOU ARE ASSOCIATED WITH?

21 A FISH & RICHARDSON.

22 Q HAVE YOU EVER HELD ANY POSITIONS OR TITLES WITHIN THE  
23 FIRM OF FISH & RICHARDSON?

24 A YES. FOR MANY YEARS I'VE ACTUALLY BEEN -- HAD A  
25 LEADERSHIP ROLE IN FISH & RICHARDSON, FIRST INFORMALLY, THEN

1 AS WE GREW, I WAS PRESIDENT AND CHAIRMAN. AND NOW THE YOUNGER  
2 GENERATION HAS TAKEN THAT OVER, BUT I'M STILL A MEMBER OF THE  
3 MANAGEMENT COMMITTEE.

4 Q SIR, DURING YOUR CAREER HAVE YOU EVER BEEN INVOLVED IN  
5 ISSUING LEGAL OPINIONS ON BEHALF OF THE FIRM OF FISH &  
6 RICHARDSON?

7 A YES. IN THE DAYS WHEN I WASN'T FULLY INVOLVED IN PATENT  
8 LITIGATION, I ISSUED A NUMBER OF OPINIONS. BUT EVEN SINCE  
9 THEN, I'VE BEEN PART OF A GROUP IN OUR FIRM THAT REVIEWS  
10 OPINIONS PRIMARILY WRITTEN BY OTHER PEOPLE IN THE FIRM  
11 PURSUANT TO A POLICY THAT WE HAVE WHERE WE TRY TO GET A SECOND  
12 SET OF EYES LOOKING AT ANY OPINION THAT GOES OUT THE DOOR.

13 Q AND IS THAT -- WHY DOES THE FIRM DO THAT, SIR? WHAT'S  
14 THE PURPOSE OF THAT REVIEW?

15 A I THINK THAT'S NOT AN UNUSUAL PRACTICE. IT'S DESIGNED TO  
16 ASSURE QUALITY.

17 Q SIR, CAN YOU GIVE US A ROUGH NUMBER OF HOW MANY OPINIONS  
18 THAT YOU'VE BEEN INVOLVED WITH OVER THE TIME OF YOUR CAREER?

19 A OH, YOU KNOW, SCORES AND SCORES. I'M NOT REAL GOOD AT  
20 NUMBERS, BUT MANY OF THEM.

21 Q HAVE YOU EVER BEEN APPOINTED A SPECIAL MASTER BY ANY  
22 FEDERAL COURT?

23 A ACTUALLY I WAS ONCE. IT WAS A VERY INTERESTING  
24 EXPERIENCE. I WAS A SPECIAL MASTER TO JUDGE WILSON IN LOS  
25 ANGELES WHERE HE WAS INVOLVED -- HE WAS DEALING WITH A CASE

1 WHERE AN INDIVIDUAL HAD SUED BASICALLY THE ENTIRE SEMI-  
2 CONDUCTOR INDUSTRY, AND THERE WERE A BUNCH OF SUMMARY JUDGMENT  
3 MOTIONS PENDING THAT HE NEEDED HELP WITH. SO, I ADVISED HIM  
4 ON HOW TO DEAL WITH THOSE, GAVE HIM A RECOMMENDATION. HE  
5 ACTUALLY ASKED ME TO TAKE THE WITNESS STAND AT ONE POINT AND  
6 LET THE PLAINTIFF CROSS EXAMINE ME ON MY RECOMMENDATIONS,  
7 WHICH DID HAPPEN.

8 Q WE ARE GOING TO DO THAT NEXT.

9 A OKAY.

10 Q OKAY. SIR, YOU SHOULD HAVE AN EXHIBIT BINDER IN FRONT OF  
11 YOU.

12 THE COURT: HOW LONG AGO WAS THAT, MR. HILLMAN?

13 THE WITNESS: OH, THAT WAS PROBABLY 15 YEARS AGO.

14 IT'S A PUBLISHED OPINION OF THE FEDERAL CIRCUIT.

15 THE COURT: DID IT GO BEFORE -- THE FEDERAL CIRCUIT  
16 APPROVED THAT PRACTICE?

17 THE WITNESS: THEY APPROVED IT. THEY NOT ONLY  
18 APPROVED IT, BUT I REMEMBER IT VERY CLEARLY BECAUSE MY  
19 CREDENTIALS WERE CHALLENGED BY THE PLAINTIFF, AND THE FEDERAL  
20 CIRCUIT SAID, YES, HE'S VERY CREDENTIALIAED TO DO THIS.

21 Q (BY MR. MCELHINNY:) SIR, SPEAKING OF YOUR CREDENTIALS,  
22 YOU SHOULD --

23 THE COURT: YOU HAVE GIVEN ME A NEW PROCESS MAYBE  
24 TO --

25 THE WITNESS: RIGHT.

1 Q (BY MR. MCELHINNY:) SIR, YOU --

2 A I HAVE THE BINDER.

3 Q YOU HAVE AN EXHIBIT BINDER. IF YOU OPEN IT TO TAB 5061,  
4 PLEASE.

5 A OKAY. I HAVE THAT.

6 Q SIR, CAN YOU JUST TELL US WHAT THAT DOCUMENT IS?

7 A THAT'S SORT OF A BLURB ABOUT MY PRACTICE. I GUESS YOU'D  
8 CALL IT A BIO, BUT IT LARGELY LISTS A BUNCH OF CASES THAT I'VE  
9 BEEN INVOLVED IN. IT'S PUBLISHED ON OUR WEBSITE TO GIVE  
10 PEOPLE AN IDEA OF WHAT MY PRACTICE HAS BEEN LIKE.

11 Q SIR, MR. AARONSON JUST GOT OFF THE STAND, SO HE HAS TOLD  
12 US ABOUT THE OPINIONS THAT WERE ISSUED ON BEHALF OF FISH &  
13 RICHARDSON FOR ECHOSTAR IN THIS MATTER. WHAT WAS YOUR  
14 INVOLVEMENT IN THAT OPINION PROCESS?

15 A WELL, IF I COULD JUST GIVE YOU THE BRIEF HISTORY OF HOW  
16 THAT CAME ABOUT.

17 Q SURE.

18 A I GOT A CALL ONE DAY FROM NICK SETTY IN OUR ATLANTA  
19 OFFICE AND HE HAD BEEN ASKED BY ECHOSTAR TO FIND A TEAM TO  
20 GIVE HIM -- TO GIVE THEM AN OPINION ON A DESIGN-AROUND AND  
21 SOME DESIGN-AROUND POSSIBILITIES. AND THEY WANTED A SENIOR  
22 ATTORNEY FROM THE FIRM TO BE PART OF THAT TEAM, AND SO NICK  
23 CALLED ME AND ASKED ME TO DO THAT. AND THAT WAS BASICALLY THE  
24 ROLE I PLAYED.

25 LARRY DID THE SPADE WORK. HE MET WITH THE CLIENT. HE

1 GOT ALL THE INFORMATION. AND MY INVOLVEMENT IN SUBSTANCE  
2 BEGAN WHEN HE PRESENTED ME WITH AN INITIAL DRAFT OF THE  
3 OPINION. I GAVE HIM FEEDBACK. WE HAD CONVERSATIONS SO THAT I  
4 COULD UNDERSTAND FULLY WHAT WAS GOING ON THERE. AND  
5 EVENTUALLY WE GOT A DRAFT THAT WE WERE BOTH HAPPY WITH. WE  
6 PRESENTED IT TO THE CLIENT, BOTH IN WRITING AND IN AN ORAL  
7 PRESENTATION OVER THE PHONE.

8 AND I THINK THEN THERE WAS SOME SUBSEQUENT OPINIONS WITH  
9 SMALL CHANGES IN THEM THAT DIDN'T REALLY AFFECT THE  
10 FUNDAMENTAL ADVICE THAT WE'D GIVEN THEM ORIGINALLY.

11 Q SIR, DURING MR. AARONSON'S TESTIMONY WE COMPARED YOUR  
12 NINE BILLABLE HOURS TO THE HUNDREDS OF HOURS THAT HE SPENT ON  
13 THIS PROJECT. AND JUST SO THAT IT'S CLEAR, WAS YOUR  
14 PARTICIPATION IN THIS PROJECT IN YOUR VIEW SUBSTANTIVE?

15 A IT WAS ABSOLUTELY SUBSTANTIVE. YOU KNOW, THIS WAS BILLED  
16 TO US BY THE CLIENT AS A VERY IMPORTANT MATTER. THEY WANTED  
17 ME ON THAT FOR A REASON, NOT JUST FOR WINDOW DRESSING BUT TO  
18 GIVE MY EXPERIENCE IN SUBSTANCE, AND I FELT ABSOLUTELY  
19 OBLIGATED, AS I DO IN ANY OPINION THAT I REVIEW, TO THOROUGHLY  
20 UNDERSTAND THE SITUATION. AND I MADE A NUMBER OF SUGGESTIONS  
21 ACTUALLY OF SUBSTANCE TO MR. AARONSON BEFORE THAT OPINION WENT  
22 OUT THE DOOR.

23 Q AND YOU ARE AWARE THAT FISH & RICHARDSON ISSUED FIVE  
24 WRITTEN OPINIONS IN THIS MATTER. IS THAT CORRECT?

25 A YES, WE DID.

1 Q IN YOUR VIEW, ARE THOSE OPINIONS RELIABLE?

2 A I THINK OBVIOUSLY THEY WERE. IN MY VIEW THEY WERE  
3 RELIABLE. THEY WOULDN'T HAVE GONE OUT THE DOOR IF I DIDN'T  
4 THINK THEY WERE RELIABLE.

5 Q AND DO YOU STAND BEHIND THEM TODAY, SIR?

6 A ABSOLUTELY.

7 Q SIR, MR. AARONSON TESTIFIED THAT WHEN YOU REVIEWED THE  
8 ORIGINAL DRAFTS YOU SUGGESTED ADDING AN ARGUMENT ABOUT  
9 JUDICIAL ESTOPPEL. DO YOU RECALL THAT?

10 A I DO.

11 Q AND CAN YOU EXPLAIN TO US WHY YOU FOCUSED ON THAT?

12 A WELL, WHAT STRUCK ME ABOUT THE SITUATION WHEN I REVIEWED  
13 HIS INITIAL DRAFT WAS THAT THE PLAINTIFF HAD DURING THE TRIAL  
14 BASICALLY TOLD THE JURY WHAT THE ESSENCE OF THEIR INVENTION  
15 WAS, THE CENTERPIECE, AND IT WAS TWO THINGS, REALLY. IT WAS  
16 CREATING THIS INDEX OF START CODES BEFORE YOU ACTUALLY  
17 RECORDED THE INCOMING STREAM SO THAT YOU DIDN'T HAVE TO LOOK  
18 THOSE UP ON THE FLY WHEN YOU WERE DOING PLAYBACK, AND THEN  
19 ALSO TO CONTROL THE FLOW FROM THE SOURCE TO THE BUFFER SO THAT  
20 YOU DIDN'T LOSE ANY INFORMATION, AND WHEN THE BUFFER WASN'T  
21 AVAILABLE, YOU'D STOP THAT FLOW.

22 SO THOSE WERE THE TWO THINGS THAT WERE URGED OVER AND  
23 OVER AGAIN AT THE TRIAL. AND THE DESIGN-AROUND THAT WE WERE  
24 BLESSING HERE ELIMINATED BOTH OF THOSE FEATURES. AND SO I  
25 FELT THAT IF THE PLAINTIFF WERE TO COME BACK AND SAY, OH,

1 THESE DESIGN-AROUNDS STILL INFRINGE, THEY WOULD BE TAKING  
2 PRECISELY THE OPPOSITE POSITION THAT THEY HAD RELIED ON IN THE  
3 TRIAL IN ORDER TO WIN THAT CASE. AND TO ME, THAT WAS A  
4 CLASSIC SITUATION OF JUDICIAL ESTOPPEL.

5 Q IN ISSUING YOUR OPINIONS, DID YOU DEPART IN ANY WAY FROM  
6 JUDGE FOLSOM'S CONSTRUCTION OF THE CLAIM TERMS?

7 A ABSOLUTELY NOT.

8 Q SIR, AFTER THE OPINIONS WERE ISSUED, DID YOU -- I THINK  
9 YOU SAID YOU PARTICIPATED IN A TELEPHONE CONFERENCE WITH  
10 ECHOSTAR?

11 A I DID.

12 Q AND CAN YOU DESCRIBE THAT FOR US, PLEASE?

13 A YES. THAT WAS ACTUALLY A LITTLE UNUSUAL IN MY PRACTICE.  
14 LARRY TOLD ME ONE DAY THAT THE CLIENT NOT ONLY WANTED THE  
15 WRITTEN OPINION BUT THEY WANTED A PRESENTATION OVER THE PHONE.  
16 AND SO WHAT THAT TURNED OUT TO BE WAS REALLY SORT OF A CROSS  
17 EXAMINATION BY THE CLIENT. THEY WERE PLAYING THE ROLE OF  
18 DEVIL'S ADVOCATE, YOU KNOW, CHALLENGING ME AND LARRY ON THE  
19 OPINION, BASICALLY, ON DIFFERENT ASPECTS OF THE OPINION TO  
20 MAKE SURE THAT WE'D GOT IT RIGHT, THAT WE FELT CONFIDENT ABOUT  
21 IT. THEY WANTED TO KNOW THAT WE WERE TRULY CONFIDENT ABOUT  
22 THIS OPINION, BECAUSE IT WAS CRITICAL TO THEIR BUSINESS TO GET  
23 IT RIGHT.

24 Q AND THIS WAS IN THE AUGUST OR SEPTEMBER TIME FRAME. IS  
25 THAT CORRECT?

1 A I THINK SO. I'M REAL POOR ON DATES.

2 Q OKAY. BUT TO BE CLEAR, YOU JUST SAID THAT ONE OF THE  
3 THINGS YOU WERE DOING WAS BLESSING A DESIGN FOR A DESIGN-  
4 AROUND. HAS YOUR FIRM EVER REVIEWED THE ACTUAL IMPLEMENTATION?

5 A NO. I'VE HEARD A LITTLE BIT ABOUT IT IN, YOU KNOW, IN  
6 THE DAYS LEADING UP TO THIS TESTIMONY, BUT I DON'T REALLY KNOW  
7 FOR SURE EXACTLY WHAT IT IS.

8 Q SIR, DID YOU REVIEW THE FISH OPINIONS AGAIN IN THE LIGHT  
9 OF THE FEDERAL CIRCUIT OPINION THAT WAS ISSUED IN THIS CASE?

10 A I DID. I HEARD FROM MR. BLUM OF ECHOSTAR ONE DAY AND HE  
11 ASKED ME TO LOOK AT THE OPINION AND SEE IF IT AFFECTED OUR  
12 OPINIONS. I READ IT. IT WAS CLEAR TO ME THAT IT DIDN'T  
13 REALLY INVOLVE THE ISSUES, DIDN'T IMPACT THE ISSUES ON WHICH  
14 WE WERE BASING OUR OPINIONS, AND I TOLD HIM SO.

15 Q SIR, IF YOU LOOK IN YOUR BINDER AT EXHIBIT 5091.

16 A YES, THAT'S MY BRIEF REPORT TO JEFF BLUM TO THE EFFECT  
17 THAT I JUST INDICATED.

18 Q MR. HILLMAN, BASED ON YOUR CAREER AND YOUR EXPERIENCE,  
19 HOW WOULD YOU DESCRIBE THE LEVEL OF CARE THAT ECHOSTAR TOOK IN  
20 OBTAINING YOUR OPINIONS?

21 A I WOULD SAY IT WAS IN THE VERY UPPER ECHELON OF CARE THAT  
22 CLIENTS HAVE TAKEN. YOU HAVE TO REMEMBER HERE THAT THIS WAS  
23 NOT A SITUATION WHERE WE WERE BEING ASKED TO GIVE AN OPINION  
24 ON SOMETHING THEY'D ALREADY COMMERCIALIZED, WHICH IS OFTEN THE  
25 CASE. THIS WAS AN OPINION WHICH THEY WANTED IN ORDER TO GUIDE

1 THEM IN A BUSINESS DECISION AND, YOU KNOW, THEY WANTED THE  
2 UTMOST CARE AND WE GAVE IT.

3 MR. MCELHINNY: I HAVE NOTHING FURTHER, YOUR HONOR.

4 THE COURT: CROSS EXAMINATION.

5 MR. CHU: THANK YOU, YOUR HONOR.

6 CROSS EXAMINATION

7 BY MR. CHU:

8 Q GOOD MORNING, MR. HILLMAN.

9 A GOOD MORNING.

10 Q MY NAME IS MORGAN CHU. I DON'T THINK WE'VE MET BEFORE.

11 A I'VE SEEN YOU, BUT WE HAVEN'T TALKED.

12 Q JUST WANT TO START OUT WITH A SMALL QUESTION. YOU  
13 TESTIFIED THAT YOU MADE A NUMBER OR LARGE NUMBER OF  
14 SUGGESTIONS IN ADDITION TO THE POINT ABOUT JUDICIAL ESTOPPEL.  
15 IS THAT RIGHT?

16 A I MADE -- I MADE SOME SUGGESTIONS, YES. I DON'T -- I  
17 CAN'T REMEMBER FOR YOU EXACTLY WHAT THEY WERE RIGHT NOW, BUT  
18 THEY WERE MORE AT THE LEVEL OF THE TECHNOLOGY AND HOW THE  
19 TECHNOLOGY WAS DESCRIBED.

20 Q THAT'S FAIR, MR. HILLMAN. I JUST WANT IT TO BE CLEAR, SO  
21 LET ME JUST ASK THE FOLLOW-UP QUESTION. ASIDE FROM THE POINT  
22 ABOUT JUDICIAL ESTOPPEL, YOU DO NOT RECALL ANY OTHER  
23 SUGGESTIONS YOU MADE?

24 A NO, AND I --

25 Q THANK YOU.

1 A -- DON'T BELIEVE THE OTHER SUGGESTIONS, YOU KNOW,  
2 IMPACTED THE LEGAL SUBSTANCE OF OUR OPINION.

3 Q AND YOUR MAJOR POINT ABOUT JUDICIAL ESTOPPEL IN ONE OF  
4 THE LETTERS AS AN EXAMPLE, MADE IT TO PAGE 20, FOOTNOTE 52?

5 A YES.

6 Q THANK YOU. NOW I WANT TO ASK YOU ABOUT A 2008  
7 SUPPLEMENTAL OPINION. DO YOU RECALL DOING ONE?

8 A I RECALL THAT THERE WERE FIVE OPINIONS ALTOGETHER. THE  
9 FIRST TWO --

10 Q LET ME -- LET ME HELP YOU. AND I APOLOGIZE FOR  
11 INTERRUPTING BUT --

12 A YEAH, I'M SORRY. I SHOULD HAVE JUST SAID YES OR NO.

13 Q THANK YOU. SO THIS WAS A TWO-SENTENCE OPINION THAT WAS  
14 FEBRUARY 10, 2008 THAT WAS AFTER THE FEDERAL CIRCUIT AFFIRMED  
15 JUDGE FOLSOM'S OPINION. IS THAT CORRECT?

16 A LET'S SEE.

17 Q LET ME START AGAIN. AND IF YOU WANT TO REFER TO IT,  
18 THAT'S FINE. IN FACT, WE CAN PUT IT UP ON THE SCREEN. IT'S  
19 EXHIBIT 3057.

20 A NO, THAT'S THE ONE THAT MR. MCELHINNY JUST ASKED ME ABOUT  
21 I THINK, ISN'T IT? MAYBE I'M MISUNDERSTANDING IT.

22 Q WELL, LET'S GO TO THE LETTER ITSELF WHICH IS PROBABLY THE  
23 THIRD PAGE IN, AND LET'S BLOW UP THE ESSENCE.

24 A YES.

25 Q AND I MAY HAVE READ THE DATE INCORRECTLY. IT LOOKS NOW

1 TO BE FEBRUARY 19, 2008.

2 A YES.

3 MR. CHU: CAN WE JUST BLOW UP THE TEXT? CAN WE  
4 EXPAND THE TEXT?

5 A YEAH, I SEE IT.

6 Q OKAY. SO THIS WAS AFTER THE FEDERAL CIRCUIT RENDERED ITS  
7 DECISION, CORRECT?

8 A YES.

9 Q AND YOU HAD THE UNDERSTANDING THAT THE FEDERAL CIRCUIT IN  
10 ITS WISDOM AFFIRMED JUDGE FOLSOM'S RULINGS, RIGHT?

11 A WELL, AS I UNDERSTAND IT, THE FEDERAL -- ECHOSTAR WON ON  
12 --

13 Q LET ME MAKE A --

14 A -- TWO OF THE PATENTS AND LOST ON TWO. SO I'M NOT SURE  
15 IT WAS A COMPLETE AFFIRMANCE.

16 Q BUT IN ESSENCE --

17 THE COURT: FIFTY-FIFTY.

18 MR. MCELHINNY: WE CONSIDERED IT AN AFFIRMANCE, YOUR  
19 HONOR.

20 MR. CHU: IT'S LIKE HOW THE LOSING TEAM DID IN THE  
21 NINTH GAME OF THE WORLD SERIES, AND THEY SAY, WELL, WE GOT 11  
22 RUNS BUT THE OTHER TEAM HAD 12, AND THEY COULD FIGURE OUT WHO  
23 WON OR LOST.

24 Q (BY MR. CHU:) SO BEFORE YOU WROTE THIS 2008 OPINION, YOU  
25 READ THE FEDERAL CIRCUIT DECISION, CORRECT?

1 A YES.

2 Q AND YOU DIDN'T GO BACK TO READ ANY OF THIS SUBSTANTIVE  
3 WRITTEN OPINIONS ON THE DESIGN-AROUND, CORRECT?

4 A NO, BUT I REMEMBERED THE ESSENCE OF THEM.

5 Q THAT'S OKAY. MR. HILLMAN, IF YOU CAN ANSWER IT FAIRLY  
6 YES OR NO, IF YOU WOULD DO SO.

7 A OKAY, SURE.

8 Q SO THE RECORD IS CLEAR, YOU DID NOT GO BACK TO READ OR  
9 REVIEW ANY OF THE OTHER SUBSTANTIVE OPINIONS ON THE ALLEGED  
10 DESIGN-AROUND. IS THAT CORRECT?

11 A I DON'T RECALL DOING SO.

12 Q THANK YOU. YOU DO RECALL THAT PART OF THE PROCESS OF  
13 PUTTING TOGETHER THOSE OPINIONS INVOLVED MR. AARONSON READING  
14 THE ENTIRE TRIAL RECORD, CORRECT?

15 A SO I UNDERSTAND.

16 Q AND THAT INCLUDED THE EXPERT WITNESS TESTIMONY OF ALL THE  
17 EXPERTS, CORRECT?

18 A IT'S MY UNDERSTANDING.

19 Q AND THAT PART OF THE OPINION RELIED ON WHAT HE GLEANED  
20 AND INTERPRETED FROM THE OPINIONS OF THE EXPERT WITNESSES AT  
21 TRIAL, CORRECT?

22 A CORRECT.

23 Q DO YOU RECALL DISCUSSING WITH MR. AARONSON THE FACT THAT  
24 THERE WAS A POINT IN TRIAL WHERE DR. POLISH, WHO WAS AN  
25 ECHOSTAR EXPERT, WANTED TO TESTIFY FROM THE STAND OF WHAT DR.

1 POLISH'S INTERPRETATION OF DR. GIBSON'S SUPPOSED  
2 INTERPRETATION OF THE COURT'S CLAIM CONSTRUCTION WAS? DO YOU  
3 RECALL THAT ONE WAY OR THE OTHER?

4 A I -- I DON'T BELIEVE THAT WE HAD THAT DISCUSSION.

5 Q THANK YOU. WOULD IT REFRESH YOUR MEMORY IF I TOLD YOU  
6 THAT THE COURT HAD THREATENED ECHOSTAR'S COUNSEL WITH  
7 SANCTIONS AT THAT POINT IN THE TRIAL IF THEY PERSISTED IN  
8 ASKING QUESTIONS OF HOW DR. POLISH WAS INTERPRETING ANOTHER  
9 WITNESS'S SUPPOSED INTERPRETATION OF THE COURT'S CLAIM  
10 CONSTRUCTION? DOES THAT HELP?

11 MR. MCELHINNY: I'M SORRY, YOUR HONOR. WE'VE USED  
12 THE WORD THREATENED TWICE, AND I JUST THINK IT'S  
13 INAPPROPRIATE. I DON'T THINK IT HAPPENED.

14 THE COURT: CAUTIONED OR COMMENTED.

15 Q (BY MR. CHU:) WELL, THERE WAS A POINT WHERE THE WORD  
16 SANCTIONS --

17 THE COURT: I DON'T KNOW IF THREATEN IS THE CORRECT  
18 WORD --

19 Q (BY MR. CHU:) WELL --

20 THE COURT: BUT WHATEVER HAPPENED HAPPENED.

21 Q (BY MR. CHU:) LET ME STATE IT NEUTRALLY. THERE WAS A  
22 POINT WHERE THE WORD SANCTIONS WAS USED. DOES THAT HELP YOU,  
23 REFRESH YOU AT ALL?

24 A I DON'T KNOW ANYTHING ABOUT THAT.

25 Q OKAY. BUT NEVERTHELESS, IN YOUR WORKING WITH MR.

1 AARONSON YOU THOUGHT IT WAS FINE FOR HIM TO GLEAN AND  
2 INTERPRET HIS VIEW OF WHAT THE EXPERT WITNESSES SAID AT TRIAL  
3 IN ORDER TO RENDER THE OPINION LETTERS YOU AND HE RENDERED FOR  
4 ECHOSTAR, CORRECT?

5 A THAT'S RIGHT. HE WAS --

6 Q THANK YOU.

7 A -- ASSIGNED TO DO THAT.

8 Q THANK YOU. DO YOU REMEMBER THAT IN THE FEDERAL CIRCUIT  
9 OPINION THIS EXACT ISSUE ABOUT DR. POLISH WAS ADDRESSED?

10 A AGAIN, THAT ISSUE WAS --

11 Q DO YOU REMEMBER, SIR?

12 A I DON'T.

13 Q WILL IT HELP YOU TO -- IF I REFRESH YOU BY SAYING THAT  
14 THE FEDERAL CIRCUIT SQUARELY AFFIRMED JUDGE FOLSOM IN  
15 EXCLUDING DR. POLISH FROM GIVING HIS INTERPRETATION, HIS VIEW  
16 OF THE SUPPOSED VIEW OF DR. GIBSON ON CLAIM CONSTRUCTION  
17 BECAUSE THERE SHOULD ONLY BE ONE INTERPRETATION OF THE CLAIMS,  
18 ONE CLAIM CONSTRUCTION IN THE COURT, AND THAT'S HIS HONOR'S  
19 CLAIM CONSTRUCTION, DO YOU RECALL THAT THE FEDERAL CIRCUIT  
20 SQUARELY AFFIRMED JUDGE FOLSOM ON THAT POINT?

21 A I DON'T RECALL THAT INCIDENT AT ALL.

22 Q THANK YOU. WHEN YOU READ THE DRAFT THAT MR. AARONSON DID  
23 OF THE VARIOUS OPINION LETTERS, YOU WERE VERY CAREFUL. IS  
24 THAT CORRECT?

25 A AS CAREFUL AS I COULD BE.

1 Q AND BEING VERY CAREFUL AS A LAWYER IS IMPORTANT, CORRECT?

2 A OF COURSE.

3 Q INCLUDING ON DETAILS?

4 A ON DETAILS THAT MATTERED.

5 Q SIR, YOU WOULDN'T PUT IN INFORMATION THAT DIDN'T MATTER  
6 AT ALL, WOULD YOU, OR DID YOU? LET ME ASK A DIFFERENT  
7 QUESTION, SIR. YOU DIDN'T GO THROUGH MR. AARONSON'S DRAFT OF  
8 THE LETTERS AND SAY, WELL, THIS IS IMPORTANT SO I'LL BE  
9 CAREFUL, AND THIS NEXT PARAGRAPH IS NOT IMPORTANT SO I WON'T  
10 BE CAREFUL, I'LL BE SLOPPY HERE. YOU DIDN'T DO THAT. YOU  
11 WERE CAREFUL THROUGHOUT THE PROCESS. WERE YOU CAREFUL  
12 THROUGHOUT THE PROCESS, SIR?

13 A I'LL ANSWER THAT YES.

14 Q THANK YOU. THANK YOU.

15 THE COURT: I'M CONFIDENT YOU'LL HAVE A CHANCE TO --  
16 ON REDIRECT.

17 Q (BY MR. CHU:) RIGHT. SO WHEN AS A LAWYER YOU ARE NOT  
18 ONLY CAREFUL, BUT WHEN YOU ARE DOING AN OPINION LETTER ON YOUR  
19 FIRM'S LETTERHEAD AND YOU ARE OFFICIALLY ASSIGNING AN OPINION  
20 LETTER, YOU UNDERSTAND THAT THAT CAN IMPOSE SERIOUS LIABILITY  
21 ON YOUR LAW FIRM, SO YOUR DEGREE OF CARE IS EVEN MORE  
22 HEIGHTENED, CORRECT?

23 A ABSOLUTELY.

24 Q SO WHEN YOU READ IN MR. AARONSON'S DRAFT A REFERENCE TO  
25 FIGURES 2 AND 3, YOU DIDN'T THINK ANYTHING OF THE FACT THAT

1 THERE WAS NO FIGURE 3 AT ALL. YOU DIDN'T MAKE THAT CHANGE,  
2 DID YOU?

3 A NO.

4 Q AND SO THERE WAS SOME SIMILARITY BETWEEN THE OPINION  
5 LETTERS, SO SOME OF THESE ISSUES ABOUT THAT ERROR, FOR  
6 EXAMPLE, MAY BE IN MORE THAN ONE OF THE OPINION LETTERS,  
7 CORRECT?

8 A I DIDN'T UNDERSTAND THAT. I'M SORRY.

9 Q OKAY. EACH OF THE SEVERAL OPINION LETTERS DESCRIBE  
10 CLAIMS, CLAIM TERMS, THE TECHNOLOGY, THE ECHOSTAR BOXES THAT  
11 WERE ALL PROPOSED MODIFICATIONS AND THE LIKE, AND THERE WAS A  
12 LOT OF TEXT FROM OPINION LETTER NUMBER 1 THAT'S VERY SIMILAR  
13 OR THE SAME AS OPINION LETTER NUMBER 2, AND OPINION LETTER  
14 NUMBER 3. IS THAT CORRECT?

15 A THAT'S CORRECT.

16 Q SO IF THERE WAS A MISTAKE IN ONE LETTER, IT MIGHT HAVE  
17 APPEARED IN A SECOND OR THIRD, OR IT MIGHT NOT HAVE, DEPENDING  
18 ON THE EXACT CONTEXT, CORRECT?

19 A EITHER WAY IS POSSIBLE.

20 Q NOW, WHEN AN OPINION LETTER SAYS AT THE OUTSET THAT IT'S  
21 RENDERING AN OPINION ON VALIDITY OF THE PATENT BUT YOU DON'T  
22 SEE ONE WHIFF, OR HINT, OR DISCUSSION, OR ANALYSIS ABOUT THE  
23 VALIDITY OF THE PATENT, YOU WOULD CONSIDER THAT TO BE A  
24 MISTAKE, CORRECT?

25 A YES.

1 Q AND THAT'S NOT THE MARK OF A CAREFUL LAWYER, CORRECT? I  
2 WITHDRAW THE QUESTION, SIR. I WANT TO ASK YOU A QUESTION  
3 ABOUT THE EXTENT TO WHICH YOU, OR MR. AARONSON, OR ANYONE FROM  
4 FISH & RICHARDSON WAS INVOLVED IN COMING UP WITH THE PROPOSALS  
5 TO MODIFY THE ECHOSTAR BOXES.

6 DID YOU PROVIDE ANY PROPOSED MODIFICATIONS TO ECHOSTAR AS  
7 OPPOSED TO SIMPLY RENDERING AN OPINION ON THE MODIFICATIONS  
8 THAT THEY PROPOSED?

9 A I DID NOT.

10 Q TO THE BEST OF YOUR KNOWLEDGE, DID MR. AARONSON PROPOSE  
11 ANY MODIFICATIONS TO THE ECHOSTAR BOXES?

12 A I'VE NEVER HEARD THAT HE DID, BUT I DON'T KNOW FOR A  
13 FACT.

14 Q NOW, YOU -- SINCE YOU RENDERED OPINIONS AFTER THE INITIAL  
15 OPINION LETTERS, INDEED WE SAW ONE IN 2008, YOU DID NOT  
16 ACTUALLY REVIEW THE ECHOSTAR PRODUCTS TO SEE IF THE PROPOSED  
17 MODIFICATIONS WERE THE SAME AS WHAT WAS PROPOSED, CORRECT?

18 A YES, THAT WAS NOT OUR ASSIGNMENT.

19 Q YOU WOULD HAVE BEEN ABLE TO DO THAT HAD YOU BEEN ASSIGNED  
20 IT, CORRECT?

21 A YES.

22 Q WHAT IS NO-SYNC?

23 A I DON'T KNOW.

24 Q YOU'VE NEVER HEARD OF A COMMAND CALLED NO-SYNC?

25 A I'VE SEEN REFERENCES TO IT IN PREPARING FOR THESE -- FOR

1 THIS TESTIMONY, BUT I DON'T KNOW WHAT IT MEANS.

2 Q YOU COULDN'T SAY WHAT FUNCTION IT RELATES TO?

3 A I DON'T KNOW WHAT IT MEANS.

4 Q YOU HAVE NO IDEA?

5 A NO.

6 Q IF I ASKED YOU SOME QUESTIONS ABOUT THE COMMUNICATIONS  
7 BETWEEN THE BROADCOM DRIVERS ON ONE SIDE AND THE ECHOSTAR  
8 APPLICATIONS TO GET THE BROADCOM CHIP TO WORK WITH THE REST OF  
9 THE CIRCUITRY IN THE ECHOSTAR BOXES, IF I ASKED YOU SOME  
10 QUESTIONS ABOUT THAT, WOULD YOU BE ABLE TO ANSWER THE  
11 TECHNICAL QUESTIONS?

12 A SOME.

13 Q IF I ASKED YOU WHETHER THERE IS COMMUNICATION BETWEEN A  
14 WRITE\_TSP\_THREAD IN A BROADCOM DRIVER, WOULD THAT RING ANY  
15 BELLS?

16 A YES, IT RINGS A BELL.

17 Q DO YOU KNOW WHAT IT IS?

18 A DO I KNOW WHAT WHAT IS?

19 Q WHAT JUST RANG A BELL WITH YOU, THAT PARTICULAR --

20 A THAT SUBJECT RANG A BELL. I'M FAMILIAR WITH THE DEBATE  
21 HERE ABOUT WHETHER THERE IS THAT COMMUNICATION AND WHAT WE  
22 SAID IN THE OPINION LETTERS.

23 Q AND YOU STAND BY WHAT WAS SAID IN THE OPINION LETTERS ONE  
24 HUNDRED PERCENT DESPITE THE FACT THAT YOU KNOW DR. RHYNE'S  
25 TESTIMONY ON THAT SUBJECT. IS THAT CORRECT?

1 A ABSOLUTELY.

2 Q AND YOU KNOW DR. RHYNE'S TESTIMONY ON THAT SUBJECT?

3 A YES, I DO.

4 Q THANK YOU. NOW, YOU DISCUSSED WHEN YOU WERE TESTIFYING  
5 ABOUT YOUR OPINION LETTERS CIRCULAR BUFFERS. IS THAT CORRECT?

6 A I'M SORRY. MY MIND WANDERED FOR A SECOND. COULD YOU  
7 REPEAT IT?

8 Q THAT'S QUITE ALL RIGHT. YOU'VE HEARD OF THE TERM A  
9 CIRCULAR BUFFER OR A RING BUFFER.

10 A YES.

11 Q IS THAT CORRECT?

12 A YES.

13 Q AND SOMEONE WITH AN ENGINEERING BACKGROUND WOULD KNOW A  
14 CIRCULAR BUFFER OR RING BUFFER TO BE ESSENTIALLY THE SAME?

15 A SOMEONE MIGHT. I'M NOT -- PERSONALLY THAT'S NOT MY  
16 BACKGROUND, BUT I WOULD ASSUME THAT THEY ARE THE SAME.

17 Q THANK YOU. AND YOU WERE ASKED SOME QUESTIONS WHERE YOU  
18 TESTIFIED ABOUT THE CIRCULAR BUFFER THAT WAS IN THE ECHOSTAR  
19 PRODUCTS DURING THE JURY TRIAL, CORRECT?

20 A YOU MEAN I WAS ASKED THOSE QUESTIONS DURING MY  
21 DEPOSITION? IS THAT WHAT YOU ARE REFERRING TO?

22 Q YES.

23 A YES, I BELIEVE SO.

24 Q AND THEN YOU WERE ALSO ASKED SOME QUESTIONS AND YOU  
25 TESTIFIED ABOUT THE CIRCULAR BUFFER THAT WAS IN THE ECHOSTAR

1 PRODUCTS AFTER THEIR SUPPOSED DESIGN-AROUND. IS THAT CORRECT?

2 A LOOK, I KNOW I WAS ASKED ABOUT A CIRCULAR BUFFER. I  
3 DON'T REMEMBER EXACTLY WHAT THE QUESTIONS WERE. YOU COULD  
4 REFRESH MY MEMORY BY SHOWING THEM TO ME.

5 Q BUT YOU DID HAVE THE UNDERSTANDING -- LET ME BACK UP.  
6 YOU COULDN'T IDENTIFY WHETHER THERE ARE ANY CHANGES TO THE  
7 CIRCULAR BUFFER THAT WAS IN THE ECHOSTAR PRODUCTS DURING THE  
8 JURY TRIAL AND AFTER THE PROPOSED MODIFICATION. IS THAT  
9 CORRECT?

10 A AS I SAY, I DON'T SPECIFICALLY REMEMBER THE TESTIMONY.  
11 YOU'D HAVE TO SHOW IT TO ME BEFORE I COULD ANSWER THAT.

12 Q I THINK IT WILL BE QUICKER IF I JUST READ IT, MR.  
13 HILLMAN.

14 A READ IT. THAT'S FINE.

15 Q IT'S PAGE 25, LINE --

16 THE COURT: YOU HAVE YOUR DEPOSITION IN FRONT OF YOU,  
17 MR. HILLMAN.

18 A DO I?

19 Q PAGE 25, LINE 22.

20 THE COURT: MAYBE YOU CAN SHOW IT ON THE SCREEN.

21 MR. CHU: YES.

22 THE COURT: IT MIGHT BE QUICKER FOR ALL OF US.

23 A YEAH.

24 Q 25, LINE 22 TO 26, 3:

25 QUESTION: HAS THE CIRCULAR ARRANGEMENT OF BUFFERS CHANGED

1 BETWEEN THE VERSION THAT WAS FOUND TO BE INFRINGING AT TRIAL  
2 AND THE VERSION WITH PROPOSED CHANGE?

3 THE WITNESS: I DON'T REMEMBER THE ANSWER TO THAT.

4 A OKAY. I SEE IT.

5 Q NOW, WHEN YOU WERE ASKED A SIMILAR QUESTION WITH RESPECT  
6 TO THE TEN BUFFERS IN THE DP-522 AND WHETHER THEY ARE  
7 DIFFERENT FROM THE BUFFERS IN THE DP-50X, YOU ALSO COULDN'T  
8 ANSWER THAT AS WELL. IS THAT CORRECT? THIS IS AT PAGE 26,  
9 LINE 10-16.

10 A I SEE THAT QUESTION AND ANSWER.

11 Q THANK YOU. THE PROBLEM OF OVERFLOW IS A PART OF THIS  
12 CASE. YOU ARE GENERALLY FAMILIAR WITH THAT?

13 A ABSOLUTELY.

14 Q AND THERE IS THE QUESTION OF WHETHER AT THE JURY TRIAL  
15 THE ECHOSTAR PRODUCTS IN EXISTENCE THEN WITH THE SOFTWARE THEY  
16 USED AT THAT TIME DID OR DIDN'T HAVE OVERFLOW. ARE YOU JUST  
17 GENERALLY FAMILIAR WITH THAT SUBJECT?

18 A I AM NOT ACTUALLY FAMILIAR WITH WHETHER THERE WAS A  
19 DEBATE AT TRIAL ABOUT WHETHER THE ACCUSED PRODUCT HAD OVERFLOW  
20 OR NOT. I AM FAMILIAR WITH THE OVERFLOW ISSUE IN CONNECTION  
21 WITH THE PATENTS, BUT I DIDN'T -- I HAVEN'T SEEN TESTIMONY  
22 ABOUT WHETHER THERE WAS OR WASN'T OVERFLOW IN THE PRODUCT.

23 Q AND YOU UNDERSTAND THIS OVERFLOW ISSUE HAS SOMETHING TO  
24 DO WITH AUTOMATIC FLOW CONTROL IN GENERAL, CORRECT?

25 A VERY SPECIFICALLY.

1 Q AND THIS OVERFLOW ISSUE IS BEING HOTLY DEBATED BY THE  
2 PARTIES IN GENERAL?

3 A THAT'S MY UNDERSTANDING, ALTHOUGH I HAVEN'T BEEN HERE IN  
4 THE COURTROOM.

5 Q AND YOU RENDERED AN OPINION THAT RELATED TO OVERFLOW AND  
6 AUTOMATIC FLOW CONTROL, CORRECT?

7 A YES.

8 Q BUT THE FACT IS, SIR, YOU DON'T KNOW HOW THE ECHOSTAR  
9 DVRS WITH THE PROPOSED MODIFICATION HANDLE THE OVERFLOW  
10 SITUATION. IS THAT CORRECT?

11 A THE ISSUE OF HANDLING IT --

12 Q CAN YOU FAIRLY ANSWER MY QUESTION YES OR NO?

13 A HOW THEY HANDLED IT AFTER IT HAPPENED? IS THAT THE  
14 QUESTION?

15 Q LET ME ASK THE QUESTION AGAIN. YOU DON'T KNOW HOW THE  
16 ECHOSTAR DVRS WITH THE PROPOSED MODIFICATION HANDLE OVERFLOW  
17 SITUATIONS. IS THAT CORRECT?

18 A I DON'T -- TO ME, THE QUESTION IS AMBIGUOUS AS TO WHETHER  
19 YOU'RE TALKING ABOUT --

20 Q OKAY. THANK -- THANK YOU, SIR.

21 A -- HOW YOU HANDLED IT AFTERWARDS OR --

22 Q THANK YOU.

23 A -- HOW YOU AVOID IT.

24 Q THANK YOU, SIR. LET ME GO TO YOUR DEPOSITION TRANSCRIPT  
25 PAGE 24, LINE 17.

1 A UH-HUH.

2 Q PAGE 25, LINE 17:

3 QUESTION: LET'S TALK A LITTLE BIT ABOUT THE ECHOSTAR  
4 DVRS AND IN PARTICULAR THE PROPOSED MODIFICATION THAT YOU  
5 PROVIDED THE OPINION ON. DO YOU KNOW HOW THE ECHOSTAR DVRS  
6 WITH THE PROPOSED MODIFICATION HANDLE OVERFLOW SITUATIONS?

7 THE WITNESS: DO YOU MEAN HOW THEY OCCURRED?

8 QUESTION: YES.

9 ANSWER: OR HOW -- DID THEY TRY TO PREVENT OVERFLOW?

10 QUESTION: HOW THEY --

11 ANSWER: WHICH ARE YOU TALKING ABOUT?

12 QUESTION: THE FORMER, HOW THE ECHOSTAR DVRS WITH THE  
13 PROPOSED MODIFICATION WOULD HANDLE AN OVERFLOW SITUATION, AN  
14 ACTUAL OVERFLOW SITUATION.

15 THE WITNESS: I BELIEVE THAT IF AN OVERFLOW ACTUALLY  
16 OCCURRED THERE WOULD BE A DEGRADATION OF THE PERFORMANCE. YOU  
17 KNOW, IF THERE WAS SOME PALLIATIVE THAT THEY HAVE THAT WOULD  
18 SOMEHOW TRY TO DEAL WITH THAT SITUATION AFTER IT HAPPENED, I  
19 DON'T KNOW WHAT THAT WOULD BE. IT WASN'T RELEVANT TO OUR  
20 OPINION.

21 AND THAT WAS YOUR TESTIMONY AT THE TIME, SIR?

22 A ACTUALLY, YOU MISREAD THAT TESTIMONY.

23 Q I FEARED I MIGHT HAVE GOTTEN OUT OF MY PERIPHERAL VISION. WHAT  
24 I MISREAD WAS EARLIER --

25 A YES, YOU LEFT OUT THE EXACT QUESTION THAT I ASKED YOU TO

1 CLARIFY THE AMBIGUITY.

2 Q OKAY. SO THE FACT IS, SIR, YOU DON'T KNOW HOW THEY DEALT  
3 WITH THE SITUATION AFTER IT HAPPENED, CORRECT?

4 A THAT'S CORRECT.

5 Q OKAY. SO AN OVERFLOW MIGHT BE A FEW BYTES OF INFORMATION  
6 THAT GOT PUT INTO A BUFFER, CORRECT, AT AN INAPPROPRIATE TIME,  
7 JUST IN GENERAL?

8 A WHERE THERE WAS NO ROOM IN THE BUFFER FOR THEM.

9 Q YES.

10 A THAT'S RIGHT.

11 Q AND SO LET'S JUST CALL THAT AN EXAMPLE OF AN OVERFLOW  
12 SITUATION, ALL RIGHT?

13 A THAT'S MY UNDERSTANDING.

14 Q SO IT COULD BE ONE OF TEN DIFFERENT COMPARTMENTS WHERE  
15 THIS OCCURS IN A TINY, TINY FRACTION OF A SECOND, CORRECT?

16 A I -- I'M NOT SURE ABOUT THE TIMING. ALL I KNOW IS THAT  
17 OVERFLOW IS WHEN YOU ARE TRYING TO PUT -- WHEN YOU'RE PUTTING  
18 SOMETHING INTO THE BUFFER WHERE THERE'S NO ROOM FOR IT AND SO  
19 --

20 Q FAIR ENOUGH.

21 A -- YOU OVERWRITE OTHER THINGS.

22 Q SO THE OVERFLOW COULD OCCUR IN A TINY, TINY, TINY  
23 FRACTION OF A SECOND, CORRECT?

24 A I SUPPOSE SO. I'M NOT FAMILIAR WITH THE TIMING.

25 Q AND THE SOFTWARE COULD HAVE THE ABILITY TO DETECT THAT

1 OVERFLOW CONDITION, CORRECT?

2 A WHICH SOFTWARE ARE YOU TALKING ABOUT?

3 Q THE SOFTWARE THAT'S MANAGING WHAT'S GOING ON IN THE  
4 ENTIRE SYSTEM.

5 A I AM NOT FAMILIAR WITH WHETHER THERE IS SOFTWARE TO  
6 DETECT THE OVERFLOW SITUATION.

7 Q OKAY. SO --

8 A I WOULD GUESS THAT THERE IS, BUT AGAIN, THAT DIDN'T HAVE  
9 ANYTHING TO DO WITH OUR OPINION, AND SO --

10 Q SIR --

11 A -- I'M NOT AN EXPERT ON THAT.

12 Q -- IF YOU COULD JUST DIRECTLY ANSWER MY QUESTIONS.

13 A I AM TRYING.

14 Q SO I WANT YOU TO ASSUME THAT IN A TINY, TINY FRACTION OF  
15 A SECOND THERE IS OVERFLOW THERE IS SOFTWARE TO MANAGE IT. DO  
16 YOU HAVE THE UNDERSTANDING THAT THE WAY THE SOFTWARE MANAGES  
17 IT IN THE MODIFIED ECHOSTAR BOXES IS DO A QUICK FLUSH SO THE  
18 CONSUMER DOESN'T NOTICE ANY DIFFERENCE?

19 A AS I SAID, I DON'T KNOW ANYTHING ABOUT HOW IT'S HANDLED  
20 AFTER IT OCCURS.

21 Q SO YOU DON'T KNOW WHAT HAPPENS WHEN THERE IS AN OVERFLOW  
22 SITUATION OF ANY KIND AND HOW THE SOFTWARE REGULATES BY ITSELF  
23 WHAT HAPPENS NEXT?

24 A DON'T KNOW IT. IT'S BEYOND THE SCOPE OF OUR ASSIGNMENT.

25 Q THANK YOU.

1 THE COURT: REDIRECT.

2 REDIRECT EXAMINATION

3 BY MR. MCELHINNY:

4 Q TWO VERY QUICK QUESTIONS, SIR. YOU TESTIFIED -- YOU WERE  
5 ASKED A QUESTION ABOUT RING BUFFER AND CIRCULAR BUFFER. DO  
6 YOU REMEMBER THAT?

7 A I DO.

8 Q AND YOU SAID, I BELIEVE, THAT YOU ASSUMED THAT THEY WOULD  
9 BE THE SAME THING, CORRECT?

10 A YEAH, AND THAT WAS PROBABLY A --

11 Q WELL, LET ME -- LET ME --

12 A -- AN UNWISE --

13 Q LET ME ASK YOU, DID YOU ASSUME THAT BECAUSE THE WORDS ARE  
14 SIMILAR?

15 A THAT'S ALL.

16 Q AND IF YOU WERE SIMPLY LOOKING AT THE SURFACE, BECAUSE  
17 THE WORDS WERE SIMILAR, THEY MIGHT SOUND THE SAME?

18 A YEAH, I ACTUALLY --

19 MR. CHU: OBJECTION, LEADING, YOUR HONOR.

20 A -- I HAVE --

21 THE COURT: OVERRULED.

22 A -- NO IDEA WHAT EITHER OF THEM SPECIFICALLY MEANS.

23 Q SIR, IN RENDERING THE OPINIONS FROM FISH & RICHARDSON,  
24 WHOSE CLAIM CONSTRUCTION DID YOU APPLY?

25 A WE APPLIED THE COURT'S CLAIM CONSTRUCTION.

1 MR. MCELHINNY: NOTHING FURTHER, YOUR HONOR.

2 THE COURT: RE-CROSS.

3 MR. CHU: NO FURTHER QUESTIONS.

4 THE COURT: YOU MAY STEP DOWN. WE WILL TAKE OUR  
5 LUNCH RECESS UNTIL 1:30.

6 (RECESS AT 11:59 A.M., UNTIL 1:31 P.M., OPEN COURT)

7 THE COURT: PLEASE BE SEATED. YOU MAY CALL YOUR NEXT  
8 WITNESS.

9 MR. MCELHINNY: THANK YOU, YOUR HONOR. ECHOSTAR  
10 CALLS CHARLES ERGEN.

11 (WITNESS SWORN)

12 CHARLES W. ERGEN, DEFENDANTS' WITNESS, SWORN

13 DIRECT EXAMINATION

14 BY MR. MCELHINNY:

15 Q IS YOUR CELL PHONE OFF?

16 A I DON'T HAVE A CELL PHONE ON ME.

17 Q ALL RIGHT. GOOD. MR. ERGEN, WOULD YOU STATE YOUR FULL  
18 NAME, PLEASE, AND SPELL YOUR LAST NAME FOR THE RECORD?

19 A CHARLES WILLIAM ERGEN, E-R-G-E-N.

20 Q MR. ERGEN, YOU HAVE TESTIFIED TWICE PREVIOUSLY IN THIS  
21 DISPUTE WITH TIVO, CORRECT?

22 A YES, I HAVE.

23 Q WOULD YOU TELL US WHAT YOUR CURRENT TITLE IS, PLEASE?

24 A I AM CHAIRMAN AND CEO OF ECHOSTAR CORPORATION.

25 Q COULD YOU TELL US, PLEASE, WHAT ROLE, IF ANY, YOU PLAYED

1 IN ECHOSTAR'S EFFORT TO REDESIGN ITS DVR SOFTWARE SO AS TO  
2 AVOID INFRINGING TIVO'S '389 PATENT?

3 A I PLAYED A VERY BROAD ROLE IN SETTING THE -- REALLY  
4 SETTING THE PRIORITIES, SETTING SOME OF THE STRATEGY, TIME  
5 COMMITMENTS, MANAGEMENT FOCUS, OVERALL DIRECTION, AND THEN  
6 FROM TIME TO TIME HAD TO MAKE CRITICAL DECISIONS.

7 Q WHEN WAS THE DECISION MADE TO TRY TO DESIGN-AROUND -- TO  
8 TRY TO REDESIGN ECHOSTAR'S DVR SOFTWARE?

9 A SHORTLY AFTER THE JURY RETURNED A VERDICT IN 2006 AGAINST  
10 ECHOSTAR IN FAVOR OF TIVO.

11 Q MR. ERGEN, LET ME ASK YOU A VERY SIMPLE QUESTION, WHICH  
12 IS, WHY GO THROUGH THIS EFFORT? I MEAN, WHY DIDN'T YOU JUST  
13 SIMPLY DO A DEAL WITH TIVO?

14 A WELL, TWO FUNDAMENTAL REASONS. THE FIRST IS AS A  
15 COMPANY, AND I TALKED ABOUT THIS A BIT AT TRIAL, AS A COMPANY  
16 OUR WHOLE DNA IS ENGINEERING. JUST AS TIVO IS INNOVATIVE AND  
17 COMPETES AGAINST LARGE COMPANIES, WE ALSO COMPETE AGAINST VERY  
18 LARGE COMPANIES, LIKE AT&T, OR VERIZON, OR COMCAST. AND WE  
19 HAVE TO HAVE INNOVATIVE PRODUCTS AND OUR PRODUCTS HAVE TO --  
20 FOR US TO COMPETE, WE HAVE TO BE ABLE TO HAVE THEM DO THINGS A  
21 LITTLE DIFFERENT OR BE LESS -- MORE ECONOMICAL.

22 AND SO FUNDAMENTALLY WE ARE AN ENGINEERING COMPANY, AND  
23 OUR ENGINEERS BELIEVED THAT THEY COULD DESIGN-AROUND BASED ON  
24 WHAT THEY SAW AT TRIAL.

