

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., and VIZIO, INC.

Petitioners,¹

v.

MULTIMEDIA TECHNOLOGIES PTE. LTD.,

Patent Owner.

Case IPR2024-00354
U.S. Patent No. 10,419,805

PATENT OWNER'S RESPONSE PURSUANT TO 37 C.F.R. § 42.120

¹ VIZIO, Inc. filed a petition in IPR2024-00699 and was joined as petitioner in this proceeding.

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Exhibit No.	Patent Owner's Exhibits
2001	Third Amended Docket Control Order, <i>Multimedia Techs. Pte. Ltd. v. LG Elecs. Inc. et al.</i> , No. 2:22-cv-00494 (E.D. Tex. Jan. 3, 2024), ECF No. 54
2002	Table C-5—U.S. District Courts—Civil Statistical Tables For The Federal Judiciary (Median Time From Filing to Disposition of Civil Cases, by Action Taken—During the 12 Month Period Ending December 31, 2023)
2003	Westlaw Litigation Analytics Report for Hon. Rodney Gilstrap, for 3/27/2023 to 3/27/2024
2004	Docket Control Order, <i>Multimedia Techs. Pte. Ltd. v. Vizio, Inc.</i> , No. 2:23-cv-00124 (E.D. Tex. Aug. 4, 2023), ECF No. 46
2005	Report and Recommendation re: Motion to Dismiss, <i>Multimedia Techs. Pte. Ltd. v. LG Elecs. Inc. et al.</i> , No. 2:22 cv-00494 (E.D. Tex. Mar. 1, 2024), ECF No. 61
2006	Defendants' Invalidity Contentions, <i>Multimedia Techs. Pte. Ltd. v. LG Elecs. Inc. et al.</i> , No. 2:22-cv-00494 (E.D. Tex.) (filed Sept. 28, 2023)
2007	Petition for Inter Partes Review Under 35 U.S.C. § 312 and 37 C.F.R. § 42.104, <i>Vizio, Inc. v. Multimedia Techs. Pte. Ltd.</i> , IPR2024-00699 (PTAB) (filed Mar. 14, 2024)
2008	Defendant's Invalidity Contentions, <i>Multimedia Techs. Pte. Ltd. v. Vizio, Inc.</i> , No. 2:23-cv-00124 (E.D. Tex. Sept. 28, 2023)
2009	Order Adopting Report and Recommendations, <i>Multimedia Techs. Pte. Ltd. v. LG Elecs. Inc. et al.</i> , No. 2:22-cv-00494 (E.D. Tex. Mar. 28, 2024), ECF No. 65
2010	Declaration of Rajeev Surati
2011	CV of Rajeev Surati
2012	Deposition Transcript of Dr. Andrew Lippman in IPR2024-00354
2013	U.S. Patent No. 8,776,101
2014	U.S. Patent No. 9,008,190

I. INTRODUCTION

U.S. Patent No. 10,419,805 (the “’805 Patent”) is directed to a specific method of organizing metadata received from multiple types of subservices based on individual pre-defined formats corresponding to each of the types of subservices. Each of independent claims 1, 10, and 17 recite a specific series of steps where a TV receives data from a plurality of subservices, including a video-on-demand (VOD) subservice, an electronic programming guide (EPG) subservice, and a media subservice, and the TV organizes that data according to pre-defined formats corresponding to each of the three subservices. In other words, the TV organizes VOD data received from a VOD subservice according to a pre-defined VOD format, organizes EPG data received from an EPG subservice according to a pre-defined EPG format, and organizes media data received from a media subservice according to a pre-defined media format. By doing so, this method provides a uniform format for each of the three subservices (*i.e.*, a uniform VOD format for the VOD subservice, a uniform EPG format for the EPG subservice, and a uniform media format for the media subservice).

By contrast, Petitioner’s prior art does not organize data according to formats based on the type of subservice. Instead, the Petition at most shows that the prior art was capable of organizing data (potentially received from the same subservice) according to formats based on the file type of the data received. In other words, the

prior art organized MP3 data according to an MP3 format, organized JPEG data according to a JPEG format, and organized MPEG-4 data according to an MPEG-4 data. But one of ordinary skill would appreciate that organizing by type of subservice as in the claims is very different than organizing by file type as in the prior art. The same type of subservice could provide data in multiple file types, and the same file type could be used for data from multiple types of subservices. Thus, organizing data according to file types is entirely distinct from, and can in no way suggest, organizing data according to types of subservices.

Given this critical distinction, Petitioner has not shown that any of the prior art combinations suggest the Challenged Claims. Patent Owner therefore respectfully request that the Board find claims 1-18 not unpatentable in view of Petitioner's prior art.

II. OVERVIEW OF THE '805 PATENT AND PRIOR ART

A. The '805 Patent

U.S. Patent No. 10,419,805 (the "'805 Patent") is directed to a specific method of organizing metadata received from multiple types of subservices based on individual pre-defined formats corresponding to each of the types of subservices. In particular, the '805 patent is directed to "a data service system in an Intelligent Television (TV) includes an internal content provider module configured to provide content to video hardware or display of the Intelligent TV or to a content provider

module or application of the Intelligent TV and a subservice configured to provide the internet content provider module with requested data for a pre-defined data model.” Ex. 1001 at Abstract.

The ’805 patent explains that each type of content (e.g., EPG, VOD, media) and its corresponding metadata have an associated data model, such as VOD data model 1404 for VOD data, EPG data model 1408 for EPG data, and media data model 1412 for media data. Ex.1001, 28:35-37. The ’805 patent further explains that “[t]he data models govern what information is to be stored and how that information will be stored by the data service.” Ex.1001, 21:6-8, 28:37-38. For example, in reference to Figure 14, the ’805 patent provides that “[t]he data models provide uniform formats for the respective subservices (i.e., VOD subservice 1420, EPG subservice 1424, and media subservice 1428) and/or the internal content provider modules 1416 which interface with applications 416.” Ex.1001, 33:25-29. Thus, the ’805 patent provides that each data model (e.g., VOD data model 1404) or a particular type of content (e.g., VOD content) provides a corresponding format for that content and associated metadata (e.g., metadata for VOD content):

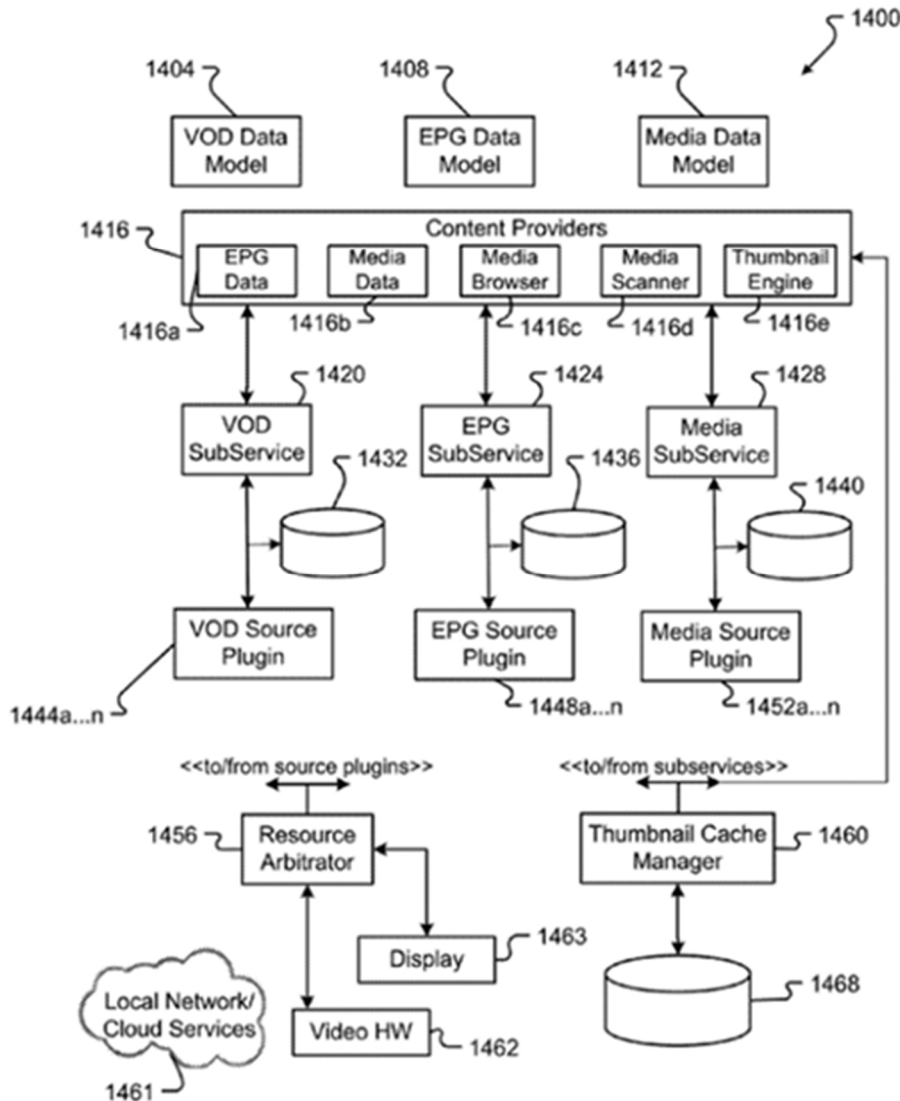


Fig. 14

B. Challenged Claims

Petitioner challenges claims 1-18 (the “Challenged Claims”) of the ’805 Patent. The Petition asserts the following five grounds of obviousness:

- Ground 1: Claims 1, 10, and 17 as obvious over Melnychenko and Chen;

- Ground 2: Claims 1-3, 9-12, and 16-18 as obvious over Melnychenko, Chen, Kim, and Lee-1;
- Ground 3: Claims 4 and 13 as obvious over Melnychenko, Chen, Kim, Lee-1, and Lee-2;
- Ground 4: Claim 5 as obvious over Melnychenko, Chen, Kim, Lee-1, Lee-2, and Ferren; and
- Ground 5: Claims 6-8, 14, and 15 as obvious over Melnychenko, Chen, Kim, Lee-1, and Choi.

