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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

APPLE COMPUTER, INC., Plaintiff, v. BURST.COM, INC., Defendant.	Case No. C 06-0019 MHP **APPLE'S CLAIM CONSTRUCTION BRIEF** Hon. Marilyn Hall Patel Complaint Filed: January 4, 2006 Trial Date: February 26, 2008

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STATUTES

I.

BACKGROUND

A. The Burst Patents

Burst describes its patents as claiming "fundamental innovations" based on the "technology of computers, compression, and high-speed transmission." According to Burst, the "innovation" at "the heart of Burst's patents" is "effectively decoupl[ing] the time required to transmit and receive audio and video works from the time required to play the back," so they can be sent in less time than it takes to play them.[1]

However, the patents as originally filed were actually directed primarily to a more mundane product—an improved VCR. The sole named inventor, Richard Lang, testified that he conceived of the inventions claimed in the Burst patents after he left his former company, Go Video, while he was attempting to come up with a way to design around Go Video's patent on a dual deck VCR:

> I was thinking about the lawsuit that had been discussed as a possibility at Go Video, and I was thinking more precisely about what I would do if I were the Japanese electronics industry and if Go Video had a patent on the dual deck VCR, how might I try and get around that patent. So, my thought process began in thinking about the dual deck VCR. And from there, I went to that – the idea of replacing one of the decks with random access memory hard drive or some other type of memory that could be accessed, and where editing could take place and there would be an option of going back to a new tape.[2]

As part of his thinking, Lang claims that he also recognized his improved VCR could use digitized, compressed data, and possibly phone line or satellite transmission.[3]

Confirming that the Burst patents, as originally filed, were directed to an improved VCR, the abstract in each of the Burst patents describes the invention as "[a]n improved video recorder/transmitter with expanded functionality."[4] The "Description of the Prior Art" section

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[1] Opening Brief at 1.

[2] Kalay Decl., Exh. A [Lang 7/23/03 Depo.] at 114:17-24.

[3] Kalay Decl., Exh. A [Lang 7/23/03 Depo.] at 115:2-10.

[4] Brown Decl., Exh. A ['995 patent] at Abstract.

enumerates the limitations of dual deck VCRs, which included the limitation to magnetic tape, the lack of random access during editing, and lack of transmission capabilities.[5] The "Background of the Invention" section describes the state of the art for VCRs in 1988 and summarizes the "[d]esirable features that are not normally available in a VCR," including "copying recorded programs from one tape or alternative storage medium to a similar or dissimilar storage medium," "editing recorded programs," and finally "the capability for high speed, high quality transmission and reception by optical fiber using the VCR."[6]

The remainder of the specification of the '995 patent is also consistent with the goal of creating an improved single deck VCR. The patent describes "an improved audio/video recorder transmitter-editor 10 (the 'VCR-ET')."[7] The VCR-ET contains a recording unit that has "all the functions of the typical VCR including record, play, rewind, slow motion, fast-forward and single frame hold."[8] In addition, the VCR-ET has features that include compatibility with a broader array of recording media, the ability to handle analog or digital input signals, data compression, random access storage, and a fiber optic port.[9]

In addition to the extensive description of the components of the improved VCR, the specification includes a very brief description of how the presence of the fiber-optic port enables high-speed transmission of video programs from one VCR-ET to another VCR-ET.[10] Based on this very brief description—and particularly based on the single sentence "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"—Burst contends that its patents enabled Lang "to shift the existing broadcast paradigm."[11]

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[5] *Id.* at 1:40-62.

[6] *Id.* at 1:29-37.

[7] *Id.* at 3:29-30.

[8] *Id.* at 3:43-45.

[9] *See generally* Brown Decl., Exh. A ['995 Patent].

[10] *Id.* at 7:45-66.

[11] Opening Brief at 1-2; Brown Decl., Exh. A ['995 patent] at 7:60-64.

B. The Asserted Claims

The issued claims of the Burst patents claim methods and apparatuses for handling audio/video source information, where the end result is transmitting a "time-compressed representation" of that source information faster than its "real-time" playback time. The asserted claims in all four patents are written in a consistent parallel structure that recites a series of steps that must be performed on the audio/video source information. There are two basic types of claims. Claim 1 of the '839 patent is the simplest claim, and illustrates the basic structure of the first type of claim:

> **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.

As can be seen, the four basic steps of the claim are receiving information, compressing it into a "time compressed representation," storing the "time compressed representation," and finally transmitting the "stored time compressed representation."

The second type of claim shortens this sequence to three steps by requiring that the audio/video source information be received already in time-compressed form, then stored, and then transmitted. Claim 17 of the '839 patent is the simplest example of this second style.

In the first type of claim, the compressing step gives the "time compressed representation" "an associated burst time period" that is "shorter" than real time. In the second type of claim, there is no compressing step, but the "time compressed representation" is received "over an associated time period" that is shorter than real time. In both types of claims, the transmission step is required to occur in this previously defined, shorter-than-real-time "burst

time period."

C. Apple's Accused Products

Burst asserts that its claims cover a variety of Apple hardware and software products that handle audio or video. The focus of Burst's allegations appears to be on Apple's iPod, iTunes, and iTunes Store products, though many other Apple products are accused of infringement.[12] The iPod is a portable music player, shown to the right, that uses an intuitive user interface with a characteristic circular touchpad. iTunes is software that can be used to organize and play music on a computer, and to access the iTunes Store. The iTunes Store is essentially an electronic music and video store that is accessed through the internet using the iTunes software. Music and video sold by Apple's iTunes Store are electronically delivered to the customer using the internet.

Burst's basic contention is that these products infringe because they can be used to transmit compressed music and/or video files in less time than it takes to play the music or video.

II.

THE BASIC LEGAL FRAMEWORK FOR CLAIM CONSTRUCTION

The claim construction law most significant to the issues here is cited in the context of the issues to which it applies. This section briefly outlines the basic principles of claim construction, as set forth in the Federal Circuit's recent *en banc* decision in *Phillips v. AWH*.[13] The longstanding law, restated in *Phillips*, is that claim construction involves considering "the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of

[12] Brown Decl., Exh. B [Burst's Preliminary Infringement Contentions].

[13] 415 F.3d 1303 (Fed. Cir. 2005).

the art."[14]

It is "a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude."[15] "The words of the claim are generally given their ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention."[16]

The "claims must be read in view of the specification, of which they are a part."[17] However, a claim is not "a nose of wax which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express. . . . The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is, and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms."[18]

Put differently, while it is appropriate for a court to "rely heavily on the written description for guidance,"[19] it cannot trump the plain language of the claims. As the Federal Circuit explained in *Schoenhaus v. Genesco*, "where a patent specification includes a description lacking a feature, but the claim recites that feature, the language of the claim controls."[20] The claim controls even when it departs from the original written description because the patentee "is only entitled to protection of the claims as issued, not as filed."[21] This is true even where the claim "excludes the described embodiment, which is deemed dedicated to the public."[22]

The prosecution history is significant because it "excludes any interpretation that

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[14] *Id.* at 1314.

[15] *Id.* at 1312.

[16] *Id.* at 1312, 1312, and 1313 respectively.

[17] *Id.* at 1315.

[18] *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (quoting *White v. Dunbar*, 119 U.S. 47, 51-52 (1886)). *Innova*'s statement of "the basic principles of claim construction" was expressly reaffirmed in *Phillips*, 415 F.3d at 1312.

[19] *Phillips*, 415 F.3d at 1317.

[20] *Schoenhaus v. Genesco, Inc.*, 440 F.3d 1354, 1359 (Fed. Cir. 2006).

[21] *Id.*

[22] *Id.*

was disclaimed during prosecution."[23] Furthermore, "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention."[24]

Finally, "extrinsic evidence may be useful to the court," because it "can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean," though it "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." [25]

III.

"TIME COMPRESSED REPRESENTATION HAVING AN ASSOCIATED BURST TIME PERIOD THAT IS SHORTER THAN [REAL-TIME]"

Apple and Burst agree that "the parties have a basic fundamental dispute regarding the type of compression covered by the Burst patent claims."[26] That dispute focuses on the interpretation of the phrase "time compressed representation." Each of the independent claims requires a sequence of acts—compressing (or receiving compressed), storing, and then transmitting—that involves this "time compressed representation." For example, claim 1 of the '839 patent (selected because it is the simplest claim) reads as follows:

> **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.

[23] *Phillips*, 415 F.3d at 1317.

[24] *Id.* at 1317.

[25] *Id.* at 1319.

[26] Opening Brief at 43.

Each of the claims, like this claim, requires (1) compressing audio/video source information into a "time compressed representation," (2) storing the time compressed representation, and then (3) transmitting the stored time compressed representation. The claims also require the time compressed representation to have an "associated [burst] time period" that is "shorter than a time period associated with a real time representation."[27]

Burst's position is that the claimed time compression should be interpreted as data compression, because data compression is the only compression described in the specification. This position cannot survive an analysis of the file history, where Burst stated clearly that "data compression" is "not the equivalent by any means of applicant's specifically claimed time compression," and is also contradicted by a host of other evidence.

Apple's position is that the term "time compressed representation" must be given its ordinary meaning, which is a representation that is compressed in time, not one that is data compressed. Indeed, there can be no genuine dispute that the ordinary meaning of time compression is compressing in time (by increasing the frequency or rate of the data), and is not data compression (which is compressing in *space*). Apple's position is that time compression should be given this ordinary meaning.

The phrase "time compressed representation" presents an unusual claim construction situation because that phrase does not appear *at all* in the specification, or in the originally filed claims of either Burst's December 1988 application or its May 1989 continuation-in-part application. It was only after Burst received initial rejections, and then changed patent attorneys, that the phrase "time compressed representation" and the related phrases "associated burst time period" and "shorter than a real time representation" were introduced into the Burst patents.[28] In light of this, the claim construction methodology laid out in *Phillips* suggests that it is appropriate in this case to focus on the file history and the claim language—which actually

[27] *See, e.g.*, Brown Decl., Exh. A ['995 Patent] claims 1, 8, 9, 17; '829 Patent claim 1, 8, 9, 17, 73, 76, 77; '932 Patent claim 4, '705 Patent claim 12. Some claims omit the word "burst," reading simply "associated time period."

[28] The concept of transmitting a signal faster than it would take to play is present in the original claims of the May '89 continuation-in-part, as discussed below.

discuss time compression—rather than attempting to divine from the specification a description of something which is not there. As discussed below, interpreting time compression to have its ordinary meaning of compressing in time, rather than as data compression, is consistent with the specification and is strongly supported by the remaining claim language, the fact that Burst abandoned its original data compression claims after being confronted with prior art clearly showing data compression, by Burst's statements to the European Patent Office, and by Burst's own documents.

A. "Time Compressed Representation"

1. There is no genuine dispute that time compression has an ordinary meaning that is not data compression.

The field of the Burst patents is the communication of audio/video information.[29] In this context, time compression is understood by those of skill in the art to mean compressing in time, i.e. increasing the frequency (or signaling rate) of the underlying signal, and thereby decreasing its duration. In contrast to data compression, which refers to reducing the number of "bits" used to represent particular information and thereby compressing the "space" occupied by the information, time compression does not change the "bits" themselves, only their time signature (i.e. the frequency of the signal, in the case of analog, or the digital signaling rate, in the case of digital).

Conceptually, time compression is what happens when one plays a regular 33 rpm record at 45 rpm. If one recorded this playback on a standard tape recorder, the resulting recording would be a "time compressed representation" of the original recording because it would be shorter than the original song. If this time compressed tape recording were played back at 33/45ths normal tape speed, it would be then sound normal and would last its original duration.

Graphically, time compression is shown in the top line of the following figure from DATA COMMUNICATIONS PRINCIPLES by Richard D. Gitlin et al. (1992). The two signals in

[29] Burst's expert states that the field of the Burst patents is the "*digital* communication of audio/video source information." Brown Decl. Exh. C [Hemami Depo.] at 26. Apple disagrees because many dependent claims expressly refer to analog information, and the independent claims encompass both analog and digital communication.

the middle of the top line in the figure are time compressed versions of the signals at the outside edges. As can be seen, the "bits" are the same, they are just closer together in time:

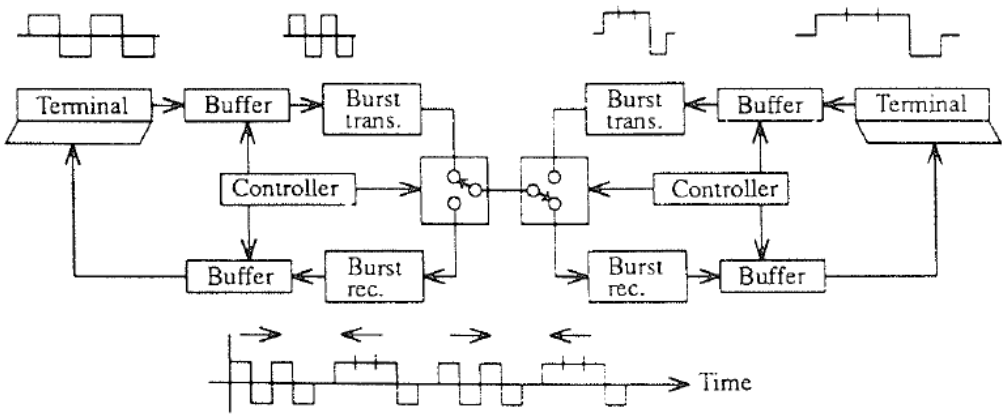

Fig. 9.3 Time-compression multiplexing (TCM), in which transmission is one way at a time in high-rate bursts.

As shown in the figure, time-compression is achieved by passing signals into a buffer at one rate, and then reading them out of the buffer at a higher rate, thereby compressing them in time[30]—or, as Burst's expert put it, "squashing" them in time.[31] Another straightforward description from a textbook is that "[T]ime compression is an exchange of time for bandwidth. For example, if we play a record twice as fast, all audio is double in frequency and the record takes half the time to play. Twice the audio bandwidth is needed in this case."[32]

This ordinary meaning of time compression—compressing a signal in time by increasing its (analog) frequency or (digital) signaling rate—is recognized by both parties' experts, and is shown in dictionaries, textbooks, and the prior art cited during the prosecution of the Burst patents.

a. Burst's expert concedes that time compression had a known meaning in 1988 that was not data compression.

Burst's expert, Dr. Hemami, testified that in 1988, time compression had two known meanings in the field of communication of audio/video information: (1) "reducing the

[30] Brown Decl., Exh. D [DATA COMMUNICATION PRINCIPLES 607-669 (R. Gitlen, J. Hayes and S. Weinstein eds., Plenum Press 1992)] at Fig. 9.3.

[31] Brown Decl., Exh. C [Hemami Depo.] at 179.

[32] Brown Decl., Exh. E [Graf] at 103.

duration of an analog signal relative to its original duration," i.e. "increasing the frequency" of the signal;[33] and (2) "increasing the digital signaling rate . . . to reduce the transmission time."[34] These two definitions are analog and digital expressions of the same concept: increasing the (analog) frequency or (digital) signaling rate of a signal and thereby compressing it in time. Thus, Burst's expert concedes that in 1988, the meaning of time compression to those of skill in the field of the Burst patents are the analog and digital variants of the construction advanced by Apple. Indeed, Burst's expert has conceded that these two definitions are the *only* meanings of time compression that she was aware of in the field of the Burst patents.[35]

The fact that Burst's expert acknowledged that Apple's proposed definition reflects the known meaning of time compression is particularly significant because it is an admission against interest.[36] Burst attempts to avoid the impact of this admission by arguing that "the term 'time compressed representation' does not have an accepted scientific or engineering meaning."[37] This argument is easily rejected. The only evidence Burst has put forward for this proposition is the testimony of Dr. Hemami, and what Dr. Hemami actually testified, as explained above, is that the term had only two possible meanings *in the field of the Burst patents*, meanings

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[33] Payne Decl., Exh. 5 [Hemami Report] at 42 (meaning # 1); Brown Decl., Exh. C [Hemami Depo.] at 166-167.

[34] Payne Decl., Exh. 5 [Hemami Report] at 43 (meaning # 4).