25 AND THEN SECONDLY, I MEAN, JUST AS APPLE TV ISN'T THE

1 SAME AS MICROSOFT, EVERYBODY'S COMPUTER WORKS EXACTLY THE SAME  
2 EXCEPT FOR APPLE. THEY'VE BEEN ABLE TO DISTINGUISH  
3 THEMSELVES. AND SECONDLY WE HAVE HAD SETTLEMENT DISCUSSIONS  
4 WITH TIVO, QUITE A FEW IN FACT AND WITH JUDGE FAULKNER, AND  
5 I'VE ALSO SPENT SOME TIME WITH --

6 MR. CHU: YOUR HONOR, I DO THINK THIS AN IRRELEVANT  
7 SUBJECT FOR THE TRIAL.

8 MR. MCELHINNY: I CAN WITHDRAW IT, YOUR HONOR. HE  
9 WASN'T GOING TO GO INTO THE CONTEXT OF THE SETTLEMENT. THAT'S  
10 FINE.

11 Q (BY MR. MCELHINNY:) DOES ECHOSTAR'S ABILITY TO OFFER ITS  
12 OWN DVR HAVE AN EFFECT ON ITS ABILITY TO COMPETE IN YOUR  
13 MARKETPLACE?

14 A WELL, SURE IT DOES. IF WE HAVE A DVR THAT WE CAN CHARGE  
15 LESS MONEY FOR AND PASS THOSE SAVINGS ON TO A CONSUMER, AND IF  
16 OUR FEATURES CAN WORK A LITTLE DIFFERENTLY, IF WE CAN MAKE IT  
17 MORE CONSUMER FRIENDLY, IF WE GET FEEDBACK FROM CUSTOMERS THAT  
18 THERE'S A PROBLEM OR A FEATURE THAT THEY WOULD LIKE TO SEE,  
19 THEN WE HAVE THE ABILITY TO GO OUT AND CHANGE THAT. AND THAT  
20 GIVES US -- IT ALLOWS US TO COMPETE IN THE DVR SPACE.

21 Q SIR, YOU SHOULD HAVE A BINDER IN FRONT OF YOU THAT HAS  
22 EXHIBITS IN IT.

23 A I DO.

24 Q WOULD YOU PLEASE TURN TO EXHIBIT DX-5121?

25 A OKAY.

1 Q CAN YOU TELL US WHAT THIS DOCUMENT IS, PLEASE?

2 A THIS IS A FORM 10-Q WHICH IS A QUARTERLY DOCUMENT THAT WE  
3 ARE REQUIRED TO FILE AS A PUBLIC COMPANY WITH THE SECURITIES  
4 EXCHANGE COMMISSION.

5 Q WOULD YOU PLEASE TURN TO PAGE 19 OF THAT EXHIBIT?

6 A OKAY.

7 Q AND WOULD YOU LOOK AT THE FIRST PARAGRAPH, PLEASE?

8 A OKAY.

9 Q WE HAVE HIGHLIGHTED SOME LANGUAGE ON YOUR SCREEN THERE.  
10 IT SAYS: WHILE WE ARE WORKING ON MODIFICATIONS TO OUR DVRS  
11 INTENDED TO AVOID FUTURE INFRINGEMENT, THERE CAN BE NO  
12 ASSURANCE WE WILL BE SUCCESSFUL. DO YOU SEE THAT?

13 A YES, I DO.

14 Q WAS THIS THE FIRST PUBLIC DISCLOSURE THAT ECHOSTAR MADE  
15 CONCERNING ITS INTENTION TO TRY TO DESIGN-AROUND TIVO'S  
16 PATENTS?

17 A I BELIEVE SO, YES.

18 MR. MCELHINNY: YOUR HONOR, AT THIS POINT I WOULD  
19 LIKE TO REFER THE COURT TO DEFENDANTS' EXHIBIT 5064 WHICH WAS  
20 A STIPULATION FILED IN THIS MATTER. AND PARAGRAPH 3, WHICH  
21 INCLUDES THE LANGUAGE THAT TIVO STIPULATES THAT TIVO BECAME  
22 AWARE OF ECHOSTAR'S DESIGN-AROUND EFFORTS ON OR AROUND THE  
23 DATE THE FIRST ECHOSTAR STATEMENT WAS MADE, SPECIFICALLY  
24 AUGUST 9, 2006.

25 Q (BY MR. MCELHINNY:) MR. ERGEN, THERE HAS BEEN TESTIMONY

1 THAT ECHOSTAR HIRED FISH & RICHARDSON TO GIVE LEGAL OPINIONS  
2 CONCERNING PROPOSED NEW SOFTWARE DESIGNS. WERE YOU INVOLVED  
3 IN THE DECISION TO HIRE FISH & RICHARDSON?

4 A YES, I WAS.

5 Q WHAT ROLE DID YOU PLAY IN THE DECISION TO HIRE THEM?

6 A EARLY ON RIGHT AFTER THE JURY VERDICT AGAINST ECHOSTAR, I  
7 MET WITH INTERNAL COUNSEL AND TOLD THEM TO RESEARCH AND GET  
8 COUNSEL IN CASE WE COULD DO DESIGN-AROUND, AND TO GET THE BEST  
9 THAT THEY POSSIBLY COULD. AND THEN SHORTLY THEREAFTER, THERE  
10 WERE SEVERAL COMPANIES THAT THEY LOOKED AT AND I WAS PRESENTED  
11 WITH A NUMBER OF OPTIONS, AND THE RECOMMENDATION WAS TO USE  
12 FISH & RICHARDSON, AND I APPROVED THAT RECOMMENDATION.

13 Q DID YOU ULTIMATELY READ THE OPINIONS THAT ECHOSTAR  
14 RECEIVED FROM THE FISH & RICHARDSON FIRM?

15 A YES, I DID.

16 Q DID YOU RELY ON THOSE OPINIONS?

17 A YES, I DID.

18 Q MR. ERGEN, WHO MADE THE DECISION TO MAKE THE NEWLY  
19 DESIGNED SOFTWARE AVAILABLE TO CUSTOMERS?

20 A ULTIMATELY THAT WAS MY DECISION.

21 Q SIR, THE TESTIMONY HAS BEEN THAT THE FIRST NEW SOFTWARE  
22 WAS DOWNLOADED TO APPROXIMATELY 20,000 CUSTOMERS ON OCTOBER  
23 24<sup>TH</sup>, 2006 ON A TEST BASIS. DOES THAT SOUND RIGHT TO YOU?

24 A YES, IT DOES.

25 Q WHAT WAS THE REACTION FROM YOUR CUSTOMER BASE TO THAT

1 FIRST SERIES OF DOWNLOADS?

2 A WELL, NOT JUST THAT DOWNLOAD BUT THE DOWNLOADS THAT WE  
3 DID AROUND THAT TIME, WE HAD SOME MAJOR ISSUES WHERE WE  
4 ACTUALLY -- WHERE THE BOX JUST WOULDN'T WORK. THEY WOULD GET  
5 A BLACK SCREEN OR IT WOULD LOCK UP. SO WE HAD, YOU KNOW, SOME  
6 VERY MAJOR ISSUES WITH THOSE DOWNLOADS.

7 Q WERE THOSE REACTIONS BROUGHT TO YOUR ATTENTION?

8 A YES.

9 Q WHAT, IF ANYTHING, DID ECHOSTAR DO IN RESPONSE TO THAT  
10 CUSTOMER, THAT INITIAL CUSTOMER RESPONSE?

11 A WE HAD TO GO A LITTLE SLOWER WITH THE DOWNLOADS AND WE  
12 HAD TO REDESIGN THE SOFTWARE AND MAKE CHANGES TO IT.

13 Q SIR, IN 2008 THE FEDERAL CIRCUIT COURT OF APPEALS  
14 AFFIRMED THE DAMAGES PORTION OF THE TIVO JUDGMENT. ISN'T THAT  
15 CORRECT?

16 A WHEN WAS THE DATE?

17 Q 2008.

18 A YES.

19 Q SIR, HAS ECHOSTAR SATISFIED THE DAMAGES PORTION OF THE  
20 JUDGMENT?

21 A BEST OF MY KNOWLEDGE, WE HAVE, YES.

22 Q HOW MUCH HAVE YOU PAID TO TIVO FOR DAMAGES FOR INFRINGING  
23 THEIR PATENT?

24 A APPROXIMATELY \$105 MILLION DOLLARS.

25 Q SIR, THIS IS ACTUALLY MY LAST QUESTION. HOW WOULD YOU

1 DESCRIBE THE LEVEL OF CARE THAT ECHOSTAR TOOK TO COMPLY WITH  
2 THIS COURT'S INJUNCTION AND TO AVOID INFRINGING TIVO'S '389  
3 PATENT?

4 A I THINK WE TOOK EXCEPTIONAL CARE. WE OBVIOUSLY TOOK THE  
5 -- WHILE DISAPPOINTED, WE TOOK THE JURY VERDICT AND THE COURT  
6 VERDICTS TO HEART. WE KNEW THAT WHATEVER WE DID WOULD BE  
7 UNDER A MICROSCOPE, AND WE WENT ABOUT OUR BUSINESS TO GET THE  
8 BEST, PUT OUR BEST TEAM OF ENGINEERS ON THIS PROJECT, SO WE  
9 TOOK THE BEST SOFTWARE ENGINEERS LED BY MR. MINNICK THAT WE  
10 HAD.

11 WE HAD THE KNOWLEDGE FROM THE TRIAL, MORE DETAIL ON THE  
12 PATENT AT ISSUE. WE SPENT A LOT OF TIME BRAINSTORMING AND  
13 GOING THROUGH DIFFERENT OPTIONS. FINALLY CAME UP WITH SOME  
14 METHODOLOGY AND HIRED THE BEST --

15 MR. CHU: YOUR HONOR --

16 A -- OUTSIDE LEGAL COUNSEL WE COULD.

17 MR. CHU: EXCUSE ME, SIR. IF WE COULD GO QUESTION  
18 AND ANSWER, QUESTION AND ANSWER, INSTEAD OF HAVING A LONG  
19 NARRATIVE.

20 THE COURT: WELL, I BELIEVE HE WAS GIVING A RESPONSE,  
21 SO I WILL OVERRULE IT.

22 Q (BY MR. MCELHINNY:) DO YOU KNOW WHERE YOU WERE BEFORE YOU  
23 WERE INTERRUPTED, SIR?

24 A YES, I DO.

25 Q OKAY.

1 THE COURT: WELL, BEFORE THERE WAS AN OBJECTION.

2 Q (BY MR. MCELHINNY:) I'M SORRY. BEFORE THERE WAS AN  
3 OBJECTION.

4 A YES, I DO. SO I WAS TALKING A BIT ABOUT HIRING THE BEST  
5 OUTSIDE COUNSEL THAT WE COULD. AND THE THING THAT -- ONE  
6 THING WE DID DIFFERENT IS WE GOT THEM INVOLVED IN THE PROCESS  
7 FROM THE VERY BEGINNING SO THERE WASN'T A -- IT WASN'T LIKE WE  
8 DIDN'T BRING THEM A PRODUCT AND SAID DOES THIS INFRINGE? WE  
9 GOT THEM INVOLVED IN THE PROCESS AS OUR ENGINEERS WERE  
10 DESIGNING IT. WE GOT A METHODOLOGY AND A FUNCTIONALITY OF HOW  
11 TO DO IT THAT WAS APPROVED BY THEM AS NON-INFRINGING.

12 AND THEN OUR BEST ENGINEERS, YOU KNOW, WENT TO WORK AND  
13 TRIAL AND ERROR, TRIAL AND ERROR, STOP AND GO, STOP AND GO,  
14 AND DEVELOPED A DESIGN-AROUND THAT DOESN'T INFRINGE, IN OUR  
15 OPINION, ON TIVO'S PATENT AT ISSUE.

16 Q THANK YOU, SIR.

17 MR. MCELHINNY: NO FURTHER QUESTIONS.

18 THE COURT: CROSS EXAMINATION.

19 MR. CHU: THANK YOU, YOUR HONOR. I AM PAUSING A  
20 MOMENT JUST SO WE CAN DISTRIBUTE SOME EXHIBITS, YOUR HONOR.

21 THE COURT: YOUR TIME IS RUNNING, SO TAKE AS LONG AS  
22 YOU LIKE.

23 CROSS EXAMINATION

24 BY MR. CHU:

25 Q MR. ERGEN, WE MAY REFER TO SOME OF THOSE EXHIBITS. LET

1 ME CALL YOUR ATTENTION TO --

2 A DO YOU KNOW WHICH BOOK WOULD BE FIRST?

3 Q EXCUSE ME?

4 A DO YOU KNOW WHICH BOOK WOULD BE FIRST SO I CAN SET ONE  
5 DOWN?

6 Q YOU COULD ACTUALLY PROBABLY SET THEM BOTH DOWN AND I'LL  
7 PUT SOME THINGS UP ON THE SCREEN. IT WILL PROBABLY BE EASIER  
8 FOR YOU. YOU UNDERSTOOD THAT THERE WAS A TIME WHEN HIS HONOR  
9 ENTERED A PERMANENT INJUNCTION. IS THAT CORRECT?

10 A YES.

11 Q AND THE PERMANENT INJUNCTION ASKED ECHOSTAR TO DISABLE  
12 ITS DVRS BY SPECIFIC PRODUCT NUMBER, CORRECT?

13 A I BELIEVE THEY DID, YES.

14 Q AND THEN ECHOSTAR WENT TO THE FEDERAL CIRCUIT ON AN  
15 EMERGENCY BASIS TO GET A STAY OF THE INJUNCTION, CORRECT?

16 A YES.

17 Q AND THE INJUNCTION WAS STAYED PENDING APPEAL, CORRECT?

18 A YES.

19 Q AND IN JANUARY OF 2008 THE FEDERAL CIRCUIT AFFIRMED JUDGE  
20 FOLSOM'S TRIAL AND FINAL JUDGMENT. IS THAT FAIR?

21 A I THINK IT AFFIRMED SOME IN PART, YES.

22 Q AND THEN THE STAY OF THE INJUNCTION IN DUE COURSE WAS  
23 LIFTED. YOU ARE AWARE OF THAT, CORRECT?

24 A YES.

25 Q AND IT'S ALSO CORRECT THAT YOU WERE THE ULTIMATE

1 DECISION-MAKER, THAT YOU DECIDED ON BEHALF OF ALL OF THE  
2 ECHOSTAR DEFENDING CORPORATIONS IN THIS CASE NOT TO DISABLE  
3 THE SPECIFIC MODELS OF THE DVR THAT JUDGE FOLSOM HAD ORDERED  
4 TO BE DISABLED AND THAT THE FEDERAL CIRCUIT HAD AFFIRMED THAT  
5 THEY SHOULD BE DISABLED. IS THAT CORRECT, YOU WERE THE  
6 ULTIMATE DECISION-MAKER.

7 A I JUST DISAGREE WITH THAT STATEMENT. I WAS THE ULTIMATE  
8 DECISION-MAKER. I DISAGREE WITH THE PREFACE.

9 Q WELL, LET'S LOOK AT THE INJUNCTION, AND IF YOU WILL WANT  
10 TO LOOK AT THE ENTIRE INJUNCTION I WILL ALLOW YOU TO DO THAT,  
11 BUT LET'S CALL UP PART OF IT ON THE SCREEN HERE. IT'S  
12 ACTUALLY ON THE FRONT PAGE THAT THE SPECIFIC MODEL NUMBERS ARE  
13 DEFINED, BUT THE PERMANENT INJUNCTION IS AFFIRMED BY THE  
14 FEDERAL CIRCUIT SAYS THAT THE DEFENDANTS ARE TO, QUOTE:  
15 DISABLE THE DVR FUNCTIONALITY, I.E. DISABLE ALL STORAGE TO AND  
16 PLAYBACK FROM A HARD DISK DRIVE OF TELEVISION DATA IN, AND  
17 THERE WERE PRODUCTS SPECIFIED. DO YOU SEE THAT LANGUAGE?

18 A I SEE THE PART THAT'S BLOWN UP, YES.

19 Q NOW, THERE WAS NOTHING THAT PHYSICALLY STOPPED YOU AND  
20 YOUR CORPORATIONS FROM DISABLING THAT DVR FUNCTIONALITY. IS  
21 THAT CORRECT?

22 A I DON'T BELIEVE SO.

23 Q IN OTHER WORDS, YOU COULD HAVE DOWNLOADED SOME SOFTWARE  
24 THAT WOULD HAVE DISABLED THE DVR FUNCTIONALITY WHILE ALLOWING  
25 THOSE RECEIVER BOXES TO CONTINUE TO OPERATE AS RECEIVERS,

1 CORRECT?

2 A YES.

3 Q AND YOU WERE THE ONE THAT MADE THE DECISION THAT ECHOSTAR  
4 WOULD NOT DISABLE THE DVR FUNCTIONALITY WHEN THE PERMANENT  
5 INJUNCTION BECAME EFFECTIVE, CORRECT?

6 A I MADE THE DECISION THAT COMPLIED WITH THIS INJUNCTION,  
7 YES.

8 Q AND THAT DECISION WAS TO MAKE NO CHANGE TO THE DVR  
9 FUNCTIONALITY IN MILLIONS OF SET-TOP BOXES THAT INCLUDED, FOR  
10 EXAMPLE, THE DP-501, 508, 510, 522, AND 625, CORRECT?

11 A I CAN'T ANSWER THAT YES OR NO.

12 Q IS IT BECAUSE OF THE PARTICULAR MODEL NUMBERS?

13 A NO.

14 Q AFTER THE STAY OF THE INJUNCTION WAS LIFTED, TO THE BEST  
15 OF YOUR KNOWLEDGE, THERE WERE MILLIONS OF DVRS THAT CONTINUED  
16 TO FUNCTION WITH NO CHANGE IN THE DVR FUNCTIONALITY?

17 A AGAIN, I DON'T THINK THAT'S TRUE, NO.

18 Q ARE YOU SAYING THAT YOU DISABLED DVR FUNCTIONALITY IN  
19 RESPONSE TO THIS COURT'S INJUNCTION AND THAT INCLUDED THE DP-  
20 501 AS AN EXAMPLE?

21 A I'M SAYING THAT WE COMPLIED WITH THIS INJUNCTION.

22 Q SIR, CAN YOU ANSWER MY QUESTION DIRECTLY, NOT IN YOUR  
23 MIND WHETHER YOU THINK YOU COMPLIED WITH IT? DID YOU ISSUE AN  
24 ORDER AT ECHOSTAR TO DISABLE THE DVR FUNCTIONALITY, TO DISABLE  
25 ALL STORAGE TO AND PLAYBACK FROM A HARD DISK DRIVE OF

1 TELEVISION DATA IN THE DP-501S THAT WERE DEPLOYED BY ECHOSTAR  
2 IN THE FIELD?

3 A I DON'T THINK I CAN ANSWER THAT YES OR NO.

4 Q AND YOU WOULDN'T BE ABLE TO ANSWER IT YES OR NO WITH  
5 RESPECT TO THE 508, 510, 522, 625. IS THAT RIGHT?

6 A I JUST THINK IT'S MORE THAN A YES OR NO ANSWER.

7 Q I WOULD LIKE TO READ YOUR DEPOSITION TESTIMONY, PAGE 18,  
8 LINE 11 THROUGH LINE 25:

9 QUESTION: YOU ARE AWARE THAT THE COURT'S INJUNCTION  
10 WAS STAYED PENDING APPEAL?

11 ANSWER: YES.

12 QUESTION: AND YOU ARE AWARE THAT THAT STAY WAS  
13 LIFTED IN 2008, CORRECT?

14 ANSWER: I BELIEVE THAT'S TRUE, YES.

15 QUESTION: AND AFTER THE STAY WAS LIFTED, ECHOSTAR  
16 CONTINUED TO PROVIDE DVR FUNCTIONALITY TO ITS CUSTOMERS WHO  
17 HAD THE 50X PRODUCTS, CORRECT?

18 ANSWER: YES.

19 QUESTION: AND WHO MADE THAT DECISION?

20 ANSWER: I ULTIMATELY DID THAT, MADE THAT DECISION.

21 NOW, SIR, IF THIS COURT BELIEVES THAT ITS COURT ORDER TO  
22 DISABLE THE DVR FUNCTIONALITY MEANS EXACTLY WHAT IT SAYS ON  
23 THE FACE, INCLUDING THE 501, 508, AND 510 PRODUCTS, WOULD YOU  
24 BE -- WOULD YOU AGREE WITH ME THAT YOU HAVE VIOLATED THAT  
25 INJUNCTION?

1 MR. MCELHINNY: OBJECTION, YOUR HONOR. IT'S  
2 ARGUMENTATIVE, CALLS FOR LEGAL CONCLUSION AS TO WHAT YOUR  
3 HONOR BELIEVES.

4 THE COURT: I AM GOING TO SUSTAIN THE OBJECTION. I  
5 THINK IN LARGE PART THAT'S WHY WE'RE HERE TODAY TO DETERMINE.

6 MR. CHU: THANK YOU.

7 Q (BY MR. CHU:) NOW, MR. ERGEN, YOU HAD IN YOUR MIND THAT  
8 IT WAS OKAY NOT TO DISABLE THE DVR FUNCTIONALITY OF THE  
9 SPECIFIED PRODUCT MODELS IF YOU THOUGHT THAT THERE WAS  
10 SIGNIFICANT ENOUGH CHANGES, FOR EXAMPLE, IF THEY NO LONGER  
11 INFRINGED OR WERE MORE THAN COLORABLY DIFFERENT. IS THAT  
12 RIGHT?

13 A NO.

14 Q YOU WOULD AGREE THAT YOU AND ECHOSTAR HAD A STRONG  
15 MOTIVATION TO CONTINUE TO PROVIDE SERVICE FOR THESE MILLIONS  
16 OF DVRS THAT HAD BEEN DEPLOYED AND INSTALLED. IS THAT  
17 CORRECT?

18 A YES.

19 Q AND ONE OF THOSE MOTIVATIONS IS FROM YOUR POINT OF VIEW  
20 EVERY COMPETITOR OF YOURS HAS DVRS THAT THEY DEPLOY AND LEASE  
21 OR SELL TO CUSTOMERS. IS THAT CORRECT?

22 A YES.

23 Q AND WITHOUT THE ABILITY TO OFFER DVRS, WHETHER INFRINGING  
24 OR NOT, ECHOSTAR WOULD LOSE THE ABILITY TO COMPETE IN THE  
25 MARKETPLACE. IS THAT CORRECT?

1 A THAT'S IN LARGE PART TRUE, YES.

2 Q AND YOUR LARGEST DIRECT COMPETITOR, IS THAT DIRECTV?

3 A IT'S PROBABLY COMCAST CABLE. THEY ARE BIGGER.

4 Q OKAY. LET'S START WITH COMCAST CABLE, SIR. YOU ARE  
5 FAMILIAR WITH THE FACT THAT COMCAST CABLE HAS A PATENT LICENSE  
6 FROM THE FOLKS AT TIVO, CORRECT?

7 A I AM AWARE THEY HAVE A LICENSE. I DON'T KNOW THE DETAILS  
8 OF THAT, BUT I AM AWARE THEY HAVE A LICENSE WITH TIVO.

9 Q IF, SIR, IF YOU CAN FAIRLY ANSWER A QUESTION YES OR NO,  
10 WE WILL SPEED ALONG THROUGH THIS. NOW, DIRECTV IS YOUR MAJOR  
11 COMPETITOR AS FAR AS SATELLITE TV IS CONCERNED, CORRECT?

12 A YES.

13 Q AND YOU ARE AWARE OF THE FACT DIRECTV HAS A PATENT  
14 LICENSE FROM THE FOLKS AT TIVO. IS THAT CORRECT?

15 A YES.

16 Q SO THERE IS A WAY, AND YOU KNOW THAT THERE IS A WAY THAT  
17 YOU CAN COMPETE HEAD TO HEAD WITH YOUR CHIEF RIVALS AND ALL  
18 THE OTHER RIVALS WITH RESPECT TO SATELLITE TELEVISION OR CABLE  
19 TELEVISION BY GETTING A LICENSE FROM THE FOLKS AT TIVO,  
20 CORRECT?

21 A I DON'T KNOW THAT I CAN ANSWER THAT YES OR NO.

22 Q NOW, FROM YOUR POINT OF VIEW, TURNING OFF THE DVR  
23 FUNCTIONALITY IN ALL OF THE 50X AND BROADCOM BOXES WOULD BE  
24 EXTREMELY DISRUPTIVE AND EXPENSIVE FOR YOU, CORRECT?

25 A IF LEFT OFF PERMANENTLY, YES.

1 Q IS THE FOLLOWING AN ACCURATE STATEMENT, THAT ECHOSTAR  
2 WOULD LOSE 90 MILLION PER MONTH IF IT HAD TO COMPLY FULLY WITH  
3 THE TERMS OF THE INJUNCTION, ASSUMING IT'S PROPERLY  
4 INTERPRETED AS REQUIRING YOU TO DISABLE THE DVR FUNCTIONALITY  
5 IN THE SPECIFIED PRODUCT LINES?

6 A THERE WOULD HAVE BEEN A TIME FRAME THAT THAT WOULD HAVE  
7 BEEN AN ACCURATE STATEMENT. TODAY THAT --

8 Q NINETY --

9 A -- TODAY IT WOULD BE MORE THAN THAT. TODAY WOULD BE MORE  
10 THAN \$90 MILLION DOLLARS.

11 Q AND HOW MUCH WOULD IT BE A MONTH TODAY?

12 A WOULD BE PROBABLY SEVERAL HUNDRED -- IT WOULD BE OVER  
13 SEVERAL HUNDRED MILLION DOLLARS. I DON'T KNOW EXACTLY. I  
14 DON'T HAVE THE FIGURES IN FRONT OF ME, BUT IT WOULD BE MORE  
15 TODAY.

16 Q SEVERAL HUNDRED MILLION DOLLARS A MONTH?

17 A IT MAY BE AS MUCH AS SEVERAL HUNDRED MILLION DOLLARS A  
18 MONTH.

19 Q TWO TO THREE HUNDRED MILLION DOLLARS A MONTH?

20 A WELL, I DON'T HAVE FIGURES IN FRONT OF ME --

21 Q BUT JUST GENERALLY.

22 A -- BUT IT WOULD BE MORE -- IT WOULD BE -- SUFFICE IT TO  
23 SAY IT WOULD BE MORE THAN \$90 MILLION TODAY BECAUSE WE HAVE  
24 MORE DVRS TODAY AND OUR CUSTOMERS PAY US MORE TODAY.

25 Q AND WHEN HIS HONOR'S PERMANENT INJUNCTION WAS FIRST

1 ENTERED THAT WAS IN MID-2006, SO FROM THAT POINT COMING  
2 FORWARD TO TODAY THAT AMOUNT THAT IT WOULD COST YOU, THE  
3 FINANCIAL INCENTIVE TO CONTINUE TO ALLOW THE DVR FUNCTIONALITY  
4 REMAIN IN PLACE HAS CONTINUED TO CLIMB TO SEVERAL HUNDRED  
5 MILLION DOLLARS A MONTH AS OF TODAY?

6 A THE LOSS THAT WE WOULD SUFFER BY NOT HAVING DVRS TODAY  
7 WOULD BE MORE THAN IT WAS IN 2006 FOR SURE.

8 Q AND YOU WOULD AGREE WITH ME THAT YOU HAVE A VERY STRONG  
9 INCENTIVE NOT TO DISABLE THE, QUOTE -- "NOT TO," QUOTE,  
10 "DISABLE THE DVR FUNCTIONALITY, I.E. DISABLE ALL STORAGE TO  
11 AND PLAYBACK FROM A HARD DISK DRIVE," END QUOTE. IS THAT  
12 RIGHT?

13 A I THINK THE FUNCTIONALITY WE HAVE TODAY, WE WOULD -- I  
14 WOULD AGREE THAT WE HAVE A STRONG INCENTIVE NOT TO DISABLE  
15 THAT FUNCTIONALITY WE HAVE TODAY.

16 Q NOW OF THE TWO DIFFERENT GROUPS OF MODEL, THE ST OR 50X  
17 BOXES AND WHAT WE SOMETIMES HAVE CALLED THE 522/625 OR  
18 BROADCOM BOXES, IT'S THE SECOND CATEGORY THAT'S MUCH LARGER  
19 TODAY. IS THAT CORRECT?

20 A YES.

21 Q AND DURING THE PERIOD OF THE STAY OF THE INJUNCTION,  
22 ECHOSTAR CONTINUED TO DISTRIBUTE MORE OF THE SO-CALLED  
23 BROADCOM BOXES BUT CEASED AT SOME POINT IN TIME DISTRIBUTING  
24 THE ST BOXES. IS THAT CORRECT?

25 A THAT'S CORRECT.

1 Q NOW, YOU AGREE THAT AFTER THE JURY TRIAL A DESIGN-AROUND  
2 WAS AN OPTION THAT WAS AVAILABLE, CORRECT?

3 A YES.

4 Q AND THAT OPTION WAS ALSO AVAILABLE BEFORE THE JURY TRIAL?

5 A YES.

6 Q AND IT WAS YOUR VIEW THAT BY THE TIME WE HAD THE BENCH  
7 TRIAL BEFORE HIS HONOR THAT THE COST OF PATENT LITIGATION WAS  
8 GOING TO BE CERTAINLY IN THE TENS, MULTIPLE TENS OF MILLIONS  
9 OF DOLLARS, CORRECT?

10 A I DIDN'T KNOW EXACTLY WHAT IT WAS GOING TO BE, BUT I KNEW  
11 WE HAD SPENT ABOUT THAT MUCH I THINK UP TO THAT POINT.

12 Q AND YOU DECIDED TO ENGAGE IN LITIGATION THAT WAS GOING TO  
13 COST YOU TENS OF MILLIONS OF DOLLARS INSTEAD OF DOING A  
14 DESIGN-AROUND. IS THAT CORRECT?

15 MR. MCELHINNY: OBJECTION, YOUR HONOR. THAT'S  
16 ARGUMENTATIVE AND ASSUMES FACTS NOT IN EVIDENCE. WE DIDN'T  
17 BRING THIS LAWSUIT.

18 THE COURT: OVERRULED. YOU CAN REPHRASE IT.

19 Q (BY MR. CHU:) DO YOU HAVE THE QUESTION IN MIND,  
20 SIR?

21 A NO, I DON'T. CAN YOU PLEASE REPHRASE IT?

22 Q OKAY.

23 A OR REITERATE IT.

24 Q I'LL ASK A SOMEWHAT DIFFERENT QUESTION. DO YOU  
25 UNDERSTAND THAT IT'S ECHOSTAR'S CLAIM THAT ITS SUPPOSEDLY

1 SUCCESSFUL DESIGN-AROUND COST A TOTAL OF \$750,000?

2 A I UNDERSTAND WE SPENT SOME DIRECT COST OF ENGINEERING  
3 TIME, AND THAT AMOUNT HAD OBVIOUSLY COST MORE THAN THAT.

4 Q ARE YOU AWARE OF THE NUMBER \$750,000 BEING PUT FORWARD BY  
5 YOUR COUNSEL AS THE COST?

6 A I'M AWARE THAT THAT'S THE ENGINEERING TIME THAT WAS SPENT  
7 ON IT.

8 Q AND YOU DECIDED TO CONTINUE -- WERE YOU INVOLVED IN  
9 DECISION MAKING TO CONTINUE THROUGH THE JURY TRIAL, THE BENCH  
10 TRIAL, THE LITIGATION BEFORE THE FEDERAL CIRCUIT, AND THE  
11 LITIGATION UP UNTIL TODAY, WHATEVER THAT COST IS AND HAS BEEN  
12 INSTEAD OF SPENDING THE \$750,000 OR MORE TO HAVE DESIGNED  
13 AROUND YEARS EARLIER? DID YOU --

14 MR. MCELHINNY: SAME OBJECTION.

15 THE COURT: OVERRULED.

16 Q (BY MR. CHU:) DID YOU MAKE THAT DECISION?

17 A CAN YOU REPEAT THE QUESTION? I'M CONFUSED NOW.

18 Q LET ME JUST ASK IT IN A SIMPLER FASHION. THE TOTAL COST  
19 OF THE LITIGATION TO DATE FOR ECHOSTAR ALONE OR TIVO ALONE, SO  
20 FAR AS YOU KNOW, IS FAR IN EXCESS OF WHATEVER THE REDESIGN  
21 COSTS HAVE BEEN FOR THE SUPPOSEDLY SUCCESSFUL REDESIGN. IS  
22 THAT FAIR?

23 A I THINK ON BALANCE THE LEGAL COSTS HAVE BEEN MORE THAN  
24 THE ENGINEERING COSTS, YES.

25 Q SIGNIFICANTLY MORE?

1 A YES.

2 Q NOW, YOU THINK PRESS RELEASES SHOULD BE ACCURATE IN ALL  
3 RESPECTS, CORRECT?

4 A I THINK YOU SHOULD ATTEMPT TO HAVE ACCURATE PRESS  
5 RELEASES, YES.

6 Q THAT'S ESPECIALLY TRUE FOR A PUBLIC COMPANY. IS THAT  
7 CORRECT?

8 A YES.

9 Q AND ONE OF THE DIFFICULTIES IS IF YOU ISSUE PRESS  
10 RELEASES THAT ARE NOT ACCURATE, THE COMPANY, OFFICERS, AND  
11 DIRECTORS MIGHT BE SUBJECT TO A SECURITIES LAWSUIT AS AN  
12 EXAMPLE. IS THAT CORRECT?

13 A IT'S POSSIBLE.

14 Q AND YOU HAVE SOME SIGNIFICANT CONTROLS IN PLACE AT THE  
15 ECHOSTAR COMPANIES TO MAKE SURE THAT PRESS RELEASES ARE  
16 CAREFULLY REVIEWED. IS THAT CORRECT?

17 A WE HAVE A PROCESS, YES.

18 Q AND THAT'S TO MAKE SURE THAT THE PRESS RELEASES ARE  
19 ACCURATE?

20 A WE CERTAINLY ATTEMPT TO DO THAT, YES.

21 Q AND SO FAR AS YOU KNOW, EVERY PRESS RELEASE THAT ECHOSTAR  
22 HAS EVER MADE RELATED TO THE TIVO LAWSUIT HAS BEEN ACCURATE IN  
23 ALL RESPECTS?

24 A I BELIEVE SO.

25 Q AND YOU HAVE REVIEWED THOSE PRESS RELEASES. YOU'VE SEEN

1 THEM. THEY ARE NOT NEW NEWS TO YOU?

2 A I WOULD HAVE SEEN MOST OF THEM, YES.

3 Q AND YOU DON'T RECALL DISAGREEING WITH ANY OF THE  
4 STATEMENTS. IS THAT CORRECT?

5 A NO.

6 Q SO YOU WOULD AGREE THAT JUDGE FOLSOM, HIS HONOR, QUOTE,  
7 MADE SIGNIFICANT ERRORS IN THE CONDUCT OF THE CASE?

8 MR. MCELHINNY: OBJECTION, YOUR HONOR, TO THE  
9 RELEVANCE OF THIS.

10 MR. CHU: THEY PUT THEM FORWARD IN OTHER WITNESSES AS  
11 SO-CALLED GOOD FAITH WITNESSES. WE WANTED TO EXCLUDE ALL THE  
12 GOOD FAITH TESTIMONY. THAT'S HIS PURPOSE IN TESTIFYING.

13 THE COURT: OVERRULED.

14 A YOU'D HAVE TO GIVE ME THE PARTICULAR PRESS RELEASE AND  
15 THE CONTEXT.

16 Q YOU CAN'T SAY WHETHER YOU AGREE OR DISAGREE WITH A  
17 STATEMENT IN THE PRESS RELEASE --

18 THE COURT: WELL, WHY DON'T YOU SHOW HIM THE PRESS  
19 RELEASE?

20 MR. CHU: WILL DO. LET'S SHOW 3045, AND IT'S THE  
21 SECOND PAGE.

22 Q (BY MR. CHU) THIS IS ACTUALLY AN INTERNET PRINTOUT SO  
23 IT'S NOT THE ACTUAL PRESS RELEASE. AND IT'S THE PARAGRAPH  
24 THAT'S JUST TO THE RIGHT OF THE LOVELY ADVERTISING BOX. YOU  
25 SEE THE WORDS "THIS ACTION BY THE FEDERAL CIRCUIT" RIGHT ABOVE

1 WHERE THE CURSOR IS? OKAY. IF WE CAN BLOW THAT UP. LET ME  
2 READ THAT IN PART.

3 QUOTE: THIS ACTION BY THE FEDERAL CIRCUIT REINFORCES OUR  
4 BELIEF THAT THE TEXAS COURT MADE SIGNIFICANT ERRORS DURING THE  
5 TRIAL PROCESS AND WE LOOK FORWARD TO COMPLETE VINDICATION OF  
6 OUR POSITION. DO YOU SEE THAT?

7 A YES, I DO.

8 Q AND YOU AGREE WITH THAT STATEMENT, CORRECT?

9 A AT THE TIME, YES.

10 Q NOW, IN OCTOBER OF 2006 ECHOSTAR BEGAN TO DOWNLOAD  
11 MODIFIED SOFTWARE, CORRECT?

12 A NO.

13 Q ON OCTOBER 24, 2006, WAS ANY MODIFIED SOFTWARE  
14 TRANSMITTED TO ECHOSTAR DVR BOXES THAT ARE AT ISSUE IN THIS  
15 CASE?

16 A YES.

17 Q AND THAT INCLUDED CHANGES TO THE SOFTWARE THAT ALLEGEDLY  
18 DESIGNED AROUND THE TIVO PATENT CLAIMS, CORRECT?

19 A I BELIEVE WHAT WE DID WAS DOWNLOADED TO A SMALL NUMBER OF  
20 BOXES, DISABLED THE EXISTING SOFTWARE, REBOOTED THE BOX, AND  
21 DOWNLOADED NEW SOFTWARE.

22 Q AND OVER THE NEXT SEVERAL MONTHS YOU ENDED UP  
23 TRANSMITTING TO WHAT YOU CONSIDERED TO BE MILLIONS OF BOXES,  
24 IS THAT CORRECT, AFTER YOU FIXED THE BUGS AND THE LIKE?

25 A YES.

1 Q AND THROUGHOUT THIS PERIOD OF TIME THERE WAS NO  
2 INFORMATION GIVEN TO THE DISTRICT COURT OR THE COURT OF  
3 APPEALS THAT YOU BELIEVED THAT YOU HAD MODIFIED SOFTWARE THAT  
4 SUPPOSEDLY DESIGNED AROUND THE TIVO PATENT CLAIMS, CORRECT?

5 A I DON'T THINK SO, NO.

6 Q AND AT THIS POINT IN TIME, STARTING OCTOBER OF 2006 GOING  
7 FORWARD, YOU HAD ACTUALLY ALREADY MONTHS EARLIER HAD GOTTEN  
8 OFFICIAL OPINION LETTERS FROM FISH & RICHARDSON ON WHICH YOU  
9 WERE RELYING TO ASSERT THAT YOUR SUPPOSED DESIGN-AROUNDS WERE  
10 SUCCESSFUL. IS THAT CORRECT?

11 A YES.

12 Q AND YOU NEITHER INFORMED THE DISTRICT COURT OR THE  
13 FEDERAL CIRCUIT OF THAT, CORRECT?

14 A NO.

15 Q AND IF THE DESIGN-AROUNDS WERE SUCCESSFUL, THEN THE  
16 GRIEVOUS INJURY OF \$90 MILLION DOLLARS PER MONTH OR MORE WOULD  
17 NOT APPLY IN YOUR OPINION, CORRECT?

18 A I AM NOT SURE I TOTALLY UNDERSTAND THAT QUESTION.

19 Q WELL, IF THE SOFTWARE WAS NO LONGER INFRINGING, THEN FROM  
20 YOUR POINT OF VIEW YOU COULD CONTINUE TO COLLECT REVENUE FROM  
21 THE DVRS THAT WERE THE SUBJECT MATTER OF THIS LAWSUIT. IS  
22 THAT RIGHT?

23 A HYPOTHETICALLY, THAT -- DO WE HAVE A TIME FRAME WE ARE  
24 TALKING ABOUT?

25 Q FROM THE TIME OF THE INJUNCTION IN MID-2006 GOING FORWARD

1 UNTIL THE FEDERAL CIRCUIT RENDERED ITS FINAL DECISION IN  
2 JANUARY OF 2008, IF YOU IN FACT HAD NON-INFRINGING SOFTWARE,  
3 FROM YOUR POINT OF VIEW, THEN AN INJUNCTION OUGHT NOT TO APPLY  
4 AGAINST THAT SOFTWARE?

5 A I AGREE IF WE HAD NON-INFRINGING SOFTWARE THAT AN  
6 INJUNCTION SHOULDN'T APPLY AGAINST IT.

7 Q AND YOU UNDERSTAND THAT YOU OBTAINED AN EMERGENCY STAY OF  
8 HIS HONOR'S PERMANENT INJUNCTION FROM THE FEDERAL CIRCUIT BY  
9 ASSERTING THAT YOU WOULD BE GRIEVOUSLY INJURED TO THE TUNE OF  
10 AT LEAST \$90 MILLION DOLLARS A MONTH. IS THAT RIGHT?

11 A THAT'S CORRECT.

12 Q BUT YOU FAILED TO DISCLOSE AT ANY TIME TO THE FEDERAL  
13 CIRCUIT OR TO ANY COURT THE FACT THAT YOU THOUGHT YOU ALREADY  
14 HAD A NON-INFRINGING DESIGN, AND SOME MONTHS LATER HAD IN FACT  
15 DOWNLOADED IT TO THE ECHOSTAR DVRS. IS THAT CORRECT?

16 A THAT'S A COMPOUNDED QUESTION, SO LET ME TAKE THEM -- TAKE  
17 EACH ONE SEPARATELY. WE --

18 Q LET ME BREAK IT UP. PERHAPS YOU ARE RIGHT, IT WAS  
19 COMPOUND. YOU NEVER INFORMED THE FEDERAL CIRCUIT THAT YOU HAD  
20 DOWNLOADED WHAT YOU CONSIDERED TO BE NON-INFRINGING SOFTWARE.  
21 IS THAT RIGHT?

22 A I DON'T BELIEVE SO.

23 Q EVEN THOUGH THE FEDERAL CIRCUIT'S STAY ORDER THAT YOU  
24 OBTAINED WAS IN EFFECT AFTER YOU HAD DOWNLOADED WHAT YOU  
25 CONSIDERED TO BE NON-INFRINGING SOFTWARE. IS THAT CORRECT?

1 A I AM NOT SURE I HEARD THAT CORRECT. WE DOWNLOADED THE  
2 SOFTWARE AFTER THE STAY WAS IN EFFECT. IS THAT WHAT YOU SAID?  
3 THE DOWNLOAD OF THE SOFTWARE WAS AFTER, AFTER THE STAY HAD  
4 BEEN ISSUED.

5 Q YES. BUT THE BASIS FOR THE STAY, AT LEAST THE ARGUMENT  
6 BY ECHOSTAR, WAS THAT IT WOULD HURT ECHOSTAR TO THE TUNE OF  
7 \$90 MILLION DOLLARS A MONTH. YOU NEVER PROVIDED THE  
8 ADDITIONAL INFORMATION THAT HAD BEEN CONCEALED UP TO THAT DATE  
9 THAT YOU HAD DOWNLOADED THE SOFTWARE. IS THAT RIGHT?

10 MR. MCELHINNY: THAT ARGUMENT -- THAT'S  
11 ARGUMENTATIVE, CONCEALING.

12 THE COURT: WELL, REPHRASE WITHOUT USING CONCEALED.

13 Q (BY MR. CHU:) OKAY. YOU NEVER COMMUNICATED TO ANY COURT  
14 THAT YOU HAD DOWNLOADED WHAT YOU CONSIDERED TO BE NON-  
15 INFRINGING SOFTWARE?

16 A YES, WE HAVE COMMUNICATED TO THIS COURT HERE THAT WE HAVE  
17 DONE THAT.

18 Q SIR, WHILE THE STAY WAS IN PLACE FROM MID-2006 TO THE  
19 BEGINNING OF 2008, YOU NEVER COMMUNICATED TO ANY COURT AT ANY  
20 TIME THAT YOU HAD DOWNLOADED WHAT YOU CONSIDERED TO BE NON-  
21 INFRINGING SOFTWARE. IS THAT CORRECT?

22 A THAT'S CORRECT.

23 Q AND ONE OF THE CONSIDERATIONS IN MAKING THAT DECISION WAS  
24 THAT YOU KNEW THAT TIVO OR ONE OF THE COURTS WOULD SAY, LET'S  
25 SEE IF IT'S REALLY NON-INFRINGING INSTEAD OF LETTING ECHOSTAR

1 DECIDE THAT ON ITS OWN. THAT WAS A CONSIDERATION IN YOUR  
2 DECISION-MAKING, CORRECT?

3 A I DON'T THINK SO.

4 Q SO DURING THE PERIOD OF TIME OF THE STAY, IS IT CORRECT  
5 THAT YOU LAUNCHED AN ADVERTISING CAMPAIGN THAT WAS  
6 SPECIFICALLY AIMED AT TIVO?

7 A I WOULDN'T PHRASE IT THAT WAY, NO.

8 Q YOU LAUNCHED AN ADVERTISING CAMPAIGN THAT FOR THE FIRST  
9 TIME SPECIFICALLY BEGAN TO USE THE TIVO NAME AS AN INTEGRAL  
10 PART OF THE ADVERTISEMENT. IS THAT CORRECT?

11 A I THINK WE HAD USED TIVO'S NAME BEFORE.

12 Q YOU LAUNCHED AN ADVERTISING CAMPAIGN WHEN THE STAY WAS --  
13 AFTER YOU HAD SECURED THE STAY THAT WAS TOUTING THE ECHOSTAR  
14 DVR BOXES AS, QUOTE, BETTER THAN TIVO. IS THAT CORRECT?

15 A I BELIEVE WE RAN AN ADVERTISEMENT THAT DID USE  
16 TERMINOLOGY BETTER THAN TIVO, YES.

17 Q SO LET'S SEE MR. ERGEN'S SLIDE 2. THIS IS AN EXAMPLE OF  
18 THAT ADVERTISING CAMPAIGN. IS THAT CORRECT?

19 THE COURT: IS THERE A DATE AVAILABLE FOR THAT?

20 MR. CHU: LET ME SEE IF I HAVE ONE. LET ME ASK MR.  
21 ERGEN.

22 Q (BY MR. CHU:) DO YOU RECALL THAT YOU BEGAN THIS  
23 ADVERTISING CAMPAIGN USING ADVERTISINGS -- ADVERTISEMENTS,  
24 SUCH AS THE ONE WE HAVE ON THE SCREEN, AFTER THE STAY FROM THE  
25 FEDERAL CIRCUIT WAS IN EFFECT?

1 A YES.

2 Q DO YOU RECALL SPENDING MORE THAN A MILLION DOLLARS ON  
3 THAT?

4 A ON THE TOTAL CAMPAIGN, YES, WE SPENT MORE THAN A MILLION  
5 DOLLARS.

6 Q WELL, MORE THAN FIVE MILLION?

7 A YES.

8 Q MORE THAN TEN MILLION?

9 A YES.

10 Q MULTIPLE TENS OF MILLIONS?

11 A YES.

12 Q MORE THAN FIFTY MILLION?

13 A I BELIEVE SO, YES.

14 Q AND YOU CONSIDER TIVO TO BE A DIRECT COMPETITOR WITH  
15 RESPECT TO DVRS. IS THAT CORRECT?

16 A YES.

17 Q IT WAS TO YOUR FINANCIAL BENEFIT TO PUT OFF THE DATE AS  
18 TO WHEN THERE COULD BE A COURT HEARING WITH RESPECT TO THE  
19 ALLEGEDLY DESIGNED AROUND SOFTWARE DURING THE PERIOD OF THE  
20 STAY. IS THAT CORRECT?

21 A I DON'T KNOW IF THAT'S TRUE OR NOT.

22 Q WELL, YOU KNEW YOU COULD HAVE COME TO COURT AND SAID, WE  
23 THINK WE HAVE DESIGNED AROUND THE SOFTWARE, AND BEFORE WE  
24 DEPLOY IT WE WOULD LIKE THE COURT TO DECIDE WHETHER IT REALLY  
25 IS A DESIGN-AROUND. YOU KNEW THAT WAS AN OPTION, CORRECT?

1 A I GUESS THEORETICALLY THAT WAS AN OPTION, YES.

2 Q AND YOU COULD HAVE DONE THAT IN MID-2006 WHEN THE  
3 PERMANENT INJUNCTION WAS FIRST ENTERED IMMEDIATELY AFTER THE  
4 FEDERAL CIRCUIT STAYED THE APPLICATION OF THE INJUNCTION,  
5 CORRECT?

6 A I DON'T THINK SO.

7 Q YOU COULDN'T DO THAT? YOU WERE PHYSICALLY STOPPED FROM  
8 RAISING THE ISSUE?

9 A WE DIDN'T HAVE A DESIGN-AROUND IN MID-2006.

10 Q BY LATER 2006, YOU HAD THE DESIGN DOCUMENTATION, YOU HAD  
11 BEGUN TO DOWNLOAD SOFTWARE, YOU HAD THE FISH & RICHARDSON  
12 OPINIONS, CORRECT?

13 A LATER IN 2006, WE DID.

14 Q AND AT THAT POINT YOU COULD HAVE COME FORWARD TO TIVO AND  
15 THE COURTS AND SAID, WE THINK WE HAVE DESIGNED AROUND. LET'S  
16 SEE IF IT'S TRUE. LET'S GET THIS DECIDED FAIR AND SQUARE.  
17 THAT WAS A POSSIBILITY. YOU COULD HAVE COME FORWARD WITH THAT  
18 INFORMATION, CORRECT?

19 A I DON'T KNOW IF THERE WAS ANY LAW TO PREVENT YOU FROM  
20 DOING THAT. I DON'T KNOW.

21 Q YOU COULD HAVE COME FORWARD WITH THAT INFORMATION?

22 A SO I THINK BASED ON MY MIND, BASED ON WHAT I KNOW, I  
23 THINK WE COULD HAVE DONE THAT.

24 Q THANK YOU. AND THE FACT OF THE MATTER IS THAT IT WAS  
25 DURING THAT PERIOD OF TIME THE ONLY PUBLIC STATEMENTS ABOUT A

1 DESIGN-AROUND WERE TO THE EFFECT THAT YOU WERE TRYING TO DO A  
2 DESIGN-AROUND. IS THAT CORRECT?

3 A AT THE TIME THAT'S WHAT WE WERE TRYING TO DO, YES.

4 Q AND THE ONLY TIME YOU FIRST ANNOUNCED THAT YOU SUPPOSEDLY  
5 HAD A DESIGN-AROUND WAS AT THE END OF THE ROAD WHEN THE  
6 FEDERAL CIRCUIT HAD AFFIRMED, THEN SHORTLY AFTER THE UNITED  
7 STATES SUPREME COURT REFUSED TO HEAR YOUR FURTHER APPEAL TO  
8 THAT BODY, CORRECT?

9 A MY RECOLLECTION IS THAT SHORTLY AFTER THE COURT OF  
10 APPEALS' FINAL VERDICT, WE DID MAKE A DISCLOSURE THAT WE HAD  
11 IN FACT IMPLEMENTED A DESIGN-AROUND.

12 Q SO DURING THIS PERIOD FROM THE ORIGINAL ISSUANCE OF THE  
13 PERMANENT INJUNCTION TO THE FINAL DECISION OF THE FEDERAL  
14 CIRCUIT, YOU WERE AGGRESSIVELY MARKETING THE ECHOSTAR DVRS,  
15 CORRECT?

16 A WELL, I THINK WE WERE AGGRESSIVELY MARKETING OUR SERVICE.  
17 AS A SMALL PART OF THAT, IT'S KIND OF BLOWN UP IN THE PICTURE  
18 THERE, AS A SMALL PART OF THAT WE HIGHLIGHTED THE EDITOR'S  
19 AWARD THAT WE HAD WON OVER TIVO FROM -- FROM A THIRD PARTY.

20 Q NOW, YOU HAVE SOME UNDERSTANDING OF WHAT THE SUPPOSED  
21 DESIGN-AROUNDS ARE. IS THAT CORRECT?

22 A YES, I DID.

23 Q FOR EXAMPLE, YOU KNOW DETAILS SUCH AS THE SUPPOSED  
24 DESIGN-AROUND FOR THE 50X BOXES AS WELL AS THE BROADCOM BOXES  
25 INCLUDES ECHOSTAR'S POSITION THAT THOSE BOXES NO LONGER DO

1 INDEXING. IS THAT CORRECT?

2 A I THINK IN GENERAL THAT'S -- IN GENERAL THAT'S AN  
3 ACCURATE STATEMENT, YES.

4 Q YOU ALSO HAVE THE UNDERSTANDING SINCE YOU -- THIS IS THE  
5 THIRD TRIAL INVOLVING *TIVO V. ECHOSTAR* THAT YOU'VE TESTIFIED  
6 AT, THAT PATENT CLAIMS ARE CONSTRUED BY THE COURT, CORRECT?

7 A I KNOW THAT THE COURT CONSTRUES PATENT CLAIMS. THE JURY  
8 MAY AS WELL. I'M NOT SURE. I DON'T KNOW IF IT'S JUST LIMITED  
9 TO THE COURT. I THINK MAYBE THE JURY DOES AS WELL. I MAY BE  
10 WRONG ON THAT.

11 Q IN REACHING YOUR DECISION NOT TO DISABLE THE 50X BOXES,  
12 DID YOU AT ALL CONSIDER THE FACT THAT THE ONLY BASIS ON WHICH  
13 THEY ARE SUPPOSEDLY NON-INFRINGING IS THE FACT THAT THEY DO  
14 NOT DO INDEXING?

15 A WELL, I DON'T THINK I CAN ANSWER THAT YES OR NO.

16 Q BUT YOU DO UNDERSTAND THAT THAT IS THE REASON THAT'S  
17 BEING PUT FORWARD AS TO WHY THEY SUPPOSEDLY DO NOT INFRINGE  
18 THE 50X BOXES?

19 A I HAVE A GENERAL UNDERSTANDING OF WHY WE BELIEVE THE 50X  
20 BOXES DO NOT NOW INFRINGE.

21 Q AND YOU MADE YOUR DECISION NOT TO DISABLE THOSE BOXES  
22 DESPITE THE FACT THAT YOU DO NOT KNOW IF THE COURT HAS  
23 INTERPRETED CLAIM 31 AS REQUIRING INDEXING?