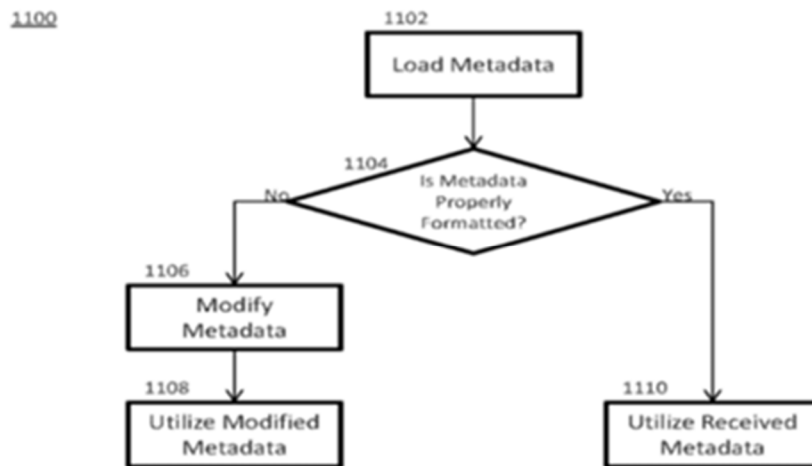
Paper 1 [Pet.], 11.

C. Summary of Asserted References

1. Melnychenko

U.S. Patent Application Publication No. 2013/0263184 to Melnychenko et al. (“Melnychenko”) is entitled “System and Methods for Modifying Improperly Formatted Metadata” and generally describes a system for “for modifying metadata associated with content that is improperly formatted.” Ex. 1005, Abstract. Melnychenko addresses scenarios where metadata which has been initially formatted in an application, source or purpose-specific “metadata format” or has otherwise been corrupted, is needed for an application or purpose requiring a different format. *Id.* at [0064]-[0067], [0088]-[0105], [0106]- [0115].

The system described by Melnychenko aggregates metadata from a variety of sources (*id.* at [0082]-[0087]) and pre-processes it to, instead of having its initial format, conform to a particular specified format desired for the application. *Id.* at [0116]-[0140]; *see generally, id.* at Figs. 13-15; [0157]-[0180]. While both the aggregation and conformation processes described by Melnychenko utilize information from a variety of sources (*see id.* at [0083]-[0085], [0142]-[0148], [0175]), the goal of Melnychenko is to conform all pre-processed metadata into a single metadata format that is compatible with the desired application or purpose. *See, e.g., id.* at [0116]-[0140], Fig. 11:



2. Chen

U.S. Patent Application Publication No. 2007/0226268 to Chen ("Chen") is entitled "Method of Managing Metadata and Set Top Box Device" and describes a method of managing metadata in a set top box device. The method operates on file

types, *e.g.* MP3, WPA, JPEG, and MPEG-4, and formats metadata based on the file types to store in a database. *See, e.g.*, Ex. 1007 at [0006], [0018].

Figure 3 of Chen shows a set top box device 100:

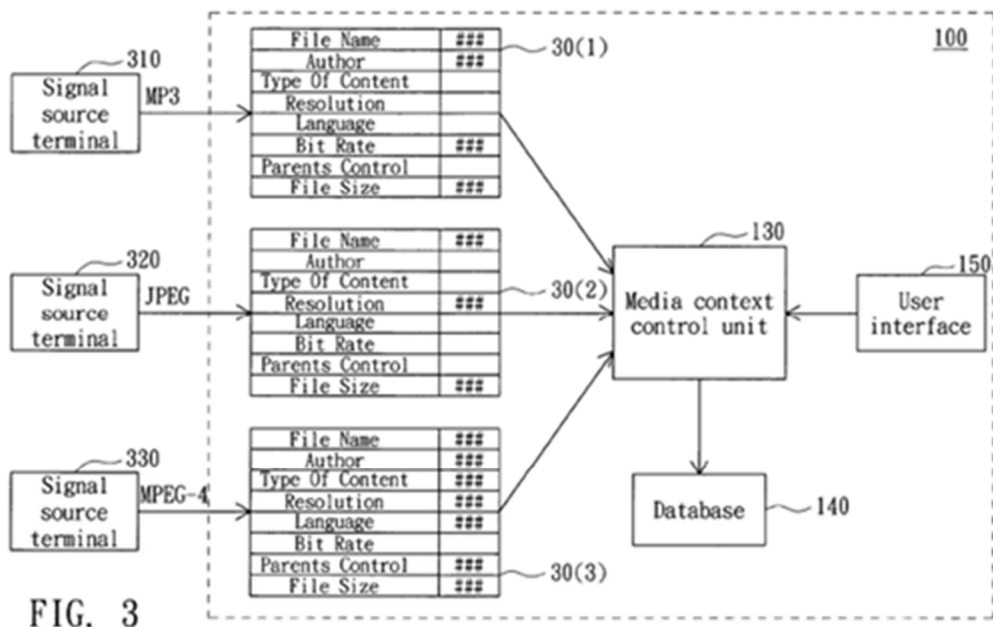


FIG. 3

Ex.1007, Fig. 3.

Ex. 1007, Fig. 3. Set top box device 100 accepts file of the MP3, JPEG, and MPEG-4 formats and imports metadata into metadata tables 30(1), 30(2), and 30(3) corresponding to the file types MP3, JPEG, and MPEG-4.

Chen's method specifically declines to employ "different types of media data in a corresponding database according to the" information corresponding with that type. *Id.* at [0006]; *see also id.* at [0007]. Instead, as a way of minimizing storage space, Chen's method stores "plural types of media data" in metadata

tables formatted in accordance with a single “uniform format.” *Id.* at [0017]; *see also id.* at Fig. 3.

3. Kim

U.S. Patent Application Publication No. 2012/0054794 to Kim et al. (“Kim”) is entitled “Image Display Apparatus System and Method for Operating the Same” and describes an image display apparatus having a user interface in the form of a “home screen” having a series of 31 graphical “card objects” (windows) representing different “source[s] or type[s]” of content. Ex. 1006, [0193], [0194] (“card object may be a window having a predetermined configuration”). The home screen may be displayed as a default user interface or upon the user selecting a home key or providing a “go-to-home” input on the remote control device. *Id.*, [0192], [0094].

Kim discloses that settings such as video settings, audio settings, and network settings can be set using setup object 1318. *Id.*, [0200] (“The setup object 1318 may be used to set various settings of the image display apparatus 100, such as video settings, audio settings, screen settings, reservation settings, ... network settings, or another appropriate setting for the image display apparatus 100.”). Kim does not teach or suggest that settings are set for specific users. *Id.*

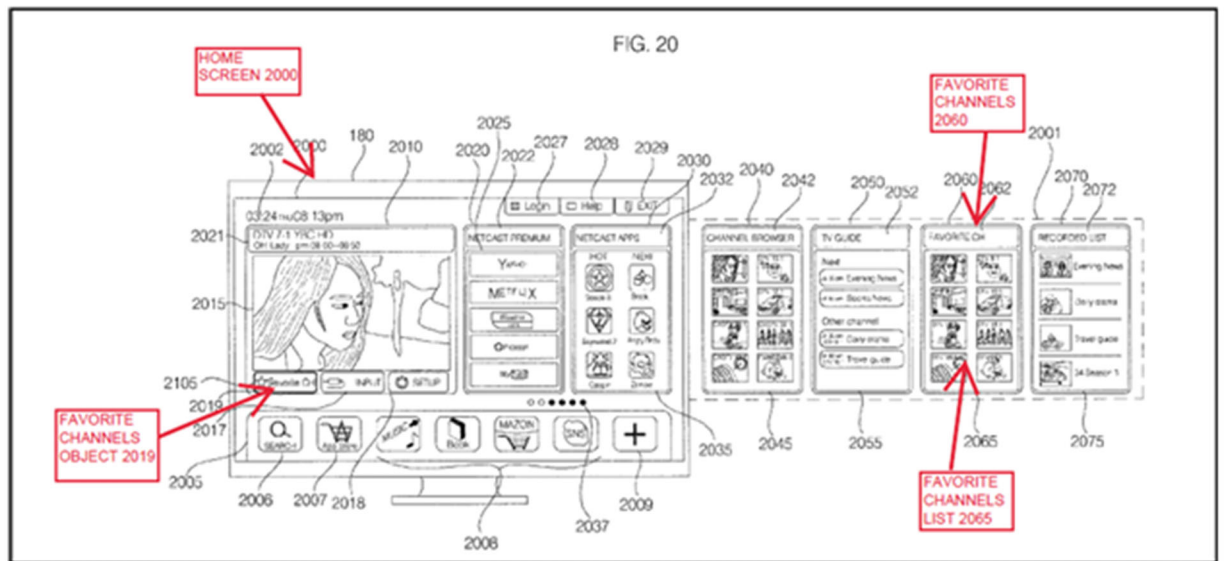
Kim further discloses that a user may access the login menu 1327 on the home screen of Figure 19 to login to the App Store 1330 or to a network connected

to the television. *Id.*, [0203] (“A Login menu item 1327 ... may be displayed above the card objects 1320 and 1330 [and] [t]he user may login to the APP STORE or a network connected to the image display apparatus 100.”).

