EXHIBIT A

Chad S. Campbell (SBN 258723)
CSCampbell@perkinscoie.com
PERKINS COIE LLP
2901 North Central Avenue, Suite 2000
Phoenix, AZ 85012-2788
Telephone: (602) 351-8000
Facsimile: (602) 648-7000

Lauren Sliger (SBN 213880)
LSliger@perkinscoie.com
PERKINS COIE LLP
1888 Century Park East, Suite 1700
Los Angeles, CA 90067-1721
Telephone: (310) 788-3245
Facsimile: (310) 788-3399

Christopher Kao (SBN 237716)
CKao@perkinscoie.com
PERKINS COIE LLP
3150 Porter Drive
Palo Alto, CA 94304-1212
Telephone: (650) 838-4300
Facsimile: (650) 838-4350

Attorneys for Plaintiff Microsoft Corporation

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

MICROSOFT CORPORATION, a Washington corporation,

Plaintiff,

v.

TIVO INC., a Delaware corporation,

Defendant.

AND RELATED COUNTERCLAIMS.

Case No. 5:10-cv-00240-LHK (PSG)

MICROSOFT'S OPENING CLAIM CONSTRUCTION BRIEF

Date: May 17, 2011
Time: 10:00 a.m.
Location: Courtroom #4, 5th Floor
Judge: Honorable Lucy H. Koh

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I. INTRODUCTION

Plaintiff Microsoft Corporation ("Microsoft") has led the development of interactive television technology for nearly 20 years. Since the early 1990s, Microsoft has invented—and patented—technologies for secure delivery of paid video programming content, user-friendly on-screen programming guides, intuitive user interfaces to navigate those guides, and the remote management of video content, among many other advances.

The pace of Microsoft's interactive television development accelerated in the mid 1990s when Microsoft acquired WebTV, a Silicon Valley start-up that was developing set-top boxes for digital video recording and connecting household televisions to the Internet, and opened a Silicon Valley campus devoted to interactive television technologies. Microsoft's Silicon Valley campus proceeded to create software for set-top box satellite television receivers with digital video recording ("DVR") capability. The first of those products, the Dishplayer 7100, was introduced at the same 1999 Consumer Electronics Show where Defendant TiVo, Inc. ("TiVo") introduced its first DVR product. Many of those early Dishplayer boxes running Microsoft software are still being used by Dish Network subscribers today.

In this case, Microsoft has asserted seven patents against TiVo—U.S. Patent Nos. 6,008,803 ("the '803 patent"), 6,055,314 ("the '314 patent"), 5,654,748 ("the '748 patent"), 5,896,444 ("the '444 patent"), 6,725,281, ("the '281 patent"), 5,677,708 ("the '708 patent") and 5,648,824 ("the '824 patent")—each of which is directed to interactive television technology invented by Microsoft (in most cases, well before TiVo even existed) and that TiVo has adopted and is using to enhance the products and services it delivers to its own subscribers.

Four of these patents, the '803 patent, the '748 patent, the '708 patent and the '824 patent, are directed to viewer-friendly ways to present and navigate video programming information on the television screen. Although these types of interactive program guides and navigational tools are today commonplace in interactive television systems, Microsoft was at the forefront of their development. Precisely because of the advantages of Microsoft's user interface inventions, TiVo has implemented them in its own on-screen displays.

The '314 patent discloses systems and methods for securely—through the use of video encryption and decryption techniques—transmitting and receiving video programs (*i.e.*, television shows, movies, etc.) through the use of an integrated circuit card ("IC card") that can be inserted in a set-top box. TiVo's customers take advantage of the inventions set forth in the '314 patent when they utilize a TiVo DVR equipped with a "CableCard" provided by their cable television company to receive video programming. The CableCard interacts with the TiVo DVR to decrypt encrypted video programming in the manner claimed in the '314 patent.

The '281 patent claims systems and methods for the remote management of a computing device such as an interactive television set-top box. TiVo utilizes the inventions disclosed in the '281 patent to allow its customers to use a remote device, such as a home or office computer or a tablet computer like the Apple iPad, to manage a TiVo DVR, including transferring video programs to and from the DVR, viewing a list of content stored in the DVR, and scheduling recordings, among other things.

The '444 patent solved a problem confronting television viewers who utilize a telephone line to connect their interactive television set-top box to a service provider such as TiVo to receive program schedule information and software updates. Without Microsoft's invention, a television viewer could miss incoming telephone calls because the telephone line was being used for other purposes at the time of the call. Alternatively, the data being downloaded to the set-top box might become corrupted because of the interruption caused by the incoming call. In order to deliver effective service to its customers, TiVo adopted the method described in the '444 patent of terminating the TiVo DVR's connection to the TiVo service in order to allow the incoming call to be received by the television viewer, and then re-initiating a connection between the TiVo DVR and the TiVo service after the viewer's call has been completed.

Pursuant to Patent L.R. 4-3(c), the parties have identified 10 disputed claim terms "whose construction will be most significant to the resolution of the case"—two terms from the '803 patent, four terms from the '314 patent, one term from the '748 patent, one term from the '444 patent, and two terms from the '281 patent. No terms from the '708 patent or the '824 patent were identified among the top 10 disputed terms.

With respect to each of the 10 contested terms, Microsoft either contends that the terms do not require construction by the Court, as the plain meaning of the terms will be understandable to the jury without construction by the Court, or has proposed straightforward constructions consistent with the use of the disputed term within the asserted claim and the specification of the patent. TiVo's constructions, on the other hand, stray impermissibly from the ordinary meaning of the terms and violate fundamental rules of claim construction, such as limiting claim terms to a preferred embodiment or rendering other claims of the relevant patent superfluous.

II. CLAIM CONSTRUCTION PRINCIPLES

In construing claims, courts are to give the words of a claim their "ordinary and customary meaning," i.e., "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

The starting point for an inquiry into the proper construction of particular claim terms is the claims themselves. *Id.* at 1314; *see also Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("The claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim."). Specifically, "the context in which a term is used in the asserted claim can be highly instructive." *Phillips*, 415 F.3d at 1314. Other claims of the patent can also be valuable, as the use of a term in one claim may "illuminate the meaning of the same term in other claims." *Id.* Likewise, differences among claims, asserted or unasserted, can also be useful in understanding the meaning of particular claim terms. *Id.*

The claims must also be "read in view of the specification, of which they are a part." *Markman v. Westview Instruments, Inc.*, 52 F. 3d 967, 979 (Fed. Cir. 1995). The specification "is always highly relevant to the claim construction analysis" and "is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F. 3d 1576, 1582 (Fed.

Cir. 1996). "It is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims." *Phillips*, 415 F.3d at 1317. In addition to the specification, the Court "should also consider the patent's prosecution history, if it is in evidence." *Markman*, 52 F.3d at 980.

In most cases, the Court can construe claims based solely on this intrinsic evidence. *See Vitronics*, 90 F.3d at 1583. Only if an analysis of the intrinsic evidence fails to resolve any ambiguity in the claim language may the court then rely on extrinsic evidence. *Id.* ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper."). While the Court is in those instances permitted to rely on extrinsic evidence, including dictionaries and learned treatises, such evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F3d. at 1317 (citation omitted). "In sum, extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1319.

III. THE '803 PATENT—THE "PROGRAM INFORMATION DISPLAY" PATENT.

The '803 patent (attached as Exhibit A) is directed to a system and method for displaying to a viewer items of electronic information, such as a schedule, source and other information about a particular program (e.g., an electronic program guide). '803, Abstract. The on-screen program guide "provides a highly intuitive user interface to support the easy and convenient selection of desired programming information," which "can include text-based and/or graphical information regarding the represented program, including the name, program date and start-time, and program channel." '803, 2:33-35; 4:10-13. The selection of programming information displayed can be controlled by the user via a remote control unit or directly by another input device, such as a keypad or a touch-sensitive screen. '803, 2:51-54. TiVo uses the inventions of the'803 patent to provide its customers with an on-screen interface that they can use to easily view and navigate video program information.

