United States District Court,
E.D. Texas, Texarkana Division.

LG ELECTRONICS, INC,
Plaintiff.
v.
HITACHI, LTD., et al,
Defendants.

Civil Action No. 5:07-CV-90 (DF)

Dec. 8, 2008.

Background: Holder of patents relating to digital display systems brought action against competitor, alleging infringement.

Holding: The District Court, David Folsom, J., held that terms relating to patent for optical disc player which discriminates between audio files would be construed.

So ordered.

7,158,456. Construed.

Michael J. McKeon, Stephanie Deckter, Andrew C. Warnecke, Brian T. Racilla, James A. Fussell, III, Steven A. Bowers, Fish & Richardson PC, Washington, DC, Geoffrey Patton Culbertson, Justin Kurt Truelove, Nicholas H. Patton, Patton Tidwell & Schroeder, LLP, Texarkana, TX, Patricia L. Peden, Law Offices of Patricia L. Peden, Emeryville, CA, Robert Lawrence Rickman, Fish & Richardson, Dallas, TX, for Plaintiff.

Craig D. Leavell, Paul Richard Steadman, Wengang He, William A. Streff, Jr., Howard E. Levin Kirkland & Ellis, Chicago, IL, Eric Hugh Findlay, Findlay Craft, Tyler, TX, for Defendants.

CLAIM CONSTRUCTION ORDER (2 OF 4) REGARDING U.S. PATENT NO. 7,158,456

DAVID FOLSOM**, District Judge.**

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I. Introduction

Please see Dkt. No. 90 for the claim-construction introduction and claim-construction legal principles. This order construes the second of four asserted patents. For brevity purposes, the introductory material and legal principles are included only in the first order, which construes the disputed terms of U.S. Patent No. 6,404,418.

II. U.S. Patent No. 7,158,456

The '456 Patent entitled, "Optical Disc Players and Method for Reproducing Thereof," issued on January 2, 2007, to inventors Yong Hee Han, Jong In Shin, Myung Gu Lee, and Han Sang Lee, from Application No. 11/199,150, filed August 9, 2005. The '456 Patent application is a continuation of application Ser. No. 09/951,210, filed on Sep. 11, 2001, which issued as U.S. Pat. No. 7,050,376. On its face, the '456 Patent is assigned to LG.

A. Overview

The '456 Patent relates to an optical disc player, and more particularly to an optical disc player which discriminates between audio files. The '456 Patent contains awkward wording seemingly because it was translated from a foreign language. The '456 Abstract reads:

An optical disc player discriminates an attribution of tracks recorded onto a disc inserted in the player, and normally reproduces MP3 tracks recorded onto discs inserted into a plurality of disc drivers using an MP3 decoder. Also, according to a method of reproducing an optical disc, the optical disc player discriminates a kind of an inserted disc as an audio file disc, an MP3 file disc, or a general data file disc and normally performs a reproducing operation for the files or music recorded onto the inserted disc.

1. Background

According to the '456 Patent, by using a "double deck type audio compact disc player," "anyone can make his own compact discs by recording his voice or dubbing his favorite music from other compact discs, all without a computer operation." Also, "portable MP3 file displayers for reproducing * * * MP3 files or music have been widely suppl[ied] to the markets." However, the '456 Patent explains, "the MP3 and the audio files and music have different data formation and construction. Accordingly, the optical disc players have to check the file formation and construction for inserted disc and perform a suitable reproducing process according to the checking result that of discriminating the disc kind in order to normally reproduce the files or music recorded onto the inserted disc by the optical disc player." '456 Patent, col. 1, lines 23-46.

Thus, "an object of the present invention [is] to provide an optical disc player and a method for reproducing thereof, which can discriminate a kind of inserted disc with the audio file disc, the MP3 file disc, and the general data file disc and normally performs the reproducing operation for the files or music recorded onto the inserted disc." '456 Patent, col. 1, lines 50-55.

2. Disclosure

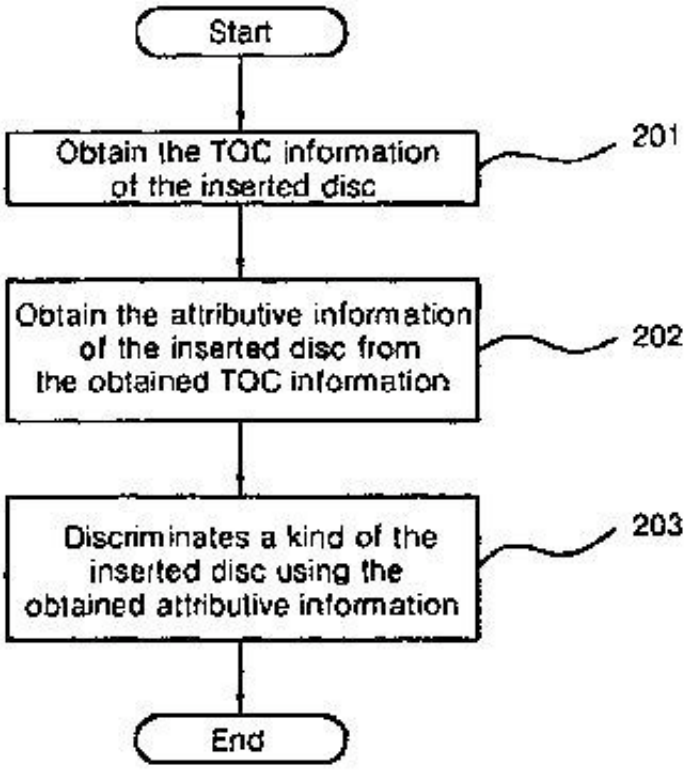
The '456 Patent discloses methods and devices for reproducing, *i.e.,* playing, individual files and entire discs, some of which are discussed in this overview section; others may be discussed in more detail below as necessary or helpful to resolve the parties' dispute over various terms and phrases of the ' 456 Patent.

For example, the '456 Patent discloses a "process for discriminating a kind of an inserted disc at the optical disc player" in which "the disc discrimination section 102[1] obtains the TOC(Table Of Content) FN1 information of the inserted disc 101 (201 step)," (2) "[m]eanwhile, * * * obtains the attributive information of the inserted disc 101 from the obtained TOC information (202 step) after obtaining the TOC(Table Of Content) information of the inserted disc," and (3) "discriminates a kind of the inserted disc 101 using the

obtained attributive information, and can normally reproduce the file or music recorded onto the disc according to a suitable reproducing method (203 step)." ' 456 Patent, col. 3, line 65-col. 4, line 32. Figure 2 is said to illustrate that method:

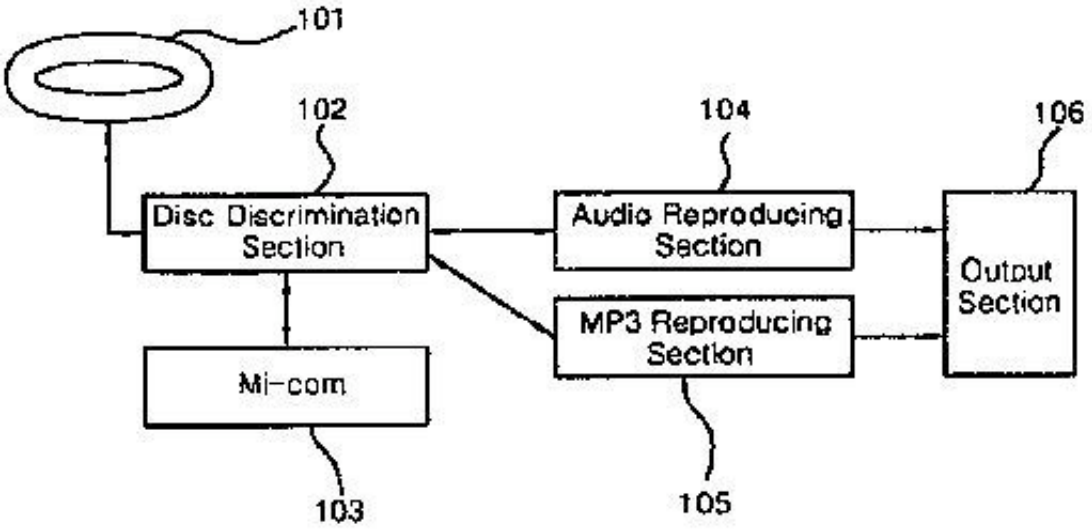
FN1. "The TOC information means that of a file or music attribution, a file or music number, each file or music playing time, and each file or music address recorded onto the disc." '456 Patent, col. 4, lines 6-9.

FIG. 2



As is apparent from the foregoing, that method relies primarily on the "disc discrimination section 102" of "an optical disc player which can reproduce an MP3 file or music," as depicted in the "block diagram" of Figure 1:

FIG. 1



The '456 Patent explains that "block diagram" as follows:

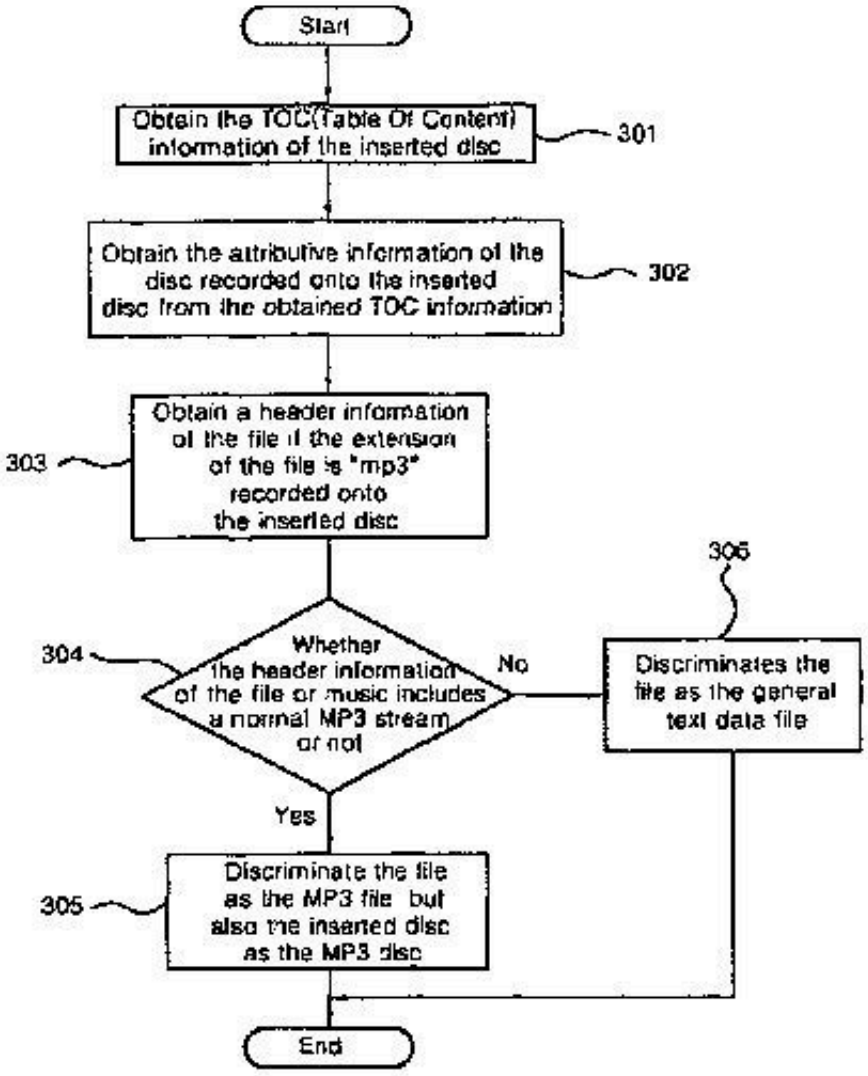
[T]he optical disc player * * * includes a disc 101 for receiving a disc; a disc discrimination section 102 for discriminating an attribution of the file or music recorded onto the disc inserted into the disc 101; a mi-com 103 for controlling an overall operation of the optical disc player; an audio reproducing section 104 for reproducing an audio file or music provided from the disc discrimination section 102; an MP3 reproducing section 105 for reproducing an MP3 file or music provided from the disc discrimination section 102; and an output section 106 for outputting output signals provided from the audio reproducing section 104 or the MP3 reproducing section 105.

'456 Patent, col. 3, lines 52-64. Thus, "if the extension of the inserted disc 101 is 'mp3', the disc discrimination section 102 discriminates the disc file as an MP3 file and then the MP3 reproducing section 105 reproduces the MP3 file. If the extension of the inserted disc 101 is 'wav', the optical disc player discriminates the disc file as an audio file and then the audio reproducing section 104 reproduces the MP3 file." '456 Patent, col. 4, lines 20-26.

The '456 Patent further explains that a "reproducing mode" is established based on the discriminated attribution. According to the '456 Patent, "the reproducing operation includes the sub-steps of obtaining an information for the established reproducing mode at present; and discriminating whether the track according to the reproducing mode which is established at present is recorded or not on the inserted disc with reference to the attributive information of the obtained track, and reproducing the track of the inserted disc according to the current reproducing mode if the track according to the current reproducing mode does not exists on the inserted disc." '456 Patent, col. 1, line 66-col. 2, line 7.

The '456 Patent then describes, in connection with Figure 3, "a process of reproducing" MP3 files:

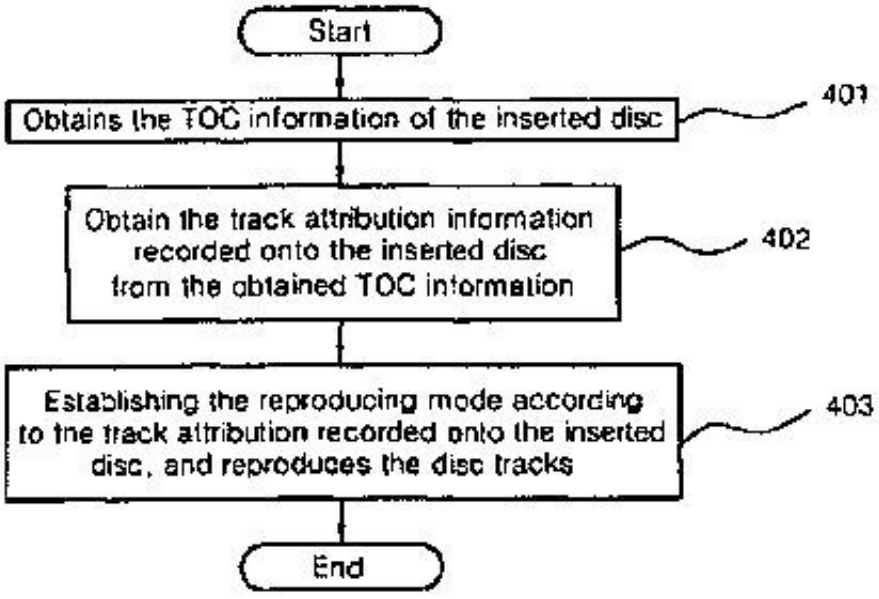
FIG. 3



According to the '456 Patent, "the disc discrimination section 102 of the optical disc player [1] obtains the TOC (Table Of Content) information of the inserted disc 101 (301 step)," (2) "obtains the attributive information of the file or disc * * * from the obtained TOC information (302 step)," (3) "obtains a header information of the file or music if the extension of the file or music is 'mp3,' " (4) "discriminates whether the header information of the file or music includes a normal MP3 stream or not by using the header information * * * (304 step)," (5) "not only discriminates the file or music as the MP3 file or music, but also the inserted disc as the MP3 disc, if the header information of the file or music recorded onto the disc includes the normal MP3 stream as the result of 304 step (305 step)," and (6) "discriminates the file or music as the general text data file or music, if the header information of the file or music recorded onto the disc does not include the normal MP3 stream as the result of 304 step (306 step)." '456 Patent, col. 4, line 48-col. 5, line 28.