24 A AGAIN, I DON'T BELIEVE I CAN ANSWER THAT IN YES OR NO.

25 Q I WOULD LIKE TO READ YOUR DEPOSITION TRANSCRIPT FROM

1 FEBRUARY OF THIS YEAR, 2009, PAGE 17, LINE 4-10:

2 QUESTION: AND IS IT YOUR UNDERSTANDING THAT THE  
3 COURT HAS INTERPRETED CLAIM 31 AS REQUIRING INDEXING?

4 ANSWER: I DON'T THINK I -- I DON'T WANT TO -- I'M  
5 NOT AN EXPERT FOR WHAT THE COURT HAS RULED, AND I THINK THE  
6 COURT KNOWS HOW THEY HAVE RULED.

7 NOW, YOU ALSO HAVE THE UNDERSTANDING THAT THERE IS A  
8 PARTICULAR KIND OF BUFFERING SYSTEM THAT IS IN THE MODIFIED  
9 SOFTWARE. IS THAT CORRECT?

10 A I HAVE A GENERAL UNDERSTANDING OF BUFFERING. I SHOULD  
11 SAY FLOW CONTROL. I KNOW IT SOMEHOW RELATES TO BUFFERING.

12 Q AND YOU UNDERSTAND THAT IT'S ECHOSTAR'S POINT OF VIEW AND  
13 THAT IT SHOULD NOT BE HELD IN CONTEMPT BECAUSE IT DOES NOT USE  
14 A BUFFERING SYSTEM TO CONTROL THE OVERFLOW OF DATA. IS THAT  
15 CORRECT?

16 A MY UNDERSTANDING IS MAYBE A LITTLE DIFFERENT THAN THAT.  
17 MY UNDERSTANDING IS THAT WE DO -- WE DO NOT HAVE THE ABILITY  
18 TO NOT -- TO SHUT OFF DATA, AND THAT WE CAN HAVE OVERFLOWING  
19 CONDITIONS.

20 Q AND THAT'S A REASON SUPPOSEDLY FROM ECHOSTAR'S POINT OF  
21 VIEW THAT IT SHOULD NOT BE HELD IN CONTEMPT. IS THAT RIGHT?

22 A BASED ON OUR OUTSIDE LEGAL COUNSEL AND BASED ON --

23 Q SIR, CAN YOU ANSWER FAIRLY YES OR NO?

24 A CAN YOU REPEAT THE QUESTION?

25 Q IT'S JUST A GENERAL QUESTION. ONE OF THE REASONS WHY FOR

1 THE BROADCOM BOXES THAT YOU DO NOT BELIEVE YOU SHOULD BE HELD  
2 IN CONTEMPT IS BECAUSE A PARTICULAR BUFFERING SYSTEM IS BEING  
3 USED THAT DOES NOT INFRINGE, CORRECT?

4 A AGAIN, IN MY MIND IT'S A LITTLE -- I'M NOT QUITE AS  
5 COMPLEX AS THAT. I WOULD SAY IT A DIFFERENT WAY. AS I STATED  
6 EARLIER IN MY ANSWER, I BELIEVE WE DO NOT PRACTICE FLOW  
7 CONTROL. WE DON'T HAVE THE ABILITY TO DO FLOW CONTROL.

8 Q AND THAT'S RELATED TO THE BUFFERING SYSTEM?

9 A AND MY UNDERSTANDING IS THAT IT'S SOMEHOW RELATED TO  
10 BUFFERING, YES.

11 Q AND YOU DON'T KNOW, DESPITE THE FACT THAT YOU'VE DECIDED  
12 NOT TO DISABLE THOSE BROADCOM DVRS, YOU DON'T KNOW IF THE  
13 COURT'S CLAIM CONSTRUCTION REQUIRES A PARTICULAR BUFFERING  
14 SYSTEM. IS THAT CORRECT?

15 MR. MCELHINNY: IT'S COMPOUND, AND THE INTRODUCTION  
16 IS ARGUMENTATIVE AND INCORRECT, YOUR HONOR.

17 MR. CHU: I'LL RESTATE IT.

18 THE COURT: REPHRASE IT.

19 Q (BY MR. CHU:) YOU DO NOT KNOW WHETHER THE COURT'S CLAIM  
20 CONSTRUCTION REQUIRES A PARTICULAR BUFFERING SYSTEM. IS THAT  
21 FAIR?

22 A I DON'T HOLD MYSELF OUT AS A LEGAL EXPERT, NO.

23 Q SO YOU DON'T KNOW ONE WAY OR THE OTHER WHETHER IT'S  
24 REQUIRED?

25 A WELL, YES, I HAVE AN UNDERSTANDING OF THAT. WE GOT

1 OUTSIDE LEGAL COUNSEL TO LOOK AT THOSE ISSUES AND --

2 Q BUT --

3 A -- BASED ON EVERYTHING --

4 Q EXCUSE ME.

5 A -- THAT I'VE BEEN TOLD AND I'VE BEEN RELYING ON --

6 THE COURT: GENTLEMEN, GENTLEMEN, DON'T -- LET HIM  
7 FINISH.

8 MR. CHU: EXCUSE ME. OKAY.

9 THE COURT: IF YOU HAVE AN OBJECTION, RAISE IT.  
10 OTHERWISE, LET HIM FINISH HIS ANSWER AND ASK YOUR NEXT  
11 QUESTION.

12 MR. CHU: OKAY. THANK YOU, YOUR HONOR.

13 A AND SO --

14 THE COURT: LET'S TRY TO MOVE THIS ALONG.

15 MR. CHU: THANK YOU.

16 THE COURT: I DON'T THINK WE'RE -- I THINK WE ARE  
17 BOGGING DOWN.

18 MR. CHU: THANK YOU.

19 A SO I RELIED ON THOSE EXPERTS.

20 Q WAS IT THE VIEW OF SOME PEOPLE AT ECHOSTAR THAT YOU  
21 COULDN'T CONCLUDE THAT YOU DIDN'T INFRINGE AND THAT YOU COULD  
22 CONTINUE TO DEPLOY THE SPECIFIC DVRS THAT ARE AT ISSUE IN THIS  
23 HEARING UNTIL A COURT SAID, YES INDEED, IT IS A VALID  
24 WORK-AROUND?

25 MR. MCELHINNY: I'M SORRY, YOUR HONOR, THAT WAS SO

1 COMPOUND THAT ACTUALLY I'VE LOST IT, SO I DON'T --

2 MR. CHU: I'LL RESTATE IT.

3 Q (BY MR. CHU:) WAS IT EVER EXPRESSED AT ECHOSTAR THAT WHAT  
4 YOU HAD TO DO OR SHOULD DO IS TO GO TO COURT TO FIND OUT  
5 WHETHER YOU HAD A VALID WORK-AROUND RATHER THAN CONTINUING ON  
6 WITHOUT DISABLING THE DVRS?

7 A I DON'T THINK THE ANSWER TO THAT QUESTION IS -- OBVIOUSLY  
8 THE ANSWER TO THAT QUESTION IS NO.

9 Q I'D LIKE TO READ PART OF A STATEMENT BY DAVID MOSKOWITZ.  
10 BY THE WAY, WHO IS DAVID MOSKOWITZ?

11 A DAVID MOSKOWITZ WAS OUR FORMER -- WAS A GENERAL COUNSEL  
12 TO ECHOSTAR UP UNTIL ABOUT 2007.

13 Q AND --

14 MR. MCELHINNY: AT THE MOMENT THERE IS NO FOUNDATION  
15 TO READ THIS OR TO USE IT FOR IMPEACHMENT, YOUR HONOR.

16 MR. CHU: WELL, I'M GOING TO ASK WHETHER IT REFRESHES  
17 HIS RECOLLECTION ON THE SUBJECT MATTER OF MY PRIOR QUESTION.

18 THE COURT: OVERRULED. YOU MAY READ IT. AND WHAT IS  
19 THIS FROM?

20 MR. CHU: THIS IS FROM AN ANALYST CALLED TYPICALLY  
21 AFTER AN EARNINGS ANNOUNCEMENT, AND THERE ARE STATEMENTS MADE  
22 BY COMPANY OFFICERS.

23 Q (BY MR. CHU:) IS THAT GENERALLY TRUE, MR. ERGEN?

24 A YES.

25 Q DOES IT REFRESH YOU --

1 THE COURT: I MEAN, IS THIS AN EXHIBIT OR --

2 MR. CHU: YES.

3 THE COURT: WHICH ONE?

4 MR. CHU: IT IS 3313, AND THIS IS AT PAGE 8 AND IT'S  
5 AT THE BOTTOM OF THE PAGE. IT ACTUALLY SAYS UNKNOWN SPEAKER  
6 AS IS OFTEN THE CASE IN TRANSCRIPTS, BUT I THINK WE ARE FAIRLY  
7 CONFIDENT. CAN WE JUST BLOW THAT UP, ON THE LAST BRACKET THAT  
8 SAYS UNKNOWN SPEAKER?

9 Q (BY MR. CHU:) SO LET ME JUST READ IT. QUOTE: MY  
10 UNDERSTANDING IS MOST OF THAT HAS COME THROUGH THE NEWS CORP  
11 RELATIONSHIP VERSUS THE DIRECT TV RELATIONSHIP -- THIS IS  
12 RESPONDING TO PART OF A QUESTION -- AND WE CONTINUE TO LOOK AT  
13 WAYS AGAIN TO THE EXTENT WE HAVE A BROADBAND PLATFORM AND WE  
14 WILL MAKE MORE ANNOUNCEMENTS AS WE GET FURTHER ALONG THAT  
15 PATH. BUT I WOULDN'T ASSUME THAT OUR SILENCE MEANS THAT WE  
16 ARE NOT ACTIVELY PURSUING THINGS THAT CAN ENHANCE OUR  
17 EXPERIENCE AND BE MORE COMPETITIVE IN THE MARKETPLACE. AND  
18 IT'S AGAIN -- HOLD ON A MOMENT, I THINK WE ARE ON THE WRONG  
19 PAGE. I APOLOGIZE. I THINK I WAS A PAGE OFF. OKAY.

20 Q MR. ERGEN, WOULD YOU READ THAT ALOUD?

21 A WELL, WE ARE SPENDING ENGINEERING RESOURCES TO TRY TO  
22 DEVELOP WORK-AROUNDS WHICH WOULD MAKE OUR PRODUCTS NON-  
23 INFRINGING EVEN UNDER THE ANALYSIS THE DISTRICT COURT GAVE,  
24 AND WE'VE MADE GOOD PROGRESS IN THAT REGARD, BUT WE'RE NOT  
25 FINISHED WITH THAT DEVELOPMENT. UNTIL THAT DEVELOPMENT IS

1 COMPLETED AND IMPLEMENTED AND THE COURT CONCLUDES THAT, YES,  
2 INDEED IT IS A VALID WORK-AROUND, WE CAN'T SAY WE'VE GOT ONE.  
3 BUT WE ARE CERTAINLY DOING ALL THE RIGHT THINGS THAT WE CAN  
4 PRUDENTLY -- WE CAN PRUDENTLY TO LOOK AT THIS FROM EVERY ANGLE  
5 WE CAN.

6 Q SO THAT VIEW WAS EXPRESSED AT ECHOSTAR BY A SENIOR  
7 OFFICER THAT YOU CAN'T SAY YOU'VE GOT A VALID WORK-AROUND  
8 UNTIL A COURT SAYS YOU'VE GOT ONE. IS THAT RIGHT?

9 A WELL, I THINK IN THE CONTEXT OF HIS SPEAKING, I THINK IT  
10 SPEAKS FOR ITSELF, AND I THINK THAT -- I THINK THAT THE  
11 UNKNOWN SPEAKER PROBABLY WAS AN EXECUTIVE OF ECHOSTAR. AND IT  
12 PROBABLY WAS A CONFERENCE CALL, AS YOU SAID.

13 Q SIR, IF THIS COURT DECIDES THAT ECHOSTAR HAS BEEN IN  
14 VIOLATION OF ITS INJUNCTION SINCE THE STAY WAS LIFTED, HOW  
15 QUICKLY COULD YOU DISABLE THE DVR BOXES THAT ARE THE SUBJECT  
16 MATTER OF THE INJUNCTION?

17 A I DON'T KNOW EXACTLY.

18 Q BUT IT IS A SOFTWARE DOWNLOAD WHERE YOU ESSENTIALLY SEND  
19 A SOFTWARE SWITCH TO TURN OFF THE DVR FUNCTIONALITY, CORRECT?

20 A I DON'T KNOW THAT I'M QUALIFIED TO ANSWER. I DON'T THINK  
21 IT'S QUITE THAT SIMPLE, BUT I THINK IN GENERAL -- I HAVE A  
22 GENERAL UNDERSTANDING THAT WE WOULD SEND SOME SOFTWARE  
23 DOWNLOADS TO TURN THE BOXES -- TO TURN SOME FUNCTIONALITY OFF.

24 Q AND IT COULD BE DONE RELATIVELY PROMPTLY, CORRECT?

25 A I'M NOT THE RIGHT PERSON TO ASK THAT QUESTION.

1 MR. CHU: NO FURTHER QUESTIONS, YOUR HONOR.

2 THE COURT: REDIRECT.

3 MR. MCELHINNY: THANK YOU, YOUR HONOR.

4 REDIRECT EXAMINATION

5 BY MR. MCELHINNY:

6 Q SIR, YOU WERE ASKED A COUPLE OF QUESTIONS ABOUT  
7 STATEMENTS MADE IN PUBLIC FILINGS, AND YOU ASKED -- AND YOU  
8 MENTIONED YOU HAD A PROCESS FOR THAT. DO YOU REMEMBER THAT?

9 A YES.

10 Q WHO IS INVOLVED IN THE DECISIONS ABOUT WHAT GETS SAID OR  
11 DOESN'T GET SAID IN PUBLIC FILINGS?

12 A WELL, BECAUSE THE GAP RULES AND SEC ACCOUNTING RULES ARE  
13 SO COMPLEX, AS WE ALL ARE LEARNING MORE ABOUT, I RELY ON  
14 OUTSIDE LEGAL COUNSEL, SEC COUNSEL, AND OUTSIDE ACCOUNTANTS,  
15 KPMG, TO MAKE SURE THAT WE IN ALL THE FILINGS THAT WE DO THAT  
16 WE ARE AS ACCURATE AS WE CAN, AND WE GET THEIR INPUT AND THEIR  
17 RECOMMENDATIONS AS TO HOW WE -- WHAT STATEMENTS WE SHOULD AND  
18 SHOULDN'T BE MAKING IN OUR FILINGS.

19 Q SIR, DID THERE COME A POINT WHEN ECHOSTAR VOLUNTARILY  
20 TURNED OVER ITS SOFTWARE AND ITS LEGAL OPINIONS TO TIVO?

21 A YES, WE DID.

22 Q AND DID YOU AUTHORIZE THAT?

23 A YES, I DID.

24 Q SIR, YOU WERE SHOWN, ACTUALLY YOU WERE JUST SHOWN A  
25 SCREEN, BUT I THINK -- I THINK WHAT YOU WERE SHOWN WAS A

1 BLOWUP OF PART OF TIVO EXHIBIT 3020 WHICH YOU -- I DON'T KNOW  
2 IF YOU HAVE IN YOUR BINDER, TO TELL YOU THE TRUTH. OKAY. DO  
3 YOU HAVE A COPY OF THAT IN YOUR BINDER? SIR, IF I COULD --

4 MR. MCELHINNY: MAY I APPROACH THE WITNESS, YOUR  
5 HONOR? IT WOULD JUST BE A LITTLE BIT FASTER.

6 THE COURT: YES.

7 Q (BY MR. MCELHINNY:) MR. ERGEN --

8 A OKAY. I HAVE IT.

9 Q MR. ERGEN, I'M GOING TO GIVE YOU A COPY OF THAT EXHIBIT  
10 THAT WE'VE BLOWN UP SECTIONS OF. THE PRINT IN THE EXHIBIT  
11 BOOK IS TOO SMALL. CAN YOU TELL THE DATE OF THAT AD, SIR?

12 A IT APPEARS TO BE FEBRUARY 1<sup>ST</sup>, 2008.

13 Q AND USING THE BLOWUP ON THE BETTER THAN TIVO SECTION, IS  
14 THERE A FOOTNOTE TO THAT BETTER THAN TIVO?

15 A YES, THERE IS.

16 Q AND CAN YOU TELL USING THE BLOWUP WHAT THE FOOTNOTE SAYS?

17 A YES, I CAN.

18 Q WHAT IS THAT, SIR?

19 A IT SAYS: CNET REVIEW ON OCTOBER 3<sup>RD</sup>, 2007 CNET.COM.

20 Q AND WHAT DOES THAT REFER TO, SIR?

21 A CNET, WE -- WE WERE REVIEWED AS OTHER DVRS INDUSTRY WERE  
22 REVIEWED FOR THE TOTAL DVRS, AND OUR DVRS SCORED A HIGHER  
23 SCORE, 8.7 OUT OF 10, VERSUS TIVO WHO SCORED 8.3, AND WE WERE  
24 AWARDED THE EDITOR'S CHOICE BY CNET AS BEING BETTER THAN TIVO.  
25 AND CNET IS A VERY WELL RESPECTED, OWNED BY CBS, VERY

1 RESPECTED INDEPENDENT THIRD PARTY WHO REVIEWS ELECTRONICS AND  
2 DOES REVIEWS FOR CUSTOMERS AND SO FORTH.

3 Q THE \$100 MILLION DOLLAR FIGURE FOR ADVERTISING THAT YOU  
4 GAVE, WHAT IS THAT? WHAT IS THAT? WHAT DOES THAT ENTAIL,  
5 \$100 MILLION DOLLARS FOR WHAT?

6 A WELL, I DON'T KNOW THAT I GAVE \$100 MILLION. I THINK HE  
7 ASKED ME IF IT WAS MORE THAN \$50 MILLION, BUT THAT WOULD HAVE  
8 BEEN FOR AN ADVERTISING CAMPAIGN THAT WOULD HAVE TALKED ABOUT  
9 OUR PROGRAMMING PRIMARILY, THAT WE HAD HUNDREDS OF CHANNELS  
10 FOR \$29 A MONTH.

11 AS PART OF THAT, WE WERE VERY PROUD THAT AN INDEPENDENT  
12 THIRD PARTY HAD RATED OUR DVR HIGHER THAN TIVO WHO HAD BEEN AT  
13 THAT POINT THE INDUSTRY LEADER, AND THAT WE ACTUALLY WON THE  
14 EDITOR'S CHOICE OVER THAT. AND WE WON -- IN ADVERTISING I  
15 THINK, YOU KNOW, WE WERE BRAGGING ABOUT THAT A THIRD PARTY,  
16 AND REFERENCING A THIRD PARTY FOR PEOPLE TO GO AND READ THE  
17 REVIEW FOR THEMSELVES.

18 Q AND TO THAT EXTENT IS THE AD THAT TIVO MARKED AS AN  
19 EXHIBIT, IS THAT CHARACTERISTIC? DOES IT SHOW THE  
20 ADVERTISEMENT FOR THE ENTIRE SERVICE WITH A LITTLE BULLET  
21 POINT THAT SAYS BETTER THAN TIVO AND REFERRING TO THAT CNET  
22 AD, IS THAT HOW IT WORKED?

23 A YES.

24 Q SIR, FOLLOWING UP ON COUNSEL'S QUESTION, IF THIS RESULTED  
25 IN AN ORDER THAT YOU HAD TO DISCONNECT DVRS ENTIRELY AS

1 QUICKLY AS POSSIBLE, HOW MANY PEOPLE IN THE UNITED STATES  
2 WOULD LOSE THEIR DVR FUNCTION?

3 A WELL, WE HAVE OVER 6 MILLION HOMES, AND THERE'S OVER TWO  
4 PEOPLE PER HOME, SO IT WOULD BE 12 TO 15 MILLION PEOPLE WOULD  
5 LOSE THAT SERVICE.

6 MR. MCELHINNY: THANK YOU, YOUR HONOR.

7 THE COURT: CROSS EXAMINATION.

8 RE CROSS EXAMINATION

9 BY MR. CHU:

10 Q THERE WERE THREE MODELS OF THE ST BOXES OR THE 50X BOXES  
11 AT ISSUE IN THIS CASE, CORRECT?

12 A IS THE 510 A 50X?

13 Q LET ME, SIR, JUST REPRESENT TO YOU THAT THERE ARE I  
14 BELIEVE THREE 50X MODELS. IS THAT RIGHT?

15 A I KNOW THERE'S A 501, A 508, AND IF THE 510 IS A 50X BOX,  
16 THERE WOULD BE THREE.

17 Q NONE OF THOSE BOXES RECEIVED THE CNET AWARD, CORRECT?

18 A NO, THEY DID NOT. WELL, THEY DIDN'T -- THEY DIDN'T WIN  
19 THE EDITOR'S CHOICE AWARD.

20 Q THEY DIDN'T WIN THE AWARD YOU WERE JUST TALKING ABOUT,  
21 CORRECT?

22 A NO, THEY DID NOT.

23 Q AND THE DP-522, IT'S A BROADCOM BOX, CORRECT?

24 A YES.

25 Q IT DIDN'T WIN THE CNET AWARD YOU WERE JUST TALKING ABOUT,

1 CORRECT?

2 A I DON'T -- I DON'T KNOW WHAT AWARDS IT WON.

3 Q AND THE OTHER BROADCOM BOX THAT IS AT ISSUE IN THIS CASE,  
4 IT DIDN'T RECEIVE THE CNET AWARD YOU WERE JUST TALKING ABOUT,  
5 CORRECT?

6 A THE -- I DON'T -- WHICH ONE?

7 Q THE CNET AWARD WITH THE TINY FOOTNOTE THAT YOU COULDN'T  
8 READ UNTIL IT WAS BLOWN UP?

9 A WE DID WIN OTHER CNET AWARDS. WE DID WIN OTHER CNET  
10 AWARDS, BUT I DON'T KNOW THAT WE WON AN EDITOR'S CHOICE AWARD.  
11 WE WON SOME CONSUMER ELECTRONIC AWARDS, AND WE GOT FOUR STAR  
12 RATINGS.

13 Q AND THAT'S THE ONE YOU WERE JUST TALKING ABOUT, RIGHT?

14 A THE ADVERTISEMENT THAT WE WERE JUST TALKING ABOUT WAS  
15 REFERRING TO THE EDITOR'S CHOICE AWARD.

16 Q SIR, SIR, RIGHT. THANK YOU VERY MUCH.

17 REDIRECT EXAMINATION

18 BY MR. MCELHINNY:

19 Q JUST -- IT MAY BE GETTING LESS CLEAR HERE WITH EVERY  
20 QUESTION. BUT MAYBE SO THAT I UNDERSTAND, THESE ADS WERE NOT  
21 DIRECTED TO PARTICULAR BOXES, WERE THEY?

22 A NO, BUT THE BOX WE SOLD AT THE TIME WERE -- IN THE  
23 FEBRUARY 2008 TIME FRAME, THIS WAS THE MODEL THAT WAS THE CORE  
24 MODEL.

25 Q OKAY. BUT I JUST -- DID YOU EVER MAKE A DECISION TO DO A

1 FOCUSED ADVERTISING CAMPAIGN ON THE SPECIFIC BOXES THAT HAD A  
2 STATE INJUNCTION AGAINST THEM?

3 A NO, WE DID NOT.

4 Q WERE YOU SELLING THE BOXES THAT WERE -- EVERYBODY WHO  
5 KNOWS ANYTHING ABOUT THIS INDUSTRY SAYS THEY ARE BETTER THAN  
6 TIVO, WERE YOU SELLING THOSE?

7 A YES. YES.

8 MR. MCELHINNY: THANK YOU, YOUR HONOR.

9 THE COURT: ANY ADDITIONAL QUESTIONS?

10 MR. CHU: NO FURTHER QUESTIONS, YOUR HONOR.

11 THE COURT: YOU MAY STEP DOWN. CALL YOUR NEXT.

12 MR. MCELHINNY: YOUR HONOR, WE CALL DR. THOMAS RHYNE.

13 (WITNESS SWORN)

14 MR. BARQUIST: JUST A MINUTE, YOUR HONOR, TO MAKE  
15 SOME ROOM HERE.

16 THE COURT: TAKE YOUR TIME, THE CLOCK IS RUNNING.

17 MR. BARQUIST: I AM VERY AWARE OF THAT.

18 V. THOMAS RHYNE, DEFENDANTS' WITNESS, SWORN

19 DIRECT EXAMINATION

20 BY MR. BARQUIST:

21 Q DR. RHYNE, WOULD YOU PLEASE STATE YOUR FULL NAME?

22 A MY FULL NAME IS VERNON THOMAS RHYNE, III. I GO BY TOM.

23 Q AND YOU ARE TESTIFYING AS AN EXPERT WITNESS FOR ECHOSTAR  
24 TODAY. IS THAT RIGHT?

25 A YES.

1 Q AND WOULD YOU TELL US WHAT ISSUES YOU'VE BEEN ASKED TO  
2 TESTIFY ABOUT TODAY?

3 A TWO. ONE IS THE QUESTION OF WHETHER OR NOT THIS IS --  
4 THESE CHANGES THAT HAVE BEEN MADE ARE I BELIEVE THE CORRECT  
5 TERM IS MORE THAN COLORABLE. SECONDLY, WHETHER OR NOT THE NEW  
6 MODIFIED BOXES THAT HAVE BEEN DESCRIBED SEVERAL TIMES HERE  
7 TODAY INFRINGE CLAIMS 31 AND 61 AS CONSTRUED BY THE COURT AND  
8 AS ASSERTED BY TIVO DURING TRIAL.

9 Q HAVE YOU REACHED A CONCLUSION ABOUT THE COLORABLE  
10 DIFFERENCES QUESTION?

11 A YES, I HAVE.

12 Q BRIEFLY, WHAT IS YOUR CONCLUSION, AND WHAT WERE THE  
13 REASONS FOR IT?

14 A AFTER COMPARING THE OPERATIONAL CHARACTERISTICS OF BOTH  
15 THE BROADCOM AND THE ST BOXES AS THEY WERE FOUND TO INFRINGE  
16 AT TRIAL AND AS THEY ARE NOW OPERATED WITH THE MODIFICATIONS  
17 THAT HAVE BEEN MADE, I THINK THE CHANGES ARE FAR MORE THAN  
18 COLORABLE.

19 I BASE THAT ON THE FACT THAT THE MANNER IN WHICH THOSE  
20 BOXES WERE MODIFIED HAS FOCUSED DIRECTLY ON THE MANNER IN  
21 WHICH INFRINGEMENT WAS FOUND WITH THE PRIOR VERSIONS OF THOSE  
22 BOXES IN A COUPLE OF KEY AREAS. ONE IS THE DETECTION OF START  
23 CODES AS A FORM OF PARSING, AS WAS RULED AT COURT BY THE JURY.  
24 THE SECOND IS THE MANNER IN WHICH FOR THE BROADCOM BOXES  
25 BUFFERING TAKES PLACE IN A FORM THAT DOES NOT ALLOW THE

1 FILLING OF THE BUFFER TO BE STOPPED AND SPECIFICALLY ALLOWS  
2 OVERWRITING OF THE DATA IN THE BUFFER IF THAT CONDITION DOES  
3 OCCUR.

4 Q AND ARE THOSE CHANGES MERELY COSMETIC?

5 A NO, NO. THEY ARE FUNDAMENTAL CHANGES THAT ARE MADE  
6 DIRECTLY ON POINT WITH THE AREAS THAT WERE RAISED BY TIVO  
7 DURING THE TRIAL IN ORDER TO SUCCESSFULLY BRING THE JURY TO A  
8 DECISION OF INFRINGEMENT BY THE ORIGINAL FORM OF THE TWO  
9 FAMILIES OF ECHOSTAR PRODUCTS.

10 Q AND WITH REGARD TO THE SECOND ISSUE ABOUT INFRINGEMENT,  
11 HAVE YOU REACHED A CONCLUSION?

12 A I HAVE. I HAVE COMPARED THE OPERATIONS OF THE NEW BOXES  
13 TO THE CLAIMS AS CONSTRUED AND ASSERTED, AND I -- IT'S MY  
14 OPINION, AND I WILL EXPLAIN IT, THAT THE MANNER IN WHICH THE  
15 MODIFIED DESIGN-AROUND BOXES OPERATE FALLS OUTSIDE THE SCOPE  
16 OF CLAIMS 31 AND 61.

17 Q AND WHICH LIMITATIONS IN PARTICULAR?

18 A PARTICULARLY THE LIMITATION REQUIRING A PHYSICAL DATA  
19 SOURCE IN BOTH CLAIMS, AND THE LIMITATION REQUIRING THAT THERE  
20 BE FLOW CONTROL OF WHAT THE CLAIM REFERS TO AS A SOURCE OBJECT  
21 WHILE THAT SOURCE OBJECT IS FILLING A BUFFER THAT IT MUST WORK  
22 WITH.

23 Q OKAY. AND JUST TO BE PRECISE, THE FIRST POINT ABOUT THE  
24 PHYSICAL DATA SOURCE, DOES THAT APPLY TO BOTH TYPES OF BOXES?

25 A YES.

1 Q AND YOUR SECOND POINT ABOUT THE AUTOMATIC FLOW CONTROL,  
2 DOES THAT APPLY JUST TO THE BROADCOM BOXES?

3 A THAT'S CORRECT.

4 Q IN ANALYZING INFRINGEMENT, DID YOU HAVE TO CONSIDER  
5 ISSUES THAT WERE NOT DECIDED AT TRIAL?

6 A YES.

7 Q WHAT ISSUES DID YOU HAVE TO DECIDE OR EXAMINE THAT WERE  
8 NOT PREVIOUSLY DECIDED?

9 A WELL, I'LL GIVE YOU SOME EXAMPLES THAT COME TO MIND. THE  
10 FIRST IS WHETHER OR NOT A PRODUCT, A DVR PRODUCT THAT DOES NOT  
11 DO START CODE DETECTION AND AS A RESULT DOES NOT GENERATE AN  
12 INDEX OF START CODES CAN BE FOUND TO INFRINGE THE PARSING  
13 LIMITATION OF CLAIMS 1 -- 31 AND 61. AND BY THE PARSING  
14 LIMITATION, I AM REFERRING TO WHAT IS REQUIRED OF THAT  
15 PHYSICAL DATA SOURCE.

16 THE SECOND ONE WOULD BE WHETHER OR NOT A DEVICE THAT USES  
17 INSTEAD A FORM OF STATISTICAL ANALYSIS THAT OPERATES NOT ON  
18 THE RECORDING SIDE BEFORE THE DISK STORAGE, BUT RATHER ON THE  
19 PLAYBACK SIDE AFTER THE DISK STORAGE WOULD BE FOUND TO  
20 INFRINGE THAT SAME LIMITATION, THE PHYSICAL DATA SOURCE  
21 LIMITATION.

22 ANOTHER ONE WOULD BE WHETHER OR NOT A DEVICE THAT HAS A  
23 BUFFER OPERATION WHICH CLEARLY CAN ALLOW OVERFLOW TO OCCUR IF  
24 DATA THAT'S BEEN STORED IN THE BUFFER HAS NOT BEEN REMOVED  
25 FROM THE BUFFER BEFORE NEW DATA IS WRITTEN OVER IT WOULD BE

1 FOUND TO INFRINGE THE FLOW CONTROL LIMITATION PLACED ON THE  
2 SOURCE OBJECT DURING ITS FILLING OF THE BUFFER BY CLAIMS 31  
3 AND 61.

4 AND LASTLY, KIND OF A COUPLE OF NEW POSITIONS, WHETHER OR  
5 NOT A DEVICE THAT HAS ONLY A PID FILTER, A PACKET  
6 IDENTIFICATION FILTER, CAN BE FOUND TO INFRINGE THE PARSER  
7 LIMITATION OF CLAIMS 31 AND 61.

8 AND THEN THE LATEST NEW ONE IS WHETHER OR NOT A DEVICE  
9 THAT SIMPLY HAS A WELL KNOWN CIRCULAR BUFFER AND USES IT IN  
10 THE PROCESS OF STORING DATA COMING INTO IT AS EN ROUTE TO  
11 STORAGE ON THE DISK SIMPLY BY HAVING A CIRCULAR BUFFER COULD  
12 BE FOUND TO INFRINGE THE FLOW CONTROL ARRANGEMENT REQUIREMENT  
13 OF CLAIMS 31 AND 61.

14 Q AND WHAT IS THE REASON OR WHY DID YOU HAVE TO CONSIDER  
15 THOSE NEW ISSUES IN ANALYZING INFRINGEMENT?

16 A THE MAIN THING IS THE FACT THAT IN MY OPINION TIVO HAS  
17 CHANGED THE BASIS FOR ITS SUCCESSFUL ASSERTIONS OF  
18 INFRINGEMENT AT TRIAL. AND I GUESS COUPLED WITH THAT THE FACT  
19 THAT THESE FUNDAMENTAL AND SIGNIFICANT CHANGES HAVE BEEN MADE  
20 TO THE MANNER IN WHICH BOTH FAMILIES OF ECHOSTAR PRODUCTS  
21 OPERATE AFTER THE DESIGN-AROUND.

22 Q ALL RIGHT. DR. RHYNE, BEFORE WE DIVE IN THE DETAILS,  
23 WOULD YOU -- LET'S BACK UP A MINUTE. WOULD YOU TELL THE COURT  
24 A LITTLE BIT ABOUT YOUR EDUCATIONAL AND PROFESSIONAL  
25 BACKGROUND THAT IS RELEVANT TO TODAY'S TESTIMONY?

1 A YOUR HONOR, I HAVE THREE DEGREES IN ELECTRICAL  
2 ENGINEERING, THE LAST TWO FOCUSING IN AN AREA THAT TODAY IS  
3 CALLED COMPUTER ENGINEERING, BUT I KIND OF PREDATED THE  
4 DEFINITION OF THAT SUBFIELD RELATED TO ELECTRICAL ENGINEERING.

5 I HAVE ALMOST A 50-YEAR CAREER IN BOTH INDUSTRY AND  
6 ACADEMIA SPLIT PRETTY MUCH DOWN THE MIDDLE. I TAUGHT FOR  
7 NEARLY 18 YEARS AT TEXAS A&M. I WORKED FOR A NUMBER OF YEARS  
8 AT A COMPANY CALLED THE MICRO ELECTRONICS AND COMPUTER  
9 TECHNOLOGY CORPORATION IN AUSTIN. AND WHILE I WAS THERE, I  
10 TAUGHT AT THE UNIVERSITY OF TEXAS IN THE ELECTRICAL AND  
11 COMPUTER ENGINEERING DEPARTMENT.

12 I HAVE BEEN LUCKY ENOUGH TO RECEIVE A NUMBER OF HONORS  
13 FROM MY PEERS. I AM A LIFE FELLOW OF THE INSTITUTE OF  
14 ELECTRICAL AND ELECTRONICS ENGINEERS WHICH I RECEIVED  
15 IDENTIFYING MY WORK AS A COMPUTER ENGINEER AND AS A COMPUTER  
16 ENGINEERING EDUCATOR. A COUPLE OF YEARS AGO, I WAS IDENTIFIED  
17 AS THE YOUNG ENGINEER IN THE STATE OF TEXAS. AND I ALSO AT  
18 ONE TIME WAS IDENTIFIED BY THE AMERICAN SOCIETY FOR  
19 ENGINEERING EDUCATION AS THE OUTSTANDING YOUNG ELECTRICAL  
20 ENGINEERING EDUCATOR IN THE UNITED STATES.

21 I'VE -- WHILE I WAS IN ACADEMIA I HAD A REASONABLY GOOD  
22 PUBLICATION RECORD, AND I RETIRED FROM TEXAS A&M IN 19 -- LATE  
23 '97, EARLY '98. AND SINCE THAT TIME I SPEND TIME WITH MY  
24 GRANDKIDS AND I ALSO DO A GREAT DEAL OF LATE OF PATENT  
25 LITIGATION WORK. THERE JUST SEEMS TO BE A DEMAND FOR THAT,

1 PARTICULARLY IN EAST TEXAS.

2 Q SINCE YOU MENTIONED A COUPLE OF TIMES THESE YOUNG  
3 ENGINEER AWARDS, MAY I WISH YOU A HAPPY BIRTHDAY TODAY, DR.  
4 RHYNE?

5 A TODAY'S THE, WHAT IS IT JACK BENNY SAID, THE 28<sup>TH</sup>  
6 ANNIVERSARY OF MY 39<sup>TH</sup> BIRTHDAY, SO, THANK YOU.

7 Q NOW, DR. RHYNE, YOU APPEARED AT THE FIRST TRIAL IN THIS  
8 MATTER, CORRECT?

9 A THAT'S RIGHT. I WAS RESPONSIBLE FOR PRESENTING MY  
10 OPINIONS REGARDING WHETHER OR NOT ECHOSTAR INFRINGED A LARGER  
11 SET OF CLAIMS THAN JUST CLAIMS 31 AND 61 AT THAT TRIAL.

12 Q AND WERE YOU PRESENTED AS AN EXPERT WITNESS AT THAT  
13 TRIAL?

14 A I WAS ACCEPTED BY THE COURT, I SURELY WAS, AND THAT WAS  
15 THE ROLE THAT I PLAYED.

16 MR. BARQUIST: YOUR HONOR, I WOULD OFFER DR. RHYNE AS  
17 AN EXPERT IN TODAY'S PROCEEDINGS.

18 MR. CHU: NO OBJECTION.

19 THE COURT: SO RECOGNIZED.

20 Q (BY MR. BARQUIST:) DR. RHYNE, WHAT MATERIALS DID YOU  
21 REVIEW IN DOING YOUR WORK AND DEVELOPING YOUR OPINIONS IN THE  
22 CURRENT MATTER?

23 A WELL, IT HAD BEEN I GUESS OVER A YEAR OR SO SINCE THE  
24 TRIAL THAT TOOK PLACE ORIGINALLY, AND I FRANKLY HAD FORGOTTEN  
25 A LOT OF THE DETAILS SO I WENT BACK AND REVIEWED MY OWN

1 REPORTS, THE REPORTS THAT WERE DONE BY THE INFRINGEMENT  
2 EXPERT, DR. GIBSON, IN THAT TRIAL, THE REPORT THAT WAS FILED  
3 BY PROFESSOR STORER, ALL OF THE TRIAL TESTIMONY AS RECORDED, A  
4 NUMBER OF EXHIBITS THAT WERE PROVIDED AND DOCUMENTS ASSOCIATED  
5 WITH THE TESTIMONY AT THAT TRIAL.

6 I REVIEWED THE FINDINGS AT THE END OF THE TRIAL  
7 SUBSEQUENTLY WITH RESPECT TO THIS NEW LITIGATION. I HAVE  
8 REVIEWED THE NEW REPORT WRITTEN BY PROFESSOR STORER. I HAVE  
9 WRITTEN A REPORT OF MY OWN. I REVIEWED THE DEPOSITION  
10 TESTIMONY OF MR. MINNICK, OF PROFESSOR STORER. I HAVE BEEN  
11 DEPOSED MYSELF FOR ELEVEN HOURS BY MR. IANCU IN AUSTIN, AND I  
12 HAVE STUDIED IN DEPTH THE SOFTWARE MODIFICATIONS AND THE  
13 HARDWARE CHANGE THAT HAS BEEN MADE IN THE VARIOUS ECHOSTAR  
14 DESIGN-AROUND RECEIVERS.

15 Q AND DID YOU ALSO REVIEW MATERIALS FROM THE APPEAL PORTION  
16 OF THE CASE?

17 A YES, YES, I HAVE. I READ THE TRANSCRIPT OF THE APPEAL,  
18 AND I HAVE READ THE RESULTS OF THAT, I GUESS YOU CALL IT THE  
19 FEDERAL CIRCUIT OPINION, OR WHATEVER THAT WAS CALLED.

20 Q DID YOU MEET WITH ECHOSTAR DURING YOUR WORK?

21 A I HAVE. I'VE BEEN TO DENVER TWICE, A TOTAL OF ABOUT FOUR  
22 DAYS, AND SAT DOWN TO DO WHAT IN INDUSTRY WAS CALLED A DESIGN  
23 REVIEW OF THE SOFTWARE THAT'S BEING MODIFIED -- HAS BEEN  
24 MODIFIED. AND, YOUR HONOR, WHAT YOU DO IN A DESIGN REVIEW, AT  
25 LEAST THE WAY I RUN THEM, IS I ASK THE ENGINEERS WHO DID THE

1 SOFTWARE DEVELOPMENT TO SIT DOWN IN A ROOM WITH ME. WE GET A  
2 PROJECTOR. THEY SHOW ME THE SOURCE CODE FOR THE SOFTWARE AS  
3 IT WAS AND AS IT IS, AND WE GO THROUGH IT PRETTY MUCH FUNCTION  
4 BY FUNCTION. IT GIVES ME AN OPPORTUNITY TO QUESTION THEM  
5 ABOUT IT. AND MY PURPOSE HERE, I'D HEARD SOME GENERAL  
6 INFORMATION ABOUT HOW THE NEW SOFTWARE OPERATED BUT I WANTED  
7 TO CONFIRM ON MY OWN THE FACT THAT THE MODS THAT THEY HAD MADE  
8 REALLY DID MAKE THE CHANGES THAT I HAD BEEN TOLD ABOUT.

9 AND I ALSO HAD AN OPPORTUNITY TO TAKE SOME OF THAT  
10 SOFTWARE ON MY OWN AND LOOK AT A COUPLE OF KEY AREAS, BUT THAT  
11 GAVE ME HOURS OF OPPORTUNITY TO ASK THE, I GUESS, FIVE OR SIX  
12 PEOPLE WHO WERE BROUGHT TO THE ROOM BY MR. MINNICK EXACTLY  
13 WHAT DOES THIS MEAN, WHY DID YOU DO THIS, HOW DID YOU TURN  
14 THIS ON, HOW DID YOU TURN THAT OFF? I WENT THROUGH THAT TYPE  
15 OF OPERATION. I AM VERY FAMILIAR WITH THAT. I MANAGED  
16 COMPLEX SOFTWARE DEVELOPMENT PROJECTS IN AN INDUSTRIAL SETTING  
17 AT MCC, THAT COMPANY I MENTIONED IN AUSTIN, FOR ABOUT TEN  
18 YEARS.

19 Q DID YOU TALK WITH ANYONE OUTSIDE OF ECHOSTAR?

20 A A FEW. I THINK PRINCIPALLY I'VE HAD TWO CONVERSATIONS  
21 WITH A GENTLEMAN FROM BROADCOM, AND I'VE ALSO READ HIS  
22 DEPOSITION OF RECENT DAYS. THE GENTLEMAN'S NAME IS DEMAS, I  
23 THINK D-E-M-A-S, AND I ASKED HIM SOME VERY SPECIFIC QUESTIONS  
24 TO RECONFIRM THE UNDERSTANDING I HAD BEEN PROVIDED BY THE  
25 PEOPLE AT ECHOSTAR AS TO HOW THE OPERATIONAL CHARACTERISTICS

1 OF THE BROADCOM CHIP IN WHAT WE NOW CALL THE BROADCOM FAMILY  
2 OF RECEIVERS HAD BEEN MODIFIED DURING THE REDESIGN EFFORT.

3 Q NOW, DR. RHYNE, DID YOU YOURSELF HAVE ANYTHING TO DO WITH  
4 DEVELOPING THE NEW DESIGN?

5 A ABSOLUTELY NOTHING.

6 Q HAVE YOU HAD AN OPPORTUNITY TO OPERATE THE NEW DESIGN  
7 DVRS?

8 A BACK IN DECEMBER OF 2007 I HAD AN OPPORTUNITY TO OPERATE  
9 ONE OF THE EARLY MODIFIED 50X RECEIVERS. BUT MORE RECENTLY IN  
10 DECEMBER OF LAST YEAR, I HAD AN OPPORTUNITY TO SEE A SIDE-BY-  
11 SIDE COMPARISON OF ONE MEMBER OF THE 50X FAMILY AS IT WAS  
12 BEFORE THE DESIGN-AROUND AND AS IT IS NOW, AS WELL AS A MEMBER  
13 OF THE BROADCOM FAMILY BEFORE AND AFTER.

14 Q AND YOU HAVE ALSO ATTENDED THIS HEARING THIS WEEK,  
15 CORRECT?

16 A I'VE BEEN HERE. I WAS OUT FOR A LITTLE WHILE DURING SOME  
17 OF THE DISCUSSION THAT MR. HILLMAN, I UNDERSTAND, HAD, BUT  
18 OTHER THAN THAT HOUR OR SO, I HAVE BEEN IN THE HEARING FROM  
19 THE BEGINNING.

20 Q SO YOU HEARD DR. STORER'S TESTIMONY?

21 A I HAVE.

22 Q AND MR. MINNICK'S TESTIMONY?

23 A YES.

24 Q SO TURNING TO THE TWO ISSUES THAT YOU HAVE IDENTIFIED,  
25 COLORABLE DIFFERENCES AND INFRINGEMENT, TELL US FIRST OF ALL

1 WHAT THE DIFFERENCE BETWEEN THOSE TWO ISSUES IS AS YOU  
2 UNDERSTAND IT.

3 A WELL, AGAIN, I'M NOT THE LAWYER HERE, BUT AS I UNDERSTAND  
4 IT, THE COLORABLE DIFFERENCE ISSUE HAS TO DO WITH HOW THE  
5 ORIGINAL DEVICE HAS BEEN MODIFIED VIS-A-VIS THE DESIGN-AROUND  
6 DEVICE, AND IN PARTICULAR ADDRESSING THOSE CHANGES WITH  
7 RESPECT TO THE WAY IN WHICH THE CONSTRUED CLAIMS WERE ASSERTED  
8 BY TIVO SUCCESSFULLY AT THE FIRST TRIAL.

9 MR. CHU: OBJECTION, YOUR HONOR. IT'S A MISSTATEMENT  
10 OF THE LAW.

11 THE COURT: WELL, HE SAID THAT'S HIS UNDERSTANDING.  
12 I MEAN, YOU ARE LEFT TO ARGUE WHETHER THAT'S CORRECT OR NOT,  
13 BUT HE SAID THAT'S HIS UNDERSTANDING.

14 MR. CHU: I'LL JUST FOR THE RECORD PRESERVE A RUNNING  
15 OBJECTION ON HIS VIEW OF CLAIM CONSTRUCTION.

16 THE COURT: VERY WELL. YOU ARE WELCOME TO CROSS  
17 EXAMINE HIM ON THAT AND ADDRESS THAT IN FINDINGS OF FACT AND  
18 CONCLUSIONS OF LAW.

19 MR. CHU: THANK YOU VERY MUCH.

20 THE COURT: VERY WELL.

21 Q (BY MR. BARQUIST:) SO, DR. RHYNE, THE COLORABLE  
22 DIFFERENCES LOOKS AT THE -- COMPARES THE OLD DEVICE AND THE  
23 NEW DEVICE.

24 A THAT'S CORRECT.

25 Q IS THAT ESSENTIALLY IT?

1 A THAT'S -- THAT'S MY UNDERSTANDING.

2 Q AND --

3 A AND MR. CHU MAY POINT OUT THAT THAT'S INCORRECT, BUT  
4 THAT'S -- THAT'S AN ISSUE AS TO HOW WERE THE DEVICES CHANGED  
5 FROM THE INFRINGING DEVICES THAT WERE FOUND AT TRIAL AND HOW  
6 DO THEY WORK NOW.

7 Q AND THE SECOND ISSUE, THE INFRINGEMENT ISSUE, THAT  
8 INVOLVES COMPARING WHAT TO WHAT?

9 A IN THAT ROLE I HAVE COMPARED THE NEW DEVICES, WITHOUT  
10 REGARD TO THE WAY THEY WERE BEFORE, TO THE CLAIMS 31 AND 61,  
11 AS THOSE LIMITATIONS OF THAT -- THOSE PAIR OF CLAIMS HAVE BEEN  
12 CONSTRUED BY THE COURT. AND AGAIN, I THINK I'VE BEEN INFORMED  
13 BY THE MANNER IN WHICH THE -- THE LIMITATIONS OF THOSE CLAIMS  
14 WERE ASSERTED SUCCESSFULLY BY TIVO AT TRIAL.

15 Q AND RECOGNIZING THAT YOU ARE NOT A LAWYER AND NOT GIVING  
16 LEGAL TESTIMONY, WHAT IS YOUR UNDERSTANDING OF THE COLORABLE  
17 DIFFERENCES STANDARD?

18 A IT'S A NEW TERM TO ME. IT'S MY UNDERSTANDING, THOUGH,  
19 THAT IT WOULD BE A BAD THING, IT WOULD BE COLORABLE, I GUESS  
20 IS THE RIGHT WAY TO PUT IT -- IF -- IF THE ONLY CHANGES THAT  
21 HAD BEEN MADE BY MR. MINNICK AND HIS TEAM WERE KIND OF  
22 COSMETIC CHANGES, IF THEY MAYBE -- MY DEBATE COACH USED TO SAY  
23 THERE WERE DIFFERENCES BETWEEN REASONS THAT SOUND GOOD AND  
24 GOOD SOUND REASONS. IF THEY MADE SOME CHANGES THAT LOOK GOOD  
25 BUT WHEN YOU OPENED THE HOOD AND LOOKED UNDERNEATH TO SEE WHAT

1 REALLY HAD HAPPENED, THAT WITH RESPECT TO THE INFRINGING  
2 ISSUES THAT WERE FOUND AT TRIAL IN COMPARISON PARTICULARLY TO  
3 THE CONSTRUED CLAIMS, THEY LOOKED LIKE THEY HAD DONE  
4 SOMETHING, BUT REALLY THEY HADN'T MADE ANY FUNDAMENTAL CHANGES  
5 ALONG THOSE LINES.

6 Q SO HOW DID YOU GO ABOUT ANALYZING WHETHER THE DIFFERENCES  
7 IN THE NEW DEVICES WERE MEANINGFUL WITH RESPECT TO THE PATENT  
8 AND WITH RESPECT TO CLAIMS 31 AND 61 IN PARTICULAR?

9 A I STARTED WITH THE CLAIM, THE TWO CLAIMS. THEY REALLY --  
10 THE LIMITATIONS ARE THE SAME WORD FOR WORD IS MY  
11 UNDERSTANDING, EXCEPT FOR THE EARLIER PART OF CLAIMS 31 AND  
12 61. I WENT BACK AND REREAD THE LANGUAGE OF THE CLAIMS. I  
13 LOOKED AT THE COURT'S CONSTRUCTION, PARTICULARLY OF A PHRASE  
14 THAT IN THE CLAIM READS AS PARSSES ANALOG, EXCUSE ME, PARSSES  
15 VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA, OR SOMETHING  
16 LIKE THAT. AND I'LL NOT JUST BE VAGUE ABOUT IT, I HAVE IT  
17 HERE IN FRONT OF ME IF YOU'LL GIVE ME A MOMENT. PARSSES VIDEO  
18 AND AUDIO DATA FROM SAID BROADCAST DATA, I GUESS I GOT THAT  
19 RIGHT.

20 THEN I TURNED TO THE SPECIFICATION OF THE PATENT AND  
21 REREAD IT TO SEE WHAT THE PATENT ITSELF, I THINK THE PHRASE IS  
22 READING THE CLAIM IN LIGHT OF THE SPECIFICATION, SAID ABOUT  
23 THIS ISSUE OF PARSING AND WHAT WAS THE CLAIMED PHYSICAL DATA  
24 SOURCE. THEN I, OF COURSE, LOOKED AT THE COURT'S CONSTRUCTION.  
25 AS I SAID EARLIER, THE COURT SPECIFICALLY CONSTRUED THE

1 ENTIRETY OF THE PHRASE PARSES VIDEO AND AUDIO DATA FROM SAID  
2 BROADCAST DATA TO BE ANALYZES VIDEO AND AUDIO DATA FROM THE  
3 BROADCAST DATA. I TOOK THAT INTO MY UNDERSTANDING.

4 AND THEN I LOOKED AT THE ASSERTIONS THAT HAD BEEN MADE AS  
5 CLARIFYING OPERATIONS BY TIVO AND THEIR EXPERTS AND OTHER  
6 WITNESSES AT TRIAL TO SEE HOW THAT FURTHER INFORMED ME AS TO  
7 WHAT THE APPROPRIATE WAY TO LOOK AT THOSE WERE, TO UNDERSTAND  
8 WHAT HAD BEEN SUCCESSFUL IN THE EYES OF THE JURY IN THE FIRST  
9 TRIAL. AND THAT'S WHAT I DID.

10 I ALSO LOOKED AT THE FLOW CONTROL REQUIREMENT, WHICH  
11 READS AS WHEREIN SAID SOURCE OBJECT IS AUTOMATICALLY FLOW  
12 CONTROLLED BY SAID TRANSFORM OBJECT IN BOTH OF THE CLAIMS,  
13 AND I TOOK INTO ACCOUNT AGAIN THE SPECIFICATION AND WHAT IT  
14 TELLS ME ABOUT THAT. AND THE COURT'S DECISION THAT THE TERM  
15 AUTOMATICALLY FLOW CONTROLLED MEANT SELF-REGULATED, AND AGAIN  
16 LOOKED AT HOW THAT HAD BEEN FOUND TO BE MET IN THE ORIGINAL  
17 DEVICES, AND COMPARED, GIVEN THOSE BACKDROPS, HOW THE NEW  
18 DEVICES THAT ECHOSTAR HAD PRODUCED OPERATED.

19 Q SO WITH REGARD TO THE LIMITATION YOU HAVE IDENTIFIED, THE  
20 PARSING OR ANALYZING THE VIDEO AND AUDIO DATA FROM THE  
21 BROADCAST DATA, WHAT DID YOU FIND TIVO HAD IDENTIFIED AS  
22 MEETING THAT LIMITATION IN THE ORIGINAL DEVICES?

23 A PRIMARILY AN OPERATION CALLED START CODE DETECTION WHICH  
24 HAS TO DO WITH LOOKING AT THE VIDEO DATA AS IT PROCEEDS  
25 THROUGH THE DEVICE EN ROUTE TO THE STORAGE ON THE HARD DISK,

1 AND TO SEE THAT SEARCH THROUGH THAT DATA IS INTENDED TO LOCATE  
2 WHAT THE PATENT CALLS, I THINK, IMPORTANT EVENTS. AND AS AN  
3 EXAMPLE OF IMPORTANT EVENTS, IT TALKS ABOUT THE START CODE OF  
4 WHERE A SET OF DATA FOR A VIDEO FRAME IS. AND THAT SET OF  
5 DATA, IT'S A VARIABLE LENGTH, BUT IT ESSENTIALLY IS DIGITAL  
6 DATA THAT DESCRIBES ONE PICTURE TO PUT ON THE SCREEN OF A  
7 TELEVISION SET. AND IF YOU DON'T GET THE RIGHT START, YOU  
8 KIND OF END UP PUTTING HALF OF AN OLD PICTURE AND HALF OF THE  
9 NEW ONE, AND IT TEARS UP THE SCREEN AND IT DOESN'T LOOK  
10 PROPERLY.