4. Lee-2

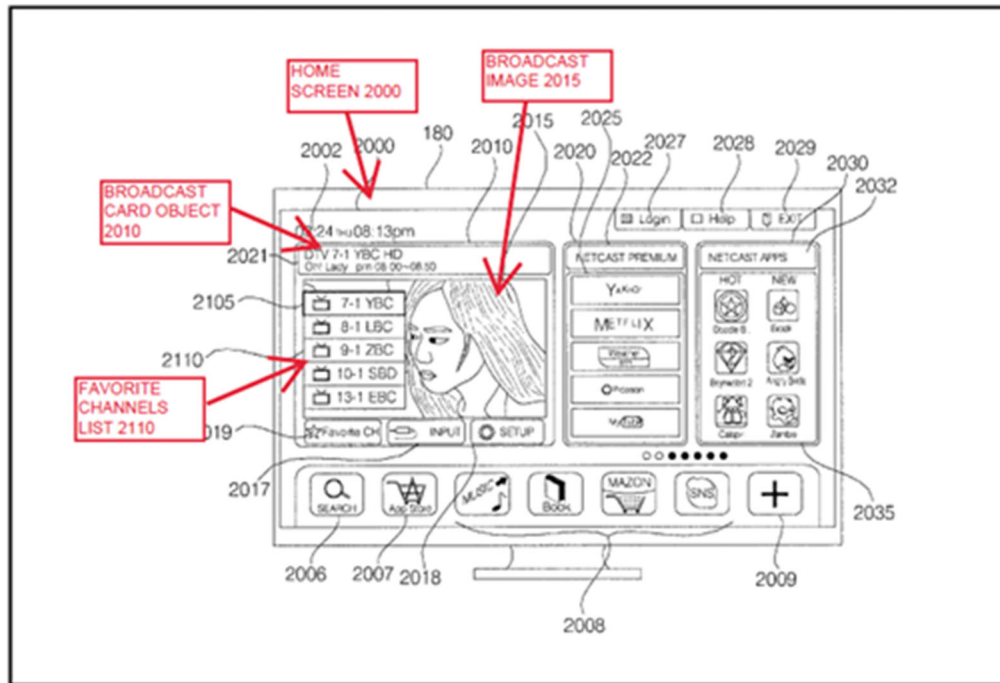
U.S. Patent No. 9,398,339 to Lee et al. (“Lee-2”) is entitled “Image Display Apparatus and Method for Operating the Same” and describes a home screen display including a favorite channels card object having a favorite channel list. Ex. 1009, Abstract.

Figure 20 of Lee-2 presents a home screen display 2000 with various card objects 2010-2070, including a Favorite Channels card object 2060 having a favorite channels list 2065. The home screen also includes a favorite channels object 2019 that may be selected to cause the favorite channels list 2110 to be presented as depicted in Figure 21B. *Id.*, 27:4-28:18, 29:27-29 (“The [Favorite Channels] card object 2060 representing favorite channels may include a card object name 2062 (FAVORITE CH) and a list of pre-stored favorite channels 2065.”), Figs. 20, 21B. The home screen in Figure 20 with the Favorite Channels card object 2060 is depicted below:



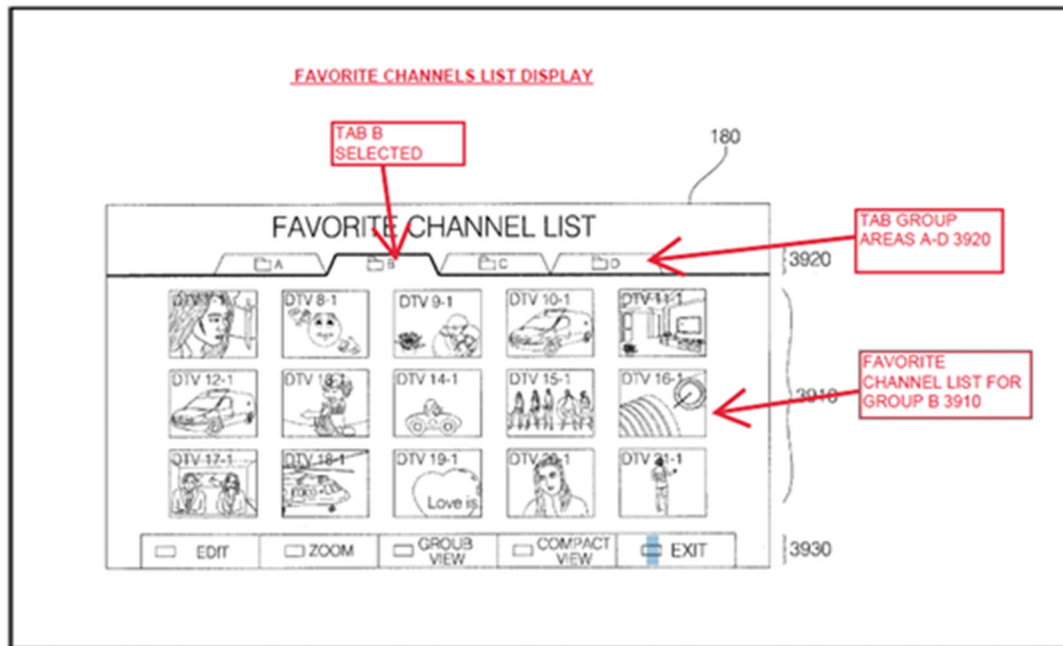
Ex. 1009, Fig. 20 (annotated).

A user may select the favorite channels object 2019 to bring up a modified home screen 2000 that includes the favorite channels list 2110 in the broadcast image area 2015. *Id.*, 30:44-61, Fig. 21B. Figure 21B illustrating the modified home screen 2000 with the favorite channels list 2110 is depicted below:



Ex. 1009, Fig. 21B.

Figure 39A illustrates a home screen 2000 including a favorite channel object 2019. If the user selects the favorite channel object 2019, a full-screen Favorite Channels List display is presented as depicted in Figure 39B. *Id.*, Figs. 39A-B. The Favorite Channels List display may present favorite channels in a channel list area 3910 for each of four users A-D according to the selected tab in tab group area 3920. *Id.*, 41:47-60, Fig. 39B. The Favorite Channels List display is presented in Figure 39B:



Ex. 1009, Fig. 39B (annotated).

5. Choi

U.S. Patent Application Publication No. 2013/0057764 to Choi et al.

(“Choi”) is entitled “Method of Providing External Device List and Image Display Device” and describes a method of displaying an external device list on an image display device such as a television. Ex. 1011, Abstract.

Figure 5 of Choi describes an external device interface unit 135 that may connect external devices, such as a DVD player, Blu-ray player, game console, and computer, to the image display device. *Id.*, [0097] (“The external device interface unit 135 may be used for wire/wireless connection of an external device such as a

Digital Versatile Disk (DVD) player, a Bluray player, a game console, a camera, a camcorder, and a computer (such as a notebook computer).”).

Choi describes in Figure 11 a full-screen external devices screen on display unit 180 that includes a series of external devices 820 including icons 830a 830c indicating which external devices are connected to the image display apparatus (e.g., television). *Id.*, [0250], Fig. 11.

III. CLAIM CONSTRUCTION

Claim terms in IPRs are construed according to their “ordinary and customary meaning” to those of skill in the art. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The Petition asserts that “no claim term requires express construction,” but nonetheless discusses the definition of the term “one or more.” Paper 1 [Pet.], 9-10. But none of Patent Owner’s arguments turn on the construction of this term, and the Board therefore need not expressly construe “one or more.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

The construction of the terms “media metadata personalized for a user” and “media sources of the TV” are relevant to Patent Owner’s arguments and require express construction. In addition, Patent Owner’s Response addresses the ordinary and customary meaning of the terms “predefined format” and “uniform format” as encouraged by the Institution Decision. Paper 9, 29.