Similarly, Figure 4 is said to illustrate reproducing an optical disc:

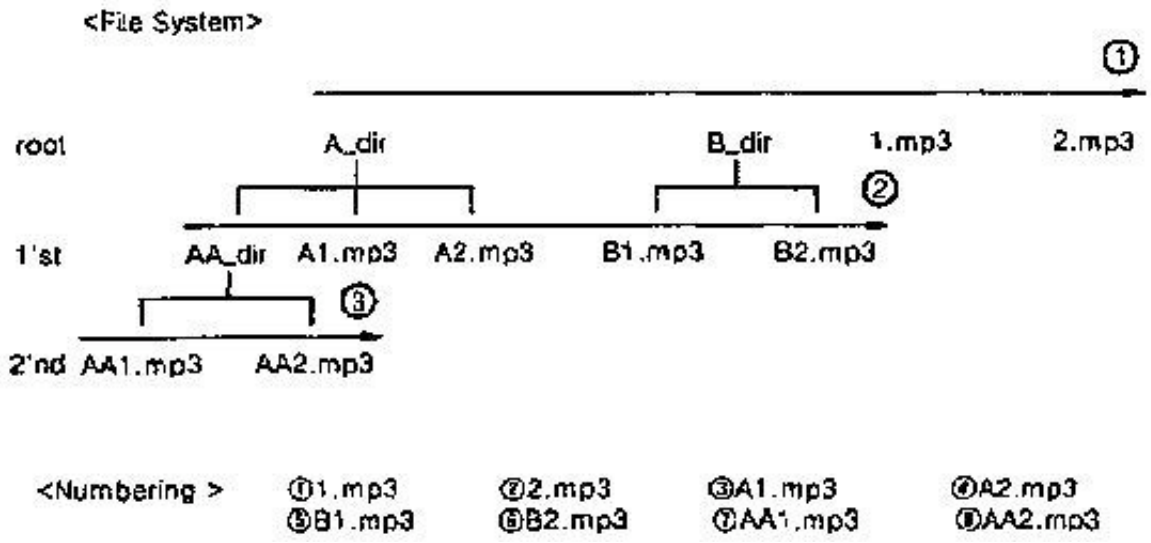
Fig. 4



According to Figure 4, "the disc discrimination section 102[1] * * * obtains the TOC information of the inserted disc 101 (401 step)," (2) "obtains the tracks recorded onto the inserted disc 101 with an audio track, an MP3 track, and so on from the obtained TOC information at 401 step (402 step)," and then (3) "the optical disc player establishes a reproducing mode according to the track attribution recorded onto the inserted disc 101, and reproduces the disc tracks (403 step)." '456 Patent, col. 5, lines 47-63.

As for "sequential numbering" of tracks, Figure 6 is said to "illustrate[ ] a case that of sequentially numbering the MP3 tracks according to a horizontal hierarchy of the tree structure referring to the file system of the MP3 track recorded onto the inserted disc 101." '456 Patent, col. 8, lines 15-18.

Fig. 6



According to the '456 Patent, the tree "root" has two subdirectory folders A_dir and B_dir and two MP3 tracks 1.mp3 and 2.mp3. Subdirectory A_dir further includes a subdirectory AA_dir and two MP3 tracks A1.mp3 and A2.mp3, and subdirectory B_dir further includes two MP3 tracks B1.mp3 and B2.mp3. Additionally, the sub directory folder AA_dir includes two MP3 tracks AA1.mp3 and AA2.mp3. *See* '456 Patent, col. 8, lines 15-25. That "file system," the ' 456 Patent explains, "can be classified three hierarchies such as [1] a root (A_dir, B_dir, 1.mp3, and 2.mp3), [2] the first hierarchy (AA_dir, A1.mp3, A2.mp3, B1.mp3, and B2.mp3) and [3] the second hierarchy (AA1.mp3, and AA2.mp3)." If the MP3 tracks in the "tree" are "sequentially numbered according to the horizontal hierarchy of the tree structure," then the order of the MP3 tracks are 1.mp3, 2.mp3, A1.mp3, A2.mp3, B1.mp3, B2.mp3, AA1.mp3, and AA2.mp3. *See* '456 Patent, col. 8, lines 26-34.

As noted above, the '456 Patent describes other embodiments; however, the foregoing is believed to provide a sufficient overview of the '456 Patent for construction of terms in this case.

3. The Asserted Claims

LG asserts claims 17, 22 and 27, of which claim 17 is independent and provides:

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information associated with an audio file and discriminating a type of the audio file using the attribute information, wherein the attribute information includes an extension of the audio file; and

(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b), and reproducing the audio file according to the reproducing mode, wherein if an extension of the audio file is "mp3" as a result of the step (a), further comprising the steps of:

(c1) obtaining a header information of the audio file; and

(c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained header information.

'456 Patent, col. 12, lines 26-40. Claims 22 and 27 depend from independent claim 20: FN2

FN2. LG says that claim 20 is "asserted, but non-selected." LG's Brief at 20.

20. An apparatus for an audio file, comprising:
a reader configured to read an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file;

a first controller for establishing a reproducing mode for reproducing the audio file based on the extension information

a detector configured to detect at least a part of the audio file under the established reproducing mode; and

a second controller configured to check whether the obtained part of the audio file constructs a normal MP3 format stream corresponding to the established reproducing mode.

22. The apparatus of claim 20, wherein the first controller automatically changes the reproducing mode if the audio file is not available under the established reproducing mode.

27. The apparatus of claim 20, further comprising a display for displaying information including at least title information of a currently reproduced audio file.

'456 Patent, col. 12, lines 49-62, col. 12, lines 65-67, col. 14, lines 4-6.

B. Claim Construction

1. Agreed Terms The parties agree on the construction of the following term:

Claim Term	*Agreed Construction*
"automatically changes the reproducing mode"	The reproducing mode changes from one mode to the other mode without user intervention.

See Dkt. No. 42, at 2.

2. Disputed Terms

a) "attribute information"

The phrase appears in claim 17 (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an **attribute information** associated with an audio file and discriminating a type of the audio file using the **attribute information,** wherein the **attribute information** includes an extension of the audio file; and

(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b), and * * *.

'456 Patent, col. 12, lines 26-40 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions. Hitachi's proposed construction changed during briefing:

LG	***Hitachi***
Information (for example extension information) sufficient to differentiate between different types of audio information.	Information including a filename extension that is used to differentiate between different types of audio information.

See Dkt. No. 64, at 9.

LG urges that "the language of the claims themselves" supports LG's proposed construction, and that the specification "consistently defines 'attribute information' in accordance with LGE's construction-it is replete with examples of using attribute information to differentiate between different types of audio information." Dkt. No. 47, at 21-22. LG argues that "[i]n a preferred embodiment, the system uses the extension information of the audio file to differentiate between different types of audio information"-but "this is merely one exemplary way in which different types of audio information may be discerned." *Id*. at 22.

LG also relies on differences between claims 1 and 17, arguing that claim 1 "recites 'reading an extension information,' rather than reciting the broader term 'reading an attribute information' recited in claim 17." Dkt. No. 47, at 22. According to LG, "[i]f the invention recited in claim 17 was intended to be limited to only 'extension information,' the claim would have used the same language as claim 1 rather than the broader term 'attribute information.' " *Id*. at 22-23. LG urges that construing the terms "attribute information" and "extension information" synonymously (*i.e.*, "both meaning: 'characters at the end of the file name after the period, which identify the type of file' ") would be "improper" because the word "includes" means "comprising," and does not foreclose additional elements. *Id*. at 23. "Thus, although 'attribute information' may include 'extension information,' additional elements are not foreclosed." *Id*.

Hitachi contends "the plain language of step (a) and step (b)" of Claim 17 "requires the 'attribute information' ***used*** in step (b) to include the 'extension of the audio file.' " Dkt. No. 48, at 68. Hitachi further argues the second "wherein" clause, *i.e.*, "wherein if an extension of the audio file is 'mp3' as a result of the step (a)," means that "the '***result of the step (a)' is*** the 'mp3' extension." *Id*. Consequently, Hitachi urges "the attribution information used in step (b) [of Claim 17] is the 'extension of the audio file.' " *Id*. Hitachi concludes, "the information used to discriminate the file type and to establish the reproducing mode in claim 17 ***must*** include the filename extension." *Id*.

Hitachi also argues LG "disclaimed the concept of establishing a reproducing mode on mere attribution information (as opposed to filename extension in particular) during prosecution of the parent '376 Patent." Dkt. No. 48, at 68-69. Hitachi notes that "[o]riginal independent claim 1 and dependent claim 2 filed with the parent '376 application were directed to establishing a reproducing mode based on '***attributive information***' of an optical disc" were rejected " * * * as being anticipated by the Park reference which teaches determining the type of disc based on attribute information." *Id*. at 69. Hitachi further notes that LG

"amended independent claim 1 by merging claim 2 into claim 1, and adding the clause 'b ... wherein the **attribute information *includes* an extension of the audio file.'** and **'c. establishing a reproducing mode according to an attribute of audio file stored in the storage medium as a result of the step (c) [sic].'** " *Id*. at 69. Hitachi urges that LG distinguished its invention from the Park reference by noting that "Park never mentions 'an extension of the audio file' and fails to disclose 'using an 'mp3' extension ***as*** the attributive information.' " *Id*.

Furthermore, Hitachi argues that "[d]uring prosecution of the '456 patent, [LG] amended all the pending independent claims to highlight the use of file extensions in order to distinguish the Lee reference." Dkt. No. 48, at 69. Specifically, Hitachi contends LG distinguished its invention from the Lee reference by noting, "Lee does not necessarily disclose ***using a file naming extension*** ... Accordingly, ***Lee fails to teach ...*** **'establishing a reproducing mode for reproducing the audio file *based on the extension information*' *as recited in claim 1* ...' a first controller for establishing a reproducing mode for reproducing the audio file *based on the extension information*' as recited in claim 13."** *Id*. Hitachi concludes LG's "statements and amendments during prosecution are a clear disavowal of establishing reproducing modes without using filename extensions." *Id*.

In response, LG argues that "[a] plain reading of claim 17 reveals that the method comprises 'reading an attribute information associated with an audio file,' 'establishing a reproducing mode' based on that information, and *then,* if the 'extension information' is 'mp3,' obtaining 'header information' to further examine the audio file." Dkt. No. 55, at 17. LG urges that "[t]here is nothing in claim 17 that requires using only 'extension information' to 'establish a reproducing mode.' " *Id*. LG avers that the " 'extension information' recited in claim 17 is used to determine whether to further analyze the audio file to decide if it constructs normal MP3 audio data," but that this determination step "need not be part of the establishment of the reproducing mode." *Id*. at 17-18. LG contends, "[o]ther claims of the '456 patent lend further support" to LG's construction, namely, various claims which " 'establish the reproducing mode' based solely on the 'extension information' " and Claim 20, which recites "a first controller for establishing a reproducing mode for reproducing the audio file based on extension information." Id. at 18.

With respect to the prosecution history, LG argues that "[n]othing in [the cited] amendments or statements relating to the Park reference represents a clear disavowal of claim scope limiting the claims to require that 'extension information' included in the 'attribute information' must be used to establish the 'reproducing mode.' " Dkt. No. 55, at 18. LG further argues that "[t]he claim language recited in the pending claims of the '376 Patent is different than the language recited in the '456 patent and statements distinguishing these terms should have no impact on the scope of different terms appearing in a different patent." Id. at 18-19. LG notes that the Park reference was distinguished on grounds that Park did "not disclose 'obtaining attribute information of an audio file using an extension of the audio file from management information in a storage medium.' " Id. at 19. Similarly, LG contends the Lee reference was distinguished because Lee "does not disclose 'using a file extension to determine whether the file is an ordinary CD file or an MP3 file.' " Id. LG argues that since the claims of the '456 Patent do not include reference to "management information" or "a storage medium," and the claims in Lee "recited 'establishing a reproducing mode for reproducing the audio file *based on the extension information,*' " the "amendments to the claims and statements made during the prosecution of the '456 patent do not justify the narrow construction" proffered by Hitachi. Id. at 19.

In reply, Hitachi argues that its "proposed construction of 'attribute information' * * * does not require using ***only*** or ***solely*** extension information to establish a reproducing mode," but rather "requires the use of '[i]nformation ***including*** a filename extension,' and 'the information used to discriminate the file type and to

establish the reproducing mode in claim 17 must ***include*** the filename extension.' " Dkt. No. 63, at 28. With respect to prosecution history estoppel, Hitachi contends "[e]very disputed term of issued claim 17 of the '456 patent was also present in the claims of the parent ' 376 patent that were amended to distinguish the Park reference" and that "[t]he insignificant differences between the parent '376 and '456 patent claims identified by [LG] are irrelevant." Id.

(2) Construction

[1] There appears to be no dispute that the "attribute information" must include "an extension of the audio file." Claim 17 make clear that the "attribute information" FN3 is "associated with an audio file," and is used to "discriminate[e] a type of the audio file." The claims also make clear that the "attribute information includes an extension of the audio file." The term "includes," of course, is an open-ended term. *See* SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1284 (Fed.Cir.2005) ("As a patent law term of art, 'includes' means 'comprising.' Neither includes, nor comprising, forecloses additional elements that need not satisfy the stated claim limitations." (citations omitted)); Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., Inc., 123 F.3d 1445, 1451, (Fed.Cir.1997) ("The claim term 'including' is synonymous with 'comprising,' thereby permitting the inclusion of unnamed components."). Thus, because "includes" is open-ended, "attribute information" as used in the ' 456 Patent claim 17 is not limited to "an extension of the audio file," *i.e.,* "attribute information" may include information in addition to "an extension of the audio file."

FN3. This term is otherwise not used in the claims of the '456 Patent.

The parties do, however, dispute whether "an extension of the audio file" must be (1) used to "discriminate[e] a type of the audio file," and (2) used to "establish[ ] a reproducing mode." In short, the '456 Patent claims do not require that.

Turning to the first issue, claim 17 does not expressly require "an extension of the audio file" be used to "discriminat[e] a type of audio file." The "attribute information" includes "an extension of the audio file," of course, but does not require the "extension of the audio file" be used to "discriminat [e] a type of audio file."