[35] Brown Decl., Exh. C [Hemami Depo.] at 190-191 ("Q. Are you aware of any definitions that you haven't, definitions of the term time compression that would have been known in 1988 that fall within the field of the Burst patents that you haven't listed here? A. I am not aware of any that I haven't listed. I attempted to be thorough in finding the uses as I stated, it's not a term, it's a term that didn't have a single accepted use or meaning and I wanted to make sure that I cast a broad net and that I didn't miss anything."); *see also* Hemami Depo at 191 ("Q. You'd agree that the term time compression is used in the sense you've described as one and four in your expert report in the field of communication of audio or video information? A. Yes."). In addition to these two meanings ("one and four"), Dr. Hemami provided two other meanings for time compression in her expert report. Payne Decl., Exh. 5 [Hemami Report] at 42-43 (meaning #s 2 and 3.) But Dr. Hemami readily conceded that these two other meanings "aren't relevant to the Burst patents because they're in a different field." Brown Decl., Exh. C [Hemami Depo.] at 160, *id*. at 190. At her deposition, Dr. Hemami also offered a further definition for time compression, one known in the field of radar. Again, Dr. Hemami conceded that this definition was "definitely" not in the field of the Burst patents. Brown Decl., Exh. C [Hemami Depo] at 183.

[36] *Fin Control Sys. Pty., Ltd. v. OAM, Inc.*, 265 F.3d 1311, 1321 (Fed. Cir. 2001) (noting that testimony by a party's expert can "constitute a fatal admission against interest").

[37] Opening Brief at 50; Payne Decl., Exh. 5 [Hemami Report] at 42-43.

which are analog and digital expressions of the construction advanced by Apple.[38] Whether or not time compression has other, potentially different meanings in other fields is irrelevant, because patents are construed by those of skill in the "field of the *invention*", not by those of skill in different fields.[39]

The ordinary meaning of time compression is also confirmed by the testimony of Mr. Halpern—a professional with more than 20 years of technical experience in the field of data communication, and Apple's expert.[40] Mr. Halpern testified that "time compression is understood by those of skill in the art to mean compressing in time, that is, increasing the frequency of the underlying signal and decreasing its duration." As he explained, unlike data compression, which "reduces the number of 'bits' used to represent a particular signal," "time compression does not change the "bits" themselves, only their time signature (i.e. their frequency)."[41]

In short, the undisputed fact is that, in the field of the Burst patents, the only known meanings of time compression are (1) "reducing the duration of an analog signal relative to its original duration," i.e. "increasing the frequency" of the signal; and (2) "increasing the digital signaling rate … to reduce the transmission time."[42] These two definitions are analog and digital expressions of the same concept: i.e. increasing the (analog) frequency or (digital) signaling rate of a signal and thereby compressing it in time.

[38] Brown Decl., Exh. C [Hemami Depo.] at 160 (conceding that the two other meanings "aren't relevant to the Burst patents because they're in a different field"); *id.* at 190.

[39] *Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc.*, 347 F.3d 1367, 1370 (Fed. Cir. 2003) (emphasis added).

[40] *See* Halpern Decl., Exh. 1 [Halpern Report] at Exh. A.

[41] *Id.* at 8-9.

[42] Dr. Hemami takes the position that none of the understood meanings of "time compression" in the art is actually applicable to the Burst patents, and argues that "time compression" should be read as meaning data compression. Payne Decl. Exh 5 [Hemami Report] at 42.

b. Dictionaries, textbooks, and the cited prior art show that time compression is compressing in time, not data compression.

There is extensive evidence, both intrinsic and extrinsic, that in the field of data communication at the time of the alleged invention,[43] time compression means increasing the (analog) frequency or (digital) signaling rate of a signal and thereby compressing it in time. This evidence also shows that the concept of time compression is frequently referred to in the art in conjunction with the use of the term "burst," just as is done in the Burst patents.

The following quotations and figures, taken from textbooks and a dictionary, are extrinsic evidence:

- The 1992 "Data Communication Principles" textbook by Gitlin describes "time compression multiplexing" as a technique that "alternates fast transmission bursts in each direction, saving up data (submitted to each transmitter at a lower rate) in buffers … [so that in ideal circumstances for a duplex line] the burst transmission rate required would be exactly twice the average data rate of each terminal."[44] Figure 9.3 is of the Gitlin, reproduced below, illustrates time compression:

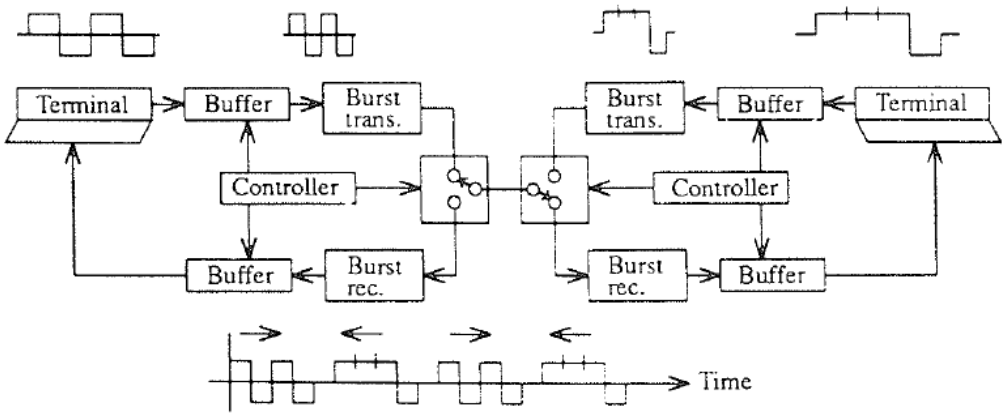

Fig. 9.3 Time-compression multiplexing (TCM), in which transmission is one way at a time in high-rate bursts.

- The 1988 "Digital Communication" textbook by Lee & Messerschmit—which Burst's

[43] The Burst patents were filed in December 1988 and May 1989.

[44] Brown Decl., Exh. D [Gitlin] at 609.

expert used in one of her graduate school courses—states that "time-compression refers to the fact that a bit-stream in one direction is divided into traffic bursts and transmitted at a speed at least twice as high as its average bit rate."[45]

- The 1988 "Digital Communications" textbook by Sklar describes "*bursting* [a] transmission at a much faster rate than the rate at which it is generated,"[46] and provides the example of "INTELSAT digital transmission standards" where a signal with a bit rate of 2.048 Mbits/s "is compressed (by a factor of 59) and transmitted … at a burst rate" of 120.832 Mbits/s. This compresses a 2 millisecond frame of data into 33.9 microseconds (the same factor of 59)—without changing the bits—as illustrated in the following figure:[47]

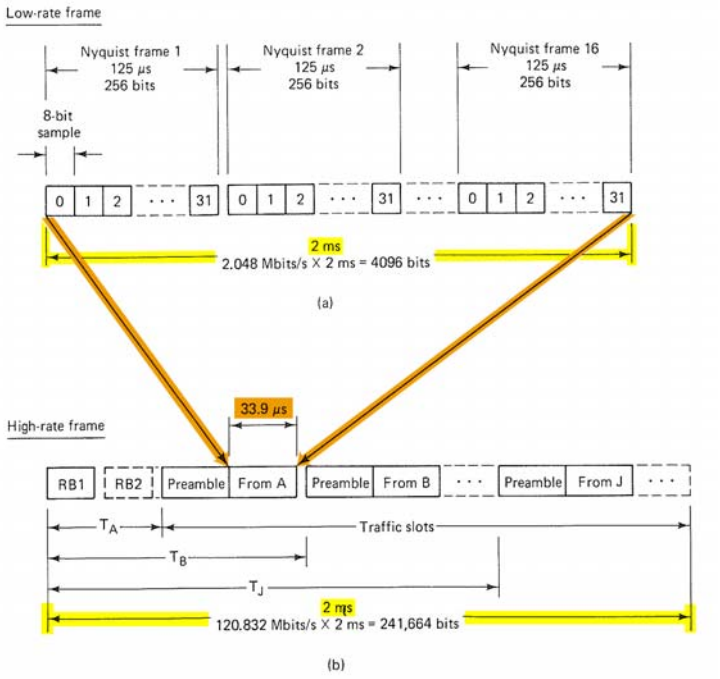

Figure 9.35 INTELSAT digital transmission standards for Europe. (a) Terrestrial PCM multiplex. (b) High-rate frame.

The Sklar textbook also describes the "burst compression and expansion buffers" which are used to accomplish this.[48]

[45] Brown Decl., Exh. F [Lee & Messerschmitt] at 598.

[46] Brown Decl., Exh. G [Sklar] at 519 (emphasis in original).

[47] Brown Decl., Exh. G [Sklar] at 519-523, Fig. 9.36.

[48] *Id.* at 523, Fig. 9.37.

- The 1984 edition of the Modern Dictionary Of Electronics defines a "burst transmission" as a "radio transmission in which messages are stored and then released at 10 to 100 or more times the normal speed. The received signals are recorded and returned to the normal rate for the user."[49] As Burst's expert has testified, this releasing of signals at "10 to 100 or more times the normal speed" is the same thing as "increasing the frequency" of the transmitted signal.[50]

The following quotations, taken from the cited prior art to the Burst patents, are intrinsic evidence:[51]

- The 1982 Arnon patent, entitled "Time Compression Multiplex Digital Transmission System," which is cited prior art to the Burst patents, describes a "time compression multiplex (TCM) technique" as one in which "the digital information signal to be transmitted is divided into discrete portions and each portion *compressed with respect to time* to form a so-called 'burst', occupying less than one half the time of the original portion. The transmitter at each terminal alternately transmits the burst onto the path… On receipt, each burst is expanded to occupy its original time span." [52]
- The 1985 Abraham patent, which is also cited prior art, describes a system in which video signals are sent "within a *time compressed* transmission period."[53] Specifically, the Abraham patent describes "video/audio content" of a "program library" that is "digitized and compressed time-wise for transmission … during time compressed transmission periods of relatively short duration as compared to the real time duration."[54] The information sent in this manner is decompressed by being recorded at "a relatively high recording speed corresponding to the signal time compression associated with the

[49] Brown Decl., Exh. H [Modern Dictionary of Electronics] at 122.

[50] Brown Decl., Exh. C [Hemami Depo.] 161-162.

[51] "Prior art cited in a patent or cited in the prosecution history of the patent constitutes intrinsic evidence." *V-Formation, Inc. v. Benetton Group SPA*, 401 F.3d 1307, 1311 (Fed. Cir. 2005).

[52] Brown Decl., Exh. I [U.S. Patent No. 4,467,473] at 1:29-43 (emphasis added).

[53] Brown Decl., Exh. J [U.S. Patent No. 4,521,806] at Abstract.

[54] *Id*. at 4:24-30.

incoming signal." "At the end of such recording operation," the recording drive is switched "to the playback mode," in which the drive advances at "a relatively low speed for signal pickup by the head 44 in real time."[55]

- The 1981 Haskell patent, entitled "Time Compression Multiplexing of Video Signals," is cited prior art to the Burst patents.[56] It describes a system of multiplexing video signals through time 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 store, compressed in time, and transmitted sequentially, one after the other, over the communication path."[57] "The signal of each channel occupies the communication path only for a fraction of the time, i.e., during its time slot, but during that fraction of time the whole bandwidth is available to the signal."[58] Significantly, Burst acknowledged during prosecution that the Haskell patent "teach[es] a system for time compression multiplexing."[59]

All of these references show that time compression was well understood in the art to involve compressing information *in time*, i.e. by increasing the rate or frequency of the data. This is an operation that is completely different compressing data by reducing the number of "bits" required to represent the data.

2. The claim language supports giving time compression its ordinary meaning, not construing it as data compression.

The context provided by the claim language as a whole is a critical factor in claim construction. Here, the claim language makes several important points about the proper construction of the phrase "time compressed representation."

First, and most obvious, is the presence of the word "time" in "time compressed representation." Burst is effectively asking this phrase to be read as if it said "compressed

[55] *Id.* at 3:43-60.

[56] Brown Decl., Exh. K [U.S. Patent No. 4,300,161].

[57] *Id.* at 1:62-66 (emphasis added).

[58] *Id.* at 1:55-59.

[59] Brown Decl., Exh. L ['705 File History] at APBU 0620 (emphasis added).

representation." This violates the basic axiom that all of the words of the claims should be given effect.[60] Confirming the significance of the word "time," when Burst amended its claims in Europe to make it "clear that the claims relate to the data compression as described on page 7 of the description," Burst did so by removing the word "time" from "time compressed representation."[61] Thus, Burst has publicly conceded that the word "time" needs to be removed from "time compressed representation" for it to refer to a data compressed representation.

Second, the "time compressed representation" has an "associated *burst* time period." As shown by the examples above, the word "burst" is commonly used in the art to refer to a segment of data that has been compressed in time.[62] The claim language uses the word "burst" in exactly this way: the "burst time period" is the time period that is associated with the time compressed data. The presence of the term "burst" in the claims, and its use to describe something about the time-compressed data, is consistent with how the term is used in the art in conjunction with "time compression." Thus, the presence of the term "burst" supports giving the term "time compressed" its ordinary meaning in the art.

Third, the "burst time period" is "associated" with the "time compressed representation," and this is done as part of the compressing step: "compressing ... source information into a time compressed representation *having an associated* burst time period…" As shown by the examples above, when data is compressed in time, the rate (or frequency) associated with it necessarily changes, becoming higher as the data is compressed in time. Correspondingly, the time period of the data necessarily gets smaller. This is part and parcel with time compression. Indeed, the "burst time period" of the data is essentially the "key" that allows

[60] *See, e.g.*, *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (rejecting an interpretation that "largely reads the term 'operatively' out of the phrase 'operatively connected'" because "all claim terms are presumed to have meaning in a claim."). *Innova* was expressly reaffirmed in *Phillips*, 415 F.3d at 1312.

[61] Burst's representations to the European Patent Office are discussed in Section III.A.5 below.

[62] *E.g.* Brown Decl., Exh. F [Lee & Messerschmitt textbook] at 598 ("time-compression refers to the fact that a bit-stream in one direction is divided into traffic *bursts* and transmitted at a speed at least twice as high as its average bit rate"); Brown Decl., Exh. G [Sklar Textbook] at 519 (describing a signal with a bit rate of 2.048 Mbits/s that "is compressed (by a factor of 59) and transmitted … at a *burst* rate" of 120.832 Mbits/s); Brown Decl., Exh. I [Arnon Patent] at 1:32-36 (describing a "portion compressed with respect to time to form a so-called '*burst*', occupying less than one half the time of the original portion").

decompression of time-compressed data. One needs to know by what factor the data must be expanded in order to return it to real time. There is thus no question that time compressed data has an "associated burst time period."

Moreover, in time compression this "burst time period" exists even if the data is never transmitted. The 33 rpm record playing at 45 rpm has a "burst time period" that is 33/45ths of its original time period, regardless of whether a telephone transmits that compressed signal or not. In contrast, data-compression is itself completely divorced from time. Data compression reduces the amount of "bits" the data occupies, for example by encoding a longer bit sequence with a shorter one. Without a transmission, data compression does not create or change any associated time period. Of course, during transmission, if all else is equal, a data-compressed representation will be transmitted in less time than an uncompressed representation because fewer bits need to be transmitted, and transmitting fewer bits takes less time when the transmission rate is constant. It is this shorter transmission time period that Burst's construction refers to: "a reduced number of bits that *allows transfer* over an external communications link in a time period that is shorter than [real time]." But in this case the shorter "time period" is associated with the compressed data as part of the transmission, not as part of the compression. The language of the claims clearly shows that this is not correct: The burst time period of the claims is something the time compressed representation acquires in the compressing step, before transmission, not something it acquires as part of transmission.[63] When the claimed transmission occurs, it occurs in the already-established "*said* burst time period." This claim language fits with Apple's construction, and not Burst's.

3. The file history precludes construing time compression as data compression.

a. Burst has disclaimed data compression by stating that data compression is not time compression.