1. “Media metadata personalized for a user”

“Media metadata personalized for a user” as it appears in claims 4 and 13 should be construed as “the content of the metadata is personalized for a user.” Ex. 2010, ¶54. Patent Owner seeks this construction because Petitioner appears to argue that selecting media metadata for a user, where the content of that metadata does not change, is personalized for a user.

A person of ordinary skill would understand that these two constructions are very different. For example, having two users select the same media would arguably satisfy Petitioner’s construction because, by selecting the media, the metadata associated with that media is also selected. This example, however, does not satisfy Patent Owner’s construction because the metadata content is still the same between the two users and has not been personalized for any user.

Patent Owner’s construction should be adopted for several reasons. First, Patent Owner’s construction is the only construction consistent with the ’805 Patent’s specification. Specifically, the ’805 patent states that the “personalized media metadata” is “generated” from metadata received from media subservices:

In another example, media data provider 1416b is configured to *provide personalized media metadata* and stores the personalized media metadata into a database for further access. In one implementation, the personalized media metadata is stored in a sqlite database. The user may set up a personalized profile or

preference for types, genres, or other preferred characteristics of media. The user may access and set up the profiles in a corresponding application. Alternatively, Intelligent TV 100 may contain pre-defined profiles and/or may automatically build a profile for a user by analyzing the user's past viewing preferences progressively. Media data provider 1416b may work with media subservice 1428, VOD sub service 1420, and/or other subservices. For example, *media data provider 1416b uses the metadata regarding media collected by media subservice 1428 in order to generate the personalized media metadata.*

Ex. 1001, 31:26-41.

For example, EPG data provider 1416a serves applications with EPG information in a read-only format. As such, EPG data provider 1416a may transmit EPG information received from EPG subservice 1424 in EPG data model 1408 without modification. In another example, media data provider 1416b provides personalized media metadata and stores data in a sqlite database. As such, media data provider 1416b may receive media and information from VOD subservice 1420, EGP subservice 1424, and media subservice 1428. *Media data provider 1416b will also organize the media and data received from these subservices to generate the personalized media metadata and further stores the generated metadata into the sqlite database.* The relevant application may simply access the database for the personalized media metadata.

Ex. 1001, 34:61-35:8.

A person of ordinary skill would understand, based on the '805 Patent's disclosure that the "personalized media metadata" is "generated," that it is the content of the metadata that is personalized. Ex. 2010, ¶56 ("It makes no sense to 'generate' personalized metadata from existing metadata if personalizing metadata meant selecting the programs of that metadata based on the user rather than modifying the content of the metadata based on the user."). In all cases, the '805 Patent consistently discloses that personalized media metadata is generated from other received metadata and never suggests that personalization of media metadata occurs when media or programs are selected based on a user. *Id.*

Patent Owner's construction should also be adopted because both parties' experts agree that Patent Owner's construction is "possible" and, under *Phillips*, if more than one construction is possible, the Board should adopt the construction that preserves the validity of the claims. *Phillips*, 415 F.3d at 1327. Petitioner's expert Dr. Lippman testified in deposition that Patent Owner's construction was a "possible meanings of these words." Ex. 2012, 31:4-18. Patent Owner's expert Dr. Surati testifies that not only is Patent Owner's construction plausible, but that it is also the correct construction for the reasons above. Ex. 2010, ¶56-58. Given that Patent Owner's construction is the only construction consistent with the specification and that the experts of both parties agree that the construction is plausible, Patent Owner's construction should be adopted. *Phillips*, 415 F.3d at 1327.

2. “Media sources of the TV”

“Media sources of the TV” as it appears in claims 6 and 14 are the “plurality of subservices [that] comprises a video-on-demand (VOD) subservice, electronic programming guide (EPG) subservice, and a media subservice” of independent claims 1 and 10. This construction is supported by the specification and required by the dependency of claim 6 from claim 1 and claim 14 from claim 10.

First, the ’805 patent explicitly refers to the different types of data services (including VOD, EPG, and media) as media sources:

The different types of data services (video on demand, electronic programming guide, media) each have a data subservice component (i.e., VOD subservice 1420, EPG subservice 1424, and media subservice 1428) that is in communication with one or more internal and/or external sources. *Each data subservice component is in communication with the corresponding source plugins (i.e., VOD source plugins 1444a-n for VOD subservice 1420, EPG source plugins 1448a-n for EPG source subservice 1424, and media source plugins 1452a-n for media source subservice 1428).*

Ex. 1001, 28:46-55.

In addition, the ’805 Patent further explains that the media browser operates with the VOD, media, and/or other subservices (i.e., EPG) to show information pertaining to the list of available media sources:

Media browser 1416c is configured to provide a view of the media sources in real-time. Further media browser 1416c maintains a list of the connected media sources. In one implementation, media browser 1416c does not require any permanent storage as media browser 1416c is configured to collect real-time information. Media browser 1416c may work with VOD subservice 1420, media subservice 1428, and/or other subservices to gather information pertaining to a list of media sources and/or contents available.

Ex. 1001, 31:42-50.

Again, the '805 patent explicitly teaches that VOD and the other claimed subservices are “media sources”:

For example, each of VOD source plugins 1444a-n may be configured to communicate with one specific VOD source or some plurality of VOD sources. Some VOD sources include dedicated media sources (i.e., over the internet), such as Amazon Instant Video, AOL Video, Blockbuster, DailyMotion, Google Play, Hulu, Joost, IPTV, iTunes Store, MetaCafe, NetFlix, Pandora, PlayStation Store, Vimeo, Voddler, Vudu, WatchESPN, YouTube, Xbox Video, or other dedicated distribution platforms and other content websites. Other VOD sources may include over-the-air or cable VOD sources with analog or digital feeds. Intelligent TV 100 may also access internal data storage (i.e., data storage 314) or other external storage (i.e., digital media library 148) that contains additional VOD media. Further, devices connected to Intelligent TV 100 (i.e., devices 168 or other devices accessible to Intelligent TV 100 over network 132)

may also contain additional VOD media. Each of these media sources may have a corresponding VOD source plugin developed that can communicate with the specific media source.

Ex. 1001, 29:3-23 (referring to VOD sources such as Amazon Instant Video as “dedicated media sources” and explaining that both VOD sources and external devices are among “each of these media sources.”).

Based on these disclosures, a person of ordinary skill would understand that media sources of the TV include the VOD, EPG, and media subservices. Ex. 2010, ¶¶60-65.

Moreover, because claim 6 depends from claim 1, the “media sources of the TV” of claim 6 must refer to media sources recited by claim 1. Because the media sources recited by claim 1 are the VOD, EPG, and media subservices, the media sources of the TV of claim 6 must include these three subservice media sources recited by claim 1. *Id.* The same is true of claims 10 and 14.

3. “Predefined format” and “uniform format”

While Patent Owner submits that the terms “predefined format” and “uniform format” should be afforded their ordinary and customary meaning, Patent Owner believes that the following clarifications to the ordinary and customary meaning of these terms is appropriate in view of the Institution Decision. Paper 9, 29.

Patent Owner agrees with the Institution Decision that the terms “pre-defined format” and “uniform format” mean different things. *Id.* These terms are separate and independent limitations that must both be satisfied. Ex. 2010, ¶¶66-71.

Specifically, the term “pre-defined format” refers to the format of the VOD data model, EPG data model, and media data model having a format that is defined prior to the organizing step (i.e., “pre-defined” prior to the organizing step). There are at least three “pre-defined formats,” one each for the VOD data model corresponding to the VOD subservice, the EPG data model corresponding to the EPG subservice, and the media data model corresponding to the media subservice.

The specification provides multiple examples where data from the VOD subservice, EPG subservice, or media subservice are organized according to a pre-defined format corresponding to the specific subservice source. For example, the specification states:

Process 1600 next organizes the requested media and/or data according to a pre-defined format as content 1630. As discussed with respect to process 1500, in step 1540, the content provider modules 1416 process the received media and/or data from the corresponding subservices 1420, 1424, and 1428. Ex. 1001, 34:49-54.

An exemplary EPG source plugin receives and processes EPG information from a designated EPG information source. The EPG source plugin is ***configured to process the received EPG information***

according to the specific format of the corresponding designated EPG information source.

Ex. 1001, 29:63-67 (emphasis added).

Similar to as discussed with respect to the EPG source plugins 1448a-n, VOD source plugins 1444a-n and media source plugins 1452a-n may need to translate the various different media format and information received into a consistent model. In one implementation, *information related to the VOD or media received from a corresponding VOD source plugin or media source plugin can be translated according to the respective VOD data model 1404 or media data model 1412* and stored into the respective storage 1432 or storage 1440.

Ex. 1001, 30:32-41 (emphasis added).