The specification describes using "an extension of the audio file" to determine the file type:

[T]he disc discrimination section 102 of the optical disc player obtains the attributive information of the file or music recorded onto the inserted disc 101 in a manner that of perceiving the attribution using an extension of the disc file from the TOC information obtained from the inserted disc 101.

'456 Patent, col. 4, lines 14-19. *See also* '456 Patent, col. 4, lines 53-56 ("[T]he disc discrimination section 102 obtains the attribution of each track by referring the extension information of each track from the obtained TOC information."), and col. 10, lines 28-30 ("the Mi-com 13 obtains the attribution information using the track extension information recorded onto the disc from the TOC information obtained from the inserted disc"). That, however, is described by the specification as exemplary:

Here, the disc discrimination section 102 of the optical disc player obtains the attributive information of the file or music recorded onto the inserted disc 101 in a manner that of perceiving the attribution using an extension of the disc file from the TOC information obtained from the inserted disc 101.

For example, if the extension of the inserted disc 101 is "mp3", the disc discrimination section 102 discriminates the disc file as an MP3 file and then the MP3 reproducing section 105 reproduces the MP3 file.

'456 Patent, col. 4, lines 14-23 (discussing "preferred embodiment.") (emphasis added). *See* '456 Patent, col. 3, lines 37-48 ("A *preferred embodiment* of the present invention will now be described with reference to the accompanying drawings. In the following description, same drawing reference numerals are used for the same elements even in different drawings. The matters defined in the description such as a detailed construction and elements of a circuit are nothing but the ones provided to assist in a comprehensive understanding of the invention. Thus, it is apparent that the present invention can be carried out without those defined matters. Also, well-known functions or constructions are not described in detail since they would obscure the invention in unnecessary detail.").

Additionally, as described in the "Summary of the Invention," for example, the disclosed method does not call for use of "an extension of the audio file" in determining the file type, just "attributive information" generally:

To achieve the above objects, there is provided a method of reproducing a disc in an optical disc player, the method comprising the steps of obtaining a TOC(Table Of Content) information of an inserted disc; obtaining an attributive information of the inserted disc file from the TOC information; and discriminating a kind of the inserted disc using the attributive information obtained.

'456 Patent, col. 1, lines 56-62.

Similarly, with respect to the second issue, claim 17 does not facially require the "extension of the audio file" be used to "establish[ ] a reproducing mode." According to the claim, the "reproducing mode" is established "in response to the type of the audio file"-however that type is determined. As above, the "Summary of the Invention" describes a method of reproducing-all without reference to "an extension of the audio file:"

The track of the inserted disc are *reproduced by establishing a reproducing mode according to an attribution* of the inserted disc after performing the discriminating step, and the reproducing operation includes the sub-steps of obtaining an information for the established reproducing mode at present; and discriminating whether the track according to the reproducing mode which is established at present is recorded or not on the inserted disc with reference to the attributive information of the obtained track, and reproducing the track of the inserted disc according to the current reproducing mode if the track according to the current reproducing mode does not exists on the inserted disc.

'456 Patent, col. 1, line 63-col. 2, line 7 (emphasis added).

However, Hitachi urges that during prosecution of the '456 Patent and its parent, the applicant clearly distinguished the prior art on the basis of using "an extension of the audio file" to determine the file type and establish a "reproducing mode." As previously noted, the '456 Patent issued from a continuation of the '210 Application. The Federal Circuit has explained that "[w]hen the application of prosecution disclaimer involves statements from prosecution of a familial patent relating to the same subject matter as the claim language at issue in the patent being construed, those statements in the familial application are relevant in

construing the claims at issue." Ormco Corp. v. Align Technology, Inc., 498 F.3d 1307, (Fed.Cir.2007). Thus, the focus turns first to the parent application of the '456 Patent.

With respect to determining the file type, the originally-filed independent claims of the '210 Application simply called for using "attributive information" to determine the disc type. Those claims made no mention of using "an extension of the audio file:"

1. A method of reproducing a disc in an optical disc player, the method comprising the steps of:

(a1) obtaining a TOC (Table of Content) information of an inserted disc;

(b1) obtaining an attributive information of the inserted disc file from the TOC information; and

(c1) *discriminating a kind of the inserted disc using the attributive information obtained in (b 1) step*.

19. An optical disc player comprising:

a plurality of disc drivers for receiving each disc;

a first control section for *obtaining an attributive information of tracks of each disc* inserted each disc driver and performing an overall control for the optical disc player;

a second control section for receiving an MP3 track data from the first control section and converting the received MP3 track data into decodable data, and controlling a decoding order for the converted data;

an MP3 decoder for decoding the converted MP3 track data provided from the second control section and forwarding the decoded data to the second control section;

a digital to analog converter for converting the converted MP3 track data provided from the second control section into analog data; and

an output section for outputting the converted analog data.

Dkt. No. 51, Exh. 28, pt. 1, at 28-32 (emphasis added). Rather, the "file extension" limitation appeared in dependent claims, *e.g.,* original claim 6:

6. The method of claim 1, wherein the optical disc player obtains the attributive information of the inserted disc file, the optical disc player *perceives the attribution using an extension of the disc file* from the TOC information obtained from the inserted disc.

Dkt. No. 51, Exh. 28, pt. 1, at 29 (emphasis added).

In a first office action to the '210 Application, the examiner rejected, *inter alia,* the independent claims and claim 6 as anticipated by U.S. Pat. No. 5,701,384 to Park ("Park"):

Park discloses the invention as claimed. Figs. 1-4 show the optical disk apparatus having: the section for obtaining a TOC information on an inserted disc; *obtaining attributive information* (taken to be the

information stored in the TOC) of the inserted disc file from the TOC (see Fig. 4 Step S1); and discriminating a kind (type) of the inserted disc *using the information obtained* from the TOC (see steps S2-S10), as set forth in the claims. The reference further *teaches discriminating different formats of recording, along with different types of audio or video formats (including MPEG which is believed to be a form of MP3 format, and audio CD formats which includes WAV files,* see columns 5-7), as set forth in the dependent claims. See also the description of the apparatus and figures for further details relating to the limitations as set forth in the claims.

Dkt. No.51, Exh. 28, pt. 2, at 34-35 (emphasis added). As perceived by the examiner, Park taught determining disc type using file attribute information.

In response, the applicants amended, *inter alia,* independent claims 1 and 19 as follows:

1. (Currently Amended) A method of reproducing *audio data* a disc in an optical disc player, the method comprising the steps of:

(a1) obtaining a TOC (Table of Content) *management* information of an inserted disc *associated with audio file stored in a storage medium;*

(b1) obtaining an attributive *attribute* information of *audio file* the inserted disc file from the TOC *management* information *and discriminating an attribute of audio file stored in the storage medium using the attribute information, wherein the attribute information includes an extension of the audio file;* and

(c1) *establishing a reproducing mode according to an attribute of audio file stored in the storage medium as a result of the step (c), and reproducing the audio file* discriminating a kind of the inserted disc using the attributive in formation obtained in (b 1) step.

19. (Currently Amended) An *apparatus for audio data* optical disc player comprising:

a plurality of disc drivers for receiving each disc,

a first controller section for obtaining an attributive *attribute* information of tracks *stored in a* of each disc inserted *storage medium* each disc driver and performing an overall control for the optical disc player,

a second control section for receiving an MP3 track data from the first control section and converting the received MP3 track data into decodable data, and controlling a decoding order for the converted data, *discriminating an attribute of audio data stored in the tracks based on an attribute information, and outputting a control signal to reproduce audio data according to the attribute information, wherein the attribute information includes an extension of audio data stored in the track;* and

an MP3 a decoder *processor* for decoding the converted MP3 track *audio data* provided from the second control section and forwarding the decoded data to ig n al from the controller;

a digital to analog converter for converting the converted MP3 track data provided from the second control section into analog data; and

an output section for outputting the converted analog data. [markings in original]

Dkt. No. 51, Exh. 28, pt. 2, at 53, 59. The applicants also added a number of new claims, such as claim 25:

25. (New) A method of reproducing audio data, the method comprising the steps of:

(a) identifying audio file based on an attribute information, wherein the attribute information includes an extension of audio file; and

(b) determining a reproducing mode to reproduce the audio file as a result of step (a).

Dkt. No. 51, Exh. 28, pt. 2, at 61. The amended claims variously called for using attribute information for determining disc type and establishing the reproducing mode. The amended claims further clarified that the "attribute information" included the file or audio data "extension." But the amended claims did not expressly require using the "extension" for determining disc type or establishing the reproducing mode.

In support of those amendments, the applicants contended Park did not disclose the newly-added limitations:

Claim 1, as amended, recites a combination of features for reproducing audio data by obtaining attribute information of an audio file using an extension of the audio file from management information in a storage medium.

Park contain no such disclosure and does not even mention an extension of an audio file, let alone perceiving *the attribute information using an extension of the audio file*.

The rejection never addresses this failure of Park to contain such disclosure. Instead, the rejection merely alleges that Park teaches discrimination different types of recording along with different types of audio or video formats, including MPEG which the rejection says is believed to be a form of MP3 format, and audio CD formats which includes WAV files.

This statement fails to even address using a file extension of an audio file to perceive attribute information.

Additionally, the statement to "[S]ee also the description of the apparatus and figures for further details relating to the limitations as set forth in the claims" denies Applicant's substantive and procedural due process under the Administrative Procedures Act by making Applicants read the entire reference and each and every claim feature and guess at how the reference allegedly discloses those features. See in this regard, In re Zurko, 527 U.S. 150, 119 S.Ct. 1816, 144 L.Ed.2d 143, 50 USPQ2d 1930 (1999), and In re Gartside, 203 F.3d 1305, 53 USPQ2d 1769 (Fed.Cir.2000).

Accordingly, the Office Action fails to make out a *prima facie* case of anticipation of the invention recited in claim 1 by Park.

Claims 19 and 20 recite a combination of features including a first controller for obtaining an attribute information of tracks stored in a storage medium discriminating an attribute of audio data stored in the tracks based on an attribute information, and outputting a control signal to reproduce audio data according to the attribute information, wherein the attribute information includes an extension of audio data stored in the track. *The Office Action fails to indicate where Park discloses an extension of an audio file, let alone perceiving the attribute information using an extension of the audio file, or outputting a control signal to*

reproduce audio data according to the attribute information.

Applicants do not find the recited features in Park. Accordingly, the Office Action fails to make out a *prima facie* case that Park discloses the subject matter recited in claims 19 and 20.

Dkt. No. 51, Exh. 28, pt. 2, at 65-67. In connection with new claim 25, the applicants argued:

Independent claim 25 positively recites a method of reproducing audio data comprising (1) identifying an audio file based on attribute information wherein the attribute information includes an extension audio file, and (2) determining a reproducing mode to reproduce the audio file. Park fails to disclose or suggest this feature.

Dkt. No. 51, Exh. 28, pt. 2, at 68. A Notice of Allowability thereafter issued, *see id*. at 88, and, after subsequent minor amendments, *see id*. at 97-108, the '210 Application issued as U.S. Pat. No. 7,050,376.

It is clear from the foregoing that the prosecution history of the '210 Application does not support Hitachi's assertion that LG "disclaimed the concept of establishing a reproducing mode on mere attribution information (as opposed to filename extension in particular)." It is true that the applicants amended the claims as Hitachi points out. However, the applicants argued that "Park contains no such disclosure and does not even mention an extension of an audio file, let alone perceiving the attribute information using an extension of the audio file," and that "[t]his statement fails to even address using a file extension of an audio file to perceive attribute information." Dkt. No. 51, Exh. 28, pt. 2, at 65. According to the applicants, "[t]he Office Action fails to indicate where Park discloses an extension of an audio file, let alone perceiving the attribute information using an extension of the audio file, or *outputting a control signal to reproduce audio data accord ing to the attribute information*." *Id*. at 67. That is, the applicants argued that Park did not disclose "an extension of the audio file," and further did not disclose using "an extension of the audio file" to perceive attribute information. The applicants did not urge that Park lacked disclosure of establishing a reproducing mode based on "an extension of the audio file." Rather, the applicants argued that that the "attribute information"-and not "an extension of the audio file" specifically-was used for reproduction.

The focus thus turns to prosecution of the continuation application from which the '456 Patent issued. The originally-filed continuation claims included the following independent claims, and dependent claim 6:

1. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information associated with audio file and discriminating a type of audio file using the attribute information, wherein the attribute information includes an extension of the audio file; and

(b) establishing a reproducing mode in response to the type of audio file as a result of the step (b), and reproducing the audio file according to the reproducing mode.

6. The method of claim 1, wherein if an extension of the audio file is "mp3" as a result of step (a), further comprising the steps of:

(c1) obtaining a header information of the audio file; and

(c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained header

information.

13. An apparatus for audio data, comprising:

a controller for obtaining attribute information associated with an audio file, discriminating an attribute of an audio file based on the attribute information, and outputting a control signal to decode an audio file according to the attribute information, wherein the attribute information includes an extension of an audio file; and

a processor for decoding a first audio file or a second audio file in response to the control signal from the controller, wherein the first audio file is discriminated by the extension of "mp3" and the second type audio is discriminated by other extension, according to each attribute information.

20. A method of reproducing audio data, the method comprising the steps of:

(a) identifying type of audio data based on an attribute information, wherein the attribute information includes extension information indicating an extension of audio data; and

(b) determining whether to reproduce the audio data as a result of step (a).

21. The method of claim 20, wherein the step (b) comprises the steps of:

(b1) identifying a current reproducing mode to reproduce the identified audio data; and

(b2) determining whether to change the current reproducing mode in response to the identified audio data.

25. A method of reproducing audio data, the method comprising the steps of:

(a) identifying a type of audio data based on an attribute information, wherein the attribute information includes an extension of audio data; and

(b) controlling a reproduction of the identified audio data as a result of step (a).

28. A method of reproducing audio data, the method comprising the steps of:

(a) identifying a type of audio data based on an attribute information, wherein the attribute information includes an extension of audio data; and

(b) determining a decoding mode to decode the identified audio data in response to the attribute information.

31. A method of reproducing audio data, the method comprising the steps of:

(a) identifying a type of audio data based on an attribute information, wherein the attribute information includes extension data indicating an extension of audio data; and

(b) controlling a decoding of the identified audio data as a result of step (a), wherein the audio data is a least one of MP3 audio discriminated by the extension of "mp3" and second type audio discriminated by the

extension of "wav," according to each attribute information.

Dkt. No. 51, Exh. 29, at 26-30.

In a first office action, the examiner rejected, *inter alia,* the independent claims as anticipated by U.S. Pat. No. 6,292,440 to Lee ("Lee"):

Lee discloses the invention as claimed. Figs. 1-3 show the apparatus and method for reproducing data having: the reading section for detecting the type or audio file, by the file type detector (100), to determine whether the audio file is a MP3 file (as set forth in claims 2, 12-16, 24, 26, 29 and 31) or an ordinary audio CD file (not specifically described, however well known to be "wav" file, as set forth in claims 2, 16, 24, 30 and 31) based on the information reproduced from the medium (which include the recited attribute information, not specifically described but inherent to digital audio recording to identify the audio format of the MP3 files or ordinary audio CD files); and establishing the reproducing mode based on the type of audio files detected (see Fig. 1 and Figs. 3), as set forth in the claims. The reference further teaches: the displaying section (301) associated with the reproduced audio file for displaying information such as the title of the audio data (file name), track number (file number) etc. (see column 4, lines 10-16), as set forth in claims 9-11 and 19; and the digital to analog converter (600), as set forth in claim 18. See the description of the apparatus and figures for further details relating to the limitations as set forth in the claims.