A. "Scrolling"—TiVo Seeks to Add Unwarranted Limitations to a Straightforward Term.

Claim 1: . . . "**scrolling** a first display, which contemporaneously displays a first plurality of items of electronic information, until a first item of the first plurality of the items of electronic information appears within a viewing panel . . . ; **"scrolling** [a] second display, which contemporaneously displays a second plurality of items of electronic information, until a second item of the second plurality of the items of electronic information appears within the viewing panel . . . ."

Term	Microsoft Construction	TiVo Construction
scrolling (Claims 1, 2) Joint Claim Construction Prehearing Statement ("JCCPS") item A1	"scrolling" is "moving a display image vertically or horizontally in order to view data not otherwise visible within the boundaries of the display screen"	Incrementally or continuously moving, item by item, a list of items of electronic information up or down a first [or a second] display to reveal previously hidden items in the list. For each previously hidden item that is revealed at one end of the display, a previously visible item is hidden at the other end of the display.

The term "scrolling" has an ordinary, accepted meaning that conforms to the surrounding claim language and the usage of the term throughout the rest of the '803 specification. Microsoft seeks adoption of that accepted meaning as the construction of "scrolling." TiVo seeks to add multiple, complex restrictions that the intrinsic record does not require or support.

In the context of an interactive computer interface, "scrolling" means "moving a display image vertically or horizontally in order to view data not otherwise visible within the boundaries of the display screen." Exhibit B, *IBM Dictionary of Computing* (10th ed. 1993) (definition of "scrolling": "moving a display image vertically or horizontally in order to view data not otherwise visible within the boundaries of the display screen"); *see, Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010) (indicating that where the term has an ordinary and customary meaning, and where the "specification does not assign or suggest a particular definition to the term . . . it is appropriate to consult a general dictionary definition of the word for guidance").

Microsoft's proposed construction is the way the surrounding claim language uses the term each time it appears in claim 1. Thus, the first-listed step of method claim 1 requires "scrolling a first display . . . ***until*** a first item of the first plurality of the items of electronic

information appears within a viewing panel." Scrolling until a desired item appears refers to the act of moving through the displayed items to find the desired one (which may not have been visible when the scrolling began). The same meaning is employed in the third-listed step of claim 1, which reads: "scrolling [a] second display . . . ***until*** a second item of the second plurality of the items of electronic information appears within the viewing panel."

The written description similarly uses "scrolling" to refer to the act of moving through a list of displayed items to find the desired one, which may not have been visible when the scrolling began. '803, 8:6-11 ("The visible portion for each of the displays 52, 54, and 56, i.e., the display panel, may reflect only a subset of the entire list of programming items represented by tiles. Accordingly, tiles which are not immediately visible to the subscriber can be accessed by scrolling the display in a selected vertical direction."); '803, 8:32-35 ("a tile is scrolling off beyond the visible area of the display."). The patent does not use the term "scrolling" to refer to anything other than the act of moving through items in a display.

Not content with the plain meaning reflected in the claim language and the actual usage of the term "scrolling" in the specification, TiVo seeks to modify the meaning by converting immaterial attributes of a preferred embodiment into narrowing restrictions of claim scope and by injecting further limitations of TiVo's own creation. Neither approach is proper.

For example, TiVo seeks to confine the reach of "scrolling" to refer solely to "up or down" movement. Although a preferred embodiment in the patent is depicted as scrolling vertically, importing that detail from the specification into the claims is plainly improper. *Phillips*, 415 F.3d at 1323; ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."); *Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1303 (Fed. Cir. 1997) ("The claimed invention should not be limited to preferred embodiments or specific examples in the specification."). The ordinary meaning of "scrolling" includes both movement up and down and movement from side to side. If the applicant had intended to restrict claim scope to scrolling in one direction, the claim language would have included the direction in which scrolling must be done. Instead, the actual claim language includes no such limiting direction. Moreover, the fact

that the specification was required to include the term "vertical" to identify the direction in which the preferred embodiment is set up to scroll confirms that the term "scrolling" by itself is not limited to movement in the vertical direction. '803, 8:8-11.

TiVo's lengthy construction also seeks to include a limitation that would require "[f]or each previously hidden item that is revealed at one end of the display, a previously visible item is hidden at the other end of the display." There is no basis for such a narrow reading of the term "scrolling." TiVo's apparent support is the description of an embodiment at column 8 of the patent. Those passages, however, unambiguously state that they describe a preferred embodiment as opposed to stating the only way that the invention can be practiced. '803, 8:32-35 ("For the preferred schedule display 50, each of the displays 52, 54, and 56 uses three-dimensional shading to indicate that a tile is scrolling off beyond the visible area of its display"). Nothing in the passages purports to redefine the term "scrolling" to be limited to the precise way in which the preferred embodiment is depicted. In particular, nothing in the passages restricts the meaning of the term "scrolling" to movement through displayed items one by one as opposed to movement two-by-two or in any other magnitude that makes sense for the display in question.

Finally, TiVo seeks to require that "scrolling" be confined to "incrementally or continuously moving, item by item"—whatever that means. Adding such vague restrictions would not help the jury understand the reach of the claim; it would sow confusion. Moreover, neither the '803 specification nor the claims uses the qualifier "incremental or continuous movement, item by item" to limit how "scrolling" must be done. The terms "incremental" and "continuous" do not appear in the patent. They have nothing to do with the claimed invention.

Microsoft's construction, which is faithful to the ordinary meaning of "scrolling," should be adopted.

B. "Viewing Panel" Is a Simple Term that Does Not Require a Complex Construction.

Claim 1: . . . "scrolling a first display, which contemporaneously displays a first plurality of items of electronic information , until a first item of the first plurality of the items of electronic information appears within a **viewing panel** . . ., wherein the **viewing panel** extends along and defines a portion of the first display and a portion of a second display; . . . scrolling [a] second display, which contemporaneously displays a second plurality of items of electronic information, until a second item of the second plurality of the items of electronic information appears within the **viewing panel** . . . ."

Term	Microsoft Construction	TiVo Construction
viewing panel JCCPS item A2	plain meaning, or alternatively, a "viewing panel" is "a visually defined portion of a screen in which data may be viewed"	A single window into which, for each display, an item of electronic information is shifted. The presence of an item of electronic information in the window indicates to the user that such item has been selected by the user. The single window extends along the first display and the second display and is defined by a portion of the first display and a portion of the second display.

Because the term "viewing panel" has a plain meaning that the jury will understand, particularly with the contextual claim language that surrounds the term, it does not require construction. Alternatively, if the Court believes a specific construction is necessary, the jury should be instructed that a "viewing panel" is a "visually defined portion of a screen in which data may be viewed." That construction is easy to understand and is supported by the intrinsic evidence. The claim language itself indicates what the "viewing panel" is and must do. The first and second displays recited in claim 1 each display a respective set of data items. The viewing panel "extends along" and "defines" a portion of both displays.

TiVo's construction, in contrast, is unduly complex and unsupported. It is in essence a transparent attempt at raw importation of details from the specification into broader claim language. *DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1348 (Fed. Cir. 2008) ("[W]hen claim language is broader than the preferred embodiment, it is well-settled that claims are not to be confined to that embodiment.") (citing *Phillips*, 415 F.3d at 1323). Some aspects of TiVo's construction even contradict the teachings of the '803 patent. For example, TiVo proposes to insert a requirement that the viewing panel be "a single window." The phrase "single window"

does not appear in the '803 patent and is not used to delimit what the viewing panel must be. In the only passage of the specification where the word "window" appears in proximity to the phrase "viewing panel" (10:28-32), the passage is referring expressly to what the viewing panel preferably displays in the embodiments of Figures 2-4 as opposed to what the invention must do. Moreover, instead of depicting a "single window," the passage and figures describe and show a viewing panel with three defined areas for viewing different levels of information.[1] Therefore, TiVo's proposed "single window" construction would exclude the preferred embodiments depicted in Figures 2-4, which is "rarely, if ever, correct." *Vitronics*, 90 F.3d at 1583.