By contrast, “uniform format” does not mean that all three “pre-defined formats” share a uniform format. A person of ordinary skill would instead understand that “uniform format” refers to each “pre-defined format” providing a “uniform format” for that subservice. Ex. 2010, ¶70 (“The purpose of organizing data from each subservice according to a pre-defined format corresponding to that subservice is to provide a uniform format for all data received from that subservice”). This understanding is consistent with the ’805 Patent’s disclosure that uniform formats are provided “for the respective subservices”:

The data models *provide uniform formats for the respective subservices* (i.e., VOD subservice 1420, EPG subservice 1424, and media subservice 1428) and/or the internal content provider modules 1416 which interface with applications 416. In some implementations, step 1530 may be optional as the media and/or data may be sent to storage or be processed by data management 1400 without any conversion.

Ex. 1001, 33:25–33 (emphasis added).

In view of these disclosures, a person of ordinary skill would understand that the terms “predefined format” and “uniform format” have separate and distinct meanings under their plain and ordinary meanings. Ex. 2010, ¶66-71.

IV. PETITIONER FAILS TO MEET ITS BURDEN TO PROVE THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE

1. Melnychenko and Choi are not “printed publications” under 35 U.S.C. § 311(b)²

Petitioner’s grounds fail because neither Melnychenko nor Choi are available as prior art under 35 U.S.C. §311(b). IPRs may challenge claims “only on

² The issue of whether §102(e) art qualifies as a printed publication under §311(b) is on appeal at the Federal Circuit in, for example, *VLSI v. Patent Quality Assurance LLC*, No. 23-2298 (Fed. Cir. 2023), and this section is intended to preserve this argument should the Federal Circuit find that §311(b) requires printed publications to be publicly available as of the relevant date.

the basis of prior art consisting of patents or printed publications.” 35 U.S.C. § 311(b). Melnychenko and Choi are published patent applications—not issued patents—and do not qualify under § 311(b) as “patents.” Nor do Melnychenko and Choi qualify as “printed publications” because their dates of publication (October 13, 2013 for Melnychenko and March 7, 2013 for Choi) are after the priority date of the ’805 Patent—August 17, 2012.

Petitioner presumes that Melnychenko and Choi qualify as prior art under 35 U.S.C. §102(e). Paper 1 [Pet.], 11. But §102(e) does not dictate whether prior art is available in IPR—§311(b) does. “Printed publication” as it appears in §311(b) is a longstanding subset of prior art. Pre-AIA 35 U.S.C. §102 provides that the prior art includes inventions that “w[ere]...described in a printed publication . . . before” the invention, §102(a), or “in a printed publication . . . more than one year prior to the date of [the] application for patent,” §102(b). The effective date of “printed publication” prior art is the date it is “published, i.e., accessible to the public.” *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1368, 1370 (Fed. Cir. 2019). Under §102(a) and (b) alike, the question is whether the document “was publicly available by the [relevant] date and therefore qualifies as a prior art ‘printed publication.’” *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1381 (Fed. Cir. 2012); *see Carella v. Starlight Archery*, 804 F.2d 135, 138-139 (Fed. Cir. 1986). Said another way:

The statutory phrase “printed publication” has been interpreted to mean that **before the [relevant] date** the reference must have been **sufficiently accessible to the public** interested in the art; dissemination and public accessibility are the keys to the legal determination whether a prior art reference was “published.”

In re Klopfenstein, 380 F.3d 1345, 1348 n.2 (Fed. Cir. 2004) (emphases added) (quoting *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989)); *Acceleration Bay, LLC v. Activation Blizzard, Inc.*, 908 F.3d 765, 772-773 (Fed. Cir. 2018) (affirming finding reference was not a printed publication where Petitioner did not prove publicly accessibility prior to critical date).

Here, neither Melnychenko nor Choi was accessible to the public at all until after the priority date of the '805 Patent. Thus, they are not “printed publications” within the meaning of §311(b) and may not be used as prior art in IPR.

2. Ground 1: Melnychenko and Chen do not suggest organizing data received from a VOD subservice, an EPG subservice, and a media service according to a pre-defined format corresponding to each of the plurality of subservices (all claims)

Every independent claim challenged in this IPR requires “receiving...data...from one of a corresponding subservice of a plurality of subservices, wherein the plurality of subservices comprises a video-on-demand (VOD) subservice, electronic programming guide (EPG) subservice, and a media subservice.” The received data is “organiz[ed] according to a pre-defined format

corresponding to each of the plurality of subservices.” Because “the pre-defined format comprises one of a VOD data model, an EPG data model and a media data model,” the independent claims explicitly require organizing the received data according to pre-defined formats corresponding to each of the three types of subservices. Ex. 2010, ¶118. In other words, the claimed method organizes VOD data received from a VOD subservice according to a pre-defined VOD format, organizes EPG data received from an EPG subservice according to a pre-defined EPG format, and organizes media data received from a media subservice according to a pre-defined media format. *Id.*

The '805 Patent's specification fully supports this understanding. Figure 14 as annotated below illustrates the organizing step, with organizing of VOD data according to a pre-defined format of a VOD data model shown in **red**, organizing of EPG data according to a pre-defined format of an EPG model shown in **green**, and organizing of media data according to a pre-defined format of a media model shown in **purple**:

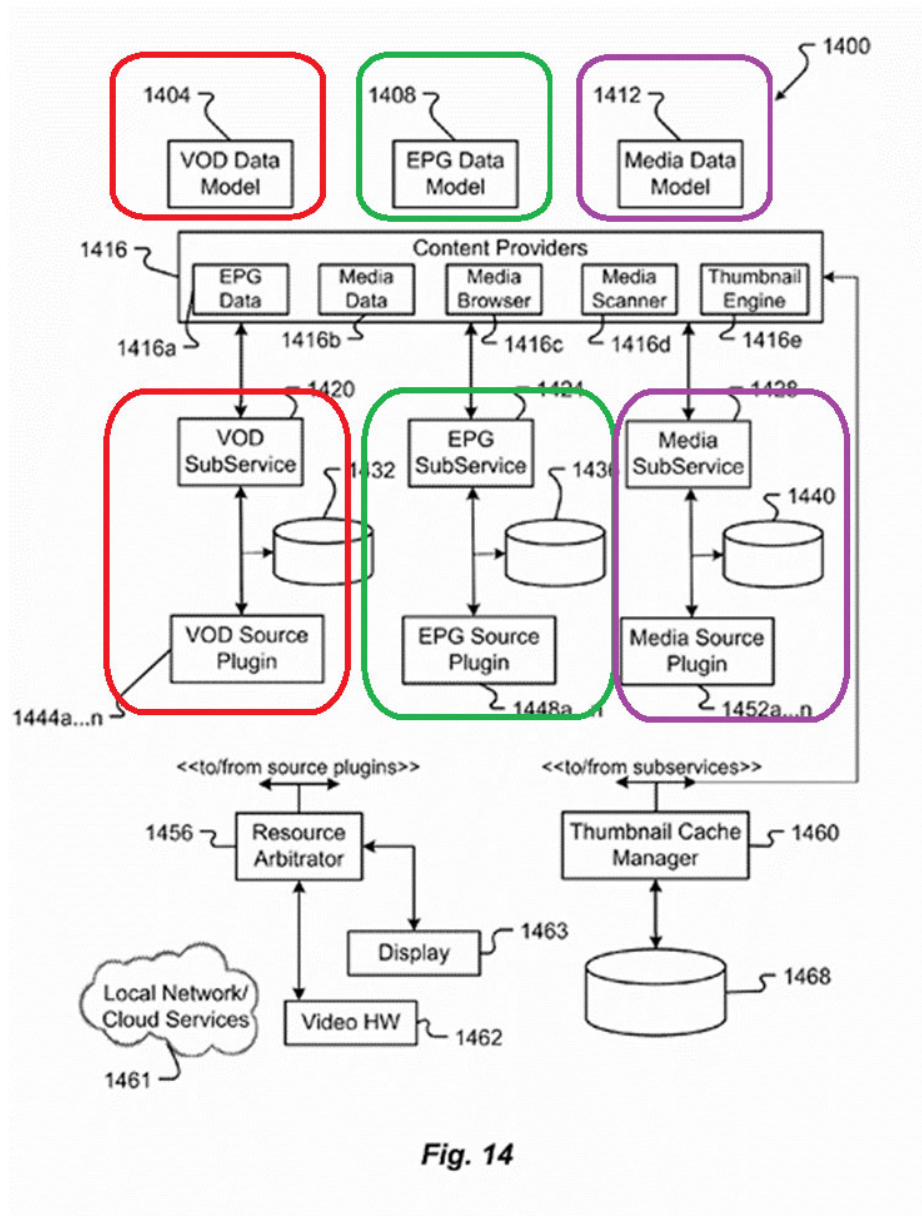


Fig. 14

See Ex. 2010, ¶119. According to Fig. 14, dedicated source plugins corresponding to each of the subservices (**VOD source plugin 1444 for VOD subservice 1420**, **EPG source plugin 1448 for EPG subservice 1424**, and **media source plugin 1452 for media subservice 1428**) apply the appropriate data model to the respective subservice source (**VOD data model 1404 for the VOD subservice**

1420, **EPG data model 1408 for the EPG subservice 1424**, and **media data model 1412 for the media source 1428**). Ex. 2010, ¶119 (*citing* Ex. 1001, 30:36-41).

