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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA (SAN FRANCISCO)

APPLE COMPUTER, INC., Plaintiff/Counterdefendant, v. BURST.COM, INC., Defendant/Counterclaimant.	§	Case No. 3:06-CV-00019 MHP **DEFENDANT BURST.COM, INC.'S OPENING BRIEF ON CLAIM CONSTRUCTION**

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1. U.S. Patent No. 4,963,995 (the "'995 patent");
2. U.S. Patent No. 5,057,932 (the "'932 patent);
3. U.S. Patent No. 5,164,839 (the "'839 patent");
4. U.S. Patent No. 5,995,705 (the "'705 patent");
5. Claim Construction Expert Report of Dr. Sheila S. Hemami;
6. Excerpts from Expert Report of Joel Halpern re: Claim Construction of U.S. Patent Nos. 4,963,995, 5,057,932, 5,164,839, and 5,995,705;
7. Excerpts from the deposition transcript of Sheila Hemami dated November 14, 2006;
8. Excerpts from the deposition transcript of Joel Halpern dated November 13, 2006;
9. *Amendment "A,"* '995 Patent File History (March 12, 1990);
10. *Amendment "A,"* '932 Patent File History (May 7, 1990);
11. *Amendment "B,"* '932 Patent File History (January 4, 1991);
12. *Preliminary Amendment*, '705 Patent File History (August 7, 1997);
13. *Amendment and Response*, '705 Patent File History (June 1, 1998);
14. *The American Heritage Dictionary* (Second College Edition 1982);
15. Exhibit Number Not Used;
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22. Excerpts from Burst's Opening Claim Construction Brief in the Burst/Microsoft case;

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Defendant Burst.com, Inc. ("Burst") submits this brief in support of its proposed constructions of the disputed claim terms in U.S. Patents Nos. 4,963,995 (the "'995 Patent"), 5,164,839 (the "'839 Patent"), 5,057,932 (the "'932 Patent"), and 5,995,705 (the "'705 Patent") (collectively, the "Burst patents"). The Burst patents are attached as Exhibits 1-4, respectively.[1]

I. BACKGROUND

The Burst patents claim fundamental innovations for efficiently sharing, editing, and playing digital audio and video works by employing the technology of computers, compression, and high-speed transmission. Playing back digital audio and video works for listening and viewing requires time. Indeed, the need for and duration of playback time is an intrinsic characteristic of digital audio and video works that fundamentally distinguishes them from other sorts of digital information such as text files, still images, and spreadsheets. Burst's inventions effectively decouple the time required to transmit and receive digital audio and video works from the time required to play them back. That innovation is at the heart of Burst's patents.

At the time of the application for the first Burst patent in 1988, audio and video were transmitted primarily through broadcasting in "real time." Radio and television stations continuously transmitted programming, and listeners or viewers could tune in to the programming as it was being received. The time required for transmission of a particular program or work was no different than the time required to view or listen to it. In the broadcast paradigm, the audio and video works were transmitted and received at a steady, real-time rate to ensure correct and realistic playback, and continuously occupied a fixed portion of the limited bandwidth of the transmission channel. In order to transmit more channels of audio or video in

[1] All exhibits have been concurrently submitted as attachments to the "Declaration of Leslie V. Payne in Support of Defendant Burst.com, Inc.'s Opening Brief on Claim Construction." To authenticate the Claim

real time over the limited available bandwidth, the telecommunications industry eventually began converting audio and video into digital bits of information and compressing them with specialized data compression techniques that preserved the temporal aspects of the audio/video source material. Yet even using these compression techniques, the time required for transmission was not different than the time required for "playback."

Against this background, the inventor of the Burst patents, Richard Lang, recognized that converging compression, transmission, and computer technologies could enable a new model for digital media delivery and a new kind of digital media device. Lang realized that compression of audio and video could be used not only to allow more channels to be broadcast in real time over a given amount of bandwidth, but also to reduce the transmission time of audio and video works. Lang saw that even though audio and video works have an associated playback time, the delivery of an audio or video work could be accomplished faster than the real-time period required for playback. Lang also recognized that the compressed audio or video work could be sent directly to consumers, and could be saved digitally in computer memory. Once saved, the audio or video could be played back, edited, or transmitted to another device.

Building on his invention, Lang set out to shift the existing broadcast paradigm of delivering audio and video at a rate matching the playback speed. Lang's invention would eliminate the strict transmission time constraints found in the previous systems by transmitting audio and video faster than real time. Lang founded Burst's earliest predecessor in 1988 to develop and commercialize his ideas, and he filed the application for what became the '995 Patent in December 1988. In 1989 he secured an initial investment of $2 million from the rock band U2. The band wanted to invest in technology that would benefit fans of its music, and it

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Construction Report of Burst's expert, Burst also submits the "Declaration of Dr. Sheila S. Hemami in Support of

recognized that Lang's inventions could revolutionize the music industry by providing audio (and video) works to consumers outside of traditional delivery mechanisms. In January of 1991, Lang exhibited a pair of prototypes of his invention at the Consumer Electronics Show. Today, the key elements of Lang's invention are replicated, among other places, in miniature digital media players that can weigh as little as half an ounce and cost less than one hundred dollars.[2]

Burst licensed its patents and developed software to implement its technology on industry standard personal computers and servers. In 1996, Burst delivered the first experimental version of its video-streaming software called Burstware. It released the first commercial version of Burstware to the public in early 1999. By 2002, however, misappropriation of Burst's technology by larger competitors had devastated the company. Ultimately, Burst sued Microsoft for patent infringement and antitrust violations. That suit was settled in 2005 when Microsoft agreed to pay $60 million for a license under the Burst patents.

II. CLAIM CONSTRUCTION PRINCIPLES

Claim construction is governed by the Federal Circuit's recent *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). There, it embraced the *Vitronics* hierarchical approach of focusing first on the claims, then on the patent specification, next on the file history, and finally on "extrinsic" evidence if appropriate. *Phillips*, 415 F.3d at 1312-18 (repeatedly citing with approval *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996)). *Phillips* criticized the claim construction technique popularized in *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), in which courts consulted dictionaries before reviewing the patent specification to determine the meaning of a disputed

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Defendant Burst.com, Inc.'s Opening Brief on Claim Construction."

claim term. *Phillips*, 415 F.3d at 1320-21. As stated by the *en banc* panel, "[t]hat approach, in our view, improperly restricts the role of the specification in claim construction," *id.* at 1320, and "focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent," *id.* at 1321.

Phillips is critical to claim construction in this case because the parties have taken vastly different approaches in their adherence to the patent specification. Significantly, *Phillips* reinforced the importance of the specification in claim construction, stating that "[t]he specification is . . . the primary basis for construing the claims." 415 F.3d at 1315. *See also Vitronics*, 90 F.3d at 1582 ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term."). Consistent with that mandate, Burst's constructions are carefully grounded in the patent specifications. Apple in many instances completely ignores the specifications. In fact, Apple's own expert openly admits that the patent specification contains little, and in some cases no, support for Apple's claim construction positions.

Apple's approach not only violates *Phillips*, but also fails to account for another critical principle of claim construction: a construction that excludes the preferred embodiment is "rarely, if ever, correct." *Vitronics Corp. v. Conceptronics, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996); *see also Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1308 (Fed. Cir. 2003).

While the prosecution history is also relevant to claim construction, it must be considered with great care. As the *Phillips* court cautioned, "because the prosecution history represents an

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[2] Apple's iPod shuffle, for example, has one gigabyte of memory, "weighs in at about half an ounce," and currently sells for $79.00. *See* http://store.apple.com/1-800-MY-APPLE/WebObjects/AppleStore?family=iPodshuffle.

ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Phillips*, 415 F.3d at 1317. This cautionary note has special application in this case because the last Burst patent, the '705 Patent, experienced a lengthy prosecution history involving significant back-and-forth correspondence with the PTO.

One last legal principle that deserves highlighting at the outset is the rule that terms used in multiple claims should be construed consistently, *see Inverness Medical v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1371 (Fed. Cir. 2002), as should terms used in related patents, *see Omega Engineering Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003).

III. PRIOR CONSTRUCTION OF THE BURST PATENTS

In the Microsoft case, Judge Motz of the Eastern District of Maryland entered a pair of interlocutory letter orders construing the Burst patents. Neither of these letter orders is controlling here because collateral estoppel does not apply. Collateral estoppel applies only if "(1) the issue necessarily decided at the previous proceeding is identical to the one which is sought to be relitigated; (2) the first proceeding ended with a final judgment on the merits; and (3) the party against whom collateral estoppel is asserted was a party or in privity with a party at the first proceeding." *Hydranautics v. FilmTec Corp.*, 204 F.3d 880, 885 (9th Cir. 2000). The Motz opinions do not meet either of the first two requirements for application of collateral estoppel.

Identity of issues for purposes of collateral estoppel requires "application of the same rule of law as that involved in the prior proceeding." *Resolution Trust Corp. v. Keating*, 186 F.3d 1110, 1116 (9th Cir. 1999). The Federal Circuit's intervening *en banc* decision in the landmark *Phillips* case negates any identity of claim construction issues between this and the Microsoft

lawsuit. As explained above, *Phillips* resolved a conflict in claim construction law against a line of cases that placed undue emphasis on dictionary definitions following the *Texas Digital* decision. In *Phillips*, the Federal Circuit affirmed the primacy of intrinsic evidence consisting of the patent claims, specification, and, to a lesser extent, prosecution history. *See* 415 F.3d at 1320-24. Microsoft and Burst both relied on *Texas Digital* throughout their claim construction briefing to Judge Motz. *See* Microsoft Resp. Cl. Const. Br. at 7, 10, 11, 14, 16, 30 (Exhibit 21); Burst Op. Cl. Const. Br. at 19 (Exhibit 22). The informal opinions of Judge Motz do not reject *Texas Digital*, nor do they identify the line of claim construction authority upon which they rely. Given the intervening decision in *Phillips*, there is no identity of issues between the Microsoft case and the case before this Court.

The Motz opinions also cannot satisfy the final judgment prong of the collateral estoppel test. The Federal Circuit has held in similar circumstances that a claim construction order does not constitute a "final judgment on the merits" for purposes of applying collateral estoppel. In *RF Delaware, Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1260-62 (Fed. Cir. 2003), the court held that a partial summary judgment order entered after claim construction in a suit that later settled before trial was not sufficiently final to establish collateral estoppel on claim construction issues in a later suit.[3] The court did not find that the claim construction opinion itself was sufficiently final to establish collateral estoppel. As the Federal Circuit has stated in other circumstances, "[e]xcept in the context of validity or infringement, judicial statements regarding the scope of patent claims are hypothetical . . . ." *A.B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 704 (Fed. Cir. 1983). The Microsoft case settled without any adjudication on the

[3] The Federal Circuit applied the Eleventh Circuit's collateral estoppel standard, which is substantially the same as the Ninth's. *See In re McWhorter*, 887 F.2d 1564, 1566 (11th Cir.1989)

merits, and Judge Motz's claim construction opinions were never embodied in a final judgment of any kind affecting validity or infringement that could support collateral estoppel in this case.

Moreover, the letter opinions themselves indicate that they were preliminary in nature and not final even in that case. *See, e.g.*, *Burst.com v. Microsoft Corp.*, No. JFM-02-2952 (D. Md. March 12, 2004) (letter construing claim terms), at 3 ("When and if it is necessary for me to construe the term in order to decide summary judgment motions … I will request further argument…") (Exhibit 23); *Burst.com v. Microsoft Corp.*, No. JFM-02-2952 (D. Md. June 22, 2004) (letter clarifying certain claim terms), at 1 ("In making this change, I am not finally deciding …") (Exhibit 24). Thus, it is fair to say that the Motz opinions were not viewed as final, even in the *Burst.com v. Microsoft* lawsuit.

IV. DISPUTED "MEANS" TERMS

The parties disagree whether a number of claim terms are "means-plus-function" terms subject to 35 U.S.C. § 112, ¶ 6 ("Paragraph 6"). Burst contends that Paragraph 6 does not apply to these terms because the terms themselves recite sufficient structure. Section A provides an overview of law governing the threshold issue of the application of Paragraph 6. Section B establishes that Paragraph 6 does not apply to specific terms.[4]

A. 35 U.S.C. § 112, ¶ 6 & Related Law

Although patent claims often recite the invention's elements as physical structures (*e.g.*, an "oar" or "brake"), the Patent Act authorizes an applicant to describe an element of the invention in terms of its function (*e.g.*, a "means for rowing" or "means for stopping"). *Warner Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 27 (1997). Under the statute, a

[4] The parties also disagree about the applicability of Paragraph 6 to the term "recording … onto a removable recording medium." The discussion of that term in Section B below describes the law applicable to purported "step-plus-function" terms and establishes that Paragraph 6 does not apply to the term.

limitation expressed as "a means or step for performing a specified function without the recital of structure, material, or acts in support thereof" is construed to "cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 ¶ 6.[5] Because such "means-plus-function" limitations are construed differently from other limitations, determining whether Paragraph 6 has been invoked is a threshold claim construction issue.

Paragraph 6 applies "only to purely functional limitations that do not provide the structure that performs the recited function." *Phillips*, 415 F.3d at 1311 (emphasis added). Though use of the word "means" presumptively invokes Paragraph 6, evidence that a limitation "recites sufficient structure or material for performing [the stated] function" rebuts the presumption. *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1302 (Fed. Cir. 1999). Thus, "[w]here a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format," even if the claim uses the term "means." *Sage Prods. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427–28 (Fed. Cir. 1997) (internal quotations omitted).

The absence of the word "means" in a claim limitation creates the reverse presumption – namely, that Paragraph 6 does not apply. *Watts v. XL Sys.*, 232 F.3d 877, 880 (Fed. Cir. 2000). This presumption can be rebutted "by showing that the claim element recite[s] a function without reciting sufficient structure for performing that function." *Id*. Unlike the presumption stemming from use of the term "means," "the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004). As the Federal Circuit explained in *Lighting World*, given the

[5] Apple's purported identifications of corresponding structures uniformly omit the language "plus equivalents" required by the statute. Should the Court adopt any of Apple's identifications of structures, its order should include this qualification.

strength of the presumption, "it is not surprising that we have seldom held that a limitation not using the term 'means' must be considered to be in means-plus-function form." *Id*. at 1362.

A common principle guides both presumptions about the presence or absence of the word "means": recitation of sufficient structure to perform any stated function precludes application of Paragraph 6. In *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 526–31 (Fed. Cir. 1996), for example, the Federal Circuit concluded that the limitation "perforation means . . . for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user" did not invoke Paragraph 6 because the "perforation" connoted adequate structure to perform the recited function. The court reached the same result regarding the term "baffle means" in *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1365 (Fed. Cir. 2000). In *Allen Engineering Corp. v. Bartell Industries, Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002), the Federal Circuit found that Paragraph 6 was not invoked by any of a host of terms that appended "means" to a number of readily identifiable mechanical parts. In each of these cases, the "perfunctory addition" of the term "means" did not subject the terms to Paragraph 6. *See Cole*, 102 F.3d at 531.[6]

Recitation of structure that precludes application of Paragraph 6 need not be specific to a single structure; it need only convey a family or group of structures to those of skill in the art:

> [T]he term "detector" is a sufficient recitation of structure. "Detector" is not a generic structural term such as "means," "element," or "device"; nor is it a coined

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[6] As *Cole* and *Allen* Engineering make explicit, the mere fact that an applicant is "enamored" of the term "means" and makes "perfunctory" use of it repeatedly does not justify a conclusion that Paragraph 6 was invoked. *Cole*, 102 F.3d at 531 ("The drafter of claim 1 in the '239 patent was clearly enamored of the word 'means'. . . . [T]he claim drafter's perfunctory addition of the word 'means' did nothing to diminish the precise structural character of this element. It definitely did not somehow magically transform this element into a § 112, ¶ 6, 'means-plus-function' element."); *Allen Eng'g*, 299 F.3d at 1348 (recognizing that "[a]s in Cole, the drafter of the '220 patent was clearly enamored of the word 'means,'" but refusing to apply Paragraph 6 to most of the "means" limitations) (internal quotation omitted); *see also Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583-84 (Fed. Cir. 1996) ("The drafter of the application that matured into the '501 patent appears to have been enamored of the word 'means,' as the word is used repeatedly in the summary of the invention. A close reading of the specification reveals, however, that the term is used in that portion of the patent simply as a shorthand way of referring to each of the key structural elements of the invention.").

> term lacking a clear meaning, such as "widget" or "ram-a-fram." Instead, as noted by the ALJ by reference to dictionary definitions, "detector" had a well-known meaning to those of skill in the electrical arts connotative of structure, including a rectifier or demodulator. . . . [N]either the fact that a "detector" is defined in terms of its function, nor the fact that the term "detector" does not connote a precise physical structure in the minds of those of skill in the art detracts from the definiteness of structure. Even though the term "detector" does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as "detectors." We therefore conclude that the term "detector" is a sufficiently definite structural term to preclude the application of § 112, ¶ 6.

Personalized Media Communications., L.L.C. v. Int'l Trade Comm'n, 161 F.3d 696, 704–05 (Fed. Cir. 1998) (emphasis added). Thus, recitation of a term that connotes structure but is generic to a family of structures is adequate to preclude application of Paragraph 6.

Dictionaries can be proper aids in determining whether a given term (*e.g.*, analog digital converter, monitor, input or output) "denotes a type of device with a generally understood meaning in the [relevant art]" so as to preclude application of Paragraph 6. *Greenberg*, 91 F.3d at 1583; *see also CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (dictionary definition established that term "member" connotes structure to an artisan of ordinary skill).