Dkt. No. 51, Exh. 29, at 56-57. The examiner rejected various dependent claims as either anticipated by or obvious over Lee:

As discussed above, Lee discloses the invention as claimed, *however does not specifically describe changing or maintaining the reproduction mode based on the type of audio file detected,* as set forth in claims 3-5, 17 and 21-23. This is *believed to be inherent* to the apparatus of Lee, since the type of audio file detected dictates the mode of operation. In other word, if information is being reproduced in the ordinary audio CD file format mode, and the disk is replaced with the MP3 type format, then the file type detection section (S100) would detect the change to the MP3 type and switch operations to the MP3 type reproduction mode. Likewise if the disk is replaced with another ordinary audio type CD, then the file type detection would detect it is an ordinary audio type CD, and controls would be set to ordinary audio type CD more, i.e. maintaining the same audio type operation.

If however, this feature is not inherent it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the apparatus such that the reproduction mode is maintained or changed based on the detected audio filed type, in order to prevent the apparatus from being lost or frozen.

Dkt. No. 51, Exh. 29, at 58-59. With respect to claim 6, though, the examiner stated that claim 6 would be allowable if written in independent form to include all of the limitations of the base and intervening claims. *See id*. at 59.

In response, the applicants amended independent claims 1 and 13 (as follows), and cancelled the remaining independent claims:

1. (Currently Amended) A method of reproducing an audio datafile, the method comprising the steps of

(a) reading an attribute *extension* information *of the audio file, the extension information of the audio file*

being separated from but associated with *audio data of the* audio file and discriminating a type of audio file using the attribute information, wherein the attribute information includes an extension of the audio file; and

(b) establishing a reproducing mode in result of the step (b), and *for* reproducing the audio file according to thereproducing mode *based on the extension information;*

(c) obtaining at least a part of the audio file under the established reproducing mode; and

(d) determining whether the obtained part of the audio file constructs a normal MP3 format stream corresponding to the established reproducing mode.

13. (Currently Amended) An apparatus for *an* audio data *file,* comprising:

a reader configured to read an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file;

a *first* controller for *establishing a reproducing mode for reproducing the audio file based on the extension information* obtaining attribute information associated with an audio file, discriminating an attribute of an audio file based on the attribute information, and outputting a control signal to decode an aution includes an extension of an audio of an audio file; and

a processor for decoding a first audio file or a second audio file in response to the control signal from the controller, wherein the first audio file is discriminated by the extension of "mp3" and the second type audio is discriminated by other extension, according to each attribute information

a detector configured to detect at least a part of the audio file under the established reproducing mode; and

a second controller configured to check whether the obtained part of the audio file constructs a normal MP3 format stream corresponding to the established reproducing mode.

Dkt. No. 51, Exh. 29, at 67-70. The applicants also amended dependent claim 6 to stand as an independent claim:

6. (Currently Amended) The method of claim 1 *A method of reproducing audio data, the method comprising the steps of:*

(a) reading an attribute information associated with an audio file and discriminating a type of the audio file using the attribute information, wherein the attribute information includes an extension of the audio file; and

(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b), and reproducing the audio file according to the reproducing mode,

wherein if an extension of the audio file is "mp3" as a result of the step (a), further comprising the steps of:

(c1) obtaining a header information of the audio file, and

(c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained header information.

Dkt. No. 51, Exh. 29, at 68-69. That claim 6, as amended, issued as currently-asserted claim 17. The applicants added additional dependent claims, as well. In short, the patentees amended application claims 1 and 13 to expressly call for establishing a reproducing mode "based on the extension information." The patentees did not, however, similarly amend claim 6. To distinguish Lee, the applicants argued with respect to claims 1 and 13, *inter alia,* that:

Independent claim 1 now recites a combination of steps including "reading an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file" and "establishing a reproducing mode for reproducing the audio file based on the extension information."

Independent claim 13 now recites a combination of elements including "a reader configured to read an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file" and "a first controller for establishing a reproducing mode for reproducing the audio file based on the extension information."

Applicants respectfully submit that the combinations of steps and elements set forth in claims 1 and 13 are not disclosed or suggested by the reference relied on by the Examiner.

* * * *

Lee in col. 3, lines 10-11 and col. 3, lines 44-48 disclosed "[a] file type detector receives source data of CD's and CD-ROMs" and "the file type detector 100 receives audio data and detects whether the file of the audio data is an ordinary CD file or an MP3 file." However, Lee nowhere discloses that the file type detector 100 detects whether the file type is an ordinary CD file or an MP3 file *based on the extension information of the file,* nor does the Office Action provide objective factual evidence that Lee inherently, i.e., necessarily, uses a file extension to determine whether the file is an ordinary CD file or an MP3 file.

In fact, because Lee discloses that its detector 100 receives *audio data* and detects whether the file of the audio data is an ordinary CD file or an MP3 file, it seems to suggest that Lee detects the file type based on the audio data of the audio file, not based on the file extension of the audio file. In addition, because Lee discloses that the file type detector 100 receives "source data of CDs and DC-ROMs" and because that "source data" includes different file format data and coding data which Lee could use to determine whether the file is an ordinary CD file or an MP3 file, it is clear that Lee does not necessarily disclose using a file naming extension feature to determine whether the file is an ordinary CD file or an MP3 file.

For example, it is possible that Lee may detect the file type simply based on the encoded audio data or the data format of the audio data by reading the audio data without using the file extension information. Since Lee does not necessarily use a file extension to determine whether the file is an ordinary CD file or an MP3 file, the feature of using the file extension to determine whether the file is an ordinary CD file or an MP3 file is not inherently disclosed in Lee. Accordingly, Lee fails to teach "reading an extension information of the audio file, the extension information of the audio file being separated but associated with audio data of the audio file" and "establishing a reproducing mode for reproducing the audio file based on the extension information" as recited in claim 1 and "a reader configured to read an extension information of the audio

file, the extension information of the audio file being separated but associated with audio data of the audio file" and "a first controller for establishing a reproducing mode for reproducing the audio file based on the extension information" as recited in claim 13.

Since Lee fails to teach at least the above features of amended independent claims 1 and 13, Applicants respectfully submit that amended independent claims 1 and 13 and their dependent claims (at lease due to their dependency) clearly define the present invention over Lee. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. s. 102 and 103 are respectfully requested.

Id. at 75-78. A Notice of Allowability thereafter issued. *See id*. at 87.

Hitachi's argument is unpersuasive in light of the foregoing. While it is true the applicants distinguished Lee on the basis that "an extension of the audio file" was used to determine the file type, that distinction was made in connection with claims 1 and 13, which the applicants had amended to expressly include that limitation. The applicants did not add that limitation to claim 6, nor did they argue that claim 6 was patentable over Lee on the basis that the "extension" was used to determine file type or establish a reproducing mode. To reiterate, application claim 6 issued as currently-asserted claim 17. Accordingly, Hitachi's argument must be rejected.

Therefore, the Court construes the term "attribute information" to mean "information that is used to differentiate between different types of audio information."

b) "audio file"

This phrase appears in claims 17, 20 and 22. Claim 17 is representative (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information associated with an **audio file** and discriminating a type of the **audio file** using the attribute information, wherein the attribute information includes an extension of the **audio file;** and

establishing a reproducing mode in response to the type of the **audio file** as a result of the step (b), and reproducing the **audio file** according to the reproducing mode, wherein if an extension of the **audio file** is "mp3" as a result of the step (a), further comprising the steps of:

(c1) obtaining a header information of the **audio file;** and

(c2) deciding whether the **audio file** constructs normal MP3 audio data or not, based on the obtained header information.

'456 Patent, col. 12, lines 26-40 (emphasis added).

(1) The Parties'

Positions The parties propose the following constructions:

LG	***Hitachi***

A file having audio data.	A "wav" file. The term "audio file" does not include an MP3 file.

See Dkt. No. 64, at 10.

LG contends the "term 'audio file' does not require construction because it is a simple, clear phrase that is neither terse nor in need of elaboration for a jury to understand it." Dkt. No. 47, at 23. However, LG notes that "Claim 2 specifically provides that an 'audio file' can be either a 'wav' file or an 'mp3' file," Claim 17 recites, "if an extension of the ***audio file is 'mp3,'*** a determination is made regarding 'whether the ***audio file constructs normal MP3 audio data,'*** " and the specification suggests that " 'the ***audio file includes*** one of first type audio discriminated by the extension of '***wav***' and second type audio discriminated by the extension of '***mp3.***' " *Id* . at 24. LG concludes that "as explained in the claims themselves, an 'audio file' can comprise either 'wav' audio data and/or 'mp3' audio data." *Id*. LG also contends the limitation, "audio file constructs a normal mp3 format stream," suggests the term "audio file" cannot be simply a "wav" file, because a " 'wav' file can never conform to the MP3 format stream." *Id*.

Hitachi argues that "[i]n the specification, [LG] was its own lexicographer and defined 'audio file' as a 'wav' file (*i.e.,* WAV file), and explained that a WAV file is mutually-exclusive to an 'mp3' file (*i.e.,* MP3 file)." Dkt. No. 48, at 62. Hitachi contends the claims of the '456 Patent are inconsistent with the rest of the specification "because they treat 'audio file' as a generic genus of sound files, and MP3 and WAV files as the species within that genus." Id. Hitachi urges that "statements throughout the specification * * * equating audio files to 'wav' files and teaching mutual exclusivity between audio files and MP3 files" may be found in various excerpts of the Abstract, Background of the Invention, Summary of Invention (stated object and advantages of the invention), Figures 1 and 5, and numerous quotes from the Detailed Description of the Preferred Embodiment, all of which confirm that the patentee was his own lexicographer and defined the term 'audio file' to refer to WAV files, and the term 'MP3 files' as something else." Id. at 64. Hitachi also cites the originally-filed claims 7 and 8 of the parent '376 Application, which purportedly "define an 'audio file' as a file with a 'wav' extension and an 'MP3 file' as a file with an 'mp3' extension." Id.

In response, LG urges that "the specification of the '456 patent does not demonstrate an intent by the patentee to deviate from the ordinary meaning of the term 'audio file' and contains no words or expressions of manifest exclusion or restriction representing a clear disavowal of claim scope." Dkt. No. 55, at 20. Additionally, LG argues that "[n]one of the portions of the specification relied upon by [Hitachi] state that an 'audio file' cannot include MP3 formatted audio data." *Id*. With respect to the originally-filed claims, LG notes that the "applicants amended claim 7 to recite 'wherein if the extension of the *audio file is 'mp3',* the step (b) discriminates the audio file as an *MP3 audio file*' and amended claim 8 to recite 'wherein if the extension of the *audio file is 'wav',* the step (b) discriminates the audio file as a *CD audio file*.' " *Id*. LG urges that these amendments evince that "the term 'audio file' was intended to encompass MP3 files * * *." *Id*.

In reply, Hitachi contends LG's arguments contradict "the undisputed, intrinsic evidence" cited in the specification and "ignore the originally-filed claims of the '456 patent in favor of later, amended claims that * * * were intended to broaden the specification's definition of 'audio file.' " Dkt. No. 63, at 24-27. Hitachi argues that LG's construction, if adopted, "would render the asserted claims of the '456 patent invalid under one or both of Sections 112 and 132(a)." Id. at 28.

(2) Construction

[2] The parties dispute whether an "audio file" can be an MP3 file, *i.e.,* whether the patentees defined an "audio file" to refer to a WAV file, and not an MP3 file.

Beginning with the plain language, claim 17 suggests that an "audio file" may be an MP3 file, but does not have to be, *i.e.,* by reciting "if an extension of the audio file is 'mp3.' " Other claims confirm this view. For example, claim 1 calls for an "audio file," and dependent claim 2 further recites "wherein the audio file includes one of first type audio discriminated by the extension of 'wav' and second type audio discriminated by the extension of 'mp3', according to each extension information." Thus, the claims clearly indicate the term "audio file" is not limited to WAV files.

The specification, on the other hand, consistently and without exception in every section distinguishes "audio files" from MP3 files. The abstract, for example, states that "the optical disc player discriminates a kind of an inserted disc as an *audio file* disc, an *MP3 file* disc, or a general data file disc and normally performs a reproducing operation for the files or music recorded onto the inserted disc." In the "Description of the Related Art," the applicants explained that "the *MP3* and the *audio files* and music have different data formation and construction." '456 Patent, col. 1, lines 39-40. The "Summary of the Invention" explains that "there is provided the advantages that of discriminating the kind of inserted disc with the *audio file* disc, the *MP3 file* disc, and the general data file disc and normally performing the reproducing operation for the files or music recorded onto the inserted disc." '456 Patent, col. 2, lines 43-48. The "Detailed Description of the Preferred Embodiment" states that "if the extension of the inserted disc 101 is 'mp3', the disc discrimination section 102 discriminates the disc file as an *MP3 file* and then the *MP3* reproducing section 105 reproduces the MP3 file. If the extension of the inserted disc 101 is *'wav',* the optical disc player discriminates the disc file as an *audio file* and then the audio reproducing section 104 reproduces the MP3 file." '456 Patent, col. 4, lines 20-26. *See also* id. at col. 5, lines 56-59 ("the disc discrimination section 102 discriminates the object track as the *audio* tracks if the track extension is ' *wav',* and as the *MP3* tracks if the track extension is '*mp3*' ").

The figures likewise maintain the distinction between audio file and MP3 file, *e.g.,* Figure 1,FN4 which illustrates an "audio reproducing section" separate from an "MP3 reproducing section." The prosecution history of the ' 456 Patent, however, is considerably more mixed. During prosecution of the parent '210 Application, the examiner understood an "MP3 format" to be different from an "audio CD format," and the applicant, in response, did not argue against that understanding:

FN4. *See supra* Part II.A for a reproduction of Figure 1.

The rejection never addresses this failure of Park to contain such disclosure. Instead, the rejection merely alleges that Park teaches discrimination different types of recording along with different types of audio or video formats, including MPEG which the rejection says is believed to be a form of MP3 format, and audio CD formats which includes WAV files.
Dkt. No. 51, Exh. 28, pt 2, at 65. Indeed, the patentees had made the very same distinction in the originally-filed claims, *e.g.,* claims 7 and 8:
1. A method of reproducing a disc in an optical disc player, the method comprising the steps of:

(a1) obtaining a TOC (Table of Content) information of an inserted disc;

(b1) obtaining an attributive information of the inserted disc file from the TOC information; and

(c1) discriminating a kind of the inserted disc using the attributive information obtained in (b 1) step.