In addition, the '805 Patent explicitly states that each data model applies to each corresponding subservice type (VOD data model to the VOD subservice, EPG data model to the EPG subservice, and media data model to the media subservice). Ex. 2010, ¶121. Each type of data service has a corresponding data subservice component with a corresponding source plugin:

The different types of data services (video on demand, electronic programming guide, media) each have a data subservice component (i.e., VOD subservice 1420, EPG subservice 1424, and media subservice 1428) that is in communication with one or more internal and/or external sources. Each data subservice component is in communication with the corresponding source plugins (i.e., VOD source plugins 1444a-n for VOD subservice 1420, EPG source plugins 1448a-n for EPG source subservice 1424, and media source plugins 1452a-n for media source subservice 1428).

Ex. 1001, 28:46-55.

The '805 Patent confirms that each of the VOD source plugins, EPG source plugins, and media source plugins apply the specific pre-defined format corresponding to the subservice source of the plugins (VOD data model for the

VOD subservice, EPG data model for the EPG subservice, media data model for the media subservice):

For example, each of VOD source plugins 1444a-n may be configured to communicate with one specific VOD source or some plurality of VOD sources.

Ex. 1001, 29:3-5.

An exemplary EPG source plugin receives and processes EPG information from a designated EPG information source. The EPG source plugin is *configured to process the received EPG information according to the specific format of the corresponding designated EPG information source.*

Ex. 1001, 29:63-67.

Media source plugins 1452a-n are configured to interface or communicate with the various media sources available to Intelligent TV 100.

Ex. 1001, 30:16-21.

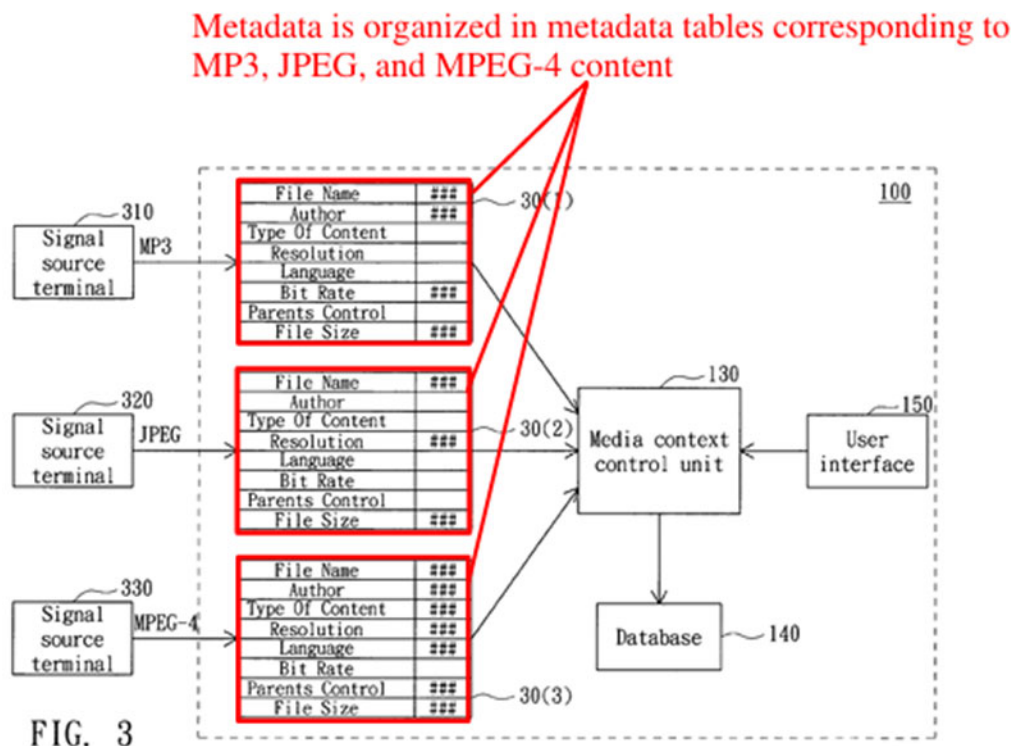
Based on these disclosures, a person of ordinary skill would understand that data from each type of subservice is organized according to a pre-defined format corresponding to that subservice type – a VOD data model for the VOD subservice, an EPG data model for the EPG subservice, and a media data model for the media subservice. Ex. 2010, ¶122-123 (*citing* Ex. 1001, 30:32-41).

Petitioner, however, fails to show that its prior art combinations organize data according to a pre-defined format corresponding to the types of subservices providing that data. Ex. 2010, ¶124-133. In all instances, the Petition relies upon Melnychenko in view of Chen to suggest this element. Paper 1 [Pet.], 32-42. But the Petition admits that Melnychenko “does not provide implementation details how such metadata is formatted or how the pre-processor 958 organizes metadata with a variety of formats.” Paper 1 [Pet.], 32-33. And Chen at most teaches organizing data by file type (*e.g.*, MP3, JPEG, or MPEG-4), an entirely distinct method that cannot suggest organizing data by types of subservices (the VOD subservice, EPG subservice, and media subservice) as claimed. Ex. 2010, ¶124-133 (*citing* Ex. 1007, [0020]).

As Dr. Surati explains, unlike the claimed method, “Chen does not organize the data from each type of subservice source (VOD, EPG, or media) according to a pre-defined format corresponding to that subservice source type (VOD, EPG, or media).” Ex. 2010, ¶125 (*citing* Ex. 1007, [0020]). That is, “Chen does not organize data from a VOD subservice source according to a pre-defined format comprising a VOD data model, organize data from an EPG subservice source according to a pre-defined format comprising an EPG data model, or organize data from a media subservice source according to a pre-defined format comprising a media data model” as required by the Challenged Claims. *Id.* Instead, “Chen

organizes data from multiple sources based on the file type of the data (MP3, JPEG, or MPEG-4) provided by the source regardless of the type of source (VOD, EPG, or media).” *Id.* (citing Ex. 1007, [0020]).

Petitioner essentially concedes this. Petitioner’s annotations to Chen’s Fig. 3 shows that metadata “is organized in metadata tables corresponding to MP3, JPEG, and MPEG-4 content”:



Ex.1007, Fig. 3 (annotated).

Paper 1 [Pet.], 34. Fig. 3 as annotated unambiguously shows that Chen organizes MP3 files according to an MP3 format, JPEG files according to a JPEG format,

and MPEG-4 files according to an MPEG-4 format. Ex. 2010, ¶126-127. A person of ordinary skill would know that MP3, JPEG, and MPEG-4 are file types—not VOD, EPG, or media subservices. Ex. 2010, ¶127. Thus, “instead of organizing data according to pre-defined formats corresponding to the type of subservice, Chen organizes data according to formats corresponding to the file type of the data.” *Id.* Organizing data according to the file type of the data is distinct from organizing data according to the type of the subservice providing that data. *Id.*

Moreover, not only is organizing data according to file types as in Chen distinct from organizing data according to subservice types as claimed, but organizing data according to file types as in Chen would not even suggest organizing data according to subservice types as claimed to a person of ordinary skill. Ex. 2010, ¶128-133. As Dr. Surati explains, a single subservice type may provide data of multiple file types. Ex. 2010, ¶128. Indeed, Chen discloses that the three sources of Fig. 3 belong to the same type of subservice—a media subservice. *Id.* Likewise, a single file type may be used by multiple subservices. *Id.*

Petitioner’s expert confirms that multiple file types may be used by a single subservice. Ex. 2012, 34:14-36:10 (citing MP3, MPEG-2, MPEG-4, and MPEG-1 as possible file types for VOD content). Because a single subservice may provide data of multiple file types, organizing data according to file type would not organize the data according to a pre-defined format corresponding to the type of

subservice, because the format would be shared among all subservices providing data of that file type. Ex. 2010, ¶128. “When Chen applies its metadata table based on MP3, JPEG, or MPEG-4 content, it does so regardless of the type of subservice (that is, MP3 files are organized according to the MP3 format regardless of whether the source is VOD, EPG, or media; JPEG files are organized according to the JPEG format regardless of whether the source is VOD, EPG, or media; and MPEG-4 files are organized according to the MPEG-4 format regardless of whether the source is VOD, EPG, or media).” *Id.* Chen does not teach organizing MP3 files from a VOD subservice any differently from MP3 files from a media subservice and thus cannot suggest organizing data according to a pre-defined format corresponding to the types of subservices as claimed. *Id.* And “[e]ven if Chen’s teachings are applied to Melnychenko, a POSITA would at most organize files received from each subservice according to a format based on the type of the file.” Ex. 2010, ¶129. Thus, Chen does not suggest organizing data from each subservice according to a format based on the type of the subservice. *Id.*