Once a court determines that a term invokes Paragraph 6, two further steps are required to construe it as a means-plus-function term. First, the Court must identify the claimed function. *See Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003). Second, the Court must determine what structure disclosed in the specification corresponds to the claimed function. *Id.* The claim limitation is then construed to mean the corresponding structure as well as statutory "equivalents." 35 U.S.C. § 112, ¶6.

When identifying the function, the Court must not "adopt[] a function different from that explicitly recited in the claim." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). Nor may the Court narrow or broaden the claimed function. *Lockheed*

Martin Corp. v. Space Sys/Loral, Inc., 324 F.3d 1308, 1319 (Fed. Cir. 2003). Finally, as with terms not subject to Paragraph 6, the Court may not "import[] the functions of a working device into the specific claims, rather than reading the claims for their meaning independent of any working embodiment." *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005).

The Court undertakes the next step of identifying the structure corresponding to the properly construed function from the perspective of a person of ordinary skill in the art. *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1379 (Fed. Cir. 1999). The corresponding structure identified must not only perform the claimed function, but also should be linked to the performance of the function in the patent specification. *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). The corresponding structure need not include all things necessary to enable the claimed invention to work but instead should be limited to the structure that actually performs the recited function. *Asyst Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1371 (Fed. Cir. 2001). To the extent that the patent discloses multiple embodiments that link different structures to the claimed function, the corresponding structure of the means-plus-function limitation encompasses all alternative structures disclosed in the patent. *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1369 (Fed. Cir. 2005); *Serrano v. Telular Corp.*, 111 F.3d 1578, 1583 (Fed. Cir. 1997).

Structure can be viewed at many levels of abstraction ranging from the very general (*e.g.*, an automobile) to the very specific (*e.g.*, a Toyota Camry V6 XLE). Accused infringers regularly seek to relegate patentees to very specific and narrow structures. However, the law is clear that "generic" structure can be perfectly adequate structure under Paragraph 6 provided it refers to a "class of structures [that are] identifiable by a person of ordinary skill in the art."

Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1321–22 (Fed. Cir. 2004); *see also Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1381-82 (Fed. Cir. 2001) (holding that a generic reference in the specification to "commercially available" "vacuum sensors" provided adequate structure because vacuum sensors were well known in the art at the time); *Serrano*, 111 F.3d at 1583 (general reference to a microprocessor programmed to perform a specific function was adequate to treat microprocessor as corresponding structure).

B. Terms

1. "analog to digital converter means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"analog to digital converter means" **'995:** 8 ***"analog to digital converter means for converting said analog audio/video source information to corresponding digital audio/video source information"*** **'995:** 8.	**"analog to digital converter means"** – Not subject to §112 ¶6, and no construction necessary. Alternatively, "a circuit that changes analog information into digital information" Although Burst does not believe "analog to digital converter means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure if the terms were interpreted as subject to § 112 ¶6. **"analog to digital converter means"** – Corresponding structure: an analog to digital converter, plus equivalents.	**"analog to digital converter means for converting said analog audio/video source information to corresponding digital audio/video source information"** - Limited to structures disclosed under §112 ¶6: Burr-Brown ADC 600.

Claim 8 of the '995 Patent recites an "analog to digital converter means." Claim 8 defines the pertinent function as "converting [] analog audio/video source information . . . to corresponding digital audio/video source information."

The term "analog to digital converter" recites sufficient structure for performing the function of converting analog information into digital information. At the time the '995 Patent was filed and prosecuted, analog to digital converters constituted a well known class of circuits that perform precisely the function recited in claim 8. For example, technical dictionaries

recognized that analog to digital converters were specific circuits used to convert analog information to digital information. *See* IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS (4th ed. 1988) (defining an "analog-to-digital converter" as "[a] circuit whose input is information in analog form and whose output is the same information in digital form") (Exhibit 16); MODERN DICTIONARY OF ELECTRONICS (6th ed. 1984) (defining an "analog-to-digital converter" as "[a] circuit that changes a continuously varying voltage or current (analog) into a digital output") (Exhibit 17). Similarly, Burst's expert Dr. Hemami has opined that "[t]he term 'analog to digital converter' connotes a physical device [and] would have been well known in 1988 to one of ordinary skill in the art." *See* Hemami Report at 57 (Exhibit 5).[7]

Because the term "analog to digital converter" refers to a "variety of structures" known to perform a specific function, it describes sufficient structure. *Personalized Media*, 161 F.3d at 704–05. Additional evidence that the words "analog to digital converter" represent sufficient structure can be found in claim 73 of the '995 Patent. That claim, which also requires an "analog to digital converter means," specifies that the "analog to digital converter" is coupled to the "random access storage means" via the "high speed bus means." This specification of a particular location for the analog to digital converter connotes structure. *See Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996) (refusing to apply Paragraph 6, in part because "[t]he claim describes not only the structure that supports the [stated] function, but also its location . . . and extent").

The prosecution history of the '995 Patent further demonstrates that the term "analog to digital converter" represents structure. In a March 12, 1990 Response, Burst characterized certain claims as requiring "an analog to digital converter for converting analog audio/video

[7] The expert report of Dr. Sheila Hemami provides support for each and every construction

source information to a corresponding digital format." *Amendment "A," '995 PH*, at 19 (March 12, 1990) (Exhibit 9). This characterization, which uses the term "analog to digital converter" as a noun, makes clear that the analog to digital converter is the specific structure performing the conversion function. Adding the term "means" in the claims was simply perfunctory.

Because the term "analog to digital converter means" provides sufficient structure to perform the recited function, it is not subject to Paragraph 6. Moreover, because the term "analog to digital converter" is sufficiently descriptive, no construction is necessary. To the extent the Court deems one necessary, the customary and ordinary meaning of the term—namely, a circuit that changes analog information into digital information – should apply.

If the Court determines that "analog to digital converter means" is subject to Paragraph 6, Burst would identify the corresponding structure as "an analog-to-digital converter, plus equivalents." Burst's position is supported by several passages in the patent specification. *See* '995 Patent, 4:19-20; 4:34-37; 4:54-62. In contrast, Apple's proposed identification of corresponding structure as a single model of chip – the "Burr-Brown ADC 600" – is overly restrictive, given that the specification identifies "commercially available analog to digital converter integrated circuits" in the plural form and mentions the Burr-Brown converter as just one of several different types. *See* '995 Patent, 4:56-62. Apple's position also contains the flaw common to every one of Apple's identifications of corresponding structure: the omission of the language "plus equivalents" that is required by Paragraph 6.

Burst will provide further explanation of its alternative construction under Paragraph 6, if necessary, in its reply brief.

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proposed by Burst and addressed in this brief.

2. "monitor means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"monitor means" **'995:** 3, 22, 24, 25, 27, 28. ***"monitor means for enabling the user to selectively identify the time compressed representation…"*** **'995:** 3. ***"monitor means…for enabling the user to selectively view…"*** **'995:** 24, 25, 27, 28.	**"monitor means"** – Not subject to §112 ¶6, and no construction necessary. Alternatively, "a display" Although Burst does not believe "monitor means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure if the terms were interpreted as subject to § 112 ¶6. **"monitor means"** – Corresponding structure: a flat panel video display, a television, or a computer monitor, plus equivalents.	**"monitor means for enabling the user to selectively identify the time compressed representation…"** - Limited to structures disclosed under §112 ¶6: flat panel video display built into the VCR-ET, television coupled to an RF modulator, or a computer monitor. **"monitor means…for enabling the user to selectively view…"** - Limited to structures disclosed under §112 ¶6: (1) flat panel video display built into the VCR-ET, television coupled to an RF modulator, or a computer monitor and (2) user interface control panel, light pen or mouse.

The term "monitor means" appears in several '995 Patent claims. *See* '995 Patent, claims 3, 22, 24, 25, 27, and 28. Each of those claims describes a monitor that can be used while editing to enable the user to "selectively identify the time compressed representation … during editing" (claim 3), "view the selectively decompressed time compressed representation" (claim 22), or "selectively view the decompressed digital time compressed representation" (claims 24, 25, 27, and 28).

Apple has taken the position that "monitor means" is subject to Paragraph 6. Apple's position is incorrect because the word "monitor" recites sufficient structure for performing the stated functions of selectively identifying and viewing. First, the term "monitor" plainly denotes a monitor or display. Second, the claim language – which provides that the monitor allows the user to identify and view representations of audio/video source information – reinforces that common understanding. Third, the specification precisely identifies examples of monitors: "a flat-panel video display," "a television," and "computer monitors and similar display devices." '995 Patent, 6:39-40, 6:49-52, 8:24-26; 10:25-28. These all belong to a "class of structures [that

are] identifiable by a person of ordinary skill in the art." *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1322 (Fed. Cir. 2004). One skilled in the art would clearly understand "monitor means" to be a monitor or display. *See* Hemami Report at 54-55 (Exhibit 5). Fourth, it is apparent that the term "monitor" constitutes sufficient structure because nothing is lost in the claims when the term "means" is deleted. *See, e.g.*, '995 Patent, claim 24 ("monitor [] for enabling the user to selectively view the decompressed time compressed representation"). Fifth, the claims treat "monitor means" as structure by describing it as "coupled to" the decompression means. *See* '995 Patent, claims 25 & 28. That description indicates that a claim term is structural in nature. *See Cole*, 102 F.3d at 531.

Burst's position is that "monitor means" does not need construction. If, however, the Court determines that it is necessary to construe the term, Burst's construction is "a display." That term accurately and sufficiently captures the examples provided in the specification recited above. *See* '995 Patent, 6:39-40, 6:49-52, 8:24-26; 10:25-28.

If the Court were to conclude that "monitor means" is subject to Paragraph 6, Burst would identify the corresponding structure as: "a flat panel video display, a television, or a computer monitor, plus equivalents." As set forth above, the specification identifies each of these types of monitors or displays as performing the cited function of enabling the user to "selectively identify the time compressed representation … during editing" (claim 3), "view the selectively decompressed time compressed representation" (claim 22), or "selectively view the decompressed digital time compressed representation" (claims 24, 25, 27, and 28). *See also* Hemami Report at 55 (one of ordinary skill in the art would recognize these displays as "easily fulfilling any of the functions associated with the 'monitor means'") (Exhibit 5).

Apple offers two different identifications of corresponding structure. Both include "flat panel video display built into the VCR-ET, television coupled to an RF modulator, or a computer monitor." One identification, which Apple applies to claims 24, 25, 27, and 28 of the '995 Patent ("monitor means … for enabling the user to selectively view"), includes the additional structure of "user interface control panel, light pen or mouse." Both of Apple's identifications of corresponding structure suffer from major infirmities. First, they include structure that does not itself perform the recited functions of identifying and viewing. Thus, it is not necessary that the display structure be "built into the VCR-ET," nor is it necessary to the structure for the television to be "coupled to an RF modulator." Second, the structures of "user interface control panel, light pen or mouse" do not perform the recited function of enabling the user to "selectively identify" or "view." The corresponding structure should include only that which is necessary to perform the recited function. It should not include everything necessary to enable the claimed invention to work. *Asyst Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1370-71 (Fed. Cir. 2001). Finally, Apple's identification omits the legally required language "plus equivalents."

For all of these reasons, if the Court concludes that Paragraph 6 applies to "monitor means," the Court should adopt Burst's alternative identification of corresponding structure. Burst will provide further explanation of its alternative construction under Paragraph 6, if necessary, in its reply brief.

3. "random access storage means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"random access storage means" **'995:** 1, 2, 3, 7, 8, 9, 17, 20, 21, 22, 23, 25, 26, 28, 44, 47, 80; **'932:** 4. ***"random access storage means…for storing the recompressed…"*** **'995:** 21.	**"random access storage means"** - Not subject to §112 ¶6: "storage that provides for random access to any given segment of stored audio/video source information" Although Burst does not believe "random access storage means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure for the '995 Patent claims if the terms were interpreted as subject to § 112 ¶6. **"random access storage means"** – Corresponding structure: DRAM, SRAM, CMOS, or optical disk memories, plus equivalents.	'995 PATENT: **"random access storage means…for storing the time compressed representation…"** AND **"random access storage means…for storing the recompressed…"** - Limited to structures disclosed under §112 ¶6: DRAM, SRAM, CMOS memory, or optical disc memory.

The term "random access storage means" appears in independent claims 1 and 17 and several dependent claims in the '995 Patent.[8] This term is not subject to Paragraph 6 of Section 112 because the words "random access storage" recite sufficient structure for performing the stated function of "storing" audio/video source information in the form of a time compressed representation ('995 Patent claims 1, 8, 9, and 17), a recompressed selectively decompressed time compressed representation ('995 Patent claim 21), or an edited decompressed digital time compressed representation ('995 Patent claim 26).

The function performed by the random access storage means is fundamentally the same in each of these variations: storing compressed audio and/or video. The words "random access storage" define a particular type of memory structure for performing that function and thus convey sufficient structure to preclude application of Paragraph 6. The term "random access

[8] The term also appears in '932 claim 4, but the parties agree that the proper construction for that term is "one or more magnetic disks."

storage" was known to one of ordinary skill in the art in 1988. *See* Hemami Report at 43-44 (Exhibit 5). Indeed, the term would be "self-descriptive to such an individual," conveying the meaning within the context of the Burst patents of "storage that provides for random access to any given segment of stored audio/video source information." *Id*.

It is also clear that "random access storage" constitutes sufficient structure based on the claim language. For example, the relevant limitation from a representative claim requires: "random access storage [means], coupled to said compression means, for storing the time compressed representation of said audio/video source information." '995 Patent claim 1 (brackets added around term "means"). With or without the term "means" included, this limitation has exactly the same meaning. The word "means" is perfunctory and superfluous. Moreover, the limitation treats "random access storage" as structure by giving it a particular location, "coupled to" the compression means. *See Cole,* 102 F.3d at 531.

Apple's contention that "random access storage means" is subject to Paragraph 6 is not supported. Apple's expert opined that "random access storage" does not connote sufficient structure because there are a "wide variety of very different classes of structures" that provide random access storage. *See* Halpern Report at 34 (Exhibit 6). But in his deposition, Mr. Halpern conceded that he could not identify any type of random access storage in 1988 not listed in the patent specifications. *See* Halpern Dep. at 259-62 (Exhibit 8). That short list hardly represents a "wide variety of very different classes of structures."

Moreover, as Mr. Halpern also conceded in his deposition, the term "random access storage" represents a "general class of structure." *Id*. at 253. A term need not be limited to a single, specific structure to preclude application of Paragraph 6. To the contrary, "generic" structure is perfectly sufficient if it refers to a "class of structures [that are] identifiable by a

person of ordinary skill in the art." *Linear Tech.*, 379 F.3d at 1322; s*ee also Personalized Media*, 161 F.3d at 704-05 (finding a term encompassing a variety of structures not subject to Paragraph 6 where that term had a well-known meaning to those of skill in the art). Mr. Halpern's concession and Dr. Hemami's opinion confirm that the term "random access storage means" conveys sufficiently definite structure under these cases to avoid Paragraph 6.

The prosecution histories of the Burst patents further demonstrate that the term "random access storage" is structure and that the addition of the word "means" was purely perfunctory. In a March 12, 1990 Response in the '995 prosecution, Burst used the words "random access storage" as a noun more than ten times to describe the location where certain information is stored. *Amendment "A", '995 PH* at 18-20 (March 12, 1990) (Exhibit 9); *see also Amendment "A", '932 PH* at 5-6 (May 7, 1990) (using "random access storage" as noun and structure) (Exhibit 10); *Amendment "B", '932 PH* at 7 (January 4, 1991) (using "random access storage" as noun and structure) (Exhibit 11). This use of the term "random access storage" as a noun makes clear that the random access storage is the specific structure performing the storing function. In fact, Apple's expert conceded that Burst used the phrase random access storage as structure in the prosecution histories. *See* Halpern Dep. at 261:5-264:4 (Exhibit 8).

Burst's proposed construction of the term "random access storage means" is "storage that provides for random access to any given segment of stored audio/video source information." The claims make clear that this term defines storage for the time-compressed representation of audio/video source information, allowing random access to selected segments or portions. For example, '995 claim 20 provides that audio/video source information stored in random access storage means can be "selectively decompress[ed]." That functionality requires that segments of the stored information can be accessed randomly in order for selective decompression to occur.

The specification also provides unambiguous support for Burst's construction. It is a stated object of the invention to provide for "random access to any given segment of a self-stored audio/video program so that the desired segment may be accessed and viewed without the time-consuming delays normally involved in fast-forward or fast-reverse searching procedures employed in present state-of-the-art VCRs." '995 Patent, 2:59-66. The specification states further that audio/video source information that has been digitized and stored in the random access memory can be viewed or transferred "either in its entirety or in random segments, based on user preference." '995 Patent, 10:1-5.

The specification describes particular types of random access memory, such as DRAM (Dynamic Random Access Memory), SRAM (Static Random Access Memory), CMOS (Complimentary Metal Oxide Semiconductor), optical disc memories, and magnetic disks, all of which are identified as examples of memory 13 in Figure 2. *See* '995 Patent, Fig. 2; 6:8-19; '932 Patent, 6:37-39; *see also* '995 Patent, 5:38-40 (describing DRAM and SRAM); '995 Patent, 3:59-4:16 (describing optical disc memories such as WORM (Write Once Read Many) and erasable optical discs, which have "random access capabilities"). The common feature of all these memory types is random access capability. *See* Hemami Report at 44 (Exhibit 5). It was clear to one of ordinary skill in the art in 1988 that any form of memory or media that provided random access to segments of stored audio/video source information would be acceptable. *Id*.