11 SO THAT PARSING VIDEO AND AUDIO WAS IDENTIFIED AS  
12 DETECTING START CODES. AND ONCE YOU HAVE DETECTED THEM, THE  
13 NEXT STEP THAT WAS DESCRIBED IS TO MAKE AN INDEX OF THOSE  
14 START CODES WHICH WOULD SUBSEQUENTLY BE USED DURING PLAYBACK  
15 FROM THE DISK TO IMPLEMENT THE TRICK MODES.

16 Q SO DID YOU LOOK TO SEE IF THERE WERE SIGNIFICANT CHANGES  
17 IN THOSE PARTS OF THE DEVICES?

18 A I DID.

19 Q AND WHAT DID YOU FIND?

20 A I FOUND THAT IN THE 50X BOXES WHERE THE SOFTWARE DID THE  
21 START CODE DETECTION AND USED THE DETECTED START CODES TO FORM  
22 AN INDEX OF START CODE POSITIONS AS REPRESENTED ON THE STORED  
23 VIDEO DATA ON DISK, THAT THAT SOFTWARE WAS GONE. IT'S NOT  
24 PRESENT IN THE DESIGN-AROUND BOXES.

25 FOR THE BROADCOM BOXES I FOUND THAT THE OPERATION OF THE

1 BROADCOM CHIP HAD BEEN MODIFIED SUCH THAT THE HARDWARE START  
2 CODE DETECTOR AND INDEX BUFFER THAT WERE PREVIOUSLY UTILIZED  
3 WITHIN THE BROADCOM DEVICE HAD BEEN DISABLED. THEY ARE NEVER  
4 ENABLED, MAY BE A MORE TECHNICAL CORRECT WAY TO STATE THEM,  
5 AND AS A RESULT THERE WAS NO OPPORTUNITY FOR THE ECHOSTAR  
6 SOFTWARE TO RECEIVE FROM THAT HARDWARE BROADCOM CHIP  
7 INFORMATION THAT IT COULD THEN USE TO FORM AND STORE A START  
8 CODE INDEX FILE.

9 Q DID YOU FIND ANY CHANGES IN THE BROADCOM DEVICE VIS-A-VIS  
10 THE PID FILTER?

11 A I DID. AS A RESULT OF DOING AWAY WITH THE USE OF THE  
12 HARDWARE START CODE DETECTOR TO DETECT VIDEO START FRAMES, THE  
13 OPERATION OF THE PID FILTER IN THE BROADCOM DEVICE HAS ALSO  
14 BEEN MODIFIED SO THAT WHATEVER SET OF PIDS, IT'S BASICALLY A  
15 SET OF 13-BIT NUMBERS THAT THE DEVICE LOOKS FOR IN THE FRONT  
16 OF EVERY TRANSPORT STREAM DATA PACKET, WHATEVER THAT SET OF  
17 PIDS MAY BE, AND TYPICALLY THEY ARE AS MANY AS FOUR OR FIVE  
18 BECAUSE YOU'VE GOT THE VIDEO, YOU HAVE THE AUDIO STREAM, YOU  
19 SOMETIMES USUALLY HAVE A SECONDARY AUDIO LIKE SPANISH, YOU  
20 HAVE CLOSED CAPTION DATA, YOU MAY HAVE OTHER TYPES OF CONTROL  
21 DATA. AS FAR AS THE BROADCOM DEVICE IS CONCERNED, THEY ARE  
22 JUST A SET OF FIVE NUMBERS. AND IT FILTERS FOR THOSE FIVE  
23 PACKETS WITHOUT REGARD TO WHICH IS VIDEO OR WHICH IS AUDIO OR  
24 WHICH IS SOMETHING ELSE. IT JUST KNOWS. IT'S LIKE IT LOOKS AT  
25 THE PACKET HEADER AND SAYS, IT'S ONE I WANT TO KEEP, BUT IT NO

1 LONGER IDENTIFIES, FOR EXAMPLE, THE SPECIFIC PACKETS THAT  
2 CARRY VIDEO DATA. IT NEVER LOOKS FOR THAT.

3 Q AND DID YOU FIND CHANGES IN THE ECHOSTAR SOFTWARE THAT  
4 RELATED TO THE PARSING THE AUDIO AND VIDEO DATA LIMITATION?

5 A AS I MENTIONED, THE MAJOR CHANGES IN THE 50X FAMILY,  
6 BECAUSE THAT'S WHERE THE START CODE DETECTION WAS PREVIOUSLY  
7 DONE AND THERE HAVE BEEN CHANGES IN THE INTERFACE, IF YOU  
8 WILL, BETWEEN THE ECHOSTAR SOFTWARE IN THE BROADCOM BOXES AND  
9 THEIR INTERACTION WITH THE BROADCOM CHIP.

10 Q I JUST WANT TO MAKE SURE I'M NOT MIXING UP 50X AND  
11 BROADCOM. WERE THERE CHANGES TO THE BROADCOM --

12 A OH, I'M SORRY, I MISUNDERSTOOD YOUR QUESTION. I MISHEARD  
13 YOU. YES.

14 Q YOU TOLD US ABOUT THE CHANGES IN THE 50X SOFTWARE.

15 A I UNDERSTAND. I UNDERSTAND.

16 Q TELL US ABOUT THE BROADCOM CHIP CHANGES. I WANT TO ASK  
17 YOU NOW WERE THERE CHANGES IN THE BROADCOM DEVICES ON THE  
18 SOFTWARE SIDE THAT RELATED TO THE PARSING LIMITATION?

19 A PRIMARILY, GIVEN THE FACT THAT THE CHIP NO LONGER  
20 IDENTIFIES START CODES AND PRODUCES INFORMATION ABOUT WHERE  
21 THOSE START CODES OCCUR IN THE STREAM OF PACKETS THAT ARE  
22 BEING PROCESSED BY THE CHIP, THEN THE SOFTWARE NO LONGER  
23 CREATES AN INDEX OF START CODES AND WHERE THOSE START CODES  
24 COULD BE FOUND ON THE DISK. THAT TOO HAS BEEN DISABLED.

25 Q SO WITH REGARD TO THE SECOND LIMITATION YOU MENTIONED,

1 THE FLOW CONTROL OF THE SOURCE FILLING THE BUFFER, WHAT DID  
2 TIVO IDENTIFY AS MEETING THAT LIMITATION IN THE DEVICES  
3 EXAMINED AT THE FIRST TRIAL?

4 A THEY IDENTIFIED AN OPERATION THAT OCCURS BETWEEN AN  
5 INITIAL LARGE BUFFER COMPOSED OF A SET OF SMALLER BUFFERS  
6 AND THE TRANSFER OF THAT, OF DATA THAT'S IN ONE OF THOSE  
7 SMALLER BUFFERS, I THINK MR. MINNICK USED THE TERM SEGMENTS,  
8 WITHIN THE FIRST LEVEL BUFFER INTO A SECOND LEVEL BUFFER,  
9 AND THE FACT THAT THE WAY THE HARDWARE OF THE BROADCOM CHIP  
10 AND THE SOFTWARE WRITTEN BY ECHOSTAR INTERACTED IN THE  
11 INFRINGING ECHOSTAR BROADCOM DEVICES, IF THE SECOND LEVEL  
12 BUFFER HAD NOT BEEN EMPTIED OF ITS DATA, THERE WOULD BE NO  
13 TRANSFER OF ANY DATA FROM THE SET OF FIRST SEGMENTED BUFFERS  
14 ABOVE.

15 AND AS A RESULT, IF THAT FIRST SET OF SEGMENTS IN THE  
16 UPPER BUFFER GOT FULL OF DATA, THERE WOULD BE A FULL STOP OF  
17 THE ABILITY OF THE BROADCOM CHIP TO TRANSFER ANY OTHER  
18 INFORMATION. AND ALSO THE BLOCKING WAS CREATED, THAT  
19 OPERATION. IF THAT SECOND LEVEL BUFFER HAD NOT BEEN UNLOADED  
20 TO THE DISK, THEN THERE WAS NO CAPABILITY OF WRITING INTO IT  
21 THAT WOULD BE CONSIDERED TO BE OVERWRITING.

22 SO IT'S A PREVENTION ABSOLUTELY IN THE OLD DEVICES, THE  
23 INFRINGING DEVICES, OF EVER HAVING A SITUATION WHERE THE DATA  
24 THAT'S BEEN PLACED IN A BUFFER CAN BE OVERWRITTEN. AND  
25 PARTICULARLY TIVO POINTED TO THE SECOND LEVEL BUFFER AS

1 IMPLEMENTING FLOW CONTROL, BECAUSE IT DIDN'T LET ANY MORE DATA  
2 IN UNTIL IT HAD BEEN EMPTIED.

3 Q SO THE FOCUS WAS ON THE MOVEMENT FROM WHAT YOU CALL THE  
4 FIRST LEVEL BUFFER TO THE SECOND LEVEL BUFFER, AND THAT WAS  
5 THE AUTOMATIC FLOW CONTROL?

6 A THAT'S WHAT THEY IDENTIFIED.

7 Q AND DID YOU FIND WHETHER OR NOT THERE WERE CHANGES MADE  
8 TO THAT FUNCTIONALITY IN THE BROADCOM DEVICES?

9 A IN THE NEW DEVICES, THE MANNER IN WHICH THE BROADCOM UNIT  
10 PLACES DATA INTO ITS ASSOCIATED BUFFER HAS BEEN COMPLETELY  
11 CHANGED. THE WAY IN WHICH THEY ARE CALLED DESCRIPTORS, THE  
12 SUBREGIONS IN THAT BUFFER ARE MANAGED HAS BEEN CHANGED. IT'S  
13 BECOME A TRUE CIRCULAR BUFFER. AND THE SECONDARY BUFFER BELOW  
14 IT HAS BEEN COMPLETELY DONE AWAY WITH.

15 BUT THE KEY -- I MEAN, THAT'S PART OF THE PROCESS OF  
16 CHANGING. BUT I THINK THE KEY IS THE FACT THAT THE BROADCOM  
17 HARDWARE NOW ON ITS OWN FILLS THAT CIRCULAR BUFFER AT WHAT  
18 USED TO BE THE FIRST LEVEL IS NOW THE ONLY LEVEL. AND IT, AS  
19 IS TRUE IN A CIRCULAR BUFFER, IT JUST KEEPS FILLING. AND IF  
20 FOR SOME REASON THERE HAS NOT -- DATA IS REACHED AS THE UNIT  
21 GOES AROUND INSIDE THAT CIRCLE, IF IT BEGINS TO STORE DATA IN  
22 AN AREA THAT HAS NOT BEEN EMPTIED PREVIOUSLY, THAT THAT DATA  
23 WILL BE OVERWRITTEN. I USED TO SAY THAT'S LIKE A DOG, IF YOU  
24 SEE THEM TRYING TO CHASE THEIR TAIL IN A CIRCLE, THAT'S WHEN  
25 THE DOG ACTUALLY CAUGHT UP WITH HIS TAIL. IT'S NOT A GOOD

1    THING TO HAPPEN.    YOU LOSE DATA.

2    Q       DO YOU HAVE SOME INFORMATION ABOUT THE QUANTITY OR SCOPE  
3    OF THE CHANGES THAT ECHOSTAR MADE TO ITS SOFTWARE?

4    A       I'VE DISCUSSED IT BOTH WITH MR. MINNICK AND WITH HIS  
5    EMPLOYEES WHILE I WAS IN DENVER IN DECEMBER OF THIS LAST YEAR.  
6    AND I THINK I LOOKED AT THE DATA THAT MR. MINNICK PUT ON THE  
7    BOARD WITH THE ECHOSTAR SOFTWARE DEVELOPERS, AND IN THE AREAS  
8    THAT ARE RELEVANT TO THE DVR OPERATIONS THAT WERE FOUND TO  
9    INFRINGE, THE CHANGES ARE VERY DRAMATIC.

10           IN A COUPLE OF AREAS THE CODE THAT NOW OPERATES SAY ON  
11   THE PLAYBACK SIDE IS COMPLETELY NEW AND REPLACES ALL OF THE  
12   OLD.   AND THE CODE THAT PREVIOUSLY DID SUCH THINGS AS START  
13   CODE DETECTION OR BUILDING THE START CODE INDEX HAS BEEN  
14   DISABLED AND REPLACED WITH CODE THAT DOES NOTHING LIKE THAT.  
15   THAT'S JUST BEEN GONE.

16           I NOTICED THAT I THINK MR. MINNICK SAID THAT HE HAD HAD  
17   OVER 7,000, I GUESS YOU SHOULDN'T SAY MAN HOURS ANYMORE, LABOR  
18   HOURS INVESTED, AND ABOUT FOUR MAN YEARS.   AND HAVING MANAGED  
19   PROJECTS OF THIS SCOPE, I THINK THAT'S INDICATIVE OF A FAIRLY  
20   MAJOR SOFTWARE REDEVELOPMENT EFFORT.

21   Q       SO WHAT HAVE YOU CONCLUDED ABOUT COLORABLE DIFFERENCES  
22   BASED ON YOUR REVIEW OF THESE HARDWARE AND SOFTWARE CHANGES?

23   A       I THINK THAT THE CHANGES THAT HAVE BEEN MADE BY ECHOSTAR  
24   FALL DIRECTLY ON THE RELEVANT ISSUES THAT WERE RAISED.   IN  
25   CONSIDERING INFRINGEMENT, THEY FALL DIRECTLY ON THESE TWO

1 LIMITATIONS OF CLAIMS 31 AND 61, AND THEY ARE DRAMATIC. AND  
2 AS A RESULT, IT'S MY OPINION THAT THEY ARE FAR MORE THAN  
3 COLORABLE DIFFERENT -- COLORABLY DIFFERENT.

4 Q LET'S LOOK AT IN GREATER DETAIL, THEN, THE CHANGES THAT  
5 RELATE TO THE PARSING OR ANALYZING LIMITATION. WHAT DID  
6 ECHOSTAR PUT INTO THE NEW DVRS THAT WASN'T THERE BEFORE?

7 A GIVEN THAT THEY NO LONGER HAVE THE START CODE INDEX AS A  
8 RESULT OF START CODE DETECTION FOR USE DURING TRICK MODE  
9 PLAYBACK, THEY DEVELOPED I THINK MR. MINNICK REFERRED TO IT AS  
10 KIND OF A SMART OR IMPROVED BRUTE-FORCE TECHNIQUE THAT IS  
11 STATISTICALLY BASED FOR CREATING A DIFFERENT FORM OF TRICK  
12 MODES ON THE PLAYBACK SIDE. ALL OF THE SOFTWARE THAT THEY  
13 DEVELOPED TO IMPLEMENT THAT NEW APPROACH PLAYS ON THE PLAYBACK  
14 SIDE, RATHER YOU MIGHT THINK OF IT AS THE OUTPUT SIDE FROM THE  
15 DISK AS OPPOSED TO THE RECORD OR INPUT SIDE TO THAT DISK.

16 AND THAT'S WHAT THEY DEVELOPED, LIKELY INVENTED. I KNOW  
17 THAT THEIR PATENT APPLICATION HAS NOT PROCEEDED TO ITS  
18 CONCLUSION. BUT THAT'S WHAT THEY BELIEVE IS THEIR INVENTION,  
19 WHICH IS NEW AND DIFFERENT AND CERTAINLY DOES NOT FALL UPON  
20 THE INVENTION THAT MR. BARTON HAS SUCCESSFULLY COME UP WITH.

21 Q WHY IS THE DIFFERENCE BETWEEN THE RECORD VERSUS THE  
22 PLAYBACK SIDE OR THE FRONT END VERSUS THE BACK END, WHY IS  
23 THAT DIFFERENT? WHY IS THAT IMPORTANT?

24 A CAN WE BRING UP CLAIM EITHER 31, I GUESS, OR 61? IS THAT  
25 POSSIBLE?

1 Q BRING UP CLAIM 31, PLEASE.

2 A IF YOU -- IT'S BECAUSE THE CLAIM ESTABLISHES AN ORDERING  
3 OF WHAT THE PROCESS THAT CLAIM 31 SETS FORTH. YOU CAN SEE  
4 THAT AT THE FIRST LIMITATION IS PROVIDING A PHYSICAL DATA  
5 SOURCE WHICH GETS BROADCAST DATA FROM AN INPUT DEVICE, PARSES  
6 VIDEO AND AUDIO DATA FROM IT, AND TEMPORARILY STORES THE  
7 PARSED DATA. THAT'S AN EARLY STEP THAT OCCURS BEFORE ANY DATA  
8 HAS MADE ITS WAY TO THE DISK. THAT'S ON WHAT I'VE CALLED THE  
9 RECORD SIDE.

10 FURTHER DOWN THERE IS A SOURCE OBJECT THAT OBTAINS A  
11 BUFFER. IT CONVERTS THE VIDEO DATA THAT'S BEEN EXTRACTED FROM  
12 THE PHYSICAL DATA SOURCE INTO DATA STREAMS, AND IT FILLS THE  
13 BUFFER WITH THE STREAMS. THAT'S THE NEXT STEP.

14 SO THIS PARSING OPERATION MUST TAKE PLACE BETWEEN THE  
15 ORIGINAL INPUT OF THE DATA AND THE FIRST LEVEL OF BUFFERING.  
16 AND YOU HAVE TO GO FURTHER IN THE CLAIM TO FIND THE TRANSFORM  
17 OBJECT THAT THEN LATER STORES IT ON THE DISK.

18 SO WHAT THE STATISTICALLY BASED APPROACH THAT MR. MINNICK  
19 AND HIS TEAM DEVELOPED DOES IS ON THE OTHER SIDE OF THE DISK  
20 DRIVE. AND IN IMPLEMENTING TRICK MODE THAT WAY, THEY ARE NOT  
21 DOING WHAT THE CLAIM ABSOLUTELY REQUIRES, WHICH IS PARSING THE  
22 VIDEO AND AUDIO DATA DURING THE PROCESS THAT GOES FROM THE  
23 INPUT, TO THE BUFFER, TO THE HARD DRIVE. THEY ARE IN A NEW  
24 AREA UNADDRESSED IN CLAIMS 31 AND 61.

25 Q OKAY. ARE YOU AWARE OF SOME TESTIMONY FROM MR. BARTON

1 ABOUT WHETHER DOING TRICKPLAY ON THE BACK END WOULD BE A  
2 PROBLEM THAT SHOULD BE AVOIDED?

3 A I'VE SEEN THAT. I BELIEVE WE ARE PREPARED TO PLACE THAT  
4 ON THE SCREEN.

5 MR. BARQUIST: COULD WE BRING UP TESTIMONY FROM THE  
6 TRIAL MARCH 30, MORNING SESSION, STARTING AT PAGE 29, STARTING  
7 AT LINE 6?

8 Q (BY MR. BARQUIST) LET'S NOT READ THE WHOLE THING, DR.  
9 RHYNE, BUT IF YOU'D POINT US TO THE SIGNIFICANT ASPECTS.

10 A HE CHARACTERIZED HIS INVENTION AS A LITTLE EYE THAT'S  
11 LOOKING DOWN AT THE DIGITAL INFORMATION THAT'S COMING IN FROM,  
12 IN THE CASE OF THE INFRINGING DEVICES, THE SATELLITE. AND HE  
13 SAID THAT LITTLE EYE LOOKS DOWN AND ANALYZES THE DATA, THAT  
14 BEING THE TERM THAT THE COURT HAS SAID MEANT PARSING. AND HE  
15 SAYS AS IT LOOKS IT JUST -- RIGHT AT THE END, I'M ON LINE 18  
16 -- IT JUST KEEPS DOING THIS OVER AND OVER AS THE DIGITAL  
17 PICTURES ARE COMING IN, BUILDING UP THIS TABLE FOR US.

18 THIS IS WHAT ALLOWS US ON OUTPUT WHEN WE'RE PLAYING BACK  
19 TELEVISION TO DO THE TRICKPLAY OPERATIONS THAT MAKE THIS  
20 DEVICE WORK. WELL, THEN HE WAS ASKED, WELL, WHY DO YOU NEED  
21 TO PUT IT IN THIS TABLE? WHY CAN'T YOU JUST PLAY IT BACK?  
22 AND HE SAID, WELL, WE COULD BUT THEN THE ACTUAL TRICKPLAY --  
23 AND WE NEED TO GO TO THE NEXT PAGE -- THE ACTUAL TRICKPLAY  
24 OPERATIONS WOULD BE VERY CRUDE OR WE WOULD NEED A VERY  
25 POWERFUL PROCESSOR BECAUSE IT WOULD HAVE TO ANALYZE ALL THIS

1 INFORMATION ON THE FLY AS IT'S PLAYING BACK TO ACTUALLY  
2 PERFORM THE TRICKPLAY OPERATIONS. SO DOING IT AHEAD OF TIME  
3 ALLOWS US AGAIN TO BUILD A MUCH MORE COST EFFECTIVE AND  
4 EFFICIENT SYSTEM TO KEEP THE FINAL PRODUCT COST AS LOW AS  
5 POSSIBLE.

6 Q SO HOW DOES THIS DISTINCTION BETWEEN DOING IT AHEAD OF  
7 TIME ON THE ONE HAND AND DOING IT ON THE FLY ON THE OTHER HAND  
8 RELATE TO THE NEW ECHOSTAR PRODUCTS?

9 A THEY DO EXACTLY WHAT MR. BARTON SAID HIS INVENTION DIDN'T  
10 DO. HE CLAIMS AS AN ADVANTAGE, AND I DON'T DISAGREE WITH  
11 THAT, HIS ABILITY TO MAKE A MORE COST EFFECTIVE PRODUCT USING  
12 A LESS POWERFUL PROCESSOR. YOU CAN DO THAT ON THE FRONT END  
13 BECAUSE YOU ARE PROCESSING THE DATA IN REGULAR TIME.

14 IF YOU ARE GOING TO PROCESS A ONE-HOUR TELEVISION PROGRAM  
15 TO FIND THE START CODES IN ALL THE VIDEO, YOU HAVE AN HOUR TO  
16 DO IT. SO YOU CAN HAVE HIS LITTLE EYE, THE START CODE  
17 DETECTOR, LOOK AT ALL THE VIDEO DATA AND FIND THE START CODES  
18 AND CREATE A TABLE, AS HE SAYS AN INDEX, THAT SAYS THIS START  
19 CODE IS ON THE DISK HERE. THE NEXT START CODE IS HERE. IT  
20 GIVES HIM THE INFORMATION THAT GREATLY SIMPLIFIES THE  
21 TRICKPLAY.

22 CONVERSELY, AS HE SAID, THE CRUDE OPERATION THAT REQUIRES  
23 A VERY POWERFUL PROCESSOR IS WHAT MR. MINNICK'S GROUP HAS  
24 DONE. THEY HAVE FOCUSED WITH A MORE POWERFUL PROCESSOR. THEY  
25 CAN GET BETTER MICROPROCESSORS TODAY, MORE POWER. THEY LOOK

1 AT THE VERY PLACE THAT MR. BARTON SAID HIS INVENTION WOULDN'T  
2 LOOK, ON THE PLAYBACK SIDE. AND THINK OF IT, IF YOU ARE DOING  
3 A 60X FAST FORWARD, AND I THINK THE DEVICES, THE ECHOSTAR, MAY  
4 BE CAPABLE OF 400X, IF YOU DO --

5 Q THE 60X MEANS --

6 A SIXTY --

7 Q -- AN HOUR LONG PROGRAM IN A MINUTE. IS THAT RIGHT?

8 A IT TURNS OUT, AND I AM NOT THE ONE TO EXPLAIN IT, THAT'S  
9 ACTUALLY 30 SECONDS. IT'S -- OKAY, BUT, YEAH, IT'S A HECK OF  
10 A LOT FASTER THAN ONE HOUR. THEY HAVE TO SEARCH WHEN THEY'RE  
11 HUNTING AROUND WITH THIS APPROXIMATE LOOK AS TO WHERE THEY  
12 THINK A START CODE MIGHT BE, THEY ARE HAVING TO SEARCH THAT  
13 SAME VIDEO DATA 60 OR SO TIMES FASTER. THEY DON'T HAVE AN  
14 HOUR. THEY'VE GOT A MINUTE OR A HALF A MINUTE, AND THAT'S WHY  
15 THEY NEED A MORE POWERFUL PROCESSOR.

16 AND THE TIME THAT'S SPENT SEARCHING IS WHAT KIND OF MAKES  
17 IT CRUDE. HE MENTIONED, AS I SAW WHEN I LOOKED AT THE  
18 COMPARISON BETWEEN THE OLD AND THE NEW DEVICES, KIND OF A  
19 JERKINESS AND A CHANGE IN THE TIME FRAME WITH THAT. I THINK  
20 EXACTLY WHAT MR. BARTON WAS TALKING ABOUT, THERE IS SOME  
21 CRUDENESS, AND IT CERTAINLY COULD NOT BE DONE WITHOUT A MORE  
22 POWERFUL PROCESSOR THAN WAS AVAILABLE AT THE TIME MR. BARTON  
23 WAS DEVELOPING HIS INVENTION.

24 Q WE HAVE SEEN SOME USE OF THE TERM BRUTE-FORCE. IS BRUTE-  
25 FORCE A GOOD WAY TO CHARACTERIZE THE WAY THE NEW ECHOSTAR

1 DEVICE WORKS?

2 A I DON'T KNOW IT'S THE TERM THAT I WOULD HAVE USED, BUT I  
3 UNDERSTAND WHY IT MAY BE -- I DON'T KNOW WHETHER IT WAS COINED  
4 AT ECHOSTAR OR NOT, BUT BY BRUTE-FORCE THEY MEAN WHAT MR.  
5 BARTON WAS TALKING ABOUT, GOING TO THE PLAYBACK SIDE WHERE THE  
6 DATA IS COMING OUT POSSIBLY AT 30, 60, 100, 400 TIMES FASTER  
7 THAN IT WOULD BE IN NORMAL PLAY DURING A TRICKPLAY MODE, AND  
8 SEARCHING THROUGH THAT DATA BIT BY BIT BY BIT LOOKING FOR  
9 VIDEO START CODES AT THAT HIGH DATA RATE, THAT'S BRUTE-FORCE.

10 YOU DON'T HAVE A TABLE TO TELL YOU WHERE TO LOOK. YOU  
11 DON'T HAVE A GPS TO SAY IT'S RIGHT DOWN THE STREET AT THAT  
12 BUILDING. YOU ARE KIND OF WALKING ALONG THE STREET LOOKING AT  
13 THE HOUSE NUMBERS, IF YOU CAN FIND THEM, TRYING TO FIND THE  
14 PLACE THAT YOU WANT TO GET TO TO PUT UP THE NEXT FRAME THAT  
15 YOU NEED IN ONE OF THE TRICK MODES.

16 Q AND LET ME JUST GO BACK FOR A MINUTE TO THE SECOND ISSUE,  
17 THE FLOW CONTROL ISSUE. IN TERMS OF WHAT YOU LOOKED AT AND  
18 WHAT TIVO FOCUSED ON AT TRIAL, WHAT WAS THE IMPORTANCE OF  
19 REGULATING THE FILLING OF THE BUFFERS BY THE SOURCE OBJECT BY  
20 BLOCKING ACCESS TO THE BUFFERS?

21 A THE MAIN IMPORTANCE WAS THAT YOU HAD NO POSSIBILITY OF  
22 HAVING OVERFLOW. AND BY OVERFLOW OR OVERWRITING I MEAN THAT  
23 YOU'VE PLACED SOME TELEVISION DATA THAT SHOULD BE DISPLAYED OR  
24 USED AS SOUND INTO A BUFFER, AND BEFORE YOU CAN GET IT OUT AND  
25 ON DISK NEW DATA HAS COME IN AND OVERWRITTEN THAT, DESTROYING

1 THE OLD DATA BEFORE IT CAN BE SAVED ON DISK FOR LATER  
2 PLAYBACK.

3 Q AND DO YOU RECALL HOW MR. BARTON ILLUSTRATED THE  
4 DIFFERENCE AT THE TRIAL?

5 A I DO.

6 MR. BARQUIST: COULD WE BRING UP SLIDES 16 AND 17  
7 FROM DX-5003?

8 Q (BY MR. BARQUIST) WHAT IS THE FIRST SLIDE, WHICH IS  
9 EXHIBIT 16 FROM -- OR IT'S SLIDE 16 FROM DX-5003?

10 A THIS IS MR. BARTON, THE INVENTOR'S EXPLANATION TO THE  
11 JURY SUCCESSFULLY OF WHAT HE MEANT BY AUTOMATIC FLOW CONTROL,  
12 THE TERM DIRECTLY FROM CLAIMS 31 AND 61. AND HE EXPLAINED  
13 THAT THE PHYSICAL DATA SOURCE WAS OFF TO THE LEFT, THE  
14 PHYSICAL GUY, AND IT'S SUPPLYING DATA DOWN THE PIPE. AND FOR  
15 THE RECORD, THAT PIPE IS IDENTIFYING, THIS IS THE ORIGINAL  
16 LABELING THAT WAS THERE AT TRIAL, THAT PIPE IS THE DATA  
17 SOURCE, THE SOURCE OBJECT OF CLAIMS 31 AND 61. AND AT THE END  
18 OF THE PIPE THERE'S A FAUCET WHICH CAN BE TURNED ON AND OFF.  
19 AND THERE WAS ACTUALLY ANIMATION THAT RAN, THAT SHOWED THIS.  
20 AND THAT WAS IDENTIFIED ON THE SLIDE AS THE FLOW CONTROL  
21 OPERATION, WHETHER THE DATA COULD FLOW OR NOT.

22 THE DATA WAS REPRESENTED AS WATER AND THE BUFFER WAS  
23 REPRESENTED AS A PITCHER. AND AS WATER FLOWED INTO THE  
24 BUFFER, WHEN THE BUFFER GOT FULL, TO PREVENT WATER FROM  
25 SPILLING OUT ON THE FLOOR, THE FLOW CONTROL TURNED THE FAUCET

1 OFF. AND THEN THE NEXT STEP WAS EMPTYING THE BUFFER INTO A  
2 LARGER PAIL WHICH WAS USED TO DEPICT THE HARD DRIVE, THE DISK  
3 DRIVE. AND THEN THE BUFFER WOULD GO BACK AS AN EMPTY PITCHER  
4 AND BE AVAILABLE TO RECEIVE DATA OR WATER, AND THE FLOW  
5 CONTROL WAS OPENED BACK UP AGAIN AND MORE WATER FLOWED INTO  
6 THE BUFFER.

7 Q OKAY. LET'S TURN TO SLIDE 17 OF MR. BARTON'S TRIAL  
8 GRAPHICS. WHAT DOES THIS ILLUSTRATE?

9 A THIS ILLUSTRATES WHAT --

10 Q WHAT WAS IT USED TO ILLUSTRATE, DR. RHYNE?

11 A I'M SORRY. THIS ILLUSTRATED WHAT MR. BARTON DEFINED,  
12 DESCRIBED AS WHAT HAPPENS WHEN YOU HAVE NO FLOW CONTROL. AND  
13 THE FUNDAMENTAL DIFFERENCE IS THAT THERE IS NO FAUCET AT THE  
14 END OF THE PIPE. THERE IS NO ABILITY, TO USE THE LANGUAGE OF  
15 THE CLAIMS OF THE PATENT'S SPECIFICATION, THERE IS NO ABILITY  
16 TO BLOCK THE FLOW OF DATA INTO THE BUFFER. AND IF THE BUFFER  
17 DOESN'T GET EMPTIED QUICKLY ENOUGH, IT WILL FILL UP, USING THE  
18 WATER ANALOGY, AND FLOW OVER ONTO THE FLOOR, I THINK HE SAID  
19 AT ONE POINT. AND THAT'S NOT GOOD. IF YOU ARE HAVING TO MOP  
20 UP DATA OFF THE FLOOR, YOU'VE LOST GOOD DATA. AND THIS IS, HE  
21 SAID, WAS NOT A GOOD THING TO HAVE HAPPEN IN A DEVICE.

22 Q OKAY. DR. RHYNE, DO YOU RECALL ONE OF THE ANIMATIONS  
23 THAT DR. STORER SHOWED YESTERDAY THAT HE SAID ILLUSTRATED HOW  
24 THE REDESIGN ECHOSTAR DEVICE WORKS?

25 A I DO.

1 MR. BARQUIST: COULD WE PLAY THAT?

2 Q (BY MR. BARQUIST) THIS IS ONE OF THE GRAPHICS  
3 ILLUSTRATED --

4 MR. BARQUIST: YEAH, PLAY THE ANIMATION.

5 Q (BY MR. BARQUIST) THIS IS ONE OF THE ANIMATIONS PRESENTED  
6 BY DR. STORER, CORRECT?

7 A I SAW IT THERE FOR A MOMENT. YES, I SAW THIS.

8 Q AND CAN YOU EXPLAIN FOR THE RECORD, SINCE WE CAN'T PUT  
9 THAT INTO THE TRANSCRIPT, WHAT ARE YOU OBSERVING HERE --

10 A WELL, HERE --

11 Q -- IN DR. STORER'S ANIMATION?

12 A FIRST, HE HAS REPRESENTED THE BUFFER IN THE NEW DEVICE OF  
13 ECHOSTAR, AS HE UNDERSTANDS IT, AS BEING CONTROLLED. HE HAS  
14 SHOWN A BUNCH OF SMALLER CUPS, IF YOU WILL, AND HE POINTED  
15 OUT, I THINK HE ACTUALLY DREW SOMETHING OVER ON THE FLIP CHART  
16 THAT THE BUFFER AT THE TOP LEVEL, THE CIRCULAR BUFFER THAT  
17 ECHOSTAR NOW USES HAS BEEN -- IS COMPOSED OF THESE TEN  
18 SEGMENTS OR DESCRIPTORS. AND THAT'S OKAY. IF YOU WANT TO  
19 THINK OF IT AS THE BIG BUFFER IS MADE UP OF TEN LITTLE  
20 BUFFERS, I DON'T HAVE A PROBLEM WITH THAT.

21 AND THEN WHAT HE SHOWED IS A SEQUENTIAL OPERATION AS THE  
22 DATA SOURCE, WHICH HERE WOULD BE THE BROADCOM CHIP IN THE  
23 BROADCOM DEVICES, IS GOING AROUND PERIODICALLY FILLING UP EACH  
24 OF THOSE DESCRIPTOR SEGMENTS. AND THERE IS ONE ERROR IN HERE  
25 IN THAT THE -- IF THE BUFFER EVER GETS -- IF THE FILLING OF

1 THE BUFFER EVER GETS MORE THAN ONE SEGMENT AHEAD OF THE DRAIN,  
2 IF YOU WILL, THE EMPTYING OF THE BUFFER, WHAT ACTUALLY HAPPENS  
3 WITH THE ECHOSTAR SOFTWARE IN THE NEW DEVICES IS IF THE  
4 ECHOSTAR SOFTWARE GOES BACK AND FINDS THAT, LET'S SAY, THREE  
5 OF THOSE DESCRIPTOR SEGMENTS ARE FULL, IT UNLOADS ALL THREE OF  
6 THEM AT ONCE. IT DOESN'T JUST -- THE WAY HE HAS SHOWN IT,  
7 THEY FOLLOW AROUND IN EXACTLY THE SAME ORDER. I DON'T KNOW  
8 THAT THAT'S REALLY MATERIAL, BUT IT IS A DIFFERENCE.

9 Q SO WITH REGARD TO THIS ANIMATION OF DR. STORER, CAN --  
10 AND TO THE EXTENT IT ILLUSTRATES THE NEW ECHOSTAR DEVICE, CAN  
11 YOU TELL US WHETHER THIS IS MORE LIKE THE FLOW CONTROL THAT  
12 MR. BARTON ILLUSTRATED IN HIS SLIDE 16 OR THE NO FLOW CONTROL  
13 THAT HE ILLUSTRATED IN HIS SLIDE 17?

14 A IT'S LIKE THE NO FLOW CONTROL AT LINE 17 IN THAT AS YOU  
15 CAN SEE HERE THERE IS NO FAUCET TO PROVIDE BLOCKING OR  
16 PREVENTION OF OVERWRITING IN THE PIPE THAT'S COMING DOWN FROM  
17 THE TOP FILLING THE BUFFERS. THAT WOULD REPRESENT THE  
18 OPERATION OF THE SOURCE OBJECT. AND IF THOSE BUFFERS DON'T  
19 GET EMPTIED FOR SOME REASON, WHAT HAS BEEN CONFIRMED TO HAPPEN  
20 IN THE NEW ECHOSTAR DEVICES, UNLIKE THE OLD, IS THAT THE PIPE  
21 CAN WORK ITS WAY AROUND AND FIND AN UNEMPTIED SEGMENT, AND AS  
22 A RESULT, IN THE WATER ANALOGY WATER WOULD OVERFLOW THAT  
23 SEGMENT AND FALL TO THE FLOOR. DATA WOULD BE LOST.

24 MR. BARQUIST: OKAY. WE CAN TAKE DOWN THE IMAGE.  
25 THANK YOU.

1 Q (BY MR. BARQUIST) DR. RHYNE, DO THE NEW DVRS BEHAVE  
2 DIFFERENTLY WHEN PERFORMING DVR FUNCTIONS IN TERMS OF WHAT YOU  
3 CAN PERCEIVE?

4 A THEY DO.

5 Q WHAT DIFFERENCES HAVE YOU OBSERVED?

6 A WHEN I WAS IN DENVER AND HAD AN OPPORTUNITY TO LOOK AT  
7 THE OLD AND THE NEW SIDE BY SIDE FOR BOTH THE 50X AND THE  
8 BROADCOM, THERE WERE OBSERVABLE DIFFERENCES BETWEEN THE TWO.  
9 THEY REALLY FELL INTO TWO AREAS. ONE WAS THE TIME EACH UNIT  
10 TOOK TO COMPLETE, SAY, A SKIP. ONE OF THE THINGS THAT WE HAD  
11 DONE IS TO RECORD A 60-MINUTE PROGRAM ON THE DISK. AND IF YOU  
12 STARTED AT THE SAME TIME, THE TWO RECEIVERS, THE OLD ONE AND  
13 THE NEW ONE, THE OLD ONE WOULD TAKE A FIXED AMOUNT OF TIME AND  
14 IT WOULD BE REPEATABLE. AS I SAY, I EXPECTED IT TO BE 60  
15 SECONDS. MY RECOLLECTION IS IT ENDED UP ACTUALLY BEING 30 AT  
16 60 TIMES SPEED.

17 THE OTHER DEVICE, THE NEW DEVICE, BECAUSE OF THIS SMART  
18 BRUTE-FORCE, IF THAT'S THE TERM TO USE, THE STATISTICAL BASED  
19 APPROACH, IT WOULD TAKE A VARIABLE AMOUNT OF TIME. FOR THE  
20 50X BOXES IT WAS ALWAYS LONGER. FOR THE BROADCOM DEVICES, IN  
21 MY OPPORTUNITY TO OBSERVE THEM FOR ABOUT A HALF AN HOUR TO 45  
22 MINUTES, THEY WERE ALWAYS LONGER AS WELL, ALTHOUGH MR. MINNICK  
23 TOLD ME THAT BECAUSE OF THIS TURNING ON OF THE CACHE IN THE  
24 BROADCOM CHIP, SOMETIMES THEY CAN ACTUALLY BE QUICKER, BUT  
25 THEY WERE DIFFERENT.

1           BUT MAYBE THE MORE OBSERVABLE DIFFERENCE WAS THAT THE  
2 APPEARANCE ON THE VIDEO SCREEN WAS DIFFERENT. THE OLD DEVICES  
3 GIVE YOU A SMOOTH FAST FORWARD. IF YOU WERE WATCHING A  
4 FOOTBALL GAME, WE ACTUALLY HAD A SOCCER GAME, YOU COULD SEE  
5 THE PLAYERS MOVE, THEIR LITTLE LEGS GOING KIND OF LIKE A  
6 CARTOON CHARACTER WHEN YOU SPEED THEM UP. WHEREAS WITH THE  
7 NEW DEVICES, BECAUSE OF THE STATISTICALLY BASED APPROACH, YOU  
8 WOULD SEE AN IMAGE AND THEN YOU WOULD SEE ANOTHER IMAGE AND IT  
9 WOULD BE AS IF THE PLAYER HAD TELEPORTED TO A SLIGHTLY  
10 DIFFERENT POSITION RATHER THAN MOVING SMOOTHLY. THEY WERE  
11 CHOPPIER, JUMPY.

12 Q       DR. RHYNE, I THINK YOU USED THE PHRASE SMART BRUTE-FORCE.  
13 WHAT DID YOU MEAN BY THAT?

14 A       WELL, BRUTE-FORCE TO ME WOULD MEAN THAT YOU DIDN'T USE  
15 STATISTICAL INFORMATION TO AT LEAST GET AN ESTIMATE AS TO  
16 WHERE THE NEXT FRAME MIGHT BE. YOU WOULD JUST SEARCH EVERY  
17 SINGLE PIECE OF DATA. AND THAT, I GUESS YOU COULD DO THAT IF  
18 YOU HAD AN EXTREMELY POWERFUL DEVICE. BUT WHAT THE -- WHAT  
19 THE ECHOSTAR PEOPLE HAVE DONE IS COME UP WITH THIS STATISTICAL  
20 BASED APPROACH WHERE THEY HAVE DATA THAT SAYS BASED ON THE  
21 PLAYBACK OF TELEVISION WE'VE MADE UP TO NOW, WE KNOW ABOUT HOW  
22 FAR DOWN THE DISK WE THINK THE NEXT VIDEO FRAME WOULD BE. AND  
23 THEY JUMP WITH THAT APPROXIMATION AND THEN THEY DO BRUTE-  
24 FORCE.

25           SO IT'S NOT BRUTE-FORCE WITHOUT SKIPS. IT'S BRUTE-FORCE

1 WITH A JUMP TO A SPACE IN THE FUTURE AND THEN LOOK AROUND TO  
2 SEE WHERE THE NEXT FRAME WOULD BE. IT'S NOT AS BAD AS WHAT I  
3 WOULD CALL PURE BRUTE-FORCE, BUT IT'S CERTAINLY NOT THE KIND  
4 OF PRECISION YOU GET IF YOU HAVE START CODE DETECTION AND USE  
5 IT ON THE RECORD SIDE TO TELL YOU EXACTLY IN AN INDEX WHERE  
6 THE NEXT START CODE WOULD BE.

7 Q DR. RHYNE, HAVE YOU PREPARED A CHART THAT SUMMARIZES YOUR  
8 OPINIONS CONCERNING THE DIFFERENCES BETWEEN THE NEW DVRS AND  
9 THE ORIGINAL ONES?

10 A I DID. I WROTE IT UP MYSELF AND THE GRAPHICS GUYS  
11 COMPLAINED ABOUT MY HANDWRITING. BUT THEY -- THIS IS THE BEST  
12 CUT THEY COULD MAKE FROM THAT.

13 MR. BARQUIST: COULD WE BRING UP SLIDE 28, PLEASE?

14 A ALL RIGHT.

15 Q JUST BRIEFLY TELL US WHAT YOU HAVE CONCLUDED ABOUT THE  
16 DIFFERENCES BETWEEN THE OLD AND THE NEW DEVICES.

17 A THEY ARE KIND OF COMPLIMENTARY. ON THE OLD DEVICES THEY  
18 DETECTED START CODES DURING RECORDING BEFORE BUFFERING AND  
19 BEFORE STORAGE ON THE DISK. THE NEW ONES DETECT START CODES  
20 DURING THIS SMART BRUTE-FORCE APPROACH DURING PLAYBACK FROM  
21 THE DISK. THE OLD ONES DETECTED EVERY SINGLE START CODE. THE  
22 NEW ONES ONLY DETECT A FEW START CODES BECAUSE THEY SKIP AND  
23 THEN JUMP AND LOOK AROUND IN THAT NEW AREA FOR A START CODE.

24 Q AND AGAIN, THEY DO THAT ON THE BACK END, NOT THE FRONT  
25 END?

1 A ON THE PLAYBACK SIDE. THE OLD ONES DETECTED START CODES  
2 IN REAL TIME. THE NEW ONES HAVE TO DETECT START CODES FASTER  
3 THAN REAL-TIME DURING A FAST FORWARD OR FAST REVERSE. THE OLD  
4 ONES HAD LESS COMPUTATION REQUIREMENTS. THE NEW ONES HAD  
5 MORE. THE OLD ONES USED START CODE DETECTION, THAT'S WHAT I  
6 ABBREVIATED FOR SPACING AS SCD, TO CREATE AND STORE AN INDEX.  
7 THE NEW ONES HAVE NO START CODE INDEX CREATED DURING  
8 RECORDING.

9 THE OLD ONES USED THE INDEX DURING TRICK MODES. THE NEW  
10 ONES DO TRICK MODES WITHOUT A START CODE INDEX. THE OLD ONES  
11 MOVE DIRECTLY TO A FRAME USING TRICK MODES. THAT'S WHAT I  
12 MEAN WITH TMS. IF YOU WANT TO SPACE FORWARD TEN FRAMES, THEY  
13 KNOW EXACTLY WHERE TO GO. THE NEW ONES HAVE TO SEARCH FOR THE  
14 NEXT APPROPRIATE FRAME AND MAY NOT FIND IT. THEY MAY FIND THE  
15 9<sup>TH</sup> OR THE 11<sup>TH</sup> USING TRICK MODES.

16 THE OLD ONES OPEN THE PACKET PAYLOADS -- AND I'LL SHOW A  
17 LITTLE MORE ABOUT WHAT I MEAN ABOUT THAT LATER -- DURING  
18 RECORDING BECAUSE THEY HAVE TO. THEY HAVE TO FIND THE VIDEO  
19 START CODES IN THE PAYLOADS OF THE TRANSPORT STREAM PACKETS.  
20 THE NEW ONES NEVER OPEN THE PAYLOADS DURING RECORDING.

21 AND THEN I CATEGORIZED THREE DIFFERENCES FOR THE BROADCOM  
22 ONLY. THE OLD ONES, THE PID PARSER IN THE BROADCOM CHIP  
23 IDENTIFIED AND KNEW WHICH PARTICULAR PACKET IDENTIFIER WAS FOR  
24 THE VIDEO'S PACKETS. THE NEW ONES, THEY DON'T KNOW THAT. THE  
25 BROADCOM PART IS NOT RESPONDING TO THAT PARTICULAR PID AS A

1 VIDEO. THE OLD ONES BLOCKED BUFFERING UNTIL THIS SECONDARY  
2 BUFFER WAS EMPTIED. THE NEW ONES, THERE IS NO REGULATION THAT  
3 BLOCKS THE BUFFERING. THE OLD ONES, THERE WAS NO -- NO  
4 POSSIBILITY OF LOSS OF DATA THAT HAD COME INTO A BUFFER. THE  
5 NEW ONES, THERE IS THE POSSIBILITY OF LOSS OF BUFFER DATA WHEN  
6 AN OVERWRITING OCCURS.

7 Q OKAY. LET'S THEN TURN, DR. RHYNE, TO THE INFRINGEMENT  
8 QUESTION. WHAT DOES TIVO POINT TO IN ITS NEW INFRINGEMENT  
9 CASE THAT IT DID NOT POINT TO AT TRIAL?

10 A I GUESS SEVERAL THINGS. SINCE THERE IS NO START CODE  
11 DETECTOR USED TO BUILD AN INDEX THAT WOULD BE PARSING AS WAS  
12 THE CASE BEFORE, THEY, THROUGH DR. STORER, NOW POINT TO A PURE  
13 PID FILTER AS MEETING THE PARSING OF AUDIO/VIDEO OR ANALYZING  
14 OF AUDIO/VIDEO DATA REQUIREMENT OF CLAIMS 31 AND 61.

15 THEY THEN POINT TO WHAT WE HEARD DISCUSSED EARLIER, THE  
16 WRITE TIME TABLE AND THE TIMED BOOKMARK TABLE THAT ARE  
17 PRODUCED DURING PLAYBACK AS BEING SOME FORM OF INDEX, AND SOME  
18 WAY THAT APPARENTLY MEETS THE PARSING LIMITATION. THEY POINT  
19 -- GIVEN THAT THE BUFFERING HAS BEEN CHANGED SO THAT OVERFLOW  
20 CAN OCCUR SINCE THERE'S NO BLOCKING, THERE'S NO REGULATION OF  
21 THE FLOW OF DATA INTO THE CIRCULAR BUFFER, THEY POINT I GUESS  
22 TO JUST THE NORMAL OPERATION OF THAT WELL KNOWN CIRCULAR  
23 BUFFER AS BEING SOMETHING THAT STILL MEETS THE FLOW CONTROL  
24 LIMITATION OF CLAIMS 31 AND 61.

25 Q AND THOSE NEW INFRINGEMENT CONTENTIONS RAISED NEW ISSUES

1 THAT HAD NOT BEEN DECIDED BEFORE. IS THAT RIGHT?

2 A ABSOLUTELY.

3 Q AND YOU MENTIONED THOSE EARLIER IN YOUR TESTIMONY?

4 A I DID. WHETHER OR NOT THESE NEW AND DIFFERENT FEATURES  
5 OF THE DESIGN-AROUND ECHOSTAR PRODUCTS ARE IN FACT WITHIN THE  
6 SCOPE OF CLAIMS 31 AND 61.

7 MR. BARQUIST: COULD WE BRING UP DR. STORER'S SLIDE  
8 53, PLEASE?

9 Q (BY MR. BARQUIST) DR. RHYNE, THIS SLIDE FROM DR. STORER'S  
10 TESTIMONY FOCUSES ON THE PARSING VIDEO AND AUDIO DATA FROM  
11 SAID BROADCAST DATA LIMITATION. DO YOU SEE THAT?

12 A I DO. IT'S THE SAME PHRASE. IT'S ONLY HIGHLIGHTED IN  
13 CLAIM 31, BUT IT'S IN WHAT'S BEEN CALLED THE B LIMITATION.

14 Q AND IN YOUR VIEW, WHY IS IT IMPORTANT TO KEEP IN MIND NOT  
15 ONLY THE WORD PARSES BUT THE ENTIRE CLAIM TERM, PARSES VIDEO  
16 AND AUDIO DATA FROM SAID BROADCAST DATA?

17 A WELL, IF I RECALL IT PROPERLY, IN SOME OF THE EXHIBITS  
18 THAT PROFESSOR STORER PUT UP HE ACTUALLY HAD PARSES EQUALS  
19 ANALYZES, AND I AGREE WITH THAT. I MEAN, THAT'S THE COURT'S  
20 CONSTRUCTION. FINE. BUT THE COURT ALSO CONSTRUED THE  
21 ENTIRETY OF THIS LIMITATION IN BOTH CLAIMS 31 AND 61. AND I  
22 READ IT EARLIER I THINK PROPERLY FROM MEMORY. THIS HAS BEEN  
23 CONSTRUED AS ANALYZES VIDEO AND AUDIO DATA FROM THE BROADCAST  
24 DATA.

25 SO IT'S NOT JUST ANY KIND OF ANALYZING. IT'S

1 SPECIFICALLY THIS CLAIM AS CONSTRUED BY THE COURT REQUIRES A  
2 TEST AS TO WHETHER OR NOT THERE IS SOMETHING IDENTIFIABLE IN  
3 AN ACCUSED DEVICE THAT ANALYZES WHAT? VIDEO AND AUDIO DATA  
4 FROM WHAT? FROM THE BROADCAST STREAM, BROADCAST DATA.

5 Q AND, OF COURSE, THE THING THAT HAS TO DO THAT IS THE  
6 PHYSICAL DATA SOURCE IN THIS CLAIM, CORRECT?

7 A THAT'S CORRECT.

8 Q AND DOES THE SPECIFICATION DISCUSS THE PHYSICAL DATA  
9 SOURCE?

10 A IT DOES.

11 MR. BARQUIST: COULD WE LOOK AT THE PATENT AT COLUMN  
12 8 LINES 43-45, PLEASE?

13 Q (BY MR. BARQUIST) WHAT DOES THIS PASSAGE INDICATE, DR.  
14 RHYNE?

15 A IT SAYS THAT THE SOURCE OBJECT 901 -- AND THAT'S A CLAIM  
16 LIMITATION, THE SOURCE OBJECT -- TAKES DATA OUT OF A PHYSICAL  
17 DATA SOURCE, SUCH AS THE MEDIA SWITCH, AND PLACES IT INTO A  
18 WHAT'S CALLED A PES BUFFER IN THIS. THAT'S A PACKETIZED  
19 ELEMENTARY STREAM. THAT IS VIDEO DATA. AND IT, THE MAIN  
20 THING I THINK HERE IS THAT IT SAYS AN EXAMPLE OF A PHYSICAL  
21 DATA SOURCE AS CALLED FOR IN CLAIMS 31 AND 61 IS THE MEDIA  
22 SWITCH, WHICH IS ALSO DESCRIBED IN FIGURES IN SOME OF THE  
23 EARLIER COLUMNS OF THE PATENT AT ISSUE HERE.

24 MR. BARQUIST: COULD WE BRING UP FIGURE 9 FROM THE  
25 PATENT, PLEASE?

1 Q (BY MR. BARQUIST) WHAT DOES THIS INDICATE ABOUT THE  
2 RELATIONSHIP OF THE MEDIA SWITCH AND THE PHYSICAL DATA SOURCE  
3 IN THE PATENT?

4 A WELL, HERE IS THAT SOURCE OBJECT 901, OKAY? IT'S ONLY  
5 LABELED AS SOURCE HERE. BUT WE JUST READ THE SECTION OF  
6 COLUMN 8 THAT REFERS TO IT AS THE SOURCE OBJECT. THIS IS  
7 WHAT'S -- I THINK FIGURE 9 IS IDENTIFIED AS THE CLASS  
8 HIERARCHY OF THE INVENTION. AND YOU CAN SEE THAT COMING  
9 DIRECTLY INTO THE SOFTWARE SOURCE OBJECT, IT'S -- THE  
10 INFORMATION IS COMING FROM THE MEDIA SWITCH.

11 IF YOU GO BACK AND THINK ABOUT WHAT CLAIM 31 AND 61 SAY,  
12 THEY SAY THAT THE SOURCE OBJECT MUST EXTRACT DATA FROM THE  
13 PHYSICAL DATA SOURCE. AND HERE THIS IS REPRESENTED AS THE  
14 MEDIA SWITCH. I THINK IT'S A SECOND PLACE SPECIFICALLY WHERE  
15 THE PATENT SPECIFICATION TEACHES THAT THE PHYSICAL DATA SOURCE  
16 AND THE MEDIA SWITCH ARE THE SAME.