The simplest evidence that the time compression of the claims is not data compression is Burst's direct statement in the file history that "data compression" is "not the

[63] Burst itself emphasizes the fact that the claim language makes clear that its steps are performed in order. Opening Brief at 56 (describing the "sequence mandated by the claim language itself.")

equivalent by any means of applicant's specifically claimed time compression."[64]

Burst made this statement in order to distinguish U.S. Patent No. 4,974,178 to Izeki et al. ("Izeki"), which had been cited by the examiner in rejecting Burst's claims. Izeki, which is titled "Editing Apparatus for Audio and Video Information," describes a device for editing audio/video programs and then creating an edited "master tape" from the audio/video data. Izeki describes using data compression to reduce the number of bits used to represent "the inputted video and/or audio data," using algorithms such as those described in the classical paper "Scene Adaptive Coder" by Chen and Pratt for "real-time color television transmission."[65]

In response to the examiner's rejection, Burst declared:

> While Izeki et al. mentions data compression as one type of conversion process, this is not the equivalent by any means of applicant's specifically claimed time compression.[66]

The Federal Circuit has repeatedly held that an applicant must be held to the statements it makes during prosecution to distinguish the prior art.[67] Thus, Burst's unequivocal statement that "data compression" is "not the equivalent" of "time compression" is binding on Burst, and excludes data compression from the meaning of time compression.[68]

The Federal Circuit put this principle particularly succinctly in *North American Container v. Plastipak Packaging*, explaining that the "inescapable consequence" of distinguishing a prior art reference to overcome a rejection is that "the scope of applicant's claims

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[64] Brown Decl., Exh. L ['705 File History] at APBU 551.

[65] Exh. M [Izeki patent] at 2:47-56; Brown Decl., Exh. N ["Scene Adaptive Coder"] at 225; Brown Decl., Exh. C [Hemami Depo.] at 52-53 (describing "Scene Adaptive Coder" as a "classical" paper.)

[66] Brown Decl., Exh. L ['705 File History] at APBU 551.

[67] *Nystrom v. Trex Co.*, 424 F.3d 1136, 1144 (Fed. Cir. 2005); *Research Plastics v. Federal Packing*, 421 F.3d 1290 (Fed. Cir. 2005); *Norian Corp., v. Stryker Corp.*, 432 F.3d 1356, 1361-62 (Fed. Cir. 2005); *Sentry Protection Products, Inc., v. Eagle Manufacturing Co.*, 400 F.3d 910, 916 (Fed. Cir. 2005).

[68] It is worth noting that in Izeki, the disclosed data compression would have allowed faster-than-real-time transfer to a hard drive of the video data described in the Burst patents. However, without the disclosed data compression, this would not have been possible. *See* Halpern Decl. Exh. 1 [Halpern Report] at 14-15 (explaining that the data rate of the SCSI interface is higher than the data rate for full motion video described in the "Scene Adaptive Coder" paper, but is slower than the data rate of the uncompressed video in the Burst patents).

cannot cover" what was distinguished.[69] In *Plastipak*, the issue was the interpretation of the "generally convex" inner walls of the claimed plastic bottle. During prosecution, the applicant distinguished a prior art reference on the basis that it disclosed inner walls that were "slightly concave." The Federal Circuit found this argument required the term "generally convex" to be construed to exclude inner walls that were concave in any part. The Federal Circuit reasoned that "that the scope of applicant's claims cannot cover inner walls that are 'slightly concave,'" and that "it logically follows … that the scope of applicant's claims is also limited to inner walls … with no concavity." The Federal Circuit reached this conclusion even though the applicant did not need to make the distinguishing statement in the prosecution history in order to distinguish the art,[70] and even though this conclusion excluded the preferred embodiment from the scope of the claims in that case.[71] Here, as in *Plastipak*, the "inescapable consequence" of Burst's decision to distinguish the Izeki reference on the grounds that "data compression" is "not the equivalent" of "time compression" is that time compression cannot encompass data compression.

b. Burst filed and then abandoned data compression claims before introducing the term "time compression."

The terms "time compressed" and "associated burst time period" do not appear in the specification or the originally filed claims of either Burst's December 1988 application or its May 1989 continuation-in-part application. However, the file history shows that Burst originally claimed both data compression and faster-than-real-time transmission (its current proposed construction), and then abandoned its claims to data compression after the Patent Office found prior art showing data compression in the context of transmitting video information. The law requires claims to be "read and interpreted with reference to claims that have been cancelled or rejected, and the claims allowed cannot by construction be read to cover what was thus eliminated by the patent."[72] The fact that Burst filed and then abandoned its data compression claims

[69] 415 F.3d 1335, 1345 (Fed. Cir. 2005).

[70] *Id.* at 1345-46.

[71] *Id.* at 1346.

[72] *Omega Engineering v. Raytek*, 334 F.3d 1314, 1323 (Fed. Cir. 2004); *Regents of University of California v. Dako North America, Inc.*, 448 F. Supp. 2d 1145, 1153 (N.D. Cal. 2006).

contradicts Burst's argument that time compression should be interpreted as data compression.

The original claims of the May 1989 continuation-in-part application distinguish between data compression and faster-than-real-time transmission. Some of these original claims, such as claim 9, appear to describe data compression. Claim 9 describes an apparatus where audio data is received, digitized, and then "compressed"—not time compressed—before being stored and then transmitted:

> 9. Apparatus comprising:
>
> means for receiving an analog audio signal;
>
> means for digitizing said analog audio signal, thereby generating digital data corresponding to said audio signal and for compressing said digitized data;
>
> means for storing said compressed digital data; and
>
> transceiver means for transmitting said compressed digital data.[73]

The compression of this claim seems to be data compression because "compression" alone without the word "time" implies data compression.

Claim 11, which depends from claim 9 (through claim 10), adds the limitation that the compressed data be transmitted in less than the amount of time required to watch it:

> 11. Apparatus of Claim 10 wherein the time required by said transceiver means to transmit or receive said compressed digital data is less than the time required to monitor the audio signal corresponding to said data.

The addition, in a dependent claim, of the concept of faster-than-real-time transmission shows that the original claims, like the specification,[74] independently describe both data compression and faster-than-real-time transmission. Similarly, the original claims of the '995 patent independently claim sending data faster-than-real-time (original claim 1), and data compression (original dependent claim 4).[75]

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[73] Brown Decl. Exh. O ['932 File History] at APBU 167.

[74] *See* Section III.A.4 below.

[75] Original claim 1 of the '995 application claimed an apparatus that converts analog video signals to digital data and then sends the digital data to an output port "at a speed greater than the speed of the analog video signals." In contrast, original claim 4 of the '995 application, which depends from claim 1, claims the additional function of "sequentially compress[ing]" the digital data "into a second digital data signal." This claim describes data compression, because (1) "sequential compression" implies data compression, and (2) the claim suggests that the compression changes

In December 1989, the Patent Office rejected each of the claims in the May 1989 continuation-in-part application, citing several references which showed the transmission of data-compressed video.[76] Particularly relevant here, the Patent Office cited the Fabris patent, titled "Teleconferencing Method and System," and the Workman patent, titled "Video Information Bandwidth Compression." Both of these references clearly disclose data-compression of video for video transmission.[77] As the examiner remarked, "Fabris shows data transmission in a data compression context and use of optic fibers as a transmission means."[78]

At this point, Burst apparently switched to a new patent attorney, William Hein. In the prosecution of the original December '88 application, Burst submitted both the Fabris and Workman patents to the Patent Office. [79] Burst then cancelled all the existing claims and submitted new claims that included, for the first time, the limitations of "compressing … into a time compressed representation … having an associated time period that is shorter than … real time."[80] Shortly thereafter, Burst submitted an amendment in the May 1989 continuation-in-part application which also cancelled all of the existing claims and submitted new claims that included the "time compressed representation" language.[81]

In short, the original claims of the Burst patent applications contained claims to data compression, as well as claims describing faster-than-real-time. However, these claims were all cancelled by Burst after being confronted with prior art that showed data-compression of video

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the underlying digital data (into a "second" data signal), which occurs with data compression but not with time compression. Burst's expert agreed that this claim appeared to described data compression. Brown Decl., Exh. C [Hemami Depo.] at 213-214.

[76] *See* Brown Decl., Exh. O ['932 File History] at APBU 199-207.

[77] Brown Decl., Exh. P [Workman patent] at 2:23-64 (disclosing both the "interframe encoding" and the "intra-frame encoding" described in the specification of the Burst patents); Brown Decl., Exh. Q [Fabris patent] at 10:25-47 (describing "motion codec 45" that was used for "transmission to the remote site"); *id.* at 15:20 (identifying the NEC "NETEC-X1" chip as a suitable motion codec).

[78] Brown Decl., Exh. O ['932 File History] at APBU 203.

[79] Brown Decl., Exh. A ['995 File History] at APBU 69 (Information Disclosure Statement).

[80] Brown Decl., Exh. A ['995 File History] at APBU 73 (Amendment cancelling all pending claims).

[81] Brown Decl., Exh. O ['932 File History] at APBU 212.

to facilitate transmission. Burst cannot now recapture the data compression that it abandoned.[82]

4. The specification supports giving time compression its ordinary meaning.

The specification does not disclose time compression or a "time compressed representation." The only compression that is labeled as such by the specification is expressly described as "data compression," not as time compression.[83]

The specification also discloses faster-than-real-time transmission of programs:[84]

> The fiber optic line carries digital signals … at a high speed (e.g., about 200 megabytes/second). The VCR-ET can receive a video program at an accelerated rate via fiber optic port 18, e.g., from 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.

This disclosure of faster-than-real-time transmission is not linked to the disclosure of data compression. Indeed, the specification states expressly that the invention has the capability to transmit "program information in either a compressed or decompressed format over fiber optic lines."[85] Moreover, the disclosed fiber optic line operates at a rate (200 megabytes/second) that would be sufficient to transmit the uncompressed 2-hour movie of the specification in 4 minutes and 15 seconds.[86] Conversely, the specification also discloses transmission that would be unable to send even the compressed version of the 2-hour movie in less than real time: "even compressed

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[82] *See, e.g., Schoenhaus v. Genesco, Inc.*, 440 F.3d 1354, 1358 (Fed. Cir. 2006) (holding that patentee abandoned coverage of flexible and semi-rigid seats with amendment to add "rigid" heel seat limitation); *Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1362 (Fed. Cir. 2005) (holding that amendments limiting claims to single solute prevented patentee from attempting to cover other solutes).

[83] *See* Brown Decl., Exh. A ['995 Patent] at 4:63-5:24 (discussing "compression of the digital data defining a video" as the "representation of a series of numbers by a reduced number of digits" and concluding that "if no *data compression* techniques is used, it would take approximately 51.03 gigabytes to store a 2-hour movie"); *id.* at 2:47-52 (describing the use of "data compression" as part of 2 of the 15 disclosed "objects of the invention").

[84] Apple believes that the disclosure of faster-than-real-time transmission does not satisfy the requirements of 35 U.S.C. § 112. The court need not reach that issue at this stage.

[85] Brown Decl., Exh. A ['995 Patent] at Abstract.

[86] The specification states that "if no data compression technique is used, it would take approximately 51.03 gigabytes to store a 2 hour movie." Brown Decl., Exh. A ['995 Patent] at 5:20-21. At the disclosed fiber-optic rate of 200 megabytes/second, which is .2 gigabytes/second, it would take 255.15 seconds to send 51.03 gigabytes.

data may require more time to transmit over conventional phone lines than it would take to view the actual program."[87] In short, while time compression is not disclosed in the specification, the concept is consistent with what is disclosed because it could have been used to accomplish the disclosed faster-than-real-time transmission.

Furthermore, in light of the clear ordinary meaning of time compression, Burst's argument that time compression should be interpreted as data compression amounts to an argument that Burst should be found to have acted as its "own lexicographer" and given time compression a meaning different from its ordinary meaning. As the Federal Circuit has explained, "patent law allows the inventor to be his own lexicographer. All that is required is that the patent applicant *set out the different meaning in the specification* in a manner sufficient to give one of ordinary skill in the art notice of the change from ordinary meaning."[88] Here, Burst cannot have acted as its "own lexicographer" and redefined time compression because Burst never used the term time compression in the specification.

5. Burst's statements to the European Patent Office show that time compression is not data compression.

The Federal Circuit has found statements made to the European Patent Office to be strong evidence regarding claim construction of terms in a counterpart U.S. patent.[89] Here, Burst conceded to the European Patent Office that time compression is not data compression, and that to make the claims read on data compression, the word "time" needs to be deleted from the phrase "time compressed representation."

In Europe, Burst originally filed the same claims that it had originally filed in the

[87] Brown Decl., Exh. A [995 patent] at 9:65-68.

[88] *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (emphasis added). *Innova* was expressly reaffirmed in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*).

[89] *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1374 (Fed. Cir. 2005) ("The defendant itself endorsed an open interpretation of "comprising" when it argued to the European Patent Office (EPO) that a virtually identical claim in Gillette's European counterpart to the '777 patent would not exclude an arrangement with four or more blades. This blatant admission by this same defendant before the EPO clearly supports this court's holding that those skilled in the art would construe the claims of the '777 patent to encompass razors with more than three blades.").

U.S.—claims which did not mention time compression.[90] Before any action was taken by the European Patent Office, Burst cancelled all of its claims and replaced them with claims that all required time compression.[91] Thereafter, Burst received its first rejection by the European Patent Office. In the rejection, the European Patent Office stated that Burst's pending claims "introduce subject-matter which extends beyond the content of the application as originally filed."[92] The European examiner explained that while the claims now required compressing into a time compressed representation and storing the time compressed representation, "in the application as originally filed no such time compression or storing of time compressed information could be identified."[93] The European examiner also pointed out that the application's specific description of "compression refers to data reduction and not to accelerated transmission of information."[94]

In response, Burst argued its disclosure was sufficient to support its time compression claims.[95] But the European examiner rejected Burst's argument, insisting that while the application "describes data compression processes," the claimed time compression "does not involve a data compression."[96]

To overcome this repeated rejection, Burst deleted the word "time" from the phrase "time compressed representation."[97] Burst stated that this amendment was made "in response" to the examiner's insistence that the claimed time compression "does not involve a data

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[90] Brown Decl., Exh. R [European Application].

[91] Brown Decl., Exh. S [September 12, 1990 Letter to EPO].

[92] Brown Decl., Exh. T [April 22 1994 EPO Communication] at 2.

[93] *Id.* at 2-3.

[94] *Id.* (also stating that "in the description, page 7, lines 5-27, it is clearly stated that the compression of information refers to a reduction of number of digits. No indication of a time compression as claimed could be identified. Therefore, claims 1-39, 57-102, and 132-149 are not supported by the description.").

[95] Brown Decl., Exh. U [May 5, 1995 Response to EPO Communication] at 1 ("the Examiner's attention is drawn to the passage on page 12, line 15 to page 13, line 11 of the description, where it is clearly stated that the video program is communicated or transmitted in less time that [sic] would be taken the view the program …").

[96] Brown Decl., Exh. V [June 30, 1995 EPO Communication] at 1-2 (also stating that the "subject matter as claimed … lacks clarity because it does not make sense to generate a time compressed representation of an information and store this representation in a memory means where the effect of the time compression [is] lost.").

[97] Brown Decl., Exh. W [February 9, 1996 Response to EPO Communication].

compression" and stated that "it is submitted that it is now clear that the claims relate to the data compression as described on page 7 of the description."[98] The claims ultimately issued with the phrase "compressed representation" rather than "time compressed representation."[99]

Thus, Burst acknowledged to the European Patent Office that time compression was not data compression. Moreover, Burst conceded that in order to make the claims refer to "data compression," the term "time" needed to be deleted from the phrase "time compressed representation." This shows that time compression is not data compression.

6. Burst's own documents confirm that time compression is not data compression.

Burst's own documentation demonstrates that it recognized that time compression and "data compression" are separate and distinct operations. For example, a Burst marketing document—created in 1994 when Burst was known as IVT (Instant Video Technologies)—expressly contrasts time compression with "commonly understood spatial compression"[100]:

> IVT's patented "time-compression" (versus commonly understood spatial compression) technology combines a number of different technologies to transmit entire video/audio programs in a matter of seconds, or minutes (depending upon bandwidth) over a variety of networks. This system of analog-to-digital conversion, compression,

This distinction between time compression and "spatial compression" shows that time compression is not data compression. Indeed, Burst has made clear in other documents that the phrase "spatially compressed" refers to data compressed files, such as MPEG-2 files.[101]

In another example, a memorandum created in 1991 when Burst was known as ETI (Explore Technology, Inc.) shows that Burst considered data compression to be independent from its "proprietary" technology:[102]

> After explaining the concept to him briefly (touching on the three main areas: data compression, storage and transmission) he began to dig a bit more at "what is unique". He asked such questions as "what if there were no data compression, would the program still get there faster than usual?" to which I responded "Yes" (having the proprietary ETI factor in mind). I added that I was uncomfortable going any further without signing non-disclosure agreements.