A further problem with TiVo's construction is the proposed requirement that an "item of electronic information [be] shifted" into the viewing panel such that the "presence of an item of electronic information in the window indicates to the user that such item has been selected by the user." First, the '803 patent does not use the word "shift." Claim 1 only requires that "items of electronic information appear" within the viewing panel—they need not be "shifted" to appear. Second, using the definition of "viewing panel" to impose a requirement about significance that must attach to the mere appearance of a data item within the panel would conflict with the rest of claim 1. As surrounding claim language makes clear, it is "the indicator" not the "viewing panel" that "provides an indication of the selection" of the first and second items:

> . . . a first item of the first plurality of the items of electronic information appears within a viewing panel and is proximate *to an indicator that provides an indication of the selection of the first item . . . ;*
>
> a second item of the second plurality of the items of electronic information appears within the viewing panel and is associated with the indicator, *so that the indicator provides an indication of the selection of the second item*

'803, 19:35-53 (emphasis added).

At its core, TiVo's construction appears aimed at restricting claim 1 to the preferred embodiments of the '803 patent. TiVo's construction implies that for a given display (i.e., the

[1] The term "window" would only serve to confuse the jury. Most jurors will have some experience using a computer with a Windows operating system. The attributes of a window in the context of a modern PC operating system interface are neither required nor suggested as necessary to use the inventive method claimed in the '803 patent.

first display or the second display) only one item may appear in the viewing panel and the viewing panel must be fixed on the screen. The '803 patent indicates that those features are preferred, but not required, to practice the claimed invention. In particular, the patent uses open-ended language ("can" not "must") when describing how the viewing panel might be set up. '803, 3:3-5 ("A viewing panel **can** extend along a portion of each of the displays for displaying one each of the category, subcategory, and program tiles.").

In addition to the impropriety of using features from preferred embodiments to limit broader claim language, TiVo's construction of "viewing panel" would create unnecessary conflict with other claims in the '803 patent. Like claim 1, the other independent claims use the term "viewing panel," which should be given a common meaning across all claims. *Phillips*, 415 F.3d at 1314 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims."). If "viewing panel" were construed (as TiVo proposes) to be limited to a fixed panel into which only one item of a display can appear at a time, at least two dependent claims would no longer make sense. Independent claim 5, for example uses the term "viewing panel" but says nothing about fixing the viewing panel. Dependent claim 14 adds to claim 5 the limitation that "the viewing panel extends in a fixed position." Similarly, dependent claim 4 adds to claim 1 the limitation that "the viewing panel displays one item" for each of the first and second displays. Because an independent claim should not be interpreted to include the requirements added by a dependent claim, TiVo's construction is mistaken. *Id*. at 1314-15 ("For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.").

Finally, the last sentence of TiVo's multi-sentence construction would directly contradict the claim language. Claim 1 provides that it is "the viewing panel" that "extends along and defines a portion of the first display and a portion of the second display." In the last sentence of TiVo's construction, the requirement is reversed. Instead of defining a portion of the first display and a portion of the second display, TiVo proposes to have the viewing panel be "defined by" those portions.

Because TiVo's construction contradicts the patent and Microsoft's construction is correct, the Microsoft construction should be adopted.

IV. THE '314 PATENT—THE "INTEGRATED CIRCUIT CARD" PATENT

The '314 patent (attached as Exhibit C) discloses systems and methods for securely transmitting and receiving video programs (*i.e.*, cable television shows, movies, etc.) through the use of an integrated circuit card ("IC card") that can be inserted into various computing devices, including a "viewer's set-top box, DVD player, or other video computing device." '314, 2:26-42. In particular, the '314 patent describes an IC card that is able to at least partly decrypt video program content that is sent to the IC card in encrypted form.

The accused TiVo DVRs can be used with an IC card to receive and decrypt video programs in the manner specified in the'314 patent.

A. A "Program Key" Is A Key Used to Encrypt or Decrypt Program Information.

Claim Language	Microsoft Construction	TiVo Construction
program key (Claims 1, 27, 30, 42, 63, 70) JCCPS item B1	an "encrypted cryptographic program key" is "a cryptographic key that is used to encrypt and/or to decrypt program information	A key in the form of a string of bits which gives its holder the right to view a video content program.

The term "program key," as used in the context of each of the asserted claims means "a cryptographic key that is used to encrypt and/or to decrypt program information." The claims themselves provide that meaning for "program key." Claim 1 of the '314 patent, for instance, recites:

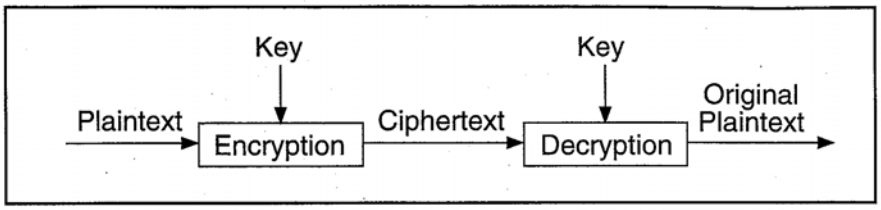
> "a video encryption device . . . *encrypting* the video data stream *using a cryptographic program key*; and
>
> an integrated circuit card compatibly couplable to, and interactive with, the viewer computing unit, the integrated circuit card . . . being configured to . . . to at least partly *decrypt* the video data stream on the distribution medium *using the cryptographic program key*.

From the face of Claim 1 itself, a person of ordinary skill in the art would understand the term "program key" to mean a cryptographic key that can be used to encrypt or decrypt a video

program. *See Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1351 (Fed. Cir. 2003) ("The usage of the disputed claim terms in the context of the claims as a whole . . . informs the proper construction of the terms."); *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1368 (Fed. Cir. 2003) (noting "a 'heavy presumption' that a claim term carries its ordinary and customary meaning") (citation omitted).

The specification of the '314 patent uses the term "program key" consistently with Microsoft's straightforward construction of the term: "The video encryption device encrypts the video data stream using the cryptographic *program key* that is unique to the ordered video content program and included in the decryption capabilities. The IC card uses the stored *program key* to at least partly decrypt the video data stream provided from the distribution medium." '314, 3:42-50 (emphasis added).

That usage and meaning of "program key" is likewise consistent with the general meaning of a cryptographic key. For example, the treatise on cryptography that the '314 specification incorporates by reference illustrates the use of a cryptographic key to encrypt and decrypt data in the following figure:



Bruce Schneier, *Applied Cryptography: Programs, Algorithms and Source Code in C* (1994), Fig. 1.2 (Exhibit D, Chapter 1, p. 3).

TiVo's proposed construction seeks to graft in two limitations that the claim language does not recite and that the intrinsic record does not support. There is no requirement that the program key consist of a "string of bits." The term "string" does not appear in the '314 patent. Although a program key could consist of a contiguous sequence of bits or a string, no aspect of the claimed invention requires that arrangement or precludes a program key from being organized into multiple discontiguous packets or other digital forms. Nor does the program key convey any "rights" to a holder. The program key is simply a computational construct that can be used to

perform two different functions in cryptography, encryption on the one hand and decryption on the other. It cannot and does not bestow "rights" to anyone to own, rent or view a video program. The introduction of the vague and amorphous concept of holder "rights" is unnecessary for the proper construction of the term "program key." As TiVo's construction of the term "program key" strays well beyond the use of the term in the asserted claims and the specification of the '314 patent, it should be rejected in favor of Microsoft's construction.