If the Court concludes that "random access storage means" as used in the '995 Patent is subject to the means plus function analysis of Section 112, ¶ 6, Burst identifies the corresponding structure as: DRAM, SRAM, CMOS, or optical disk memories, plus equivalents. Claims 6 and 7 of the '995 Patent plainly establish these forms of memory as types of random access storage means. *See* '995 Patent, claim 6 ("said random access storage means comprises an optical

disc"); '995 Patent, claim 7 ("said random access storage means comprises a semiconductor memory"). As shown above, the specification also describes these forms of memories as random access storage. *See also* Hemami Report at 44 (these forms all correspond to random access storage means and memory 13) (Exhibit 5). Apple's identification of corresponding structure is incorrect because it does not identify "equivalents."

Burst will provide further explanation of its alternative construction under Paragraph 6, if necessary, in its reply brief.

4. "storage means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"storage means" **'705:** 1, 2 ***"storage means…for storing said digital time compressed representation…"*** **'705:** 1.	**"storage means" –**Not subject to §112 ¶6, and no construction necessary. Alternatively, "a medium in which data is retained for subsequent retrieval" Although Burst does not believe "storage means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure if the terms were interpreted as subject to § 112 ¶6. **"storage means"** – Corresponding structure: DRAM, SRAM, CMOS, magnetic disk, or optical disk memories, plus equivalents.	'705 PATENT: **"storage means…for storing said digital time compressed representation…" -** Limited to structures disclosed under §112 ¶6: DRAM, SRAM, CMOS memory, optical disc memory, bubble memory, magnetic disk, or digital paper.

The term "storage means" appears in claims 1 and 2 of the '705 Patent. It provides storage of the digital time compressed representation. It is not subject to Paragraph 6 because one of ordinary skill in the art in 1988 would have had no difficulty identifying the class of structures connoted by the term "storage" that could perform the function of storing the digital time compressed representation in memory. *See* Hemami Report at 45 (Exhibit 5). In other words, the term "storage" represents a group or family of structures that is sufficient to preclude

the application of Paragraph 6. *See Linear Tech.*, 379 F.3d at 1322; *Personalized Media*, 161 F.3d at 704-05.

Moreover, as is true of "random access storage means," the claim limitations that include "storage means" reveal its treatment as structure. An exemplary limitation reads: "storage [means], coupled to said compression means, for storing said digital time compressed representation …." '705 claim 1 (brackets added around term "means"). With or without the term "means" included, this limitation has exactly the same meaning. The word "means" is again merely perfunctory. In addition, the limitation plainly treats "storage" as structure by giving it a particular location, "coupled to" the compression means. *See Cole*, 102 F.3d at 531.

Technical dictionary definitions also demonstrate that the term "storage" connotes sufficient structure to one skilled in the art. For example, the IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONIC TERMS 956 (4th ed. 1988) defines storage as "any device in which information can be stored, sometimes called a memory device." (Exhibit 16). This definition matches the use in the patent claims and shows that the word "storage" had a generally understood meaning to those skilled in the art. *See Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (dictionaries are proper aids in determining whether a term "denotes a type of device with a generally understood meaning in the [relevant art]" precluding application of Paragraph 6). The term "storage means" is not subject to Paragraph 6.

Nor does "storage means" require construction by the Court. As noted above, the term has a straightforward meaning to those skilled in the art. The same is true for the ordinary juror or layperson. In the context of the Burst patents, a layperson would understand "storage" to have its common meaning. As defined by one general purpose dictionary, "storage" is "[t]he part of a computer that stores information for subsequent use or retrieval." AM. HERITAGE DICTIONARY

1201 (2d College ed. 1982) (Exhibit 17). The Court need not construe a term whose meaning within a patent claim is the same as the term's ordinary meaning. *See Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*, 249 F.3d 1341, 1349 (Fed. Cir. 2001) (district court did not err in declining to construe the term "melting" because its meaning in the patent claim did not "depart from its ordinary meaning").

If the Court concludes that it must construe "storage means," it should adopt Burst's construction: "a medium in which data is retained for subsequent retrieval." That construction is directly supported by the claims themselves, which describe the process of storing data (the digital time compressed representation) in the storage means and then retrieving it for purposes of transmission ('705 Patent, claim 1) and/or editing and re-storing ('705 Patent, claim 2).

The specification amply supports this construction. The specification identifies storage as "intermediate" in that data is stored and then retrieved for additional purposes, such as conversion between analog and digital forms of audio/video source information. *See* '995 Patent, Abstract, 2:13-17; '839 Patent, Abstract. In addition, there are numerous examples in the specification in which data is placed in storage and then subsequently retrieved for copying to other media or for editing, transmission, and/or viewing. *See* '995 Patent, 9:12-26; 9:33-38, 9:55-62, 10:1-5, 10:10-13; '839, 8:30-33, 9:65-10:6; 11:28-35; 11:66-12:4; 12:23-27; 12:38-40. The definitions of "storage" from technical and lay dictionaries cited above are fully consistent with this usage of the term in the claims and specification.

Finally, if the Court were to find that the term "storage means" is subject to Paragraph 6, Burst would identify the corresponding structure as: "DRAM, SRAM, CMOS, magnetic disk, or optical disk memories, plus equivalents." All of these forms of memory are structures disclosed in the specification. *See* '995 Patent, Fig. 2; 6:8-19; *see also* '995 Patent, 5:38-40 (DRAM and

SRAM); '995 Patent, 3:59-4:16 (optical disc memories); '705 Patent, 6:24-26 (magnetic disks). All perform the stated function of storing the digital time compressed representation. Apple's identification of corresponding structure for "storage means," like its identification of structure for "random access storage means," is inadequate because it fails to identify "equivalents."

Burst will provide further explanation of its alternative construction under Paragraph 6, if necessary, in its reply brief.

5. "recording … onto a removable recording medium"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"recording … onto a removable recording medium" **'839:** 44, 45, 47, 48, 49, 50.	**"recording … onto a removable recording medium"** – Not subject to §112 ¶6, and no construction required. Alternatively, "copying on a storage medium that can be removed"	**"recording … onto a removable recording medium"** - Limited to structures disclosed under §112 ¶6: removable magnetic tape, removable magnetic disk, removable WORM optical disk, or removable erasable optical disk.

Several asserted method claims in the '839 Patent include the term "recording … onto a removable recording medium." These dependent claims all recite "the step of" recording various versions of time compressed representations of audio/video source information onto removable recording media. *See* '839 Patent, claims 44, 45, 47, 48, 49, and 50. Apple has taken the position that this phrase is subject to Paragraph 6 as a "step-plus-function" claim. Apple's position is wholly unsupported.

First, the language of the "recording" limitation in these claims gives rise to a presumption that Paragraph 6 does not apply. The drafter of a patent claim invokes a presumption that Paragraph 6 applies to a method claim only by using the language "step *for*" to describe a step in the method. *Masco Corp. v. United States*, 303 F.3d 1316, 1327 (Fed. Cir. 2002). Where the drafter has instead used the language "step *of*" within a claim limitation, as is true of the "recording" limitation in the claims of the '839 Patent, it is presumed that the limitation is not subject to Paragraph 6. *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 381

F.3d 1371, 1382 (Fed. Cir. 2004). Apple, therefore, must overcome the presumption that Paragraph 6 does not apply to this term.

Apple cannot sustain its burden and overcome this presumption. The requirement Apple must meet to prove that Paragraph 6 applies to a method claim limitation that lacks the "step for" language is as follows: "[W]here a method claim does not contain the term 'step[s] for,' a limitation of that claim cannot be construed as a step-plus-function limitation without a showing that the limitation contains no act." *Masco*, 303 F.3d at 1327. Thus, Apple must show that the claim limitation "recording … the time compressed representation onto a removable recording medium" contains no act. This Apple cannot do. The claim language clearly includes the act of recording. The underlying function of the limitation in these method claims is to make a "hard" copy of the time compressed representation, *i.e.*, to copy it onto other media. *See* '839 Patent, 8:30-33 ("After downloading, … a hard copy of the program may be made on magnetic tape, optical disk, etc."), 9:64-10:9 (describing how user can download a stored program onto recording media, thereby providing "a hard copy of the program in digital format" for archiving or later viewing or use), 10:60-61 ("A hard copy of the program may also be made for later viewing."). It is the act of "recording … onto a removable recording medium" that accomplishes this function of creating a hard copy. Because the "recording" claim limitations all include an act, Paragraph 6 cannot apply to them. *See Masco*, 303 F.3d at 1327.

Burst's position is that the phrase "recording … onto a removable recording medium" does not require construction by the Court, because an ordinary layperson or juror would understand it to mean recording onto a tape, disk, or other medium that could be removed from the device. If the Court decides that the term needs construction, however, Burst proposes the following construction: "copying on a storage medium that can be removed." This construction

is supported by the series of '839 claims that use the phrase, claims 44, 45, 47, 48, 49, and 50. Each of these claims includes the step of recording the time compressed representation – or the stored, edited, or selectively decompressed time compressed representation – onto a removable recording medium. As noted below with respect to the construction of "recording means," the specification identifies several different types of removable recording media that can be inserted into the recording or copying device and then removed: magnetic tape, WORM disks, and erasable optical disks. *See* '995 Patent, 3:31, 3:38-45, 3:58-4:16, 9:4-30.

Moreover, the specification uses the term "copying" to refer to recording. In addition to the passages cited above regarding the creation of "hard" copies of programs, the specification states that "[w]hen it is desired to copy a program from one recording media to another, the recording media holding the desired program is installed in the AVRU." '995 Patent, 9:4-6. Then, once that program has been stored in memory, "the recording media from which the stored program has just been read is replaced by blank recording media upon which the stored program is to be copied." '995 Patent, 9:18-22. Similarly, the specification highlights the invention's capability to transfer or copy an audio/video program from one magnetic tape or other storage medium to another. *See* '995 Patent, 1:30-33 (VCRs ordinarily lack "capabilities for copying recorded programs from one tape or alternative storage medium to a similar or dissimilar storage medium"); 2:4-7 (invention includes transferring program from one storage medium to another); 2:13-17 (same).

These passages all demonstrate that "recording … onto a removable recording medium" means copying onto a storage medium that can be inserted into and then removed from the recording device. They are further supported by two pieces of extrinsic evidence. First, the MODERN DICTIONARY OF ELECTRONICS 834 (6th ed. 1984) defines "record" to mean "the process

of putting data into a computer storage device." (Exhbit 17). Second, those of ordinary skill in the art would understand that "recording" means copying onto some type of media and that "removable recording media" means media that can be inserted into and removed from the recording device. *See* Hemami Report at 60 (Exhibit 5).

Apple's construction – that the phrase is limited to the structures of removable magnetic tape, magnetic disk, WORM optical disk, or erasable optical disk – is based on application of Paragraph 6 and thus limits the claims to particular embodiments. Such limitations are not appropriate when Paragraph 6 does not apply, because particular embodiments appearing in the specification must not be read into the claims when the claim language is broader than the disclosed embodiments. *Electro Med Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994); *see also Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1328 (Fed. Cir. 2003) (courts may not incorporate into claims the unclaimed attributes of preferred embodiments described in the specification). Apple's construction violates this important principle of claim construction and must be rejected.

Burst will provide further explanation of its alternative construction under Paragraph 6, if necessary, in its reply brief.

6. "input means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"input means" **'995:** 1, 15, 16, 17 **'932:** 4; **'705:** 1. ***"input means for receiving audio/video source information"*** **'995:** 1; **'932:** 4; **'705:** 1. ***"input means for receiving audio/video source information as a time compressed representation thereof…"*** **'995:** 17.	**"input means"** - Not subject to §112 ¶6: "an input port or terminal capable of receiving information" Although Burst does not believe "input means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure if the terms were interpreted as subject to § 112 ¶6. **'995 Patent** **"input means for receiving audio/video source information"** – Corresponding structure: video line or camera input line, TV RF tuner, auxiliary digital input port, fiber optic input/output port, audio/video transmitter/receiver, or microwave satellite transceiver, plus equivalents. **"input means for receiving audio/video source information as a time compressed representation thereof…"** – Corresponding structure: auxiliary digital input port, fiber optic port, or microwave satellite transceiver, plus equivalents. **'932 and '705 Patents** **"input means for receiving audio/video source information"** – Corresponding structure: video line or camera input line, TV RF tuner, auxiliary digital input port, fiber optic input/output port, audio/video transmitter/receiver, or microwave transceiver, plus equivalents.	'995 PATENT: **"input means for receiving audio/visual source information"** - Limited to structures disclosed under §112 ¶6: video line or camera input line 15, TV RF tuner 16, auxiliary digital input port 17, or fiber optic port 18.

Although "input means" includes the word "means," thus giving rise to a presumption that "input means" is a means-plus-function claim subject to Paragraph 6, that presumption is rebutted because an "input" conveys sufficient structure to one of ordinary skill in the art to perform the claimed function. As discussed above, the "perfunctory addition" of the word "means" to a claim that otherwise recites sufficient structure will not subject that claim to Paragraph 6. *Cole*, 102 F.3d at 531. The perfunctory nature of the word "means" in the term

"input means" is apparent when the claim language is read with the word "means" omitted: "input [] for receiving audio/video source information" or "input [] for receiving audio/video source information as a time compressed representation thereof." Accordingly, Burst proposes that "input means" be construed as "an input port or terminal capable of receiving information."

The focus of the inquiry in determining whether a claim is subject to Paragraph 6 is the understanding of a person of ordinary skill in the art. *See Cole*, 102 F.3d at 531; *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002). To such a person, an "input" is a structure. *See* Hemami Report at 29-30 (Exhibit 5). In fact, an "input" would be a known structure to many laypeople. Most modern electronic devices, such as computers, televisions, and VCRs, are equipped with many "inputs" and "outputs" – perhaps too many, as anybody who has ever attempted to set up a home entertainment system will understand. For example, there is likely an input on the back of a television for receiving the cable television signal. Similarly, there is likely an audio input on the back of a stereo surround-sound system for receiving the television audio signal. In each of the above examples, the input is structure—a physical port or terminal.

Additionally, the functions of "receiving audio/video source information" and "receiving audio/video source information as a time compressed representation thereof" clarify the type of input covered – one that can receive audio/video information. The claims further specify the location of the "input means" in the Burst apparatus as being connected to the "compression means." *See, e.g.*, '995 Patent, claim 1 (describing the "compression means, coupled to said input means"). Descriptions of location are a further indication that a claim term is structural in nature. *See Cole*, 102 F.3d at 531; *Cellnet Data Sys., Inc. v. Itron, Inc.*, 17 F.Supp.2d 1100, 1107 (N.D. Cal. 1998) (Infante, J.).

Dr. Hemami explained in her report that an "input" "connotes a physical port or terminal on a device through which information is received" and would be understood as such by a person of ordinary skill in the art. Hemami Report at 29-30 (Exhibit 5). Technical dictionaries that were standard in the field at the relevant time frame also confirm that an "input" is structure. *See, e.g.*, IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONIC TERMS 474 (4th ed. 1988) ("The device or collection of devices used for bringing data into another device.") (Exhibit 16); GRAF, MODERN DICTIONARY OF ELECTRONICS 495 (6th ed. 1984) ("The terminals, jack, or receptacle provided for the introduction of an electrical signal or electric power into a device or system.") (Exhibit 17). *See Cole*, 102 F.3d at 531 (construing "perforation" in "perforation means" to recite sufficient structure based in part on dictionary definition). The same is further demonstrated by Figure 2 of the Burst patents, which refers to the various "inputs" and the "input/output port" on the Burst transceiver interchangeably. All of the above demonstrates that an "input" is structure.

The specific input structure is further clarified by the remainder of the claim language, which requires an "input means" capable of "receiving audio/video source information" or "receiving audio/video source information as a time compressed representation." This language limits the types of inputs that fall within the scope of the claims. Not just any input will suffice to perform the stated function. It must be capable of receiving audio/video source information, which "can be in either analog or digital form." Hemami Report at 29 (Exhibit 5). This limiting language excludes inputs that, for example, receive only data that is neither audio nor video, such as a mouse input or keyboard input.

Apple's proposed construction treats "input means" as subject to Paragraph 6. Notably, however, Apple's expert, Mr. Halpern, agrees with Burst that an "input" is structure. *See, e.g.*,

Halpern Report at 23 (citing technical dictionary defining "input/output device" as "A unit that accepts new data, sends it into the computer for processing...."(emphasis added)) (Exhibit 6); *id.* ("The phrase 'input means for receiving audio/visual source information' does not connote a particular structure." (emphasis added)); *id.* ("The fact that 'input' is essentially generic and lacking in definite structure is shown in technical dictionaries." (emphasis added)). Mr. Halpern's main objection is not that "input" lacks structure, but that "input" is not sufficiently precise. Mr. Halpern's precision requirement, however, must be tempered by the understanding of one of skill in the art. *See Allen Eng'g*, 299 F.3d at 1348 (concluding that "crank means," "fork means," and "cable means," *inter alia*, all recited sufficient structure to rebut the presumption that § 112, ¶ 6 applied because they "recite precise structure well understood by those of skill in the art"). Dr. Hemami has opined that the term is sufficiently precise to one of skill in the art. *See* Hemami Report at 29-30 (Exhibit 5).

To the extent the Court disagrees with Burst and finds that Paragraph 6 applies to "input means," Burst will offer the following identifications of corresponding structure, based on the patent specifications' description of a variety of specific inputs that can be used:

> **'995 Patent ("input means for receiving audio/video source information")**: a video line or camera input line, a TV RF tuner, an auxiliary digital input port, a fiber optic input/output port, an audio/video transmitter/receiver, or a microwave satellite transceiver.
>
> **'995 Patent ("input means for receiving audio/video source information as a time compressed representation")**: an auxiliary digital input port, a fiber optic port, or a microwave satellite transceiver.
>
> **'932 and '705 Patents ("input means for receiving audio/video source information")**: a video line or camera input line, a TV RF tuner, an auxiliary digital input port, a fiber optic input/output port, an audio/video transmitter/receiver, or a microwave transceiver.