2. A method of claim 1, further comprising the step of reproducing tracks of the inserted disc by establishing a reproducing mode according to an attribution of the inserted disc after performing the discriminating step.

3. The method of claim 2, wherein the step of reproducing the track of the inserted disc by establishing the reproducing mode according to the attribution of the inserted disc, comprising the sub-steps of:

obtaining an information for the established reproducing mode at present; and

discriminating whether or not the track according to the reproducing mode established at present is recorded or not on the inserted disc with reference to the attributive information of the obtained track, and reproducing the track of the inserted disc according to the current reproducing mode if the track according to the present reproducing mode exists on the inserted disc.

4. The method of claim 3, further comprising the step of changing the current reproducing mode into the reproducing mode according to the track of the inserted disc and reproducing the track of the disc, if the track according to the reproducing mode does not exist on the inserted disc by discriminating whether the track according to the current reproducing mode is recorded or not on the inserted disc.

5. The method of claim 1, wherein the optical disc player interrupts a play operation for the inserted disc and transits a standby mode waiting for a next command from a user, if the attribution of the inserted disc does not correspond to the current reproducing mode.

6. The method of claim 1, wherein the optical disc player obtains the attributive information of the inserted disc file, the optical disc player perceives the attribution using an extension of the disc file from the TOC information obtained from the inserted disc.

7. The method of claim 6, wherein if the extension of the inserted disc is "mp3," the optical disc player discriminates the disc file as an MP3 file.

8. The method of claim 6, wherein if the extension of the inserted disc is "wav," the optical disc player discriminates the disc file as an audio file.

9. The method of claim 1, wherein if an extension of the disc file is "mp3" recorded onto the inserted disc after discriminating the kind of the inserted disc, further comprising the steps of:

obtaining a header information of the disc file;

deciding whether the disc file constructs normal MP3 streams or not by using the obtained header information; and

discriminating as a MP3 file for the disc file and as a MP3 disc for the disc, if disc file constructs the normal MP3 streams.

10. The method of claim 9, wherein the optical disc player discriminates as a text data file for the disc file, if

disc file does not construct the normal MP3 streams.

11. The method of claim 1, wherein after discriminating the kind of the inserted disc, further comprising the step of classifying and numbering the tracks by each attribution using the attributive information obtained at the (b) step, respectively.

12. The method of claim 11, wherein if the tracks are MP3 tracks, the MP3 tracks are numbered according to a hierarchy order of a tree structure referring to a file information of the tree construction for a file system of the obtained MP3 tracks.

13. The method of claim 12, wherein the MP3 tracks are numbered according to the hierarchy order of the tree structure referring to the file information of the tree construction for a file system, the MP3 tracks are sequentially numbered according to a horizontal hierarchy of the tree construction.

14. The method of claim 12, wherein the MP3 tracks are numbered according to the hierarchy order of the tree structure referring to the file information of the tree construction for a file system, the MP3 tracks are sequentially numbered according to a vertical hierarchy of the tree construction.

15. The method of claim 11, wherein if the tracks are MP3 tracks, the MP3 tracks are arranged on the basis of a specific field and numbered according to the arranged order referring to information for a file system of the obtained MP3 tracks.

16. The method of claim 15, wherein the MP3 tracks are arranged on the basis of the specific field, the field selectively including MP3 tracks file name, MP3 tracks playing time, and MP3 tracks storing time.

17. The method of claim 1, further comprising the step of reproducing MP3 tracks of the disc and sequentially displaying information of the reproducing MP3 file on a displaying section of the optical disc player according to a user requirement, if the inserted disc is discriminated as the MP3 disc.

18. The method of claim 17, wherein the information of the reproducing MP3 file on the displaying section of the optical disc player according to the user requirement, are selectively displayed from a current reproducing MP3 track number, a current reproducing MP3 track name, a current reproducing MP3 track number, a current reproducing MP3 track elapsed time, and a current reproducing MP3 track remain time.

19. An optical disc player comprising:

a plurality of disc drivers for receiving each disc;

a first control section for obtaining an attributive information of tracks of each disc inserted each sic driver and performing an overall control for the optical disc player;

a second control section for receiving an MP3 track data from the first control section and converting the received MP3 track data into decodable data, and controlling a decoding order for the converted data;

an MP3 decoder for decoding the converted MP3 track data provided from the second control section and forwarding the decoded data to the second control section;

a digital to analog converter for converting the converted MP3 track data provided from the second control section into analog data; and

an output section for outputting the converted analog data.

20. The optical disc player of claim 19, wherein each disc driver has the first control section, respectively.

21. The optical disc player of claim 19, wherein the second control section comprising:

a plurality of slave controllers for converting the MP3 track data recorded onto the disc inserted into the disc delivers into decodable data; and

master controllers for controlling the decoding order for the converted signal of the plurality of slave controllers.

22. The optical disc player of claim 21, wherein the each disc driver has the slave controller, respectively.

That is consistent with the specification, of course.
However, during prosecution of the '456 Patent-and when faced with different claims than those in the '210 Application-the examiner clearly viewed the term "audio file" as encompassing both MP3 and WAV files in stating that:

Lee discloses the invention as claimed. Figs. 1-3 show the apparatus and method for reproducing data having: the reading section for detecting the type or audio file, by the file type detector (100), to *determine whether the audio file is a MP3 file (as set forth in claims 2, 12-16, 24, 26, 29 and 31) or an ordinary audio Cd file (not specifically described, however well known to be "wav" file,* as set forth in claims 2, 16, 24, 20 and 31) based on the information reproduced from the medium (which include the recited attribute information, not specifically described but inherent to digital audio recording to identify the audio format of the MP3 files or ordinary audio CD files); * * *.

Dkt. No. 51, Exh. 29, at 56. In response, the applicants apparently held that view, too, as evidenced by the discussion of the "audio file" being either an "ordinary CD file" or an "MP3 file:"

In fact, because Lee discloses that its detector 100 receives *audio data* and detects *whether the file of the audio data is an ordinary CD file or an MP3 file,* it seems to suggest that Lee detects the file type based on the audio data of the audio file, not based on the file extension of the audio file. In addition, because Lee discloses that the file type detector 100 receives "source data of CDs and DC-ROMs" and because that "source data" includes different file format data and coding data which Lee could use to determine whether the file is an ordinary CD file or an MP3 file, it is clear that Lee does not necessarily disclose using a file naming extension feature to determine whether the file is an ordinary CD file or an MP3 file.

For example, it is possible that Lee may detect the file type simply based on the encoded audio data or the data format of the audio data by reading the audio data without using the file extension information. Since Lee does not necessarily use a file extension to determine whether the file is an ordinary CD file or an MP3 file, *the feature of using the file extension to determine whether the file is an ordinary CD file or an MP3 file is not inherently disclosed in Lee*. Accordingly, Lee fails to teach "reading an extension information of the audio file, the extension information of the audio file being separated but associated with audio data of

the audio file" and "establishing a reproducing mode for reproducing the audio file based on the extension information" as recited in claim 1 and "a reader configured to read an extension information of the audio file, the extension information of the audio file being separated but associated with audio data of the audio file" and "a first controller for establishing a reproducing mode for reproducing the audio file based on the extension information" as recited in claim 13.

Dkt. No. 51, Exh. 29, at 77 (emphasis added). In short, the prosecution history of the '456 Patent suggests the applicants understood "audio file" to encompass both WAV and MP3 files, and the examiner allowed the claims with that understanding. This interchange supports construing the term "audio file" as it is used in the claims, *i.e.,* as including WAV and MP3 files.

Such a construction does not, of course, necessarily resolve any potential issues of enablement or written description support. "Ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity for failure to comply with 35 U.S.C. s. 112-para. 2, not to interpretation or construction." Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989). *See* Pandrol USA, LP v. Airboss Ry. Prods., Inc., 424 F.3d 1161, 1165 (Fed.Cir.2005) ("Compliance with s. 112 requires sufficient information in the specification to show that the inventor possessed the invention at the time of that original disclosure."); Sitrick v. Dreamworks, LLC, 516 F.3d 993, 999 (Fed.Cir.2008) ("A patentee who chooses broad claim language must make sure the broad claims are fully enabled."); Automotive Techs. Int'l, Inc. v. BMW of N. Am., Inc., 501 F.3d 1274, 1285 (Fed.Cir.2007) ("[I]n order to fulfill the enablement requirement, the specification must enable the full scope of the claims that includes both electronic and mechanical side impact sensors, which the specification fails to do."); Liebel-Flarsheim Co. v. Medrad, Inc., 481 F.3d 1371, 1380 (Fed.Cir.2007) ("The irony of this situation is that Liebel successfully pressed to have its claims include a jacketless system, but, having won that battle, it then had to show that such a claim was fully enabled, a challenge it could not meet. The motto, 'beware of what one asks for,' might be applicable here.").

To conclude, the Court construes the term "audio file" to mean "a file having audio data."

c) "extension of audio file" & "extension information"

This phrase appears in claims 17 and 20, both of which are reproduced below. Claim 17 is representative (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information associated with an audio file and discriminating a type of the audio file using the attribute information, wherein the attribute information includes an **extension of the audio file;** and

(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b), and reproducing the audio file according to the reproducing mode, wherein if an **extension of the audio file** is "mp3" as a result of the step (a), further comprising the steps of: * * * *

20. An apparatus for an audio file, comprising:

a reader configured to read an **extension information** of the audio file, the **extension information** of the

audio file being separated from but associated with audio data of the audio file;

a first controller for * * * *

'456 Patent, col. 12, lines 26-41, col. 12, lines 49-62 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
Information that indicates the type of audio file but does not dictate the format of the audio file.	These terms each refer to a filename extension-the characters at the end of a file name after the period, which identify the file type.

See Dkt. No. 64, at 11.

LG urges that the terms "extension of audio file" and "extension information" indicate information identifying the type of audio file, but which "does not dictate the *format* of the audio data contained in the audio file." Dkt. No. 47, at 25. LG contends that "extension information" is merely "a way in which audio files may be discriminated from each other." *Id*. According to LG, "if the audio file contains audio data formatted according to MP3 standards, adding the extension '.wav' to this audio file will not change the contents of the audio file or somehow transform the MP3 formatted audio data into WAV formatted audio data ." *Id*. LG notes that claim 20 evinces that distinction by reciting, "the extension information of the audio file [is] ***separated from but associated with audio data of the audio file.***" *Id*. at 25-26. LG also cites *Newton's Telecom Dictionary* (11th ed.1996), which explains, " '[c]hecking a file's extension often tells you what the file does or contains.' " *Id*. at 26.

Hitachi urges that "[t]he claims, specification, prosecution history, and extrinsic evidence all support [Hitachi's] construction of these terms to mean *a filename extension*." Dkt. No. 48, at 65. Hitachi notes that "claim 2 recites 'the audio file includes one of first type audio discriminated by **the extension of 'wav'** and second type audio discriminated by **the extension of 'mp3,'** ***according to each extension information***' * * * [and] Claim 17 recites 'if an ***extension of the audio file is 'mp3.***' " *Id*. at 65-66. Hitachi also notes that "[t]he Figures and specification repeatedly refer to **'extension is 'wav"** and **'extension is 'mp3.'** " *Id*. at 66. Hitachi also contends that "[d]uring prosecution of the '456 patent, [LG] distinguished the prior art by arguing that 'Lee does not necessarily disclose ***using a file naming extension.***' " Id. Finally, Hitachi cites extrinsic evidence submitted by both parties, namely, definitions from the *Microsoft Computer Dictionary* and *Newton's Telecom Dictionary* in support of Hitachi's position that "extension information" means the filename extension.

In response, LG maintains that "the filename extension does not dictate the contents of the audio file, but rather simply identifies its contents." Dkt. No. 55, at 21. LG urges that its construction is supported by the prosecution history, because the applicants distinguished the prior art by explaining that " '[s]ince Lee does not necessarily use a file extension *to determine whether the file is an ordinary CD file or an MP3 file,* the feature of *using the file extension to determine whether the file is an ordinary CD file or an MP3 file* is not inherently disclosed in Lee.' " *Id*.

(2) Construction

[3] Claim 17 recites: "if an extension of the audio file is 'mp3,' " and claim 2 further describes WAV as another "extension:"

2. The method of claim 1, wherein the audio file includes one of first type audio discriminated by the *extension of* "*wav*" and second type audio discriminated by the *extension of* "*mp3*", according to each extension information.

'456 Patent, col. 11, lines 39-42 (emphasis added). The specification similarly describes MP3 and WAV as filename extensions, and Figure 6 FN5 further discloses those extensions as Hitachi describes them-the characters at the end of file name after the period. *See, e.g.,* ' 456 Patent, col. 4, lines 14-19 ("Here, the disc discrimination section 102 of the optical disc player obtains the attributive information of the file or music recorded onto the inserted disc 101 in a manner that of perceiving the attribution using an *extension of the disc file* from the TOC information obtained from the inserted disc 101."); col. 4, lines 54-57 ("the disc discrimination section 102 obtains a header information of the file or music if the *extension of the file* or music is 'mp3' recorded onto the inserted disc 101"); and col. 5, lines 56-59 ("the disc discrimination section 102 discriminates the object track as the audio tracks if the track extension is 'wav', and as the MP3 tracks if the track extension is 'mp3' ").

FN5. *See supra* Part II.A for a reproduction of Figure 6.

This construction comports with extrinsic sources, as well. For example, the MICROSOFT COMPUTER DICTIONARY (4th ed.1999), at 175, defines extension as "1. A set of characters added to a filename that serves to extend or clarify its meaning or to identify a file as a member of a category. An extension may be assigned by the user or by a program, as, for example, .com or .exe for executable programs that MS-DOS can load and run." Similarly, the COMPUTER & INTERNET DICTIONARY (Random House Webster's 3d ed.2000), at 203, defines extension as "[i]n DOS and some other operating systems, one or several letters at the end of a filename. Filename extensions usually follow a period (dot) and indicate the type of information stored in the file. For example, in the filename EDIT.COM, the extension is COM, which indicates that the file is a command file. (Depending on the operating system, the punctuation separating the extension from the rest of the filename may or may not be considered part of the extension itself.)." *See also* MODERN DICTIONARY OF ELECTRONICS 270 (7th ed.1999) (defining "extension" as "[f]ilenames often end with a period followed by additional characters known as the file extension. An extension is generally a standard abbreviation for a type of file. For example, .text is often used for ASCII files, and .ps for PostScript files.").

The parties appear to agree that the file extension indicates the file type. As for whether the extension "does not dictate the format of the audio file," as LG urges, Hitachi does not appear to dispute that. As LG notes, claim 17 indicates that the format of the audio file may be determined by use of other information, *e.g.,* the header for a file with an MP3 extension may be used to determine if the file actually has MP3 audio data.