B. The Terms "Decrypting, Decryption, Decrypt" Have A Plain Meaning and Do Not Require Construction By The Court.

Claim Language	Microsoft Construction	TiVo Construction
decrypting decryption decrypt (Claims 1, 27, 30, 42, 63, 70) JCCPS item B3	plain meaning, or alternatively, "a procedure for converting encrypted information into an unencrypted or less encrypted form using a key"	Processing data which has been encrypted in order to recover the data as it was prior to the data being encrypted.

The terms "decrypting," "decryption," and "decrypt" do not require construction, as they have ordinary and plain meanings that the jury will understand without further elaboration by the Court. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also Orion IP, LLC v. Staples, Inc.*, 406 F. Supp. 2d 717, 738 (E.D. Tex. 2005) ("[A]lthough every word used in a claim has a meaning, not every word requires a construction.").

To the extent the Court believes a construction is needed for the term, Microsoft proposes that "decrypt" be construed to mean "a procedure for converting encrypted information into an unencrypted or less encrypted form using a key." This is the ordinary understanding of the term, and is consistent with its usage in the technical treatise that the '314 incorporates by reference. *See* Schneier, *Applied Cryptography*, at 1 (Exhibit D).

TiVo's proposed construction is similar to Microsoft's, but is ambiguous in its use of the words "data as it was prior to the data being encrypted." Because of that ambiguity, TiVo's

construction would potentially narrow the asserted claims of the'314 patent impermissibly. To illustrate, if TiVo's construction means that a decryption of data must result in the data being returned to its original, unencrypted form, the construction is too narrow because data can have multiple layers of encryption. In that circumstance, the operation of one decryption process may result in data being converted into a less secure, but still encrypted form. In other words, one layer of encryption would have been removed, even though the other layer(s) of encryption remain. Microsoft's construction, which includes no such ambiguity, provides better guidance for the jury.

C. To "At Least Partly Decrypt" Covers All or Part of the Decryption Procedure.

Claim 1: ". . . the integrated circuit card being configured . . . ***to at least partly decrypt*** the video data stream on the distribution medium using the cryptographic program key"

Claim 27 "a video decryption program executing on the processor . . . ***to at least partly decrypt*** a video content program using the cryptographic program key when the integrated circuit card is coupled to the computing unit"

Claim 30: "the integrated circuit card comprising . . . a processor programmed . . . ***to at least partly decrypt*** the video data stream using the cryptographic program key . . ."

Claim 63: ". . . the integrated circuit card being configured ***to at least partly decrypt*** the video data stream on the distribution medium using the cryptographic program key . . ."

Claim 70: ". . . the integrated circuit card comprising a memory to store a cryptographic program key and a processor programmed ***to at least partly decrypt*** the video data stream using the cryptographic program key . . ."

Term	Microsoft Construction	TiVo Construction
partly decrypt Claims 1, 27, 30, 63, 70 JCCPS item B5	Plain meaning, or alternatively, "to perform part of the procedure for decrypting encrypted video data"	Applying a mathematical function which takes a key in the form of a short string of bits and expands the key into a longer string of bits. The longer string of bits is used in subsequent portions of the decryption process.

The dispute here arises from TiVo's improper efforts to replace the plain meaning of the actual claim language with a construction that would restrict the scope of the claims to one of multiple, alternative embodiments. Specifically, TiVo's construction seeks to confine the claims

to a preferred embodiment consisting of a cryptographic multi-stage expansion approach shown in Figure 5 of the '314 patent. *Phillips*, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."); *Kara Technology Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) ("The claims, not specification embodiments, define the scope of patent protection. The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims."). TiVo's construction is impermissibly narrow in at least two regards—(1) it excludes an embodiment in which the IC card fully decrypts the video data; and (2) it limits the partial decryption performed by the IC card to a particular embodiment in the specification.

As noted above, the phrase "partly decrypt" never appears in the asserted claims by itself. In each instance, the operative phrase is "to ***at least*** partly decrypt." Thus, the asserted claims require the IC card or one of its programs or processors "to ***at least*** partly decrypt" a "video data stream" or "video content program." '314, 17:33-34; 18:2; 18:53; 20:44-45; 21:11; 25:31-32; 25:44; 26:19; 27:13; 27:32-33. The distinction matters because "to at least partly decrypt" has broader scope than "to partly decrypt," standing alone. *See Abbott Labs.*, 334 F.3d at 1351 ("The usage of the disputed claim terms in the context of the claims as a whole . . . informs the proper construction of the terms."). "[T]o at least partly decrypt" permits, but does not require, that the IC card do nothing more than partly decrypt the video data stream. "[T]o at least partly decrypt" also covers fully decrypting the video stream because fully decrypting is more than (and therefore ***at least***) partly decrypting.

Consistent with the plain meaning of the actual claim language, the '314 patent discloses a preferred embodiment where the IC card only partly decrypts a video stream and an alternative embodiment where the IC card fully decrypts the stream. In particular, Figure 5 illustrates an approach where the IC card only partly decrypts the video stream, leaving the set-top box in which the card is placed to complete the decryption process. '314, 4:26-29 ("FIG. 5 is a diagrammatic illustration of a two phase decryption process employed in one implementation of this invention.');'314, 11:1-4 ("The dual expansion cryptographic function further facilitates

cooperation of the partial decryption performed by IC card 50 and the partial decryption performed by viewer computing unit 60."). As an alternative to that approach, the '314 patent also teaches a process by which the IC card is "able to fully decrypt the video data stream in real-time," which "would be desired as the entire decryption process would be more securely performed on the IC card." '314, 11:17-19. Both alternatives are encompassed in the claim recitation "to at least partly decrypt."

As an initial matter, TiVo's proposed construction is inappropriate because it threatens to exclude an embodiment expressly disclosed in the specification. *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008) ("We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification."). As the specification teaches an alternative implementation where the IC card *fully* decrypts the video stream and therefore has no need for the multi-stage key expansion process of Figure 5, TiVo's construction of the term "partly decrypts" to require the use of the multi-stage expansion process is too narrow and should be rejected.

In addition, TiVo's proposed construction is flawed even with respect to the implementation where the IC card performs only *part* of the decryption process. Although Figure 5 generally describes a cryptographic expansion process where the IC card partly decrypts the program key through a first expansion process and the set-top box completes the decryption (10:35-56), the '314 patent is by no means limited to this dual-expansion process. There could be many other ways for an IC card to perform part of the decryption process and the set-top box to perform the rest of the process. The process described in Figure 5 is only "*one implementation of this invention*" according to the specification. '314, 4:26-28 (emphasis added). Indeed, the discussion of Figure 5 and the use of its "dual expansion" process occurs entirely within the "Detailed Description of the Preferred Embodiment." '314, 10:35-11:19. TiVo's construction therefore improperly limits the disputed phrase to the preferred embodiment. It is wrong to read "a limitation from the preferred embodiment into the language of the claim." *Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111, 1123 (Fed. Cir. 2001) (quoting *Laitram*

Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.")).

As with the terms "decrypting," "decryption," and "decrypt," the term "partly decrypt"—particularly in the full context of the claim language, which requires the IC card to "at least partly decrypt"— does not require construction. "At least partly decrypt" is language with an ordinary and plain meaning that the jury will understand without further elaboration from the Court. If, however, the Court believes a construction is needed, Microsoft's proposed construction provides the proper approach. Interpreting "partly decrypt" to mean "to perform part of the procedure for decrypting encrypted video data" is consistent with the ordinary meaning and the rest of the specification.

D. "Decryption Capabilities That Are Unique To The Integrated Circuit Card."

Claim 1: ". . . the integrated circuit card being configured to decrypt the encrypted cryptographic program key with ***decryption capabilities that are unique to the integrated circuit card***, and to at least partly decrypt the video data stream on the distribution medium using the cryptographic program key . . ."