As explained above, Burst does not believe that "input means" is subject to Paragraph 6. Accordingly, it will provide further explanation of its alternative construction under Paragraph 6, should that be necessary, in its reply brief.

7. "output means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"output means" **'995:** 1, 2, 17; **'932:** 4. ***"output means…for receiving… [and] for transmission away from said audio/video transceiver apparatus"*** **'995:** 1, 2, 17. **'932**: 4	**"output means"** - Not subject to §112 ¶6: "an output port or terminal capable of transmitting information" Although Burst does not believe "output means" is subject to § 112 ¶6, Burst provides the following description of the corresponding structure if the terms were interpreted as subject to § 112 ¶6. **'995 Patent** **"output means"** – Corresponding structure: fiber optic input/output port, auxiliary digital port, or microwave satellite transceiver, plus equivalents. **'932 Patent** **"output means"** – Corresponding structure: fiber optic input/output port, auxiliary digital port, or microwave transceiver, plus equivalents.	'995 PATENT: **"output means…for receiving…for transmission away from said audio/video transceiver apparatus"** - Limited to structures disclosed under §112 ¶6: fiber optic port 18 that delivers audio/video signals to a fiber optic telephone line. '932 PATENT: **"output means…for receiving… [and] for transmission away from said audio/video transceiver apparatus"** - Limited to structures disclosed under §112 ¶6: point-to-point microwave transceiver, or satellite transceiver.

Like "input means," the term "output means" is subject to a presumption that Paragraph 6 applies, but the presumption is rebutted because an "output" denotes sufficient structure to one of skill in the art to perform the claimed function. *See Cole*, 102 F.3d at 531. Once again, the word "means" in "output means" is perfunctory, and does "nothing to diminish the precise structural character of this element." *Id.* Burst proposes that "output means" be construed as "an output port or terminal capable of transmitting information."

When construing claims, the focus should always remain on the understanding of a person of ordinary skill in the art. *Phillips*, 415 F.3d at 1313. The same is true when

determining whether a patentee intended to invoke Paragraph 6 by including "means" in the claim language of his patent. *Allen Eng'g*, 299 F.3d at 1348. Here, one of ordinary skill in the art would understand an "output" to be "a physical port or terminal on the claimed transceiver that receives information to be transmitted away from the device." Hemami Report at 46 (Exhibit 5).

The claims of the Burst patents support interpreting an "output" as structure. The claims specify that the "output means" is connected to the "random access storage means," thus providing its location and further indicating that the term is intended to be structural. *See, e.g.*, '995 Patent, claim 1; *Cole*, 102 F.3d at 531. The claim language "for receiving the time compressed audio/video source information ... for transmission away" would "indicate to one of ordinary skill that the output signal is digital," which further describes the class of output structures. Hemami Report at 46 (Exhibit 5). Also, as was true for "inputs," many laypersons would understand an "output" to be structure. In the aforementioned example of a home entertainment system, the "inputs" on one component of the system will most likely come from an "output" from another component of the system.

Technical dictionaries in the field also demonstrate that "output" is a term of structure. *See* IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONIC TERMS 655 (4th ed. 1988) ("the device or collective set of devices used for taking data out of a device") (Exhibit 16); MODERN DICTIONARY OF ELECTRONICS 698 (6th ed. 1984) ("the terminals or other places where the circuit or device may deliver the current, voltage, power, or driving force") (Exhibit 17). The claims would suffer no loss of clarity if the word "means" were removed. *See, e.g.*, '995 Patent, Claim 1 ("output [], coupled to said random access storage means, for receiving the time compressed audio/video source information").

Once again, Apple's expert, Mr. Halpern, does not disagree that an "output" is structure. *See* Halpern Report at 38 ("A 'unit' is even more generic than 'output' – the definition confirms that an [output] device is a 'unit' that performs the function of outputting data" (citing the MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS (4th ed. 1989))) (Exhibit 6). The dispute, therefore, reduces to whether "output" sufficiently denotes structure to one skilled in the art. The description provided by the claims requires a digital output, which limits the claims to the discrete selection of outputs available at the time for transmitting digital signals. *See* Hemami Report at 46-47 (Exhibit 5). This refutes Mr. Halpern's statements that more detail is necessary for one of ordinary skill in the art to understand the possible outputs.

To the extent the Court disagrees with Burst and finds that Paragraph 6 applies, Burst would propose the following identifications of the specific structures corresponding to the "output means" in the various patents for the various claim functions:

> **'995 Patent**: a fiber optic input/output port, an auxiliary digital port, or a microwave satellite transceiver.
>
> **'932 Patent**: a fiber optic input/output port, an auxiliary digital port, or a microwave transceiver.

As explained above, Burst does not believe that "output means" is subject to Paragraph 6. Accordingly, it will provide further explanation of its alternative construction under Paragraph 6, should that be necessary, in its reply brief.

V. REMAINING DISPUTED TERMS

A. Media Terms

1. "audio/visual source information" & "audio/video source information"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"audio/visual source information" *or* ***"audio/video source information"***	**"audio/video source information"** and **"audio/visual source information"** - "an audio and/or video work that can be received from one or more sources and	**"audio/video"** - agreed construction **"**audio/video **source information"** - the entirety of the data intended to be

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
'995: 1, 2, 3, 8, 9, 15, 16, 17, 19, 20, 21, 22; 23, 24, 25, 26, 27, 28, 44, 47, 51, 52, 80; **'839:** 1, 2, 3, 7, 8, 9, 15, 16, 17, 19, 20, 21 22, 23, 26, 27, 28, 44, 45, 46, 47, 48, 49, 50, 51, 52, 58, 59, 73, 76, 77; **'705**: 1, 2, 3, 12, 13, 21; **'932**: 4.	that has a temporal dimension"	transmitted, not segments of that data.

The parties agree that "audio/video" and "audio/visual" mean "audio and/or video." *See* List of Agreed Terms (Exhibit 19). With respect to the full phrase that includes "source information," Burst's construction flows directly from the claim language and the specification of the patents-in-suit. The terms "audio/video source information" and "audio/visual source information" are used throughout the claims of the Burst patent claims. Although the wording in the terms varies slightly, that variation does not result in any meaningful distinction between the terms' constructions.[9] The claimed devices all focus on the handling and manipulation of the "audio/video source information," including "receiving," "compressing," "storing," and "transmitting." Claim 1 of the '995 Patent is representative of the use of "audio/video source information" in the claims of the Burst patents:

> An audio/video transceiver apparatus comprising:
>
> input means for receiving **audio/visual source information**;
>
> compression means, coupled to said input means, for compressing said **audio/video source information** into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said **audio/video source information**;
>
> random access storage means, coupled to said compression means, for storing the time compressed representation of said **audio/video source information**; and

[9] All but a few of the claims use the term "audio/video source information." In the interest of brevity, therefore, "audio/video source information" will be used to refer to both terms.

> output means, coupled to said random access storage means, for receiving the time compressed **audio/video source information** stored in said random access storage means for transmission away from said audio/video transceiver apparatus.

The specifications of the Burst patents provide additional insight into the meaning of "audio/video source information." For example, the specifications explain that the term may refer to audio material, video material, or some combination of both audio and video. *See* '995 Patent, 1:6-18, 1:40-62, 2:1-7, 2:18-22, 5:28-32, 7:1-8:2 (audio and video); '995 Patent, 9:48-49 (video only); '995 Patent, 10:37-41 (audio only); *see also* Hemami Report at 27 (Exhibit 5). The specification often uses the shorthand term "program" to refer to audio/video source information, encompassing "movies and other types of video materials, whether broadcast from a TV station or another source." '995 Patent, 1:14-18. The specification further explains that any discussion of "programs" contained in the Burst patents also applies to "signals containing only audio material." *Id.* at 10:37-41. The audio/video source information can come from any of several different sources, which justifies the inclusion of the language "received from one or more sources" in Burst's proposed construction. See '995 Patent, 7:1-8:2 (describing various inputs for audio/video source information); *see also Amendment "A", '995 PH* at 18, 20 (March 12, 1990) (transceiver can receive audio/video source information from a variety of sources) (Exhibit 9).

Burst has included the term "work" in its proposed construction to identify the wide variety of audio/video source information described in the specifications. A "work" is "something produced by the exercise of creative talent or expenditure of creative effort." *See* WEBSTER'S NEW COLLEGIATE DICTIONARY 1340 (1981) (Exhibit 18); Hemami Report at 28 (Exhibit 5). The term "work" accurately captures the specifications' description of television programs, movies, and audio signals described as audio/video source information. *Id.*

Furthermore, each kind of work mentioned in the Burst Patents has a "temporal dimension." The claims themselves make this clear by requiring a "time compressed representation … that is shorter than a time period associated with a real time representation of said audio/video source information." *See, e.g.*, '995 Patent, claim 1. Works that do not have an inherent temporal dimension, such as photographs or texts, could not be compressed into the time compressed representation required by the claims because they have no "time period associated with a real time representation."

Importantly, both parties' experts have recognized that the claimed audio/video source information has a length or duration. For example, Dr. Hemami opines that "[i]t would be apparent to one of ordinary skill that [the claimed source information] naturally has some 'length' or duration." Hemami Report at 27 (Exhibit 5). Apple's expert agreed at his deposition that the claimed audio/video source information has a "duration" and/or "length." Halpern Dep. at 106:6-107:5 (Exhibit 8). Duration and length, of course, refer to a temporal dimension. The prosecution history evidence also lends support for Burst's construction requiring a temporal dimension. *See Amendment and Response, '705 PH*, at 15-16 (June 1, 1998) (referring to the claimed audio/video source information as having "an inherent temporal element" or "a temporal dimension") (Exhibit 13).

Apple's proposed construction is flawed for multiple reasons. First, Apple seeks to graft an unnecessary limitation – "the entirety of the data" – on the term "audio/video source information" that is not present in the claims or suggested in the specification. Its inclusion would only create confusion in what is otherwise a straightforward claim term. Second, Apple's construction introduces a subjective intent component to the claim – "the entirety of the data intended to be transmitted" – that requires the resolution of what audio/video source information

a user *intended* to transmit before infringement can be determined. Apple suggests through its expert that the order of claim limitations and the specifications' reference to "programs" (which, as explained above, Burst has defined as "works") somehow supports its subjective intent requirement. *See* Halpern Report at 5-7 (Exhibit 6). Despite these suggestions, however, it is completely unclear why Apple's reasoning leads in any way to a requirement of assessing what the user intended.

Rather than introduce Apple's subjective intent requirement into the claims, Burst respectfully requests the Court to construe "audio/video source information" in the manner supported by the intrinsic evidence: "an audio and/or video work that can be received from one or more sources and that has a temporal dimension."

2. "multiplicity" & "multiplicity of video frames in the form of one or more full motion video programs"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"multiplicity" **'995:** 19; **'839:** 19, 73, 76, 77; **'932:** 4; **'705:** 1, 12, 21.	**"multiplicity"** – No construction necessary. Alternatively, "a large number"	**"multiplicity"** - two or more; usually a fairly large number.
"multiplicity of video frames in the form of one or more full motion video programs" **'839:** 73, 76, 77; **'932:** 4. ***"multiplicity of video frames collectively [representing / constituting] at least one full motion video program"*** **'705:** 1, 12, 21. ***"video frames"*** **'839:** 73, 76, 77. **"**[at least one] ***full motion video program"***	**"multiplicity of video frames in the form of one or more full motion video programs"** – No construction necessary. Alternatively, "movies and other video materials represented by multiple images in a temporal sequence and providing the sense of motion when viewed sequentially"	**"multiplicity"** - see above **"video frames"** - individual images intended to be displayed in sequence. **"**[at least one] **full motion video program"** - an entire audio/video program made of video frames that are displayed in sequence to make a moving picture.

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
'839: 73, 76, 77.		

None of these terms require construction as they would all be easily understood by a person skilled in the art and would similarly be understood by most laypeople. *See Phillips*, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words."). Because Apple has insisted that the terms be construed, however, Burst provides alternative constructions if the Court decides to construe them.

The ordinary meaning of the term "multiplicity," reflected in common dictionaries, is "a large number." AM. HERITAGE DICTIONARY 822 (2d College ed. 1982) (Exhibit 14); *see also* WEBSTER'S NEW COLLEGIATE DICTIONARY 750 (1981) (same) (Exhibit 18). The claims of the Burst patents use "multiplicity" in two separate contexts, but the meaning of the term in both contexts is consistent with its ordinary meaning. The first context is exemplified by '995 claim 19, where the term is used in connection with a "video library storing a multiplicity of items of audio/video source information." The second context is demonstrated by claim 1 of the '705 Patent, which describes "a multiplicity of video frames collectively representing at least one full motion video program."

In each context, the term "multiplicity" refers to a large number of items, whether they are video frames or items in a video library or video frames. Apple's construction seeks to expand the definition of "multiplicity" to include "two or more." A collection of two videos hardly qualifies as a video library. Similarly, two frames of video could not constitute a "full motion video program." *See* Hemami Report at 61 (explaining that full motion video generally,

but not necessarily, includes 30 video frames per second) (Exhibit 5); *see also* '995 Patent, 4:53-54. As used in the Burst patents, the term "multiplicity" refers to "a large number" and should be construed consistent with this context.

Apple has broken up the phrase "multiplicity of video frames in the form of one or more full motion video programs" into individual components for construction. Burst, however, asserts that the full phrase is a better candidate for construction, to the extent that it is construed at all, because it presents a better depiction of the claim requirements. Burst proposes that the term be construed as "movies and other video materials represented by multiple images in a temporal sequence and providing the sense of motion when viewed sequentially." Unlike the discussion of the broader "audio/video source information" term above, the claim language here expressly limits itself to video programs. Accordingly, instead of "works," Burst proposes "movies and other video materials."

Video materials, such as movies and television broadcasts, include individual "video frames," or images, that, when viewed in sequence, create the appearance of motion. Hemami Report at 12-13 (Exhibit 5). A simple illustration of the frame concept is provided by flip books (http://en.wikipedia.org/wiki/Flip_book), where each page of the book represents a "frame." To effectively create the appearance of motion, each frame must appear in its appropriate temporal location. Frames viewed out of their proper temporal sequence will disrupt or even prevent the appearance of motion. They must be viewed sequentially to produce the sense of motion.

When read in its entirety, the full claim phrase makes clear that Apple's proposed construction cannot be correct. The "multiplicity" discussed above refers to the number of video frames. These video frames, when taken together, create "one or more full motion video programs." As Dr. Hemami explained in her report on claim construction, a full motion video

program is one that appears smooth and not jerky—in other words, it shows full motion. Hemami Report at 63 (Exhibit 5). Dr. Hemami also explained that full motion video typically consists of 30 frames per second. *Id.* at 61; '995 Patent, 4:53-54. The two frames permitted by Apple's proposed construction could not create a "full motion video program." Consequently, Apple's proposed construction of "multiplicity," when inserted into the claim language that surrounds it, simply does not make sense. Hemami Report at 63 (Exhibit 5).

As it did with "audio/video source information," Apple has again inserted a subjective "intent" requirement into its construction. If adopted, Apple's construction will require a jury to assess what was "intended" to be done with images before they are able to determine whether those images are video frames—an unnecessary exercise under the claim language that will likely result in confusion. Apple's construction also seeks to introduce the same flawed "entirety" concept that it included in its construction of "audio/video source information." If Apple derives this "entirety" requirement from the "full" in "full motion video program," it misunderstands the use of that term. "Full" refers to "motion," meaning that the video program is smooth and not jerky. Hemami Report at 63 (Exhibit 5). Furthermore, the "entirety" requirement suggested in Apple's proposed constructions for both "audio/video source information" and "full motion video program" is inconsistent with its own proposed construction of "multiplicity," which Apple suggests can include as few as two video frames. At 30 frames per second, two video frames hardly constitute an "entire audio/video program."

Apple's proposed constructions of "multiplicity" and the component terms of "multiplicity of video frames in the form of one or more full motion video programs" introduce confusion, are inconsistent with the claim language and specification of the Burst patents, and

even appear to contradict themselves. Accordingly, Burst respectfully requests that its proposed constructions be adopted.

B. Compression Terms

There are several disputed compression-related terms. Those terms fall into four groups: (i) "compressing"; (ii) "time compressed representation"; (iii) "compression means"; and (iv) "decompression means." The parties agree that "compression means" and "decompression means" are means-plus-function terms subject to Paragraph 6. The terms "compressing" and "time compressed representation" form part of the "compression means" function, but also appear separately in method claims. Because the function of a means-plus-function term must be construed first, "compressing" and "time compressed representation" are discussed initially, followed by an identification of the structure corresponding to the means-plus-function terms.

1. Data Compression Versus Time Compression

At the outset, it is important to understand that the parties have a basic, fundamental dispute regarding the type of compression covered by the Burst patent claims. Burst's constructions follow from the fundamental fact that the compression recited in the patent claims is data compression, which is the type of compression described in detail in the patent specification. *See, e.g.*, '995 Patent, 2:46-51, 4:63-5:35. Apple wrongly contends that the claimed compression is what it refers to as "time compression," which its expert contends is a term used "particularly in the context of time division multiplexing."[10] Halpern Report at 8 (Exhibit 6). Apple's expert concedes that neither time compression nor time division

[10] Burst's expert states that the claim term, "time compressed" did not have a single accepted meaning, and neither did the term "time compression." Hemami Report at 42 (Exhibit 5). Dr. Hemami gives several examples of articles mentioning "time compression" and they use the term in widely varying ways. *Id.* at 42-43. Dr. Hemami also states that none of these examples are "applicable to the Burst patents." *Id.*at 43.

multiplexing is discussed in the Burst patent specification. *See* Halpern Dep. at 51:17-52:24; 99:5-102:18, 165:13-166:17 (Exhibit 8).