[98] *Id.* at 2.

[99] Brown Decl., Exh. X [European Patent].

[100] Declaration of Leeron G. Kalay ("Kalay Decl.") Exh. A at BURSTA 353342.

[101] *See e.g.*, Kalay Decl. Exh. B at BURSTA 255885.

The fact that Burst's "proprietary" technology can allow transmission of a non-data-compressed file faster than real-time shows that Burst considered its "proprietary" technology to be independent of data compression.

A third example appears in U.S. Patent No. 5,440,334. The '334 is a later Burst patent which also names Richard Lang as an inventor. The '334 patent contains a description of time compression that shows that it is independent of and distinct from data compression. Specifically, the '334 patent describes a "compressed digital video bitstream" that "requires 1.2 Mbits/second for real-time playback." This is clearly a data-compressed video file. It then describes time compressing that already data-compressed file:

> For example, assume that the compressed digital video bitstream requires 1.2 Mbits/second for real-time playback, and that the transmission line 30 is a 36-MHz satellite channel modulated at approximately 4 bits/Hz plus overhead, resulting in a 114 Mbit/second digital transmission rate. Dividing the 114 Mbit/second transmission rate by the 1.2 Mbit/second compressed video bit rate results in a time compression factor of 95:l.[103]

This passage makes clear that time compression that apparently occurs during the satellite transmission of the video is independent and distinct from the data compression that had been previously applied.

These admissions in Burst's own pre-litigation documents, while extrinsic evidence, are the type of inherently reliable evidence upon which the Federal Circuit has not hesitated to rely.[104] They confirm that time compression is not data compression.

7. Burst's arguments cannot justify construing time compression as data compression.

a. Burst's argument that time compression is inconsistent with the sequence required by the claims should be rejected.

Burst argues that despite their actual language, the claims cannot be directed at

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[102] Kalay Decl. Exh. C at BURSTA 3157023.

[103] Brown Decl., Exh. Y ['334 Patent] at 3:43-51.

[104] *See ASM America, Inc. v. Genus, Inc.*, 401 F.3d 1340, 1347 (Fed. Cir. 2005) (relying on statements made in documents by patentee's Chief Technology Officer, and also by the named inventor); *AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1248 (Fed. Cir. 2001) (relying on admissions of Cardinal's President in rejecting Cardinal's proposed construction and construing a claim requiring a coating "composed of five layers" to include coatings that had five layers even if they also had additional "interlayers" between the layers.).

time compression because the claims require the step of storing the "time compressed representation" to occur before step of the transmitting the "time compressed representation." Burst argues that this requirement is incompatible with time compression because in time compression, "compression necessarily occurs *after* storage and at the transmission/output stage."[105]

This argument depends on the unsupportable assumption that time compression "necessarily occurs *after* storage" of the time compressed representation. This is simply not the case, because time compression occurs when the frequency or rate of the signal is increased, which can be before or after transmission, and before or after storage. In the example of the 33 rpm record being played at 45 rpm, the audio from the record is time compressed by being played faster than it was recorded. At that point, there is nothing present which could possibly be called a "stored time compressed representation"—the only thing which is stored is the audio on the 33rpm record, and that is not time compressed. Of course, the time-compressed sound from the record player *could* be transmitted before being stored, as would occur if one held a telephone up the record player and pressed record on a tape recorder at the other end of the telephone line. But the time-compressed sound could equally well be stored before being transmitted anywhere, as would occur if one tape recorded the time compressed sound produced by the record player. Thus, Burst is wrong to assume that time compression "necessarily occurs *after* storage" of the "time compressed representation." Accordingly, the claimed sequence of storing after compressing, and transmitting after storing, is perfectly compatible with the concept of "time compression."

b. Burst's "don't exclude the preferred embodiment" argument should be rejected.

Burst's primary argument for its time-compression-is-data-compression position is that interpreting the claims differently would exclude the preferred embodiment.[106] While it is

[105] Opening Brief at 56.

[106] Whether Burst is correct that Apple's interpretation would necessarily exclude the preferred embodiment is unclear, since the specification is devoid of any explanation—other than an identification of a "200 megabyte/second" fiber optic or microwave link—of exactly how the disclosed faster-than-real-time transmission is accomplished. It is not clear whether time-

true that it is not ordinarily correct to exclude the preferred embodiment, this is an unusual case. The phrase "time compressed representation" did not appear in the specification or the claims until after Burst received rejections of both its pending applications from the Patent Office and then switched patent attorneys. Burst then abandoned the data compression claims it had originally filed and replaced them with claims revolving around a "time compressed representation." Terms central to the interpretation of claims are not normally introduced for the first time in prosecution, without having ever appeared in the specification. Yet that is what happened here. Moreover, in order to distinguish prior art, Burst expressly stated to the Patent Office that "time compression" is not "data compression." Burst then conceded the same thing to the European Patent Office, removing the word "time" from "time compressed representation" in order to make its claims refer to data compression. This is simply not the usual case. As the Federal Circuit explained in *North American Container v. Plastipak Packaging*, "limitations may be construed to exclude a preferred embodiment if the prosecution history compels such a result."[107]

Plastipak is controlling here. In *Plastipak*, the term at issue was "generally convex," and the preferred embodiment shown had "base portions with concave inner walls."[108] During prosecution, the patent owner distinguished one prior art reference on the basis that it was "clearly concave in its entirety" and another on the basis that it was "slightly concave." The Federal Circuit found that the "inescapable consequence" of distinguishing a reference as "slightly concave" was "that the scope of applicant's claims cannot cover inner walls that are 'slightly concave'"—even though this conclusion excluded the preferred embodiment from the scope of the claims.[109] Here, in distinguishing the Izeki reference which showed data

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compression is used for this transmission because time compression is never mentioned. It is certainly true, however, that Apple's construction implies that the claims would exclude, for example, the only *stored* compressed representations that are actually disclosed in the specification.

[107] 415 F.3d 1335, 1345 (Fed. Cir. 2005).

[108] *Id.* at 1344-45.

[109] *Id.* at 1345-46. The Federal Circuit has also excluded embodiments from the claims on other occasions where, like here, the situation warrants it. *See Unique Concepts, Inc. v. Brown*, 939 F.2d 1558 (Fed. Cir. 1991); *Acco Brands, Inc. v. Micro Security Devices, Inc.*, 346 F.3d 1075 (Fed. Cir. 2003); *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319 (Fed. Cir. 2002).

compression, Burst argued that "data compression" is "not the equivalent by any means of applicant's specifically claimed time compression." That statement is binding on Burst, just as the patent owner's distinguishing argument was binding upon him in *Plastipak*.

Moreover, even without the disclaimer in the file history, Burst's construction should be rejected because the claim language is clear on its face. There is no genuine dispute that time compression does not mean "data compression" to those of skill in the art. This is sufficient to exclude the preferred embodiment under both *Schoenhaus v. Genesco* and *Elekta Instrument v. O.U.R. Scientific International*.[110] In *Schoenhaus*, the Federal Circuit found that the clear meaning of the term "rigid" excluded materials which were only semi-rigid, despite the fact that the preferred embodiment was only semi-rigid. As the court explained, "[w]here a patent specification includes a description lacking a feature, but the claim recites that feature, the language of the claim controls. In that case, the claim excludes the described embodiment, which is deemed dedicated to the public."[111] In *Elekta*, the Federal Circuit again excluded the preferred embodiment on the basis of "the unambiguous language of the amended claim." The claim phrase "extending *to* latitudes 30-45" was amended to "extending *between* latitudes 30-45." The Federal Circuit held that this amended language excluded latitudes of less than 30, despite the fact that this excluded the preferred embodiment.[112] Here, as in *Schoenhaus* and *Elekta*, the claim language is unambiguous because there is no genuine dispute that time compression does not mean "data compression" to those of skill in the art. Moreover, here, as in *Elekta*, claims requiring "compression" were cancelled in favor of claims requiring "time compression." In short, time compression means compressing in time, not data compression, and the Court should so find.[113]

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[110] 440 F.3d 1354 (Fed. Cir. 2006) and 214 F.3d 1302 (Fed. Cir. 2000), respectively.

[111] 440 F.3d at 1358, 1359.

[112] 214 F.3d at 1308.

[113] The construction of "time compressed" adopted by Judge Motz in *Burst v. Microsoft*—"reduced in temporal quality"—is different from the construction that Apple proposes. *See* Brown Decl., Exh. Z [*Burst v. Microsoft* Claim Construction Order] at 1-2. However, much of the evidence presented in this section appears not to have been presented to Judge Motz during the claim construction process in the *Burst v. Microsoft* case. For example, Burst's statements to the European Patent Office, and most of the extensive (and undisputed) evidence of the ordinary meaning of "time compression," was not before Judge Motz. Moreover, the issue the parties

B. "Having An Associated Burst Time Period" And "In Said Burst Time Period"

1. The ordinary meaning of the claim language requires the transmission time period to be known at the time of compression

The parties dispute whether the claim language requires the transmission time to have a definite duration that is known at the time of compression. Burst's position is that it does not, and that the claims are satisfied as long as the compressed representation can be sent in less than real time.[114] Apple's position is that having a known transmission time is required by the claim language "compressing … into a time compressed representation *having an associated* burst time period" and "transmitting, in *said* burst time period."

The context provided by the claim language as a whole is significant here, because it shows the "associated burst time period" is created and associated with the time compressed representation as part of the compression step, not as part of the transmission step. The claims make clear that each step in the claims operates on the result of the previous step. The storing step stores "*said* time compressed representation," and the transmitting step transmits "*said* stored time compressed representation."[115] The Federal Circuit has held repeatedly that when the claim language shows that steps must be performed in order, such as when a later step operates on the result of a previous step, this sequencing requirement must be given effect.[116] This principle controls here.

At the compressing step, the "received audio/video source information" is compressed "into a time compressed representation thereof having an associated burst time

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joined before Judge Motz on the question of time compression was different. Accordingly, Judge Motz's interpretation of term "time compressed" is of relatively little use here.

[114] *See* Opening Brief at 48-50.

[115] *E.g.* Brown Decl., Exh. AA ['839 Patent] at claims 1 and 17.

[116] *Oak Tech., Inc. v. ITC*, 248 F.3d 1316, 1325 (Fed. Cir. 2001) (holding steps of claimed method must be performed in sequence where latter step operated on the output of the previous step); *Loral Fairchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1321 (Fed. Cir. 1999) (finding claimed steps must be performed sequentially where insulation layer must already be in place before it is used to align the barrier regions in later step); *Mantech Envtl. Corp. v. Hudson Envtl. Serv., Inc.*, 152 F.3d 1368, 1375-76 (Fed. Cir. 1998) (finding that the plain meaning of the claim language required the claim steps to be performed in order); *Combined Sys. v. Defense Tech. Corp. of Am.*, 350 F.3d 1207, 1211-12 (Fed. Cir. 2003) (holding "as a matter of grammar" that "said formed folds" must already exist in previous method step before being acted upon by subsequent step).

period." This language, in combination with the clear sequencing requirement of the claim language as a whole,[117] shows that it is the compressing step, not the transmission step, that creates the "burst time period" and "associates" it with the time compressed representation.

This in turn shows that the "burst time period" must have a duration in the compression step. For a time period to exist and be associated with the "time compressed representation," as the claims require in the compression step, the time period must have a duration—otherwise a "time period" does not exist. Carl Lewis ran 100 meters at the 1991 World Championships in 9.86 seconds, setting a new world record. The "time period" associated with his run did not exist until the run had happened. The claim language reinforces this common sense conclusion by requiring the transmission to occur "in *said* burst time period."[118] It would not make sense to require transmission "in *said* burst time period" if the burst time period was not already known. Indeed, the Maryland Court reached exactly this conclusion in *Burst v. Microsoft*, finding that "the participle 'having' which precedes the phrase 'an associated burst time period' necessarily implies that the quality of being 'shorter than [real-time]' exists at the time the 'time compressed representation' is made." [119]

The conclusion that the "burst time period" becomes known during the compression step makes sense because "associating" a new and definite "time period" with data is exactly what time compression does. When one plays a regular 33 rpm record at 45 rpm and records it on a standard tape recorder, one knows that the resulting recording will have a time period that is 33/45ths of its original length. Indeed, as stated above, the "burst time period" of the data is essentially the "key" that allows decompression of time-compressed data. One needs to know by what factor the data must be expanded in order to return it to real time. In short,

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[117] If there is any doubt about the sequencing requirement in the claims, the file history removes it. Burst repeatedly used the word "then" between the steps of the claims in its descriptions of what they required. E.g. Brown Decl., Exh. A ['995 File History] at APBU 0089 ("[The claims] are directed to an audio/video transceiver having the ability to receive … compress … store … and then transmit …"); *id.* at APBU 0091; Brown Decl., Exh. O ['932 File History] at APBU 0216, APBU 0233.

[118] This claim language appears in each of the asserted independent claims in the 839 and '705 patents. It does not appear in the asserted independent claims of the '995 patent and '932 patents.

[119] Brown Decl., Exh. Z [Claim Construction Order in *Burst v. Microsoft*].

Apple's proposed construction fits naturally with the claim language and the ordinary meaning of "time compression."

In contrast, Burst's proposed construction renders the claim language "having an associated time period" completely superfluous. Burst's proposed construction—"allows data transfer [in less than real time]"[120]—is satisfied as long as the compressed representation can be sent in less than real time. Thus, under Burst's proposed construction, the claim would simply require "compressing … into a compressed representation" and then "transmitting, in a period shorter than the real-time period." Reading limitations out of claim in this fashion is not permitted.[121] The claims require a "time compressed representation," and they require this representation to "hav[e] an associated time period" at the time of compression. These requirements are plainly recited as distinct, and in addition to, the time requirement of the transmission step.

2. Interpreting The Claims To Require A Known Time Period Is Consistent With The Specification

Burst argues that "Apple contends that the patents are limited to situations where the bandwidth of the transmission medium is fixed."[122] That is not Apple's position. It is true that, as Mr. Halpern explained, the only examples of transmission in the specification are examples of circuit switched media whose bandwidth would be fixed.[123] But Apple does not seek to limit the claims to fixed bandwidth media.

Burst also argues that "[r]equiring a 'definite duration' is inconsistent with the duration and speed approximations provided throughout the specification." [124] The specification does state that transmission "an at accelerated rate" is a feature that "allows transmission and

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[120] Opening Brief at 48-50.

[121] *E.g. Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (rejecting an interpretation that "largely reads the term 'operatively' out of the phrase 'operatively connected'"), reaffirmed in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*).

[122] Opening Brief at 58.

[123] Halpern Decl, Exh. 1 [Halpern Report] at 18.

[124] Opening Brief at 58.

reception of programs in a few minutes or seconds using currently available technology." But this does not imply, as Burst argues, that the claimed transmission of a specific program in a specific network system cannot have a known transmission time. Different programs have different lengths and will take different amounts of time to transmit even if everything else is the same. Burst presumably agrees that its patents could be implemented on videos of varying lengths, in a variety of systems using different transmission media and/or compression techniques. This would result in the described variations in transmission time even if the transmission time for every program was known at the time of compression in each system.

The fact is that, as discussed above, the concept of "compressing … into a time compressed representation having an associated time period" does not appear in the specification or in the originally filed claims, and was not added until Burst changed attorneys during prosecution. As a result, the specification simply does not explain what it means for data to be compressed into a representation "having an associated time period."

IV.

"TRANSMISSION"

The parties agree that "transmission" in the context of the patents-in-suit refers to sending the time compressed representation away from the claimed transceiver apparatus. There are two disputes. The first dispute is whether transmission can include sending to any external device (such as iPods), or whether this is precluded by the file history's emphatic disclaimer of transfers through "an interface to a storage device" as shown in the Izeki reference. The second dispute is whether, as Burst contends, the unclaimed device *receiving* the transmission must be "capable of playback." Apple's position is that it is improper to import a limitation about the capabilities of an unclaimed receiving device into the meaning of "transmission."

A. Burst disclaimed coverage of transfers through an "interface to a storage device"

During prosecution, the Patent Office repeatedly rejected Burst's claims based on the Izeki patent, which discloses an "Editing Apparatus For Audio and Video Information." [125]

[125] Brown Decl., Exh. M [U.S. Patent No. 4,974,178 to Izeki].