17 Q NOW, IN THE TRIAL OF THIS CASE, DID TIVO EVER SAY THAT  
18 PARSING HAD DIFFERENT MEANINGS UNDER ANY OF THE DIFFERENT  
19 PATENT CLAIMS?

20 A I CERTAINLY DON'T RECALL THAT THEY EVER DID.

21 Q AND DID DR. STORER AGREE THAT THE WORD PARSES HAD THE  
22 SAME MEANING IN ALL OF THE CLAIMS?

23 A HE DID.

24 Q NOW, DID DR. STORER SUGGEST IN ONE OF HIS GRAPHICS  
25 YESTERDAY --

1 MR. BARQUIST: AND IF WE COULD BRING UP DR. STORER'S  
2 GRAPHIC NUMBER 10, PLEASE.

3 Q (BY MR. BARQUIST) DID HE SUGGEST THAT PORTIONS OF THE  
4 SPECIFICATION THAT DISCUSS PARSING TO FIND VIDEO FRAMES APPLY  
5 ONLY TO THE HARDWARE CLAIMS AND NOT TO CLAIMS 31 AND 61?

6 A THAT'S MY GENERAL UNDERSTANDING OF THE PURPOSE OF THIS  
7 SLIDE AND HIS DISCUSSION OF IT, THAT IT'S AS IF THERE WERE A  
8 SPLIT IN THE PATENT WHICH DEALT WITH HARDWARE, AND IN THAT  
9 PART OF THE PATENT PARSING MEANT ONE THING AND THAT THERE WAS  
10 ALSO THIS SOFTWARE ARCHITECTURE WHERE IN SOME WAY PARSING  
11 COULD MEAN SOMETHING ELSE. I CAN'T RESOLVE THAT WITH HIS  
12 ANSWER THAT, YES, THEY MEAN THE SAME THING. BUT THAT'S  
13 CERTAINLY MY TAKEAWAY FROM HIS DISCUSSION OF THIS SLIDE.

14 Q WELL, DO YOU AGREE WITH THE SUGGESTION THAT PARSING MEANS  
15 SOMETHING DIFFERENT IN THE HARDWARE CLAIMS AND THE SOFTWARE  
16 CLAIMS?

17 A NO. THERE'S ONLY ONE INVENTION IN THIS PATENT. IT HAS  
18 HARDWARE AND IT HAS SOFTWARE. BUT THROUGHOUT THE PATENT FROM  
19 THE BEGINNING TO THE END IT'S CLEAR THAT WHAT THEY DESCRIBE IS  
20 HARDWARE WORKS DIRECTLY WITH WHAT THEY CALL THE PROGRAM LOGIC.  
21 THAT TERMS SHOWS UP OVER AND OVER AGAIN. AND THAT --  
22 THAT'S THE SOFTWARE THAT WORKS WITH THE HARDWARE IN THE  
23 INVENTION.

24 MR. BARQUIST: CAN WE BRING UP THE PATENT, PLEASE?

25 Q (BY MR. BARQUIST) AND IF YOU COULD POINT OUT, DR. RHYNE,

1 WHAT YOU ARE REFERRING TO IN THAT ANSWER BY PROGRAM LOGIC AND  
2 HOW THAT RELATES TO YOUR CONCLUSION?

3 A SURE. IF WE COULD JUST GO AHEAD TO THE WRITTEN  
4 SPECIFICATION TO COLUMNS 1 AND 2, WHAT I'D FIRST LIKE TO POINT  
5 OUT ON THE LOWER LEFT IS THIS PATENT IS WRITTEN AS SUMMARY OF  
6 THE INVENTION. I SEE SOME PATENTS THAT SAY SUMMARY OF THE  
7 INVENTIONS OR WHATEVER. I MEAN, THERE'S SOME ISSUES AS TO HOW  
8 MANY INVENTIONS A PATENT REALLY CAN SET FORTH, BUT THEY SAY  
9 ONE OF THEM. AND IF YOU GO TO THE RIGHT-HAND SIDE AND PICK UP  
10 THE BRIEF DESCRIPTION OF THE DRAWINGS DOWN TO THE BOTTOM OF  
11 THE COLUMN, IT'S AT LINE 43 I THINK RIGHT THERE, YOU WILL SEE  
12 IT SAYS EVERY ONE OF THESE FIGURE DESCRIPTIONS ENDS UP WITH  
13 ACCORDING TO THE INVENTION.

14 SO WE'VE GOT FIGURE 2 IS A BLOCK DIAGRAM. IT'S A  
15 SCHEMATIC. IT'S MORE HARDWARE ORIENTED IN ITS DEPICTION.  
16 BLOCK -- FIGURE 3 IS A SCHEMATIC. FIGURE 4 IS A BLOCK  
17 SCHEMATIC. FIGURE 5, 6, AND 7, THOSE FIGURES TEND TO DEAL  
18 WITH THE OVERALL KIND OF BLOCK DIAGRAM FROM A HARDWARE POINT  
19 OF VIEW. BUT WHEN YOU GET DOWN TO FIGURE 8 IT SAYS IT'S A  
20 BLOCK SCHEMATIC DIAGRAM OF A HIGH LEVEL VIEW OF THE PROGRAM  
21 LOGIC ACCORDING TO THE INVENTION.

22 AND IF WE COULD GO TO THE TOP OF THE NEXT PAGE AT COLUMN  
23 3, YOU WILL SEE THAT FIGURE 9 IS A BLOCK SCHEMATIC DIAGRAM OF  
24 A CLASS -- WE JUST LOOKED AT THE CLASS HIERARCHY OF FIGURE 9  
25 -- OF THE PROGRAM LOGIC ACCORDING TO THE INVENTION. AND IF

1 YOU RECALL, FIGURE 9 SHOWED THAT CLASS HIERARCHY OF THE  
2 PROGRAM LOGIC RECEIVING ITS INFORMATION FROM THE MEDIA SWITCH.  
3 AND I'VE SEARCHED THE PATENT TO SEE HOW MANY TIMES PROGRAM  
4 LOGIC SHOWS UP. I DON'T WANT TO GO THERE FOR THE MOMENT, BUT  
5 FIGURE -- IN COLUMN 3 IT SHOWS UP AT LEAST THREE TIMES. I DID  
6 THIS MANUALLY.

7 IF YOU GO TO COLUMN 5, IT'S NOW DISCUSSING SORT OF THE  
8 GENERAL HARDWARE OPERATION OF THE MEDIA SWITCH. BUT IF YOU  
9 TAKE A LOOK, I THINK -- I DON'T KNOW HOW TO TELL YOU ANY  
10 BETTER. IF YOU GO TO LINE 18, IT SAYS THE MEDIA SWITCH  
11 NOTIFIES THE PROGRAM LOGIC. OKAY. YOU CAN -- NOTIFIES THE  
12 PROGRAM LOGIC. IF YOU GO DOWN TO THE NEXT PARAGRAPH -- IT'S  
13 SORT OF YELLOWED HERE -- YOU CAN SEE THAT IT SAYS THE PROGRAM  
14 LOGIC KNOWS WHERE THE AUDIO STREAM IS. IT SAYS THE ADDRESS  
15 TELLS THE PROGRAM LOGIC. THEY ARE TALKING ABOUT THE INTERPLAY  
16 IN THIS INVENTION BETWEEN THE HARDWARE OF THE MEDIA SWITCH AND  
17 THE SOFTWARE THAT MAKES UP THE PROGRAM LOGIC.

18 IF YOU GO TO THE NEXT PARAGRAPH, OKAY, I THINK THERE ARE  
19 TEN INSTANCES OF PROGRAM LOGIC IN THIS DESCRIPTION THAT'S MORE  
20 OR LESS FOCUSED ON THE MEDIA SWITCH. THE PROGRAM LOGIC. WE  
21 COME DOWN HERE, THE PROGRAM LOGIC. AND I WON'T -- I WON'T --

22 Q WE DON'T HAVE TIME TO LOOK AT EVERY ONE, DR. RHYNE.

23 A YEAH. I AM AWARE THE CLOCK IS RUNNING. THERE'S AT LEAST  
24 THREE IN COLUMN 6, AND BY THE TIME YOU GET OVER TO COLUMN 7  
25 THEY ARE ACTUALLY TALKING ABOUT FIGURES 8 AND 9 WHICH ARE THE

1 PROGRAM LOGIC. IT'S JUST REplete WITH THE UNDERSTANDING THAT  
2 THERE IS A PROGRAM LOGIC AND THERE IS A HARDWARE LIKE THE  
3 MEDIA SWITCH, AND THEY MAKE UP THE INVENTION. THEY ARE NOT  
4 TWO DIFFERENT CONCEPTS SET FORTH HERE.

5 Q SO ON THE SUBJECT, THEN, OF PARSING AND HOW THAT'S  
6 APPLIED IN THIS CASE, DID YOU LOOK AT MR. BARTON'S TESTIMONY?

7 A I DID.

8 MR. BARQUIST: COULD WE BRING UP TESTIMONY FROM MARCH  
9 30, MORNING SESSION, STARTING AT PAGE 26?

10 Q (BY MR. BARQUIST) WHAT'S THE SIGNIFICANCE OF MR. BARTON'S  
11 TESTIMONY ON THIS PAGE FOR THE PARSING LIMITATION?

12 A WELL, LET ME ORIENT IT MYSELF. OKAY. AT LINE 5 HE IS  
13 TALKING ABOUT THE ANALYSIS DONE BY THE MEDIA SWITCH. IT  
14 ANALYZED THE DATA COMING IN TO THE SYSTEM. HE'S TALKING ABOUT  
15 FUNCTIONS PERFORMED ON THE INPUT SIDE BEFORE THE STORAGE ON  
16 THE DISK. AND HE THEN SAYS AT LINE 11 THAT HE TALKS ABOUT,  
17 EXCUSE ME, AT LINES 9 AND 10: WE SEPARATED OUT THE VIDEO  
18 PARTS. THAT'S A REFERENCE TO ANALYZING THE VIDEO DATA AS THE  
19 PARSING OPERATION TAKES PLACE, THE ANALYSIS, AND TO CREATE A  
20 TABLE OF WHERE THE FRAMES WERE. AND WE ASSOCIATED THAT TABLE  
21 WITH THE VIDEO, HE SAYS, THEN WITH THE VIDEO AND AUDIO DATA  
22 WHERE WE STORED IT THAT ALLOWED US WHEN WE PLAYBACK TO KNOW  
23 PRECISELY WHERE THESE FRAME STARTS ARE SO THAT WE COULD  
24 PROPERLY SEND THE TELEVISION TO THE DECODER.

25 THEN HE GOES ON IN LINE 16: THIS IS WHY WE CAN ACTUALLY

1 DO THESE TRICKPLAYS BECAUSE WE, TO SIMULATE FAST FORWARDING,  
2 FOR EXAMPLE, FOR INSTANCE, WE ACTUALLY HAVE TO SKIP FRAMES,  
3 BUT WE HAVE TO DO IT IN THE 30 FRAME TIME PER SECOND, YOU  
4 KNOW, 30 FRAMES PER SECOND BECAUSE -- SORT OF A STYLE BECAUSE  
5 THAT'S THE WAY A TELEVISION WORKS.

6 WHAT HE'S SAYING, THEN, IS THAT HE'S TALKING ABOUT THE  
7 REAL-TIME THAT YOU CAN DO ON THE RECORD SIDE. AND I THINK  
8 THAT'S FINE.

9 Q SO JUST, IF WE JUST LOOK BACK UP AT LINES 5 AND 6 --

10 A ALL RIGHT.

11 Q -- SO THAT THE -- IN LINE 5 AND 6 HE IS TALKING ABOUT  
12 ANALYZING, CORRECT, DR. RHYNE?

13 A THE DATA COMING INTO THE SYSTEM, THAT'S PARSING.

14 Q THAT'S THE PARSING OF THE CLAIM LIMITATION, RIGHT?

15 A YES.

16 Q AND THE MEDIA SWITCH WE SAW WAS AN EXAMPLE OF WHICH WAS  
17 THE PHYSICAL DATA SOURCE?

18 A THAT'S CORRECT. OKAY.

19 Q SO THIS IS MR. BARTON TALKING ABOUT THE MEDIA SWITCH  
20 DOING THIS ANALYSIS, OR PARSING, IN THE WORD OF THE CLAIM?

21 A AND HIS REFERENCE IS BECAUSE THE MEDIA SWITCH IS A  
22 PHYSICAL DATA SOURCE, HIS COMMENTARY APPLIES THERE AS WELL.  
23 THIS TALKS ABOUT START CODE DETECTION IN REAL-TIME OF THE  
24 VIDEO DATA COMING IN AT THE FRONT END OF THE PROCESS BEFORE  
25 IT'S BEEN STORED ON DISK.

1 Q AND THEN WE ALSO LOOKED AT MR. BARTON'S TESTIMONY ABOUT  
2 THE ADVANTAGE OF DOING THE ANALYSIS BEFORE STORAGE RATHER THAN  
3 AFTER?

4 A WE LOOKED AT THAT EARLIER.

5 Q OKAY.

6 A I THINK THAT'S WHERE HE WAS CONTRASTING WHAT REQUIRED A  
7 LESS POWERFUL COMPUTER PROCESSOR AS OPPOSED TO A MORE POWERFUL  
8 ONE.

9 Q AND THAT ALSO RELATED TO THE PARSING LIMITATION, CORRECT?

10 A THAT'S CORRECT.

11 Q AND DID DR. GIBSON OFFER TESTIMONY RELATED TO THE  
12 IMPORTANCE OF DOING THE ANALYZING BEFORE STORAGE?

13 A YES.

14 MR. BARQUIST: COULD WE BRING UP TESTIMONY FROM MARCH  
15 30 IN THE AFTERNOON, STARTING AT PAGE 75 AT THE BOTTOM OF THE  
16 PAGE?

17 A DON'T THINK THAT'S WHAT I HAD IN MIND. LET'S GO BACK UP  
18 A BIT. PAGE 75? HE'S TALKING THERE BETWEEN LINES 6 AND 11 AS  
19 TO WHAT YOU CAN ACCOMPLISH WHEN YOU HAVE AN INDEX. HE SAYS IF  
20 WE WANT TO IN THIS CASE DO A FAST FORWARD WHERE WE CHOOSE  
21 EVERY THIRD FRAME, WE KNOW WHERE TO GO TO GET THE FIRST FRAME  
22 AND WE KNOW WHERE TO GO TO GET THE THIRD FRAME. AND THEN WE  
23 CAN CONTINUE TO PIECE THESE THINGS TOGETHER, REASSEMBLE THEM,  
24 AND SO WHEN WE PLAY THIS BACK WE GET FAST FORWARD. THIS WAS  
25 HIS TESTIMONY ABOUT HAVING AN INDEX.

1 Q AND DID YOU ALSO LOOK AT DR. GIBSON'S GRAPHICS FROM THE  
2 TRIAL?

3 A I DID.

4 MR. BARQUIST: CAN WE BRING UP SLIDE 92 FROM DX-5004?

5 A BEFORE YOU DO, THIS HAS CONFIDENTIAL INFORMATION, BUT I  
6 BELIEVE MS. KREVANS SAID IT WAS OKAY.

7 MS. KREVANS: IS IT 92?

8 MR. BARQUIST: YES.

9 MS. KREVANS: IT'S ILLEGIBLE, SO IT'S OKAY.

10 Q (BY MR. BARQUIST:) THE LEVEL OF LEGIBILITY I THINK MAKES  
11 IT OKAY.

12 A OKAY. I AM MAKING REFERENCE TO A DRAWING THAT NO ONE CAN  
13 READ. OKAY. YES, BRING IT UP. THIS IS THE ONE I HAVE BEEN  
14 VERY INTERESTED IN FROM THE FIRST TIME I SAW IT.

15 Q AND WHAT DOES THIS GRAPHIC INDICATE ABOUT THE  
16 UNDERSTANDING OF WHAT THE PHYSICAL DATA SOURCE COMPRISES IN  
17 THE PARSING LIMITATION?

18 A WELL, THIS IS DR. GIBSON'S TAKE ON WHERE YOU WOULD FIND A  
19 PHYSICAL DATA SOURCE IN A PARTICULAR VERSION THAT IS THE 721  
20 BROADCOM CHIP THAT'S USED THERE. AND YOU CAN SEE THE THREE  
21 BULLETS ON THE BOTTOM. HE IS LOOKING AT THREE  
22 RESPONSIBILITIES THAT ARE REQUIRED OF THE PHYSICAL DATA SOURCE  
23 BY CLAIMS 31 AND 61. IT MUST ACCEPT BROADCAST DATA FROM AN  
24 INPUT DEVICE, IT MUST ANALYZE VIDEO AND AUDIO DATA FROM THE  
25 BROADCAST DATA, AND IT MUST TEMPORARILY STORE THAT DATA.

1           AND YOU CAN SEE THAT HE PUT THREE YELLOW THINGS IN THE  
2 FIGURE. I THINK THAT THIS YELLOW ARROW -- HERE I HAVE A VERY  
3 DIFFERENT TAKE ON IT, AND I WAS THERE TO HEAR THE DISCUSSION  
4 FOR THAT BRIEF MOMENT IT WAS ON THE SCREEN. I THINK THIS  
5 YELLOW ARROW IS AN INDICATION OF ACCEPTS BROADCAST DATA FROM  
6 AN INPUT DEVICE. AND ALTHOUGH IT'S VERY HARD TO READ, THOSE  
7 THREE WORDS TO THE UPPER LEFT OF THAT ARROW, IT SAYS:  
8 TRANSPORT STREAM INPUT. THIS IS WHERE THE TRANSPORT STREAM OF  
9 MULTIPLE PROGRAM MPEG DATA COMES INTO THE BROADCOM CHIP. SO I  
10 THINK THAT'S THE MATCH HERE.

11           I THINK THAT THE SECOND AREA THAT'S BEEN YELLOWED IS THE  
12 BUFFER THAT TEMPORARILY STORES VIDEO AND AUDIO DATA ON THE  
13 BROADCOM -- IN THE BROADCOM DEVICE. AND THEN THE ANALYZES,  
14 WHICH IS HIS PROPER USE OF THE COURT'S CONSTRUCTION FOR  
15 PARSING, ANALYZES VIDEO AND AUDIO DATA FROM THE BROADCAST DATA  
16 IS THIS BLOCK UP AT THE UPPER RIGHT. AND IN THAT BLOCK HE HAS  
17 HIGHLIGHTED IN YELLOW THE START CODE DETECTOR AND THE INDEX  
18 FORM, OR IT'S ACTUALLY ABBREVIATED OVER HERE TBIT. THAT IS  
19 THE THING THAT COOPERATES WITH THE START CODE DETECTOR TO  
20 PROVIDE INFORMATION OUTSIDE OF THE DEVICE INTO MEMORY THAT'S  
21 USED TO FORM THE START CODE INDEX.

22 Q       SO IN THIS GRAPHIC FROM DR. GIBSON THAT ILLUSTRATES THE  
23 THREE OPERATIONS OF THE PHYSICAL DATA SOURCE, DID HE INCLUDE  
24 THE PARSERS OR PID FILTER?

25 A       NO. HE DIDN'T CONSIDER THEM TO BE WITHIN THE PHYSICAL

1 DATA SOURCE.

2 Q NOW, DID DR. STORER ALSO OFFER SOME TESTIMONY CONCERNING  
3 THE BENEFITS OF PARSING BEFORE STORAGE?

4 A YES.

5 Q AND IF WE COULD GO TO THE TESTIMONY ON APRIL 11 IN THE  
6 MORNING, STARTING AT PAGE 46.

7 A IF WE COULD COME DOWN A BIT, NOT QUITE THAT FAR. LET ME  
8 TAKE A -- JUST TO GET ORIENTED. OKAY.

9 Q BEGINNING ABOUT -- THE QUESTION BEGINS AT 13.

10 A OKAY, YES. SO HE WAS ASKED:

11 QUESTION: NOW DOES THE MEDIA SWITCH THAT IS A PART  
12 OF JIM BARTON'S INVENTION PERFORM ANY OTHER FUNCTIONS?

13 ANSWER: IT DOES.

14 SO THAT'S THE SECOND BULLET HERE, AND WE'VE HEARD, WE'VE  
15 HEARD A LOT ABOUT THIS BUSINESS OF ANALYZING -- AGAIN, THAT'S  
16 THE CONSTRUCTION FOR PARSING -- AND SEPARATION. AGAIN,  
17 MILLIONS OF BITS A SECOND.

18 WE HAVE ALREADY GOT THE IDEA THAT THE MEDIA SWITCH IS  
19 GOING TO BE A HELPER. IT'S GOING TO HANDLE ALL THIS TRAFFIC.  
20 IF WE COULD GO ON DOWN. WELL, A GREAT IDEA IS SINCE IT,  
21 MEANING THE MEDIA SWITCH, IS HANDLING ALL THE TRAFFIC, ANOTHER  
22 FUNCTION IT CAN DO IS AS THE TRAFFIC FLOWS THROUGH THE MEDIA  
23 SWITCH, AS THE INPUT STREAMS COME IN AND FLOW THROUGH THE  
24 MEDIA SWITCH, WHY NOT DO A LITTLE EXTRA WORK WHILE YOU'RE AT  
25 IT?

1           SO IF WE COULD GO TO PAGE 47. AND SO WHAT IT DOES IS  
2 ACTUALLY TAKES A LOOK AT, AT THE BITS AS THEY GO THROUGH AND  
3 IT FIGURES OUT THINGS LIKE WHERE THE FRAMES BEGIN IN THERE,  
4 AND WHERE THE DIVISION IS BETWEEN ONE FRAME AND THE NEXT. AND  
5 THIS CAN BE VERY USEFUL FOR THE SYSTEM LATER ON.

6 Q       SO AGAIN WE HAVE THE EMPHASIS ON EARLIER VERSUS LATER?

7 A       ABSOLUTELY. THAT'S WHAT THE ANALYSIS OR PARSING AS  
8 PROFESSOR STORER CONSIDERED AT TRIAL WAS DONE BY THE MEDIA  
9 SWITCH.

10 Q       DID TIVO EVER SUGGEST AT TRIAL THAT ANALYZING VIDEO AND  
11 AUDIO DATA AFTER STORAGE ON THE HARD DISK WOULD FALL WITHIN  
12 THE CLAIMS?

13 A       NOT TO MY RECOLLECTION.

14 Q       SO WHAT DO YOU CONCLUDE, DR. RHYNE, REGARDING TIVO'S  
15 POSITION AT TRIAL ABOUT WHAT MET THE PARSING AUDIO AND VIDEO  
16 DATA LIMITATION?

17 A       IT WAS START CODE DETECTION, AND THEN THE USE OF THE  
18 START CODE DETECTION DURING THE STORAGE OF DATA ON THE INPUT  
19 SIDE BEFORE THE DISK TO GENERATE AN INDEX OF START CODES WHICH  
20 COULD BE USED LATER DURING PLAYBACK FROM THE DISK TO IMPLEMENT  
21 IN A VERY EFFICIENT AND DIRECT AND ACCURATE MANNER THE TRICK  
22 MODES.

23 Q       NOW, DID TIVO MAKE ANY STATEMENTS IN CONNECTION WITH THE  
24 APPEAL OF THE VERDICT THAT YOU FOUND SIGNIFICANT TO YOUR  
25 ANALYSIS?

1 A I DID. AND I TOLD YOU I HAD READ THAT TRANSCRIPT AND I  
2 THINK I ACTUALLY QUOTED A PIECE OF IT ON PAGE 5 OF MY EXPERT  
3 REPORT.

4 Q OKAY.

5 A COULD WE BRING THAT UP?

6 Q COULD WE TURN TO EXHIBIT 5008 AND PAGE 38 AND 39? THIS  
7 IS THE TRANSCRIPT OF THE APPELLATE ARGUMENT.

8 A ALL RIGHT.

9 Q LOOK AT LINE 18 ON PAGE 38.

10 A THIS IS MR. WAXMAN, I BELIEVE, SOMEONE I DON'T THINK I'VE  
11 EVER MET. HE RESPONDED TO JUDGE BRYSON BY SAYING, THE GENIUS,  
12 THE CORE OF THIS INVENTION -- HE'S TALKING ABOUT MR. BARTON'S  
13 INVENTION -- IS SEPARATION AT THE COMPONENT LEVEL. THAT IS  
14 THE WAY THE CPU AND THE HIGHER PROGRAM LOGIC GETS LIBERATED  
15 FROM HAVING TO RUN LIKE A MANIAC UP AND DOWN THIS MASSIVE DATA  
16 STREAM EVERY TIME IT GETS A COMMAND SITTING ON A COUCH.

17 THE GENIUS, CONTINUING, IS THE BUILDING OF A LOGICAL  
18 TABLE OF EVENTS THAT SAYS, YOU KNOW, AHA, THIS IS AN AUDIO  
19 COMPONENT. IT APPEARS AT THIS SEQUENTIAL PLACE. IT STARTS  
20 HERE. IT'S STORED HERE. IT'S THIS LONG. AND WHEN A COMMAND  
21 COMES IN, THE CPU ONLY HAS TO DEAL WITH THAT TABLE. AND THEY  
22 BUILD A TABLE, THEY MEANING I THINK ECHOSTAR, WE BUILD A  
23 TABLE, MEANING TIVO, AND THAT'S THE INVENTION HERE. THAT'S  
24 THE WAY IN WHICH A LOW COST, LIMITED CPU DEVICE CAN MANIPULATE  
25 THESE STREAMS THE WAY THAT THEY, I THINK AGAIN MEANING

1 ECHOSTAR, DO IN THE INFRINGING DEVICES.

2 Q SO, DR. RHYNE, IN VIEW OF THE CLAIM LANGUAGE AND THE  
3 COURT'S CONSTRUCTION OF IT AND THE POSITIONS TIVO TOOK AT  
4 TRIAL AND ON APPEAL ABOUT WHAT MET THE PARSING VIDEO AND AUDIO  
5 DATA LIMITATION, IN YOUR OPINION DO THE ECHOSTAR'S -- DO  
6 ECHOSTAR'S REDESIGN DVRS MEET THE PARSING AUDIO AND VIDEO DATA  
7 LIMITATION?

8 A THEY DON'T. THEY NO LONGER HAVE ANY FORM OF START CODE  
9 DETECTION THAT ANALYZES VIDEO AND AUDIO DATA FROM THE  
10 BROADCAST STREAM ON THE PRIMARY INPUT SIDE, EXCUSE ME, BEFORE  
11 THE DISK.

12 Q DO THE NEW ECHOSTAR DEVICES DO ANY ANALYSIS OF VIDEO AND  
13 AUDIO DATA BEFORE STORAGE?

14 A NONE.

15 Q DOES ECHOSTAR EVER CREATE ANY TABLE OR INDEX OF START  
16 CODES BEFORE STORAGE --

17 A NO.

18 Q -- IN THE NEW DEVICES?

19 A I'M SORRY. NO, THEY DO NOT.

20 Q IS THE SPECIFICATION ITSELF CONSISTENT WITH THE -- WHAT  
21 YOU'VE TOLD US ABOUT THE IMPORTANCE OF DOING THE ANALYSIS OF  
22 AUDIO AND VIDEO DATA BEFORE STORAGE?

23 A I BELIEVE THAT IT IS.

24 Q COULD WE LOOK AT COLUMN 7 OF THE PATENT, PLEASE?

25 A IF WE GO TO ABOUT LINE 13 OR 12, THAT PARAGRAPH, IT'S

1 TALKING ABOUT WHAT'S HAPPENING AT THE KIND OF THE MEDIA SWITCH  
2 END, SO THAT'S THE FRONT END. AND IT SAYS: RATHER THAN HAVING  
3 TO PARSE THROUGH AN IMMENSE DATA STREAM LOOKING FOR THE START  
4 OF WHERE EACH FRAME WOULD BE, THE PROGRAM LOGIC ONLY HAS TO  
5 LOOK AT THE CIRCULAR EVENT BUFFER IN DRAM 714 AND TELL -- AND  
6 IT CAN TELL WHERE THE START OF EACH FRAME IS AND THE FRAME  
7 TYPE.

8 THIS APPROACH SAVES A LARGE AMOUNT OF CPU POWER KEEPING  
9 THE REAL-TIME REQUIREMENTS OF THE CPU 713 SMALL. THE CPU DOES  
10 NOT HAVE TO BE VERY FAST AT ANY POINT IN TIME. THE MEDIA  
11 SWITCH 701 GIVES THE CPU AS MUCH TIME AS POSSIBLE TO COMPLETE  
12 TASKS.

13 AGAIN, IT'S DEALING, MR. BARQUIST, WITH THIS IDEA THAT BY  
14 DOING THE IDENTIFICATION OF WHERE THE FRAME START CODES ARE AS  
15 DATA COMES IN AND THROUGH EN ROUTE TO THE BUFFER AND THEN TO  
16 THE DISK, THAT IT CAN BE DONE WITH A LOWER POWER CPU AND AS  
17 MUCH TIME AS POSSIBLE TO COMPLETE THAT SEARCH FOR THE VIDEO  
18 START CODES.

19 Q LET'S LOOK AT COLUMN 6, LINES 37-46 AS WELL, PLEASE.

20 A OKAY.

21 Q WHAT'S THE SIGNIFICANCE OF THIS PARAGRAPH TO YOUR  
22 ANALYSIS, DR. RHYNE?

23 A I THINK IT'S GOT A COUPLE OF POINTS HERE. THE PARSER 705  
24 PARSES THE INPUT DATA STREAM FROM THE MPEG ENCODER -- NOW THIS  
25 IS A SITUATION WHERE YOU DO NOT YET HAVE A DIGITAL APPROACH.

1 YOU'RE BRINGING IN ANALOG TELEVISION AND ENCODING IT -- THE  
2 AUDIO ENCODER AND VERTICAL BLANKING -- THAT'S AN OLDER WAY IN  
3 ANALOG TELEVISION TO DO CLOSE CAPTIONING -- AND A VBI DECODER  
4 OR FROM THE TRANSPORT DEMULTIPLEXOR IN THE CASE OF A DIGITAL  
5 TV STREAM.

6 AND I THINK DR. STORER AND I ARE IN AGREEMENT THAT A  
7 TRANSPORT DEMULTIPLEXOR IS ANOTHER NAME FOR A PID FILTER. THE  
8 PARSER DETECTS THE BEGINNING OF ALL THE IMPORTANT EVENTS IN A  
9 VIDEO OR AUDIO STREAM, THE START OF ALL THE FRAMES, THE START  
10 OF SEQUENCE HEADERS, ALL OF THE PIECES OF INFORMATION THAT THE  
11 PROGRAM LOGIC NEEDS TO KNOW ABOUT IN ORDER TO PROPERLY PLAY  
12 BACK AND PERFORM SPECIAL EFFECTS ON THE STREAM, FOR EXAMPLE,  
13 FAST FORWARD, REVERSE, PLAY, PAUSE, FAST/SLOW PLAY, INDEXING,  
14 AND FAST/SLOW REVERSE PLAY. SO CLEARLY THE PARSING TAKES  
15 PLACE ON THE INPUT STREAM, AND THIS IS ALSO A PART OF THIS  
16 PATENT THAT DISTINGUISHES IN THE CASE OF DIGITAL TV FROM A  
17 TRANSPORT DEMULTIPLEXOR OR PID FILTER AND THE PARSER ITSELF.

18 Q THIS PART OF THE PATENT INDICATES THAT THOSE TWO ARE  
19 DIFFERENT THINGS, IS THAT IT?

20 A ABSOLUTELY.

21 Q SO YOUR OPINION, THEN, WHETHER THE REDESIGNED ECHOSTAR  
22 DVR MEETS THE LIMITATIONS OF CLAIMS 31 AND 61 IS WHAT, DR.  
23 RHYNE?

24 A WELL, WE'VE ONLY DEALT WITH THE PARSER REQUIREMENT, THE  
25 ANALYSIS OF VIDEO AND AUDIO DATA FROM THE BROADCAST STREAM FOR

1 BOTH SETS OF DEVICES, THE 50X AND THE BROADCOM. BUT, YOU  
2 KNOW, YOU DON'T INFRINGE A CLAIM IF YOU MISS ANY SINGLE  
3 LIMITATION. AND THE NEW DEVICES, UNLIKE THE OLD DEVICES WHICH  
4 DID HAVE START CODE DETECTION AND USED THAT DETECTION TO BUILD  
5 AN INDEX, THE NEW DEVICES DO NOT ON THE INPUT SIDE EVER DO A  
6 START CODE DETECTION NOR DO THEY USE THAT DETECTION TO BUILD A  
7 START CODE INDEX. SO THEY DON'T FALL WITHIN THE LIMITATIONS  
8 OF CLAIM 31 OR 61 AS CONSTRUED BY THE COURT.

9 Q THAT'S THE ANALYZES LIMITATION?

10 A THAT'S CORRECT.

11 Q AND HAVE YOU LOOKED AT WHETHER THAT LIMITATION IS MET  
12 UNDER THE DOCTRINE OF EQUIVALENTS?

13 A I HAVE.

14 Q WHAT DID YOU CONCLUDE?

15 A WELL, I -- THERE ARE A LOT OF WAYS TO DO DOCTRINE OF  
16 EQUIVALENTS. I'VE THOUGHT THROUGH IT FROM THE POINT OF VIEW  
17 OF THE FUNCTION WAY RESULT, OR GRAVER TANK IT'S SOMETIMES  
18 CALLED. THE FUNCTION IS CLEARLY SET FORTH IN THE CLAIM AND AS  
19 CONSTRUED BY THE COURT. THE FUNCTION THAT THE -- MUST BE  
20 PROVIDED BY THE PHYSICAL DATA SOURCE IS ANALYZING VIDEO AND  
21 AUDIO DATA FROM THE BROADCAST DATA. THE FUNCTION IS NOT  
22 PERFORMED IN THE NEW DEVICE, SO I COULD STOP THERE. I MEAN,  
23 IT'S NOT SUBSTANTIALLY DIFFERENT OR MORE THAN SUBSTANTIALLY  
24 DIFFERENT. IT'S NOT EVEN THERE.

25 BUT THE WAY IS QUITE DIFFERENT AS WELL. IN THE

1 INFRINGING DEVICES, IT'S EITHER DONE BY SOFTWARE IN THE 50X ON  
2 THE INPUT SIDE OR BY THE BROADCOM CHIP USING ITS CAPABILITIES  
3 THAT WERE THEN ENABLED TO DO START CODE DETECTION AND INDEX  
4 BUFFERING. IN THE NEW DEVICE THOSE ARE DISABLED, THE SOFTWARE  
5 IS GONE, AND THE TRICK MODES ARE SUPPORTED BY THIS APPROXIMATE  
6 STATISTICAL BASED APPROACH ON THE PLAYBACK SIDE. AND THE  
7 RESULT IS VISIBLY DIFFERENT. I'VE LOOKED AT OLD AND NEW SIDE  
8 BY SIDE AND THEY JUST ARE NOT THE SAME.

9 Q AS WE HAVE HEARD, TIVO IS NOW POINTING TO THE WRITE TIME  
10 TABLE, OR WTT FILES, AND THE TIME BOOKMARK TABLES, OR TBK  
11 FILES. AND DID YOU HEAR MR. MINNICK'S TESTIMONY ABOUT THOSE  
12 TBK AND WTT FILES?

13 A I DID. AND I'VE ALSO DISCUSSED THE NATURE OF THOSE WITH  
14 THE SOFTWARE DEVELOPERS WHO CREATED THEM IN THE FIRST PLACE.

15 Q AND DO YOU AGREE WITH MR. MINNICK'S TESTIMONY ABOUT WHAT  
16 THOSE FILES ARE AND WHAT THEY CONTAIN?

17 A YES. THEY ARE NOT START CODE INDEX FILES. THEY CONTAIN  
18 TIME OF DAY, SYSTEM TIME, AND FILE SIZES AS DATA IS PUT ON THE  
19 DISK. AND THEY ARE ALSO NEVER USED FOR TRICKPLAY OPERATION.  
20 THEY ARE ONLY USED TO PUT A GRAPHICAL USER INTERFACE BAR ON  
21 THE SCREEN DURING CERTAIN OPERATIONS.

22 Q IS THERE ANYTHING THAT YOU ARE AWARE OF IN THE '389  
23 PATENT THAT SUGGESTS THAT MR. BARTON AND HIS CO-INVENTORS  
24 THOUGHT THE INVENTION WAS DISPLAYING A PAUSE BAR ON THE  
25 SCREEN?

1 A NO.

2 Q NOW, AS YOU HAVE INDICATED, DR. RHYNE, TIVO NOW SAYS THAT  
3 PID FILTERING ALONE MEETS THE PARSING OR ANALYZING LIMITATION.  
4 DID TIVO EVER SAY AT TRIAL THAT PID FILTERING ALONE WAS  
5 PARSING OR ANALYSIS BY THE PHYSICAL DATA SOURCE OF AUDIO AND  
6 VIDEO DATA?

7 A NO.

8 Q WHAT DID TIVO SAY PID FILTERING WAS AT THE TRIAL?

9 A THEY ASSIGNED THE PID FILTERS THAT WERE IDENTIFIED IN  
10 BOTH FAMILIES OF DEVICES TO AN EARLIER STEP WHICH CONSISTED OF  
11 CONVERSION AND SELECTION OF A PARTICULAR PROGRAM FROM A MULTI-  
12 PROGRAM MPEG TRANSPORT STREAM.

13 Q DID DR. GIBSON HAVE SOME SLIDES ON THAT?

14 A I THINK HE HAD AT LEAST TWO.

15 Q COULD WE BRING UP SLIDES --

16 A THIRTY-SEVEN.

17 Q -- 37 FROM DX-5004?

18 MS. KREVANS: WAIT. 37?

19 MR. BARQUIST: IS THIS CONFIDENTIAL?

20 MS. KREVANS: YEAH, SORRY.

21 MR. BARQUIST: I'M SORRY, YOUR HONOR. I THINK WE'LL  
22 HAVE TO ASK --

23 MS. KREVANS: BRIEFLY.

24 MR. BARQUIST: -- BRIEFLY PEOPLE WHO DO NOT HAVE  
25 ACCESS TO THE --

1 THE COURT: VERY WELL. IF EVERYONE WILL LEAVE --

2 MR. BARQUIST: -- THIRD PARTY.

3 THE COURT: -- THAT'S NOT SUBJECT TO THE PROTECTIVE  
4 ORDER, STEP OUT BRIEFLY.

5 (INDIVIDUALS NOT UNDER PROTECTIVE ORDER EXITING  
6 COURTROOM)

7 THE COURT: HOW MUCH MORE DIRECT EXAMINATION DO YOU  
8 ANTICIPATE?

9 MR. BARQUIST: EXCUSE ME, YOUR HONOR?

10 THE COURT: HOW MUCH MORE DIRECT EXAMINATION DO YOU  
11 ANTICIPATE?

12 MR. BARQUIST: I WOULD ESTIMATE ABOUT 45 MINUTES.  
13 LET ME ASK MY PARTNER HOW MUCH TIME I HAVE USED, YOUR HONOR.  
14 THAT'S INDEED WHAT I AM AIMING FOR.

15 THE COURT: EXCUSE ME?

16 MR. BARQUIST: THAT'S INDEED WHAT I'M AIMING FOR.  
17 OKAY. I'M SORRY.

18 Q SEALED

19 SEALED

20

21 A SEALED

22 SEALED

23

24 Q SEALED

25 SEALED

1	A	SEALED
2		SEALED
3		
4	Q	SEALED
5		
6	A	SEALED
7		
8	Q	SEALED
9	A	SEALED
10		SEALED
11		SEALED
12	SEALED	
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14		SEALED
15		SEALED
16		SEALED
17		SEALED
18		SEALED
19		SEALED
20		SEALED
21		SEALED
22		SEALED
23		SEALED
24	Q	SEALED
25		SEALED

1 SEALED

2 SEALED

3 A SEALED

4 SEALED

5 SEALED

6 SEALED

7 SEALED

8 SEALED

9 SEALED

10 MR. BARQUIST: WE CAN TAKE THE SLIDE DOWN AND, YOUR  
11 HONOR, WE CAN INVITE --

12 THE COURT: WHY DON'T WE GO AHEAD AND TAKE A SHORT  
13 BREAK, 10 OR 15 MINUTES, THEN IT'S MY GOAL TO AT LEAST KNOCK  
14 OUT THE REST OF DIRECT. THAT WOULD TAKE US ABOUT TO THE 5  
15 O'CLOCK HOUR, AND THEN WE MAY SAVE THE CROSS EXAMINATION FOR  
16 TOMORROW.

17 MR. BARQUIST: YES, YOUR HONOR.

18 THE COURT: WE WILL BE IN RECESS.

19 (RECESS AT 4:00 P.M., UNTIL 4:15 P.M., OPEN COURT)

20 THE COURT: PLEASE BE SEATED. YOU MAY CONTINUE THE  
21 DIRECT EXAMINATION.

22 MR. BARQUIST: THANK YOU, YOUR HONOR.

23 DIRECT EXAMINATION CONTINUES

24 BY MR. BARQUIST:

25 Q DR. RHYNE, I AM GOING TO ASK YOUR --

1 THE COURT: WITH EVERY GOAL TO HAVE THIS COMPLETED BY  
2 FIVE.

3 MR. BARQUIST: TOOK THE WORDS OUT OF MY MOUTH, YOUR  
4 HONOR.

5 Q (BY MR. BARQUIST:) DR. RHYNE, WE ARE GOING TO HAVE TO  
6 WORK TOGETHER TO GET THIS DONE BY 5 O'CLOCK.

7 A YOU ARE UNDER MORE CONTROL THAN I AM.

8 Q WE WILL ARGUE ABOUT THAT LATER. OKAY. HAVE YOU READ  
9 TESTIMONY BY DR. STORER ABOUT THE DIFFERENT USES OF THE WORD  
10 PARSE FROM THE TRIAL?

11 A I REMEMBER THAT HE TESTIFIED AT ONE POINT DURING HIS  
12 CROSS EXAMINATION THAT PID FILTERING WAS PARSING AND, AS BEST  
13 I RECALL IT, DURING CROSS EXAMINATION HE BASICALLY SAID THAT  
14 ONE NEEDS TO BE CAREFUL ABOUT APPLYING TERMS LIKE PARSE TO THE  
15 DIFFERENT CLAIMS. THAT MUCH I RECALL.

16 Q SO, IN OTHER WORDS, PARSING MAY MEAN SOMETHING IN ONE  
17 CONTEXT BUT THAT DOESN'T NECESSARILY MEAN WHAT IT MEANS IN THE  
18 CONTEXT OF THE CLAIM, IS THAT RIGHT?

19 A THAT'S MY TAKEAWAY FROM WHAT HE SAID IN THE REDIRECT BY  
20 MR. CHU LATER IN THE AFTERNOON OF THAT SAME DAY.

21 Q AND DO YOU AGREE WITH THAT?

22 A NO. I THINK PARSING IS PRETTY STANDARD ACROSS ALL OF  
23 THESE CLAIMS. IT ALWAYS MEANS --

24 MR. CHU: I'M SORRY, DR. RHYNE. I WANT TO INTERPOSE  
25 AN OBJECTION. THIS ISN'T BASED ON WHAT WAS ACTUALLY SAID.

1 IT'S BASED ON SPECULATION, UPON A SPECULATION OF A REDIRECT --  
2 THE COURT: CAN YOU CITE US TO -- CAN YOU CITE US TO  
3 SOME TRANSCRIPT TESTIMONY THAT MAYBE WE MIGHT BE A LITTLE MORE  
4 EXACT, EXACTLY WHAT WAS SAID?

5 MR. BARQUIST: YOUR HONOR, IN THE INTEREST OF TIME I  
6 WON'T, BUT I WILL JUST MENTION THE TESTIMONY WAS PUT UP ON THE  
7 SCREEN DURING YESTERDAY'S EXAMINATION. UNLESS YOUR HONOR  
8 WOULD REALLY LIKE TO SEE IT, I'LL MOVE ON.

9 THE COURT: MOVE ALONG. IF YOU HAVE ANY MORE  
10 OBJECTIONS, RAISE IT.

11 Q (BY MR. BARQUIST:) IS TIVO'S CURRENT POSITION ABOUT PID  
12 FILTERING CONSISTENT WITH ITS POSITION AT TRIAL?

13 A NO.

14 Q NOW YOU, DR. RHYNE, TOOK THE POSITION AT TRIAL THAT IN  
15 THE ECHOSTAR DVRS AT THAT TIME, PID FILTERING WAS PARSING. DO  
16 YOU RECALL THAT?

17 A YES.

18 Q AND WHAT WAS TIVO'S REACTION WHEN YOU GAVE THAT  
19 TESTIMONY?

20 A MR. IANCU, IN CROSS EXAMINATION, DISAGREED WITH ME.

21 Q NOW, DID THE JURY ACCEPT YOUR POSITION ABOUT THE PID  
22 FILTERS IN THE ORIGINAL PRODUCTS?

23 A NO.

24 Q HOW DO YOU KNOW THAT?

25 A IF THEY HAD ACCEPTED MY POSITION WHICH WAS THAT A PID

1 FILTER ALONE COULD SATISFY THE PARSING LIMITATION OF CLAIMS 31  
2 AND 61, THEN I BELIEVE THEY WOULD HAVE FOUND AT LEAST  
3 INVALIDITY BASED ON --

4 MR. CHU: YOUR HONOR, THIS IS REALLY THREE LAYERS OF  
5 SPECULATION ABOUT WHAT THE JURY WAS THINKING, AND THAT IF THIS  
6 HAPPENED THEN THEY WOULD HAVE FOUND INVALIDITY.

7 THE COURT: I UNDERSTAND, BUT THEY SEEM TO WANT TO GO  
8 DOWN THIS PATH, SO I GUESS WE ARE GOING TO TAKE ALL THIS TIME  
9 DOING SO.

10 MR. CHU: OKAY.

11 THE COURT: SO I AM GOING TO OVERRULE IT.

12 MR. CHU: CAN I HAVE A RUNNING OBJECTION TO ALL OF  
13 THIS?

14 THE COURT: YES. I MEAN, OBVIOUSLY ALL WE KNOW IS  
15 WHAT THE JURY VERDICT WAS. WE DON'T KNOW EXACTLY THE THOUGHT  
16 PROCESS OF THE JURY.

17 MR. BARQUIST: OF COURSE, YOUR HONOR.

18 MR. CHU: SO I DO HAVE A RUNNING OBJECTION --

19 THE COURT: YES, YOU HAVE A RUNNING OBJECTION.

20 MR. CHU: -- ON IRRELEVANCE AND FOUNDATION, AND OTHER  
21 GROUNDS AND SPECULATION?

22 THE COURT: YOU MAY CONTINUE.

23 Q (BY MR. BARQUIST:) HOW DO YOU KNOW WHETHER THE JURY  
24 ACCEPTED YOUR POSITION ABOUT PID FILTERING AS EXPRESSED AT THE  
25 TRIAL?

1 A WELL, THERE WERE TWO OPPOSITE POSITIONS PRESENTED TO  
2 THEM. MY POSITION WHICH WAS THAT PID FILTERING COULD MEET THE  
3 PARSING LIMITATION, AND DR. GIBSON'S POSITION WHICH WAS THAT  
4 PID FILTERING WAS USED IN ANOTHER PART OF THE INVENTION  
5 UNRELATED TO THE PART OF THE INVENTION THAT DID PARSING. SO  
6 THERE WERE COMPETING OPPORTUNITIES FOR THE JURY TO FIND  
7 INFRINGEMENT. AND THEY FOUND INFRINGEMENT BASED CLEARLY ON  
8 WHAT WAS PRESENTED TO THEM AS TO THE PID FILTERING DOING  
9 CONVERSION AND TUNING, AND NOT BEING USED TO DO PARSING.

10 Q IN VIEW OF ALL THE WORK THAT YOU'VE DONE SINCE THE TRIAL  
11 AND IN EXAMINING THE NEW ECHOSTAR DESIGNS, HAS YOUR OPINION  
12 ABOUT PID FILTERING AND PARSING CHANGED?

13 A YES.

14 Q WHY IS THAT?

15 A I HAVE GONE BACK THROUGH THE CLAIMS, THE COURT'S  
16 CONSTRUCTION, THE SPECIFICATION IN GREAT DETAIL, AND THE  
17 ELIMINATION THAT'S BEEN PROVIDED BY ALL OF THE INFORMATION  
18 THAT I LEARNED IN WATCHING THE ORIGINAL TRIAL AND THE DECISION  
19 THAT THE JURY MADE, AND I BELIEVE THAT THE JURY WAS CORRECT IN  
20 THE DECISION THAT THEY MADE.

21 Q SO YOUR TESTIMONY TODAY IS BASED ON ACCEPTING THE JURY'S  
22 VERDICT. IS THAT RIGHT?

23 A ABSOLUTELY.

24 Q NOW TELL US WHAT A PID FILTER DOES, PLEASE.

25 A IF YOU HAVE A SET OF VIDEO DATA TYPICALLY REPRESENTED AS

1 A PACKETIZED ELEMENTARY STREAM, SOME OF THE --

2 THE COURT: SO IF I UNDERSTAND CORRECTLY, BOTH  
3 PARTIES HAVE TOTALLY SWITCHED THEIR POSITION SINCE TRIAL. IS  
4 THAT CORRECT?

5 MR. BARQUIST: WELL, NOT EXACTLY, YOUR HONOR, BUT WE  
6 HAVE A NEW PRODUCT AND IT DOESN'T INFRINGE FOR THE REASONS WE  
7 ARE EXPLAINING.

8 THE COURT: VERY WELL. YOU MAY CONTINUE.

9 A WHERE WAS I?

10 Q YOU WERE TELLING US ABOUT HOW A PID --

11 THE COURT: I THINK WE WERE ON SWITCHING POSITIONS.

12 A WELL, I HAVE A NEW ONE.

13 THE COURT: VERY WELL. LET'S HEAR IT.

14 MR. BARQUIST: YES. YOUR HONOR, I THINK -- EXCUSE  
15 ME, YOUR HONOR.

16 Q (BY MR. BARQUIST:) DR. RHYNE, I THINK THE QUESTION WAS  
17 TELL US HOW A PID FILTER WORKS.

18 A SURE. PID FILTER SELECTS SPECIFIC PACKETS OUT OF A  
19 STREAM OF PACKETS IN A PACKETIZED TRANSPORT STREAM. YOU USE  
20 IT, AMONG OTHER THINGS, TO SELECT A PARTICULAR PROGRAM FROM  
21 THAT STREAM WITH A VARIETY OF OTHER PROGRAMS REPRESENTED IN  
22 THE PACKETS.

23 Q WHAT DO YOU -- WHAT IS A HEADER?

24 A A HEADER IS A PORTION OF A TRANSPORT STREAM PACKET THAT  
25 IDENTIFIES WHAT NUMBER THE PID, THE PACKET IDENTIFIER IS.

1 IT'S A PRECURSOR TO THE WHAT'S CALLED THE PAYLOAD OF THE  
2 PACKET. IT --

3 Q CAN WE BRING UP -- EXCUSE ME, DR. RHYNE.

4 A GO AHEAD.

5 Q CAN WE BRING UP ON THE SCREEN FROM DX-5004 SLIDE 18 WHICH  
6 IS A SLIDE, DR. GIBSON'S AT THE TRIAL? DO YOU RECOGNIZE THAT,  
7 DR. RHYNE?

8 A YES.

9 Q USING THIS CAN YOU EXPLAIN THE DIFFERENCE BETWEEN A  
10 HEADER AND THE PAYLOAD?

11 A SURE. THIS IS A REPRESENTATION OF A TRANSPORT STREAM  
12 PACKET. YOU CAN SEE THAT HE PUT BRACES AROUND IT TO IDENTIFY  
13 THE HEADER AND ANOTHER BRACE TO IDENTIFY THE PAYLOAD. THE  
14 PACKET IDENTIFIER, PID, IS A 13-BIT FIELD IN THE HEADER. THE  
15 START CODE WHICH HE REPRESENTED AS BEING IN THIS PARTICULAR  
16 PACKET, BUT CERTAINLY NOT ALL THE PACKETS HAVE VIDEO START  
17 CODES, THAT START CODE IS IN THE PAYLOAD WHICH IS A SEPARATE  
18 PART OF THE TRANSPORT STREAM PACKET.

19 Q AND WHERE IS THE VIDEO AND AUDIO DATA?

20 A THE VIDEO AND AUDIO DATA WOULD BE IN THE PAYLOAD TO THE  
21 RIGHT.

22 Q DOES THE PID FILTER ANALYZE THE PAYLOAD?

23 A NO.

24 Q NOW AT THE TIME PID FILTERING IS ACCOMPLISHED, ARE THE  
25 PAYLOADS SCRAMBLED?

1 A YES, FOR ALMOST ALL OF THEM. MOST OF THE PAYLOADS THAT  
2 ARE SHIPPED DOWN BY THE ECHOSTAR SATELLITES CARRY INFORMATION,  
3 VIDEO, AUDIO, AND OTHERS THAT HAVE BEEN SCRAMBLED.

4 Q AND WHAT IS THE SIGNIFICANCE OF SCRAMBLING TO THE  
5 QUESTION THAT WE'RE LOOKING AT NOW WHICH IS WHETHER A PID  
6 FILTER ANALYZES AUDIO AND VIDEO DATA?

7 A THE AUDIO AND VIDEO DATA IS HIDDEN BY THE SCRAMBLING, SO  
8 EVEN IF THE PID FILTER WERE TO OPEN THE PAYLOAD OF A TRANSPORT  
9 STREAM PACKET THAT CARRIED SCRAMBLED DATA, IT WOULD BE UNABLE  
10 TO ANALYZE THE ACTUAL VIDEO OR AUDIO DATA WITHOUT GOING  
11 THROUGH AN INVERSE DESCRAMBLING PROCESS, AND THE PID FILTER  
12 ITSELF DOES NOT DO THAT.

13 Q DOES A PID FILTER GENERATE ANY NEW DATA OR CREATE A TABLE  
14 OR INDEX?

15 A NO.

16 Q SO GIVEN THE JURY'S VERDICT AND THE ANALYSIS THAT YOU'VE  
17 DONE, WHAT IS YOUR OPINION TODAY CONCERNING WHETHER A PID  
18 FILTER ANALYZES AUDIO AND VIDEO DATA WITHIN THE MEANING OF  
19 CLAIMS 31 AND 61?