Claim 27: ". . . a video decryption program executing on the processor to decrypt the encrypted cryptographic program key using ***decryption capabilities that are unique to the integrated circuit card***, and to at least partly decrypt a video content program using the cryptographic program key"

Claim 30: ". . . a processor programmed to decrypt the encrypted cryptographic program key using ***decryption capabilities that are unique to the integrated circuit card***, and to at least partly decrypt the video data stream using the cryptographic program key . . ."

Terms	Microsoft Construction	TiVo Construction
decryption capabilities that are unique to the integrated circuit card (Claims 1, 27, 30) JCCPS item B4	plain meaning	An ability to decrypt video stream data that only one particular integrated circuit card possesses and no other.

TiVo proposes an overly narrow construction of the above disputed phrase that would alter the ordinary meaning of the terms used, inject a limitation that the asserted claims do not recite, and exclude alternate embodiments of the claimed invention disclosed and taught in the '314 patent. None of that is appropriate.

TiVo's construction contradicts the actual claim language in at least two ways. First, it seeks to change "decryption capabilities" (plural) to "an ability" (singular). The claim language requires the collection of decryption capabilities available to the integrated circuit card—not a particular one of those capabilities—to be unique in some way. Moreover, TiVo's construction incorrectly seeks to tie decryption capabilities to the decryption of "video stream data." The claim language unambiguously states that the "decryption capabilities" are used "to decrypt the encrypted cryptographic program key," not to decrypt the video data. For those reasons alone, TiVo's construction should be rejected.

TiVo's construction also should be rejected because there is no support for a requirement that the IC card possess "an ability to decrypt video stream data that only one particular integrated circuit card possesses and no other." To the contrary, the specification of the'314 patent details embodiments where a program key—a part of the "decryption capabilities" utilized by the IC card—that is unique *to the video program* (and not to the IC card) and is provided to multiple IC cards. Each of the IC cards uses this same program key to at least partly decrypt the program data. *See, e.g.*, '314, 2:54-61 (when a "purchaser selects a video content program," the content provider "downloads decryption capabilities *unique to the selected video content program* to the purchaser IC card for use in decrypting the selected video content program.") (emphasis added); '314, 3:44-47; 5:14-19 ("There is one program key for each video content program."). By requiring the IC card to have an ability to decrypt the video data that no other card posses, TiVo's construction would exclude multiple embodiments described in the patent and is therefore too narrow.

To be sure, the claims require the IC card to have unique decryption capabilities, but those unique capabilities are for decrypting the cryptographic program key, not for decrypting the video data. In other words, for a given program, the same program key may be provided to multiple IC cards, but each individual IC card receives the program key in an encrypted form that only that IC can decrypt. The "decryption capabilities" are therefore unique to the IC card because the IC card receives decryption capabilities sent specifically to that particular IC card in order to decrypt the video programs that the viewer is authorized to watch. In harmony with the plain meaning of the

claim language, that process is also detailed in the patent. *See, e.g.,* '314, 8:39-46 ("The policy and program key are encrypted using the public exchange key of the IC card to form package 56 . . . . The package 56 is transferred to the IC card 50 directly, or over a network. The IC card decrypts the policy and program key using its own private exchange key . . . .").

Read in context with the surrounding claim language, the phrase "decryption capabilities that are unique to the integrated circuit card" needs no construction. A construction with the correct scope would likely end up restating the phrase in slightly different words without aiding the jury's understanding of the claims. Nevertheless, in the event that the Court concludes a construction is needed, the jury should be instructed that the IC card need only have unique information for obtaining the program key.

V. THE '748 PATENT—THE "PROGRAM GUIDE" PATENT

The '748 patent (attached as Exhibit E) is directed to an "Interactive Program Identification System" for "inform[ing] a user of an interactive viewing system of the identity of a program being viewed." '748 Abstract. Each viewer station can query the head end to learn the identity of a program being viewed, which is then displayed to the user. *Id.* Additional program-specific information can also be obtained and displayed. *Id.* "Preferably, the identification panel is displayed on the video display in a manner that does not unduly obstruct the program being viewed." '748, 1:66-2:1. In one instance, the electronic program guide data server stores program schedule information, which may include a program schedule database that identifies what program is available on a given channel at a given time. '748, 3:5-9.

A. "A Head End" is "One or More Devices that Interact with Multiple Viewer Stations Over a Network."

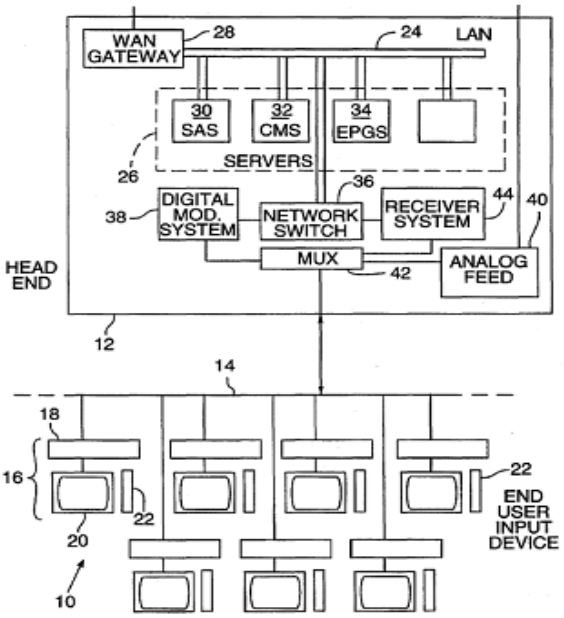
Claim Language	Microsoft Construction	TiVo Construction
a head end (Claims 1, 6) JCCPS item C1	plain meaning, or alternatively, "one or more devices that interact with multiple viewer stations over a network"	A central station that transmits a plurality of different programs on a plurality of different channels to multiple viewer stations. Each viewer station is capable of receiving the plurality of different programs on the plurality of different channels.

The dispute for this limitation arises from TiVo's unduly narrow proposal for defining the equipment that may qualify as part of the recited "head end." While Microsoft proposes a definition broad enough to cover all the equipment that the intrinsic record indicates a head end should include, TiVo's proposed construction elides the part of the head end that is most relevant to the claimed method—the head end's storage and provision of electronic program guide information (i.e., the information about programs).

The asserted claims of the '748 patent do not use the phrase "head end" in isolation. Claim 1 provides that the head end is part of an "interactive viewing system" and that the head end must be "in two-way communication with multiple viewer stations." Although the individual viewer stations may be stacked together at a single location, nothing in the claim language suggests or requires that the head end be confined to a "central station" as TiVo's construction proposes. The '748 patent never uses the term "station" to refer to the head end. It uses "station" solely and repeatedly to describe a "viewer station"—the set-top box and TV stacked on top of each other in a subscriber's home. *E.g.*, '748, 4:7-12 ("A simplified block diagram of an exemplary viewer station 16 is illustrated in FIG. 2. The illustrated viewer station includes an interactive station controller 18 which is sometimes referred to as a set top box, at least one video display 20 such as a television, and an input device 22 such as an infrared remote control.").

In contrast to an individual viewer station, Figure 1 of the '748 patent shows the "head end" as a network of distributed servers. Each of the servers, which collectively make up the head end, performs a different function. And each is in two-way communication with many subscriber viewer stations over a network. Server 30, labeled "SAS," provides services and applications (such as billing, data access or network security). '748, 2:62-66. Server 32, labeled "CMS," stores and provides access to video programming. '748, 2:67 to 3:5. Server 34, labeled "EPGS," stores and provides access to electronic program guide data (such as the program information about programs that claim 1 recites):

FIG. 1



> As shown in FIG. 1, the head end 12 of the illustrated interactive viewing system includes a digital local area network (LAN) 24 that includes multiple computer servers 26 for performing various interactive system applications or functions and a digital communication gateway 28 to a wide area network (WAN) (not shown). The servers 26, which store and process information at the head end, may include, for example, service and application servers 30, continuous media servers 32, and electronic program guide data servers 34.