As part of its disclosure of an editing apparatus, Izeki describes moving compressed audio and video information around amongst a variety of local storage devices, including tape drives and hard disks, and also to a separate "reproduction device," which is used to play the edited audio/video information.[126] To overcome the examiner's repeated rejections, Burst argued on three separate occasions that Izeki did not teach the claimed "transmission," once stating flatly that "Izeki teaches a compression technique without transmission."[127] Burst's repeated arguments that Izeki does not teach the claimed transmission require that term to be construed to exclude the transfers to local storage devices that were disclosed in Izeki.

The first rejection based on the Izeki reference was in an Office Action dated February 27, 1995. In that Office Action the examiner stated that Izeki disclosed an "output means (80) for output[ing] the edited audio/video information away from the audio and video apparatus…"[128] In response, Burst distinguished its claimed "output means … for transmission" from what the examiner had identified as Izeki's anticipating "output means":

> The element 80 of Izeki et al., cited by the Examiner as being the equivalent of applicant's claimed output means, is nothing more than an interface to a storage device such as a magnetic tape (see column 6 …
>
> Neither interface 80 of Izeki et al. nor any other element described in that reference has the capability of applicant's specifically claimed output means to serially transmit a time compressed representation of audio/video source information away from the audio/video transceiver in a burst time period …[129]

Burst's expert argued that this disclaims only "interface 80" and magnetic tape devices.[130] This is obviously not true. As the passage above makes clear, Burst made no distinction between the magnetic tape and other devices in its correspondence with the examiner. This passage disclaims not just the transfer accomplished by "interface 80" but also transfer by "any other element

[126] *See, e.g.*, Brown Decl. Exh. M at Fig. 2, 3:8-13; 3:14-16.

[127] Brown Decl. Exh. L ['705 Patent File History] at APBU 620 (emphasis added).

[128] *Id.* at 535.

[129] *Id.* at APBU 552 (emphasis added).

[130] Payne Decl. Exh. 5 [Hemami Report] at 49.

described" in Izeki.[131]

Burst filed a continuation application and then, on February 20, 1997, the examiner issued another rejection based on Izeki, in which he repeated his view that Izeki disclosed an "output means (80) for outputting the edited audio/video information away from the audio and video apparatus."[132] In response, Burst distinguished Izeki by stating flatly that "Izeki teaches a compression technique without transmission."[133] This statement to the examiner unambiguously disclaims coverage of any of the information transfers disclosed in Izeki.

Subsequently, the examiner yet again rejected the Burst patents over Izeki, noting that it would have been obvious to modify Izeki by "providing a fast transfer means" for "transferring the compressed audio/video data."[134] In response, Burst reemphasized the distinction it had already drawn between its claimed transmission and Izeki's disclosure of transfers over interfaces to storage devices:

> The edited information can then be conveyed via an interface to a storage device such as magnetic tape. It is to be appreciated that the Izeki et al. device does not provide for burst transmission of video programs over a communications channel. . . .[135]
>
> The "output means" (80) of Izeki et al. simply comprises an interface for transferring edited files to a master tape (see column 6, lines 61-65); it is not analogous to the transmission means or transmission step of the claimed invention.
>
> …
>
> Izeki et al. is simply not concerned with transmitting audio/video information away from the apparatus to one or more receivers.[136]

There can be no dispute that these repeated statements that Izeki does not disclose transmission constitute a clear and deliberate disclaimer of the information transfer that is disclosed Izeki. Because Burst itself characterized Izeki as showing transfer "via an interface to a storage device,"

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[131] *Id.*

[132] Brown Decl., Exh. L ['705 File History] at APBU 582.

[133] *Id.* at APBU 620 (emphasis added).

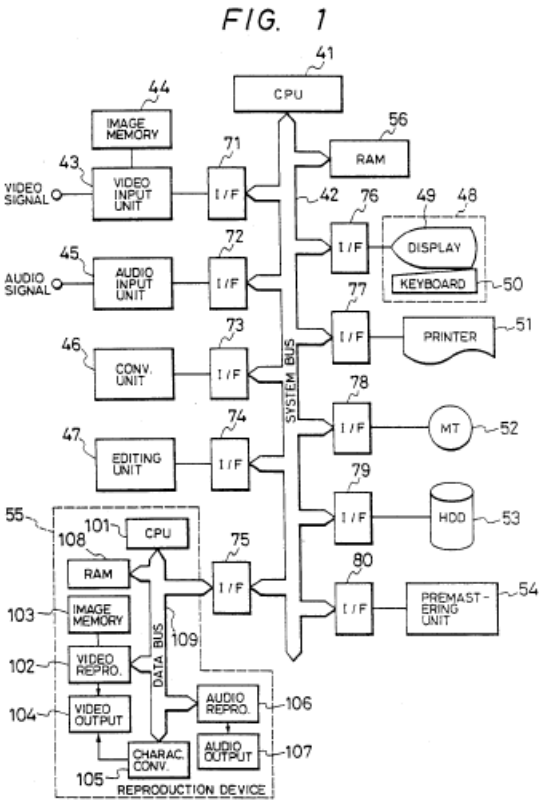
[134] *Id.* at APBU 626.

[135] *Id.* at APBU 650.

[136] *Id.* at APBU 652.

Burst is precluded from any interpretation of transmission that would capture transfers "via an interface to a storage device."

1. Burst's disclaimer of Izeki excludes transfers to any local storage device, whether external or internal



While Burst chose not to address its disclaimer of the Izeki reference in its Opening Brief, Burst's expert did not deny that Burst disclaimed coverage of the information transfer disclosed in Izeki.[137] Instead, Burst's expert argues that this disclaimer excluded on transfer means to internal devices because Izeki does not dislcose transfering information to an external device.[138] This attempt is contradicted by simple examination of Izeki's disclosure.

Figure 1 in Izeki, reproduced herein, uses dashed lines to identify components which are physically separate from the main editing apparatus.[139] The dashed lines in this figure around "reproduction device 55" and "console 48" show that these devices are separate from the main editing apparatus. Even Burst's expert acknowledged that "console 48" is a device with its own "housing," i.e., a separate external device.[140] The same is also true of the "reproduction device 55": like the console it is shown to be separately housed by the dashed lines.

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[137] *See* Brown Decl., Exh. C [Hemami Depo.] at 247.

[138] This argument is significant because Apple's iPod is an external storage device, and Burst cannot acknowledge that it disclaimed coverage of the iPod.

[139] Brown Decl. Exh. M [Izeki] at Figure 1.

[140] *Id.* at 2:65-66; s*ee also* Exh. C [Hemami Depo.] at 309:12-14 ("So I would say a console is a unit which allows one to house equipment in a common housing.").

The "reproduction device" even gets its own figure.[141] This figure makes clear that the "reproduction device" is a stand-alone device with its own "CPU", "RAM", "data bus," and "storage unit." While Burst's expert argued that the dashed lines around the "Reproduction Device" do not show that it was a separate device, this argument is not tenable. "Reproduction Device 55" is clearly independent of the main editing unit (having its own CPU, data bus, and storage).[142] Moreover, Izeki provides an example of an "audio reproduction device (not shown)," namely "an audio tape recorder." An "audio tape recorder" is plainly a separate device. Burst's attempt to read Izeki as limited to only internal storage devices is simply unreasonable.[143]

B. The claim language confirms that "storing" and "transmitting" are different acts.

The claim language supports Apple's position that transmitting excludes transferring over an interface to a local storage device. As explained above, the structure of the claims requires that each successive step of receiving, compressing, storing, and transmitting operate on the result of the previous step and must be performed in order.[144] This structure shows that "storing" is separate and distinct from "transmitting." Allowing "transmitting" to include transfers to local storage would improperly conflate "transmitting" and "storing," despite the clearly drawn distinction in the claim language.[145]

C. The specification associates "transmission" with sending to a remote location.

The Burst patent specifications associate the term "transmission" with sending

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[141] Brown Decl., Exh. M [Izeki] at Fig. 2.

[142] *See id.* at 3:29-33.

[143] This is true for reasons in addition to the fact that "reproduction device 55" is clearly a distinct device. For example, Izeki describes hard drives and "hard drive units" generically. *E.g.* Brown Decl., Exh. M [Izeki] at 7:32. Those of skill in the art would understand that hard drives, in the 1990 time frame, could be implemented as either internal or external devices. This is clearly shown the intrinsic evidence: an article titled "Peripheral Storage: Who's Got What," which Burst submitted to the Patent Office during prosecution, describes both hard disks and tape drives as external storage devices. Brown Decl., Exh. A ['995 File History] at APBU 121-23.

[144] *See, e.g.*, Exh. AA ['839 patent] at claim 1. The second type of claim requires "receiving" information that has previously been compressed, then "storing," and then "transmitting."

[145] *See Innova/Pure Water Inc., v. Safari Waters Filtration Sys.*, 381 F. 3d 1111, 1119 (Fed. Cir. 2004) (rejecting an interpretation that "largely reads the term 'operatively' out of the phrase 'operatively connected'"), reaffirmed in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*).

programs to a remote location. For example, the Abstract of the '839 patent reads: "An improved video recorder/transceiver with expanded functionality ("VCR-ET") including a capability for storing video and video programs…transferring such programs onto a hard copy magnetic media, and transmitting such programs to a remote location."[146] Because this association of transmission with sending to a "remote location," is one Burst makes repeatedly,[147] and because it seems to capture the distinction Burst drew in the file history between transmission and Izeki's transfers over interfaces to storage devices, Apple has proposed this as a construction for "transmitting." Burst complains that the term "remote" introduces ambiguity. This is not improper: terms of degree (such as "shorter" in the Burst claims) are routinely used in the patent claims. "Remote" is the word that Burst chose to describe "transmission" in the specification.[148]

D. There is no justification for adding the limitation "capable of playback."

Burst's argument that the claimed transmission must be received by a device "capable of playback" is unsupportable. This is clearest in the context of the apparatus claims, which describe transceivers. It does not make sense to limit these transceiver claims by describing the capabilities of a different unclaimed device. Yet this is what Burst proposes when it purports to limit the device that receives the transmission to one that is "capable of playback." The concept of reception by a device "capable of playback" simply does not belong in the interpretation of "transmission." More broadly, as Burst's expert admitted, the word "transmission" does not imply to a person of ordinary skill in the art that the device receiving the transmission is capable of playback.[149] The specification does not define "transmission" as limited to transmissions to devices that are capable of playback. Nor does the file history suggest that such a limitation is necessary. Burst argues that the file history "repeatedly assume[s] that transmitted audio and video are sent to a receiver that is capable of playing it back."[150] But an

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[146] Brown Decl., Exh. A ['995 Patent] at Abstract (emphasis added).

[147] *E.g.*, Brown Decl. Exh. AA ['839 Patent] at 1:40-43; Brown Decl. Exh. A ['995 Patent] at 10:14-20.

[148] *See, e.g.*, Brown Decl., Exh. A ['995 Patent] at 10:14-16.

[149] Brown Decl., Exh. C [Hemami Depo] at 239-240:12.

[150] Opening Brief at 73.

"assumption" about the nature of an unclaimed element (the receiver of the claimed transmission) is not enough to justify adding a limitation to a claim.[151] If Burst had wanted to include limitations about both the transmitting device and the receiving device, it would have had to claim a "network" or a "system" with multiple devices, not simply a "transceiver." Indeed, Burst did exactly that in claim 30 of the '995 patent, which claims an "information transfer network" and requires that the transmission be sent "to another one of said plurality of audio/video transceivers." Burst's proposed construction should be rejected.

E. "Audio/Video Source Information"

It is unclear whether there is a serious dispute about the proper construction of "audio/video source information." Burst proposes that audio/video source information be construed as a "work." If, as it appears from Burst's brief, work means a complete "work," i.e. an entire song or video as opposed to a portion thereof, then there is no dispute about that term.[152] The Burst patents use the term "program" rather than "work," but Apple does not object to "work." Apple also does not object to Burst's suggestion that the work must be one that "has a temporal dimension," though it appears to Apple that this phrase is not necessary.

Apple does object to the phrase "that can be received from one or more sources" in Burst's construction because there is not sufficient justification for adding that phrase to the definition of "source information." The evidence cited by Burst does not support in any way the concept that a single work could be received from "a variety of sources."[153] It appears, however, that this is not a significant issue to Burst.

Burst objects to Apple's proposed construction, "the entirety of the data intended to be transmitted, not segments of that data," on the grounds that it "introduces a subjective intent component to the claim."[154] Apple agrees that invoking subjective intent is improper in claim construction, and Apple did not intend to do so. The purpose of Apple's proposed construction,

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[151] *See, e.g., Innova*, 381 F.3d at 1117.

[152] *See* Opening Brief at 37 (stating that "the term 'work' accurately captures the specifications' description of television programs, movies, and audio signals").

[153] *See* Opening Brief at 37.

[154] Opening Brief at 38

"the entirety of the data intended to be transmitted," was to make clear that the "source information" was an entire song or video (i.e. a "work," as Burst has put it), rather than a portion thereof. The language "the entirety of the data intended to be transmitted" simply refers to the fact that it is inherent in the claim language that what is transmitted in the final step is a "time compressed representation" of the *complete* audio/video source information that is received in the first step.

1. "Audio/video source information" refers to a complete song or video, not portions thereof.

Though the issue appears moot, the patents make clear that the "audio/video source information" is the complete work that is ultimately transmitted as a "time compressed representation" in the final step of the claims. This is shown by the claims, the specification, and the file history.[155]

The claims show the "audio/video source information" is the complete work that is ultimately transmitted, not just a portion of what is sent, through their sequential nature: each step in the claims acts on the result of the previous step. The audio/video source information is received in the first step of the claims. In the subsequent compressing step, the "*received* audio/video source information" is compressed into a "time compressed representation." In the storing step, "*said* time compressed representation" is stored, and in the transmitting step, the "*stored* time compressed representation" is transmitted.[156] Taken as a whole, this language shows that what is transmitted in the final step is a "time compressed representation" of the *complete* audio/video source information that is received in the first step.

The specification consistently refers to the "source information" as a complete "program." For example, the '995 patent describes storage in a way that assumes the entire program is compressed and stored as a whole, stating that "if no data compression technique is

[155] This is also the conclusion reached by Judge Motz in *Burst v. Microsoft.* Brown Decl. Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 3.

[156] *See Mantech Envtl. Corp. v. Hudson Envtl. Serv., Inc.*, 152 F.3d 1368, 1375-76 (Fed. Cir. 1998) ("We hold, therefore, that the sequential nature of the claim steps is apparent from the plain meaning of the claim language").

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."[157] Similarly, one goal of the Burst patents is described as providing "a capability for transferring a previously recorded program from one magnetic tape or other storage medium to another."[158] Indeed, the only occasion in which the specification describes the handling of anything other a complete program is in the context of video editing, when it refers to "frames" and "video segments."[159] As the Judge Motz put it in construing this term in *Burst v. Microsoft*, "[t]he absence of such references in describing other processing functions implies that those functions involve composite frames and unsegmented data."[160]

The file history also repeatedly treats source information as a complete program (or "work," as Burst puts it) rather than a portion of a program . For example, it describes a user "select[ing] an audio/video program for his evening's viewing entertainment," and that program is then transmitted "for direct viewing by the user."[161]

Accordingly, the "source information" should be construed to be the complete program (or "work") that is processed and eventually transmitted as a "time compressed representation."

V.

MEANS-PLUS-FUNCTION ISSUES

The Burst patents include numerous elements written in "means-plus-function" form. This section first discusses the proper legal framework for analyzing the means-plus-function elements of the Burst patents. Next, it discusses each "means" element at issue in the case.

A. The legal framework of Section 112(6).

Means-plus-function elements are governed by 35 U.S.C. § 112, ¶ 6. Under that

[157] Brown Decl. Exh. A ['995 Patent] at 5:20-24.

[158] Brown Decl. Exh. AA ['839 Patent] at 2:10-13.

[159] Id. at 6:49-7:5.

[160] Brown Decl. Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 4.