20 A IT DOES NOT.

21 Q DOES A PID FILTER MEET THE ANALYZES AUDIO AND VIDEO DATA  
22 LIMITATION UNDER THE DOCTRINE OF EQUIVALENTS IN YOUR OPINION?

23 A NO.

24 Q CAN YOU EXPLAIN WHY NOT?

25 A SAME BASIC SET OF REASONS I GAVE PREVIOUSLY WHEN YOU

1 ASKED ME ABOUT THE DOCTRINE. THE FUNCTION THAT WOULD BE  
2 REQUIRED OR IS REQUIRED BY CLAIMS 31 AND 61 AS CONSTRUED BY  
3 THE COURT IS ANALYZING VIDEO AND AUDIO DATA FROM THE BROADCAST  
4 STREAM. THE PID FILTER ONLY LOOKS AT THE HEADER OF THE  
5 PACKETS THAT PASS THROUGH IT. IT NEVER OPENS THE PAYLOAD AND  
6 DOES NOT ANALYZE THE DATA. I GUESS I'LL STOP THERE FOR THE  
7 SAKE OF TIME.

8 Q WELL, CAN A PID FILTER DO WHAT THE SPECIFICATION OF THE  
9 '389 PATENT DESCRIBES AS PARSING?

10 A NO. THE SPECIFICATION, AS WE READ EARLIER, TALKS ABOUT  
11 IDENTIFYING SIGNIFICANT EVENTS, SUCH AS STARTS OF VIDEO  
12 FRAMES, AND THE PID FILTER ALONE CANNOT DO THAT.

13 Q CAN IT DETECT THE BEGINNING OF THOSE IMPORTANT EVENTS?

14 A NO.

15 Q CAN IT IDENTIFY ALL OF THE PIECES OF INFORMATION NEEDED  
16 TO PERFORM TRICKPLAY?

17 A NO.

18 Q DOES THE SPECIFICATION ACTUALLY USE THE TERM PID  
19 FILTERING?

20 A NOT THAT TERM. IT USES AN EQUIVALENT TERM, THE TRANSPORT  
21 DEMULTIPLEXOR, BUT IT NEVER SAYS PID FILTER IN ANY OF THE  
22 DRAWINGS OR TEXT.

23 Q DOES THE SPECIFICATION EVER SAY PID FILTERING IS PARSING?

24 A NEVER. IT SPECIFICALLY SAYS THAT IT ISN'T.

25 Q IS THE DISCUSSION IN THE SPECIFICATION CONSISTENT WITH

1 TIVO'S POSITION AT TRIAL REGARDING WHAT PID FILTERING DID?

2 A NO.

3 Q LET ME MAKE SURE YOU HEARD MY QUESTION. I AM TALKING  
4 ABOUT THE TRIAL. IS THE DISCUSSION IN THE SPECIFICATION OF  
5 THE PATENT CONSISTENT WITH TIVO'S POSITION AT THE TRIAL  
6 REGARDING WHAT PID FILTERING DID?

7 A I'M SORRY, I MISUNDERSTOOD YOUR QUESTION. YES. THEY  
8 ASSIGNED THE PID FILTER TO A TASK THAT TOOK PLACE AHEAD OF THE  
9 MEDIA SWITCH OR PHYSICAL DATA SOURCE, AND THAT'S CONSISTENT  
10 WITH WHAT THE SPECIFICATION SAYS.

11 Q IS THE DISCUSSION IN THE SPECIFICATION CONSISTENT WITH  
12 TIVO'S POSITION IN TODAY'S HEARING ABOUT WHAT PID FILTERING  
13 DOES?

14 A NO.

15 Q ALL RIGHT. DR. RHYNE, IN THE REMAINING TIME WE HAVE,  
16 LET'S TURN TO THE AUTOMATIC FLOW CONTROL LIMITATION.

17 A ALL RIGHT.

18 Q NOW, WHAT AUTOMATIC FLOW CONTROL IS AT ISSUE HERE?

19 A AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT AS IT  
20 PERFORMS ITS FUNCTIONS MOVING DATA FROM THE OUTPUT OF THE  
21 PHYSICAL DATA SOURCE INTO THE BUFFER THAT IT OBTAINS.

22 Q IS THERE ANYTHING IN THE CLAIM ABOUT AUTOMATIC FLOW  
23 CONTROL OF THE PROCESS OF EMPTYING THE BUFFER INTO THE HARD  
24 DRIVE?

25 A NO.

1 Q WHAT DOES THE CLAIM LANGUAGE REQUIRE WITH RESPECT TO  
2 AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT? AND IF WE COULD  
3 BRING UP CLAIM 31.

4 A WELL, AS I SAID EARLIER, I THINK IT'S BEEN SAID A COUPLE  
5 OF TIMES THAT THE SOURCE OBJECT HAS FOUR BASIC FUNCTIONS. IT  
6 EXTRACTS, IT OBTAINS, IT CONVERTS AND FILLS, AND IT FILLS THE  
7 BUFFER. AND THE CLAIM SPECIFICALLY SAYS AT THE TOP OF COLUMN  
8 15: WHEREIN SAID SOURCE OBJECT IS AUTOMATICALLY FLOW  
9 CONTROLLED BY SAID TRANSFORM OBJECT. AND THE COURT HAS  
10 CONSTRUED THAT REFERENCE TO AUTOMATIC FLOW CONTROL TO MEAN IS  
11 SELF-REGULATED.

12 Q SO WHERE IN THE PROCESS DOES THE AUTOMATIC FLOW CONTROL  
13 HAVE TO BE?

14 A WELL, THE CLAIM IS SOMEWHAT UNSPECIFIC ABOUT IT, BUT IT  
15 HAS TO TAKE PLACE SOMEWHERE BETWEEN THE POINT AT WHICH THE  
16 DATA COMES OUT OF THE PHYSICAL DATA SOURCE IN THE FIRST  
17 LIMITATION AND EVENTUALLY GOES INTO THE BUFFER THAT'S REFERRED  
18 TO AT THE VERY BOTTOM, FOR EXAMPLE, ON CLAIM 31 OF COLUMN 14.

19 Q SO IS THIS -- IS THE PATENT CLEAR THAT THE AUTOMATIC FLOW  
20 CONTROL HAS TO BE BEFORE THE SOURCE FILLS THE BUFFER?

21 A YES.

22 Q AND IS THAT CONSISTENT WITH TIVO'S POSITION AT TRIAL  
23 REGARDING THE AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT  
24 LIMITATION?

25 A YES.

1 Q AND WHAT -- IN WHAT WAY IS IT CONSISTENT WITH TIVO'S  
2 POSITION?

3 A WELL, THE CLAIM LANGUAGE ITSELF RIGHT AT THE BOTTOM OF  
4 COLUMN 14 BEFORE THE SPLIT HERE, SAYS THAT THE SOURCE OBJECT  
5 CONVERTS VIDEO DATA INTO STREAMS AND FILLS THE BUFFER, AND THE  
6 BUFFER THAT TIVO POINTED TO AT TRIAL WAS THAT I BELIEVE MR.  
7 MINNICK CALLED IT THE RECORD BUFFER. IT WAS THE SECOND  
8 BUFFER. AND THAT DEVICE, THAT PARTICULAR BUFFER OPERATED IN A  
9 MANNER SUCH THAT ONCE IT HAD BEEN FILLED WITH DATA, THERE WAS  
10 A FLOW CONTROL OPERATION ESTABLISHED BY THE SOFTWARE THAT  
11 PREVENTED OTHER DATA FROM BEING WRITTEN INTO IT IN A MANNER  
12 THAT WOULD HAVE OVERWRITTEN ANY OF THE DATA THAT WAS THERE.

13 Q AND IS THAT CONSISTENT WITH THE GRAPHIC WITH THE PITCHER  
14 AND THE BUCKET THAT WE SAW?

15 A YES. THE FLOW CONTROL, THE FAUCET, WAS BEFORE THE  
16 PITCHER WHICH REPRESENTED THE BUFFER. IT WAS NOT AFTER IT  
17 BETWEEN THE PITCHER REPRESENTING THE BUFFER AND THE BIG BUCKET  
18 REPRESENTING THE DISK DRIVE.

19 Q NOW DOES THE EXISTENCE OF AUTOMATIC FLOW CONTROL TURN ON  
20 THE NUMBER OF BUFFERS?

21 A NO.

22 Q WHAT IS THE AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT  
23 DESIGNED TO AVOID?

24 A OVERWRITING DATA THAT'S BEEN PLACED IN THE BUFFER BY THE  
25 SOURCE OBJECT BEFORE THAT DATA CAN BE MOVED BY THE TRANSFORM

1 OBJECT ONTO THE HARD DRIVE.

2 Q NOW IN THE REDESIGNED BROADCOM DVRS, IS THERE A BUFFER  
3 BETWEEN THE BROADCOM CHIP AND THE HARD DRIVE?

4 A YES.

5 Q AND WHAT PUTS DATA INTO THAT BUFFER?

6 A THE HARDWARE OPERATIONS OF THE BROADCOM CHIP PUT DATA  
7 INTO THAT BUFFER.

8 Q DOES THE ECHOSTAR SOFTWARE CONTROL THE BROADCOM CHIP IN  
9 FILLING THE BUFFER?

10 A NO.

11 Q HOW DOES THE -- HOW DOES THAT CHIP WORK THEN IF IT'S NOT  
12 CONTROLLED BY THE SOFTWARE?

13 A IT BASICALLY PUTS DATA INTO THAT BUFFER IN A CIRCULAR  
14 FASHION, AND AS IT PROCEEDS BECAUSE IT'S CIRCULAR, IF THE DATA  
15 ISN'T UNLOADED, AS I SAID EARLIER, IT'S LIKE A DOG CHASING HIS  
16 TAIL THAT ACTUALLY CAUGHT HIS TAIL IN HIS MOUTH. IT WILL WORK  
17 ITS WAY AROUND KIND OF LIKE WHEN A RUNNER LAPS A RUNNER AND  
18 EVENTUALLY START WRITING DATA INTO AN AREA WHICH IS FILLED  
19 WITH DATA THAT HAS NOT YET BEEN EMPTIED OUT OF THE BUFFER AND  
20 PLACED ON DISK, AND YOU LOSE DATA IN THAT CIRCUMSTANCE.

21 Q SO DO ECHOSTAR'S REDESIGNED BROADCOM DVRS PREVENT THE  
22 OVERWRITING OF DATA IN THE BUFFER FILLED BY THE SOURCE?

23 A NO.

24 Q CAN YOU EXPLAIN HOW THAT -- WHY THAT COULD OCCUR?

25 A WELL, AS THE ILLUSTRATION OR GRAPHIC THAT WAS SHOWN

1 DURING PROFESSOR STORER'S TESTIMONY SHOWED, DATA IS FLOWING  
2 INTO THE SEGMENTED DESCRIPTOR REGIONS OF THE BUFFER. AND IF  
3 THE OPERATION IN THE SOFTWARE THAT GOES AND DETECTS HOW MANY  
4 SEGMENTS HAS BEEN FILLED WITH DATA -- HAVE BEEN FILLED WITH  
5 DATA AND FAILS TO UNLOAD A SEGMENT FOR A PERIOD OF TIME  
6 SUFFICIENTLY LONG TO ALLOW NEW DATA TO GO ALL THE WAY AROUND  
7 THE CIRCLE AND COME BACK TO A BUFFER THAT'S FULL, THEN  
8 OVERFLOW WILL OCCUR AS HAS BEEN SEEN IN SOME OF THE ECHOSTAR  
9 NEW DEVICES.

10 Q SO WHAT DOES THE OVERWRITING OF DATA INDICATE ABOUT  
11 WHETHER THERE IS AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT?

12 A IT SHOWS WHEN IT OCCURS. THE VERY FACT THAT IT CAN OCCUR  
13 SHOWS THAT THERE IS NO AUTOMATIC FLOW CONTROL WHICH BLOCKS  
14 DATA FROM BEING WRITTEN INTO ANY PORTION OF THAT CIRCULAR  
15 BUFFER BEFORE THAT SEGMENT HAS BEEN MOVED ON DOWN TO THE HARD  
16 DRIVE. IN OTHER WORDS, THERE IS NO FAUCET, TO USE THE  
17 ANALOGY.

18 Q DID TIVO OFFER A GRAPHIC YESTERDAY THAT SUPPORTS YOUR  
19 CONCLUSION IN THAT REGARD?

20 A I THINK YOU ARE TALKING ABOUT THE ANIMATION?

21 Q NO.

22 MR. BARQUIST: LET ME BRING UP SLIDE 74 FROM DR.  
23 STORER'S PRESENTATION. COULD YOU DO THAT?

24 A OH, YEAH, THE WORD STATEMENT, YES. I THINK THIS  
25 STATEMENT SAYS EXACTLY WHAT I HAVE SAID. IT SAYS THE IDEA IS

1 THAT WHILE YOU ARE READING FROM A BUFFER, YOU ARE NOT TRYING  
2 TO WRITE ON TOP OF THE DATA IN THE BUFFER. SO YOU HAVE TO  
3 MAKE SURE THAT WHEN YOU ARE WRITING YOU ARE NOT WRITING ON TOP  
4 OF DATA THAT YOU NEED. AND THIS IS ENTITLED "TIVO'S  
5 EXPLANATION OF AUTOMATIC FLOW CONTROL AT TRIAL."

6 Q AND THIS WAS PRESENTED BY DR. STORER, CORRECT?

7 A YESTERDAY, YES. I THINK IT ORIGINALLY WAS PRESENTED,  
8 ACCORDING TO THE CAPTION, BY DR. GIBSON.

9 Q RIGHT. NOW IF THE OVERFLOW TURNS OUT TO HAPPEN ONLY  
10 SOMETHING LIKE LESS THAN ONE PERCENT OF THE TIME, DOES THAT  
11 CHANGE YOUR OPINION?

12 A I DON'T THINK SOMETHING THAT HAPPENS ONE PERCENT OF THE  
13 TIME IS SIGNIFICANT FROM AN ENGINEERING POINT OF VIEW, BUT IN  
14 THIS SITUATION EVEN IF IT HAPPENS ONCE, AND IT'S PROBABLY  
15 HAPPENED AT LEAST ONCE, IT'S A DIRECT INDICATION THAT THERE IS  
16 NO FLOW CONTROL IN THE REVISED BROADCOM RECEIVERS.

17 Q NOW, DR. RHYNE, YOU HAVE HEARD LOTS OF TESTIMONY  
18 CONCERNING A CIRCULAR BUFFER.

19 A YES.

20 Q IS THE USE OF A CIRCULAR BUFFER CLAIMED IN CLAIMS 31 AND  
21 61 OF THE BARTON PATENT?

22 A NO. NOT FOR THE BUFFER THAT'S CONTROLLED BY THE SOURCE  
23 OBJECT.

24 Q DOES THE USE OF A CIRCULAR BUFFER PREVENT THE OVERWRITING  
25 OF DATA?

1 A NO. IN FACT IT FACILITATES IT BECAUSE OF ITS CIRCULAR  
2 NATURE. IF YOU HAVE A LINEAR BUFFER, YOU GET TO THE END, YOU  
3 JUST BASICALLY HAVE TO STOP. IF IT'S A CIRCULAR BUFFER, YOU  
4 GO BACK AROUND TO THE FRONT AND KEEP GOING, AND THAT CIRCULAR  
5 NATURE IS WHAT FACILITATES OVERWRITING.

6 Q NOW THERE HAS BEEN TESTIMONY ABOUT A RING BUFFER OR LINK  
7 LIST.

8 A YES.

9 Q DID YOU HEAR THAT?

10 A I DID.

11 Q AND DO YOU UNDERSTAND WHAT KIND OF STRUCTURE IS BEING  
12 REFERRED TO BY THOSE PHRASES?

13 A IT'S NOT A COMMON TERM TO CALL A BUFFER A RING BUFFER,  
14 BUT I'VE DISCUSSED IT, HAD DISCUSSED THE NATURE OF THE BUFFER  
15 IN THE ORIGINAL INFRINGING ECHOSTAR BROADCOM DEVICES, AND I  
16 UNDERSTAND HOW IT WORKS.

17 Q CAN YOU EXPLAIN THE DIFFERENCE BETWEEN HOW THE BUFFER OR  
18 BUFFERS IN THE ORIGINAL DEVICES WORKED WHICH HAD BEEN CALLED  
19 AT LEAST TODAY A RING BUFFER, AND THE BUFFER OR BUFFERS IN THE  
20 NEW DEVICES WHICH HAVE BEEN CALLED A CIRCULAR BUFFER?

21 THE WITNESS: YOUR HONOR, IF I MAY GO TO THE BOARD?

22 THE COURT: YES, YOU MAY. YOU WILL TAKE THE HAND  
23 MIC, PLEASE.

24 MR. BARQUIST: MAY I, YOUR HONOR?

25 THE COURT: YES.

1 THE WITNESS: SHOULD I MOVE THIS OVER?

2 THE COURT: WHATEVER, WHATEVER SUITS YOU.

3 A I CAME PREPARED WITH A VISUAL AID. WELL, AT LEAST I  
4 THOUGHT I DID. OKAY. INSTEAD OF TEN, FOR TIME PURPOSES I AM  
5 GOING TO USE FOUR, OKAY. IN THE RING BUFFER, THE OVERALL  
6 BUFFER WAS MADE UP OF FOUR SEGMENTS, AND I HAVE JUST NUMBERED  
7 THEM ONE, TWO, THREE, AND FOUR. AND IN ADDITION, AS MR.  
8 MINNICK EXPLAINED, THERE WAS A RECORD BUFFER OF THE SAME SIZE  
9 AS EACH OF THESE SEGMENTS. AS DATA CAME IN, IT WOULD  
10 EVENTUALLY FILL UP THE FIRST SEGMENT OF THE RING BUFFER.

11 AT SOME POINT THERE WOULD BE AN OFFLOADING OF THAT DATA  
12 DOWN TO THE RECORD BUFFER, AND SINCE THIS NUMBER ONE IS NOW  
13 OPEN, EMPTY, THEY POSTED IT ON A SEPARATE LIST. EACH OF THE  
14 SEGMENTS WAS LINKED TO THE PRECEDING SEGMENT. SO IT'S LIKE  
15 ONE, WHEN IT ENDED THERE WAS A LINK TO TWO, WHEN TWO ENDED, IT  
16 LINKED TO THREE, TO FOUR. NOW, TWO STARTS FILLING UP AND  
17 MAYBE EVEN THREE FILLS UP. AND IF TWO IS FULL AND THE RECORD  
18 BUFFER HAS ALREADY BEEN EMPTIED, THEN THE DATA IN TWO CAN BE  
19 WRITTEN INTO THE RECORD BUFFER AND THE TWO SEGMENT CAN BE  
20 POSTED ON THE FREE TO BE USED AGAIN LIST.

21 BUT THE WAY THE FLOW CONTROL WORKED IN THIS RING BUFFER  
22 IS IF THE RECORD BUFFER HAD NOT BEEN EMPTIED, THEN YOU  
23 COULDN'T MOVE ANY OF THE DATA FROM TWO, THREE, OR FOUR INTO  
24 IT, AND THAT WAS THE FLOW CONTROL THAT WAS DISCUSSED.

25 NOW, THE RING CONCEPT COMES WHEN YOU JUST KEEP WORKING

1 ALONG. SO LET'S SAY WE'VE FILLED AND EMPTIED TWO, WE FILL AND  
2 EMPTY THREE. LET'S SAY WE FILL THREE BUT IT'S NOT EMPTIED  
3 YET, WE FILL FOUR, AND NOW WE HAVE SOME MORE DATA. WE NEED  
4 ANOTHER GUY HERE. YOU COULD GO GET EITHER ONE OR TWO. THERE  
5 IS NO NECESSITY IN THE ORIGINAL INFRINGING WHAT TIVO CALLS A  
6 RING BUFFER THAT THESE SEGMENTS BE MAINTAINED IN ORDER IN  
7 THEIR ADDRESS SPACE. AND THE REASON, AS BEST I CAN FIGURE IT,  
8 THAT THEY CALL IT A RING IS THAT WHEN THEY POST THE NEW GUY ON  
9 THE BACK WHEREVER IT HAPPENS TO GO, IT JUST KEEPS GOING AT THE  
10 END. SO IT JUST KIND OF RINGS -- THERE'S NOT REALLY AN AROUND,  
11 BUT THEY BRING THE PREVIOUSLY UNUSED SEGMENT BACK AND ATTACH  
12 IT HERE.

13 AND, SO THEY ARE CONSTANTLY GETTING SEGMENTS FILLED,  
14 DUMPING THEM TO THE RECORD BUFFER, AND BLOCKING ANY FURTHER  
15 RECORDING -- TRANSFER TO THE RECORDING BUFFER UNTIL THAT'S  
16 FINISHED. SO HERE, THREE IF IT'S FULL, AND THIS RECORD BUFFER  
17 IS EMPTY, IT WOULD BE USED TO STORE DATA DOWN TO THE RECORD  
18 BUFFER, EMPTIED, AND NOW AVAILABLE ON THE LIST OF WHERE --  
19 WHERE TO GO GET ANOTHER SEGMENT TO PUT ON THE END AS THIS  
20 PROCESS PROCEEDS. THAT'S THE OLD WAY.

21 Q THAT'S THE OLD WAY, OR WHAT'S BEEN CALLED A RING BUFFER  
22 OR LINK TABLE. IS THAT RIGHT?

23 A YES.

24 Q WOULD YOU NOW EXPLAIN USING YOUR DEMONSTRATIVE HOW A  
25 CIRCULAR BUFFER WORKS?

1 A SURE. THE FIRST THING THAT THEY'VE DONE IN THE NEW  
2 ECHOSTAR BROADCOM BOXES IS THEY'VE DONE AWAY WITH THE RECORD  
3 BUFFER, SO I AM GOING TO JUST STICK IT DOWN HERE. THEY START  
4 OUT WITH A BUFFER THAT'S COMPOSED OF ACTUALLY TEN, BUT I HAVE  
5 FOUR SEGMENTS HERE THAT ARE IN NUMERICAL ORDER IN THEIR  
6 ADDRESS SPACE AND THEY NEVER CHANGE. THEY ARE NEVER MOVED OFF  
7 OF THAT RING, THAT CIRCLE, DOWN TO ANOTHER LIST. THEY ARE  
8 JUST ALWAYS AVAILABLE. AND WHEN ONE FILLS UP, IT GOES TO THE  
9 DISK. WHEN TWO FILLS UP, IT GOES TO THE DISK. IF THE  
10 UNLOADING SOFTWARE COMES UP AND FINDS TWO AND ONE BOTH FULL  
11 AND THEY'RE PUTTING MORE DATA IN THREE, IT WILL ACTUALLY MOVE  
12 ONE AND TWO AT THE SAME TIME. IT CAN MOVE THREE AT THE SAME  
13 TIME.

14 BUT WHAT HAPPENS WITH THIS SYSTEM IS VERY DIFFERENT IN  
15 THAT IF YOU FILL UP ONE, TWO, THREE, AND FOUR, YOU DON'T MOVE  
16 ANYTHING. YOU GO BACK TO ONE AGAIN. THAT'S WHY IT'S CALLED  
17 CIRCULAR. AND IF YOU DON'T UNLOAD THOSE FOUR GUYS FAST  
18 ENOUGH, IF YOU COME BACK AROUND TO ONE, IT WILL OVERWRITE THE  
19 DATA IN ONE BECAUSE THERE'S NOTHING, THERE'S NO FAUCET UP AT  
20 THE TOP. THE BROADCOM CHIP JUST KEEPS WRITING.

21 Q AND SO AGAIN, IN THE OLD VERSION, THE SO-CALLED RING  
22 BUFFER, WHEN ALL OF THE SEGMENTS AT THAT TOP LEVEL THAT YOU'VE  
23 ILLUSTRATED ARE FULL, WHAT WOULD HAPPEN?

24 A IN THE -- THERE WOULD BE A FULL STOP. OKAY. IN THE OLD  
25 SYSTEM, REGARDLESS OF WHAT ORDER THESE HAPPENED TO BE IN AT

1 THE MOMENT, IF ALL FOUR OF THEM GOT FULL AND THE RECORD BUFFER  
2 WAS FULL, MEANING THAT YOU CAN'T GET SOME MORE DATA OUT TO  
3 CLEAR OUT ONE OF THEM TO TAKE NEW DATA, THIS IS BLOCKED, AND  
4 THE BROADCOM CHIP WOULD BE SIGNALLED BY THE ECHOSTAR SOFTWARE  
5 TO STOP SENDING DATA EVEN TO THESE, THE RING BUFFER SEGMENTS.

6 Q SO THERE WOULD BE NO OVERWRITING OF DATA IN EITHER LEVEL  
7 OF BUFFERS. IS THAT RIGHT?

8 A THAT'S CORRECT.

9 Q BUT IN PARTICULAR, NOT AT THE TOP LEVEL IN THE RING  
10 BUFFER DESIGN?

11 A IT'S AGAIN A SPECIAL CIRCUMSTANCE. IF THE RECORD BUFFER  
12 IS FULL AND ALL OF THE SEGMENTED BUFFERS IN THE RING BUFFER  
13 GET FULL AS WELL, THE BROADCOM CHIP IS TOLD TO STOP. ONCE  
14 DATA IS PUT INTO ONE OF THESE BUFFERS, THE TOP LEVEL RING  
15 BUFFER OR THE LOWER LEVEL RECORD BUFFER, IT WILL NEVER BE LOST  
16 IN THE OLD SYSTEM, UNLIKE THE NEW SYSTEM WHERE THE CIRCULAR  
17 NATURE OF THE BUFFER AND THE FACT THAT THERE'S NO BLOCKAGE OF  
18 THE BROADCOM CHIP MEANS THAT DATA CAN BE LOST.

19 Q THANK YOU, DR. RHYNE. IF YOU ARE DONE, YOU CAN TAKE YOUR  
20 SEAT. LEAVE THE EASEL THERE. WE WILL MOVE IT LATER WITH THE  
21 COURT'S PERMISSION.

22 (WITNESS RETURNING TO WITNESS SEAT)

23 Q NOW, DR. RHYNE, THE CIRCULAR BUFFER, WHICH IS THE CURRENT  
24 BUFFER SET UP IN THE BROADCOM DVRS, DOES A CIRCULAR BUFFER  
25 INHERENTLY PROVIDE AUTOMATIC FLOW CONTROL OF THE SOURCE

1 OBJECT?

2 A NO.

3 Q WHY NOT.

4 A IT JUST ENTERS DATA IN, AND IF THERE'S SOME SERVICE THAT  
5 TAKES DATA OUT, IT JUST OPERATES.

6 Q NOW, DR. STORER HAS TESTIFIED THAT ONE FEATURE OF THE  
7 CIRCULAR BUFFER IS THAT THE WRITING STEP ALWAYS MOVES IN ONE  
8 DIRECTION. HE ILLUSTRATED THAT WITH THE CUPS GOING AROUND.

9 A YES.

10 Q AND AS I UNDERSTOOD IT, CORRECT ME IF I'M WRONG, BUT DR.  
11 STORER SUGGESTED THAT THAT MOVEMENT OF THE WRITING IN ONE  
12 DIRECTION CONSTITUTES AUTOMATIC FLOW CONTROL. DO YOU AGREE  
13 WITH THAT?

14 A I DON'T. AND IF THAT'S WHAT AUTOMATIC FLOW CONTROL IS, A  
15 NEW ISSUE IS BEING RAISED WHICH IS THAT THAT CONCEPT OF MOVING  
16 A CIRCULAR BUFFER IN A FIXED DIRECTION FOR BOTH READING AND  
17 WRITING HAS BEEN AROUND FOR TWENTY OR THIRTY YEARS I THINK,  
18 WELL BEFORE MR. BARTON CONCEIVED OF HIS INVENTION.

19 Q WELL, WHETHER OR NOT IT'S OLD OR NEW, FOR THE MOMENT LET  
20 ME JUST ASK YOU WHY DO YOU SAY THAT THAT MOVEMENT OF THE  
21 WRITING IN ONE DIRECTION WOULD NOT, IN YOUR VIEW, CONSTITUTE  
22 AUTOMATIC FLOW CONTROL?

23 A THAT'S THE WAY CIRCULAR BUFFERS WORK. IT DOESN'T EVER  
24 BLOCK OR STOP. THE VERY NATURE OF IT BEING CIRCULAR MEANS  
25 THAT DATA JUST GOES IN AND IN AND IN AND IN. THE NATURE OF

1 THE CIRCULAR BUFFER IS INDEPENDENT FROM WHETHER OR NOT THERE'S  
2 A FAUCET ON THE END OF THE PIPE FILLING IT. THAT'S WHERE THE  
3 FLOW CONTROL WOULD BE IF THERE IS ANY. BUT THE CIRCULAR  
4 BUFFER, YOU JUST KEEP FILLING IT AND FILLING IT AND FILLING  
5 IT, AND IF YOU NEVER EMPTY IT, YOU'LL EVENTUALLY JUST KEEP  
6 WIPING STUFF OUT AND WIPING STUFF OUT AS YOU GO AROUND AND  
7 AROUND AND AROUND.

8 Q AND THE WIPING STUFF OUT, THAT'S THE OVERWRITING  
9 CONDITION WE'VE TALKED ABOUT, CORRECT?

10 A THAT'S RIGHT. THAT'S THE CONDITION THAT THAT QUOTE WE  
11 JUST SAW SAID YOU MUST AVOID.

12 Q NOW THERE'S ALSO BEEN A SUGGESTION FROM TIVO OR DR.  
13 STORER THAT RESPONDING TO AN OVERFLOW CONDITION ONCE IT OCCURS  
14 CONSTITUTES AUTOMATIC FLOW CONTROL OF THE SOURCE OBJECT  
15 FILLING THE BUFFER. DO YOU AGREE WITH THAT?

16 A NO. CERTAINLY NOT IN THE CONTEXT OF CLAIMS 31 AND 61.

17 Q EXPLAIN WHY NOT.

18 A AS WE'VE SEEN IN THOSE CLAIMS, THE SOURCE OBJECT, WHICH  
19 IS THE OBJECT THAT MUST BE FLOW CONTROLLED, IS RESPONSIBLE FOR  
20 FILLING THE BUFFER. AND IF YOU ARE GOING TO FLOW CONTROL IT,  
21 YOU'LL HAVE TO FLOW CONTROL IT BEFORE YOU FILL THE BUFFER.  
22 AND IF YOU DETECT OVERFLOW, THAT'S AN INDICATION THAT THE  
23 BUFFER HAS ALREADY BEEN OVERFILLED. SO DETECTING OVERFLOW  
24 OCCURS AFTER THE ABSENCE OF FLOW CONTROL HAS CAUSED THE BUFFER  
25 TO BE OVERFILLED. IT OCCURS TOO LATE, ACCORDING TO THE CLAIM,

1 EVEN IF IT WERE VIEWED AS A FORM OF FLOW CONTROL, WHICH I  
2 DON'T AGREE WITH.

3 Q NOW, YOU RECALL ALSO THAT DR. STORER IDENTIFIED CERTAIN  
4 SOFTWARE CODE. AND IF WE COULD BRING UP SLIDE 77 FROM DR.  
5 STORER'S PRESENTATION. DO YOU RECALL THIS SLIDE, DR. RHYNE?

6 A I DO.

7 Q DOES ANY OF THE SOFTWARE CODE IDENTIFIED BY DR. STORER IN  
8 THIS SLIDE 77 MEET THE AUTOMATIC FLOW CONTROL LIMITATION?

9 A NO.

10 Q WHY NOT?

11 A AGAIN, THE AUTOMATIC FLOW CONTROL MUST BE OF THE SOURCE  
12 OBJECT AS IT FILLS THE BUFFER. AND IN FACT I THINK HE  
13 RECOGNIZED THAT WHEN HE WROTE HERE ON THE RIGHT-HAND SIDE  
14 WHICH REFERS TO THE NEW SYSTEM PART OF THE SOURCE OBJECT FILLS  
15 THE BUFFER. BUT AS MR. MINNICK POINTED OUT, THAT PARTICULAR  
16 CODE NOR ANY OF THE REST OF THE CODE IN THIS SUBROUTINE, THIS  
17 PORTION OF THE NEW SOFTWARE, IS INVOLVED IN FILLING THE  
18 BUFFER. IT'S ALL INVOLVED IN DETERMINING HOW FULL THE BUFFER  
19 ALREADY IS AND HOW MUCH NEEDS TO BE EMPTIED FROM THE BUFFER.

20 Q SO, DR. RHYNE, WOULD YOU SUMMARIZE THEN IN CONCLUSION  
21 YOUR OPINION CONCERNING WHETHER OR NOT THE REDESIGNED ECHOSTAR  
22 DVRS, AND YOU CAN TAKE ONE GROUP AT A TIME, INFRINGE THE '389  
23 PATENT?

24 A WELL, IF WE TAKE THE 50X, THEY DON'T. AND THE REASON OR  
25 BASIS FOR THAT IS THE FACT THAT THE PARSING LIMITATION OF

1 CLAIMS 31 AND 61 IS NOT MET AS IT WAS IN THE INFRINGING  
2 DEVICES.

3 IF WE TAKE THE BROADCOM DEVICES, IN THAT CASE THOSE  
4 DEVICES HAVE TWO REASONS, FIRST BEING THAT THEY ALSO DO NOT  
5 MEET THE PARSING LIMITATION OF CLAIMS 31 AND 61 AS CONSTRUED  
6 BY THE COURT. AND SECONDLY, THEY DO NOT MEET THE AUTOMATIC  
7 FLOW CONTROL OF THE SOURCE OBJECT DURING THE FILLING OF THE  
8 BUFFER PROCESS FOR THE REASONS THAT I HAVE EXPLAINED.

9 MR. BARQUIST: THANK YOU, YOUR HONOR. THAT'S ALL I  
10 HAVE.

11 THE COURT: THANK YOU. AFTER DIRECT AND REDIRECT,  
12 DOES ECHOSTAR HAVE ANY OTHER WITNESSES TOMORROW?

13 MR. MCELHINNY: WE DON'T, YOUR HONOR. WE HAVE AN  
14 OFFER OF PROOF TO FILE, BUT OTHER THAN THAT, WE ARE DONE.

15 THE COURT: TIVO, DO YOU EXPECT --

16 MR. CHU: WE MAY HAVE --

17 THE COURT: EXCUSE ME?

18 MR. CHU: I AM SORRY, YOUR HONOR. I WAS --

19 THE COURT: DO YOU EXPECT MUCH REBUTTAL TOMORROW?

20 MR. CHU: WE DO EXPECT SOME SUBSTANTIAL REBUTTAL.

21 MR. MCELHINNY: CAN WE FIND OUT HOW MANY WITNESSES OR  
22 WHO THEY ARE, YOUR HONOR?

23 MR. CHU: WE WILL LIMIT OURSELVES TO THE WITNESSES  
24 FOR WHICH WE GAVE NOTICE, PROFESSOR STORER AND MR. BARTON.

25 THE COURT: VERY WELL. WELL, WHY DON'T WE TAKE A FEW

1 MINUTES OF CROSS EXAMINATION IF YOU ARE READY.

2 MR. CHU: SURE.

3 THE COURT: GUESS I'D LIKE TO MAKE EVERY EFFORT, I  
4 HAVE SOMETHING -- I HAD SOMETHING SCHEDULED FOR 10 O'CLOCK,  
5 AND IT WAS APPARENT WE WERE NOT GOING TO FINISH SO I MOVED IT  
6 UNTIL AFTER LUNCH TOMORROW, AND I WANT TO MAKE SURE I FINISH  
7 BY LUNCHTIME, IF AT ALL POSSIBLE.

8 CROSS EXAMINATION

9 BY MR. CHU:

10 Q GOOD AFTERNOON, DR. RHYNE.

11 A GOOD AFTERNOON, MR. CHU. I AM HONORED.

12 Q IT'S MY HONOR, DR. RHYNE. YOU READ THE FISH OPINION  
13 LETTERS, IS THAT CORRECT?

14 A YES.

15 Q AND YOU AGREE WITH THE CLAIM INTERPRETATION THAT THE FISH  
16 OPINION AUTHORS WERE APPLYING FOR THEIR OPINION LETTERS?

17 A TO BE CERTAIN, I'D HAVE TO GO BACK AND LOOK AND SEE  
18 AGAIN. BUT I DON'T REMEMBER. THERE WERE A COUPLE OF TECHNICAL  
19 ISSUES THAT I DIDN'T AGREE WITH, BUT I DON'T RECALL HAVING ANY  
20 PROBLEM WITH THE WAY IN WHICH THEY INTERPRETED THE CLAIMS.  
21 BUT AGAIN TO BE SURE, I'D HAVE TO REREAD THOSE LETTERS AND SEE  
22 WHAT THEY APPLY.

23 Q SO YOU WERE READING THE FISH OPINION LETTERS TO BOTH  
24 UNDERSTAND THE BASIS FOR THE CLAIM CONSTRUCTION THEY WERE  
25 APPLYING AS WELL AS THE FACTS TO WHICH THEY WERE APPLYING IN,

1 CORRECT?

2 A WELL, I HAVEN'T LOOKED AT THEM FOR A WHILE, AND I DON'T  
3 RECALL TESTIFYING ABOUT THEM IN MY DIRECT. BUT I READ THEM  
4 FOR THE PURPOSE THAT THEY WERE CITED AS OPINION LETTERS THAT  
5 HAD BEEN OBTAINED BY ECHOSTAR, AND SOLELY FOR THAT PURPOSE.

6 Q AND YOU DON'T, AS YOU SIT HERE TODAY, RECALL ANY  
7 DISAGREEMENT WITH THE CLAIM CONSTRUCTION THAT THEY WERE  
8 APPLYING, CORRECT?

9 A I ACTUALLY DON'T RECALL HOW THEY CONSTRUED THE CLAIMS IN  
10 THE LETTERS. I HAVE NO DETAIL TECHNICAL RECOLLECTION OF THOSE  
11 LETTERS.

12 Q YOU WERE HERE FOR MR. AARONSON'S TESTIMONY, CORRECT?

13 A ACTUALLY I WAS NOT.

14 Q I THINK YOU MENTIONED YOU MIGHT HAVE STEPPED OUT FOR MR.  
15 HILLMAN, OR DID I --

16 A WELL, I WAS OUT FOR BOTH OF THE ATTORNEYS. I HAD OTHER  
17 RESPONSIBILITIES.

18 Q THAT'S FINE AND UNDERSTANDABLE. SO LET ME GO TO A  
19 DIFFERENT SUBJECT. I THINK ABOUT TEN MINUTES AGO YOU SAID --  
20 YOU TESTIFIED THAT IF IT OVERFLOWS ONCE THEN THERE'S NO  
21 INFRINGEMENT, OR WORDS TO THAT EFFECT.

22 A I SAID IF IT OVERFLOWED ONCE THAT'S EVIDENCE OF THE FACT  
23 THAT THERE IS NO FLOW CONTROL OF THE FILLING OF THE BUFFER BY  
24 THE SOURCE OBJECT.

25 Q AND THAT WAS EVIDENCE IN YOUR MIND TO SHOW THAT THERE WAS

1 NO INFRINGEMENT?

2 A I THINK THAT'S TRUE.

3 Q AND YOU UNDERSTAND THAT AT THIS HEARING TODAY AND  
4 YESTERDAY, ONE OF THE QUESTIONS IS WHETHER THE SO-CALLED  
5 MODIFIED BOXES CONTINUE TO INFRINGE, CORRECT?

6 A I THOUGHT THAT WAS THE PRINCIPAL QUESTION.

7 Q YES. NOW THINKING ABOUT THAT PRINCIPAL QUESTION, WHEN  
8 THERE IS AN OVERFLOW EVENT, IT MIGHT TAKE A TINY, TINY  
9 FRACTION OF A SECOND. IS THAT CORRECT?

10 A IT DEPENDS ON HOW LONG IT TAKES FOR THE SOFTWARE THAT'S  
11 GOING BACK UP TO FIND OUT HOW MANY DESCRIPTORS HAVE BEEN  
12 ADVANCED, BUT IT SHOULDN'T BE EXPECTED TO BE A LENGTHY PERIOD  
13 OF TIME IN THAT IT'S MY UNDERSTANDING THAT THE ENTIRETY OF THE  
14 CIRCULAR BUFFER IS ABOUT FIVE SECONDS, SO IT SHOULD BE  
15 SOMETHING CERTAINLY LESS THAN FIVE SECONDS. BUT I DON'T KNOW  
16 THAT IT'S NECESSARILY A TINY, TINY FRACTION OF A SECOND. IT'S  
17 A RELATIVELY SHORT PERIOD OF TIME.

18 Q SO IF SOMEONE WAS TRYING TO PUT FORWARD A NON-  
19 INFRINGEMENT CASE AND THEY DESIGNED A LITTLE SOFTWARE CHANGE  
20 THAT ONCE IN A LONG WHILE, SUCH AS FOR LESS THAN ONE PERCENT  
21 OF THE BOXES AND FOR THOSE ONE PERCENT OF THE BOXES THE AMOUNT  
22 OF DATA LOST WAS LESS THAN .000019, I THINK I HAD FIVE ZEROES,  
23 ONE, NINE, AND I DIDN'T USE A PERCENT SIGN, THAT WOULD BE  
24 SUFFICIENT IN YOUR MIND TO BE EVIDENCE OF NON-INFRINGEMENT?

25 A I HAVE TWO PROBLEMS WITH YOUR QUESTION, AND IF --

1 Q IF YOU CAN'T ANSWER IT DIRECTLY YES OR NO --

2 A I CAN'T ANSWER IT YES OR NO.

3 Q OKAY.

4 A OKAY.

5 Q BUT YOU ARE CLEAR IN YOUR MIND, AS YOU STATED FIFTEEN OR

6 TWENTY MINUTES AGO, THAT THE FACT THAT IT OVERFLOWED JUST ONCE

7 WAS EVIDENCE OF NON-INFRINGEMENT?

8 A IN THIS PARTICULAR CLAIM, THE WAY --

9 Q THANK YOU.

10 A -- THE CLAIM IS WRITTEN, YES, SIR.

11 Q NOW, WHEN YOU REFER TO OVERFLOW, YOU ARE REFERRING TO A

12 SITUATION WHERE THERE'S SOME DATA LOSS, CORRECT?

13 A YES.

14 Q SO THAT MIGHT MEAN A VIEWER MAYBE WON'T SEE ANYTHING, OR

15 A VERY PERCEPTIVE CONSUMER, DEPENDING ON HOW MUCH DATA IS LOST

16 MIGHT SEE SOMETHING, MIGHT SEE A SKIP IN WHATEVER HE OR SHE IS

17 WATCHING?

18 A IT WOULD BE FIVE -- SHOULD BE FIVE SECONDS OF VIDEO WOULD

19 BE LOST THE WAY THAT THE ECHOSTAR MODIFIED CODE OPERATES.

20 THEY WOULD LOSE FIVE SECONDS, ABOUT.

21 Q SO THE CONCERN IS DATA LOSS, RIGHT?

22 A YES.

23 Q AND NOW YOU TESTIFIED JUST A MOMENT AGO ABOUT RING

24 BUFFERS AND CIRCULAR BUFFERS, CORRECT?

25 A I DID.

1 Q AND IF THE BROADCOM CHIP IN THE CIRCULAR BUFFER, WHICH  
2 YOU SAID IS THE NEWLY FOUND BUFFER IN THE MODIFIED BOXES,  
3 RIGHT?

4 A NEWLY FOUND CONFUSES ME. IT'S THE NEW. IT'S THE WAY IT  
5 NOW OPERATES.

6 Q WELL, LET'S BACK UP A LITTLE BIT. THE BUFFER, MEANING  
7 THE PHYSICAL PIECE THAT IS IN THE BOX THAT HOLDS INFORMATION  
8 IS A MEMORY, RIGHT?

9 A YES.

10 Q AND THAT HASN'T CHANGED AT ALL?

11 A THAT CHIP IS EXACTLY THE SAME.

12 Q OKAY.

13 A GO AHEAD, YEAH.

14 Q IN THE MODIFIED BOXES, YOU SAID AT SOME POINT WHEN YOU  
15 WERE DESCRIBING THE CIRCULAR BUFFER, IF ALL THE COMPARTMENTS  
16 ARE FILLED THE BROADCOM CHIP STOPS?

17 A NO, I DIDN'T SAY THAT.

18 Q OR IT'S TOLD TO STOP PUTTING MORE DATA INTO THE FILLED  
19 COMPARTMENTS?

20 A THAT'S -- IF I SAID THAT I WAS WRONG. I DON'T THINK I  
21 DID.

22 Q I MAY -- I MAY HAVE MISHEARD YOU.

23 A THAT WAS A REFERENCE TO THE OLD DESIGN.

24 Q I THINK -- LET ME SEE IF I CAN CLARIFY. YOU DESCRIBED THE  
25 OLD DESIGN WOULD NOT PUT DATA INTO THE COPY BUFFER. WE HAVE

1 CALLED IT TWO DIFFERENT NAMES, COPY BUFFER OR RECORD BUFFER.

2 WE ARE TALKING ABOUT THE SAME THING, RIGHT?

3 A THAT'S RIGHT. I JUST USED THE TERM THAT MR. MINNICK  
4 USED.

5 Q BUT SO WE UNDERSTAND EACH OTHER, BECAUSE BOTH TERMS HAVE  
6 BEEN USED, YOU UNDERSTAND WHEN PROFESSOR STORER WAS TALKING  
7 ABOUT COPY BUFFER HE'S REFERRING TO THE SAME THING AS THE  
8 RECORD BUFFER?

9 A IF HE MEANT THE SECOND LEVEL BUFFER, THEN I UNDERSTAND.

10 Q IT'S THE -- I'LL CALL IT THE ELEVENTH BUFFER OR THE  
11 ELEVENTH BUFFER SPACE, HOW'S THAT?

12 A THAT'S FINE

13 Q AND YOU SAID THAT IN THE OLD DESIGN THE SOFTWARE WORKED  
14 SO THAT IF THE COPY BUFFER HADN'T FINISHED EMPTYING ITS  
15 CONTENTS TO THE HARD DRIVE, THE WAY IT WOULD WORK IS THINGS  
16 WOULD STOP AND AS A RESULT THERE WOULD BE SOME DATA LOSS?

17 A THAT'S NOT QUITE RIGHT. I'LL BE -- RIGHT. I'LL BE HAPPY  
18 TO EXPLAIN, BUT THAT'S NOT QUITE RIGHT. IT TAKES MORE THAN  
19 THE COPY BUFFER OR RECORD BUFFER BEING FULL. IT WOULD TAKE  
20 EVERY SINGLE PIECE --

21 Q FAIR ENOUGH.

22 A -- OF THE PRIMARY BUFFER ALSO BEING FULL FOR THERE TO BE  
23 A STOPPAGE OF THE BROADCOM CHIP.

24 Q FAIR ENOUGH. IF ALL THE BUFFERS IN USE ARE FULL, THERE  
25 WOULD BE A RED LIGHT AND THEN THERE WOULD BE SOME DATA LOSS?

1 A YES.

2 Q NOW I WANT TO GO --

3 A I DON'T KNOW ABOUT THE RED LIGHT, BUT THERE WOULD BE A  
4 STOPPAGE. THERE WAS SOFTWARE THAT SAID TO THE BROADCOM CHIP:  
5 DON'T SEND ANY MORE DATA.

6 Q I'M JUST USING RED LIGHT TO MEAN STOP.

7 A OKAY. I'M AN ELECTRICAL ENGINEER. I ENVISIONED A LITTLE  
8 RED LIGHT GOING ON, AND I APOLOGIZE.

9 Q I AM JUST A LAW-ABIDING MOTORIST.

10 A NOW I UNDERSTAND, A STOP LIGHT.

11 Q OKAY. NOW LET'S GO TO THE MODIFIED SOFTWARE.

12 A SURE.

13 Q IF ALL THE RELEVANT BUFFERS ARE FULL --

14 A YES.

15 Q -- THE RED LIGHT GOES ON?

16 A NO.

17 Q THE BUFFERS -- WHEN I SAY THE RED LIGHT GOES ON, THERE  
18 ARE BUFFERS OR COMPARTMENTS OF THE BUFFERS THAT HAVE DATA THAT  
19 HAVEN'T BEEN WRITTEN OUT YET TO THE HARD DRIVE, RIGHT?

20 A YES.

21 Q SO YOU ARE SAYING THAT THEY CONTINUE TO ACCEPT DATA?

22 A YES.

23 Q EVEN THOUGH THEY ARE FULL?

24 A YES.

25 Q AND SO THE DATA THAT'S BEEN IN THOSE COMPARTMENTS THAT

1 HASN'T BEEN SENT TO THE HARD DRIVE IS OVERWRITTEN?

2 A YES.

3 Q WELL, I DON'T CARE WHAT LIGHT YOU CALL IT, WHAT HAPPENS  
4 IS THERE IS DATA LOSS?

5 A YES.

6 Q SO THE OLD SOFTWARE AND THE OLD HARDWARE, IF THERE'S TOO  
7 MUCH DATA COMING DOWN FROM THE SATELLITE, THERE ARE CONDITIONS  
8 WHERE YOU WOULD LOSE DATA, CORRECT?

9 A IF THE BROADCOM CHIP STOPS SENDING DATA INTO THE REST OF  
10 THE BROADCOM DEVICES, UNDER THE OLD TECHNIQUE THE BROADCOM  
11 CHIP WOULD LOSE DATA IN THE DOWN LINK FROM THE SATELLITE.

12 Q THANK YOU.

13 A IT WOULD AS IF YOU'D TURNED THE BOX OFF.

14 Q AND SIMILARLY, THERE WOULD BE A DATA LOSS IN THE MODIFIED  
15 BOXES IF EVERYTHING IS FULL BECAUSE THE DATA IS STILL COMING  
16 DOWN FROM THE SATELLITE, CORRECT?

17 A NO, NOT AS YOU PHRASED YOUR QUESTION.

18 Q LET ME ASK IT IN A VERY SIMPLE WAY.

19 A OKAY.

20 Q THERE WOULD BE CONDITIONS BECAUSE OF THE DATA THAT IS  
21 COMING DOWN AND BEING PROCESSED IN THE OLD BOXES WHERE YOU  
22 COULD LOSE DATA, CORRECT?

23 A YES.

24 Q AND THE MODIFIED BOXES, YOU COULD ALSO LOSE DATA,  
25 CORRECT?

1 A YES.

2 MR. CHU: I SEE IT'S ABOUT 5 P.M., YOUR HONOR.

3 THE COURT: WOULD YOU LIKE TO STOP HERE?

4 MR. CHU: IF THIS IS A CONVENIENT POINT TO TURN ON  
5 THE RED LIGHT.

6 THE COURT: WHY NOT? YES.

7 MR. MCELHINNY: YOUR HONOR, JUST SO I COULD WALK ON  
8 THE FINAL LANDMINE, I JUST -- DO YOU ANTICIPATE CLOSING  
9 ARGUMENTS TOMORROW?

10 THE COURT: NO.

11 MR. MCELHINNY: THANK YOU.

12 THE COURT: THAT WAS A QUICK NO.

13 MR. MCELHINNY: YES, SIR.

14 THE COURT: WE HAVE -- I THINK WE'VE HAD SUFFICIENT  
15 ARGUMENT. I THINK I REALIZE EVERYONE'S POSITION. SO, NO, WE  
16 WILL NOT HAVE CLOSING. WE WILL SEE EVERYONE TOMORROW, START  
17 PROMPTLY AT 9 A.M.

18 MR. CHU: THANK YOU, YOUR HONOR.

19 (ADJOURNED AT 5:00 P.M.)

20 REPORTER'S CERTIFICATION

21 I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT FROM  
22 THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.

23 DATE: MARCH 1, 2009

/S/LIBBY CRAWFORD

24 LIBBY CRAWFORD, CSR

25 OFFICIAL COURT REPORTER

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IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

TIVO, INC. . CIVIL ACTION NO. 2:04CV1  
VS. . TEXARKANA, TEXAS  
ECHOSTAR COMMUNICATIONS . FEBRUARY 19, 2009  
CORPORATION, ET AL. . 9:00 A.M.

PLAINTIFF'S MOTION FOR CONTEMPT

BEFORE THE HONORABLE DAVID FOLSOM,  
UNITED STATES DISTRICT JUDGE.

APPEARANCES:

FOR PLAINTIFF

TIVO, INC.:

MR. MORGAN CHU  
MR. ALEXANDER C. GIZA  
MR. ANDREI IANCU  
MR. BRIAN D. KRECHMAN  
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PROCEEDINGS RECORDED BY STENOMASK VERBATIM REPORTING,  
TRANSCRIPT PRODUCED BY CAT SYSTEM.

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DEFENDANT:

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V. THOMAS RHYNE

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REBUTTAL WITNESS

FOR PLAINTIFF:

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P R O C E E D I N G S

TEXARKANA, TEXAS

FEBRUARY 19, 2009

(OPEN COURT)

THE COURT: PLEASE BE SEATED. GOOD MORNING. YES, AN ANNOUNCEMENT.

MR. MCELHINNY: GOOD MORNING, YOUR HONOR. ONE VERY BRIEF HOUSEKEEPING. FOR THE CONVENIENCE OF THE COURT, WE HAVE SUBMITTED THE EXHIBITS ON DISKS. THOSE DISKS CONTAIN BOTH CONFIDENTIAL AND NONCONFIDENTIAL, AND SO WE WOULD LIKE TO CONFIRM THAT THEY ARE SEALED AND UNDER THE PROTECTIVE ORDER.

THE COURT: WE WILL PUT THOSE UNDER SEAL.

MR. MCELHINNY: THANK YOU, YOUR HONOR.

MR. CHU: AND OUR UNDERSTANDING WAS THAT'S WITHOUT PREJUDICE. IT'S JUST THE CONVENIENCE THAT WE HAVEN'T SEPARATED OUT THE NONCONFIDENTIAL FROM THE CONFIDENTIAL, AND SO FOR NOW, THEY WILL ALL BE CONFIDENTIAL, BUT WE WILL SEPARATE THEM OUT AT AN APPROPRIATE TIME LATER.

THE COURT: YOU MAY CONTINUE YOUR CROSS EXAMINATION.

MR. CHU: THANK YOU, YOUR HONOR.

CROSS EXAMINATION CONTINUES

BY MR. CHU:

Q GOOD MORNING, DR. RHYNE.

A GOOD MORNING, MR. CHU.