As the Institution Decision correctly recognized, this error is compounded by Petitioner’s conflation of “pre-defined format” and “uniform format.” Paper 9, 26 (“As an initial matter, we note that by reading the claim term ‘pre-defined format’ as recited in limitation [1.2.1] on the ‘specific table of uniform format’ in Chen, it appears Petitioner may be conflating the claim terms ‘pre-defined format’

and ‘uniform format’...”). As discussed in Section III.3, “pre-defined format” refers to the format of the VOD data model, EPG data model, and media data model having a format that is defined prior to the organizing step (“pre-defined”), whereas “uniform format” refers to each “pre-defined format” providing a “uniform format” for the respective subservice. Ex. 2010, ¶130. “There are at least three “pre-defined formats” recited in claim 1: one each for the VOD data model corresponding to the VOD subservice, the EPG data model corresponding to the EPG subservice, and the media data model corresponding to the media subservice.” *Id.* On the other hand, “uniform format” refers to each “pre-defined format” providing a “uniform format” for that subservice. Ex. 2010, ¶131. That is, the purpose of organizing data from each subservice according to a pre-defined format corresponding to that subservice is to provide a uniform format for all data received from that subservice. *Id.*

Petitioner cannot rely on Chen’s metadata tables conforming to a uniform format to show organizing data according to a pre-defined format corresponding to the plurality of subservices as claimed. Ex. 2010, ¶132. Even if Chen’s metadata tables share a uniform format, that is insufficient to show pre-defined formats corresponding to the plurality of subservices as claimed. Nothing in Chen suggests metadata tables that are pre-defined for types of subservices, rather than types of file formats. *Id.*

Thus, Petitioner fails to show that the prior art combinations suggest organizing data received from EPG subservices, VOD subservices, or media subservices according to a pre-defined format corresponding to the type of subservice as claimed.

3. Ground 3: Melnychenko, Chen, Lee-1, and Lee-2 do not suggest providing media metadata personalized for a user (claims 4 and 13)

Dependent claims 4 and 13 further require that “the media data provider is configured to provide media metadata personalized for a user.” As discussed in Section III.1, “media metadata personalized for a user” means the content of the metadata is personalized for a user. None of the prior art suggests that media metadata content is personalized for a user.

Properly construed, personalizing media metadata for a user requires the content of that media metadata to be personalized for the user (*i.e.*, the content for the same media must be different between users). Ex. 2010, ¶135. Personalizing the selection of media metadata for a user, as opposed to personalizing the content of the metadata, is insufficient to meet “media metadata personalized for a user” as claimed. *Id.* For example, if the media metadata is the title of a program, personalizing the media metadata for two users requires the first user and the second user to see different, personalized program titles. *Id.* If all users presented

with the same program see the same title, then the media metadata (program title) has not been personalized for the user as claimed. *Id.*

The Petition fails to show any prior art combination personalizes media metadata for a user as claimed. The Petition first argues that Lee-2's favorite channel list is personalized for a user because the programs in each favorite channel are selected personally for a user. Paper 1 [Pet.], 76-77 ("Lee-2 supplements by teaching a favorite channel list that is personalized for a user...Lee-2's favorite channel list settings are configured by the user."). This argument was repeated by Petitioner's expert Dr. Lippman during deposition. Ex. 2012, 31:4-18. According to Dr. Lippman, the media metadata is personalized for a user because the media corresponding to the metadata is selected and personalized for a user, hence the metadata is selected and personalized for the user. *Id.*

This argument fails because it applies the wrong understanding of "media metadata personalized for a user." As explained above, personalizing media metadata means "the content of the metadata is personalized for a user." Personalizing the selection of media in a favorite list is not personalizing media metadata for a user because the media metadata is identical for all users that have the same media in their favorite list. Ex. 2010, ¶136-138. When a user selects media for a favorite channel, the user has not personalized the media metadata as

claimed—rather, the media metadata is the same for all users with the same media selections in their favorite list. Ex. 2010, ¶138. By contrast, personalizing the content of the media metadata as claimed requires that the content of the metadata change user to user even if the users select the same media. *Id.* Thus, personalizing the selection of media in a favorite list as disclosed by Lee-2 is not personalizing media metadata for a user as claimed.

Next, the Petition argues that “Lee-2’s favorite channel list settings are configured by the user” and “Lee-2’s OSD generator functional program generates a Favorite Channel card object 2060 that includes personalized metadata (e.g., user-set thumbnails) for a user.” Paper 1 [Pet.], 77. The Petition appears to allege that Lee-2’s users may set a thumbnail for programs in their favorite channel and argue that these “user-set thumbnails” are media metadata personalized for a user.

Lee-2’s thumbnails, however, are not user generated or modified and are not personalized for a user. Ex. 2010, ¶139-143. Indeed, Lee-2 does not provide details of how to obtain its thumbnails. *Id.* Instead, these details are only described in U.S. application Ser. No. 12/651,730 incorporated in Lee-2 by reference. Ex. 2010, ¶141. But the ’730 Application explicitly teaches that a thumbnail is an image or video extracted by the device from the video signal of the media. *Id.* (*citing* Ex. 2014, 8:19-30). Thus, the ’730 Application confirms that thumbnails are generated from the media without user input. Nothing in Lee-2 suggests that thumbnails are

generated or modified by a user—at most, the thumbnails correspond to media selected for a user, but that is insufficient to suggest “media metadata personalized for a user” as claimed. *Id.*

Finally, Petitioner relies on Lee-2’s favorite channel list screen to suggest media metadata personalized for a user:

The favorite channel list screen may further include a channel setup menu 3930. For example, the channel setup menu 3930 may include menu items, EDIT for editing channels, ZOOM for changing the number of displayed thumbnail images, GROUP VIEW for viewing thumbnail images by group, COMPACTVIEW for displaying a broadcast image in a part and a channel list in another part, and EXIT.

Ex.1009, 41:61-67.

The disclosed features of the favorite channel list screen, however, do not suggest that users may edit any thumbnail. Ex. 2010, ¶143. Instead, those of ordinary skill would understand that the “EDIT” menu item “edit[s] channels” – that is, selects programs to add or remove from the favorite channel list. *Id.* And as discussed above, selecting programs for the favorite channel list does not suggest “media metadata personalized for a user.” Likewise, “Zoom for changing the number of displayed thumbnail images” does not modify any thumbnail. *Id.* Instead, those of ordinary skill would recognize that the Zoom feature increases or decreases the size of the thumbnails in channel list area 3910. *Id.* “The number of

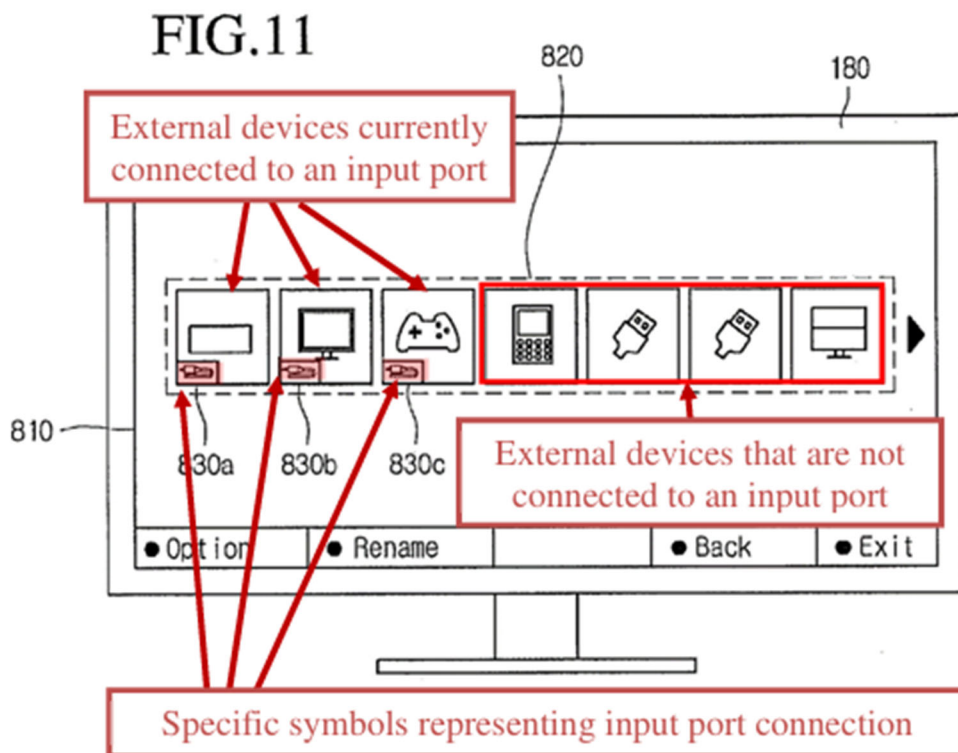
displayed thumbnail images changes because zoomed in, thumbnail images are larger and fewer of them can be displayed in the display area and zoomed out, thumbnail images are smaller and more of them can be displayed in the display area.” *Id.* Thus, ZOOM, like EDIT, does not modify any thumbnail.

For these reasons, Petitioner has not shown that any prior art combination personalizes media metadata for a user as claimed.