[161] Brown Decl. Exh. A ['995 File History] at APBU 91 (emphasis added).

section, a patentee is permitted to draft a claim element that covers a set of "means" that each perform a claimed "function." "While the use of means-plus-function language in a claim is clearly permissible by reason of Section 112(6), a means clause does not cover *every means* for performing the specified function."[162] Instead, a claim element written in means-plus-function form is limited to the structure or set of structures disclosed in the specification as performing the claimed function, and equivalents.[163] [164] The purpose of this rule is to prevent a patentee from claiming generically all structures that could perform a particular function, which is impermissible.[165]

1. The choice of "means for" language creates a presumption that Section 112(6) applies.

Whether or not to express a claim in means-plus-function form is a drafting choice that has consequences at claim construction.[166] The claim drafter's decision to invoke Section 112(6) is usually expressed through the use of the language "means for." As the Federal Circuit has observed, "the use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation generally does not."[167] Thus, as the court explained:

> The question whether a claim element triggers section 112(6) is ordinarily not a difficult one. Claim drafters conventionally use the preface "means

[162] *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1536 (Fed. Cir. 1991) (emphasis in original); *see also Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) ("Section 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation.").

[163] *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed.; Cir. 2005).

[164] Burst proposes that the phrase "and equivalents" be included in every means-plus-function construction. That phrase does not properly belong in a claim construction order. The construction of a means-plus-function element involves only the two steps of identifying the claimed function and the corresponding structure. *See, e.g., Medical Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003). The jury will be instructed to consider equivalents at the time infringement is evaluated.

[165] *Default Proof Credit Card Sys.*, 412 F.3d at 1298.

[166] *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996).

[167] *Id.* at 1580.

> for" (or "step for") when they intend to invoke section 112(6), and there is therefore seldom any confusion about whether section 112(6) applies to a particular element.[168]

This rule is often described as a "presumption" that when the patentee chooses to use the word "means," Section 112(6) will govern the construction of that element.[169]

To rebut this presumption, Burst has to show that the claim "goes on to elaborate sufficient structure, material, or acts" to perform the claimed function.[170] Without the additional elaboration of "sufficiently definite structure," the presumption holds and Section 112(6) applies.[171]

2. Burst's Opening Brief improperly downplays the significance of Burst's decision to draft its claims using classic "means for" language.

The means plus function elements at issue here are all written using classic "means for" language (e.g. "input means for receiving . . .", "storage means . . . for storing.") Burst argues that because each of these means elements includes a structural noun (e.g. "input"), the elements could be rewritten to remove the word "means" while retaining the meaning—for example, "input [] for receiving," or "storage [] for storing."[172] Burst argues that *if* it had drafted the claims without "means for" language, its claims would not invoke Section 112(6). This argument ignores the legal import of Burst's decision to use the "means for" claiming convention, and is clearly rebutted by the Federal Circuit's decision in *Greenberg v. Ethicon Endo-Surgery, Inc.*[173]

In *Greenberg*, the Federal Circuit contrasted the claim element "detent mechanism," which was at issue, with the element "detent means." [174] Noting that the word "detent", much like "filter," "brake," "clamp," "screwdriver," and "lock," was a functional noun

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[168] *Greenberg*, 91 F.3d at 1583.

[169] *Al-Site Corp. v. VSI Intern., Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999).

[170] *Id.* (quoting *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427 (Fed. Cir. 1996)).

[171] *Id.*

[172] Opening Brief at 23, 30.

[173] 91 F.3d 1580 (Fed. Cir. 1996).

[174] *See Greenberg*, 91 F.3d at 1584.

that identified a known class of structures to those of skill in the art, the Federal Circuit construed "detent mechanism" as structure not subject to Section 112(6). [175] Importantly, however, the Federal Circuit also held that "detent means," unlike "detent mechanism," *was* subject to Section 112(6), despite the fact that "detent" identified a class of structures. The difference, the court explained, was that "the patentee's choice of 'means-plus-function' language made it clear that the patentee had elected to invoke section 112(6)."[176]

This analysis is controlling here. The terms at issue—"input means," "output means," and "storage means"—are all like the "detent means" the Federal Circuit found to be subject to Section 112(6). "Input," "output," and "storage" are all functional nouns that identify generically the complete class of structures that perform their function. They are all at least as generic as the term "detent." Thus, under *Greenberg*, they are subject to Section 112(6).

This is confirmed by the Federal Circuit's decision in *Unidynamics v. Automatic Products*.[177] In *Unidynamics*, the Federal Circuit reversed a district court that had failed to apply Section 112(6) to the element "spring means tending to keep the door closed."[178] Despite the use of the structural term "spring," the Federal Circuit found the element properly within Section 112(6), ruling that the use of "spring" did not provide sufficient structure to remove the "spring means" element from Section 112(6). "Input," "output," and "storage" are all at least as generic as the term "spring," and thus cannot provide sufficient structure to overcome the presumption that Section 112(6) applies.

3. Corresponding structure must be clearly linked to the claimed function by the specification.

Where Section 112(6) applies, the Court must identify the claimed function and limit the claim to the "corresponding structure" enumerated in the specification for performing that function. For a structure to correspond to a claimed function, the structure must be "clearly

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[175] *See id.* at 1583.

[176] *Id.* at 1584.

[177] 157 F.3d 1311, 1319 (Fed. Cir. 1998).

[178] 157 F.3d 1311, 1319 (Fed. Cir. 1998).

linked" to that function in the specification.[179] It is not enough that a structure be capable of performing a particular function—only where the structure is linked explicitly to the function can it be considered corresponding structure under Section 112(6).[180] The patentee must disclose adequate structure in the specification to perform the claimed function.[181] "This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing Section 112, ¶ 6."[182] "If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112."[183]

B. "Input Means"

"Input means for receiving audio/video source information [as a time compressed representation thereof]" is in classic "means-plus-function" format. Because the phrase revolves around the operative language "means for," Section 112(6) is presumed to apply. Burst argues that the use of the word "input" provides sufficient structure to overcome that presumption. This argument should be rejected.

1. "Input" does not provide sufficient structure to overcome the presumption that Section 112(6) applies.

The fundamental flaw in Burst's argument that the word "input" provides sufficient structure to overcome the presumption that Section 112(6) applies is that "a claim cannot be construed so broadly as to cover every conceivable way or means to perform the function."[184] Indeed, this is the very purpose of the statute: "Section 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation." [185]

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[179] *Medical Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003).

[180] *Id.*

[181] *Atmel v. Information Storage Devices*, 198 F.3d 1374, 1382 (Fed. Cir. 1999).

[182] *Default Proof Credit Card Sys.*, 412 F.3d at 1298.

[183] *Id.*

[184] *Mas-Hamilton Group v. LaGard*, 156 F.3d 1206, 1214 (Fed. Cir. 1998).

[185] *Laitram*, 939 F.2d at 1536.

Here, the word "input" encompasses "every conceivable way or means to perform the function" of "receiving audio/video source information." This is demonstrated by Burst's quotation of the definition of "input" in the IEEE dictionary: "The device or collection of devices used for bringing data into another device."[186] This definition highlights the fact that "input" is generic structure, defined solely by its function, that covers "every conceivable way or means to perform" the claimed function of "receiving audio/video source information." As such, it cannot be sufficient to overcome the presumption that Section 112(6) applies.

This conclusion is also dictated by *Greenberg* and *Unidymanics*. In *Greenberg*, "detent means" was subject to Section 112(6), despite the fact that "detent" denotes a type of device in the mechanical arts.[187] Similarly, in *Unidynamics*, the court found that "spring means" was subject to Section 112(6) because "spring" did not add sufficient structure to vitiate the patentee's choice to write its claims in means-plus-function terms.[188] Here, "input" is less structurally definite than "spring" or "detent," and cannot remove "input means" from the ambit of Section 112(6) .

The *Allen Engineering* case cited by Burst is not to the contrary. In *Allen Engineering*, the Federal Circuit found that Section 112(6) did not apply to a series of "means" elements, including "pivot steering box means," "friction disk means," "torque rod means," and "knuckle spring means."[189] The court held that these "means" elements did not invoke Section 112(6) because they all "recite precise structure well understood by those of skill in the art."[190] An "input" is not a "precise structure" in the same way as a "pivot steering box" or "torque rod."

2. Structure corresponding to the "input means for receiving . . ."

Because Burst has failed to overcome the presumption that Section 112(6) applies to "input means," the next step is to identify the function and the structures in the specifications

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[186] Opening Brief at 31 (quoting IEEE Standard Dictionary of Electrical and Electronic Terms at 474 (4th ed. 1988)).

[187] *Greenberg*, 91 F.3d at 1583.

[188] *Unidynamics*, 157 F.3d at 1319.

[189] *Allen Eng'g. Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002).

[190] *Id.*

of each of the patents that correspond to that function. There are two different functions in the claims performed by input means. In one set of claims, the function of the input means is receiving audio/video source information in non-time-compressed form before time compressing and storing it.[191] In the second set of claims, the function of the input means is receiving a representation of the audio/video source information.[192] For the first function, all input means that are linked to the function of receiving audio/video source information in the specification are structures that correspond to the receiving function. For the second function, only the input means specifically identified as capable of receiving time compressed representations can correspond to the function. Additionally, because the patents do not share the same specification, the analysis of what structure corresponds to each function must be performed separately for the three patents.

a. "input means for receiving audio/video source information" (uncompressed) ('995 patent)

In the '995 patent, four distinct structures are disclosed as input means for receiving uncompressed audio/video source information: **video line or camera input line 15, TV RF tuner 16, auxiliary digital input port 17, and fiber optic port 18**. First, the specification discloses that "[a] video line or camera input line 15 is provided to enable VCR-ET 10 to receive an input signal."[193] Second, the specification discloses that "TV RF tuner input port 16 also supplies a composite signal as described in regard to video input line 15."[194] Third, it discloses that "[a]uxiliary digital input port 17 is employed to receive any acceptable digital signal."[195] Finally, it discloses that "The incorporation of fiber optic port 18 in the VCR-ET provides a capability for receiving audio/video signals from or delivering audio/video signals to the fiber optic line such as a fiber optic telephone line."[196] These four are the only structures clearly linked

[191] *See, e.g.*, Brown Decl., Exh. A ['995 Patent], claim 1.
[192] *See, e.g.*, Brown Decl., Exh. A ['995 Patent], claim 17.
[193] Brown Decl., Exh. A ['995 Patent] at 7:1-7.
[194] *Id.* at 7:23-28.
[195] *Id.* at 7:32-37.
[196] *Id.* at 7:45-55.

and are necessary to perform the function of receiving audio/visual source information in the '995 patent. Dr. Halpern confirmed that these are the only structures clearly linked to the receiving function.[197]

Burst contends in its "alternative" construction that if Section 112(6) applies to the "input means" term, the corresponding structure in the '995 patent would include "an audio/video transmitter/receiver, or a microwave satellite transceiver."[198] However, neither of these structures appear in the '995 specification. The satellite transceiver does appear in the later filed continuation-in-part specifications of the '705 and '932 patents. When Burst filed the continuation-in-part and amended the specification, it specifically added new matter, including disclosure that a microwave transceiver could perform input and output functions like the previously-disclosed fiber optic port.[199] However, because this disclosure does not appear in the '995 patent, that structure cannot be corresponding structure for a means-plus-function claim in that patent.

b. "input means for receiving audio/video source information as a time compressed representation thereof" ('995 patent)

There is only one structure disclosed in the '995 patent for receiving and transmitting time compressed information: **fiber optic port 18**. The '995 patent describes the fiber optic port 18 as being capable of receiving source information.[200] The '995 patent further discloses that the fiber optic port is used to transmit data at an accelerated rate.[201] The fiber optic port is thus clearly linked to the function of receiving and transmitting time compressed signals.

There are no other structures disclosed in the '995 patent for transmitting time

[197] *See* Halpern Decl., Exh. 1 [Halpern report] at 24.

[198] Opening Brief at 32.

[199] *See* Brown Decl., Exh. O ['932 File History] at APBU 162-64.

[200] *See* Brown Decl., Exh. A ['995 Patent] at 7:45-55 ("Fiber optic port 18 incorporates a fiber optic transceiver/receiver. . . . The incorporation of fiber optic port 18 in the VCR-ET provides a capability for receiving audio/video signals from or delivering audio/video signals to the fiber optic line such as a fiber optic telephone line.").

[201] *Id.* at 7:58-64 ("The VCR-ET can receive a video program at an accelerated rate via fiber optic port 18, e.g., from 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.").

compressed signals in a burst period. The two additional structures identified by Burst are not included in the specification of the '995 patent. The disclosure that includes the "auxiliary digital port" and "microwave satellite transceiver" was specifically added to the specification of the later-filed continuation-in-part application of the '995.[202] These structures are thus not present in the earlier-filed '995 patent, and cannot count as corresponding structure from the '995 specification. Burst's attempt to include this new matter in the older patent claims is improper.[203]

c. "input means for receiving audio/video source information" (uncompressed) '705 patent

The '705 patent discloses the same four structures as are disclosed in the '995 patent for receiving uncompressed audio/video source information: the **video line or camera input line 15, TV RF tuner 16, auxiliary digital input port 17, and fiber optic port 18**.[204] The '705 patent specification adds to that list of structures with several more that are linked to the receiving function: **auxiliary analog audio and digital input ports,[205] point-to-point microwave transceiver, or satellite transceiver**.[206] Dr. Halpern has confirmed that these structures are the only ones clearly linked to the receiving function in the '705 patent.[207]

d. "input means for receiving audio/video source information" (uncompressed) '932 patent

While the '932 patent shares essentially the same specification as the '705 patent, and discloses the same set of structures as linked to the "receiving" function, Burst has limited the corresponding structures for the '932 patent to microwave transceivers. During prosecution of

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[202] *See* Brown Decl., Exh. O ['932 File History] at APBU 162-64.

[203] Only structure that is specifically disclosed in the specification can be considered as corresponding structure, and structures in other documents will not be included, even if an attempt is made to incorporate the documents by reference. *See Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1381-82 (Fed. Cir. 1999).

[204] *See* Brown Decl., Exh. L ['705 patent at 7:12-17; 7:35-40; 7:45-47; 7:57-66.

[205] *Id.* at 11:21-23 ("In one embodiment, analog auxiliary audio and video input terminals 62, 64 are provided so that analog signals may be provided by alternate sources to VCU 12.").

[206] *Id.* at 11:26-51 ("[I]n an alternative embodiment, either in place of fiber optic port 18 or in addition to fiber optic port 18, means are provided for transmitting and/or receiving a video program via microwave.").

[207] *See* Halpern Decl., Exh. 1 [Halpern report] at 24-25.

the '932 patent, Burst focused that patent narrowly on microwave transceivers. To overcome a rejection, Burst added new claims that used a microwave link for the input and output means.[208] Burst pointed out to the PTO that new claim 26 (now claim 1) was directed to an apparatus that included "input and output means comprising microwave transceiver means."[209] Burst confirmed that new claims 27-29 (now claims 2-4) also required a microwave transceiver because those claims "call for substantially the same structure recited above" with additional limitations to the memory element.[210] Given the new focus of the '932 patent, the PTO pointed out that "[t]he title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed."[211] The original title had been "Audio/Video Recorder/Transceiver."[212] Burst rewrote the title to reflect the more limited subject matter: "Audio/Video Transceiver Apparatus Including Compression Means, Random Access Storage Means, and *Microwave Transceiver Means*."[213] Burst's statements in the file history constitute a clear disavowal of input and output means other than the microwave transceiver that is the subject matter of the new claims.[214] Thus, the structure corresponding to the receiving function in the '932 patent are the two types of microwave transceivers disclosed in the specification: **point-to-point or satellite transceiver**.[215]

C. "Output Means"

Like "input means," "output 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" is written in prototypical means-plus-function form.

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[208] *See* Brown Decl., Exh. O ['932 File History] at APBU 216 ("New claims 26-29 [present claims 1-4] are directed to an audio/video transceiver having the ability to receive audio/video source information over a microwave link.").

[209] *See id.* at APBU 232.

[210] *See id.*

[211] *Id.* at APBU 200.

[212] *Id.* at APBU 145.

[213] *Id.* at APBU 212 (emphasis supplied).

[214] *Norian v. Stryker* 432 F.3d 1356, 1361-2 (Fed. Cir. 2005).

[215] *See* Brown Decl., Exh. O ['932 patent] at 11:53-12:11.