Accordingly, the Court construes the terms "extension of audio file" and "extension information" to each refer to "a filename extension, namely, the characters at the end of a file name after the period, which identify the file type."

d) "reproducing mode"

This phrase appears in claims 17, 20, 22 and 27. Claim 17 is representative (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information * * *; and

(b) establishing a **reproducing mode** in response to the type of the audio file as a result of the step (b), and reproducing the audio file according to the **reproducing mode,** wherein if an extension of the audio file is "mp3" as a result of the step (a), further comprising the steps of * * * *

'456 Patent, col. 12, lines 26-36 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
A mode for producing an audible representation of the audio file.	A mode in which one type of supported sound file (e.g. MP3 file) is played and another type of supported sound file (e.g. WAV file) is not played when both types of sound files are stored on the same medium.

See Dkt. No. 64, at 12.

LG notes that "[o]ne aspect of the disclosed invention is to be able to reproduce music in varying formats (*e.g.,* both music from a CD and music from a computer, such as 'WAV' audio files and 'MP3' audio files) so the user's listening experience is simplified and/or uninterrupted," and urges that the "term 'reproducing mode' simply refers to a mode for reproducing such music or other sounds * * * [and] needs no further construction and should be construed according to its common and ordinary meaning." Dkt. No. 47, at 26. In support of this plain meaning, LG notes that "[c]laim 3 recites 'changing the current reproducing mode ***into another reproducing mode*** based on the extension information," which says "nothing about restricting the 'reproducing mode' to only an 'MP3 On Mode' or an 'MP3 Off Mode' * * * [but rather] recites 'another mode' which can comprise any mode of reproducing any type of audio file." *Id* . at 27. LG also states that "[c]laim 4 recites 'identifying ***a*** current reproducing mode' and 'determining whether to maintain the current reproducing mode,' " while "[c]laim 21, rather than limiting the 'reproducing mode' to merely MP3 'On' and 'Off' modes, recites 'wherein the reproducing mode is a mode for decoding the audio file.' " *Id*. LG concludes that "the specification and claims envisioned 'reproducing mode' to cover more than merely MP3 'On' and 'Off' modes." *Id*.

Hitachi argues that "[t]he only substantive description of 'reproducing mode' in the specification of the '456 patent [is] where 'reproducing mode' repeatedly, consistently, and expressly takes on two possible options: 'MP3 on mode' and 'MP3 off mode.' " Dkt. No. 48, at 70. Hitachi cites various references to "MP3 off mode" and "MP3 on mode" in the specification and urges that "the term 'reproducing mode' should be limited to the teachings of the" preferred embodiment because "the preferred embodiment is described as the invention itself." *Id*. at 71. Hitachi also urges that the prosecution history of the '456 Patent "confirms that the scope of the claims does ***not*** encompass establishing reproducing modes for different types of discs, different types of tracks, or any mixture of format types (*e.g., CDDA tracks v. MP3 files*)," but rather "the claims are limited to identifying and selectively playing types of files." Id. at 71-72. Hitachi notes that

"[o]riginal independent claim 1 and dependent claim 2 filed with the parent '376 Application were directed to 'discriminating a ***kind of the inserted disc***' using '***TOC information***' (claim 1) and 'establishing a reproducing mode according to ***an attribution of the inserted disc***' in order to reproduce ' ***tracks***' of the disc (claim 2)"-both of which were rejected in view of Park (U.S. Patent No. 5,701,384). Id. at 72. Hitachi urges that "[t]he cited Park reference teaches discriminating between CDDA (*i.e.*, regular music CD audio data) and MPEG audio data (*i.e.*, file-based audio data in the CD-ROM format), and reproducing the data accordingly." Id. at 72. Hitachi also points to statements made during prosecution of a Korean counterpart application in support of its contentions. Id. at 70 n. 48.

Hitachi notes that "LGE amended original independent claim 1 [of the '376 Patent] by removing all limitations relating to ***tracks, disc type*** identification, ***disc attributes,*** and the use of ***TOC information*** * * * [and] added limitations relating to ***audio file, file type*** identification and ***file attributes.***" Dkt. No. 48, at 73. Hitachi further notes that while "claim 2 was cancelled, the limitations of claim 2 were written into claim 1, and claim 1 was amended to include the limitations 'discriminating an attribute of ***audio file*** a kind of the inserted disc,' 'establishing a reproducing mode according to an attribute of ***audio file*** the inserted disc after performing the discriminating step,' and '***reproducing the audio file*** tracks of the inserted disc.' " *Id*. Hitachi concludes that "these amendments constitute a clear disavowal of the following teachings of Park and Hayashi: (1) discriminating between CDDA data and MPEG audio data, and establishing reproducing modes accordingly; (2) identifying different types of tracks and establishing reproducing modes based on the track type (*e.g.*, CDDA tracks, V-CD tracks, or file-based CD-ROM format data tracks containing MPEG audio files, etc.); and (3) identifying different types of discs and establishing reproducing modes based on the disc type (*e.g.*, CDDA disc, graphics CD disc, video CD disc, etc.)." *Id*. Consequently, Hitachi argues that the "amendments made during prosecution of the '376 parent application limit the '456 patent claim scope to identifying the type of file (stored in the CD-ROM data format) based on the filename extensions (such as 'mp3' files or 'wav' files) and establishing the reproducing mode for one CD-ROM format file type (*e.g.*, MP3) or another CDROM format file type (*e.g.*, WAV)." Id.

Hitachi also argues that "[d]uring the prosecution of the '456 patent the Examiner confirmed that the scope of the claims are limited to discriminating between CD-ROM format file types" since the "Examiner rejected all independent claims based on" prior art references which disclose " 'a recording or reproducing apparatus having information recorded or reproduced by different ***file formats*** that include MP3 and WAV **file formats.' "** Dkt. No. 48, at 73-74.

Next, Hitachi looks to the specification "to determine the meaning of the 'MP3 on' and 'MP3 off' reproducing modes" and concludes that " 'MP3 off mode' means a mode that *at least* requires playing only supported non-MP3 sound files (*e.g.*, WAV files) from a medium that contains both MP3 files and non-MP3 sound files * * * [while] 'MP3 on mode' means a mode that *at least* requires playing only MP3 files from a medium that contains both MP3 files and supported non-MP3 sound files (*e.g.*, WAV files)." Dkt. No. 48, at 74. According to Hitachi, "[t]he term 'reproducing mode' encompasses the meaning of both 'MP3 on mode' and 'MP3 off mode' [so that] 'reproducing mode' means a mode in which one type of supported sound file (*e.g.*, MP3 file) is played and another type of supported sound file (*e.g.*, WAV file) is not played when both types of files are stored on the same medium." *Id*. at 75.

In response, LG urges that "[t]he claim language broadly recites the establishment of 'a reproducing mode in response to the type of audio file,' " and that the "clear and unambiguous language merely connects the mode of reproduction to the type of audio file-it certainly does not require an 'MP3 on Mode' or an 'MP3 off Mode' (old construction), or that different types of sound files be stored in the same medium (changed

construction)." Dkt. No. 55, at 22. LG argues that nothing in the specification evinces "a clear intention to limit the claimed invention to only 'a mode in which one type of supported sound file (*e.g.*, MP3 file) is played and another type of supported sound file (*e.g.*, WAV file) is not played when both types of sound files are stored on the same medium,' " and that the " 'Summary of the Invention' section of the specification does not even mention this 'MP3 On' mode or an 'MP3 Off' mode." *Id*. at 22-23.

LG also argues that the term "reproducing mode" is defined as a "mode for decoding the audio file" in claims 10 and 22, and is therefore not limited "to a mode in which one type of supported sound file is played and another type of supported sound file is not played when both types of sound files are stored on the same medium." Dkt. No. 55, at 23. With respect to the prosecution history of the parent '376 Patent, LG contends that there are no "arguments made by the applicants or statements by the Examiner" to support Hitachi's construction and urges that the cited amendments did not disavow " 'reproducing modes' other than the 'MP3 On' and 'MP3 Off' modes disclosed in the specification as preferred embodiments." Id.

(2) Construction

[4] The dispute appears to concern (1) whether the "reproducing mode" is limited to the MP3 on and MP3 off modes disclosed in the specification, and (2) whether the "reproducing mode" could be established on a basis other than file type, *i.e.*, based on track type or disc type.

The claims do not limit the "reproducing mode" to any particular mode. Claim 17 simply calls for "establishing a reproducing mode in response to the type of the audio file * * *, and reproducing the audio file according to the reproducing mode." Claim 1 similarly calls for "a reproducing mode for reproducing the audio file." Claim 3, which depends from claim 2, recites "steps of: (b1) checking a current reproducing mode; and (b2) changing the current reproducing mode into another reproducing mode based on the extension information, if the audio file can not be reproduced according to the current reproducing mode." Claim 10, which depends from claim 1, further calls for the "reproducing mode" to be "a mode for decoding the audio file." In other words, the claims do not appear to limit the "reproducing mode" to MP3 on and off modes.

As Hitachi notes, the preferred embodiment of the "reproducing mode" involves MP3 on and off modes. For example, the specification explains, "[a] case that the reproducing mode of the optical disc player is established in an MP3 off mode," and specifically the "a1. Case of Merely Recording the Audio Tracks onto the Inserted Disc:"

If the user inputs a play key, the optical disc player reproduces from an *audio* track number 1.

If the user inputs a random selection key, the optical disc player selectively reproduces the audio track.

If the user inputs a digit(s), the optical disc player reproduces the audio track corresponding to the corresponding digit, or reproduces from the audio track number 1 with displaying "input error message" if the audio track number corresponding to the number is not exist.

'456 Patent, col. 6, lines 3-13 (emphasis added). The specification describes the "b1. Case of Recording Both the Audio and the MP3 Tracks onto the inserted disc" almost verbatim. *See* '456 Patent, col. 6, lines 14-24. In the case of "c1. A Case of Recording the MP3 Tracks onto the Inserted Disc," though, the specification explains that:

If the user inputs the play key, the optical disc player *changes the established reproducing mode to the MP3 on mode,* and reproduces from the *MP3 track* number 1.

If the user inputs the random selection key, the optical disc player changes the established reproducing mode to the MP3 on mode, and selectively reproduces the MP3 track.

If the user inputs the digit(s), the optical disc player changes the established reproducing mode to the MP3 on mode, and reproduces the MP3 track corresponding to the corresponding digit, or reproduces from the MP3 track number 1 with displaying "input error message" if the MP3 track number corresponding to the number is not exist.

'456 Patent, col. 6, lines 25-38 (emphasis added). In other words, the "reproducing mode" in MP3 off mode may be used to reproduce an "audio track," and will apparently switch to MP3 on mode when MP3 files are to be reproduced. The specification also explains, "[a] case that the reproducing mode of the optical disc player is established in an MP3 on mode," which provides three sub-cases similar to the foregoing case, *i.e.,* the "reproducing mode" switches to MP3 off mode to reproduce "audio tracks," and stays in MP3 on mode to reproduce MP3 tracks. *See* '456 Patent, col. 6, lines 25-38. However, that is the preferred embodiment, and those modes do not limit the claims simply by their disclosure in the specification. *See* SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1286 (Fed.Cir.2005) ("[E]ven if the court concluded that Fig. 5 shows the only partitioning consistent with the claimed methods that would not preclude use of other organizations in the memory system. Second, it is axiomatic that without more the court will not limit claim terms to a preferred embodiment described in the specification."). Furthermore, the Summary of the Invention does not mention MP3 on and off modes. The Court is not persuaded by Hitachi's argument that the "reproducing mode" is described in the specification as "the invention itself." Accordingly, Hitachi's arguments about the meaning of MP3 off and MP3 on mode are not germane.

With respect to whether the "reproducing mode" could be established on a basis other than file type, the claims-or at least claim 17-explicitly requires that the "reproducing mode" be established in response to file type, rather than track type or disc type. Also, claim 1 explicitly requires that the "reproducing mode" be established "based on the extension information" of the "audio file," and independent claim 20 explicitly requires that, as well. It would seem, therefore, the plain language of the claims would resolve the parties' dispute over whether the "reproducing mode" could be established on a basis other than file type.

As Hitachi also notes, the preferred embodiment involves establishing a "reproducing mode" based on file type, not on track type. But that is, once again, the preferred embodiment. Indeed, the "Summary of the Invention" contains a broader disclosure of establishing the "reproducing mode" based on "attributive information of the obtained track:"

The track of the inserted disc are reproduced by establishing a reproducing mode according to an attribution of the inserted disc after performing the discriminating step, and the reproducing operation includes the sub-steps of obtaining an information for the established reproducing mode at present; and discriminating whether the track according to the *reproducing mode which is established at present is recorded or not on the inserted disc with reference to the attributive information of the obtained track,* and reproducing the track of the inserted disc according to the current reproducing mode if the track according to the current reproducing mode does not exists on the inserted disc.

'456 Patent, col. 1, line 63-col. 2, line 7 (emphasis added). In other words, the '456 Patent appears to disclose establishing a "reproducing mode" based on "attributive information of the obtained track."

The prosecution history does not controvert this analysis. During prosecution of the '456 Patent, as discussed above, the examiner stated the Lee reference did not "specifically describe changing or maintaining the reproduction mode based on the type of audio file detected." However, the examiner stated that was "inherent" to Lee's apparatus:

As discussed above, Lee discloses the invention as claimed, however does not specifically describe changing or maintaining the reproduction mode based on the type of audio file detected, as set forth in claims 3-5, 17 and 21-23. This is believed to be inherent to the apparatus of Lee, since the type of audio file detected dictates the mode of operation. In other word, if information is being reproduced in the ordinary audio CD file format mode, and the disk is replaced with the MP3 type format, then the file type detection section (S100) would detect the change to the MP3 type and switch operations to the MP3 type reproduction mode. Likewise if the disk is replaced with another ordinary audio type CD, then the file type detection would detect it is an ordinary audio type CD, and controls would be set to ordinary audio type CD more, i.e. maintaining the same audio type operation.

Dkt. No. 51, Exh. 29, at 58. In response, the applicants did not disagree. Rather, the applicants urged that although Lee might rely on file type, Lee did not rely on "file extensions of the audio file."

[B]ecause Lee discloses that its detector 100 receives *audio data* and detects whether the file of the audio data is an ordinary CD file or an MP3 file, it seems to suggest that Lee detects the file type based on the audio data of the audio file, not based on the file extension of the audio file. In addition, because Lee discloses that the file type detector 100 receives "source data of CDs and CD-ROMs" and because that "source data" includes different file format data and coding data which Lee could use to determine whether the file is an ordinary CD file or an MP3 file, it is clear that Lee does not necessarily disclose using a file naming extension feature to determine whether the file is an ordinary CD file or an MP3 file.

For example, it is possible that Lee may detect the file type simply based on the encoded audio data or the data format of the audio data by reading the audio data without using the file extension information. Since Lee does not necessarily use a file extension to determine whether the file is an ordinary CD file or an MP3 file, the feature of using the file extension to determine whether the file is an ordinary CD file or an MP3 file is not inherently disclosed in Lee. Accordingly, *Lee fails to teach* "reading an extension information of the audio file, the extension information of the audio file being separated but associated with audio data of the audio file" and "*establishing a reproducing mode for reproducing the audio file based on the extension information*" *as recited in claim 1* and "a reader configured to read an extension information of the audio file, the extension information of the audio file being separated but associated with audio data of the audio file" and "a first controller for *establishing a reproducing mode for reproducing the audio file based on the extension information*" *as recited in claim 13*.