'748, 2:52-61; *see also* '748, 3:5-20 (detailing how and why "electronic program guide data server 34 stores and provides program schedule information").

TiVo's proposed construction selectively lists one function that a head end performs ("transmission of programs on channels") but omits other functions that the claimed method steps require a head end to perform. '748, 8:47-59 (claim 1). In the first listed step, the head end stores information about programs (i.e., information needed for an electronic program guide). *Id.* For the third listed step, there must be a way to access the program guide information that the head end stores. *Id.* The fourth listed step requires that a viewer station display the program guide information. *Id.* Notwithstanding the many disparate functions that a head end performs, TiVo's

construction seeks to define head end solely with reference to a function listed in the preamble (providing programs on various channels) while excluding the other head end functions in the steps of the claimed method (storing and furnishing electronic program guide data about the programs). Such a construction would mislead the jury about what a head end may or ought to include. *See Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1305 (Fed. Cir. 2007) (rejecting proposed claim interpretation that would exclude disclosed examples in the specification).

In addition, the second sentence of TiVo's proposed construction of "head end" is not directed to a head end at all. It reads, "Each viewer station is capable of receiving the plurality of different programs on the plurality of different channels." Because that sentence is directed to the capability of a **viewer station** (and not a head end) to receive programs it does not belong in the definition of "head end."

Microsoft's construction provides a better approach. Rather than picking and choosing among functions, it accurately states what a head end is: "one or more devices that interact with multiple viewer stations over a network," in harmony with the way in which the '748 patent defines and uses the term. '748 Abstract; *see also* 2:46-51, 2:7-12, and 3:66-4:1. There is no need to complicate and burden the definition of "head end" with particular functions that a head end may perform because the language of the claim plainly sets out the functions needed to practice the method. TiVo's proposal to cherry-pick one function and omit others would improperly invite the jury to ignore or deemphasize parts of the claim. Such an approach should be avoided. *See On Demand Machine Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1344 (Fed. Cir. 2006) ("Care must be taken lest word-by-word definition, removed from the context of the invention, leads to an overall result that departs significantly from the patented invention."); *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.")

VI. THE '444 PATENT—THE "CALL WAITING" PATENT

The '444 patent (attached as Exhibit F)—the "Call Waiting" patent—is directed to a method for handling incoming telephone calls in a system where two components, such as a computer and a server located remotely, are already communicating using the telephone line. This could occur, for instance, when an individual is using a telephone line to connect his home computer or interactive television set-top box to the Internet and then receives a call waiting signal over the telephone line to indicate an incoming telephone call. *See, e.g.*, '444, 5:35-53. In the accused TiVo system, this situation arises when a TiVo owner is using her telephone line to connect the TiVo DVR with the TiVo service (for example, to download updated program information) and then receives a call waiting signal.

As the '444 patent describes, absent a procedure to handle this situation, a "Call Waiting signal can severely disrupt data communications if it is received while a computer is using the line." '444, 1:60-62. In addition, "although some communications software provides the ability to disable the Call Waiting signal, doing so has the disadvantage that the computer's user generally has no way of knowing when someone is trying to reach him by telephone." '444, 1:63-67; 5:35-53.

The invention described in the '444 patent is intended to address these problems. According to the invention, when a user is using the telephone line to connect to the Internet and a call waiting signal is received, the computer disconnects from the Internet in order to allow the individual to receive the incoming telephone call, and then re-initiates the connection to the Internet once the telephone call has ended and the telephone line is again free for use. *See, e.g.*, '444, 2:52-55 and 5:35-6:28 (describing a preferred embodiment).

A. "Monitoring The Telephone Line."

Claim Language	Microsoft Construction	TiVo Construction
monitoring the telephone line to determine when there is no incoming ring signal on the telephone line (Claim 1) JCCPS item E2	checking the telephone line for an absence of a ring signal	Periodically sensing the telephone line for a ring signal.

monitoring the telephone line to determine… when all of one or more extensions associated with the telephone line are on-hook (Claim 1) JCCPS item E3	checking the telephone line to determine when all the extensions are inactive	Periodically sensing the telephone line to determine whether any extensions of the telephone line are active.

1. The Term "Monitoring" Means "Checking," Not "Periodically Sensing."

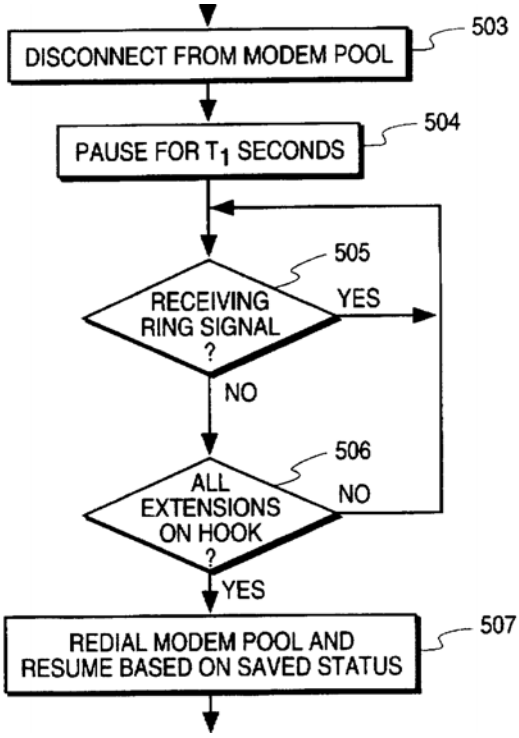
The term "monitoring the telephone line" appears twice in Claim 1 of the '444 Patent. Microsoft's proposed construction of this term to mean "checking the telephone line" is entirely consistent with the use of the term in the context of Claim 1 and the ordinary understanding of the word "monitoring." The definition of "monitoring" in *Webster's Third New International Dictionary* (1993) (Exhibit G) is instructive: "to watch, observe, *or check* esp. for a special purpose." (emphasis added.) Since the specification of the '444 patent does not expressly ascribe any other meaning to the word "monitoring," this ordinary meaning should control. See *York Products, Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.")

In contrast, TiVo's proposed construction of the term "monitoring the telephone line" to mean "periodically sensing the telephone line" improperly imports limitations not present either in Claim 1 or in the specification of the '444 patent. As an initial matter, TiVo introduces the concept of "periodically" monitoring the telephone line. But Claim 1 contains no such limitation. Claim 1 simply requires "monitoring the telephone line," whether "periodically" or not.[2] The specification of the '444 patent likewise does not provide any basis for the limitation added by TiVo in its proposed construction.

In the preferred embodiment described in the specification, after the connection between a user's computing device (called the "client" in the specification) and the Internet is disconnected in response to receiving a Call Waiting signal, the "client 1 then waits for a predetermined time

[2] The term "periodically" is itself ambiguous, as it could be understood to cover monitoring at regular intervals, irregular intervals or continuously. Adopting TiVo's construction would only serve to confuse the jury as to the proper understanding of the term "monitoring."

interval T_1 (ten seconds, for example) (step 504). At the expiration of the time interval T_1, the client 1 determines whether an incoming call is still being received by attempting to detect a ring signal on the telephone line 29 (step 505)." '444, 6:4-9. Figure 5 depicts the operation of the preferred embodiment in flow chart form. If there is no incoming ring signal, the client proceeds to determine "whether all telephone extensions are on the hook (i.e., inactive, or closed) (step 506)." If there is no ring signal and all extensions are on-hook, "then the client 1 automatically redials the modem pool 2 and resumes the previous browsing state based the status information saved earlier (step 507)." '444, 6:13-15. "If, however, either a ring signal is detected or an extension is off the hook (active) (e.g., if another member of the household had picked up an extension phone and had begun to dial), then the client 1 waits until that is not the case before re-establishing the connection to the modem pool 2." '444, 6:20-25. There is nothing in the specification to suggest that the continuing determinations (steps 505 and 506) must be conducted at the same interval of time as the first check (504), or any set interval of time at all. The system could repeat the check at any time chosen by the designer of the system, at regular or irregular intervals, or continuously. There is therefore no basis for TiVo's attempt to import a limitation into Claim 1 that the client "periodically" monitors the telephone line.