Burst's argument to rebut the presumption that Section 112(6) also applies to "output means" is nearly identical to its "input means" argument. Burst contends that an "output" is a structure and thus, that Section 112(6) does not apply. Again, Burst is wrong.

1. Output" does not provide sufficient structure to overcome the presumption that Section 112(6) applies.

"Output," like "input," does not denote sufficient structure to overcome the presumption that Section 112(6) applies to "output means." Like "input," the word "output" is a generic term, defined by its function. Like "input," "output" encompasses "every conceivable way or means to perform" the claimed function of "receiving . . . for transmission away from said audio/video transceiver apparatus." As such, it cannot be sufficient to overcome the presumption that Section 112(6) applies, because a claim "cannot be construed so broadly as to cover every conceivable way or means to perform the function."[216] This is confirmed by the technical dictionary cited by Burst, which shows that "output" refers to *any* structure that performs an outputting function: "the device or collective set of devices used for taking data out of a device."[217]

As with "input means," this conclusion is also dictated by *Greenberg* and *Unidymanics*. "Output" is less structurally definite than "spring" or "detent," and thus, as shown by *Greenberg* and *Unidynamics* respectively, it does not add sufficient structure to overcome Burst's decision to draft its claims using classic "means for" language.[218]

2. Structure corresponding to the "output means"

Because Burst has failed to overcome the presumption that Section 112(6) applies to "output means," the function and corresponding structure must be identified. The function performed by the "output means" is "receiving . . . for transmission away from said audio/video transceiver apparatus."[219] Burst argues that both the '995 and '932 patents disclose the same

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[216] *Mas-Hamilton Group v. LaGard*, 156 F.3d 1206, 1214 (Fed. Cir. 1998).

[217] Opening Brief at 34 (quoting IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONIC TERMS 655 (4th ed. 1988)).

[218] *Greenberg*, 91 F.3d at 1583; *Unidynamics*, 157 F.3d at 1319.

[219] *See, e.g.*, Brown Decl., Exh. A ['995 Patent], claim 1.

structure for performing these functions despite the fact that they have different specifications and file histories.[220] Burst's analysis is flawed. The exercise of identifying corresponding structure must be performed separately for each patent.

a. "output 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" ('995 patent)

There is only one structure disclosed in the '995 patent for receiving and transmitting time compressed information: **fiber optic port 18**. The '995 patent describes the fiber optic port 18 as being capable of receiving source information.[221] The '995 patent further discloses that the fiber optic port is used to transmit data at an accelerated rate.[222] The fiber optic port is thus clearly linked to the function of receiving and transmitting time compressed signals.

There are no other structures disclosed in the '995 patent for transmitting time compressed signals in a burst period. The two additional structures identified by Burst are *not* included in the specification of the '995 patent. The disclosure that includes the "auxiliary digital port" and "microwave satellite transceiver" was specifically added to the specification of the later-filed continuation-in-part application of the '995.[223] These structures are thus not present in the earlier-filed '995 patent, and cannot count as corresponding structure from the '995 specification. Burst's attempt to include this new matter in the older patent claims is improper.

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[220] Opening Brief at 35.

[221] *See* Brown Decl., Exh. A ['995 Patent] at 7:45-55 ("Fiber optic port 18 incorporates a fiber optic transceiver/receiver. . . . The incorporation of fiber optic port 18 in the VCR-ET provides a capability for receiving audio/video signals from or delivering audio/video signals to the fiber optic line such as a fiber optic telephone line.").

[222] *Id.* at 7:58-64 ("The VCR-ET can receive a video program at an accelerated rate via fiber optic port 18, e.g., from 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.").

[223] *See* Brown Decl., Exh. O ['932 File History] at APBU 162-64.

b. "output 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" ('932 Patent)

Burst's proposal that the '932 patent claims cover "output means" disclaimed during prosecution is also improper. At the same time Burst disavowed all "input means" other than microwave transceivers, Burst also disavowed non-microwave output means. Burst stated that its new claims were directed to a microwave transceiver apparatus.[224] The amended title also reflects the narrowness of the claimed invention: "Audio/Video Transceiver Apparatus Including Compression Means, Random Access Storage Means, and *Microwave Transceiver Means*."[225] Burst's statements in the file history constitute a clear disavowal of output means other than the microwave transceiver that is the subject matter of the new claims.[226] Thus, the structures corresponding to the receiving and transmitting function in the '932 patent are the two types of microwave transceivers disclosed in the specification: **point-to-point or satellite transceiver**.[227]

D. "Storage Means"

The claim element "storage means . . . for storing said digital time compressed representation" is written in means-plus-function format. As with "input means" and "output means," Burst fails to overcome the presumption that "storage means" should receive its ordinary treatment under Section 112(6).

1. "Storage" does not provide sufficient structure to overcome the presumption that Section 112(6) applies.

As with "input" and "output," "storage" does not provide sufficient structure to overcome the presumption that "storage means … for storing …" is governed by Section 112(6) because it is a generic term, defined by its function. As with "input means" and "output means,"

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[224] *See id.* at APBU 232 (New claim 26 (now claim 1) directed to an apparatus that included "input and output means comprising microwave transceiver means."); *id.* (New claims 27-29 (now claims 2-4) "call for substantially the same structure recited above.").

[225] *Id.* at APBU 212 (emphasis supplied).

[226] *Norian* 432 F.3d at 1361-2.

[227] *See* Brown Decl., Exh. O ['932 patent] at 11:53-12:11.

and Burst's attempt to avoid the application of Section 112(6) to the "storage means" elements is an impermissible attempt to claim any device that performs the function of storing data. [228] Indeed, Burst acknowledges in its brief that rather than denoting a particular structure, "storage" refers to "any device in which information can be stored, sometimes called a memory device."[229] Because even Burst cannot deny that but for the application of Section 112(6), the claimed "storage means" would cover "every conceivable way or means to perform" the claimed function of "storing," Section 112(6) must apply. "Section 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation." [230]

2. There is no disclosure of structure corresponding to the "storage means . . . for storing said digital time compressed representation"

The function at issue for the "storage means" in the '705 patent is "storing said digital time compressed representation." Thus, the claim covers only structures that are linked to the function of storing a "time compressed representation," not merely capable of storing audio/video data.

The '705 patent contains no disclosure linking any structure to the function of storing a "time compressed representation." As discussed in Section III above, the specification of the Burst patents does not mention "time compression." The Burst patents discuss only data compression and the storage of data compressed signals. However, the claims attempt to cover a different concept—audio or video signals that have been time compressed into a representation that has an associated burst transmission time period. The absence of any link between storage structures and the function of storing "time compressed representations" is a consequence of the specification's failure to disclose time compression.

Thus, under the proper construction of "time compressed representation," there is no structure that corresponds to the function of "storing said time compressed representation." If

[228] *See Mas-Hamilton*, 156 F.3d at 1214.

[229] Opening Brief at 23 (quoting IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONIC TERMS 956 (4th ed. 1988)).

[230] *Laitram*, 939 F.2d at 1536.

the Court construes "time compressed representation" under Burst's proposal to include any data compressed file that can be transmitted faster than real time, then the "storage means" would be limited to the structures disclosed for storing a data compressed file. The '705 patent discloses **DRAM, SRAM, CMOS memory, optical disc memory, bubble memory, magnetic disk, and digital paper** as structures that are clearly linked to the function of storing data compressed files.[231]

E. Random access storage means

The element "random access storage means . . . for storing the time compressed [or "recompressed"] representation" is written in standard means-plus-function form. As with "storage means," Burst fails to overcome the presumption that "random access storage means should receive its ordinary treatment under Section 112(6). Burst's position rests again on the idea that "random access storage" can be used as a noun. This argument is unavailing.

1. Section 112(6) applies to "random access storage means" because "random access storage" does not provide sufficient structure to overcome the presumption

Burst cannot overcome the presumption because "random access storage" does not denote a particular structure or class of structures. "Random access storage" attempts to group all structures that meet the functional requirements of "storing" and providing "random access" to that storage. Burst's expert, Dr. Hemami, defines "random access storage" in this wholly self-definitional way: "storage that provides for random access to any given segment of stored audio/video source information."[232] The attempt to define "random access storage" as any "storage" that provides for "random access" reveals that no definite structure is identified by the term. Tellingly, Burst does *not* propose to define "random access storage" as Random Access Memory (RAM). Instead, Burst points to multiple devices in the patents that provide "random access" to show the breadth of the term. This variety of structures, united only the purely functional requirement that they provide "random access storage," demonstrates that the phrase does not denote a definite structure. Rather, "random access storage," like "detent," "input,"

[231] *See* Brown Decl., Exh. L ['705 patent] at 6:16-29.

[232] Payne Decl., Exh. 5 [Hemami Report] at 43-44.

"output," and "storage," encompasses all structures that perform the recited function of providing "random access storage," and thus must be subject to Section 112(6).[233]

Burst also contends that because the claim recites that the "random access storage means" is "coupled" to the "compression means," *Cole v. Kimberley Clark* requires that it be removed from the ambit of Section 112(6). Burst is wrong. In fact, *Cole* demonstrates how much more structure is required to overcome the presumption than is present in the "random access storage means" element. In *Cole*, the claim recited "not only the structure that supports the tearing function, but also its location (extending from the leg band to the waist band) and extent (extending through the outer impermeable layer)."[234] By contrast, the Burst claim recites only that the "random access storage means" is "coupled" to the compression means. That language provides a *functional* relationship between the two—the random access storage means must be connected somehow to the compression means—but no more. The claims do not specify the location of the means at all: it could be adjacent the compression means, or on the opposite side of the transceiver. The complete lack of information about location and extent, in sharp contrast to *Cole*, shows how far short of overcoming the presumption Burst falls.

2. There is no disclosure of structure corresponding to the "random access storage means . . . for storing the time compressed representation"

As with "storage means," the function performed by the "random access storage means" involves "storing the time compressed representation" or a "recompressed" file. For the same reasons discussed above when addressing "storage means," the '995 patent does not disclose any structure as clearly linked and necessary to the function of storing a "time compressed representation." However, to the extent that "time compressed representation" is construed to include any data compressed file that can be transmitted faster than real time, the '995 patent discloses several structures for storing data compressed files. Specifically, the '995 patent discloses DRAM, SRAM, CMOS memory, and optical disc memory as structures for

[233] *See Mas-Hamilton*, 156 F.3d at 1214; *Laitram*, 939 F.2d at 1536.

[234] *Cole v. Kimberly*, 102 F.3d 524, 530 (Fed. Cir. 1996).

storing data compressed files.[235] The '995 patent does not describe a hard drive, however. That structure was new matter added to the specification in the continuation-in-part application.[236]

F. "Compression Means"

There is no dispute that the "compression means" limitations for "compressing said audio/video source information into a time compressed representation thereof" are subject to construction under Section 112(6).[237] The only dispute is about what the "corresponding structure" is. Of course, this fundamentally depends on how the court construes the function of "compressing … into a time compressed representation … having an associated time period…" That question is addressed separately above. This section first addresses what the "corresponding structure" would be under Burst's proposed construction of the "time compression" language, and then addresses what the corresponding structure would be under Apple's construction of that language.

1. Under Burst's Proposed Construction The Only Structure Linked To Compression Is The AMD 7971 Chip Disclosed In The '995 Patent

If the Court adopts Burst's construction of the "time compression" language, the parties' dispute turns on the question of whether the disclosure of "compressor/decompressor 26," which is represented by an empty box in Figure 2 of the Burst patents, can constitute corresponding structure. Burst's proposed constructions for each of the "compressing means" elements is "a compressor/decompressor executing [various algorithms]."[238] Apple's position is that because the empty box labeled "compressor/decompressor 26" cannot be "corresponding structure" under the law, the only structure disclosed that is linked to the "compressing … " function is the AMD 7971 chip disclosed in the '995 patent.[239]

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[235] *See* Brown Decl., Exh. A ['995 Patent] at 6:8-19.

[236] Brown Decl., Exh. DD ['932 Patent highlighted to show new matter].

[237] *See* Opening Brief at 60.

[238] *See* Opening Brief at 60.

[239] Judge Motz of the District of Maryland reached the conclusion urged by Apple in this section when he construed the claims in the *Burst v. Microsoft* action. Brown Decl., Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 6.

a. Compressor/Decompressor 26 does not constitute a structure under section 112(6)

Burst's position is that the empty box identified in the patents as "compressor/decompressor 26" constitutes a structure and performs the claimed function of compression.[240] However, the empty box in Figure 2 and the generic description of "compressor/decompressor 26" lack the amount of detail required under Section 112(6). In *Default Proof Credit Card v. Home Depot*, the Federal Circuit held that an empty block labeled "dispenser" could not be corresponding structure to "means for dispensing at least one debit card for each transaction."[241] The Federal Circuit found that despite the specification's description of "the 'dispenser' as 'loaded with three or more stacks of debit cards,'" the specification "discloses no structure capable of dispensing cards," and held the patent invalid for lack of corresponding structure.[242] Similarly, one district judge explained, "diagrams which do not depict any internal circuitry, such as the 'box' marked 'field comparator 23' in Figure 2, cannot be properly identified as the corresponding structure in a means-plus-function element."[243] This is because "[s]uch diagrams provide no information about the particular structure and fail to provide adequate notice of the patent's scope.[244] These cases are controlling here.

The conclusion that "compressor/decompressor" cannot be corresponding structure is also compelled by the principle established by the Federal Circuit's decision in *Fonar v. General Electric*, namely that structure which is not specifically identified cannot be part of the "corresponding structure."[245] In *Fonar*, the Federal Circuit found the specification's statement

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[240] *See* Opening Brief at 61.

[241] 412 F.3d 1291, 1298 (Fed.; Cir. 2005).

[242] *Id.* at 1302.

[243] *Faroudja Labs., Inc. v. Dwin Electronics, Inc.,* 76 F. Supp. 2d 999, 1012-13 (N.D. Cal. 1999); *see also Atmel Corp. v. Information Storage Devices*, 198 F.3d 1374, 1377, 1382 (Fed. Cir. 1999) (finding that a disclosure depicting "the high voltage generator circuit as a 'black box'" did not qualify as corresponding structure, and that the only corresponding structure to the "high voltage generating means" was the title of an article identified in the specification as describing how to "implement high voltage circuit 34.").

[244] *Id.*

[245] 107 F.3d 1543, 1551-52 (Fed. Cir. 1997).

that "other wave forms" could be used for the claimed function could not be included as part of the "corresponding structure" because the only wave form specifically identified was a "generic gradient wave form."[246]

Even Burst's expert has effectively admitted that the disclosure of "compressor/decompressor 26" provides no structural information whatsoever. Testifying about the meaning of "compressor/decompressor 26," Dr. Hemami stated:

> I understand that to mean in an implementation there could be something inside the compressor/decompressor box which would not be a standalone computer, you know, monitor and everything. It would be some amount of hardware which would be implementing compression algorithms in hardware, software, or a combination of hardware and software.[247]

As this shows, Ms. Hemami testified that she understood the "compressor/decompressor 26" to be something that implemented algorithms "in hardware, software, or a combination of hardware and software." Yet this is the entire universe of possible compression procedures. Indeed, Ms. Hemami wrote in her expert report that "*[a]ny* compression procedure is described by an algorithm," which "can be implemented in software," or in "hardware," or "finally … using a combination of both software and hardware."[248] Thus, Burst's own expert testimony shows that that the disclosure "compressor/decompressor 26" does nothing to particularize what structure might perform the compression function.

b. There is no dispute that besides "Compressor/Decompressor 26" the AMD chip is the only hardware disclosed

The only specific hardware disclosed in the Burst patents that is associated with the function of data compression is the AMD 7971 chip, a black and white compression/decompression chip used by fax machines. *See* '995 Patent at 5:4-8. Burst's expert concedes that this AMD chip is the only compression hardware that is disclosed in the '995 patent:

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[246] 107 F.3d 1543, 1551-52 (Fed. Cir. 1997).

[247] Brown Decl., Exh. C [Hemami Depo.] at 135.

[248] Payne Decl., Exh. 5 [Hemami Report] at 16 (emphasis added).