The parties agree that data compression is the most commonly used type of compression. Halpern Dep. at 55:6-56:2; Halpern Report at 2 (Exhibit 6). In data compression, the number of bits required to represent audio and/or video information is reduced by, for example, encoding patterns and redundancies in the data with fewer bits. The compressed representation then can be stored in less space in memory and can be transmitted over a communication channel in less time than the uncompressed signal.

According to Apple's expert, time compression means "increasing the frequency of the underlying signal." Halpern Report at 8 (Exhibit 6). Halpern says "the ordinary way" that this occurs is that signals "are stored in real time and then read out much faster than real time so that each can be transmitted in a fraction of the time it would take to play in real time." *Id.* at 9. Apple's expert believes that the concepts of data compression and time compression are "orthogonal" because "[d]ata compression reduces the number of 'bits' used to represent a particular signal [, whereas] time compression does not change the 'bits' themselves, only their time signature (*i.e.*, their frequency)." *Id.* at 8-9.

The Court can resolve this fundamental dispute between the parties based on its review of the patent specification – the primary resource when construing claims. *Phillips*, 415 F.3d at 1315. Consistent with Burst's position, the patent specification describes only data compression and says nothing about the time compression and time-division multiplexing that lie at the heart of Apple's construction theory. Given this intrinsic evidence support for data compression, and the lack of intrinsic support for time compression and time-division multiplexing, the choice between the parties' respective positions resolves into a choice between construing the claims to

cover the preferred embodiment as Burst proposes, or to exclude the preferred embodiment as Apple advances. A proposed construction that excludes a preferred embodiment raises a red flag, and normally will be rejected. "Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support." *Vitronics*, 90 F.3d at 1583. Apple cannot meet its burden of providing "highly persuasive evidentiary support" for its compression term positions.

2. "compressing" terms

An understanding of the word "compressing" is critical to a proper understanding of the other disputed compression-related terms. There are two very similar "compressing" phrases:

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"compressing said audio/video source information" **'995:** 1; **'932:** 4; **'705:** 1. ***"compressing the received audio/video source information"*** **'839:** 1; **'705:** 12. ***"compressing said received audio/video source information"*** **'839:** 73, 76.	**"compressing said audio/video source information"** and related terms - "reducing the number of bits necessary to represent the audio/video source information"	Related: **"time compressed representation"** - a representation of the audio/video source information that is compressed in time without using data compression.

The latter terms, "compressing [the/said] received audio/video source information" appear in independent claims 1, 73 and 76 of the '839 Patent, as well as independent claim 12 of the '705 Patent, all of which are method claims. The first term, "compressing said audio/video source information" appears in the function of the "compression means" limitations. The close

similarity between these terms dictates that they be construed consistently as "reducing the number of bits necessary to represent the audio/video information."

The specification expressly states that two separate "objects" of the invention include data compression:

> A still further object of the invention is to provide an improved audio/video recorder which maximizes a given storage capacity, **through the use of a data compression technique**.
>
> A still further object of the invention is to provide an audio/video recorder **utilizing a data compression technique** for efficient storage, transmission, and reception of a digitized audio/video program . . . .

'995 Patent, 2:42-51 (emphases added).

After twice describing data compression as an object of the invention, the patent specification further states that the compression techniques used in the preferred embodiment reduce the number of bits by performing data compression:

> Compression of the digital data defining a video frame and the reverse process (decompression) are accomplished by compressor/decompressor **26**. Various algorithms may be employed in the compression process **which enable the representation of a series of numbers by a reduced number of digits**.

'995 Patent, 4:63-68 (emphasis added). The specification goes on to describe those "various algorithms" as data compression algorithms that reduce the number of bits. '995 Patent, 4:67-5:20. The specification then states:

> [I]f no **data compression technique** is used, it would take approximately 51.03 gigabytes to store a 2 hour movie, but using the above compression techniques, it is estimated that memory 13 will require only 250 megabytes.

'995 Patent, 5:20-24 (emphasis added).

It could not be clearer that the Burst patents disclose data compression to reduce the number of bits necessary to encode the audio/video information. Importantly, the detailed discussions regarding data compression in columns 4-5 of the patent specifications appear under

the "Preferred Embodiment" portion of the patent specifications. Accordingly, the preferred embodiment clearly employs data compression to allow the resulting compressed representation of the audio/video source information to be transmitted in less time and stored in less space than would be the case if the source information were uncompressed. *See, e.g.*, '995 Patent, 2:42-45; 5:20-24; 7:58-60; 7:67-7:2.

Given the specification's clarity on the meaning of "compressing," it is not surprising that Apple fails to offer a construction for these terms. Instead, Apple seeks a construction of "time compressed representation" – which the claims identify as the result of the compressing act. However, Apple's construction of "time compressed representation" requires that compressing occur "without using data compression." Thus, Apple effectively seeks a negative construction of "compressing" – one that excludes data compression, the only type of compression disclosed in the preferred embodiment.

Apple's attempt to define the act of "compressing" in the negative reflects a conscious decision to ignore the patent specification, in violation of the *en banc Phillips* decision. Apple's own expert acknowledges in his report and deposition testimony that the only type of compression disclosed in the specification is data compression. *See* Halpern Expert Report at 13 ("The specification's only express discussion of compression is a discussion of 'data compression.'"). Halpern Dep. at 51:11-52:2 (Exhibit 8). Despite admitting that the Burst patents disclose only data compression, Apple insists on a definition for "time compressed representation" that would require the "compressing" to occur without data compression. Such a contorted approach to claim construction – one that seeks to exclude the preferred embodiment – has been rejected by the Federal Circuit in key claim construction cases such as *Vitronics*, cited above.

3. "time compressed representation"

There are eight phrases in the claims that contain the term "time compressed representation," and they can be divided into four groups: (1) the time compressed representation "having an associated" time period; (2) the time compressed representation "being received over an associated" time period; (3) the time compressed representation "is capable of being transmitted" in a time period; and (4) the digital time compressed representation.[11] The chart below is organized to reflect these four different phraseologies. Despite the complexity of the chart, Burst's proposed construction for the time compressed representation phrases can be summarized fairly simply, with the variations in brackets, as follows:

> a [digital] version of audio/video source information having a reduced number of bits [that allows data transfer / that is received / being received] over an external communications link in a time period that is [substantially] shorter than the time required for normal playback.

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
	"having" format	
"time compressed representation . . . having an associated time period that is shorter than a time period associated with a real time representation" **'995:** 1, 8, 9; **'932:** 4. ***"time compressed representation . . . having an associated burst time period that is shorter than a time period associated with a real time representation"*** **'839:** 1, 8, 9, 73, 76.	**"time compressed representation . . . having an associated time period that is shorter than a time period associated with a real time representation"** and **"time compressed representation . . . having an associated burst time period that is shorter than a time period associated with a real time representation"** - "a version of audio/video source information having a reduced number of bits that allows data transfer over an external communications link in a time period that is shorter than the time required for	**"time compressed representation"** - a representation of the audio/video source information that is compressed in time without using data compression. **"having an associated time period"** AND **"having an associated burst time period (that is shorter than a time period associated with a real time representation)"** - the time compressed representation has a burst transmission time of definite duration that is known at the time of compression to be shorter than the time required to play the source information in real time.

[11] Two other variations occur in the claim language. First, the time period in some instances must be "substantially shorter" than the real time period. *See, e.g.*, '705 Patent, claims 1, 12, 21. Second, the term "burst" is not included in all of the "associated" time period terms. '995 Patent, claim 1; '932 Patent, claim 4.

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
	normal playback"	
"digital time compressed representation . . . having an associated burst transmission time period that is substantially shorter than a time period associated with real time viewing" **'705:** 12.	**"digital time compressed representation . . . having an associated burst transmission time period that is substantially shorter than a time period associated with real time viewing" –** "a digital version of audio/video source information having a reduced number of bits that allows data transfer over an external communications link in a time period that is substantially shorter than the time required for normal playback"	**"digital"** - agreed construction **"time compressed representation"** - see above. "**having an associated burst time period"** - see above
	"being received" format	
"time compressed representation . . . being received over an associated burst time period that is shorter than a real time period associated with real time playback" **'839:** 17.	**"time compressed representation . . . being received over an associated burst time period that is shorter than a real time period associated with real time playback"** - "a version of audio/video source information having a reduced number of bits that is received over an external communications link in a time period that is shorter than the time required for normal playback"	**"being received over an associated burst time period that is shorter than a real time period associated with real time playback"** – the time compressed representation is received in a burst time of definite duration that is shorter than the time required to play the source information in real time.
"time compressed digital representation . . . being received in an associated burst time period that is shorter than a time period associated with a real time representation" **'839:** 77.	**"time compressed digital representation . . . being received in an associated burst time period that is shorter than a time period associated with a real time representation"** - "a digital version of audio/video source information having a reduced number of bits that is received over an external communications link in a time period that is shorter than the time required for normal playback"	**"being received in an associated burst time period that is shorter than a time period with a real time representation"** - the time compressed representation is received in a burst time of definite duration that is shorter than the time required to play the source information in real time.
"time compressed representation . . . being received over an associated burst time period that is shorter than a real time period associated with said audio/video source information" **'995:** 17;	**"time compressed digital representation . . . being received in an associated burst time period that is shorter than a time period associated with a real time period associated with said audio/video source information"** - "a version of audio/video source information having a reduced number of bits that is received over an external communications link in a time period that is shorter than the time required for normal playback"	**Not separately defined.**
"being received . . . in a burst transmission time period that is substantially shorter than a time period	**"being received . . . in a burst transmission time period that is substantially shorter than a time period associated with real-time**	"**being received … in a burst transmission time period …**" - see above

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
associated with real-time viewing" **'705:** 21.	**viewing"** – "being received . . . over an external communications link in a time period that is substantially shorter than the time required for normal playback."	
	"is capable of" format	
"digital time compressed representation . . . is capable of being transmitted in a burst transmission time period that is substantially shorter than a time period associated with real time viewing" **'705:** 1.	**"digital time compressed representation . . . capable of being transmitted in a burst transmission time period that is substantially shorter than a time period associated with real time viewing" –** "a digital version of audio/video source information having a reduced number of bits that allows data transfer over an external communications link in a time period that is substantially shorter than the time required for normal playback"	**"digital"** - agreed construction **"time compressed representation"** - see above **"is capable of being transmitted in a burst transmission time period that is substantially shorter than a time period associated with real time viewing"** – the time compressed representation is such that it is known at the time of compression that it is capable of being transmitted in a burst time period of definite duration that is substantially shorter than the time required to play the representation in real time.
	short digital format	
"digital time compressed representation" **'995:** 8, 9, 23, 24, 25, 26, 27, 28; **'839:** 8, 9, 23, 24, 25, 26, 27, 28; **'705:** 1, 2, 3, 12, 21.	**"digital time compressed representation"** – "a digital version of audio/video source information having a reduced number of bits."	**"digital"** - agreed construction **"time compressed representation"** - see above

The term "time compressed representation" does not have an accepted scientific or engineering meaning. *See* Hemami Report at 42-43 (Exhibit 5). Instead, the patents reflect that this term was used to describe the intended effect – a representation of audio/video source information that has been compressed to permit it to be transmitted in less time. Because there is no accepted meaning, the construction of the time compressed representation phrase can only be gleaned from the Burst patent specifications themselves. *Id.*

a. The intrinsic evidence supports Burst's proposed construction

The term "time compressed representation" appears in every independent claim of the Burst patents. Although the claim format varies, reference is made to '839 claim 1 for purposes of discussion (the "time compressed representation" language is bolded):

> 1. A method for handling audio/video source information, the method comprising:
>
> receiving audio/video source information;
>
> compressing the received audio/video source information into **a time compressed representation thereof having an associated burst time period that is shorter than a time period associated with a real time representation of the received audio/video source information**;
>
> storing said time compressed representation of the received audio/video source information; and
>
> transmitting, in said burst time period, the stored time compressed representation of the received audio/video source information to a selected destination

The "time compressed representation" phrase in '839 claim 1 includes several key concepts. First, the phrase has a compression element, because the "compressed representation" results from an act of compressing. Second, the phrase has a temporal aspect. This temporal aspect arises from the two time periods that are referenced and compared in the phrase – the burst time period associated with the compressed representation and the real time period associated with the playback of the uncompressed representation. The word "time" in "time compressed representation" also suggests the temporal aspect. Third, the phrase necessarily implies a transmission and/or reception element. In the case of '839 claim 1, one of the time periods (the "burst time period") is defined as the transmission period. *See* '839 Patent, claim 1, clause 4 ("transmitting, in said burst time period"). *See also* '839 Patent, claims 17 and 77; '995 Patent, claim 17; and '705, claim 21. Other claims explicitly require that the "time compressed

representation" is "received" in a burst time period. Claim 1 of the '705 requires a "burst transmission period" in which the time compressed representation is transmitted. Thus, the literal claim language implicates transmission and/or reception of the "time compressed representation."

Taken together, these concepts make clear that the proper construction for the "time compressed representation" phrase of '839 claim 1 is "a version of audio/video source information having a reduced number of bits that allows data transfer over an external communications link in a time period that is shorter than the time required for normal playback." As reflected in the chart above, the construction of the other "time compressed representation" terms is similar, but must be tailored for the specific language used, as Burst has done.

The only compression algorithms disclosed in the Burst patents are those that perform data compression. *See* '995 Patent, 4:68-5:45; Hemami Report at 33-34 (Exhibit 5). As noted above in the "compressing" section, the patent specifications clearly disclose that "compressing" reduces the number of bits, thus minimizing the amount of storage required to store a compressed representation. *See* '995 Patent, 2:46-51, 4:63-68, 5:9-14. In addition, and more pertinent to the "time compressed representation" phrase, the specifications provide that compressing may enable the representation to be sent between devices in less time than it would take to play back the audio/video information in real time. '839 Patent, 8:18-26; 12:4-8. As stated in the Burst patents, "a video program may be communicated **at an accelerated rate** … **in less time than it would take to view the program**." '995 Patent, 9:61-68. The specification thus aligns with the conclusion that a "time compressed representation" has "a reduced number of bits" relative to the claimed audio/video source information. Furthermore, as the specification notes explicitly and as Burst proposes in its construction, the data compression "allows" the

compressed representation to be sent in a time period shorter than real-time playback as reflected by the above cited passage.

Transmitting the compressed representation in less time than it would take to play back the audio/video program is one of the temporal aspects mentioned above. All of the "time compressed representation" phrases include a comparison of two time periods. The name for these two time periods varies across the claims, but the claims all generally require that a first time period be shorter (or in the case of the '705 Patent, substantially shorter) than a second period of time required to playback the audio/video source information.

The concept of a time compressed representation that could be sent faster than real time was a focus in the prosecution of the '727 patent application, which issued as the '705 Patent. In Burst's last Response to the PTO in the '705 Patent prosecution, Burst cancelled all of its then-pending claims and made the following remarks in arguing for the patentability of the newly added claims (which ultimately issued):

> The present invention teaches a system and method for transmitting audio/video source information, namely full motion video programs, between devices. The audio/video information is time compressed to thereby allow transmission in a burst transmission time period which is substantially shorter than the time associated with real-time viewing of the video program by a receiver of the program. For example, a video program having an associated viewing time (*i.e.*, running length) of one hour could be time compressed and transmitted to a receiver in a burst transmission time period which is substantially less than one hour.

Amendment and Response, '705 PH, at 11 (June 1, 1998) (Exhibit 13). Burst then contrasted this capability with the prior art delivery systems, which delivered video "on a substantially real time basis." *Id.* at 12. Thus, one very important temporal aspect is that the time compressed representation can be transmitted in a time period that is shorter than the playback period.

A second temporal aspect reflected in the "time compressed representation" phrase arises because of the nature of the audio/video source information. When discussing the *Izeki et al.* patent in the '727 application, Burst contrasted that patent by noting that it was limited to "still-picture information," which was "in sharp contrast to the claimed invention, wherein full motion video programs, having an **inherent temporal element**, are time compressed and transmitted." *Id.* at 15 (emphasis added). Continuing, Burst stated:

> "Since *Izeki* deals with still picture information, compression of the information would still not represent time compression thereof **(as defined in the specification of the Application)**, since time compression necessarily requires that the information to be compressed have a **temporal dimension**."

Id. at 15-16 (emphasis added).

These prosecution history passages make clear that Burst's construction is correct. First, the parenthetical in the above quote expressly links "time compression" to what is "defined in the specification of the Application." The parties agree that the specification only discusses data compression. Therefore, Burst clearly states to the PTO in this final '705 Response that data compression produces the time compressed representation. Second, the above excerpt establishes Burst's direct association of "time compressed" with the requirement that the source information have a "temporal dimension." Images that do not have an associated temporal dimension, such as still images, cannot be "time compressed" because they are time independent. *See id.* The proposed Burst definition captures this temporal aspect through its construction of the phrase "audio/video source information," which Burst defines as having "a temporal dimension."

Finally, the '705 prosecution establishes that the transmission must occur over an external communication link. In the same '727 application response referenced above, Burst distinguished the *Izeki et al.* patent because it transferred edited files only to an internal storage

device (a master tape) for copying an uncompressed version of the edited file. *Id.* at 15. Thus, to appropriately address the transmission and/or reception requirement of the claims, the construction should indicate that the time compressed representation is transferred or transmitted externally. Burst's proposed definition of "time compressed representation" captures this requirement by including the language "transfer over an external communications link."