Dkt. No. 51, Exh. 29, at 77 (emphasis added). As noted above, that distinction is found in various claims, *i.e.*, "establishing a reproducing mode in response to the type of the audio file." Thus, once again, the claim language itself appears to address establishing a "reproducing mode" on a basis other than file type. In short, the claim language itself resolves the matter.

With respect to Hitachi's contention that LG's arguments during prosecution of a Korean counterpart

application require what Hitachi urges, *see* Hitachi's Response at 70 n. 48, Hitachi has provided no explanation of the requirements for patentability in the Korean patent office. It is not entirely clear, therefore, whether the patentees made the following "translated excerpts of LGE's statements during prosecution of Korean counterpart KR 54778" in response to patentability requirements unique to Korean law:

[1]. GROUNDS FOR REJECTION

The Notice to Submit Opinion dated March 29, 2002 regarding the present invention reads as follows:

"Pursuant to the provisions set forth in Section 29 Paragraph 2 of the Patent Law, the subject invention is not patentable because "the invention described in claims 1 to 4 of this application could have been easily accomplished, prior to the application thereof, by a person having ordinary skill in the art to which the said subject matter pertains, by way of the [prior] art cited hereunder.

The present invention relates to an optical disc player, and more particularly to a method for reproducing a disc on an optical disc player, which is capable of playing audio tracks and MP3 tracks, wherein the optical disc player is capable of identifying the attributes of the tracks on the disc inserted in the optical disc player, and normally playing audio tracks and MP3 tracks. However, this Office believes that the present invention can easily be accomplished by way of the cited invention (Unexamined Korean Patent Publication No.2000-14132).

The step in Claim 1 of the present invention of reading track attributes from the TOC (Table of Contents) information written on the inserted disc *corresponds to* the step in the Cited Invention of reading TOC information, thereby identifying types of discs [sic: tracks?] based on the extension [of the file];

while "the step in the present invention of setting a play mode in accordance with the attributes of the track and playing the track [according to the reproducing mode]" *corresponds to* "the step in the cited invention of downloading a decoding program in response to the type [of track] identified."

The art described in Claims 2 to 4 can also be readily accomplished by way of the cited invention for similar reasons.

[2] AMENDMENTS

The opinion of the Applicant is hereby set forth to obviate the above Grounds for Rejection, and also Amendments to clarify the "Scope of Claims" in the initial specification is submitted on the same data as this Opinion.

Scope of Claims under the amended Specification is as follows:

[Scope of Claims]

[Claim 1]

(Amended)

In an optical disc player capable of plying both audio tracks and MP3 tracks, a method of playing a disc for an optical disc player, wherein the method is comprised of the steps of:

reading the TOC (Table of Contents) information of an inserted disc, thereby identifying the attributes of each track;

playing only the audio tracks according to the play command selected by the user if the play mode of the optical disc player is in "MP3 off mode"; and,

playing only the MP3 tracks according to the play command selected by the user if the play mode of the optical disc player is in "MP3 on mode" if a disc is inserted.

[Claim 2]

(Amended)

The method for playing a disc for an optical disc player in Claim 1, wherein, if "Random Play mode" is selected by the user as the play mode,

only audio tracks are randomly played in "MP3 Off Mode"; and

only MP3 tracks are randomly played in "MP3 On Mode."

[Claim 3]

(Amended)

The method for playing a disc for an optical disc player in claim 1, wherein, if the user selects "Number Input Mode" as the play mode and enters a number:

(a) in "MP3 Off mode," only the audio track corresponding to the number entered is played, or an error message is displayed if there is no audio track number corresponding to the number entered and,

(b) in "MP3 ON mode," only the MP3 track number corresponding to the number entered is played, or an error message is displayed if there is no MP3 track number corresponding to the number entered.

[Claim 4]

(Amended)

The method for playing a disc for an optical disc player in Claim 1, wherein

(a) the play mode automatically changes to "MP3 on Mode" if a disc with only MP3 track recordings is inserted when the play mode is in "MP3 Off Mode,"

(b) the play mode automatically changes to "MP3 Off Mode" if a disc with only audio track recordings is inserted when the play mode is in "MP3 On Mode."

[3] THE OPINION

The description in Claims 1 to 4 of the Scope of the Claims in the initial application of the present invention relates to, as duly pointed out by the examiner, relates to an optical disc player, and more particularly to a method for reproducing a disc on an optical disc player, which is capable of playing [both] audio tracks and MP3 tracks, wherein the optical disc player is capable of identifying the attributes of the tracks on the disc inserted in the optical disc player, and normally playing audio tracks and MP3 tracks, and may be easily be accomplished from the description included in the cited invention (Unexamined Korean Patent Publication No.2000-14132).

However, the specification in the initial application of the present invention includes, in addition to identifying the types of file by obtaining the file extension information written on the disc, the step-by-step descriptions of reproducing [a disc] for an optical disc player depending on the play mode of the optical disc player selected by the user (i.e. "MP3 Off Mode" or "MP3 On Mode") as well as the play command mode entered by the user (i.e. "general play mode," "random play mode," and "number input mode").

In other words, in order to normally perform the play [function] for an optical disc player in accordance with the track attributes (audio track or MP3 track) of a disc inserted, the disc reproduction method must be defined for each combination of modes consisting of

(i) the selected play mode setting of the optical disc player-i .e. "MP3 Off Mode" or "MP3 On Mode"-and

(ii) the play mode requested by the user-i.e. "general play mode," "random play mode," or "number play mode." The play modes must be selected by the user on the optical disc player via a user interface.

For this purpose, the present invention has reproduction methods defined for each play mode of an optical disc player as well as the play mode selected by the user in case a disc with mixture of both audio and MP3 track recordings is inserted. This way, the track that the user wishes to play can be reproduced normally.

As described in the foregoing, the description of the cited invention are significantly different in terms of its purpose, effect, and the solution method thereof from the amended scope of claims of the present invention.

[4] INVENTIVE STEP OF THE PRESENT INVENTION

In a comprehensive review of the foregoing, it is our belief that the core technology of the cited invention and that of the present invention are dissimilar and thus the present invention cannot be readily accomplished from the cited invention by a person having ordinary skill in the art to which the said subject matter pertains. Therefore, it is our opinion that the inventive step of the present invention should be acknowledged.

[5] CONCLUSION

The grounds for rejecting the present invention should have been obviated by the Amendments and Opinion stated above, we hereby respectfully request that your office reexamine the present invention and grant a patent unless there are any other grounds for rejection.

Dkt. No. 51, Exh. 35, at LG A-V 025201-206. In such circumstances, "statements made during prosecution of foreign counterparts * * * are irrelevant to claim construction." Pfizer, Inc. v. Ranbaxy Labs. Ltd., 457 F.3d 1284, 1290 (Fed.Cir.2006) ("Third, we agree with the district court's conclusion that the statements made during prosecution of foreign counterparts to the '893 Patent are irrelevant to claim construction because they were made in response to patentability requirements unique to Danish and European law."). *But see* 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."). In any event, the applicants amended the claims in the Korean counterpart to explicitly include the MP3 on and off modes. That did not happen during prosecution of the '456 Patent.

Thus, the Court construes the term "reproducing mode" to mean "a mode for producing an audible representation of the audio file." In claim 17, the "reproducing mode" is established based on audio file type.

e) "establishing a reproducing mode in response to the type of the audio files as a result of the step (b)"

This phrase appears in claim 17 (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information * * *; and

(b) **establishing a reproducing mode in response to the type of the audio file as a result of the step (b),** and reproducing the audio file according to the reproducing mode, wherein if an extension of the audio file is "mp3" as a result of the step (a), further comprising the steps of: * * * *

'456 Patent, col. 12, lines 26-36 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
Automatically establishing a mode for playing the specific audio file based on the result of step (a).	Defendants contend that no further construction of this phrase is needed, beyond the constructions already provided for certain terms found within this clause, such as "reproducing mode," and "audio file." To the extent this phrase needs to be construed, Defendants proposed "(b) establishing a reproducing mode based on the extension of the audio file read in step (b)."

See Dkt. No. 64, at 13.

LG urges that "[t]he disputed claim language requires automatically establishing the reproducing mode as a result of the preceding step, *i.e.* the system automatically establishes a reproducing mode upon reading the attribute information associated with the audio file." Dkt. No. 47, at 28. LG notes that "the specification

discloses the following: '[T]he optical disc player ***establishes a reproducing mode according to the track attribution*** recorded onto the inserted disc 101, and reproduces the disc tracks (403 step). At this time, the optical disc player performs the reproducing operation according to the established reproducing mode and the track attribution recorded onto the disc * * *. Establishing the reproducing mode' is automatic in the sense that 'the optical disc player establishes' the reproducing mode; it is not accomplished manually by the user." *Id.*

Hitachi references its construction of the term "attribute information" in arguing that the "language of claim 17 and the file history dictate the use of filename extensions to establish reproducing modes." Dkt. No. 48, at 77. Hitachi maintains that "the construction should reflect its proper meaning within the context of claim language and file history: '(b) establishing a reproducing mode based on ***the extension of the audio file read in step (b).***' " *Id.*

In response, LG urges that adoption of Hitachi's construction of the term "audio file" would render claim 17 as follows: "establishing a reproducing mode based on the extension of **[a "wav" file, which does not include a MP3 file],** read in step (b)," "wherein if an extension of **[the "wav" file, which does not include a MP3 file],** is 'mp3' as a result of step (b), further comprising the steps of ... deciding whether **[the "wav" file, which does not include a MP3 file],** constructs normal MP3 audio data." LG argues that such a result is nonsensical. Dkt. No. 55, at 24.

In its supplemental claim construction brief filed after the *Markman* hearing, LG further argues that "Defendants never asserted in any serious or meaningful way that the Court should find claim 17 of the '456 patent invalid during the Markman process because of an obvious and minor typographical error contained within that claim (the reference to 'step (b)' in step (b), which should be 'step (a)')." Dkt. No. 74, at 1. According to LG, "Defendants urged during the hearing that the claim was invalid because the Court could not make the correction," but "did so without referring the Court to the relevant legal precedent that authorizes the Court to correct the typographical error." *Id.* at 2. LG urges that "[t]he proper reading of the typographical error in claim 17 of the '456 patent is evident on the face of the patent" because (1) "the conclusion that 'the step' should be 'the step (a),' based on the claim language, is not subject to reasonable debate," (2) "the inclusion of the same 'as a result of the step (a)' language in the 'wherein' clause of the claim (Col. 12: 35-36) further supports the clear reading of the claim and demonstrates the unreasonableness of Defendants' half-hearted argument," (3) "[t]he specification of the '456 patent also leaves no reasonable debate as to the proper reading of the claim 17," and (4) "[t]he prosecution history does not suggest a different result." Id. at 2-3.

Hitachi replies that "[e]veryone agrees that step (b) of claim 17 is indefinite as written because it requires the step to be performed in response to itself: '(b) establishing a reproducing mode in response to the type of the audio file as *a result of the step (b).*' " Dkt. No. 77, at 1. In response to LG's argument "that the flawed language is a mere typographical error and proper claim construction should correct step (b) so that it is performed 'as a result of the step (a),' " Hitachi urges that "the claim language is subject to reasonable debate, and cannot be corrected in claim construction." *Id.* at 2. Hitachi contends that "[c]laim 17 has four separate steps: (a), (b), (c 1), and (c2). Step (a) determines the file type based on attribute information. Step (c2), expressly performed after step (a), determines the file type based on header information. Both steps (a) and (c2) determine the file type, upon which the reproducing mode of step (b) could be established. There are thus two reasonable options for correcting step (b): option (1) 'establishing a reproducing mode ... **as a result of the step (a)'** using attribute information; and option (2) 'establishing a reproducing mode ... **as a result of step (c2)'** using header information." *Id.* at 2. Hitachi urges that "[i]t is thus fundamentally unclear

whether step (b) should be corrected with option (1) (before the header check) or option (2) (after the header check). Under option (2), the reproducing mode is established appropriately, after both the attribute information is checked in step (a), and the header information is checked in step (c2). With LGE's proposed correction (option (1)), the reproducing mode of step (b) could be established erroneously, because it is established before the file type is confirmed with the step (c2) header check. In other words, with option (1), step (b) is a useless step that may need to be repeated again after the step (c2) header check." *Id*. According to Hitachi, "[t]he specification underscores the debate and supports the reasonableness of the option (2) correction," *i.e.,* "figure 1 shows a 'Disc Discriminating Section' 102" that "examines the attribute information in step 402 and the reproducing mode is subsequently established in step 403." *Id*. at 2-3. Hitachi argues that "there is no teaching of a step (c2) header check ***after*** the reproducing mode is established in Figure 4, or in any other part of the specification to support option (1)," and that the specification "is silent as to when the header check of step (c2) is performed, if at all, in the context of 'establishing a reproducing mode' and Figure 4." *Id*. at 3. Thus, Hitachi urges, "[o]ption (2) is * * * reasonable in view of both the claim language and the specification." *Id*. Finally, with respect to LG's argument that "step (b) follows step (a) in the recitation of the claim and therefore step (b) must be 'a result of the step (a),' " Hitachi contends that "absent other evidence, the order of the steps does not matter." *Id*. at 3 n. 6.

(2) Construction

[5] The foregoing discussion regarding "attribute information" and "reproducing mode" is believed to resolve the parties' dispute over this phrase.

As for LG's "automatic" argument, LG points to nothing in the claims or other intrinsic record that requires "automatic" establishment of a "reproducing mode." Rather, the embodiment disclosed in the specification suggests that some user involvement in establishing the reproducing mode may occur. *See, e.g.,* ' 456 Patent, col. 6, lines 30-32 ("If the user inputs the random selection key, the optical disc player changes the established reproducing mode to the MP3 on mode, and selectively reproduces the MP3 track."). LG's argument must therefore be rejected.

However, it seems clear that the reference to "step (b)" should be a reference to "step (a)," as LG urges. The Federal Circuit has explained that "[a] district court can correct a patent only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1357 (Fed.Cir.2003). *See also* Group One, Ltd. v. Hallmark Cards, Inc., 407 F.3d 1297, 1303 (Fed.Cir.2005) ("[A]n error apparent from the face of the patent could have been corrected by the district court."). Here, the method step at issue, *i.e.,* "(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b)," is self-referential, and thus nonsensical. According to the claim, the "establishing" is done "in response to the type of the audio file ." It is clear from the claim language that the "type of the audio file" is determined in step (a). Thus, the phrase "as a result of the step (b)" in step (b) should clearly be a reference to step (a).

This reading is consistent with the specification. In connection with Figure 4,FN6 the specification explains that the "disc discrimination section 102 of the optical disc player obtains the TOC information of the inserted disc 101 (401 step)," and then "obtains the tracks recorded onto the inserted disc 101 with an audio track, an MP3 track, and so on from the obtained TOC information at 401 step (402 step)." According to the specification, "[i] *n this stage, the disc discrimination* section 102 *obtains the attribution* of each track by

referring the extension information of each track from the obtained TOC information." "Meanwhile, the optical disc player establishes a reproducing mode *according to the track attribution* recorded onto the inserted disc 101, and reproduces the disc tracks (403 step)." ' 456 Patent, col. 5, lines 47-63 (emphasis added).