> Q. And are any examples of the hardware for the compressor/decompressor given in the Burst patents other than this A.M.D. 7971 chip?
>
> A. There are no other examples of specific hardware for the compressor/decompressor given in the patent.[249]

Because the AMD fax chip is the only structure described in the specification which is linked to the function of compression,[250] it is the only hardware that can be included as corresponding structure.

c. Algorithms without hardware are not structure under section 112(6)

Burst also suggests that adequate structure for the "compression means" can be found in the patents' disclosure of generic compression algorithms, which Burst argues could be used in "compressor/decompressor 26." This argument fails because algorithms are not structure by themselves—finding that they are would contradict the Supreme Court's ban on patenting mathematics.[251] Rather, algorithms become structure when they are implemented in hardware. As the Federal Circuit explained, "the instructions of the software program that carry out the algorithm electrically change the general purpose computer by creating electrical paths within the device. These electrical paths create a special purpose machine for carrying out the particular algorithm."[252]

This shows that Burst's reliance on *Linear Tech* and *Serrano* is misplaced.[253] In both cases, the patents-in-suit clearly disclosed physical circuitry as structure for executing the

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[249] Brown Decl., Exh. C [Hemami Depo.] at 106.

[250] *See also* Brown Decl., Exh. C [Hemami Depo] at 137 (acknowledging that "compressor decompressor 26 and the AMD chip" were the only "hardware for performing the function of compression" described).

[251] *See In re Allapat*, 33 F.3d 1526, 1543-45 (Fed. Cir. 1994) (*en banc*). *See also* Brown Decl. Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 6 ("[A]n algorithm standing alone is a mere abstraction that itself requires a means for execution. Therefore, I find that unless an algorithm is combined with such an execution means, it does not constitute a structure within the meaning of section 112, ¶ 6.").

[252] *WMS Gaming v. International Game Tech.*, 184 F.3d 1339 (Fed. Cir. 1999).

[253] Opening Brief at 62.

claimed function.[254] The only issue before those courts was whether other microprocessors were covered under that disclosure. But in the matter at hand, no circuitry or other means for execution are disclosed. Thus, neither *Linear Tech* nor *Serrano* supports the proposition that an algorithm can be "corresponding structure" in the absence of hardware.

Finally, it should be noted that while general purpose microprocessors are disclosed in the specification, these microprocessors cannot be construed as structure for the "compression means" because there is no disclosure of running a compression algorithm on a general purpose computer as software. Indeed, the specification suggests that a general purpose computer should not be used as the hardware for "compressor/decompressor" because (1) the only disclosed structure is a dedicated hardware chip, and (2) the general purpose microprocessors that are disclosed are described as separate devices and are linked to different functions.[255]

d. The AMD chip was removed from the '932 and '705 patents' specifications resulting in no disclosure of corresponding structures

When the application that led to the '932 and '705 patents was filed, Burst removed the description of the AMD 7971 chip from the specification.[256] Because the AMD chip was the only structure clearly linked to the compression means, its removal leaves no corresponding structure in the specification. Thus, even under Burst's construction of "time compression," the '705 and '932 patents do not contain any structure clearly linked to the "compressing … " function.[257]

[254] *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1322 (Fed. Cir. 2004); *Serrano v. Telular Corp.*, 111 F.3d 1578, 1582-3 (Fed. Cir. 1997).

[255] *See* Brown Decl., Exh. C [Hemami Depo] at 105-6.

[256] *See* Brown Decl., Exh. CC ['995 Patent with highlighting to show text removed in the continuation-in-part application]; Brown Decl., Exh. DD ['932 Patent with highlight to show text added in the continuation-in-part application].

[257] The Maryland Court reached the same conclusion, ruling that there is no reference to any corresponding structure in the '705 Patent (the '932 patent, whose specification is identical, was not at issue). Brown Decl. Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 6.

2. Under Apple's Construction, No Structure Linked To "Time Compression" Is Disclosed

The parties agree that the specifications of the Burst patents do not use the phrase time compression. Consequently, the specification fails to "clearly link" the function of "compressing…into a time compressed representation" with any structure. Accordingly, under Apple's proposed construction of the "time compression" language, there is no corresponding structure for the "compressing means" elements in any of the patents.

G. "Transmission Means"

The parties agree that "transmission means . . . for 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" should be construed under Section 112(6).

The function performed in claims 1 and 2 of the '705 patent is "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." Claim 3 adds the requirement that the transmission means "is configured to receive the edited digital time compressed representation of said audio/video source information and to transmit the edited digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus."

The structures in the specification of the '705 patent that correspond to these functions are the **fiber optic port 18, point-to-point microwave transceiver, or satellite transceiver**.[258] The parties agree that these structures are clearly linked to the claimed functions. The only dispute appears to be whether, as Burst proposes, an "auxiliary digital input port 17" should be included as a means for transmission.

The "auxiliary digital input" is not linked to the function of transmission. Rather, as its name suggests, the "auxiliary digital input" is linked to the function of receiving digital signals. For example, "Auxiliary digital input port 17 is employed to receive any acceptable

[258] Brown Decl., Exh. L ['705 patent] at 8:2-7, 11:26-51.

digital signal such as computer-generated video signal or as may be supplied by another VCR-ET."[259] There is no disclosure that links the auxiliary digital input port to the function of transmission. Critically, there is also no disclosure that links the auxiliary digital input port to the function of transmission *in a burst transmission time period*. Burst argues that because the port can receive audio data from a second VCR-ET, that second VCR-ET must use an auxiliary digital input port to transmit the audio data.[260] That supposition does not constitute a clear link between the auxiliary digital input port, which is described only as receiving data, and the function of transmission in a burst time period. Even if the port could be used for transmission, there is no disclosure that transmission over that auxiliary port, rather than the fiber optic port 18, would occur in a burst time period. Thus, the auxiliary digital input port 18 is not clearly linked to the transmission function, and is not corresponding structure for the "transmission means" element.

H. Recording means

The parties agree that the "recording means, including a removable recording medium coupled to said random access storage means, for storing the time compressed representation of said audio/video source information stored in said random access storage means onto said removable recording medium" is subject to Section 112(6).

The dispute between the parties stems from Burst's contention the "recording means" does not include recording media or a shunt switch. Burst's proposed construction ignores the language of the claims. The "recording means" is not simply a device that records. The claims explicitly state that the recording means "includ[es] a removable recording medium coupled to said random access storage means."[261] Thus, in addition to a structure that performs the function of "storing," the "recording means" itself must include removable recording media, such as the tapes and disks compatible with the recording unit, and a structure that couples the media to the random access storage means. The patent discloses only one such structure that couples the media to the random access storage means and assists in the function of taking data

[259] Brown Decl., Exh. L ['705 patent] at 7:45-47.

[260] Opening Brief at 77.

[261] Brown Decl., Exh. A ['995 Patent], claims 44, 47.

that is already stored in the storage means and conveying it to the recording media to be stored. That structure is a shunt switch. Without the shunt switch, the recording unit is not coupled to the storage means and cannot store compressed signals:

> In the course of converting the decompressed signals from the VCU 12 for use by the AVRU 11 the signals are synchronized by the time base generator (TBG) or corrector 48. TBG 48 can be by passed by a shunt switch 48' for the purpose of transmitting either compressed or decompressed signals from VCU 12 directly to the AVRU 11 in an uncorrected time based mode.[262]

Thus, the shunt switch is clearly linked to the requirement that the recording means include "a removable recording medium *coupled to said random access storage means*." Apple's proposed construction properly includes the shunt switch and the removable recording media. Burst's, which does not, should be rejected.

I. Editing means

The parties agree that the various "editing means" terms in claims 2, 20, and 21 of the '995 patent and claim 2 of the '705 patent are governed by Section 112(6). Claim 2 of the '995 patent requires "editing means . . . for editing the time compressed representation . . . and for restoring the time compressed representation." Claims 20 and 21 of the '995 require "editing means . . . for editing said selectively decompressed time compressed representation . . . and for storing said edited selectively decompressed time compressed representation of said audio/video source information in said random access storage means." Claim 2 of the '705 patent requires "editing means . . . for editing the digital time compressed representation . . . and for storing the edited digital time compressed representation of said audio/video source information in said storage means."

The functions performed by the editing means elements are similar, each requiring a means for editing time compressed or decompressed information, and storing or restoring the data to the storage means. The structures that perform these functions are the same for the '995 patent and '705 patent. Both patents disclose that a combination of three structures is required to

[262] *Id.* at 5:63-6:2.

perform the editing and storing functions. Editing is managed by a Digital Control Unit that contains important substructures. Editing is accomplished through a user interface that consists of a control panel and input devices. Finally, storing is managed through a specific bus. Despite the clear disclosures that link all of this structure to the functions of editing and storing, Burst attempts to broaden the claim by asserting that it only requires a generic controller and processor (executing stored editing software) and ignoring the editing tools, ROM, and structure for storing the edited material. Burst's attempt to read out clearly linked structure is inappropriate.

The "editing means" structure has three principal components. The first component is the Digital Control Unit 14, which "is responsible for all of the digital editing processes."[263] The Digital Control Unit has three cooperating parts, "a CPU (Central Processor Unit) 31, a ROM (Read Only Memory) 32 and a controller 33."[264] The structure of these components is described in detail. The patent specifies that CPU 31 is a commercially-available microprocessor of which "[t]he Intel 80286, Intel 80386, Motorola 68020, and Motorola 68030 are examples."[265] The "Controller 33 is an integrated circuit which handles the timing and interfacing between DCU 14 and memory 13."[266] The "ROM 32 holds the necessary step-by-step editing programs which are installed at the factory. A currently available example of a suitable ROM for this application is the Texas Instruments part TMS47256."[267]

The second component of the editing means is the user interface through which a user performs the editing function. The specification relates that "a program may be edited, one frame at a time, by changing the contrast, brightness, sharpness and colors, etc."[268] Through a "user interface control panel" on DCU 14, the user can "select a desired frame number from a menu on the display."[269] Then, using "a user input device such as a light pen or mouse," the user

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[263] Brown Decl., Exh. L ['706 Patent] at 6:35-36.

[264] *Id.* at 6:33-35.

[265] *Id.* at 6:63-64, 5:51-61.

[266] *Id.* at 6:64-66.

[267] *Id.* at 6:66-7:3.

[268] *Id.* at 6:40-41.

[269] *Id.* at 6:40-52.

can select individual frames to edit.[270] Thus, using the combination of user interface structures and DCU 14, the user can edit by, for example, delet[ing] frames in a strip, select a point where other frames are to be inserted into the program, or edit different frames."[271]

The third component is used to store the edited representation in the storage or random access storage means. The specification discloses that the connection between the DCU and the memory is a "high speed data bus 34."[272] The high speed data bus "is required in order to meet bandwidth requirements."[273] "Examples of suitable data bus devices are Motorola's VME bus, Intel's Multibus and the Optobuss (U.S. Pat. No. 4,732,446)."[274]

Burst's proposed construction that includes only "a processor executing stored editing software and a controller, plus equivalents"[275] is inadequate for several reasons. Burst's construction (1) eliminates the ROM portion of the Digital Control Unit; (2) eliminates the user interface that actually performs the function at the user level of editing; and (3) ignores any structure for meeting the "storing" function of the editing means.

The specification clearly discloses that a Digital Control Unit that has three cooperating components controls the editing function. Burst proposes to read out the ROM element of the DCU. The DCU is a specialized piece of hardware that contains the necessary components to handle for data management aspects of the editing function. The DCU operates by executing editing programs installed on its ROM at the factory.[276] Burst attempts to eliminate any reference to the ROM and its pre-installed editing software because Burst would prefer to broaden the "means" to include *any* editing software stored in *any* structure. However, the specification does not link the editing function to any processor working with any storage structure, the specification links the editing function to a "Digital Control Unit" that contains a

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[270] *Id.* at 6:58-59.

[271] *Id.* at 6:54-56.

[272] *Id.* at 7:6-7.

[273] *Id.* at 7:7-8.

[274] *Id.* at 7:9-11.

[275] Opening Brief at 77.

[276] Brown Decl., Exh. L ['705 Patent] at 6:66-7-1.

particular type of microprocessor, an integrated circuit controller, and a ROM with pre-loaded editing programs. Burst's attempt to deconstruct the Digital Control Unit and cherry pick the pieces that move the bits is inappropriate. "While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the claimed invention."[277] Thus, a power cord is not corresponding structure merely because without it the means could not be performed. However, the editing function is performed and not merely enabled by the combination of microprocessor, controller, and ROM.

Similarly, the actual editing function is performed by the user through a user interface. Burst attempts to define "editing" down to mean the hardware-level act of rearranging bits. That position is senselessly narrow, and is not how the patent treats the "editing" function. The patent describes how "one" may "use" the DCU to edit, arrange, rearrange segments of a program, or alter the program sound track.[278] The user can "edit different frames (i.e., alter contrast, brightness, sharpness, colors, etc.)."[279] The user "edits" frames with an input device, such as a light pen or mouse, with a user interface control panel on the DCU.[280]

Finally, Burst simply ignores any structure that performs the function of "storing said edited selectively decompressed time compressed representation of said audio/video source information in said random access storage means."[281] The "random access storage means" itself cannot be this structure. The structure that is linked to the function of storing the data in that storage means is the high speed bus.

Thus, the structures that are clearly linked as corresponding structure to the "editing means . . . for editing . . . and for storing" are (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; and (2) user interface control panel, light pen or mouse; and (3) VME bus, Intel Multibus, or Optobuss.

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[277] *Default Proof Credit Card Sys.*, 412 F.3d at 1298.

[278] Brown Decl., Exh. L ['705 Patent] at 6:36-39.

[279] *Id.* at 6:54-57.

[280] *Id.* at 6:48-52, 6:57-59.

[281] *See, e.g.*, Brown Decl., Exh. A ['995 Patent] claim 20.

VI.

MINOR DISPUTES

A. "Editing"

The parties agree that "editing" means "modifying."[282] Further, the parties appear to agree that the claims specify that the time compressed representation is what is edited. Indeed, Burst states that construing "editing" to mean modifying "the representation of the audio/video source information" is "superfluous and redundant" because "[e]very 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."[283] As a result, the parties appear to agree that modifying something other than the "representation of the audio/video source information," such as the metadata about a song (e.g., the name of an artist or track) rather than the representation of the song itself, does not constitute the "editing" of the claims.

The only dispute arises from Burst's argument that "editing" can include the act of creating a playlist.[284] In *Burst v. Microsoft*, the Maryland Court construed "editing" to exclude the function of creating a playlist, and Apple proposed that same construction here.[285] The exclusion of the function of creating a playlist is a clear logical consequence of the claim language stating that what is edited is the representation of the audio/video information, which is not the same as "metadata" about the song. Burst's argument that rearranging video or audio clips is editing is correct only to the extent that this results in a new, edited video or audio work. If that has happened, then a work has been "modified," and editing has occurred under Apple's proposed construction. If, on the other hand, all that a user does is create a "playlist" of songs to be played in a particular order, the user has not modified anything about the representation of the audio information. All that has occurred is that the user has created a separate list with

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[282] Burst CC Brief at 83.

[283] *Id.*

[284] Burst admits as much when arguing that "The playlist features of the accused instrumentalities allow user to modify sequences or segments of audio/video source information by adding, inserting, deleting, and rearranging."

[285] Brown Decl. Exh. Z [Claim Construction Order in *Burst v. Microsoft*] at 7.

information about the order in which a set of songs should be played. This involves modifying "metadata" about the songs, not modifying the audio content of the songs themselves. This is exactly what the Maryland Court found: "The plain meaning of the word 'editing' suggests modifying the content of information, not creating an external list that arranges the information."[286]

B. "Multiplicity"

Apple proposed a construction for the term "multiplicity" because it is a term of patent drafting art that is not readily understandable by a jury. As explained in LANDIS ON THE MECHANICS OF CLAIM DRAFTING, it is generally accepted that "multiplicity" means "two or more; usually a fairly large number."[287] Burst's proposed construction, "a large number," does not provide the claims with the full range of their ordinary meaning and should be rejected.

VII.

TERMS NO LONGER IN DISPUTE

Apple withdraws its proposed constructions for the terms "analog to digital converter means," "monitor means," "recording . . . onto a removable recording medium," "monitoring … during editing," and "selectively view … during editing." Apple agrees with Burst that no construction is needed for these terms.

VIII.

CONCLUSION

For the reasons stated herein, the Court should adopt Apple's proposed construction for each of the disputed terms.

Dated: December 8, 2006

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[286] *Id.*

[287] Brown Decl. Exhibit BB [Landis on Mechanics of Claim Drafting] at APBU19347.