For all of the foregoing reasons, Burst respectfully requests that the Court adopt its proposal for the "time compressed representation" terms.

b. Apple's constructions are inconsistent with the specification and the claims

Apple's proposed constructions for "time compressed representation" and "having an associated burst time period" seek to import at least two unsupported limitations into the claims. First, Apple incorrectly construes "time compressed representation" as excluding data compression. Second, it improperly requires (for at least some of the claims) that the time compressed representation have a "definite duration that is known at the time of compression."

i. Apple's negative limitation excluding data compression is wrong

Apple's construction that the time compressed representation be compressed "without using data compression" is untenable. This issue was discussed in conjunction with the term "compressing" in the immediately preceding section. As previously explained, the Burst patent specifications do not support Apple's position because the patents only disclose data compression. Thus, any attempt to construe the term "time compressed representation" to exclude data compression necessarily excludes the preferred embodiment, "which is rarely, if ever, correct." *Vitronics*, 90 F.3d at 1583. For that reason alone, Apple's construction for "time compressed representation" should be rejected.

Apple's construction for time compressed representation also ignores the sequence of the Burst patent claims. Many of the claims require that the audio/video source information be compressed "into" a time compressed representation, after which the time compressed representation is stored in memory. *See, e.g.*, '839 Patent, claim 1 ("storing said time compressed representation"). The claim language explicitly requires that the time compressed representation must be stored. The last limitation of '839 claim 1 further requires "transmitting … the stored time compressed representation." Thus, in '839 claim 1, the sequence is (i) compress; (ii) store the compressed representation; and (iii) transmit the stored compressed representation.[12] This sequence is mandated by the claim language itself, which requires storing the "time compressed representation" and transmitting the "stored time compressed representation."

But in Apple's world of "time compression" and time-division multiplexing, the signals "are stored in real time and then read out much faster than real time." Halpern Report at 9 (Exhibit 6). In this "time compression" system advanced by Apple, compression (to the extent there is any compression at all) occurs as part of the transmission by clocking out the signals at a faster rate. Such a system, however, exhibits a sequence that is out-of-order relative to the Burst claims because compression necessarily occurs *after* storage and at the transmission/output stage. Mr. Halpern's expert report unwittingly gives an example of the inconsistencies between the claim language sequence (compression and then storage) and Apple's time compression sequence (storage and then compression):

> "In time compression multiplexing, the signal from each input channel is stored for a short period of time. The signals from all channels are then read from the

[12] In discussing the claim sequence, Burst does not mean to imply that each step must be completed before the next step begins. In fact, Burst fundamentally disagrees with Apple's contention that the claims include such a requirement.

> store, **compressed in time,** and transmitted sequentially, one after the other, over the communication path."

Halpern Report at 9 (Exhibit 6). Contrary to the claims, this passage describes a process that includes storing and then "compressing in time" at the transmission stage. This underscores a fundamental flaw in Apple's construction for time compressed representation.

Apple's construction is nonsensical in the context of the claim language for another reason: the claims require both source information and a time compressed representation of that source information. Under claim construction principles, these representations are presumed to be different because of the use of different terms. *Bancorp Svcs, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004). However, Apple's expert conceded that the bits representing the source information would be identical to the bits representing the time compressed representation. *See* Halpern Depo Tr. at 73:4-74:10, 126:12-20, 134:22-136:25, 153:24-154:5, 167:5-10, 281:14-19 (Exhibit 8); *see also* Halpern Report at 12 (Exhibit 6). In this context, the claimed delineation of the time compressed representation as something different than the audio/video source information becomes non-existent. Apple's construction fails for this additional reason.

In short, Apple's proposed negative limitation, seeking to exclude use of data compression, is inconsistent with the specification and claims and should be rejected.

ii. The claims do not have a definite duration requirement

A second major flaw in Apple's construction is its position that the phrase "having an associated time period" somehow requires that the time period have a definite duration and that

this duration must be known at the time of compression.[13] Nothing in the intrinsic evidence supports Apple's construction, and it should be rejected on multiple grounds.

First, Apple's expert conceded in his deposition that he did not cite any evidence from the Burst patent specifications to support Apple's construction. Halpern Dep. at 196:15-19 (Exhibit 8). This glaring admission is a further example of how Apple has ignored the Burst specifications in violation of *Phillips*. Of course, Apple's expert is correct, there is absolutely nothing in the patent specification that requires a "definite duration" or association of the burst time period at the time of compression.

Second, Apple's definite duration construction is premised on the faulty theory that the patents require a certain type of transmission medium. As support for its definite duration argument, Apple contends that the patents are limited to situations where the bandwidth of the transmission medium is fixed. Halpern Report at 17-18 (Exhibit 6). But nothing in the claims, the patent specification or the prosecution history require that the bandwidth be fixed. To the contrary, in each instance in which bandwidth is mentioned, the patent always uses language of approximation. For example, when discussing fiber optic channels, the '839 Patent refers to fiber optic bandwidth as "*about* 200 Megabytes/second." '839 Patent, 8:15-18. When discussing microwave bandwidth, the patent references a lower threshold of "*at least as fast* as the transmission and reception of programs over optical fibers." '839 Patent, 12:6-8. In each instance, the patent specification provides approximations when it discusses duration of transmission or transmission speed, or else provides a lower boundary for the bandwidth. Requiring a "definite duration" is inconsistent with the duration and speed approximations provided throughout the patent specification. *See* Hemami Report at 36-37 (Exhibit 5).

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[13] This is not an issue with respect to the "being received" form of the phrase that appears in claim

The deposition of Apple's expert, Mr. Halpern, underscores the fatal flaws in his report and Apple's construction regarding "definite duration." Mr. Halpern admitted under oath that the words "fixed data rate" and "fixed rate" do not appear in the Burst patents. Halpern Dep. at 82:8-82:15 (Exhibit 8). Nor could he identify any evidence in the Burst patent specifications that excludes the use of variable rate or packet switched systems to transmit audio/video information. *Id.* at 82:16-90:10. Such systems (*e.g.*, the Internet) have variations in bandwidth that result in imprecise transmission times. Halpern even admitted that such variable-rate or packet-switched systems were well known in the 1980's. *Id.* at 29:4-6, 32:24-33:17, 81:9-25. He further conceded that such systems (including systems made of fiber optic cables – which are disclosed in the Burst patents) could be used to transmit audio/video information in packet-switched systems in that time frame. *Id.* at 80:9-25. These concessions establish that the Burst patent specifications do not exclude variable rate or packet-switched systems and that one of ordinary skill would know to use such systems for audio and video transmissions in 1988. *See also* Hemami Report at 7-8 (Exhibit 5). As such, the concessions of Apple's expert demonstrate that the Burst claims do not require fixed-rate or circuit-switched systems that create a "definite [transmission] duration."

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21 of the '705 Patent.

4. "compression means"

The parties agree that the "compression means" terms, at least as used in the independent asserted claims, are subject to construction under Paragraph 6. Those terms and the parties' proposed constructions are shown below:

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"compression means" **'995:** 1, 8, 9, 21;	**"compression means"** ('995) - Subject to §112 ¶6: "For video, a compressor/decompressor executing one or both of the following data compression algorithms: (i) reducing the number of bits by coding each frame independently, *i.e.*, treating each frame as an individual image, and/or (ii) reducing the number of bits by comparing two or more frames and coding certain differences between those frames, plus equivalents; and/ or for audio, a compressor/decompressor executing the following data compression algorithm: reducing the number of bits by comparing two or more samples and coding certain differences between those samples, plus equivalents."	**"compression means…for compressing said audio/video source information…"** AND **"compression means…for recompressing…"** - Limited to structures disclosed under §112 ¶6: None
"compression means…for compressing said audio/video source information…" **'932:** 4;	**"compression means"** ('932) - Subject to §112 ¶6: "For video, a compressor/decompressor executing one or both of the following data compression algorithms: (i) reducing the number of bits by coding each frame independently, *i.e.*, treating each frame as an individual image, and/or (ii) reducing the number of bits by comparing two or more frames and coding certain differences between those frames, plus equivalents."	
"compression means…for compressing said audio/video source information into a digital time compressed representation…capable of being transmitted in a burst time transmission period that is substantially shorter than a time period associated with real time viewing" **'705:** 1.	**"compression means"** ('705) - Subject to §112 ¶6: "For video, a compressor/decompressor executing the following data compression algorithms: (i) reducing the number of bits by coding each frame independently, *i.e.*, treating each frame as an individual image and (ii) reducing the number of bits by comparing two or more frames and coding certain differences between those frames, plus equivalents."	

Pursuant to the Federal Circuit's instruction, the first step in construing "compression means" is to construe the function. The disputed terms in the function are "compressing" and "time compressed representation." Burst's proposed construction of those terms has been provided above.

The properly construed function of "compression means" in claim 1 of the '995 Patent is to produce "a version of audio/video source information having a reduced number of bits that allows data transfer over an external communications link in a time period that is shorter than the time required for normal playback." The parties have agreed that "audio/video" means "audio and/or video." *See* Table of Agreed Terms (Exhibit 19).

The function of the "compression means" in claim 4 of the '932 Patent is different. The reason is that the audio/video source information recited in the compression means function was expressly limited in claim 4 to require "a multiplicity of video frames in the form of one or more full motion video programs." Claim 1 of the '705 Patent is similarly limited to full motion video, but with the further requirement that the time compressed representation "is capable of being transmitted in a burst transmission time period that is substantially shorter" than the real-time period. Thus, claim 4 of the '932 Patent and claim 1 of the '705 Patent require full motion video.

The Burst patents specifically state that a compressor/decompressor (26) is the structure that performs the compression and decompression using suitable compression algorithms to reduce the number of bits necessary to represent the audio/video source information. '995 Patent, 4:63-68. Compressor/decompressor may be either an integrated circuit or a microprocessor. *See* Hemami Depo. at 138:7-140:9 (Exhibit 7); *see also Intel v. VIA Tech.*, 319 F.3d 1357, 1366-67 (Fed. Cir. 2003); *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d

1374, 1382 (Fed. Cir. 1999); *WMS Gaming Inc. vs. International Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The only form of compression disclosed in the Burst patents is data compression.

Specifically, the patents describe several different classes of data compression algorithms for both video and audio that can be implemented in the compressor/decompressor to perform the claimed function of compressing, including: (i) intraframe video compression ('995 Patent, 4:68-5:8); (ii) interframe video compression ('995 Patent, 5:9-18); and (iii) inter-sample audio compression ('995 Patent, 5:28-33). *See* Hemami Report at 34-36 (Exhibit 5). The patents suggest, and both experts agree, that these classes of video and audio compression were known compression techniques existing in 1988. '995 Patent, 4:63-5:24; Halpern Dep. at 56:22-58:15 (Exhibit 8); Hemami Report at 17-21 (Exhibit 5); Hemami Dep. at 143:14-146:19 (Exhibit 7). Because the Burst patents describe the compressor/decompressor structure, as well as specific classes of compression algorithms to be executed by the compressor/decompressor, the Burst patents describe adequate structure for the "compression means" limitations. *See Linear Tech.*, 379 F.3d at 1321–22 (a "class of structures [that are] identifiable by a person of ordinary skill in the art" is appropriate under Paragraph 6); *Serrano,* 111 F.3d at 1583 (general reference to a microprocessor programmed to perform a specific function adequate to treat microprocessor as corresponding structure). The next issue is which of the compression algorithms are appropriate for the different functional recitations.

The intraframe video compression algorithm discussed in the Burst patents treats the video frames independently by performing compression on an individual frame-by-frame basis. Intraframe compression, also known as spatial compression, reduces the number of bits by efficiently representing redundant information within a particular frame. As Burst's expert

explains in an example in her Report, if adjacent pixels on a screen have the same value, a reduced number of bits can be used to represent the redundancy. Hemami Report at 35 (Exhibit 5). The Burst patents identify the CCITT Group IV data compression algorithm as an example of an intraframe compression algorithm. A copy of the CCITT Group IV Standard is attached as Exhibit 25.[14]

The other class of video compression algorithms described in the Burst patents is interframe compression, which also is known as temporal compression. *See* '995 Patent, 5:9-18. This compression technique treats video frames dependently. As suggested in the Burst patents, two or more frames in a time sequence are compared for encoding certain differences between the frames. Coding only the changes between frames, rather than each frame individually, results in a reduced number of bits as compared to coding each frame independently. Hemami Report at 35 (Exhibit 5).

The Burst patents further instruct the reader that the two classes of video compression algorithms described in those patents may be used independently or may be used in conjunction to achieve a higher degree of compression than would be the case if only one of the compression algorithms were implemented. '995 Patent, 5:9-24. With respect to audio, the Burst patents suggest that any "conventional algorithm" may be used. '995 Patent, 5:33-35. The '995 Patent specifically mentions as an example a Fibonacci delta compression algorithm, which generally constitutes an inter-sample compression algorithm in which the number of bits is reduced by comparing two or more samples and coding certain differences between those samples. Hemami Report at 35 (Exhibit 5). An example of a Fibonacci delta compression algorithm appears in an

[14] The '995 Patent further gives an example of the AMD 7971A Compression Expansion Processor as an example of a single chip CCITT solution. '995 Patent, 4:67-5:8. The specification sheet on the AMD Compression Processor also is attached as Exhibit 26.

article from 1985, describing a Fibonacci Delta sound compression technique in Appendix C, attached as Exhibit 20.

Given this description in the Burst patents, the structure that performs the claimed function is the compressor/decompressor executing one or more of the disclosed compression algorithms. The Patent specification clearly indicates that the compressor/decompressor performs the compression function, and clearly identifies the types of compression algorithms to be used. '995 Patent, 4:63-5:35. Claim 60 of the '995 Patent further confirms that the compressor/decompressor performs the function of compressing. That claim recites:

> **compressor/decompressor means for compressing** digital audio/video source information received at said input means or said corresponding digital audio/video source information received from said analog to digital converter means **into a time compressed representation** of said digital or corresponding digital audio/video source information, said time compressed representation having an associated time period that is shorter than a time period associated with a real time representation of said digital or corresponding digital audio/video source information, said compressor/decompressor means being further operative for decompressing said time compressed representation into a decompressed real time representation of said digital or corresponding digital audio/video source information;

'995 Patent, claim 60. Thus, in this '995 apparatus claim, the compressor/decompressor is recited as the structure for performing the same claimed function of "compressing … into a time compressed representation …."

If the claimed function encompasses audio and/or video, such as in '995 claim 1, any of the algorithms mentioned above may be used, as appropriate. If, however, the claim is drawn more narrowly to video, as is the case with '932 Patent claim 4 and '705 Patent claim 1, it is appropriate to identify the structure of the compression means as the compressor/decompressor executing at least one of the video compression algorithms mentioned above. Claim 1 of the '705 Patent further requires that the time compressed representation is capable of being sent in a

substantially shorter period than the real-time playback. For that claim, because the claimed function requires a substantially shorter time period, it is appropriate to require a greater degree of compression and thus require that the compressor/decompressor execute both the intraframe video compression algorithm and the interframe video compression algorithm, consistent with the suggestion in the patent specification. *See, e.g.*, '995 Patent, 5:15-24.

Burst's construction of "compression means" is supported by the admissions of Apple's expert. Mr. Halpern repeatedly testified that the Burst patents describe "data compression" (*i.e.*, reducing the number of bits), but do not describe Apple's "time compression." Halpern Dep. at 51:11-52:24; 99:5-102:18, 165:13-166:17 (Exhibit 8). He further conceded that data compression is one of the stated objectives in the Burst patents and that "most" uses of compression in 1988 and now are in the form of data compression. *Id.* at 52:25-55:19; Halpern Report at 2 (Exhibit 6). Mr. Halpern also testified that many data compression techniques for audio/video existed in 1988 and were implemented in 1988. Halpern Dep. at 55:23-57:6; Halpern Report at 2 (Exhibit 6). For example, consistent with Burst's construction, he agreed that both intraframe and interframe video compression, as well as various audio compression techniques, were well known by 1988. Halpern Dep. at 56:22-58:12.

But Mr. Halpern did not stop there; instead, he went on to concede that the precise algorithms set forth in Burst's construction of compression means are disclosed in the Burst patents. As to video, Mr. Halpern admitted that the Burst patents disclose a form of intraframe video compression, which reduces the number of bits by coding each video frame independently. *Id.* at 60:16-62:9. Similarly, he agreed that the Burst patents disclose interframe video compression, which includes comparing two or more frames and coding certain differences. *Id.* at 62:16-64:22. Finally, Mr. Halpern admitted that the Burst patents disclose audio data

compression, including the Fibonacci delta algorithm that compares two or more samples and codes the differences. *Id.* at 66:16-68:12. He also conceded that these various data compression algorithms could be implemented in hardware (*e.g.*, the AMD 7971 chip) or software in 1988. *Id.* at 235:6-238:2; Halpern Report at 28 (Exhibit 6).

Despite Halpern's admissions, Apple contends that no structure is disclosed in the Burst patent specifications for performing the compression functions. The basis for Apple's position flows from a faulty premise. The premise is that the claimed function is limited only to time compression and cannot use data compression techniques, even though Apple admits that the patent specification only discloses data compression. Having concluded that the claimed function covers something the specification never disclosed, Apple then concludes its argument by asserting that no structure is disclosed in the specification for that function. Apple's conclusion fails because its premise is fatally flawed.

Moreover, to prevail on its argument that no structure is disclosed for performing the compression functions, Apple must provide proof by clear and convincing evidence. This high burden of proof applies because Apple's position is tantamount to the argument that the patent claims are invalid and is contrary to the patents' presumption of validity. As the Federal Circuit has explained:

> For a court to hold that a claim containing a means-plus-function limitation lacks a disclosure of structure in the patent specification that performs the claimed function, necessarily means that the court finds the claim in question indefinite, and thus invalid. Because the claims of a patent are afforded a statutory presumption of validity, overcoming the presumption of validity requires that any facts supporting a holding of invalidity must be proved by clear and convincing evidence. Thus, a challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function.

Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376-77 (Fed. Cir. 2001) (internal citations omitted). Apple cannot carry this heavy evidentiary burden.