FN6. *See supra* Part II.A for a reproduction of Figure 4.

Hitachi's argument that "step (b)" could also be reasonably corrected to "step [c2]" is not persuasive. In claim 17, performance of steps (c1) and (c2) is contingent on the "extension of the audio file" being MP3:

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information associated with an audio file and discriminating a type of the audio file using the attribute information, wherein the attribute information includes an extension of the audio file; and

(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b), and reproducing the audio file according to the reproducing mode,

wherein if an extension of the audio file is "mp3" as a result of the step (a), further comprising the steps of:

(c1) obtaining a header information of the audio file; and

(c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained header information.

'456 Patent, col. 12, lines 26-41. If the audio file extension is not MP3, then steps (c1) and (c2) are not performed. In that event, changing "step (b)" to "step [c2]" would render the claim nonsensical. When corrected from "step (b)" to "step [a]," on the other hand, claim 17 makes sense whether or not the audio file extension is MP3.

Furthermore, neither the claims nor specification describe "establishing a reproducing mode" based on "header information." Claim 17 simply calls for the header information to be used to determine whether an audio file with an MP3 extension "constructs normal MP3 audio data." As Hitachi notes, "although a method claim necessarily recites the steps of the method in a particular order, as a general rule the claim is not limited to performance of the steps in the order recited, unless the claim explicitly or implicitly requires a specific order." *See* Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1345 (Fed.Cir.2008). Here, steps (c1) and (c2) are clearly performed after step (a), but may otherwise be done before, during or after step (b). Regardless of when steps (c 1) and (c2) are performed with respect to step (b), however, the claim does not call for "establishing a reproducing mode" based on "obtaining a header information" or "determining whether the audio file constructs normal MP3 audio data or not."

The specification is consistent with this reading when it describes using "header information" in connection with Figure 3.FN7 According to the specification, Figure 3 illustrates "a process of reproducing the file recorded onto the disc * * * when the attribution of the file or music is recorded by the MP3 formation," and more particularly illustrates "the state of discriminating a general text data and the MP3 data recorded onto the inserted disc." ' 456 Patent, col. 4, lines 40-44. The specification explains that "the disc discrimination

section 102 of the optical disc player obtains the TOC(Table Of Content) information of the inserted disc 101 (301 step)," and then "obtains the attributive information of the file or disc recorded onto the inserted disc 101 from the obtained TOC information (302 step)." ' 456 Patent, col. 4, lines 48-53. The specification further explains that "obtaining a header information" and "determining whether the audio file constructs normal MP3 audio data or not," may be done during reproducing, *i.e.,* after "establishing a reproducing mode:"

FN7. *See supra* Part II.A for a reproduction of Figure 3.

In this stage, the disc discrimination section 102 obtains a header information of the file or music if the extension of the file or music is "mp3" recorded onto the inserted disc 101 as a result of obtaining the attributive information of the file or disc at 302 step (303 step). Here, the header information can be selectively obtained by the disc discrimination section 102 *or the MP3 reproducing section* 105 depend upon a designed structure for the optical disc player.
For example, the disc discrimination section 102 can forward a command of reproducing the file or music *to the MP3 reproducing section 105 if the extension of the file or music is "mp3" as the result of 302 step*. Accordingly, the MP3 reproducing section 105 can be constructed to obtain the header information for the forwarded file or music.

While, the optical disc player discriminates whether the header information of the file or music includes a normal MP3 stream or not by using the header information of the file or music obtained at 303 step (304 step).

At this stage, the disc discrimination section 102 not only discriminates the file or music as the MP3 file or music, but also the inserted disc as the MP3 disc, if the header information of the file or music recorded onto the disc includes the normal MP3 stream as the result of 304 step (305 step).

Here, *the discriminating operation is performed during the reproducing time* of the other MP3 file or music, when the disc discrimination section 102 discriminates whether the MP3 file or music is normal state or not by using the header information of the file or music obtained from the MP3 reproducing section 105.

Also, the optical disc player can be designed not to effect the reproducing operation for MP3 file or music in view of an overall reproducing conditions even if an objected file or music is an abnormal MP3 file or music even if an objected file or music is an abnormal MP3 file or music, since the discrimination operation is performed during much less than a second and the optical disc player skips the abnormal file or music to a next file or music.

Meanwhile, the disc discrimination section 102 discriminates the file or music as the general text data file or music, if the header information of the file or music recorded onto the disc does not include the normal MP3 stream as the result of 304 step (306 step). Accordingly, the audio reproducing section 104 or the MP3 reproducing section 105 skips the abnormal file or music and reproduces the next file or music.

'456 Patent, col. 4, lines 54-67-col. 5, lines 1-31 (emphasis added). In short, the specification does not support Hitachi's contention that the reproduction mode may be established based on header information. In light of the claim at issue and specification, that this phrase should refer to "step (a)" instead of "step (b)" is not subject to reasonable debate. Finally, the prosecution history of the '456 Patent, discussed above, does

not suggest a contrary conclusion.

Thus, the Court concludes the phrase "(b) establishing a reproducing mode in response to the type of the audio file as a result of the step (b)" means "(b) establishing a reproducing mode based on the extension of the audio file read in step (a)."

f) "audio file constructs normal mp3 audio data" & "audio file constructs a normal mp3 audio stream"

This phrase appears in claim 17, 20, 22 and 27. Claim 17 is representative (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information * * *; and

(b) establishing a reproducing mode * * *, further comprising the steps of:

(c1) obtaining a header information of the audio file; and

(c2) deciding whether the **audio file constructs normal MP3 audio data** or not, based on the obtained header information.

'456 Patent, col. 12, lines 26-41 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
The audio file comprises audio data conforming to standard Layer 3 digital audio compression algorithms developed by the Moving Picture Experts Group (MPEG).	Conforms to the MPEG1 Layer 3 digital audio compression standard developed by the Moving Picture Experts Group.

See Dkt. No. 64, at 14.

LG contends "[t]he only dispute associated with this claim element surrounds the construction of the term 'audio file' " and further argues the term cannot be limited to WAV files since "a WAV file can never conform to the MPEG Layer 3 digital audio compression standard." Dkt. No. 47, at 29.

Hitachi agrees that "[t]here is no substantial difference between the parties' constructions beyond the construction of 'audio file.' " Dkt. No. 48, at 77. Hitachi also urges that the proper description of the MP3 standard and algorithm is "MPEG1 layer 3," as reflected in its construction. *Id*.

In response, LG repeats its assertion that adoption of Hitachi's construction of the term "audio file" would render claim 17 nonsensical. Dkt. No. 55, at 25.

(2) Construction

In view of the parties' arguments, the Court's construction of "audio file" is believed to address the

parties' dispute with respect to this phrase. Accordingly, nothing further is believed required.

g) "header information"

This phrase appears in claim 17 (the disputed term is in boldface):

17. A method of reproducing audio data, the method comprising the steps of:

(a) reading an attribute information * * *; and

(b) establishing a reproducing mode * * *, further comprising the steps of:

(c1) obtaining a **header information** of the audio file; and

(c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained **header information.**

'456 Patent, col. 12, lines 26-41 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
Digital data that represents the contents of an audio file.	A bit sequence preceding the sound data that identifies the sound data.

See Dkt. No. 64, at 15.

LG urges that [d]igital data, in the form of 'header information,' represents the contents of an audio file, in this case 'MP3 audio data.' " Dkt. No. 47, at 29. LG notes that the specification recites "that 'the optical disc player discriminates whether the header information of the file or music includes a normal MP3 stream or not by using the header information of the file or music obtained[.]' " *Id*. Additionally, LG proffers extrinsic evidence from the *Dictionary of Computing* (defining "header" as: "Some coded information that precedes a more general collection of data and gives details about it."), *Newton's Telecom Dictionary* (defining "header" as: "The portion of a message that contains information that will guide the message to the correct destination."), and the *Microsoft Computer Dictionary* 215 (4th ed.1999)) (defining "header" as: "information structure[s] that precede[ ] and identif[y] the information that follows."). *Id*. at 30.

Hitachi urges that "[t]he term 'header information' has an ordinary meaning of a bit sequence preceding other data that identifies the data." Dkt. No. 48, at 76. Hitachi also notes that "the most relevant extrinsic evidence is the MPEG1 standard that defines a MP3 header," and the MP3 header "is a bit sequence preceding the MP3 sound data which identifies the data." *Id*.

In response, LG cites the specification, which discloses that "the disc discrimination section 102 discriminates the file or music as the general text data file or music, *if the header information of the file or music recorded onto the disc does not include the normal MP3 stream*." Dkt. No. 55, at 25. Consequently, LG argues that "[t]he 'header information' may comprise something other than merely MP3 header

information if it is to include something other than the 'normal MP3 stream.' " *Id*. at 25-26. Similarly, LG argues that "Figure 3 illustrates that the 'header information' comprises more than merely a bit sequence associated with an MP3 file." *Id*. at 26. Finally, LG contends that Hitachi's "construction of 'header information' is inconsistent with its construction of 'audio file' " since Hitachi would limit the former "to a bit sequence preceding the sound data based on the MP3 standard," while limiting to latter to "a 'WAV' file [which] cannot include an MP3 file." *Id*. at 26.

(2) Construction

[6] Claim 17 calls for "header information of the audio file." As noted above, an "audio file" is not limited to a MP3 file. However, in claim 17, the "header information" pertains to an MP3 file, *i.e.,* "wherein if an extension of the audio file is 'mp3' as a result of the step (a), further comprising the steps of: (c 1) obtaining a header information of the audio file; and (c2) deciding whether the audio file constructs normal MP3 audio data or not, based on the obtained header information." In other words, according to the language of claim 17, if the "audio file" has an MP3 extension, then the "header information" is obtained. The "header information" of claim 17 is thus assumed to be part of an MP3 file.

In other claims, though, the "header" is not so limited. Consider claim 12, which depends from claim 1:

1. A method of reproducing an audio file, the method comprising the steps of:

(a) reading an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file;

(b) establishing a reproducing mode for reproducing the audio file based on the extension information;

(c) obtaining at least a *part of the audio file* under the established reproducing mode; and

(d) determining whether the obtained part of the audio file constructs a normal MP3 format stream corresponding to the established reproducing mode.

* * *

12. The method of claim 1, wherein the part of the audio file is a part of a *header* in the audio file.

'456 Patent, col. 11, lines 28-38, col. 12, lines 12-13 (emphasis added). In this claim, the "header" is simply part of the "audio file," which, as discussed above, may be, *e.g.,* a WAV or MP3 file. In claim 12, the header is used to determine if the "obtained part of the audio file" is MP3 content-the implication being that it may not be MP3 content, of course.

The same may be said for claim 23, which depends from claim 20:

20. An apparatus for an audio file, comprising:

a reader configured to read an extension information of the audio file, the extension information of the audio file being separated from but associated with audio data of the audio file;

a first controller for establishing a reproducing mode for reproducing the audio file based on the extension information a detector configured to detect at least a *part of the audio file* under the established reproducing mode; and

a second controller configured to check whether the obtained part of the audio file constructs a normal MP3 format stream corresponding to the established reproducing mode.

23. The apparatus of claim 20, wherein the part of the audio file is a part of a header in the audio file.

'456 Patent, col. 12, lines 49-62, col. 13, lines 1-2 (emphasis added).

The specification is consistent with this use of header information. Although the specification refers to a "header" primarily in connection with MP3 files, *see, e.g.,* '456 Patent, col. 4, lines 54-57 ("the disc discrimination section 102 obtains a header information of the file or music if the extension of the file or music is 'mp3' recorded onto the inserted disc 101") and "456 Patent, col. 4, lines 65-67 ("the MP3 reproducing section 105 can be constructed to obtain the header information for the forwarded file or music"), the specification suggests that non-MP3 files may have headers, as well. *See* '456 Patent, col. 5, lines 1-4 ("the optical disc player discriminates whether the header information of the file or music includes a normal MP3 stream or not by using the header information of the file or music obtained at 303 step (304 step)"). Accordingly, Hitachi's contention that the phrase "header information" is limited to an MP3 header, and thus limited to an MP3-standard "bit sequence," must be rejected.

Hitachi is correct, however, that a "header" is data that precedes the file contents. For example, the MICROSOFT COMPUTER DICTIONARY 215 (4th ed.1999), defines header as "[a]n information structure that precedes and identifies the information that follows, such as a block of bytes in communications, a file on a disk, a set of records in a database, or an executable program." The COMPUTER & INTERNET DICTIONARY 252 (3d ed.2000) defines header as "[i]n many disciplines of computer science, a header is a unit of information that that precedes a data object. In file management, for example, a header is a region at the beginning of each file where bookkeeping information is kept. The file header may contain the date the file was created, the date it was last updated, and the file's size. The header can be accessed only by the operating system or by specialized programs." Likewise, the MODERN DICTIONARY OF ELECTRONICS 341 (7th ed.1999), defines a "header" as "[a]n information structure that precedes and identifies the information that follows, such as a block of bytes in communications, a file on a disk, a set of records in a database, or an executable program." "Header information," therefore, is simply information in that structure.

Therefore, the Court construes the term "header information" to mean "information in an information structure that precedes and identifies the information that follows."

h) "audio file is not available under the established reproducing mode"

This phrase appears in claim 22 (the disputed term is in boldface):

22. The apparatus of claim 20, wherein the first controller automatically changes the reproducing mode if the **audio file is not available under the established reproducing mode.**

'456 Patent, col. 12, lines 65-67 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	*Hitachi*
The audio file cannot be played using the established reproducing mode.	Cannot be played using the established reproducing mode.

See Dkt. No. 64, at 15.

LG urges that this language does not require "construction beyond the plain language of the claims" and contends that "[t]he parties agree that the claim language immediately preceding this phrase-'automatically changes the reproducing mode'-means 'the reproducing mode changes from one mode to the other mode without user intervention.' " Dkt. No. 47, at 30. LG notes that under Hitachi's construction, "the claimed invention 'changes' from an 'MP3 On Mode' to an 'MP3 Off Mode' or vice versa" and further argues that "[i]f an 'audio file' cannot comprise an MP3 file, there will never by [sic] an 'MP3 On Mode' and thus, the 'reproducing mode' can never be 'changed.' " *Id*. 30-31.

Hitachi contends "[t]here is no disagreement among the parties, and nothing to construe, other than the term 'audio file,' which is addressed elsewhere." Dkt. No. 48, at 78.

In its reply, LG incorporates by reference its previous arguments. *See* Dkt. No. 55, at 25.

(2) Construction

In view of the parties' arguments, the Court's construction of "audio file" is believed to address the parties' dispute with respect to this phrase. Accordingly, no additional construction is required.

III. Conclusion

According to the previous discussion, the Court **ORDERS** the claim terms for the '456 Patent construed as indicated herein.

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