1 Q YESTERDAY WHEN YOU WERE TESTIFYING IN RESPONSE TO  
2 QUESTIONS FROM YOUR LAWYER YOU MADE A REFERENCE TO ARGUMENT BY  
3 TIVO'S LAWYER BEFORE THE FEDERAL CIRCUIT. DO YOU REMEMBER  
4 THAT?

5 A YES, I DO.

6 Q AND I THINK YOU EVEN SAID THAT MR. SETH WAXMAN WAS MAKING  
7 THE ARGUMENT?

8 A I AM NOT SURE ABOUT WHICH GENTLEMAN IT WAS. I JUST, AS I  
9 READ ALONG, I SAW A MR. WAXMAN'S NAME.

10 Q AND IF I REFRESH YOUR RECOLLECTION THAT HE WAS THE  
11 SOLICITOR GENERAL OF THE UNITED STATES UNDER THE CLINTON  
12 ADMINISTRATION, DOES THAT REFRESH YOUR RECOLLECTION?

13 A I HAVE NO RECOLLECTION OR PRECOLLECTION. I DON'T KNOW  
14 WHO THE GENTLEMAN WAS. I JUST RECALL AS I WAS READING THROUGH  
15 THE TRANSCRIPT THAT THERE WAS THAT NAME IN THERE.

16 Q AND YOU CITED TO A PARTICULAR PART OF MR. WAXMAN'S  
17 ARGUMENT TO MAKE A POINT THAT RELATED TO INDEXING IN GENERAL.  
18 IS THAT CORRECT?

19 A IT WAS WHAT IT WAS. HE WAS DESCRIBING THE GENIUS OF THE  
20 BARTON INVENTION, AND AN ASPECT OF WHAT HE TALKED ABOUT WAS  
21 START CODE DETECTION AND INDEXING.

22 Q AND ALL I AM TRYING TO DO IS SET THE CONTEXT. THE REASON  
23 YOU WERE CITING IT IS YOU WERE USING IT TO SUPPORT YOUR  
24 OPINION AS IT RELATES TO INDEXING?

25 A START CODE DETECTION AND INDEXING.

1 Q AND IF YOU LOOK AT THE MATERIALS BOTH BEFORE AND AFTER  
2 THE PORTION YOU CITED, IS IT FAIR TO SAY THAT IT'S VERY CLEAR  
3 THAT THIS RELATES TO THE CLAIM TERM SEPARATING?

4 A INDEXING WAS ARGUED BY YOUR CLIENT TO BE ASSOCIATED WITH  
5 SEPARATING AT THAT TRIAL.

6 Q SIR, I AM ASKING --

7 A AND I DON'T RECALL WHAT WAS PRIOR TO OR AFTER THAT  
8 PARTICULAR CITE. I'D BE HAPPY TO READ IT.

9 Q SO LET ME GET THIS CLEAR. YOU WERE CITING TO A SPECIFIC  
10 PART OF THE FEDERAL CIRCUIT TRANSCRIPT, AND YOU DIDN'T LOOK AT  
11 THE MATERIAL IMMEDIATELY BEFORE OR AFTER TO DETERMINE WHETHER  
12 IT WAS RELEVANT TO SEPARATING, WHICH IS A CLAIM TERM IN CLAIM  
13 1 ONLY AND NOT A CLAIM TERM IN CLAIM 31 OR 61? YOU DIDN'T  
14 LOOK AT THE MATERIAL BEFORE OR AFTER?

15 A THAT'S INCORRECT. I HAVE LOOKED AT IT. I DON'T HAVE  
16 RECOLLECTION OF EXACTLY WHAT IT SAYS TODAY.

17 Q LET'S FIRST LOOK AT PAGE 38 OF THE FEDERAL CIRCUIT  
18 ARGUMENT, AND IF WE CAN PUT THAT ON THE SCREEN AND GO TO ABOUT  
19 LINE 18 AND BLOW IT UP, THE GENIUS, THE CORE OF THIS  
20 INVENTION, AT THE BOTTOM OF THE PAGE, LINE 18, THE GENIUS, THE  
21 CORE OF THE INVENTION, THAT'S WHAT YOU WERE READING, RIGHT?

22 A YES, SIR.

23 Q NOW, LET'S GO, WE CAN EITHER HOLD THAT OR GO TO PAGE 37  
24 AT THE BOTTOM OF THE PAGE, LINE 23, AND LET'S HIGHLIGHT LINE  
25 23. CAN WE BLOW THAT UP? SO IT'S VERY CLEAR THAT WHAT'S

1 BEING DISCUSSED IS THE MEDIA SWITCH ELEMENT, WHICH IS THE  
2 FOURTH ELEMENT IN CLAIM 1 AND 32, BOTH OF THOSE ARE WHAT WE  
3 CALL HARDWARE CLAIMS, CORRECT?

4 A THAT'S WHAT WE HAVE BEEN REFERRING TO THEM AS.

5 Q OKAY. NOW LET'S GO ON TO THE PAGE 38 AND LET'S LOOK AT  
6 THE TOP OF THE PAGE. YOU SEE THERE IS STILL THE DISCUSSION  
7 ABOUT MEDIA SWITCH, THE MEDIA SWITCH ELEMENT?

8 A YES.

9 Q AND THEN IF WE CONTINUE DOWN TO LINE 15, AFTER JUDGE  
10 BRYSON SAYS, UH-HUH, MR. WAXMAN SAYS: IT DOESN'T SAY VIDEO AND  
11 AUDIO STREAMS. IT DOESN'T SEPARATE THEM LOGICALLY OR  
12 PHYSICALLY INTO STREAMS.

13 AND YOU RECALL FROM THE TRIAL THERE WAS AN ISSUE ABOUT  
14 THE WORD SEPARATE OR SEPARATING IN CLAIM 1, AND WHETHER IT WAS  
15 LIMITED TO PHYSICAL SEPARATION OR IT COULD ALSO BE LOGICAL  
16 SEPARATION. IS THAT CORRECT?

17 A I RECALL THAT ISSUE.

18 Q NOW LET'S GO TO PAGE 39, THE VERY NEXT PAGE, AND LET'S  
19 HIGHLIGHT STARTING FROM LINE 5 THROUGH LINE 9, IF WE CAN BLOW  
20 THAT UP. AND MR. WAXMAN IS SAYING: NOW THEY ARE ASKING THAT  
21 THIS CLAIM LANGUAGE OF THIS INDEPENDENT CLAIM REQUIRES THAT  
22 THE SEPARATION BE PHYSICAL, AND IT GOES ON, AND THAT WHAT THE  
23 MEDIA SWITCH DO, SEPARATE IT INTO STREAMS. DO YOU SEE THAT?

24 A YES.

25 Q AND MEDIA SWITCH IS ALSO A PART OF CLAIM 1, CORRECT?

1 A YES.

2 Q SO THE PORTION YOU CITED REFERRING TO GENIUS WAS THE  
3 DISCUSSION OF THE SEPARATING ELEMENT IN CLAIM 1, CORRECT?

4 A THAT'S TRUE IN PART.

5 Q NOW, CAN YOU FAIRLY ANSWER THE FOLLOWING YES OR NO? DO  
6 YOU RECALL THAT IN FACT ECHOSTAR HAD TRIED TO MAKE AN ARGUMENT  
7 TO JUDGE FOLSOM IN CLAIM CONSTRUCTION THAT THE TERM PARSSES IN  
8 CLAIM 32 SHOULD BE INTERPRETED TO INCLUDE A LIMITATION THAT IT  
9 MEANS SEPARATE?

10 A I DON'T RECALL THE PRE-MARKMAN ARGUMENTS.

11 Q EXCUSE ME. I SAID CLAIM 32, I MEANT CLAIM 31 IN THAT  
12 LAST QUESTION.

13 A I ACTUALLY HEARD IT AS IF YOU SAID 31, SO WE ARE BOTH  
14 EQUALLY GETTING OLDER.

15 Q WELL, AT THE SAME PACE, BUT ON A PERCENTAGE BASIS I AM  
16 AHEAD OF YOU.

17 A OKAY. I DON'T EVEN WANT TO GET INTO THAT DOG FIGHT.

18 Q OKAY. LET'S GO TO THE COURT'S CLAIM CONSTRUCTION ORDER,  
19 EXHIBIT 3275, PAGE 22. AT THE TOP WE SEE THIS RELATES TO  
20 CLAIMS 31 AND 61, AND THE PHRASE BEING INTERPRETED IS, QUOTE,  
21 "PARSES VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA." DO  
22 YOU SEE THAT?

23 A YES.

24 Q AND LET'S BLOW UP THE FIRST LINE THAT HAS TIVO'S  
25 ARGUMENT.

1 A UH-HUH.

2 Q TIVO ARGUES THESE TERMS SHOULD BE CONSTRUED TO BEING,  
3 QUOTE, "ANALYZES VIDEO AND AUDIO DATA." DO YOU SEE THAT?

4 A YES. I HAVE LOST THE CONTEXT. WHAT WAS THE TERM,  
5 PARSES?

6 Q YES.

7 A OKAY. ALL RIGHT. IT'S THE WHOLE PHRASE FROM CLAIM 31,  
8 IS IT NOT, IT'S PARSES VIDEO AND AUDIO DATA. YES, SIR, I SEE  
9 THAT.

10 Q OKAY. SO YOU HAVE SEEN WHAT TIVO'S ARGUMENT IS?

11 A YES.

12 Q AND LET'S HIGHLIGHT WHAT ECHOSTAR'S ARGUMENT IS. IN THE  
13 SECOND PARAGRAPH, ECHOSTAR ARGUES PARSES MEANS SEPARATES. DO  
14 YOU SEE THAT?

15 A I DO SEE THAT.

16 Q AND LET'S GO TO THE THIRD PARAGRAPH. AS THE COURT'S  
17 ANALYSIS OF THE TERM PARSES IN THE CONTEXT OF CLAIMS 31 AND  
18 32, THE COURT SIMILARLY FINDS THAT PARSE, AS IT IS USED IN  
19 CLAIMS 31 AND 61, MEANS ANALYZES. DO YOU SEE THAT?

20 A YES, I DO.

21 Q AND LET'S GO TO THE CONCLUDING PARAGRAPH OF THE COURT.  
22 THEREFORE, THE COURT DEFINES, QUOTE, "PARSES VIDEO AND AUDIO  
23 DATA FROM SAID BROADCAST DATA," END QUOTE, AS "ANALYZES VIDEO  
24 AND AUDIO DATA FROM THE BROADCAST DATA," END QUOTE.

25 DO YOU SEE THAT?

1 A YES, I DO.

2 Q SO TRYING TO TAKE AN ARGUMENT FROM THE FEDERAL CIRCUIT  
3 ABOUT SEPARATING AND INCORPORATING IT INTO THE CLAIMS AT ISSUE  
4 HERE, 31 AND 61, WOULD ESSENTIALLY BE TRYING TO CHANGE THE  
5 COURT'S CLAIM CONSTRUCTION OF PARSING TO INCLUDE THE WORD  
6 SEPARATES, THAT IT ANALYZES AND SEPARATES. IS THAT CORRECT?

7 A I CAN'T ANSWER THAT YES OR NO. WILL YOU GIVE ME A LITTLE  
8 BIT OF -- A MOMENT TO RESPOND?

9 Q UNDER THE COURT'S CLAIM CONSTRUCTION THE ECHOSTAR  
10 PRODUCTS, QUOTE, "PARSE," END QUOTE. CAN YOU FAIRLY ANSWER  
11 THAT YES OR NO?

12 A NO, THEY DON'T.

13 Q I WOULD LIKE TO GO TO DR. RHYNE'S SLIDE 7. THIS IS FROM  
14 YOUR DEPOSITION TRANSCRIPT. QUESTION: DO THE OTHER ECHOSTAR  
15 PRODUCTS PARSE VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA  
16 AND TEMPORARILY STORE THAT SAID VIDEO AND AUDIO DATA?

17 UNDER THE COURT'S NEW CONSTRUCTION, AND ALTHOUGH IT'S NOT  
18 IN BOLDFACE TYPE, I TAKE THE STATEMENT THAT'S MADE IN THE  
19 MARKMAN ORDER ON PAGE 18 TO DEFINE PARSE SIMPLY TO MEAN  
20 ANALYZE AND NOT ALSO TO REQUIRE SEPARATION.

21 LET ME JUST STOP THERE FOR A MOMENT. THAT'S A PROPER  
22 STATEMENT OF THE COURT'S ACTUAL CLAIM CONSTRUCTION THAT WE  
23 JUST LOOKED AT?

24 A THAT'S CORRECT.

25 Q CONTINUING WITH YOUR ANSWER: I BELIEVE THAT THE OTHER

1 PRODUCTS DO PARSE VIDEO AND AUDIO DATA FROM THE BROADCAST DATA  
2 AND DO TEMPORARILY STORE THAT DATA. SO, UNDER THE COURT'S  
3 CONSTRUCTION OF PARSE NOT TO INCLUDE OR REQUIRE SEPARATION, I  
4 BELIEVE THAT THIS OPINION NEEDS TO BE BROADENED TO COVER THAT  
5 SIMPLE PART OF CLAIM 31 OVER ALL OF THE ACCUSED PRODUCTS, END  
6 QUOTE.

7 A THAT WAS MY TESTIMONY IN 2005 BEFORE THE JURY FOUND MY  
8 OPINION TO BE FALSE.

9 Q I WAS JUST USING IT TO CONTRAST WITH YOUR CURRENT  
10 TESTIMONY.

11 MR. CHU: AND I MOVE TO STRIKE. THERE WAS NOT A  
12 PENDING QUESTION.

13 THE COURT: I WILL GRANT THAT MOTION TO STRIKE. IF  
14 YOU WILL LISTEN TO THE QUESTION AND RESPOND TO IT, DR. RHYNE.  
15 YOUR LAWYER WILL HAVE AN OPPORTUNITY TO, OR ECHOSTAR, TO  
16 FOLLOW UP WITH REDIRECT.

17 THE WITNESS: THANK YOU, SIR.

18 Q (BY MR. CHU) ALL ECHOSTAR PRODUCTS HAVE A PHYSICAL DATA  
19 SOURCE UNDER THE COURT'S CONSTRUCTION. CAN YOU ANSWER THAT  
20 YES OR NO?

21 A I DON'T BELIEVE THAT'S -- I DON'T BELIEVE THAT'S TRUE  
22 TODAY.

23 MR. CHU: LET'S LOOK AT DR. RHYNE'S TESTIMONY ON  
24 SLIDE 5.

25 Q (BY MR. CHU) QUESTION: DO ALL OF THE ECHOSTAR PRODUCTS

1 HAVE A PHYSICAL DATA SOURCE?

2 ANSWER: UNDER THE COURT'S CONSTRUCTION OF PARSE, I  
3 BELIEVE THAT THEY DO. OTHER THAN THE FACT THAT THE PHYSICAL  
4 DATA SOURCE IS SPECIFICALLY REQUIRED TO ACCEPT BROADCAST DATA  
5 FROM AN INPUT DEVICE, AND IF THERE IS NO SUCH INPUT DEVICE, IN  
6 ACCORDANCE WITH THE INFRINGEMENT OPINION IN THE TIVO REPORT,  
7 THEN THERE CAN'T BE A PHYSICAL DATA SOURCE THAT ACCEPTS  
8 BROADCAST DATA FROM A MISSING INPUT DEVICE. BUT OTHER THAN  
9 THAT, I BELIEVE THERE IS A DEVICE IN THOSE RECEIVERS, ALL OF  
10 THEM, THAT UNDER THE COURT'S CONSTRUCTION OF PARSES TO SIMPLY  
11 MEAN ANALYZE, I THINK THAT THERE IS A DEVICE THAT ANALYZES  
12 VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA. IN THIS CASE,  
13 THE MULTI-PROGRAM TRANSCRIPT STREAM SENT DOWN BY THE  
14 SATELLITE, AND THERE IS TEMPORARY STORAGE OF THAT DATA.

15 NOW, I WANT TO ASK YOU A FOLLOW-UP QUESTION THAT RELATES  
16 TO PART OF THIS. YESTERDAY, IN RESPONSE TO YOUR LAWYER'S  
17 QUESTION, YOU MADE A MAJOR POINT TO MAKE SURE THAT THE WORD  
18 PARSE BE PUT IN ITS PROPER CONTEXT SO THAT IT MEANS ANALYZE  
19 VIDEO AND AUDIO DATA FROM SAID BROADCAST DATA. I AM  
20 PARAPHRASING PART OF YOUR ANSWER THAT IS IN YELLOW. IS THAT  
21 RIGHT?

22 A YES.

23 Q AND WHEN YOU SQUARELY ANSWER THAT ALL OF THE ECHOSTAR  
24 PRODUCTS HAVE A PHYSICAL DATA SOURCE UNDER THE COURT'S  
25 CONSTRUCTION OF PARSE, YOU HAD THAT FULL PHRASE IN MIND,

1 CORRECT?

2 A AT THAT -- AT 2005 I DID.

3 Q THANK YOU. NOW, THE COURT'S CLAIM CONSTRUCTION IN 2005  
4 WE HAVE SEEN IN A WRITTEN FORM, CORRECT?

5 A YES.

6 Q AND YOU DO RECALL THAT THAT CLAIM CONSTRUCTION WITH  
7 RESPECT TO PARSE WAS NOT APPEALED TO THE FEDERAL CIRCUIT,  
8 CORRECT?

9 A I DON'T RECALL THAT. I HAVE HEARD THAT.

10 Q AND THERE HAS BEEN NO CHANGE TO THE COURT'S CLAIM  
11 CONSTRUCTION FROM 2005 UNTIL TODAY, 2009, IS THAT CORRECT?

12 A THAT'S MY UNDERSTANDING.

13 Q THANK YOU. ALL ECHOSTAR PRODUCTS PARSE THE MPEG STREAM.  
14 CAN YOU FAIRLY ANSWER THAT YES OR NO?

15 MR. BARQUIST: YOUR HONOR, I OBJECT TO THAT QUESTION  
16 AS VAGUE AS TO TIME.

17 THE COURT: WHAT TIME FRAME ARE YOU REFERRING TO?

18 Q (MR. CHU) WELL, LET'S ASK A BROADER QUESTION, DR. RHYNE.  
19 IS IT FAIR, FIRST OF ALL, THAT THE TERM PARSE HASN'T CHANGED  
20 AT ALL?

21 A IT'S JUST AN ENGLISH WORD. I DON'T KNOW -- I GUESS I  
22 DON'T UNDERSTAND YOUR QUESTION.

23 Q AND THERE WERE PID FILTERS IN THE ECHOSTAR PRODUCTS  
24 DURING THE JURY TRIAL, CORRECT?

25 A YES.

1 Q AND WITHOUT MY TRYING TO DESCRIBE THE EXACT FUNCTION,  
2 THEY PERFORMED ONE OR MORE FUNCTIONS, CORRECT?

3 A BASICALLY ONE FUNCTION.

4 Q AND THERE ARE PID FILTERS IN ALL THE ECHOSTAR PRODUCTS AT  
5 ISSUE TODAY, CORRECT?

6 A YES. YES.

7 Q AND THEY STILL PERFORM THAT FUNCTION, CORRECT?

8 A THAT SAME FUNCTION THAT THEY PERFORMED BEFORE. SOME OF  
9 THEM DO IT A LITTLE BIT DIFFERENTLY, BUT THEY ARE STILL  
10 PERFORMING THE SAME BASIC FUNCTION.

11 Q HARDWARE IS THE SAME THERE, RIGHT?

12 A THE HARDWARE, MORE OR LESS, EXCEPT FOR THE DISABLED PARTS  
13 IN THE BROADCOM.

14 Q YOU WOULD AGREE THAT AT THE TIME OF THE JURY TRIAL ALL  
15 ECHOSTAR PRODUCTS PARSED THE MPEG STREAM?

16 A THOSE PRODUCTS DID.

17 Q UNDER THE COURT'S CLAIM CONSTRUCTION?

18 A YES.

19 Q AND YOU WOULD AGREE AT THAT TIME THAT THE PID FILTERING  
20 WAS RESPONSIBLE FOR THE PARSING?

21 A THAT WAS MY OPINION BEFORE THE JURY.

22 Q UNDER THE COURT'S CLAIM CONSTRUCTION?

23 A YES.

24 Q AND THE ONLY DIFFERENCE BETWEEN YOUR OPINION THEN AND NOW  
25 IS THE RESULT OF THE JURY VERDICT, AS YOU JUST REFERRED TO?

1 A THAT'S CORRECT, THE JURY VERDICT --

2 Q THANK YOU.

3 A -- CHANGED MY OPINION.

4 Q DO YOU RECALL READING ANY SPECIAL VERDICT, SPECIAL  
5 INTERROGATORIES, BASICALLY SOME QUESTIONS PUT TO THE JURY  
6 ABOUT HOW IN THEIR MINDS THEY WERE INTERPRETING AND APPLYING  
7 THE WORD PARSING TO THE MPEG STREAM?

8 A I HAVE NO RECOLLECTION OF THAT.

9 Q THANK YOU. NOW, IN ADDITION TO YOUR LOOKING AT THE  
10 FEDERAL CIRCUIT HEARING TRANSCRIPT, YOU ALSO BASED PART OF  
11 YOUR OPINION ON THE OPINION OF THE FEDERAL CIRCUIT, CORRECT?

12 A I HAVE READ IT. I HAVE REFERENCED IT IN MY EXPERT  
13 REPORT. I DON'T REMEMBER MAKING REFERENCE TO IT DURING MY  
14 DIRECT TESTIMONY.

15 Q WELL, YOU DID CITE IT IN YOUR EXPERT REPORT, CORRECT?

16 A YES.

17 Q AND IT WASN'T JUST THAT YOU SAID THERE IS A FEDERAL  
18 CIRCUIT OPINION. DO YOU RECALL MAKING A SPECIFIC REFERENCE IN  
19 YOUR REPORT FOR THIS HEARING THAT RELATED TO THE FEDERAL  
20 CIRCUIT OPINION?

21 A I RECALL MAKING THE REFERENCE. I DON'T REMEMBER AT THE  
22 MOMENT EXACTLY WHAT THE CONTEXT OF THAT REFERENCE WAS.

23 Q I THINK I CAN HELP YOU.

24 A I THOUGHT YOU MIGHT.

25 Q THERE IS A STATEMENT, QUOTE: THE IOCTL, I-O-C-T-L,

1 COMMAND CITED BY DR. GIBSON WAS ALSO THE BASIS ON WHICH THE  
2 CAFC FOUND AUTOMATIC FLOW CONTROL.

3 THE COURT: DR. RHYNE, WOULD YOU LIKE TO SEE IT ON  
4 THE SCREEN?

5 THE WITNESS: ANY PLACE I CAN READ IT WOULD BE A BIG  
6 HELP.

7 MR. CHU: ABSOLUTELY.

8 THE COURT: WHAT PAGE IS THAT?

9 MR. CHU: IT'S EXHIBIT 3012, PAGE 52, PARAGRAPH 124.  
10 AND WE WILL PUT IT UP ON THE SCREEN IF WE CAN. 52, PARAGRAPH  
11 124. PAGE 52, PARAGRAPH 124, THERE IT IS, JUST BEFORE 125,  
12 THE IOCTL COMMAND. OKAY.

13 Q (BY MR. CHU) JUST READ ALOUD WHAT WE HAVE BLOWN UP, WOULD  
14 YOU?

15 A BEFORE I DO THAT, I NEED TO BE ABLE TO READ THE QUOTE  
16 THAT SAYS --

17 Q OH SURE. AND DO YOU WANT US TO SHOW YOU THE PRIOR PAGE?

18 A NO, NO, IT'S FINE. IT'S JUST FINE. OKAY, YOU WANTED ME  
19 TO READ ALOUD THIS SENTENCE AFTER THE CITATION?

20 Q YES.

21 MR. CHU: SO LET'S HIGHLIGHT AND BLOW UP JUST THAT  
22 LAST CONCLUDING PARAGRAPH.

23 A MY SENTENCE READ, READS: AS THE IOCTL, AND FOR THE  
24 BENEFIT OF THE COURT REPORTER, THAT'S A SINGLE TERM,  
25 I-O-C-T-L, THE IOCTL COMMAND CITED BY DR. GIBSON WAS ALSO THE

1 BASIS ON WHICH THE CAFC FOUND AUTOMATIC FLOW CONTROL IN ITS  
2 DECISION ON ECHOSTAR'S APPEAL.

3 AND THEN I CITE TO THAT DECISION AT A SPECIFIC PAGE.

4 Q RIGHT. AND CAFC IS THE WAY LAWYERS REFER TO THE FEDERAL  
5 CIRCUIT, CORRECT?

6 A I'VE BEEN HANGING AROUND LAWYERS FAR TOO LONG. IT'S THE  
7 COURT OF APPEALS OF THE FEDERAL CIRCUIT.

8 Q MY APOLOGIES TO YOU ON BEHALF OF THOSE ON BOTH SIDES OF  
9 THE ISLE HERE.

10 A I CAUGHT MYSELF USING THE WORD EN ARGUENDO THE OTHER DAY,  
11 AND I THOUGHT THIS IS -- THIS IS NOT GOOD.

12 Q WE CAN BE THROWING LATIN BACK AND FORTH AT EACH OTHER.  
13 NOW, IN THE FEDERAL CIRCUIT OPINION THE ENTIRETY OF CLAIM 31  
14 IS QUOTED, I WILL REPRESENT THAT TO YOU.

15 A I RECALL THAT.

16 Q AND IN QUOTING ALL OF CLAIM 31 THE WORDS AUTOMATIC FLOW  
17 CONTROL APPEAR BECAUSE THEY ARE PART OF THE CLAIM.

18 A YES.

19 Q SIR, DOES THE PHRASE, QUOTE, "AUTOMATIC FLOW CONTROL,"  
20 END QUOTE, APPEAR ANYPLACE ELSE IN THE FEDERAL CIRCUIT  
21 OPINION?

22 A I HAVE NO IDEA.

23 Q YOU MADE THE STATEMENT IN YOUR REPORT TO SUPPORT YOUR  
24 OPINION ON AUTOMATIC FLOW CONTROL, THE IOCTL COMMAND CITED BY  
25 DR. GIBSON WAS ALSO THE BASIS ON WHICH THE CAFC FOUND

1 AUTOMATIC FLOW CONTROL IN ITS DECISION ON ECHOSTAR'S APPEAL,  
2 BUT YOU HAVE NO IDEA WHETHER THE PHRASE AUTOMATIC FLOW CONTROL  
3 APPEARED AT ALL IN THE OPINION?

4 A SITTING HERE TODAY, I DON'T. BUT IF YOU WILL SHOW ME  
5 THOSE TWO OR THREE PAGES FROM THE CIRCUIT COURT'S OPINION,  
6 I'LL EXPLAIN TO YOU THE BASIS FOR MY STATEMENT IN MY REPORT.

7 Q I CAN GO THROUGH THE ENTIRE OPINION, SIR, AND I DON'T  
8 FIND THE PHRASE. LET ME ASK THIS. DO YOU RECALL WHETHER THE  
9 PHRASE, QUOTE, "FLOW CONTROL" APPEARS ANYPLACE IN THE OPINION?

10 A I HAVE NO CLEAR RECOLLECTION OF THE ENTIRETY OF WHAT LED  
11 ME TO THE CONCLUSION THAT I SET IN MY REPORT.

12 Q AND IF I REPRESENTED TO YOU THAT THE WORD, QUOTE, "FLOW,"  
13 END QUOTE, DOESN'T APPEAR ANYWHERE IN THE OPINION, OTHER THAN  
14 QUOTING THE CLAIM AS A WHOLE, DO YOU HAVE ANY REASON TO  
15 DISAGREE WITH THAT?

16 A I HAVE NO BASIS TO AGREE OR DISAGREE WITH IT. I DON'T  
17 RECALL IT WORD FOR WORD.

18 Q THE FACT OF THE MATTER IS, THE FEDERAL CIRCUIT DID NOT  
19 ADDRESS THE AUTOMATIC FLOW CONTROL ELEMENT OF THE CLAIMS AT  
20 ALL, IS THAT CORRECT?

21 A I DON'T THINK I AGREE. I DON'T AGREE WITH YOU SITTING  
22 HERE. IF YOU WANT TO GO THROUGH IT WORD FOR WORD, I CAN'T  
23 THINK OF ANY REASON THEY WOULD HAVE CITED THE IOCTL COMMAND IN  
24 THEIR REPORT BY NAME OTHER THAN TO DEAL WITH THE FLOW CONTROL,  
25 SINCE IT WAS ONE OF THE TWO COMMANDS THAT WAS THE BASIS FOR

1 THE JURY'S FINDING THAT FLOW CONTROL WAS PRESENT IN THE  
2 ECHOSTAR PRODUCTS AT TRIAL. WE CAN LOOK AT IT, IF YOU WISH.

3 Q SIR, IT'S HARD FOR ME TO SHOW YOU THE OPINION THAT  
4 DOESN'T HAVE ANY DISCUSSION OF AUTOMATIC FLOW CONTROL. LET ME  
5 ASK YOU A SLIGHTLY DIFFERENT QUESTION.

6 A SURELY.

7 Q BECAUSE I THINK THE FOLLOWING QUESTION HAS BEEN ASKED OF  
8 OTHER WITNESSES.

9 A ALL RIGHT.

10 Q AUTOMATIC FLOW CONTROL WAS NOT A CLAIM TERM ON WHICH  
11 ECHOSTAR APPEALED. IS THAT CORRECT?

12 A I DON'T KNOW THE ANSWER TO THAT.

13 Q YOU JUST DON'T KNOW ONE WAY OR THE OTHER?

14 A I DON'T KNOW HOW THEY FORMULATED THEIR APPEAL.

15 Q IN WRITING YOUR REPORT, AT SOME POINT IT WAS REVIEWED BY  
16 OR FIRST YOU WORKED WITH ECHOSTAR LAWYERS BEFORE IT WAS  
17 FINALLY REDUCED TO WRITING?

18 A I WROTE A FIRST DRAFT AND THEN THE LAWYERS HAD  
19 OPPORTUNITIES TO REVIEW IT.

20 Q AND THEN WHEN YOU THOUGHT YOU HAD A FINAL DRAFT, A WHOLE  
21 BUNCH OF ECHOSTAR LAWYERS HAD AMPLE OPPORTUNITY TO LOOK  
22 THROUGH IT, CORRECT?

23 A I HAVE NO IDEA WHAT THE DEGREE OF REVIEW THAT TOOK PLACE  
24 AT ECHOSTAR'S ATTORNEYS WAS.

25 Q I WOULD LIKE TO ASK YOU A QUESTION ABOUT PID FILTERS.

1 A SURELY.

2 Q THE PID FILTERS IN THE ECHOSTAR PRODUCTS ARE OPERATING  
3 THE SAME WAY BETWEEN THE OLD AND THE NEW DVRS, CORRECT?

4 A NO.

5 Q I WOULD LIKE TO READ PART OF MR. DEMAS' DEPOSITION. IT'S  
6 PAGE 18, LINES 10-13 TO SEE IF THIS REFRESHES YOUR  
7 RECOLLECTION. YOU KNOW THAT MR. DEMAS IS THE BROADCOM  
8 ENGINEER, IS THAT CORRECT?

9 A OH, I DIDN'T KNOW IF THAT WAS A QUESTION. YES, I AM  
10 FAMILIAR WITH WHO HE IS, AND I DON'T KNOW HIS EXACT TITLE, BUT  
11 HE IS THE ENGINEER I WENT TO WHEN I NEEDED FURTHER INFORMATION  
12 ABOUT BROADCOM.

13 Q SO, QUESTION: OKAY. AND DOES, THIS IS LINE 18, 10-13.  
14 QUESTION: OKAY. AND DOES -- DOES THE PID FILTER, SO JUST TO,  
15 SO THE PID FILTER IS STILL OPERATING THE SAME WAY BETWEEN THE  
16 OLD AND THE NEW DVRS, CORRECT? ANSWER: CORRECT.

17 YOU, BY THE WAY, IS IT CORRECT YOU REVIEWED MR. DEMAS'  
18 DEPOSITION IN PREPARATION FOR YOUR TESTIMONY, CORRECT?

19 A I ACTUALLY REVIEWED ALL OF THAT PAGE, INCLUDING LINES 18-  
20 24, WHICH YOU HAVEN'T CITED.

21 Q WELL, LET'S TAKE A LOOK. LET'S LOOK AT THE ENTIRE PAGE.

22 A SCROLL DOWN FURTHER.

23 Q YEP. WE WILL LOOK AT THE ENTIRE PAGE.

24 A YES, SIR.

25 MR. CHU: JUST SCROLL DOWN SO EVERYONE CAN LOOK AT

1 THE ENTIRE PAGE, PLEASE. AND I DON'T THINK WE NEED TO HAVE  
2 THE QUOTES ABOUT "I LOVE LUCY," AND OTHER THINGS, AND JUST  
3 CONTINUE DOWN. THAT'S OKAY, SCROLL TO THE END.

4 A IT'S 18 TO 24 THAT I HAVE BASED MY OPINION ON.

5 Q THANK YOU. LET ME GO TO A DIFFERENT SUBJECT. YOU HAVE  
6 HAD MANY A CONVERSATION WITH MR. MINNICK IN PREPARATION FOR  
7 YOUR REPORT AND YOUR TESTIMONY, IS THAT CORRECT?

8 A I HAVEN'T HAD A MULTITUDE OF THEM, BUT I HAVE HAD MANY OF  
9 THEM, YES, SIR, AND HIS STAFF.

10 Q AND MR. MINNICK IS NOT FAMILIAR WITH THE BROADCOM DRIVER  
11 CODE. IS THAT CORRECT?

12 A I WOULD BELIEVE THAT COULD BE THE CASE. IT'S PROPRIETARY  
13 TO BROADCOM, AND I DON'T KNOW TO WHAT DEGREE THEY HAVE OPENED  
14 THAT DOOR TO HIM.

15 Q WELL, I AM NOT ASKING WHETHER IT COULD BE THE CASE. DO  
16 YOU KNOW ONE WAY OR THE OTHER?

17 A I DO NOT.

18 Q SO, AND YOU READ MR. MINNICK'S DEPOSITION TESTIMONY FOR  
19 THIS HEARING?

20 A I HAVE.

21 Q SO LET ME READ, AND IF WE CAN CALL UP ON THE SCREEN MR.  
22 MINNICK'S TESTIMONY, VOLUME 1, PAGE 174, 8-15.

23 QUESTION: OKAY, YOU ARE NOT FAMILIAR WITH BROADCOM DRIVER  
24 CODE?

25 ANSWER: NO.

1 IS ANYONE AT ECHOSTAR FAMILIAR WITH BROADCOM DRIVER CODE?

2 ANSWER: NO, NOT -- I DON'T -- NO, THAT WOULD BE MY  
3 ANSWER.

4 I AM GOING TO ASK YOU A QUESTION ABOUT INDEXING.

5 A YES.

6 Q AND I THINK YOU ARE FULLY IN AGREEMENT THAT THE WORD  
7 INDEXING DOESN'T APPEAR IN CLAIM 31 AND 61, CORRECT?

8 A YES.

9 Q AND YOU ARE NOW IN AGREEMENT THAT IT'S NOT PART OF THE  
10 COURT'S CLAIM CONSTRUCTION, CORRECT?

11 A OF WHICH?

12 Q OF PARSING?

13 A BUT NOT OF PARSING, NO, IT'S NOT. OR THAT LONGER PHRASE,  
14 THAT PARSING AUDIO AND VIDEO.

15 Q SIR, I THINK YOU'VE ANSWERED.

16 A OKAY, FINE.

17 Q YOU WERE ACTUALLY BEING A LITTLE HELPFUL FOR OUR SIDE, I  
18 THINK, BUT I JUST WANT IT TO SPEED ALONG.

19 A I AM ALWAYS TRYING TO BE HELPFUL.

20 Q THANK YOU. IF A PROPER INTERPRETATION OF CLAIM 31 DOES  
21 NOT HAVE INDEXING AS A CLAIM ELEMENT, IT WOULD ELIMINATE YOUR  
22 OPINION ON COLORABLE DIFFERENCES AND INFRINGEMENT WITH RESPECT  
23 TO THAT CLAIM. IS THAT CORRECT?

24 A NO.

25 Q I WOULD LIKE TO READ YOUR DEPOSITION TESTIMONY FEBRUARY

1 3<sup>RD</sup>, 2009.

2 A ALL RIGHT.

3 Q JUST A COUPLE OF WEEKS AGO.

4 MR. CHU: PAGE 132, LINE 6 THROUGH LINE 23, LINE 6  
5 THROUGH LINE 23, IF WE CAN HIGHLIGHT THAT. OR CAN YOU BLOW UP  
6 THE ENTIRE THING? I WILL JUST START READING IT.

7 Q QUESTION: ASSUMING -- ASSUMING THE COURT DISAGREES WITH  
8 YOU AND DOES NOT HAVE THE VIEW THAT INDEXING IS A REQUIREMENT  
9 OF CLAIMS 31 AND 61, HOW WOULD THAT CHANGE YOUR OPINION?

10 THE ANSWER BY DR. RHYNE: IT WOULD ELIMINATE FROM THE  
11 REPERTOIRE OF OPINIONS THAT I HAVE REGARDING COLORABLE  
12 DIFFERENCES AND NONINFRINGEMENT RELIANCE ON THE FACT THAT THE  
13 NEW MODIFIED ECHOSTAR RECEIVERS DO NOT CREATE AN INDEX. IT  
14 WOULD ALSO MAKE LARGE PORTIONS OF THE OPINIONS OFFERED IN THE  
15 STORER REPORT BECOME SOMETHING THAT THE JUDGE WOULDN'T AGREE  
16 WITH EITHER BECAUSE FUNDAMENTAL TO THE POSITIONS OFFERED BY  
17 DR. STORER WITH RESPECT TO THIS ASPECT OF THE OPERATION OF THE  
18 MODIFIED SYSTEM IS HIS BELIEF, WHICH I DISAGREE WITH, THAT IN  
19 SOME WAY OR OTHER THEY STILL HAVE AN INDEX EVEN AFTER ALL THE  
20 MODIFICATIONS THAT HAVE BEEN MADE TO THOSE MODIFIED RECEIVERS.

21 SIR, WITH RESPECT TO THE 50X BOXES, THE ONLY ARGUMENT YOU  
22 PUT FORWARD AS TO WHY THERE ARE MORE THAN COLORABLE  
23 DIFFERENCES AND WHY THEY DO NOT INFRINGE RELATES TO YOUR  
24 INTERPRETATION OF THE PARSING LIMITATION WHERE YOU SAID  
25 INDEXING AND START CODES WERE REMOVED, IS THAT FAIR?

1 A AS LONG AS YOU SAY BOTH INDEXING AND START CODE, THAT'S A  
2 FAIR STATEMENT.

3 Q THANK YOU.

4 MR. CHU: NO FURTHER QUESTIONS.

5 THE COURT: REDIRECT.

6 REDIRECT EXAMINATION

7 BY MR. BARQUIST:

8 Q DR. RHYNE, YOU WERE ASKED QUESTIONS JUST NOW ON CROSS-  
9 EXAMINATION ABOUT THE HEARING AT THE FEDERAL CIRCUIT AND WHAT  
10 YOU UNDERSTOOD FROM THE STATEMENTS MADE BY TIVO'S LAWYER TO  
11 THE COURT OF APPEALS. DO YOU RECALL THAT?

12 A YES.

13 MR. BARQUIST: AND IF WE COULD BRING UP PAGE 38 FROM  
14 DEFENDANTS' EXHIBIT 5008, PLEASE. AND LET'S LOOK AT THE  
15 COMMENTS BEGINNING AT LINE 18 THROUGH THE BOTTOM OF THE PAGE.

16 Q (BY MR. BARQUIST) NOW, DR. RHYNE, WHEN YOU READ THIS  
17 STATEMENT FROM TIVO'S LAWYER TO THE FEDERAL CIRCUIT ABOUT WHAT  
18 THE INVENTION RELATED TO, WHAT DID YOU UNDERSTAND WAS BEING  
19 REFERRED TO AS THE INVENTION?

20 A EXACTLY WHAT IS SAID HERE, THIS IDEA OF HAVING SOMETHING  
21 RUN LIKE A MANIAC UP AND DOWN THIS MASSIVE DATA STREAM EVERY  
22 TIME IT GETS A COMMAND BUILDING A TABLE, WHICH CONSISTS OF TWO  
23 STEPS. ONE IS LOOKING FOR THE START CODES AND USING THAT  
24 INFORMATION ABOUT START CODES TO BUILD THE INDEX. THEY GO  
25 HAND-IN-HAND.

1 Q CAN INDEXING BE DONE WITHOUT START CODE DETECTION?

2 A IT CANNOT.

3 Q AND IF WE COULD TURN TO THE NEXT PAGE AT THE TOP OF PAGE  
4 39, THE FIRST FOUR LINES.

5 A YES.

6 Q THIS IS A REFERENCE AGAIN TO BUILDING THE TABLE. WHAT  
7 PART OF THE CLAIM DOES THAT REFER TO?

8 A BUILDING THE TABLE FOR WHICH CLAIM, FOR CLAIM 31?

9 Q LET'S TAKE IT ONE AT A TIME, CLAIM 1.

10 A IT'S A PART OF THE MEDIA SWITCH THAT'S SET FORTH THERE  
11 THAT PARSSES AND SEPARATES. PARSSES IS DETECTING THE START  
12 CODES, AND SEPARATING WAS ARGUED BY TIVO SUCCESSFULLY AS  
13 BUILDING THE INDEX.

14 Q AND CLAIM 1 CLAIMS A MEDIA SWITCH, CORRECT?

15 A IT DOES.

16 MR. BARQUIST: COULD WE BRING UP, MICHAEL, FROM THE  
17 GIBSON TRIAL GRAPHICS, I THINK IT'S MAYBE 5003 OR 5004 --  
18 5004, PAGE 47.

19 Q (BY MR. BARQUIST) DR. RHYNE, DO YOU RECALL THIS SLIDE OF  
20 DR. GIBSON'S FROM THE FIRST TRIAL?

21 A THIS IS THE VERY LIMITATION THAT I JUST SORT OF, AS BEST  
22 I COULD, RECALL. IT'S THE MEDIA SWITCH LIMITATION THAT CALLS  
23 FOR PARSING AND SEPARATION.

24 Q AND DR. GIBSON'S SLIDE SETS FORTH THE COURT'S  
25 INTERPRETATION OF THAT ELEMENT, CORRECT?

1 A YES.

2 Q AND THE MEDIA SWITCH IN THE PATENT PARSES SAID MPEG  
3 STREAM, SAID MPEG STREAM IS SEPARATED INTO IT'S VIDEO AND  
4 AUDIO COMPONENTS, CORRECT?

5 A YES.

6 Q AND THE CLAIM CONSTRUCTION WAS THAT THE MEDIA SWITCH  
7 ANALYZES SAID MPEG STREAM, SAID MPEG STREAM IS SEPARATED INTO  
8 ITS VIDEO AND AUDIO COMPONENTS, CORRECT?

9 A YES.

10 Q SO THE MEDIA SWITCH HAS TO BOTH ANALYZE AND SEPARATE?

11 A THAT'S CORRECT.

12 Q AND TIVO CLAIMED THAT THIS CLAIM ELEMENT WAS SATISFIED BY  
13 START CODE DETECTION AND CREATING THE START CODE INDEX,  
14 CORRECT?

15 A IN FACT, THEY LINKED START CODE DETECTION TO THE  
16 REQUIREMENT FOR ANALYZING, AND THEY LINKED FORMING THE INDEX  
17 AS WHAT THEY ARGUED SUCCESSFULLY WAS LOGICAL SEPARATION.

18 Q SO, IF INDEXING WAS ASSOCIATED WITH THE SEPARATING  
19 REQUIREMENT, WHAT REQUIREMENT OF THE MEDIA SWITCH AS CONSTRUED  
20 BY THE COURT WAS ASSOCIATED WITH THE PARSING REQUIREMENT?

21 A IN THE SUCCESSFUL ARGUMENTS MADE BY TIVO AT TRIAL, IT WAS  
22 THE DETECTION OF START CODES BY LOOKING AT THE VIDEO DATA AS  
23 IT PASSED UNDER WHAT MR. BARTON REFERRED TO HIS LITTLE EYE,  
24 AND THAT WAS THE MEDIA SWITCH.

25 Q AND IN THE MODIFIED ECHOSTAR PRODUCTS, THE NEW ECHOSTAR

1 PRODUCTS, DO THEY DO THAT START CODE DETENTION?

2 A NO, THEY DO NOT, NOT ON THE RECORD SIDE BEFORE THE DATA  
3 IS SENT TO A BUFFER AND SUBSEQUENTLY SENT TO THE HARD DISK  
4 DRIVE.

5 MR. BARQUIST: AND IF WE COULD LOOK AT SLIDE 51 IN  
6 THE SAME EXHIBIT, PLEASE.

7 Q (BY MR. BARQUIST) AGAIN, THIS IS ONE OF DR. GIBSON'S  
8 SLIDES FROM THE FIRST TRIAL IN WHICH HE READ THE MEDIA SWITCH  
9 ELEMENT ONTO THE PARSING AND SEPARATING PART OF THE CLAIM  
10 ELEMENT, IS THAT RIGHT?

11 A YES.

12 Q AND WHAT DID DR. GIBSON SAY PARSING INVOLVED IN THIS?

13 A THIS IS A COMMENT THAT IS MADE AT THE BEGINNING OF A PART  
14 OF THE ECHOSTAR SOFTWARE AS IT WAS BEFORE TRIAL AND DURING  
15 TRIAL, AND HE HIGHLIGHTED THE FACT THAT THIS PARTICULAR  
16 FUNCTION, NAMED FRAME PARSE, HAD A DESCRIPTION WRITTEN BY THE  
17 ECHOSTAR PROGRAMMER THAT SAID PARSE THE VIDEO DATA TO LOOK FOR  
18 START CODES, AND HE SPECIFICALLY HIGHLIGHTED AND EXPLAINED TO  
19 THE JURY THIS SLIDE AS EMPHASIZING THAT PARSING WAS LOOKING  
20 FOR START CODES.

21 Q AND IS LOOKING FOR START CODES THE INDEX?

22 A NO. IT'S WHAT YOU USE TO BUILD THE INDEX.

23 Q SO IT'S A TWO-STEP PROCESS?

24 A YES.

25 Q NOW, MR. CHU ASKED YOU ABOUT THE COURT'S CLAIM

1 CONSTRUCTION ORDER AND SUGGESTED THAT YOU ARE CHANGING THE  
2 COURT'S CLAIM CONSTRUCTION, AND YOU SAID YOU COULDN'T ANSWER  
3 THAT QUESTION YES OR NO. DO YOU RECALL THAT?

4 A THE WAY HE HAD PHRASED IT, AND I DON'T REMEMBER EXACTLY  
5 HOW HE PHRASED IT, BUT I AM NOT MAKING ANY ATTEMPT TO CHANGE  
6 THE COURT'S ORDER. THE ONLY THING THAT I THINK SOMETIMES HAS  
7 BEEN A LITTLE CONFUSING IS THAT THE COURT SEPARATELY IN THE  
8 FIRST PART OF PAGE 22 OF THE ORDER CONSTRUED PARSES TO MEAN  
9 ANALYZES, BUT THEN AT THE BOTTOM OF THAT PAGE THE COURT FULLY  
10 CONSTRUED THE PHRASE PARSES THE VIDEO AND AUDIO FROM SAID  
11 BROADCAST DATA TO MEAN ANALYZES THE VIDEO AND AUDIO DATA FROM  
12 THE BROADCAST DATA.

13 SO I THINK RELATIVE TO CLAIMS 31 AND 61 IS THE FACT THAT  
14 THE COURT CONSTRUED THE WORD PARSES TO MEAN ANALYZED ALONE IS  
15 NOT ENOUGH TO CONSIDER. AND I HAVE CONSIDERED THE ENTIRETY OF  
16 THAT PHRASE IN FORMING MY OPINIONS ON BOTH COLORABLE  
17 DIFFERENCE AND ON INFRINGEMENT.

18 Q AND SO KEEPING IN MIND THE COURT'S CLAIM CONSTRUCTION OF  
19 THAT ENTIRE CLAIM ELEMENT, PARSES AUDIO AND VIDEO DATA FROM  
20 THE BROADCAST DATA, WHY, IN VIEW OF THAT CONSTRUCTION, IS IT  
21 YOUR OPINION THAT THE NEW ECHOSTAR PRODUCTS DON'T MEET THAT  
22 LIMITATION?

23 A I CAN STATE IT VERY SIMPLY. THE ONLY PLACE THAT THE  
24 VIDEO OR AUDIO DATA WOULD BE FOUND IS IN THE PAYLOADS OF THE  
25 TRANSPORT STREAM PACKETS AS THEY PROCEED THROUGH THE FRONT END

1 OF THAT DEVICE AND ULTIMATELY SHOW UP ON DISK. AND IN THE  
2 MODIFIED PRODUCTS, DURING THAT FRONT END PROCESS, THERE IS  
3 NEVER ANY ANALYSIS OF THE VIDEO AND AUDIO DATA BEING PERFORMED  
4 BY OPENING THE PAYLOAD PORTION OF THE TRANSPORT STREAM  
5 PACKETS. THE ONLY THING THAT IS NOW DONE IS THE USE OF A PID  
6 FILTER, AS WAS DONE BEFORE, TO LOOK AT THE HEADER AND FIND THE  
7 PACKET IDENTIFIER 13 BIT CODE. THAT'S ALL THAT'S DONE. AND  
8 THE MODIFIED SYSTEMS ON THE FRONT END LEADING TO THE DISK, THE  
9 PAYLOAD IS NEVER EXAMINED.

10 Q AND IT'S THE PAYLOAD WHERE THE VIDEO AND AUDIO DATA  
11 RESIDE, CORRECT?

12 A THAT'S CORRECT.

13 Q AND NOT IN THE HEADER?

14 A NONE OF THAT DATA IS IN THE HEADER.

15 Q NOW, YOU WERE ALSO ASKED ON CROSS-EXAMINATION ABOUT THE  
16 PID FILTERS AND WHETHER THEY HAVE BEEN CHANGED AT ALL IN THE  
17 BROADCOM DEVICE.

18 A YOU ARE TALKING ABOUT THE COMMENTARY, THE DEPOSITION OF  
19 MR. DEMAS?

20 Q YES.

21 A YES.

22 Q AND I AM NOT GOING TO ASK YOU TO INTERPRET WHAT MR. DEMAS  
23 WAS THINKING OR ANYTHING OF THE SORT, BUT I DO WANT YOU TO  
24 EXPLAIN EXACTLY WHAT CHANGE YOU UNDERSTAND FROM MR. DEMAS'  
25 INFORMATION AND YOUR OWN ANALYSIS WAS MADE TO THE OPERATION OF

1 THE PID FILTER IN THE NEW, REVISED BROADCOM PRODUCTS?

2 A IN THE WAY THE BROADCOM CHIP WORKED BEFORE AND DURING  
3 TRIAL, THEY DID OPEN THE PAYLOAD AND EXAMINE IT TO FIND THE  
4 START CODES WITHIN THE VIDEO PACKETS. SO IN ORDER TO DO THAT  
5 THE BROADCOM CHIP HAD TO BE INFORMED AS TO WHAT THE PACKET  
6 IDENTIFIER FOR VIDEO WAS. WHEN THEY DISABLED THE START CODE  
7 DETECTOR AND THE INDEX BUFFER, THEY NO LONGER NEED TO KNOW  
8 WHICH PACKETS AMONG THE SEVERAL TYPES OF PACKETS THAT ARE  
9 BEING PASSED FOR A GIVEN PROGRAM IS THE VIDEO PACKET  
10 IDENTIFIER.

11 AND ON THAT SAME PAGE, JUST BELOW THE SECTION THAT MR.  
12 CHU POINTED ME TO, MR. DEMAS SAID WHAT LED ME TO BELIEVE, AND  
13 I HAVE ALSO ASKED HIM ABOUT IT DURING A PHONE CONVERSATION  
14 THAT I AM CORRECT, THAT THEY NO LONGER TELL THE PID FILTER OF  
15 THAT BROADCOM CHIP IN THE NEW BROADCOM RECEIVERS WHICH OF THE  
16 SEVERAL PIDS THAT IT'S PASSING IS THE VIDEO PID DURING THE  
17 RECORD PROCESS.

18 MR. BARQUIST: COULD WE BRING UP TIVO EXHIBIT 3004,  
19 PLEASE?

20 Q (BY MR. BARQUIST) THIS IS THE OPINION FROM THE COURT OF  
21 APPEALS THAT YOU WERE ASKED ABOUT DURING CROSS-EXAMINATION,  
22 DR. RHYNE?

23 A YES. I WASN'T SHOWN IT, BUT I WAS ASKED ABOUT IT.

24 Q CORRECT. AND I WOULD LIKE TO SHOW YOU A LITTLE BIT OF  
25 IT, IF I COULD.

1 A SURELY.

2 MR.BARQUIST: IF WE COULD TURN TO I THINK IT'S PAGE  
3 18 OF THE EXHIBIT, YEAH, AND LET'S BLOW UP THE PARAGRAPH AND  
4 HALF OF THE UPPER, LEFT-HAND CORNER, PLEASE, INCLUDING THE  
5 HALF A PARAGRAPH AT THE TOP. THANK YOU.

6 Q (BY MR. BARQUIST) DR. RHYNE, PLEASE TAKE A MINUTE TO LOOK  
7 AT THIS SECTION OF THE OPINION.

8 A OKAY.

9 Q AND DO YOU NEED TO LOOK AT THE PREVIOUS PAGE BECAUSE IT  
10 IS A CARRY-OVER PARAGRAPH?

11 A I DON'T KNOW WHAT YOU ARE GOING TO ASK ME ABOUT HERE.

12 Q THIS IS THE PART OF THE OPINION THAT REFERS TO THIS IOCTL  
13 COMMAND.

14 A YES.

15 Q IS THIS THE PART OF THE OPINION THAT YOU WERE REFERRING  
16 TO IN THE PART OF YOUR REPORT THAT WAS ADDRESSED ON CROSS-  
17 EXAMINATION?

18 A YES.

19 Q CAN YOU EXPLAIN TO THE COURT WHY YOU BELIEVE THIS  
20 DISCUSSION IN THE FEDERAL CIRCUIT OPINION SUPPORTS THE  
21 STATEMENT THAT YOU MAKE IN YOUR REPORT?