5. "decompression means" and "selectively decompressing"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"decompression means" **'995:** 20, 21, 22, 23, 25, 26, 28 ***"decompression means…for selectively decompressing [the/said] time compressed representation …"*** **'995:** 20, 21, 22.	**"decompression means"** - Subject to §112 ¶6: "a compressor/decompressor executing a decompression algorithm consistent with the compression algorithm used, plus equivalents"	**"decompression means…for selectively decompressing said time compressed representation …"** - Limited to structures disclosed under §112 ¶6: None.
"selectively decompressing" **'995:** 20, 21, 22, 23, 25, 26, 28; **'839:** 20, 21, 22, 23, 26, 28.	**"selectively decompressing"** - No construction required. Alternatively, "decompressing some or all of the stored time compressed representation selected by a user"	**"selectively decompressing"** - decompressing the portion of the stored time compressed representation selected by a user.

The parties agree that "decompression means" is subject to Paragraph 6. The function recited for decompression means is "selectively decompressing said time compressed representation of said audio/video source information stored in said random access storage means." *See, e.g.*, '995 Patent, claims 20, 21. In accordance with the principles of construction set forth above, Burst begins its analysis of the "decompression means" by starting with the function.

The functional language that follows "decompression means" has a meaning that is apparent on its face and therefore does not require construction. Alternatively, if the Court decides that construction of "selectively decompressing" is necessary, Burst proposes "decompressing some or all of the stored time compressed representation selected by a user."

Both parties agree that "selectively" requires that the user select the time compressed representation. They differ on what is selected. Burst contends that the user can select the entire time compressed representation for decompression, or may select portions of the time compressed representation for decompression. Apple insists that the user can only select a portion of the time compressed representation for decompression.

Starting with the claim language, nothing in the literal wording of the claim supports Apple's view that "selectively decompressing" is limited to only portions of the "time compressed representation." A reading of '995 claims 20 and 21 shows that a selection of the entire time compressed representation falls within the scope of the literal claim language. Specifically, a reading of the entirety of claims 20 and 21 establishes that the selectively decompressed representation is edited and then stored back in the random access storage means. Under Burst's construction, either a portion or all of the representation could be decompressed, edited and stored. Apple's interpretation would require that only pieces of the representation could be decompressed, edited and stored, but the claim is not restricted in that fashion.

The patent specification supports the notion that a user can select either a portion of the representation or the entire representation for decompression. The '995 Patent, for example, states that the program may be edited one frame at a time. '995 Patent, 6:30-33. As noted later in that same paragraph, a user interface can be used to select a desired frame number from a menu. In response, the transceiver displays a strip of frames including the selected frame and several frames before and after the selected frame. *Id.* at 6:40-44. Alternatively, the time compressed program may be selected by a user for purposes of viewing or copying it to other storage. *Id.* at 9:1-30. In the playback mode, the program is decompressed before displaying it on a monitor or playing it through the speakers. When copying, the time compressed program is

decompressed for storing in the desired storage. *Id.* at 9:22-30. The '995 Patent indicates that during these copying procedures, the user may perform editing operations on the representation. *Id.* at 9:31-53. Thus, the patent specification also supports the notion that either the entire representation or a portion of the representation may be selected for decompression, consistent with the plain language of the claims.

Turning now to the structure for the "decompression means," the patent describes very clearly that the structure is the same codec (compressor/decompressor) used for compression. *Id.* at 4:63-65. Given that decompression is described in the patent specifications as the reverse process of compression, *see id.* at 4:63-65, 5:57-59, it follows that the data compression algorithms used to decompress the time compressed representation must be consistent with the algorithms that were used to compress it.

Once again, Apple takes the position that no structure is disclosed to perform the claimed function. Apple arrives at this conclusion through a convoluted analysis. Apple starts with the position that the patent must cover time division multiplexing, which Judge Motz rejected, *see Burst.com v. Microsoft Corp.*, No. JFM-02-2952 (D. Md. March 12, 2004) (letter construing claim terms), at 1-2 (Exhibit 23), and which is not supported by the patent specification. Apple then concludes that the various data compression algorithms described in detail in the specification cannot be used to compress the audio/video information and decompress the time compressed representation because such data compression techniques cannot be used in the time division multiplexing arena. Then when it is time to identify the structure associated with the compression means and the decompression means, Apple contends there is no structure disclosed in the patent because the only compression algorithms mentioned in the patent relate to data compression. The illogical and circular nature of Apple's arguments is apparent. Moreover,

Apple's position is inconsistent with the *Phillips* mandate that the specification is the best source for determining the meaning of the claims. 415 F.3d at 1315-16.

C. Storage Terms

1. "recording means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"recording means" **'995:** 44, 47 ***"recording means, including a removable recording medium … for storing … "*** **'995:** 44, 47.	**"recording means"** - Subject to §112 ¶6: "an audio/video recording unit such as a magnetic tape drive, WORM drive, or erasable optical disk drive, plus equivalents"	**"recording means, including a removable recording medium … for storing … "** - Limited to structures disclosed under §112 ¶6: recording unit that uses removable magnetic tape, removable WORM optical disk, or removable erasable optical disk, and shunt switch.

The parties agree that the term "recording means," which appears in asserted claims 44 and 47 in the '995 Patent, is subject to Paragraph 6. Those claims describe "storing the time compressed representation of said audio/video source information stored in said random access storage means onto said removable recording medium." Burst identifies the corresponding structure that performs this function as follows: "an audio/video recording unit such as a magnetic tape drive, WORM drive, or erasable optical disk drive, plus equivalents." The claims and the specification clearly connect this corresponding structure to the claimed function.

The claims themselves identify the "recording means" as "including a removable recording medium." '995 Patent, claims 44 and 47. The specification identifies the structure that can accept and use removable recording media for copying of audio/video source information as an "audio/video recording unit," or "AVRU" depicted in Figure 11. An AVRU can use various recording media that can be inserted for recording and then removed, such as magnetic tape, WORM disks, and erasable optical disks. *See* '995 Patent, 3:31, 3:38-45, 3:58-4:16, 9:4-30. Thus the structure corresponding to "recording means" is "an audio/video

recording unit such as a magnetic tape drive, WORM drive, or erasable optical disk drive, plus equivalents."

Apple acknowledges that the corresponding structure is a recording unit that uses one of the same three removable recording media. But Apple erroneously introduces the term "shunt switch" as a component of its proposed corresponding structure. The shunt switch is not part of the corresponding structure for "recording means" because it performs no recording itself and has no connection to any removable recording media. *See* Hemami Report at 60 (Exhibit 5). The shunt switch 48, which appears in Figure 2 and is connected to the time base generator 48, is simply a binary switch that can be used to avoid adding time base information (which is associated with analog signals and thus is not relevant to time compressed representations) to compressed or decompressed digital information that is being recorded onto removable media. *See* '995 Patent, 5:63-6:2.

"Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations." *Asyst Techs., Inc. v. Empak, Inc*., 268 F.3d 1364, 1370 (Fed. Cir. 2001). Even structures that may be needed to enable the invention to work are not part of the corresponding structure unless those structures actually perform the recited function. *Id.* at 1371. Because the shunt switch does not actually perform the recited function of "storing the time compressed representation of said audio/video source information stored in said random access storage means onto said removable recording medium," it does not constitute any part of the structure corresponding to "recording means." Apple's identification of corresponding structure is erroneous and should be rejected.

D. Input & Output Terms

1. "transmitting," "transmission away," and "transmitting...to a selected destination"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"transmitting . . . away" **'705:** 1.	**"transmitting . . . away"** – "sending to an external device capable of playback"	**"transmitting / transmission"** – "sending to a remote location; excludes transferring through an interface to a storage device." **"transmitting . . . away"** - no construction necessary
"transmitting" **'839:** 1, 17, 73, 76, 77.	**"transmitting"** – No construction required. Alternatively, "sending"	**"transmitting"** – "sending to a remote location; excludes transferring through an interface to a storage device."
"transmitting . . . to a selected destination" **'839:** 1, 17, 73, 76, 77.	**"transmitting . . . to a selected destination"** – "sending to an external device that is capable of playback and is selected by a user"	**"transmitting"** – "sending to a remote location; excludes transferring through an interface to a storage device." **"transmitting . . . to a selected destination"** - no construction necessary

The Burst patents include several variations of the term "transmitting." Burst's constructions of these terms track the various contexts in which they are used in the claims, the description of the invention in the specification, the positions that Burst took in the prosecution history, and the ordinary understanding of one skilled in the art. Apple's constructions are simultaneously too narrow and too broad: they import limitations that are not present in the specification, while embracing concepts outside its scope.

Apple appears to agree that "transmitting" involves sending information outside the transmitting device. This is how the term is used throughout the claims. Claim 1 of the '705 Patent, for example, requires:

> transmitting said digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus in said burst transmission time period.

(emphasis added). Claim 1 of the '839 Patent requires:

> transmitting, in said burst time period, the stored time compressed representation of the received audio/video source information to a selected destination.

(emphasis added). In requiring that "transmission" be "away from said audio/video transceiver" and "to a selected destination," the claims suppose that transmission involves sending information somewhere else. The issue separating Apple's and Burst's construction is where. Burst contends that it is a playback device, while Apple asserts that it is a "remote location."

The specification expressly describes transmission as occurring between transceiver devices that are capable of playing back the audio and video that they receive:

> The VCR-ET can receive/transmit a video program at an accelerated rate via fiber optic port 18 from/to a variety of sources. For example—a video program may be communicated at an accelerated rate from the first VCR-ET to a second VCR-ET in less time than it would take to view the program.

'995 Patent, 7:58-64 (emphasis added). The requirement that the destination of a transmission be a device and not merely a location is also consistent with one of the stated objectives of the Burst invention, which is the "efficient storage, transmission, and reception of a digitized audio/video program." '995 Patent, 2:46-51.

The prosecution histories of the Burst patents also repeatedly assume that transmitted audio and video are sent to a receiver that is capable of playing it back. For example, in an overview of the invention, Burst explained:

> The audio/video information is time compressed to thereby allow transmission in a burst transmission time period which is substantially shorter than the time associated with real-time viewing of the video program by a receiver of the program.

Amendment and Response, '705 PH, at 11 (June 1, 1998) (emphasis added) (Exhibit 13). Burst distinguished real time transmission, explaining that "time compressed representations could be sent in a burst time period that is shorter than the time period needed for real time viewing by a receiver." *Preliminary Amendment, '705 PH*, at 9 (August 7, 1997) (Exhibit 12). The ability to

transmit audio/video files faster than the time required by the recipient to view the program also resulted in "the ability to 'pause' or 'rewind' the video program" – something that only makes sense in discussing a recipient device that is capable of playback. *Amendment and Response, '705 PH*, at 12 (June 1, 1998) (Exhibit 13); *see also Amendment "A", '995 PH*, at 18 (March 12, 1990) (describing transmission "to any of various types of destination devices") (Exhibit 9); *Amendment and Response, '705 PH*, at 15 (June 1, 1998) (transmitting to "one or more receivers") (Exhibit. 13).

The embodiment depicted in Figure 2 of the Burst patents is also instructive. In all the Burst patent claims that employ the term "transmission," the information transmitted is

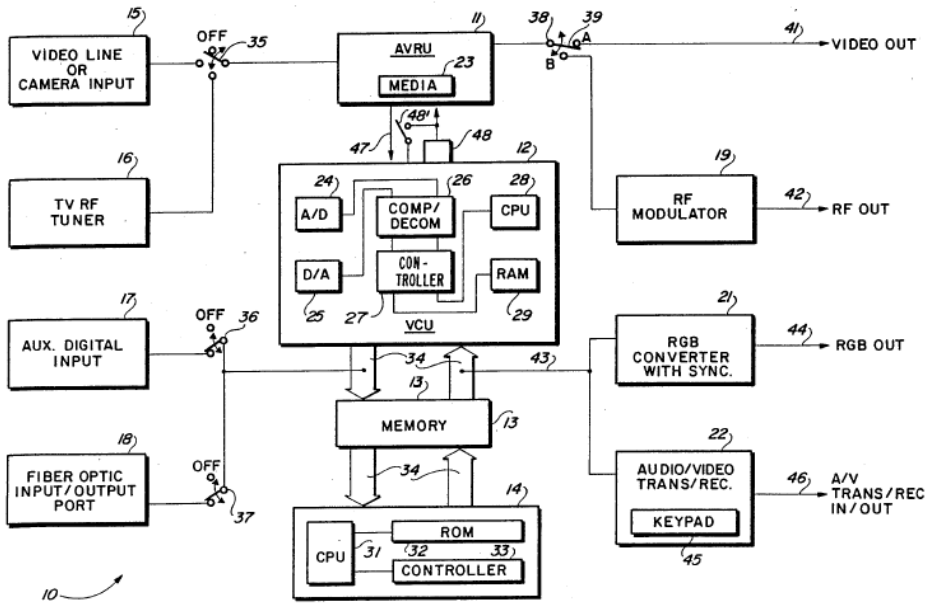

FIG. 2

compressed audio or video. Figure 2 depicts several outputs described in the specification as transmitting compressed audio or video. For example, two of those outputs are the Fiber Optic Port 18 and the Audio/Video Transmitter/Receiver 22. And the destination for transmissions of compressed audio and video from these outputs when described in the patents is always another transceiver that can play back the information it receives. *See* '995 Patent, 7:45-66; 9:55-10:21.

The term "remote location" that Apple proposes as the destination for transmissions was introduced in the '839 Patent and is used consistently with Burst's construction to indicate the location of a second device capable of receiving information transmitted from a first. *See* '839 Patent, Abstract. However, the description of a second transceiver as "remote" is introduced specifically in the context of optional embodiments where, for example, the transmission is over a telephone line, *see* '995 Patent, 10:14-21. Apple's construction thus seeks to improperly narrow the claims by importing these limitations of optional embodiments, while at the same time misdirecting the claims from a core object of the invention, which is transmission to playback devices.

Apple's construction also introduces an ambiguity by purporting to require some distance as opposed to only separation between the point of transmission and the point of reception without making clear how much. The report of Apple's expert, as well as his deposition testimony, is notably vague on this point. *See* Halpern Report at 19 (requiring "sending information over a distance (*i.e.*, to a remote location)") (Exhibit 6); *see also* Halpern Depo. at 206:13-16 ("Q: Would you agree with me the use of the word remote here is vague in the sense that it's not tied to a specific distance? A: Correct.") (Exhibit 8).

Nor do the Burst patents or prosecution histories provide a clear example of "remote." Instead, they provide varying examples of the distance between transmitters and receivers. In one example, the Burst patents describe a "remote VCR-ET at the other end of the telephone line." '995 Patent, 10:14-20. In another, the file history describes transmitting to another transceiver "coupled within the same network," which could include the same room. *Amendment "A", '995 PH*, at 19 (March 12, 1990) (Exhibit 9); *see also* Hemami Report at 49 (explaining that multiple VCR-ETs may be located in a single household) (Exhibit 5).

Burst's proposed constructions for the "transmitting" terms are derived directly from the intrinsic record. They draw clear and clean distinctions between destinations for transmission that are external to the transceiver, rather than internal. Apple's constructions are not supported by intrinsic evidence. They also depend on vague distinctions between local and remote imported from optional embodiments of the invention. The Court should adopt Burst's constructions and reject Apple's.

2. "transmission means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"transmission means" **'705:** 1, 3. ***"transmission means...for transmitting...away from said audio/video transceiver apparatus in said burst transmission time period"*** **'705:** 1, 3. ***"transmission means...configured to receive the edited digital time compressed representation..."*** **'705:** 3.	**"transmission means"** - Subject to §112 ¶6: "an auxiliary digital port, fiber optic transceiver, or microwave transceiver, plus equivalents"	'705 PATENT: **"transmission means...for transmitting...away from said audio/video transceiver apparatus in said burst transmission time period"** - Limited to structures disclosed under §112 ¶6: fiber optic port 18, point-to-point microwave transceiver, or satellite transceiver. **"transmission means...configured to receive the edited digital time compressed representation..."** - Limited to structures disclosed under §112 ¶6: fiber optic port 18, point-to-point microwave transceiver, or satellite transceiver.

The parties agree that the term "transmission means" is subject to Paragraph 6. The parties also agree that one of the corresponding structures is a fiber optic port. Apple has identified both a point-to-point microwave transceiver and a satellite transceiver as corresponding structure. Burst uses the term "microwave transceiver" to refer to both of these terms. The parties dispute, however, whether the auxiliary digital port should be included. Burst

maintains that it should because it performs the claimed function of "transmitting...away from said audio/video transceiver apparatus in said burst transmission time period."

The auxiliary digital port is shown in Figure 2 of the Burst patents as item 17. In the embodiment shown in Figure 2, the auxiliary digital port shares a connection with fiber optic input/output port 18. Although it is termed an "input" port, the Burst patents explain that the port can "receive any acceptable digital signal such as computer-generated video signal or as may be supplied by another VCR-ET." '995 Patent, 7:32-35. This signal "may be an RGB video signal such as that delivered to computer monitors, or it may be a digitized audio signal." *Id.* at 7:35-37. That the auxiliary digital input port can receive a digital audio signal from a second VCR-ET means that the second VCR-ET can transmit digitized audio as well.

None of the structures identified by Apple's expert in connection with the "transmission means" would output a digital audio signal in electronic form. Dr. Hemami, however, has explained that, given the above description of the auxiliary digital input port, one of skill in the art would readily recognize that port as a "generic computer communication interface for bidirectional communication, such as an RS-449 or an ethernet connection." Hemami Report at 51 (Exhibit 5). These devices, when used as the auxiliary digital input port, could transmit the digital audio signal as described in the Burst patents. Therefore, the Court should adopt Burst's identification of corresponding structure, including the auxiliary digital port.