In addition, TiVo's proposed construction equates "monitoring" to "sensing." As the specification of the '444 patent makes plain, however, "sensing," is only one way of "monitoring." Although the description of the *preferred embodiment* in the specification explains that the determination of whether there is an incoming ring signal "is made by sensing the impedance on the telephone line," Claim 1 cannot be so limited. It is improper to "read[] a limitation from the preferred embodiment into the language of the claim." *Demag*, 264 F.3d at

1123 (quoting *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.")); *Kara*, 582 F.3d at 1348 ("The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims.").

This rule of claim construction carries particular force where, as in this case, "another claim restricts the invention in exactly the manner suggested by [a] narrow claim construction." *Id.* Claims 11 and 12 of the '444 patent illustrate the error in TiVo's proposed construction. Just as in Claim 1, Claim 11 recites a method for, among other things, "*monitoring the telephone line* to determine when there is no incoming ring signal on the telephone line and when all of one or more extensions associated with the telephone line are on-hook." (emphasis added). Claim 12, the following dependent claim, recites: "A method according to claim 11, wherein the step of monitoring the telephone line comprises the steps of: *sensing an impedance on the telephone line*; and determining whether the sensed impedance indicates that all of the one or more extensions are on-hook." (emphasis added). Thus, TiVo's proposed claim construction cannot be supported. If "monitoring" means "sensing" as TiVo suggests, then Claim 12 would be rendered superfluous. *See Beachcombers v. WildeWood Creative Prods., Inc.*, 31 F.3d 1154, 1162 (Fed. Cir. 1994) (a claim construction rendering a dependent claim superfluous is presumptively unreasonable); *see also United States v. Telectronics, Inc.*, 857 F.2d 778, 783-84 (Fed. Cir. 1988) ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.").

Accordingly, the Court should construe the term "monitoring" to mean "checking," rather than "periodically sensing."

2. TiVo's Proposed Constructions of "No Incoming Ring Signal" and "On-Hook" Are Inconsistent With Their Ordinary Meaning.

The remaining parts of TiVo's proposed constructions for Claim 1 of the '444 patent are flatly contradictory to the claim language and should also be rejected.

First, Claim 1 expressly provides that the method requires "monitoring the telephone line to determine ***when there is no incoming ring signal*** on the telephone line." (emphasis added). TiVo's proposed construction of this term to require monitoring of the telephone line "***for a ring signal***," is exactly the *opposite* of what the claim recites, as the claim requires monitoring to determine when there is *no* ring signal. Microsoft's proposed construction of this term to mean monitoring the telephone for "***an absence of a ring signal***" is consistent with language used in the claim and should be adopted.

Second, Claim 1 expressly provides that the method requires "monitoring the telephone line to determine… when all of one or more extensions associated with the telephone line ***are on-hook***." It would be well-understood to one of ordinary skill in the art that "on-hook" means that the telephone line is *inactive*, not *active*. The specification of the '444 patent indeed itself recites that "on the hook" means "inactive, or closed," whereas "off the hook" means "active." Col. 6, lines 14-15, 20-21. Consistent with this understanding, *Newton's Telecom Dictionary* (Exhibit H), which the Federal Circuit has relied upon in construing claims in this field (*see, e.g.*, *Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1092 (Fed. Cir. 2009), *Microsoft Corp. v. Multi-Tech Systems, Inc.* 357 F.3d 1340, 1344 (Fed. Cir. 2004), *nCube Corp. v. Seachange Intern., Inc.*, 436 F.3d 1317, 1327 (Fed. Cir. 2006)) defines "on-hook" as follows: "When the phone handset is resting in its cradle. The phone is not connected to any particular line… *On-Hook is thus the normal,* ***inactive*** *condition* of a telephone system terminal device." *Id.* at 805 (9th ed. 1995) (emphasis added).

TiVo's construction of the term "monitoring the telephone line to determine… when all of one or more extensions associated with the telephone line ***are on-hook***" and to require monitoring of the telephone line "to determine whether any extensions of the telephone line are ***active***" is therefore also the exact *opposite* of what the claim recites. Microsoft's proposed construction of

the term to mean monitoring the telephone "to determine when all the extensions are ***inactive***" is consistent with both language used in the claim itself and the specification's definition of "monitoring the telephone line."

VII. THE '281 PATENT—THE "STATE TABLE" PATENT

The '281 patent (Exhibit I) is generally directed to a computing network that is composed of a "controlled computing device" and then one or more "controller devices." As described in the patent, a controlled computing device could include "image, video and audio capture" devices such as cameras and recorders or "recording, play-back and presentation devices" such as televisions, printers and data storage devices. '281, 1:57-60. The invention allows for a user to remotely control these controlled computing devices through the use of one or more controller devices, such as a "universal remote controller, handheld computer or digital assistant, cell phones, and the like." '281, 1:43-44.

A key feature of the invention described in the '281 patent is the way in which the controlled computing device and the controller device communicate and interact through the use of a "state table." A "state table"—which is somewhat analogous to the dashboard in an automobile—is a collection of information regarding the current status of the various functions of the controlled device. For example, if the controlled device is a VCR, the "state table" of the VCR might indicate whether the VCR is on or off, whether it is recording data or not recording data, or whether it is playing audio or video data.

According to the invention, a controller device can be used remotely to receive this state table from the controlled computing device, subscribe to notifications of changes to the state table that were caused to occur directly at the controlled computing device (for instance by a user pressing a button on the VCR) or by any remote controller device, and to effect control over the controlled computing device. '281, 1:66-2:16. In the accused TiVo system, a TiVo user can use a personal computer or a tablet computer to control and manage her TiVo DVR remotely, including transferring data to and from the DVR, managing the stored video programs on the DVR and scheduling recordings of video programs.

A. "A State Table. . . Representing An Operational State Of A Controlled Computing Device" Should Not Be Limited To A Preferred Embodiment.

Claim Language	Microsoft Construction	TiVo Construction
a state table…representing an operational state of a controlled computing device (Claim 1) JCCPS item F1	a table representing the current state of the controllable services in the controlled computing device	A table, stored in any manner, containing values representative of the status of a device that conforms to UPnP (Universal Plug and Play).

Microsoft's proposed construction of the term "a state table . . . representing an operational state of a controlled computing device" to mean "a table representing the current state of the controllable services in the controlled computing device" is supported by the use of the term in Clam 1 and the explicit definitions of the term "state table" set forth in the specification of the '281 patent.

Claim 1 of the '281 patent discloses a "controlled computing device" and "a state table maintained by the controlled computing device." A "device," as that term is used in the specification, is "a container for Services." '281, 7:44-45. A "Service" is defined to mean a "controllable entity" within a device. '281, 8:33-34; *see also* 13:57-58. The specification provides a specific example of the relationship between a "device" and a "service," using a VCR as a reference:

> Generally a Device represents a physical entity such as a VCR. Typical Services in the VCR Device example might be "TRANSPORT", "TUNER", "TIMER" and "CLOCK".

The specification of the '281 patent defines a "state table" using these terms and recites that the "Service State Table (SST)" is a "logical table … that represents the current electrical, mechanical and/or logical state of a Service." '281, 8:53-56; *see also* 13:58-60. Thus, the "state table" of a VCR "could represent the current transport mode, tuner channel selection, input and output switch selections, audio and video decoding format and current timer program." '281, 13:61-66. Microsoft's construction of the term "a state table . . . representing an operational state of a controlled computing device" is entirely consistent with the use of those terms in the specification.