22 A I WOULD ALMOST HAVE TO GO BACK TO MY REPORT, BUT THIS IS  
23 WHERE THEY ARE TALKING ABOUT WHAT DR. GIBSON HAD SAID ABOUT  
24 THE IOCTL EXTRACTING DATA FROM THE PHYSICAL DATA SOURCE AS IT  
25 MOVES IT. REMEMBER, THERE ARE FOUR FUNCTIONS THAT ARE

1 REQUIRED OF THE SOURCE OBJECT. EXTRACT, THEY HAVE TO OBTAIN  
2 -- IT HAS TO OBTAIN A BUFFER, IT HAS TO CONVERT TO A STREAM  
3 AND FILL THE BUFFER THAT IT OBTAINED. AND DR. GIBSON HAD SAID  
4 THAT THE IOCTL SHOWED THAT THE SOURCE OBJECT EXTRACTED.

5 AND AS I SAID DURING MY DIRECT TESTIMONY, THE MANNER IN  
6 WHICH THE SOURCE OBJECT IS FLOW CONTROLLED OR REGULATED, IT  
7 DOESN'T SPECIFICALLY SAY WHICH OF THOSE OPERATIONS WE ARE  
8 TALKING ABOUT. IS IT THE EXTRACTION, IS IT THE CONVERSION, OR  
9 IS IT THE FILLING THE BUFFER WHICH HAS ALREADY BEEN OBTAINED?  
10 BUT CLEARLY IT'S SOMETHING ALONG THAT PATHWAY. AND HERE, DR.  
11 GIBSON HAD CITED THE IOCTL AS ONE OF THOSE FUNCTIONS PERFORMED  
12 BY THE SOURCE OBJECT, THE EXTRACTION. AND THE COURT BASICALLY  
13 SAID THAT THEY ACCEPTED THAT AS SOMETHING THAT THE JURY  
14 CERTAINLY COULD HAVE -- IT SAYS THE JURY COULD PERMISSIBLY  
15 FIND THAT THE IOCTL COMMAND, THE RELEVANT PORTION OF THE  
16 SOURCE OBJECT IN THE ECHOSTAR DVRS EXTRACTS VIDEO AND AUDIO  
17 DATA FROM THE PHYSICAL DATA SOURCE.

18 WELL, THAT'S ONE OF THOSE STEPS, EXTRACT, CONVERT, FILL  
19 OF THE SOURCE OBJECT. SO THAT'S WHAT LED ME TO BELIEVE THAT  
20 THIS IS OF RELEVANCE TO EXACTLY WHAT DR. GIBSON SAID AND TO  
21 THE ISSUE OF CONTROLLING THE OPERATION OF THE SOURCE OBJECT AS  
22 IT ULTIMATELY FILLS THE BUFFER.

23 Q AND THAT'S -- THE CONTROLLING OF THE SOURCE OBJECT IS THE  
24 AUTOMATIC FLOW CONTROL ELEMENT, CORRECT?

25 A THAT'S CORRECT. AS THE COURT SAID, THE SELF-REGULATION

1 OF THAT OBJECT.

2 Q NOW, DR. RHYNE, IF WE CAN ALL THINK BACK TO LATE  
3 YESTERDAY AFTERNOON, THERE WERE A COUPLE OF OTHER QUESTIONS  
4 THAT WERE ASKED THAT I WOULD LIKE TO REFER TO BRIEFLY. THERE  
5 WAS DISCUSSION ABOUT THE CHANGES TO THE BUFFERING SYSTEM FROM  
6 THE OLD PRODUCTS TO THE NEW PRODUCTS. DO YOU RECALL THAT  
7 TESTIMONY?

8 A ARE YOU TALKING ABOUT AT THE VERY END, THE LITTLE BIT OF  
9 CROSS?

10 Q THAT'S RIGHT.

11 A I DO RECALL THAT.

12 Q OKAY. AND LET ME ASK YOU THIS FIRST OF ALL. IS THE  
13 CHANGE IN TERMINOLOGY FROM A RING BUFFER TO A CIRCULAR BUFFER  
14 MERELY A CHANGE OF WORDING OR TERMINOLOGY?

15 A WELL, AGAIN, THE RING BUFFER TERMINOLOGY WAS THE DECISION  
16 -- WAS THE TERM CHOSEN BY THE ECHOSTAR SOFTWARE DEVELOPERS FOR  
17 THE BUFFER AS IT EXISTED IN THE OLDER BROADCOM DEVICES. I  
18 WILL LEAVE IT TO THEIR DECISION TO CALL IT ANYTHING THEY WANT  
19 TO, BUT MY USE OF THE TERM CIRCULAR BUFFER IN THE NEW DEVICE  
20 IS A VERY SPECIFIC REFERENCE TO A PARTICULAR TYPE OF BUFFER  
21 THAT IS VERY DIFFERENT IN ITS OPERATION FROM WHAT IN THE PRIOR  
22 SYSTEM THE ECHOSTAR ENGINEERS CALLED A RING BUFFER; AND THE  
23 FACT THAT THOSE NAMES MIGHT SOUND SIMILAR IS IRRELEVANT TO  
24 CHARACTERIZING THE MAJOR DIFFERENCE BETWEEN THE OLD WAY THAT  
25 BUFFER OPERATES AND THE NEW WAY THE BUFFER OPERATES IN THE

1 ECHOSTAR/BROADCOM DEVICES.

2 Q NOW, I THINK YOU WERE ASKED, ALSO ASKED AND YOU CONFIRMED  
3 THAT THE MEMORY CHIP ITSELF, THE HARDWARE, THE HARDWARE  
4 MEMORY, HAS NOT CHANGED FROM THE OLD PRODUCT TO THE NEW  
5 PRODUCT, IS THAT RIGHT?

6 A IT'S A SDRAM CHIP AND IT'S THE SAME CHIP. IT'S A LARGE  
7 AMOUNT OF MEMORY THAT'S AVAILABLE FOR MANY, MANY PURPOSES FOR  
8 BOTH THE BROADCOM CHIP AND FOR THE OTHER PROCESSOR THAT'S IN  
9 THE BROADCOM DEVICES. BUT THAT CHIP HAS NOT BEEN CHANGED IN  
10 ANY WAY EXTERNALLY.

11 Q SO CAN YOU EXPLAIN TO US, THEN, GIVEN THAT THE HARDWARE  
12 OF THE CHIP ITSELF HASN'T CHANGED, HOW THERE COULD BE A CHANGE  
13 IN THE BUFFERING SYSTEM FROM THE OLD PRODUCTS TO THE NEW  
14 PRODUCTS?

15 A IT'S THE WAY IN WHICH THE SOFTWARE THAT EXECUTES TO USE  
16 THAT MEMORY WITHIN THAT CHIP AS A RESOURCE, AND THE CHIP HAS A  
17 GREAT DEAL OF MEMORY AVAILABLE AND A HUGE ADDRESS SPACE, AND  
18 IT'S USED FOR A VARIETY OF FUNCTIONS UNRELATED TO THE  
19 BUFFERING. BUT THE PORTION OF THE CHIP THAT IS ALLOCATED TO  
20 THE BUFFERING AS IT WAS DONE IN THE OLDER DEVICES IS  
21 SIGNIFICANTLY DIFFERENT IN THE WAY IN WHICH IT'S ENABLED,  
22 SELECTED, OPENED, FILLED, EMPTIED, FROM THE WAY IN WHICH IT  
23 OPERATES NOW.

24 SO, IT'S NOT A QUESTION OF WHAT THE SILICON LOOKS LIKE;  
25 IT'S A QUESTION OF HOW DOES THE SOFTWARE THAT'S EXECUTING IN

1 THE ECHOSTAR SYSTEM AND HOW DOES THE HARDWARE EXECUTING IN THE  
2 BROADCOM CHIP UTILIZE THAT CAPACITY. IT'S JUST -- IT'S LIKE  
3 AN OPEN AMOUNT OF MEMORY, AND WHAT'S REALLY IMPORTANT HERE IS  
4 THE DIFFERENCE BETWEEN THE WAY THAT HARDWARE AND THAT SOFTWARE  
5 USES THAT MEMORY AS A RESOURCE.

6 Q AND, IN YOUR OPINION, THE DIFFERENCES IN THE WAY THE  
7 BUFFER USES THAT MEMORY IS DIFFERENT FROM THE OLD PRODUCTS AND  
8 THE NEW PRODUCTS IN A SIGNIFICANT WAY, IS THAT RIGHT?

9 A ABSOLUTELY SIGNIFICANT, AND IT DIRECTLY AFFECTS MY  
10 OPINION ABOUT THE ELIMINATION OF FLOW CONTROL OR SELF-  
11 REGULATION IN THE NEW DEVICES THAT ARE BROADCOM BASED.

12 Q THANK YOU.

13 THE COURT: RE-CROSS?

14 MR. CHU: NO, YOUR HONOR, NO FURTHER QUESTIONS.

15 THE COURT: ECHOSTAR MAY CALL ITS NEXT WITNESS.

16 MR. BARQUIST: YOUR HONOR, AT THIS POINT WE WOULD  
17 LIKE PERMISSION FROM THE COURT TO FILE AN OFFER OF PROOF THAT  
18 WOULD RELATE TO DR. RHYNE'S TESTIMONY TO THE ISSUES THAT WERE  
19 THE SUBJECT OF THE MOTION TO STRIKE. WE WOULD JUST ASK THE  
20 COURT'S PERMISSION TO FILE IT SO THE RECORD IS COMPLETE.

21 THE COURT: COULD WE SIMPLY MAKE THE REPORT, THAT  
22 PART OF THE REPORT, PART OF THE RECORD? WOULD THAT SATISFY?  
23 NO OPPOSITION, I TRUST?

24 MR. CHU: NO OPPOSITION TO THE OFFER OF PROOF, BUT OF  
25 COURSE WE STAND --

1 THE COURT: I UNDERSTAND YOU STAND ON YOUR ORIGINAL  
2 POSITION IN THE COURT'S ORDER IN THAT REGARD, SO THAT WILL BE  
3 MADE A PART OF THE RECORD AS AN OFFER OF PROOF.

4 MR. MCELHINNY: THANK YOU, YOUR HONOR. AND AT THAT  
5 POINT, ECHOSTAR RESTS, YOUR HONOR.

6 THE COURT: VERY WELL. WE ARE GOING TO TAKE A --  
7 ANY REBUTTAL?

8 MR. IANCU: YES, YOUR HONOR. TIVO RECALLS DR. JAMES  
9 STORER.

10 THE COURT: WE ARE GOING TO TAKE A SHORT RECESS, AND  
11 I TRUST YOU MIGHT TAKE A FEW MINUTES TO VISIT WITH MR. PATTON  
12 AND MR. CHAMBERS ON STREAMLINING YOUR REBUTTAL. YOU KNOW, IT  
13 SEEMS DURING THE PAST TWO AND A HALF DAYS WE HAVE NOT ONLY  
14 GONE DOWN MEMORY LANE ON MARKMAN, BUT THE ORIGINAL TRIAL AND  
15 THE FEDERAL CIRCUIT. I FIND MYSELF WISHING IF I HAD KNOWN  
16 THERE WAS SO MUCH IMPORTANCE PLACED ON THE FEDERAL CIRCUIT  
17 OPINION, WE MAY HAVE HAD A FOUR JUDGE PANEL, OR MAYBE WE COULD  
18 HAVE ASKED THEM TO BE WITNESSES IN THIS CASE. I THINK WE HAVE  
19 BEAT ALL THESE ISSUES AROUND A GREAT DEAL, SO I CAN'T IMAGINE  
20 THERE IS MUCH NEED OF VERY MUCH REBUTTAL.

21 WE WILL BE IN RECESS.

22 (RECESS AT 9:52 A.M., UNTIL 10:05 A.M.; OPEN COURT)

23 THE COURT: PLEASE BE SEATED. REBUTTAL.

24 JAMES A. STORER, PLAINTIFF'S REBUTTAL WITNESS

25 DIRECT EXAMINATION

1 BY MR. IANCU:

2 Q GOOD MORNING AND WELCOME BACK, DR. STORER.

3 A GOOD MORNING.

4 Q WERE YOU HERE DURING MR. MINNICK'S TESTIMONY AND DR.  
5 RHYNE'S TESTIMONY REGARDING RING BUFFERS?

6 A YES, I WAS.

7 Q AND WERE YOU HERE FOR DR. RHYNE'S EXPLANATION OF THE  
8 BUFFERING SCHEME USING POST-ITS ON THE FLIP CHART?

9 A YES, I WAS.

10 Q WHAT ARE YOUR VIEWS OF DR. RHYNE'S EXPLANATION OF  
11 BUFFERING IN THE OLD PRODUCT USING HIS POST-ITS?

12 A WELL, A LITTLE BIT INACCURATE. IT IS TRUE THAT, IN FACT  
13 I HAVE SAID THIS, THERE ARE DESCRIPTORS IN BOTH THE OLD AND  
14 THE NEW, AND THE PURPOSE OF THE DESCRIPTORS IS TO DESCRIBE  
15 THESE TEN BUFFERS. BUT HE DESCRIBED A PROCESS OF SOMEHOW THE  
16 BUFFERS MOVING AROUND.

17 THE DESCRIPTORS DESCRIBE THE TEN POSITIONS, THE TEN  
18 BUFFERS IN MEMORY. THAT MEMORY IS SITTING THERE IN THE RAM  
19 CHIP. JUST LIKE WE HAVE HEARD EVERYONE SAY, THE MEMORY IS  
20 THERE, THE BUFFERS ARE THERE, AND THE DESCRIPTORS ARE  
21 DESCRIBING IT. THERE IS NO -- YOU AREN'T MOVING THE BLOCKS OF  
22 MEMORY, AS HE SUGGESTED HERE. THERE ARE TEN DESCRIPTORS  
23 BEFORE; THERE ARE TEN DESCRIPTORS NOW. THEY DESCRIBE THE TEN  
24 BLOCKS. THEY ARE LIKE POINTERS TO THEM. IT'S NOT THE MEMORY  
25 THAT MOVES AROUND AS HE SUGGESTED UP THERE.

1 Q BY THE WAY, DR. STORER, WHERE IN THE CODE CAN ONE FIND  
2 THE DESCRIPTION OF THE RING BUFFERS IN THE, LET'S SAY, OLD  
3 PRODUCTS?

4 A SO YOU CAN SEE THIS IN MANY PLACES OF THE CODE, BUT THE  
5 IMPORTANT PARTS OF THE CODE THAT MANIPULATE THIS INCLUDE THE  
6 DRIVER CODE AS WELL, WHICH, AS WE HEARD, MR. MINNICK HADN'T  
7 LOOKED AT AND DR. RHYNE HASN'T LOOKED AT AND SO ON. YOU ALSO  
8 SEE IT IN THE USER CODE.

9 Q DID YOU REVIEW THE DRIVER CODE?

10 A ABSOLUTELY.

11 Q DO YOU THINK YOU COULD FORM A COMPLETE UNDERSTANDING OF  
12 HOW THE BUFFERING SYSTEM WORKS WITHOUT HAVING AN UNDERSTANDING  
13 OR A DEEP UNDERSTANDING OF THE DRIVER CODE?

14 A CERTAINLY NOT AN INDEPENDENT UNDERSTANDING. THE DRIVER  
15 CODE OF COURSE IS THE KEY THING WE ARE TALKING ABOUT HERE.  
16 THIS IS WHERE ALL OF THAT, IF YOU WILL, LOW LEVEL MANIPULATION  
17 AND HANDLING AND MAINTENANCE OF THOSE TEN BUFFERS TAKES PLACE.  
18 AND WE HAVE HEARD TESTIMONY THAT BASICALLY THE ORIGINAL  
19 OPINIONS DIDN'T LOOK AT CODE AT ALL. MR. RHYNE STATED IN HIS  
20 DEPOSITION EXPLICITLY HE NEVER LOOKED AT DRIVER CODE. MR.  
21 MINNICK SAID HE NEVER LOOKED AT DRIVER CODE AND SO ON. BUT  
22 YOU REALLY NEED TO LOOK AT THAT TO SEE WHAT'S GOING ON.

23 Q IS THERE A DIFFERENCE, DR. STORER, BETWEEN RING BUFFERS  
24 AND CIRCULAR BUFFERS IN YOUR MIND?

25 A OF COURSE NOT. THOSE ARE NOT ONLY SYNONYMS THAT PEOPLE

1 WOULD USE OUTSIDE OF THIS CASE, BUT WHEN YOU LOOK AT HOW THE  
2 ENGINEERS TALK ABOUT IT, IT'S NOT JUST IN THE OLD CODE AS MR.  
3 RHYNE JUST SUGGESTED NOW. IF YOU ACTUALLY LOOK AT THE CODE,  
4 YOU SEE IT USED IN THE NEW CODE, YOU SEE IT USED IN THE  
5 MEMORANDA THAT THEY WRITE TO EACH OTHER ABOUT THE REDESIGN.  
6 THERE ARE ALL THOSE ELEVEN THOUSAND PAGES I MENTIONED OF  
7 DOCUMENTS PRODUCED AND MEMORANDA WHERE ENGINEERS ARE TALKING  
8 ABOUT THE RING BUFFER AND THIS AND THAT PERTAINING TO THE  
9 REDESIGN AS WELL.

10 BUT YOU SEE IT PRIMARILY, YOU TALKED ABOUT ORIGINAL  
11 SOURCE, YOU SEE IT IN THE CODE BOTH OLD AND NEW.

12 Q AND YOU WOULD SEE IT BOTH IN THE DRIVER SIDE OF THE CODE  
13 AS WELL AS THE ECHOSTAR SIDE OF THE CODE, RIGHT?

14 A ABSOLUTELY.

15 Q SO LET'S TAKE A LOOK AT EXHIBIT 3164, IF WE COULD PUT UP  
16 PAGE 19 FROM THAT. BEFORE WE HIGHLIGHT ANYTHING, IF WE CAN GO  
17 BACK. FIRST OF ALL, DR. STORER, WHAT KIND OF SOURCE CODE IS  
18 THIS?

19 A SO RIGHT HERE WE ARE ACTUALLY LOOKING AT, FOR EXAMPLE,  
20 WHAT WE WOULD CALL USER CODE, FOR EXAMPLE.

21 Q AND FROM THE TOP LINE YOU SEE THAT THAT'S WHERE THE  
22 DP625?

23 A THAT'S CORRECT, THE 522/625 CODE WE HAVE TALKED ABOUT.

24 Q VERSION 413, L413?

25 A THAT'S CORRECT. AND THIS IS ONE OF THE VERSIONS I SPENT

1 A LOT OF TIME ON.

2 Q AND BY LOOKING AT THIS CAN YOU TELL BOTH THE OLD CODE AND  
3 THE NEW CODE?

4 A SO, AS I MENTIONED BEFORE, THE WAY THE 522/625 CODE WORKS  
5 IS THERE ARE LITTLE, AND OTHER PEOPLE HAVE MENTIONED THIS TOO,  
6 THERE ARE LITTLE SWITCHES THAT ESSENTIALLY INCLUDE -- OR DON'T  
7 INCLUDE OLD CODE AND DO INCLUDE NEW CODE. SO YOU CAN SEE THE  
8 OLD CODE AND THE NEW CODE TOGETHER WHEN YOU ARE LOOKING AT THE  
9 NEW CODE, IF YOU WILL.

10 Q SO LET'S LOOK AT ON PAGE 19 OF EXHIBIT 3164, LINES 724  
11 THROUGH 727 OF THIS SOURCE CODE. WHAT DO YOU SEE THERE?

12 A SO AGAIN WE ARE LOOKING AT A PORTION OF THIS CURRENT  
13 CODE, BUT THIS IS ONE PORTION WHICH HAS BEEN SWITCHED OUT.  
14 THIS IS OLD CODE THAT HAS BEEN SWITCHED OUT. AND YOU SEE THAT  
15 THEY ARE USING THE TERM RING BUFFER TO REFER IN FACT TO THIS  
16 EXCEPTIONAL CONDITION OF OVERFLOW WHICH OCCURS BOTH IN THE OLD  
17 AND IN THE NEW.

18 Q LET'S TAKE A LOOK AT PAGE 23 -- SORRY, APOLOGIES, PAGE  
19 32, AND LET'S BLOW UP LINE 1229. IS THIS PART OF OLD CODE OR  
20 NEW CODE?

21 A SO AGAIN WE ARE LOOKING AT THE FILE WHICH IS THE CURRENT  
22 CODE, AND SOME PARTS, WE JUST SAW EARLIER, PARTS HAD BEEN  
23 SWITCHED OUT. THIS IS PART OF COURSE THAT IS ACTIVE, THAT IS  
24 IN THE NEW DESIGN, AND AGAIN YOU SEE THEM REFERRING TO IT AS A  
25 RING BUFFER. AND THIS IS --

1 Q DR. --

2 A I AM SORRY.

3 Q APOLOGIES. DR. STORER, DID YOU HEAR DR. RHYNE JUST SAY A  
4 FEW MINUTES AGO THAT THE RING BUFFER APPEARS ONLY IN THE OLD  
5 CODE?

6 A I DID. BUT IF YOU ACTUALLY LOOK AT THE CODE, OF COURSE  
7 YOU SEE IT IN BOTH THE OLD AND THE NEW.

8 Q AND YOU SEE IT HERE AT LINE 1229 OF EXHIBIT 3164?

9 A THAT'S CORRECT.

10 Q LET'S TAKE A LOOK AT PAGE 33 AND LINE 1255. IS THIS  
11 ANOTHER INSTANCE OF THE USE OF THE RING BUFFER IN THE NEW  
12 CODE?

13 A THAT'S CORRECT.

14 MR. IANCU: LET'S GO TO THE ORIGINAL STORER SLIDES  
15 FROM THE ORIGINAL PRESENTATION, SLIDE 76, PLEASE.

16 Q (BY MR. IANCU) SWITCHING GEARS JUST A LITTLE, DO YOU  
17 RECALL, DR. STORER, TALKING ABOUT AUTOMATIC FLOW CONTROL IN  
18 THE NEW PRODUCTS?

19 A YES.

20 Q AND DO YOU RECALL SHOWING SLIDE 76, WHICH IS NOW ON THE  
21 SCREEN, DURING YOUR FIRST PRESENTATION?

22 A YES.

23 Q AND WERE YOU HERE TO LISTEN TO MR. MINNICK DISCUSS THIS  
24 PARTICULAR SLIDE AND CALLING THE FILLING THE BUFFER OPERATION  
25 JUST ARITHMETIC?

1 A I WAS.

2 Q WHAT'S YOUR VIEW OF THAT?

3 A WELL, AND I ALSO HEARD DR. RHYNE SAY THINGS LIKE IT WAS  
4 EMPTYING, OR THIS OR THAT AS WELL, OTHER CHARACTERIZATIONS.  
5 THIS IS SOFTWARE THAT IS CONTROLLING HARDWARE. THAT'S WHAT WE  
6 ARE TALKING ABOUT HERE, WE ARE TALKING ABOUT THIS PROCESS OF  
7 FILLING THESE BUFFERS, AND THESE CALCULATIONS ARE WHAT ARE  
8 BEING USED TO CONTROL HARDWARE.

9 Q AND THAT CALCULATION IS DONE TO FILL BUFFERS, CORRECT?

10 A THIS IS AN EXAMPLE OF A NUMBER OF CALCULATIONS THAT YOU  
11 SEE BOTH AT THE USER LEVEL AND ALSO VERY IMPORTANTLY AT THE  
12 DRIVER LEVEL WHICH, AS I MENTIONED BEFORE, WASN'T LOOKED AT BY  
13 MANY PEOPLE WHO HAVE TALKED ABOUT THIS.

14 MR. IANCU: WE CAN TAKE THAT DOWN.

15 Q (BY MR. IANCU) SWITCHING GEARS JUST A LITTLE BIT, ONCE  
16 AGAIN IN TERMS OF CIRCULAR BUFFERS, DR. STORER, DO YOU RECALL  
17 DR. RHYNE OPINING YESTERDAY DURING QUESTIONING FROM HIS LAWYER  
18 THAT YOUR VIEW IS THAT AUTOMATIC FLOW CONTROL IS JUST THE  
19 CIRCULAR BUFFER. DO YOU RECALL THAT?

20 A I DO, YEAH.

21 Q IS IT YOUR VIEW THAT JUST MERELY USING A GOOD OLD PLAIN  
22 CIRCULAR BUFFER IS IN FACT AUTOMATIC FLOW CONTROL IN THIS  
23 CASE?

24 A NO.

25 Q CAN YOU PLEASE EXPLAIN?

1 A OBVIOUSLY, THERE IS A LOT -- WELL, MY SLIDE -- WELL, MY  
2 EXPLANATION IS GONE, BUT THERE IS A LOT MORE TO IT THAN SIMPLY  
3 THIS NOTION OF A DATA STRUCTURE THAT YOU MIGHT HAVE SEEN IN MY  
4 TEXTBOOK, FOR EXAMPLE, A CIRCULAR BUFFER. THERE IS A LARGE  
5 AMOUNT OF WORK TO DO ALL THE MAINTENANCE OF THE POINTERS AND  
6 THINGS THAT GO ALONG WITH THAT AND THE OTHER ASPECTS OF FLOW  
7 CONTROL.

8 BUT THIS WAS NOT TO SAY THAT THE ACTUAL EXPLANATION OF  
9 HOW THE CIRCULAR BUFFER OR THE RING BUFFER RELATES TO ALL OF  
10 THIS WASN'T VERY IMPORTANT. BUT THERE IS A LOT MORE TO IT  
11 THAN SIMPLY SAYING OH, YOU KNOW, FLOW CONTROL IS A CIRCULAR  
12 BUFFER. I CERTAINLY WASN'T SAYING THAT. I THINK THAT WAS  
13 PRETTY CLEAR, BUT IT'S WORTH MAKING THE POINT.

14 Q IN FACT, DO YOU BELIEVE THAT IT WOULD BE POSSIBLE TO  
15 ACHIEVE A DVR SYSTEM WHERE 99 PERCENT OF THE UNITS HAVE NO  
16 OVERFLOW AND OF THE 1 PERCENT UNITS THAT EXHIBIT SOME  
17 OVERFLOW, 99.999 PERCENT ARE ERROR FREE WITH SIMPLY USING JUST  
18 A GOOD OLD PLAIN CIRCULAR BUFFER?

19 A OF COURSE NOT.

20 Q IN TERMS OF THE BUFFERING CHANGE, DR. STORER, AFTER  
21 HAVING SAT THROUGH THE ENTIRE TRIAL, DO YOU BELIEVE THERE ARE  
22 ANY DIFFERENCES AT ALL WITHIN THE CONTEXT OF CLAIMS 31 AND 61  
23 BETWEEN PRODUCTS NOW AND PRODUCTS AT TRIAL?

24 A NO. AND WE ALREADY TALKED ABOUT HOW INDEXING IS NOT IN  
25 THE CLAIM, AND CLAIM 31 DOESN'T HAVE ANYTHING ABOUT NUMBERS OF

1 BUFFERS, OR WHETHER YOU HAD A COPY BUFFER OR SOMETHING. AND  
2 IT'S INFRINGED THE SAME WAY NOW AS IT WAS AT TRIAL.

3 Q SWITCHING GEARS TO THE OTHER CHANGE JUST BRIEFLY, THE  
4 INDEXING CHANGE, WE HAVE HEARD A LOT OF TESTIMONY FROM  
5 ECHOSTAR'S WITNESSES ABOUT THE INDEXING CHANGE THEY HAVE DONE.  
6 YOU WERE HERE FOR THAT, RIGHT?

7 A OF COURSE, YEAH.

8 Q DID YOU HEAR DR. RHYNE OPINE THAT THIS PATENT, MR.  
9 BARTON'S PATENT, IS ALL ONE INVENTION?

10 A I DID.

11 Q DO YOU HAVE AN UNDERSTANDING THAT THE SOFTWARE CLAIMS  
12 THAT ARE AT ISSUE HERE TODAY, 31 AND 61, ARE INDEPENDENT  
13 CLAIMS, INDEPENDENT, SEPARATE FROM CLAIMS 1 AND 32?

14 A OF COURSE, I HAVE A NUMBER OF MY OWN PATENTS, AND VERY  
15 FAMILIAR WITH THE NOTION OF AN INDEPENDENT CLAIM.

16 Q AND LET ME GO TO A DIFFERENT TOPIC, THEN.

17 MR. IANCU: LET'S PUT UP CURRENT STORER SLIDE, OR  
18 REBUTTAL STORER SLIDE 19.

19 Q (BY MR. IANCU) DR. STORER --

20 MR. IANCU: YOU CAN CLICK THROUGH THEM ALL.

21 Q (BY MR. IANCU) DR. STORER, WITHIN THE CONTEXT OF CLAIMS  
22 31 AND 61, ARE THERE ANY DIFFERENCES IN TECHNOLOGY BETWEEN  
23 PRODUCTS NOW AND THE WAY THOSE PRODUCTS WERE AT TRIAL OVERALL  
24 WITH RESPECT TO BOTH CHANGES ECHOSTAR IS ALLEGING TO HAVE  
25 MADE?

1 A NO. I THINK THAT'S -- YOU'VE SEEN THAT THROUGHOUT MY  
2 TESTIMONY, NO.

3 Q AND WE HAVE SLIDE 19 UP. CAN YOU PLEASE EXPLAIN WHAT YOU  
4 HAVE IN MIND WHEN YOU SAY THAT THERE ARE NO CHANGES, BECAUSE,  
5 IN FACT, WE HAVE SEEN WITNESSES FROM ECHOSTAR'S SIDE  
6 DESCRIBING A NUMBER OF CHANGES OVER THE PAST FEW DAYS?

7 A WELL, OKAY. I DON'T WANT TO SOUND LIKE A BROKEN RECORD,  
8 BUT I HAVE SAID MANY TIMES IT'S IMPORTANT TO ACTUALLY LOOK AT  
9 THE PRODUCT, WHAT WE ARE TALKING ABOUT HERE, THE SOFTWARE, TO  
10 ACTUALLY LOOK AT IT; AND IT'S IMPORTANT WHAT IT DOES, NOT WHAT  
11 YOU CALL IT. AND I THINK I HAVE MENTIONED ALL OF THESE THINGS  
12 OVER THE COURSE OF THE TESTIMONY BEFORE.

13 AND THERE SEEMS TO BE A THEME OF A NAME THAT'S NOT  
14 REFLECTIVE OF WHAT'S ACTUALLY HAPPENING. SO, I DON'T KNOW IF  
15 I CAN JUST RUN THROUGH THEM QUICKLY HERE, BUT INDEXLESS,  
16 RIGHT? OF COURSE, WE SEE THEY DO CONSTRUCT INDICES. WE HAVE  
17 SEEN THEIR OWN ENGINEERS SAYING, WAIT A MINUTE, THERE IS A  
18 MISTAKE. WE DO HAVE AN INDEX.

19 BRUTE FORCE, THE WHOLE IDEA OF THEIR STATISTICS WAS SO  
20 THEY COULD NOT DO BRUTE FORCE, SO THEY COULD BE SKIPPING  
21 FORWARD AND NOT HAVING TO LOOK AT ALL THAT DATA, AND WE HAD  
22 THEIR OWN ENGINEERS EVEN IN THE DESIGN PROCESS SAYING BRUTE  
23 FORCE WON'T WORK, AND YET IT'S CALLED BRUTE FORCE.

24 THEY TRY TO SAY THERE'S NO PARSING. THEY MADE CHANGES IN  
25 THE TITLES FROM PARSING AND TAKING PARSING OUT OF THE TITLE,

1 AND YET WHEN YOU ACTUALLY LOOK WHAT THEIR OWN PEOPLE SAY, WE  
2 NEED TO PARSE THE DATA; AND, OF COURSE, WE SAW WHERE WE LOOKED  
3 AT THE CODE AND THE WORD PARSE IS IN VARIABLE NAMES, AND ALL  
4 THAT SORT OF THING.

5 NO-SYNC. THERE WAS A BIG DEAL MADE ABOUT THERE WAS NO  
6 COMMUNICATION BETWEEN DIFFERENT LEVELS OF THE CODE, AND THIS  
7 NO-SYNC STRUCTURE IS A CRITICAL STRUCTURE THAT'S MAINTAINED IN  
8 THE DRIVER CODE. THE DRIVER CODE THAT MR. MINNICK SAID HE  
9 DIDN'T LOOK AT, HE SAYS HIS ENGINEERS DIDN'T LOOK AT IT, DR.  
10 RHYNE SAID EXPLICITLY IN HIS DEPOSITION HE HADN'T LOOKED AT  
11 IT, BUT THE NO-SYNC STRUCTURE IS WHERE THIS COMMUNICATION  
12 TAKES PLACE BETWEEN THE LEVELS OF THE CODE. SO, IT'S CALLED  
13 NO-SYNC, BUT ACTUALLY IT'S THE SYNC, THE COMMUNICATION  
14 STRUCTURE.

15 SINGLE BUFFER, OF COURSE WE HAVE SEEN THERE ARE TEN  
16 BUFFERS. I THINK BY NOW THAT'S PRETTY CLEAR. WE HAVE SEEN  
17 ALL -- ALL OF I THINK THE PEOPLE WHO HAVE COME UP HERE, EVEN  
18 IF THEY ORIGINALLY SAID THERE WASN'T, SAY THERE IS TEN.

19 LINEAR BUFFER, THIS SEEMS TO BE A NEW NAME THAT CAME UP  
20 AT THE VERY END. WE KNOW THAT THE ENGINEERS CALL IT A RING  
21 BUFFER. THEY CLEARLY USE IT SYNONYMOUSLY WITH CIRCULAR  
22 BUFFER. IN FACT, YOU SEE THEM USE THE WORD CIRCULAR AS WELL  
23 INTERMIXED IN THE CODE AND IN THE MEMORANDA.

24 SO, THERE SEEMS TO BE A THEME OF NAMING. I AM NOT  
25 CONCERNED WITH NAMING. I AM CONCERNED WITH WHAT IT ACTUALLY

1 DOES WHEN YOU ACTUALLY LOOK AT THE CODE.

2 Q THANK YOU, DR. STORER.

3 MR. IANCU: NOTHING FURTHER AT THIS TIME.

4 THE COURT: CROSS EXAMINATION. LIKEWISE, I SHOULD  
5 HAVE ENCOURAGED YOU TO VISIT WITH MR. PICKETT DURING THE  
6 BREAK.

7 MS. KREVANS: I DIDN'T NEED ENCOURAGEMENT, YOUR  
8 HONOR. I VISIT WITH MR. PICKETT AT EVERY BREAK, AND I DID AT  
9 THE LAST BREAK.

10 CROSS EXAMINATION

11 BY MS. KREVANS:

12 Q DR. STORER, I JUST WANT TO FOLLOW-UP ON ONE THING THAT  
13 MR. IANCU ASKED YOU ABOUT. HE ASKED ABOUT WHETHER YOU AGREED  
14 WITH DR. RHYNE THAT THE BARTON PATENT SPELLED OUT ONE  
15 INVENTION. AND YOU SAID, NO, YOU DIDN'T AGREE WITH THAT.

16 A EXCUSE ME?

17 Q YOU SAID YOU DID NOT AGREE WITH THAT?

18 A I DIDN'T SAY THAT.

19 Q YOU THINK IT'S ONE INVENTION?

20 A I'VE SAID A NUMBER OF TIMES THAT THIS PATENT DESCRIBES  
21 ACTUALLY THE BASIS OF A MODERN DVR, AND IT HAS A --

22 Q ONE INVENTION OR TWO, DR. STORER?

23 A AND IT HAS A NUMBER -- TWO KEY ASPECTS TO IT, WITH  
24 INDEPENDENT CLAIMS.

25 Q DR. STORER, COULD YOU TRY TO JUST LISTEN TO THE QUESTION

1 AND ANSWER IT. ONE INVENTION OR TWO IN THE BARTON PATENT?

2 A ONE OVERALL INVENTION, WITH DIFFERENT ASPECTS CLAIMED  
3 WITH DIFFERENT INDEPENDENT CLAIMS.

4 Q TRUE OR FALSE, DR. STORER, THE HARDWARE DESCRIBED IN THE  
5 BARTON PATENT AND THE SOFTWARE DESCRIBED IN THE BARTON PATENT  
6 RELATE TO THE SAME INVENTION?

7 A CERTAINLY THEY RELATE TO THE SAME INVENTION, SURE.

8 Q SO, TRUE?

9 A IT'S CERTAINLY TRUE THEY RELATE TO THE SAME INVENTION.

10 Q OKAY. YOU READ MR. BARTON'S RECENT DEPOSITION IN THIS  
11 CASE, DR. STORER?

12 A I BELIEVE SO.

13 Q YOU UNDERSTAND THAT MR. BARTON TESTIFIED AT HIS RECENT  
14 DEPOSITION THAT COLUMNS 5 AND 6 OF THE PATENT AND FIGURES 4, 5  
15 AND 6, WHICH ARE ABOUT THE MEDIA SWITCH, ILLUSTRATE WHAT THE  
16 PHYSICAL DATA SOURCE OF CLAIMS 31 AND 61 DOES?

17 A I DON'T RECALL THAT SPECIFIC -- SPECIFIC TESTIMONY.

18 Q OKAY. WHY DON'T WE LOOK AT IT.

19 A SURE.

20 MS. KREVANS: COULD WE SEE MR. BARTON'S JANUARY 22<sup>ND</sup>,  
21 2009 DEPOSITION, STARTING AT PAGE 121, LINE 12, GOING THROUGH  
22 PAGE 123, LINE 4? DO WE HAVE A COPY THAT WE COULD GIVE THE  
23 WITNESS?

24 A OH, THANK YOU. ALTHOUGH THIS IS -- YOU ARE GIVING ME  
25 THIS, BUT THIS IS WHAT WE ARE LOOKING AT UP THERE, RIGHT?

1 Q RIGHT. JUST BECAUSE IT'S A COUPLE OF PAGES LONG, DR.  
2 STORER, I THOUGHT IF YOU WANTED TO LOOK AT IT ON PAPER THAT  
3 WOULD BE EASIER FOR YOU.

4 A NO, THAT'S FINE. NO, ACTUALLY I HAVE THE MONITOR HERE IS  
5 FINE.

6 MS. KREVANS: JANUARY 22, 2009.

7 Q (BY MS. KREVANS) OKAY. DO YOU SEE ON PAGE 121, AT LINE  
8 12, MR. BARTON IS ASKED: IF YOU LOOK AT THE BEGINNING OF CLAIM  
9 31 AFTER THE COLON WHERE IT SAYS PROVIDING A PHYSICAL DATA  
10 SOURCE, WHEREIN SAID PHYSICAL DATA SOURCE ACCEPTS BROADCAST  
11 DATA FROM AN INPUT DEVICE, PARSes VIDEO AND AUDIO DATA FROM  
12 SAID BROADCAST DATA AND TEMPORARILY STORES SAID VIDEO AND  
13 AUDIO DATA, DO YOU SEE THAT?

14 MR. BARTON ANSWERS: I SEE THAT TEXT.

15 ARE YOU WITH ME?

16 A AND I SEE IT, TOO, YES.

17 Q OKAY. MR. BARTON IS ASKED: AND DO YOU HAVE AN  
18 UNDERSTANDING, ASIDE FROM THE EMBODIMENTS DESCRIBED IN THE  
19 SPECIFICATION, OF WHETHER THE CLAIM LANGUAGE REQUIRES THAT THE  
20 PHYSICAL DATA SOURCE PARSE VIDEO AND AUDIO DATA FROM SAID  
21 BROADCAST DATA AND TEMPORARILY STORES VIDEO AND AUDIO DATA?

22 AND IF WE COULD GO DOWN, MR. BARTON ANSWERS: AS I SAID,  
23 THE EXAMPLE EMBODIMENT IN THE SPECIFICATION OF THE PATENT IS  
24 THE BEST PLACE TO TALK ABOUT WHAT THE PHYSICAL DATA SOURCE IS  
25 DOING.

1 QUESTION: WHERE DO YOU THINK THE SPECIFICATION DOES THAT?

2 ANSWER: THE SPECIFICATION DOES THAT IN A NUMBER OF  
3 PLACES, IF WE GO BACK TO FIGURES, FIGURES 5 AND 6 IN THE  
4 PATENT, WHICH ARE DESCRIBED STARTING AT COLUMN 5, LINE 33.

5 QUESTION: FOR EXAMPLE, COLUMN 5, LINE 20, WHERE IT SAYS  
6 THE EVENT BUFFER IS FILLED BY THE PARSER WITH EVENTS. EACH  
7 EVENT IN THE EVENT BUFFER HAS AN OFFSET EVENT TYPE AND TIME  
8 STAMP FIELD. THE PARSER APPLIES THE TYPE AND OFFSET OF EACH  
9 EVENT AS IT'S PLACED IN THE BUFFER.

10 AND THEN THERE IS A COLLOQUY AMONG THE LAWYERS. THE  
11 WITNESS SAYS: I HAD SAID THE FIGURE AND THEN POINTED BACK TO  
12 THE TEXT. I ACTUALLY SHOULD HAVE POINTED TO FIGURE 4 FIRST  
13 WHICH DESCRIBES HOW DATA COMES INTO THE SYSTEM AND IS PLACED  
14 IN TEMPORARY STORAGE.

15 AND THEN IT GOES ON, AND YOU SEE AT THE BOTTOM AT --

16 MS. KREVANS: IF YOU COULD SCROLL DOWN A LITTLE BIT  
17 MORE, PLEASE. I AM SORRY, GO BACK UP A SECOND, ONE MORE, KEEP  
18 GOING, THE PREVIOUS PAGE. THE BOTTOM OF LINE 123. COULD YOU  
19 GO TO THE BOTTOM OF PAGE 123, MICHAEL?

20 Q (BY MS. KREVANS) DO YOU SEE THE QUESTION, LINE 20? AND  
21 HE WAS ASKED --

22 MS. KREVANS: SORRY, LINE 20, MICHAEL.

23 Q (BY MS. KREVANS) AND THE PARSER ALSO FILLS THE EVENT  
24 BUFFER WITH EVENTS? AND MR. BARTON ANSWERS: AS THE PARTICULAR  
25 PARSER DESCRIBED HERE IN THE FIGURES RUNS, IT IDENTIFIES

1 THINGS LIKE FRAME STARTS, OTHER INFORMATION ABOUT THE MPEG  
2 STREAM, AND GENERATES AN EVENT WHICH DESCRIBES WHERE IN THESE  
3 OTHER BUFFERS IN MAIN MEMORY THE PARTICULAR COMPONENT, THE  
4 FRAME START, WHATEVER, OF THE STREAM COMING IN IS SITTING IN  
5 MEMORY.

6 THAT WAS MR. BARTON'S TESTIMONY ABOUT THE PHYSICAL DATA  
7 SOURCE OF CLAIMS 31 AND 61, CORRECT?

8 A WELL, NO, YOU LEFT OUT -- AND NOW I DO REMEMBER THIS. HE  
9 ALSO HAD ADDITIONAL CLARIFICATION ABOUT THIS PASSAGE AT THE  
10 END.

11 Q DR. STORER --

12 A SO IT WASN'T HIS --

13 Q DR. STORER, WHAT I JUST --

14 A -- COMPLETE TESTIMONY.

15 Q DR. STORER, PLEASE --

16 THE COURT: DOCTOR, IF YOU WILL LISTEN TO THE  
17 QUESTION AND RESPOND.

18 THE WITNESS: OKAY.

19 Q (BY MS. KREVANS) THE QUESTION WAS, WHAT I JUST READ WAS  
20 TESTIMONY THAT MR. BARTON GAVE ABOUT THE PHYSICAL DATA SOURCE  
21 OF CLAIMS 31 AND 61 OF THE '389 PATENT, CORRECT?

22 A THIS WAS TESTIMONY WHICH WAS LATER ALSO AMENDED.

23 Q THIS WAS TESTIMONY THAT MR. BARTON GAVE UNDER OATH AT HIS  
24 DEPOSITION ON JANUARY 22<sup>ND</sup>, 2009, CORRECT?

25 A THAT IS CORRECT, AS I MENTIONED EARLIER.

1 MS. KREVANS: THANK YOU, YOUR HONOR.

2 MR. IANCU: JUST BRIEFLY, YOUR HONOR.

3 THE COURT: NOW FOR THE REST OF THE DEPOSITION.

4 REDIRECT EXAMINATION

5 BY MR. IANCU:

6 Q TURN TO PAGE 1, PLEASE.

7 THE COURT: WE ARE NOT GOING BACK TO PAGE 1.

8 MR. IANCU: WELL, WE HAVE 'TIL NOON, DON'T WE?

9 A JUST TO BE SAFE, I WILL CLOSE THE COVER.

10 Q DR. STORER, ON THAT LAST POINT, IS THE MEDIA SWITCH AN  
11 EXAMPLE OF THE PHYSICAL DATA SOURCE?

12 A ABSOLUTELY.

13 Q DO YOU RECALL MR. BARTON DESCRIBING THROUGH THE REST OF  
14 HIS DEPOSITION, WITHOUT HAVING TO SIT HERE AND READ INTO THE  
15 RECORD ALL OF THE FEW HUNDRED PAGES, DO YOU RECALL HIM  
16 DESCRIBING OTHER EMBODIMENTS OF THE PHYSICAL DATA SOURCE?

17 A ABSOLUTELY. AND HE, OF COURSE, WAS PROUD OF HIS  
18 INVENTION AND WAS DESCRIBING THE WHOLE THING, LOTS OF -- LOTS  
19 OF FOCUS ON THE MEDIA SWITCH IN CLAIM 1 AND THROUGHOUT THE  
20 DEPOSITION.

21 Q AND DO YOU RECALL HIM DESCRIBING AN ENCODER AS AN  
22 EMBODIMENT OF THE PHYSICAL DATA SOURCE IN CLAIMS 31 AND 61?

23 A YES.

24 Q AND DO YOU REMEMBER HIM DESCRIBING THE PID FILTER AS AN  
25 EMBODIMENT DISCLOSED IN THE PATENT FOR THE SOFTWARE CLAIMS 31

1 AND 61?

2 A YES.

3 Q THANK YOU, DOCTOR.

4 MR. IANCU: NO FURTHER QUESTIONS.

5 THE COURT: RECROSS.

6 MS. KREVANS: NOTHING FURTHER, YOUR HONOR.

7 THE COURT: THANK YOU. ANY ADDITIONAL REBUTTAL?

8 MR. CHU: NO, YOUR HONOR, WE REST.

9 THE COURT: THEN BOTH PARTIES HAVE FULLY RESTED. YOU  
10 MAY STEP DOWN. MS. MARTIN, FOR RECORD SAKE, HOW MUCH TIME DID  
11 THE PARTIES GIVE US BACK?

12 THE CLERK: AN HOUR AND TWENTY-SIX MINUTES, AND  
13 FIFTY-THREE MINUTES.

14 THE COURT: AN HOUR AND TWENTY-SIX FOR TIVO AND  
15 FIFTY-THREE FOR ECHOSTAR. I APPRECIATE THE TIME THAT'S BEEN  
16 RETURNED.

17 AS I SAID, FROM A HOUSEKEEPING STANDPOINT, I AM GOING TO  
18 ASK MRS. CRAWFORD TO GIVE ALL THE TIME TO THIS TRANSCRIPT THAT  
19 HER SCHEDULE ALLOWS, AND HOPEFULLY, SHE TOLD ME YESTERDAY  
20 LATE, AS I BELIEVE I TOLD THE LAWYERS IN CHAMBERS, THAT HER  
21 OPTIMISM ON RETURNING IT IN TWO WEEKS HAS NOW BEEN PROBABLY  
22 EXTENDED TO THREE WEEKS. BUT AS SOON AS THE TRANSCRIPT IS  
23 PLACED ON FILE, I WILL ENTER AN ORDER GIVING A TIMETABLE ON  
24 WHEN FINDINGS OF FACT, CONCLUSIONS OF LAW ARE REQUIRED, ALSO A  
25 METHOD OF RAISING OBJECTIONS TO EXPERT TESTIMONY OUTSIDE THE

1 REPORT, IF YOU FEEL THAT IS AN ISSUE IN THE CASE.

2 HAVE I RULED ON ALL THE EXHIBIT ISSUES? ARE THERE ANY  
3 PLAINTIFF EXHIBITS THAT YOU HAVE OFFERED TO WHICH THERE ARE  
4 OBJECTIONS THAT HAVEN'T BEEN ADDRESSED?

5 MR. CHU: THERE ARE OBJECTIONS AT THE OUTSET, YOUR  
6 HONOR. WE SAID WE DIDN'T MIND YOU LOOKING AT ALL THE  
7 EXHIBITS, HEARING ALL THE TESTIMONY, BUT JUST SUBJECT TO OUR  
8 OBJECTIONS, SO --

9 THE COURT: SO, BASICALLY YOU ARE SAYING YOU DON'T  
10 MIND ME ADMITTING THOSE EXHIBITS OVER YOUR OBJECTION, IS THAT  
11 WHAT YOU ARE SAYING?

12 MR. CHU: SO LONG AS THE RECORD IS CLEAR THAT WE ARE  
13 NOT WAIVING ANY ONE OF OUR OBJECTIONS.

14 THE COURT: VERY WELL.

15 MR. CHU: YES, YOUR HONOR.

16 THE COURT: FROM THE DEFENDANTS' STANDPOINT?

17 MR. MCELHINNY: WE, AS WE TOLD YOU, YOUR HONOR, THAT  
18 WE --

19 THE COURT: MAYBE I WAS A LITTLE UNCLEAR. I THOUGHT  
20 I WAS TO HEAR TESTIMONY AND THEN RULE ON THE OBJECTIONS, BUT  
21 YOU ARE BASICALLY SAYING THEY CAN BE ADMITTED OVER THE  
22 OBJECTION, AS LONG AS YOU DON'T WAIVE YOUR OBJECTION. IS IT  
23 THE SAME WITH THE DEFENDANT? DO WE HAVE ANY EXHIBITS? I HAVE  
24 FORGOTTEN DAY ONE ON THOSE EXHIBIT CONVERSATIONS.

25 MR. MCELHINNY: WE HAVE TWO SETS OF EXHIBITS TO WHICH

1 WE HAVE OBJECTED WHICH WE WERE NOT -- NOW WERE NOT USED IN THE  
2 HEARING. SO THE QUESTION OF WHETHER OR NOT THEY ARE  
3 ADMISSIBLE IS SUBMITTED TO YOUR HONOR, WHETHER THEY SHOULD BE  
4 ACTUALLY PART OF THE RECORD.

5 THE COURT: THESE ARE DEFENDANTS' EXHIBITS?

6 MR. MCELHINNY: THEY ARE PLAINTIFF'S EXHIBITS.

7 THE COURT: PLAINTIFF'S EXHIBITS.

8 MR. MCELHINNY: JUST SO THAT IT IS CLEAR, ONE IS  
9 WHETHER OR NOT EXPERT REPORTS ARE EXHIBITS OR WHETHER THEY --

10 THE COURT: YEAH. MY GENERAL PRACTICE IS, IS NOT TO  
11 ADMIT THE REPORT. I THINK IN THIS CASE IF WE ARE GOING TO,  
12 FOR THE PURPOSE OF THE RECORD, IT'S GENERALLY MY PRACTICE IF  
13 THERE ARE OBJECTIONS THAT I SIMPLY DON'T ADMIT THEM. WE HAVE  
14 HAD A WORLD OF TESTIMONY, BUT I AM GOING TO NEED AT LEAST TO  
15 LOOK AT THE REPORTS FOR A LIMITED PURPOSE IF THERE ARE ISSUES  
16 ABOUT TESTIMONY OUTSIDE THE SCOPE.

17 MR. MCELHINNY: AND YOU DON'T HAVE THE COMPLETE SET  
18 OF ALL EXPERTS. AND THE OTHER CLASS IS WHAT WE CALL THE 404  
19 BAD ACTS PRIOR COURT CASES WHICH HAVE BEEN OFFERED. THEY WERE  
20 NOT USED AT THE HEARING. OBVIOUSLY, WE DON'T THINK THEY ARE  
21 AN APPROPRIATE PART OF THE RECORD.

22 THE COURT: AND I DON'T, MY INITIAL COMMENT, I DON'T  
23 THINK THAT'S GOING TO BE A PART OF MY DECISION. SO, IN ALL  
24 LIKELIHOOD, I WILL SUSTAIN THAT OBJECTION. IT SEEMS WE HAVE  
25 BEEN DOWN THAT ROAD ON MORE THAN ONE OCCASION.

1           NOW, BUT FROM THE DEFENDANTS' STANDPOINT, HAVE YOU  
2 OFFERED ANY EXHIBITS ON BEHALF OF ECHOSTAR TO WHICH THERE ARE  
3 OBJECTIONS THAT I HAVEN'T RULED?

4           MR. MCELHINNY: I BELIEVE YOU RULED THAT YOU WERE  
5 GOING TO LET US MAKE A RECORD ON THE GOOD FAITH, AND I THINK  
6 THOSE WERE THE ONLY THINGS THAT WERE OUT THERE, YOUR HONOR.

7           THE COURT: VERY WELL.

8           MR. GOLDBERG: YOUR HONOR, THERE ARE JUST A COUPLE OF  
9 CATEGORIES OF DOCUMENTS THAT THEY HAVE OFFERED WHERE WE THINK  
10 THE DOCUMENTS ARE NOT RELEVANT IF YOU RULE ON THE CATEGORY.  
11 SO, GOOD FAITH IS AN EXAMPLE. WE DON'T THINK GOOD FAITH IS AN  
12 ISSUE FOR THIS HEARING. THERE ARE A WHOLE GROUP OF DOCUMENTS  
13 THAT THEY ARE ONLY SEEKING TO ADMIT FOR THAT PURPOSE, AND THEY  
14 SHOULD BE EXCLUDED IF THE COURT AGREES THAT GOOD FAITH IS NOT  
15 AN ISSUE HERE.

16           THE COURT: I BELIEVE I UNDERSTAND EVERYONE'S  
17 POSITION. ANYTHING ELSE FROM A HOUSEKEEPING STANDPOINT?

18           MR. CHU: NO, YOUR HONOR.

19           MR. MCELHINNY: THANK YOU VERY MUCH, YOUR HONOR.

20           THE COURT: IT'S BEEN A PLEASANT MARCH DOWN MEMORY  
21 LANE. WE WILL BE IN RECESS.

22           (ADJOURNED AT 10:33 P.M.)

23

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REPORTER'S CERTIFICATION

I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT FROM  
THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.

DATE: MARCH 6, 2009

/S/LIBBY CRAWFORD

LIBBY CRAWFORD, CSR

OFFICIAL COURT REPORTER