E. Editing & Monitoring Terms

1. "editing means"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"editing means" **'995:** 2, 20, 21, 23, 26, 80. **'705:** 2.	**"editing means"** - Subject to §112 ¶6: "a processor executing stored editing software and a controller, plus equivalents"	**"editing means…for editing the time compressed representation…and for restoring the time compressed representation"** - Limited to structures disclosed under §112 ¶6: (1) Digital control unit 14 which includes (a) CPU

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"editing means…for editing the time compressed representation…and for restoring the time compressed representation" **'995:** 2.		(Intel 80286 or 80386 or Motorola 68020 or 68030), (b) ROM (TI TMS47256) and (c) integrated circuit controller; and (2) user interface control panel, light pen or mouse.
"editing means... for editing the digital time compressed representation...and for storing..." **'705:** 2. ***"editing means…for editing said selectively decompressed time compressed representation… and for storing…"*** **'995:** 20, 21.		**"editing means…for editing said selectively decompressed time compressed representation… and for storing…"** - Limited to structures disclosed under §112 ¶6: (1) Digital control unit 14 which includes (a) CPU (Intel 80286 or 80386 or Motorola 68020 or 68030), (b) ROM (TI TMS47256) and (c) integrated circuit controller; (2) user interface control panel, light pen or mouse; and (3) VME bus, Intel's Multibus, or Optobuss.

The parties agree that the term "editing means," which appears in several asserted claims in the '995 Patent and claim 2 of the '705 Patent, is subject to Paragraph 6. The editing means performs the functions of editing the time compressed representation in its various forms, including the digital time compressed representation ('705 Patent, claim 2) and the selectively decompressed time compressed representation ('995 Patent, claims 20 and 21). In some claims, the editing means performs the additional function of storing or re-storing the edited time compressed representation. *See* '995 Patent, claims 2, 20, 23, and 80; '705 Patent, claim 2.

The structure disclosed in the patent specification for "editing means" is "a processor executing stored editing software and a controller, plus equivalents." The specification identifies a CPU (central processing unit) 31 that runs editing software stored in memory (in the preferred embodiment, ROM 32) and a controller 33 that assists the CPU in controlling the editing function by handling the communications between the CPU and memory 13, where time

compressed representations are stored after editing. '995 Patent, Fig. 2, 6:23-26, 6:53-62. This combination of structures (the CPU and controller) is both necessary and sufficient to perform the functions of editing and then storing or re-storing the edited time compressed representation into memory.

Apple's proposed designation of corresponding structure suffers from numerous flaws. First, it specifies particular models of processors as the corresponding structure, when the patent specification mentions those models strictly as examples. Thus, the patent describes CPU 31 as "a microprocessor of the type described in connection with the CPU 28." '995 Patent, 6:53-54. In the referenced description of CPU 28, the specification states: "There are numerous commercially available microprocessors that are appropriate for this application. The Intel 80286, Intel 80386, Motorola 68020, and Motorola 68030 are examples." *Id.* at 5:50-53. The specification clearly defines CPU 31 as a "commercially available general microprocessor[ ]." That identification of structure is sufficient to satisfy the requirements of Paragraph 6. *See Budde*, 250 F.2d at 1380-82 (specification's disclosure of "commercially available vacuum sensor" constituted sufficient corresponding structure where one of ordinary skill in the art would understand it as structure capable of performing the recited function). The Burst patent specification's further inclusion of examples of such microprocessors, in the form of specific models offered by Intel and Motorola, does not cancel or detract from the sufficient disclosure of structure. One of ordinary skill in the art, when reading the specification, would readily and immediately understand that the CPU 31 structure corresponding to editing means is a general purpose microprocessor, given the patent's statement regarding commercial availability and its laundry list of such processors as opposed to one of the particular models mentioned by way of example. *See* Hemami Report at 53 (Exhibit 5).

Second, Apple errs by including the ROM in its identification of structure. As explained in the specification, ROM 32 merely stores the editing program or instructions. '995 Patent, 6:57-58. It is the "CPU 31 and controller 33 [that] together control the editing process as they execute the programs stored in ROM 32." *Id.* at 6:60-62. ROM is not part of the structure that actually performs the function of editing or storing the edited representations. Indeed, Apple's own expert, Mr. Halpern, admitted in his deposition that the ROM does not perform editing. *See* Halpern Depo. at 285:8-286:4 (Exhibit 8). ROM is not even required for the invention to work, because the editing program could be stored in other types of memory as well. Nevertheless, even if ROM were required to enable the invention to work, corresponding structure is limited to that which actually performs the recited function and does not include all things necessary to enable the claimed invention to work. *Asyst Techs.*, 268 F.3d at 1370-71. It is error to include ROM as part of the structure that performs the function of editing.[15]

The third flaw in Apple's identification of corresponding structure is its inclusion of the language "user interface control panel, light pen or mouse." As is true of ROM, the specification includes these items in a description of an embodiment of the invention, but these items do not perform the functions of editing and storing or re-storing that are recited in the claims. They are merely interfaces or tools that may be used in the editing process. *See* Hemami Report at 53 (Exhibit 5). Even if they were necessary to enable the invention to work, they are not properly included as part of the corresponding structure because they do not perform the recited functions. *See id.*

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[15] Apple makes a further error in its identification of corresponding structure with respect to ROM. Apple again tries to unduly restrict the corresponding structure by requiring it to include a specific model of ROM (TI TMS47256), when the patent simply mentions that model as an example: "A currently available example of a suitable ROM for this application is the Texas Instruments part TMS47256." '995 Patent, 6:58-60. Thus, even if

In contrast to Apple's flawed identification, Burst's identification of structure as "a processor executing stored editing software and a controller, plus equivalents," is simple and concise. It includes the structures that actually perform the stated functions of editing, storing, and re-storing, and no more. Burst's identification of corresponding structure does not impose illegitimate restrictions on those structures by improperly importing examples of specific models or part numbers from the specification into the claims. The Court should adopt Burst's proposal and reject Apple's.[16]

2. "editing"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"editing" **'995:** 2, 3, 20, 21, 23, 24, 26, 27, 80; **'839:** 2, 3, 20, 21, 23, 26, 27. **'705:** 2, 13.	**"editing"** - No construction required. Alternatively, "modifying"	**"editing"** - modifying the representation of the audio/video source information (does not include the function of creating a playlist)

The term "editing" appears in a number of claims in three of the four patents in suit. All of these claims involve editing the time compressed representation of audio/video source information in some form. Some of the claims involve editing the basic time compressed representation. *See* '995 Patent, claims 2, 3, and 80; '839 Patent, claims 2 and 3; '705 Patent, claims 2 and 13. The remaining claims cover editing a time compressed representation that has been decompressed or selectively decompressed. *See* '995 Patent, claims 20, 21, 23, 24, 26, and 27; '839 Patent, claims 20, 21, 23, 26, and 27.

ROM could be considered part of the corresponding structure for "editing means," it should not and cannot be limited to a particular Texas Instruments part number.

[16] According to the parties' joint claim chart, Apple's identification of structure for "editing means" as used in claims 20 and 21 of the '995 Patent also includes "VME bus, Intel's Multibus, or Optobuss." Apple's expert, however, does not include these items within his identification of corresponding structure in his expert report. *See* Halpern report at 43-45 (Exhibit 6). It is therefore unclear what position Apple is taking on these items, and Burst will address the issue in its reply brief if necessary.

Burst's position is that no construction of the term "editing" is required, as it is a term commonly understood by laypersons. The Court need not construe a term whose meaning within a patent claim is the same as the term's ordinary meaning. *See Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*, 249 F.3d 1341, 1349 (Fed. Cir. 2001) (district court did not err in declining to construe the term "melting" because its meaning in the patent claim did not "depart from its ordinary meaning" and thus did not need construction).

If the Court determines that it should construe the term "editing," then Burst's alternative position is that the proper construction should be "modifying." The specification describes a wide variety of ways in which one can use the invention to modify audio/video source information, and it uses a variety of verbs to describe these types of editing. One can use the invention to edit and "rearrange the scenes in a movie, alter the movie soundtrack, etc." '995 Patent, 6:27-29. This includes altering the order of segments in a program and removing "undesired segments." *Id.* at 9:49-52. "In addition, a program may be edited, one frame at a time, by changing [parameters such as] contrast, brightness, sharpness, colors, etc. (Alteration of the contrast, brightness, sharpness and colors can be automated as well.)" *Id.* at 6:30-33. The specification further describes rotating or scaling images and editing individual pixels. *Id.* at 6:33-36. A user can delete, insert, or enhance individual frames. *Id.* at 6:44-48. The user also can superimpose video captions or audio commentaries. *Id.* at 9:46-49.

"Similar editing features can be incorporated for the audio portion of each program." *Id.* at 6:37-38. Additional audio editing features include "rearranging the order of portions of the audio program, increasing or decreasing the volume of portions (or different frequency components) of the audio program, or enhancing the audio program through filtering techniques (*e.g.*, to remove static and noise)." '839 Patent, 12:47-52.

Thus, the specification describes editing of video and audio as rearranging, altering, removing, changing, rotating, scaling, deleting, inserting, enhancing, superimposing, increasing or decreasing volume or frequency components, and filtering. Given this wide range of types and methods of editing, only a term such as "modifying" accurately captures the scope of the term "editing" as it is used in the claims.

Apple's construction of "editing" also uses the term "modifying" and to that extent is unobjectionable. However, Apple then adds additional material that is superfluous and completely unsupported by the claims and specification. First, the language that Apple inserts immediately after "modifying" – "the representation of the audio/video source information" – is superfluous and redundant. Every one of the asserted claims that uses the term "editing" already expressly states that some sort of time compressed representation of audio/video source information is being edited. For example, claim 2 of the '995 Patent provides "for editing the time compressed representation of said audio/video source information stored in said random access storage means," and claim 20 of the '995 Patent provides "for editing said selectively decompressed time compressed representation of said audio/video source information …." If one substitutes the language proposed by Apple for the term "editing" in these exemplary claims, the result is confusing redundancy.

Even more fundamentally flawed is the remainder of Apple's construction, which proposes to add a very specific exclusion from the meaning of "editing;" namely, that it "(does not include the function of creating a playlist)." There is no mention in the claims or the specification of the term "playlist." Although Apple does not define the term, it is apparent that Apple's goal is to exclude the playlist features of the accused instrumentalities in this case: iTunes software, the iPod, and the iTunes Music Store. The playlist features of the accused

instrumentalities allow users to modify sequences or segments of audio/video source information by adding, inserting, deleting, and rearranging. It is not proper to construe claims by reference to the accused devices. *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002); *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) (en banc). Nothing in the intrinsic evidence supports a carve-out for playlist creation.

Moreover, even if it were proper for the Court to consider the playlist features of the accused products in construing the term "editing," the specification includes abundant evidence that describes just the kind of adding, inserting, deleting, and rearranging that playlists involve. As noted above, one can use the invention to edit and "rearrange the scenes in a movie, alter the movie soundtrack, etc." '995 Patent, 6:27-29. This includes altering the order of segments in a program and removing "undesired segments." *Id.* at 9:49-52. A user can delete, insert, or enhance individual frames. *Id.* at 6:44-48. On the audio side, editing features includes the quintessential playlist function of "rearranging the order of portions of the audio program." '839 Patent, 12:47-52.

In short, Apple's attempt to exclude the creation of playlists from the construction of "editing" flies in the face of the patent claims and specification and violates the legal prohibition against construing claims to exclude a feature of an accused product.[17] Apple's proposed construction must be rejected.

[17] The only other evidence cited by Apple in support of its blatant attempt to exclude the playlist functionality that exists in the accused instrumentalities is Judge Motz's construction of the term "editing" in the *Burst v. Microsoft* case. However, Judge Motz's non-binding construction suffers from the same flaws that permeate Apple's proposed construction. Judge Motz's construction improperly imports the term "playlist" – which appears nowhere in the patents – and ignores the abundant evidentiary support in the patents for precisely the kind of editing features that describe playlists.

3. "selectively view … during editing"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"selectively view … during editing" **'995:** 24, 27.	**"selectively view . . . during editing"** - No construction necessary. Alternatively, "view selection(s) of . . . during editing	**"selectively view … during editing"** – viewing the portion of the representation selected by a user during editing.

The term "selectively view … during editing" appears in claims 24 and 27 of the '995 Patent. Both claims involve use of a monitor to selectively view the decompressed representation of audio/video source information. Burst's position is that this term is self-explanatory and needs no construction. A layperson would have no trouble understanding that this term means that a user can view selections of the decompressed audio/video source information during the editing process.

In the event that the Court finds construction of this term to be necessary, Burst proposes the construction of "view selection(s) of . . . during editing." The specification's description of the editing process states that a user can "select a desired frame number from a menu on the display[.] The VCR-ET then displays a strip of frames (including several frames before and after the selected frame)." '995 Patent, 6:41-44. As this language makes clear, the user makes a selection of a frame or portion of the audio/video source information, and the VCR-ET then displays the selected portion as well as additional portions preceding and following the selection for viewing by the user. Burst's construction simply, accurately, and concisely describes this process.

In contrast, Apple's proposed construction introduces a major inaccuracy to the meaning of the term. Apple's construction is "viewing the portion of the representation selected by a user during editing." The inaccuracy in this construction is that it limits the viewing to the portion selected by a user when, in fact, the specification makes it absolutely clear that the invention displays not only the portion selected but also portions before and after the selection. '995

Patent, 6:41-44. Given the clear contradiction between Apple's proposed construction and the specification, the Court should adopt Burst's construction.

4. "visually displaying … for selective viewing by a user during editing"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"visually displaying … for selective viewing by a user during editing" **'839:** 27.	**"visually displaying … for selective viewing by a user during editing"** - No construction required. Alternatively, "displaying at least the representation selected by a user"	**"visually displaying … for selective viewing by a user during editing"** - showing the portion of the representation selected by a user on a screen or other visual display during editing.

One asserted method claim includes the "step of visually displaying the selectively decompressed digital time compressed representation of said digital audio/video source information for selective viewing by a user during editing." '839 Patent, claim 27. This claim is the method counterpart to the limitation in the apparatus claims for "selectively view … during editing." Accordingly, a similar analysis applies. Burst's position is that this term is self-explanatory and needs no construction. An ordinary juror or layperson would readily understand what it means to visually display for viewing selections during editing.

If the Court concludes that the term needs construction, Burst's alternative construction is "displaying at least the representation selected by a user." This construction is firmly grounded in the specification. As set forth above, once a user selects a frame or portion to edit, "[t]he VCR-ET then displays a strip of frames (including several frames before and after the selected frame)." '995 Patent, 6:41-44. Thus, the invention displays the representation selected by a user and a bit more.

Apple's proposed construction is inconsistent with the patent specification. Apple's construction is "showing the portion of the representation selected by a user on a screen or other visual display during editing." This construction, just like Apple's construction of the term

"selectively view … during editing," improperly limits the display to the portion of audio/video source information selected by a user when the specification clearly states that the invention displays not only that portion but also portions before and after it. '995 Patent, 6:41-44. In short, Apple's construction is inaccurate. The Court should reject it and adopt Burst's position.

5. "monitoring … during editing"

CLAIM TERMS	BURST'S CONSTRUCTION	APPLE'S CONSTRUCTION
"monitoring … during editing" **'839:** 3.	**"monitoring . . . during editing"** - No construction required. Alternatively, "observing and/or listening during editing"	**"monitoring … during editing"** - watching (for video) and/or listening (for audio)… during editing.

One asserted method claim, claim 3 of the '839 Patent, includes the step of "monitoring the stored, time compressed representation of said audio/video source information during editing." Burst's position is that the language "monitoring … during editing" needs no construction, because its meaning is readily apparent to a layperson or juror.

If the Court finds that construction of this language is necessary, Burst offers the alternative construction of "observing and/or listening during editing." That construction is apparent from claim 3 itself, which applies to audio and/or video under the parties' agreed definition of audio/video source information. In the course of editing video, a user might observe the video frames and characteristics in order to rearrange scenes; remove, delete, or insert segments or frames; edit individual pixels; or modify contrast, brightness, sharpness, or colors. *See* '995 Patent, 6:27-36, 6:44-48, 9:49-52.

A user editing audio could monitor the audio in two ways. Of course, the user could listen to it "by means of an audio monitor." '995 Patent, 9:34-35. In addition, the user could observe graphical or other visual representations of the audio on a monitor or display. As noted above in the section on construction of the term "editing," a user editing audio may be "rearranging the order of portions of the audio program, increasing or decreasing the volume of

portions (or different frequency components) of the audio program, or enhancing the audio program through filtering techniques (*e.g.*, to remove static and noise)." '839 Patent, 12:47-52. The user might observe visually the portions and characteristics of the audio program (e.g., an audio waveform or a frequency band equalizer) while modifying or editing the sound.

Burst's construction of "monitoring … during editing" is also consistent with standard dictionary definitions of the verb "monitor." The word is defined as "to watch, observe, or check," as well as "to check or regulate the volume or quality of (sound) in recording." WEBSTER'S NEW COLLEGIATE DICTIONARY 737 (1981) (Exhibit 18).

Apple's proposed construction – "watching (for video) and/or listening (for audio) … during editing" – does not account for a user's ability to visually monitor while editing audio. Apple's restriction of the visual component of monitoring to video finds no support in the patent claims, the specification, the dictionary definitions, or common sense. The restriction is therefore improper. If the Court decides to construe the term "monitoring … during editing" at all, the Court should adopt Burst's alternative construction and reject Apple's proposal.

VI. CONCLUSION

For the reasons identified above, Burst respectfully requests that the Court adopt Burst's proposed constructions where construction is deemed necessary.

Dated: November 22, 2006

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing DEFENDANT BURST.COM, INC.'S OPENING BRIEF ON CLAIM CONSTRUCTION, was served as follows on the following counsel of record:

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On this 22d day of November, 2006.

_____/s/_____

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