TiVo's proposed construction, on the other hand, improperly limits the term to a preferred embodiment by requiring that the controlled computing device "conform[] to UPnP (Universal Plug and Play)."[3] As the Federal Circuit has noted: "[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." *Kara*, 582 F.3d at 1345; *see also Nazomi Communications, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims can cover "different subject matter than is illustrated in the specific embodiments in the specification"). In particular, Federal Circuit "precedent has emphasized that the disclosure in the written description of a single embodiment does not limit the claimed invention to the features described in the disclosed embodiment." *Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n*, 383 F.3d 1352, 1366 (Fed. Cir. 2004) (*citing Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)). "Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" *Id.*

Here, there is absolutely no suggestion—either explicit or implicit—that the invention disclosed in the '281 patent is limited to this one embodiment described in the patent. Claim 1 does not refer to UPnP at all. Moreover, the specification of the '281 patent expressly states that the "following detailed description is directed toward a device state representation and device state eventing *in a distributed device control model*" and that "[***i***]***n one described implementation***, this device state and eventing is used in a device architecture 100 (FIG. 1), connectivity model, and device control protocol proposed by Microsoft Corporation, called Universal Plug and Play ("UPnP")." '281, 4:5-12 (emphasis added). Given that there are no "words or expressions of manifest exclusion or restriction" in the '281 patent, TiVo's proposed construction is inappropriate and should be rejected.

[3] The remainder of TiVo's construction--"A table, stored in any manner, containing values representative of the status of a device"—is otherwise not appreciably different from Microsoft's proposed construction.

B. The Term "Operating According To An Eventing Model To Distribute The Change Notifications" Is Not Indefinite.

Claim Language	Microsoft Construction	TiVo Construction
operating according to an eventing model to distribute the change notifications (Claim 1) JCCPS item F4	operating automatically to notify subscribers of changes to the state table	Indefinite; otherwise, operating according to a model that involves the controlled computing device automatically sending messages notifying the user controller device of changes to the state table as such changes occur.

The term "operating according to an eventing model to distribute the change notifications" is not indefinite as TiVo asserts. "Only claims 'not amenable to construction' or 'insolubly ambiguous' are indefinite." *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010) (quoting *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008)). Here, the term has a well-defined meaning in the context of the relevant claim and the detailed description of the "eventing model" in the specification of the '281 patent.

As discussed above, the specification of the patent describes the two principal types of devices disclosed in the patent: "controlled devices" that "maintain a state table representative of their operational state" and "controller devices"—also called "user control point devices"—that "obtain the state table of the controlled device." '281, 1:66-2:4. These "user control point devices" also "subscribe to notifications of state table changes, which are distributed from the controlled device *according to an eventing model*." '281, 2:8-10 (emphasis added). The specification describes in great detail what is meant by the term "eventing model":

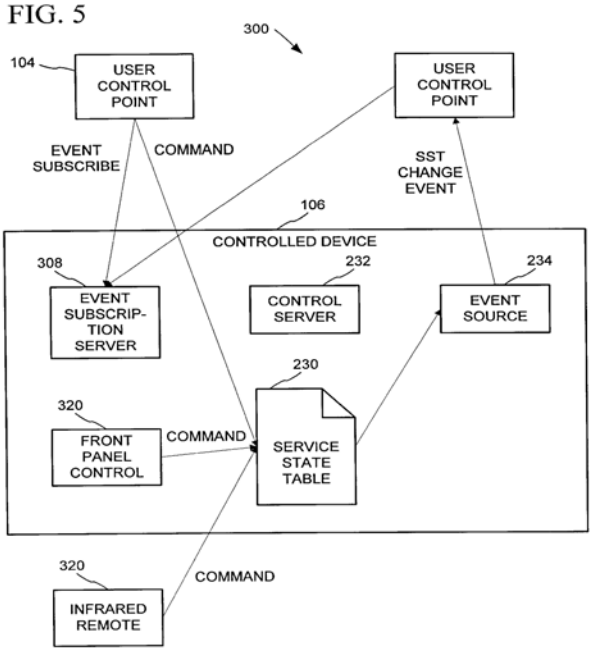
> Accordingly, upon any change to the controlled device's operational state caused by user inputs from any user control point device or even the controlled device's front panel or infrared remote, the device's state as represented in the state table is synchronized across all these user control point devices using the eventing model.
>
> The device state table and eventing model enable dynamic and automatic synchronization of the device state among all interested controllers that subscribe to notifications of the controlled device's state upon a change in the controlled device's state….

'281, 2:10-21.

In other words, in the "eventing model," a controller device that has subscribed to a state table is automatically notified of changes to the state table.

This is not the only description of the "eventing model" in the specification. Discussing Figure 5, the specification expressly states that "[i]n accordance with a device state and *eventing model* … every change to an SST [Service State Table] generate[s] a corresponding event to announce the change to the all interested User Control Points." '281, 17:2-5 (emphasis added). Figure 5 graphically depicts the interaction between user control points and a controlled device "using … *eventing*." '281, 2:62-63 (emphasis added). As depicted in Figure 5, according to the eventing model, as changes are made to the state table (230) of the controlled device (106) based on commands from an infrared remote (320) or a user control point (104), any user control point that has subscribed to the state table receives notice of a "SST Change Event."

FIG. 5



In case of any ambiguity, the specification further recites precisely what it means by the term "eventing": "Eventing … is the ability for a device to initiate a connection at any time to one or more devices that have expressed a desire to receive events from the source device. Events are used to enable synchronization among multiple devices organized into a many to one relationship." '281, 12:34-38. Indeed, with reference to Figures 22 and 23,[4] the specification contains an exhaustive description of the "eventing architecture" in the preferred embodiment. *See*, '281, 28:25-33:39.

[4] Figure 22 of the'281 patent depicts "a block diagram of an eventing model" and Figure 23 depicts "a data flow diagram illustrating subscription, notification and unsubscription in the eventing model of Fig. 22."

Consistent with its usage elsewhere in the specification, the Abstract of the'281 patent also explains what the "eventing model" is: "These user control devices also subscribe to notifications of state table changes, which are distributed from the controlled device according to an eventing model. Accordingly, upon any change to the controlled device's operational state, *the eventing model synchronizes the device's state as represented in the state table across all user control devices*." (emphasis added.)

Microsoft's proposed construction of the term "operating according to an eventing model to distribute the change notifications" to mean "operating automatically to notify subscribers of changes to the state table" is therefore entirely consistent with its use in Claim 1 and the specification of the'281 patent. In view of the detailed and extensive discussion of "eventing" and the "eventing model" in the patent specification (including in the Abstract, the Background and Summary and the Detailed Description), there is absolutely no basis for the Court to find that the term is indefinite. As the Federal Circuit has cautioned, "because claim construction frequently poses difficult questions over which reasonable minds may disagree, proof of indefiniteness must meet 'an exacting standard.'" *Haemonetics*, 607 F.3d at 783. "A claim is not indefinite merely because parties disagree concerning its construction. An accused infringer must thus demonstrate by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based on the claim language, the specification, the prosecution history, and the knowledge in the relevant art." *Id.* TiVo cannot make such a showing.

VIII. CONCLUSION

For the foregoing reasons, the Court should adopt Microsoft's proposed constructions for each of the 10 terms at issue.

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Respectfully submitted,

PERKINS COIE LLP

By: /s/ Chad S. Campbell
Chad S. Campbell
Lauren Sliger
Christopher Kao
Attorneys for Plaintiff Microsoft Corporation

CERTIFICATE OF SERVICE

I hereby certify that on February 17, 2011, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the email addresses on file with the Clerk of the Court.

/s/ Lauren Sliger
Lauren Sliger