4. Ground 5: Melnychenko, Chen, Kim, Lee-1, and Choi do not suggest a media browser configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV (claims 6 and 14)

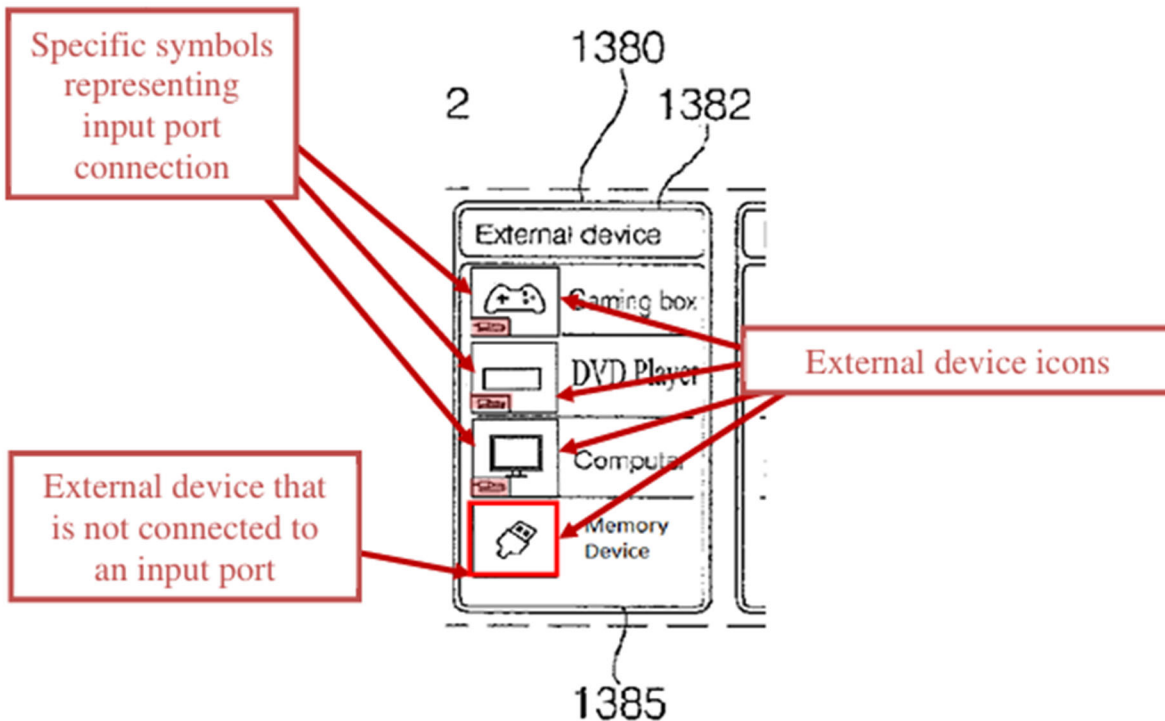
Dependent claims 6 and 14 further require that “the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV.” As discussed in Section III.2, the “media sources of the TV” are the “plurality of subservices [that] comprises a video-on-demand (VOD) subservice, electronic programming guide (EPG) subservice, and a media subservice” of independent claims 1 and 10. None of the prior art suggests providing a real-time view of the plurality of subservices, including a VOD subservice, an EPG subservice, and a media subservice. Indeed, as Dr. Surati explains, the prior art systems are not designed to provide a real-time view of these subservices. Ex. 2010, ¶145-155.

The Petition alleges that the prior art discloses claims 6 and 10 because “Kim discloses that the External Device card object 1380 includes ‘a list of external devices which may be connected’ via an input port, e.g., ‘HDMI,’ etc. [... the] list of external devices may include ‘Gaming box,’ ‘DVD player,’ etc.” and “Choi discloses that external devices determined to be connected may be represented by icons with specific symbols.” Paper 1 [Pet.], 84. The Petition presents an annotated view of Fig. 11 of Choi showing icons of “external devices” that are connected or not connected to a smart TV:



Ex.1011, Fig. 11 (annotated).

Paper 1 [Pet.], 85. The Petition then proposes modifying Melnychenko with Choi's icons:



Ex.1006, Fig. 19 (partial, modified in view of Choi).

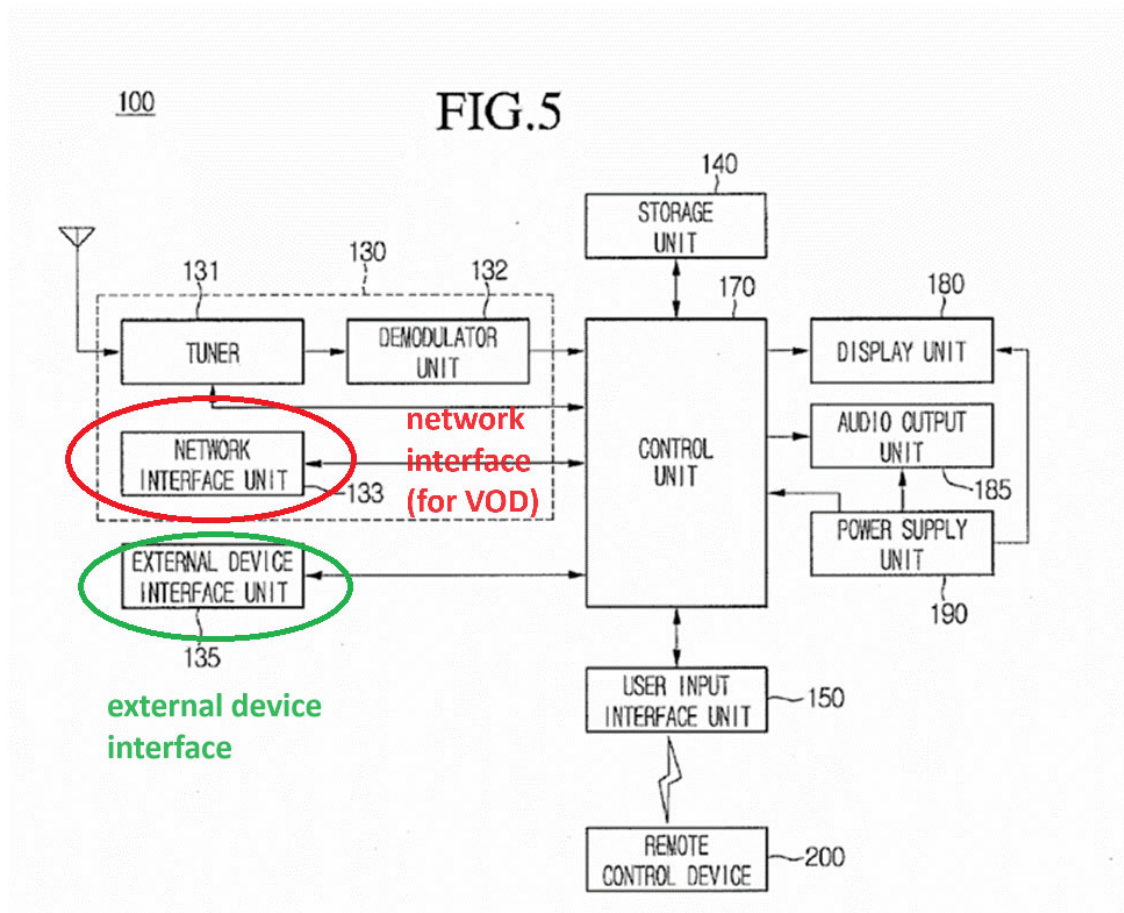
Paper 1 [Pet.], 87.

But as discussed in Section III.2, the “media sources of the TV” are the “plurality of subservices [that] comprises a video-on-demand (VOD) subservice, electronic programming guide (EPG) subservice, and a media subservice” of claims 1 and 10. An external device is not a VOD subservice, nor is the external device an EPG subservice. Ex. 2010, ¶149-150. Thus, displaying an icon of an external device, such as a DVD player, does not provide a real-time view of the plurality of subservices. A device icon does not provide a real-time view of a VOD

source. *Id.* Nor does a device icon provide a real-time view of an EPG source. *Id.*

The prior art combinations do not disclose a real-time view of the media sources of the TV that include the plurality of subservices. *Id.*

Moreover, a person of ordinary skill would have understood that Choi's device was not designed to provide a real-time view of VOD or EPG media sources as claimed. Ex. 2010, ¶151-155. Choi's Figure 4 shows that the device uses a **network interface 133** for VOD services and a separate **external device interface 135** for external devices:



Ex. 1011, Fig. 5 (annotated).

A person of ordinary skill would understand that VOD services would communicate with Choi's device through the network interface. Ex. 2010, ¶152-153. The person of ordinary skill would also understand that external devices would communicate with Choi's device through the external device interface. *Id.* Choi, however, only describes how a disclosed control unit determines which external devices are connected through the external device interface. Ex. 2010, ¶153. Determining which external devices are connected to the external device interface is necessary to show the connected external devices on the display. *Id.* By contrast, Choi does not teach any method of determining whether a VOD service is connected via the network interface. Ex. 2010, ¶154. Thus, Choi cannot teach any method of showing connected VOD or EPG services on a display. *Id.*

Accordingly, the prior art combination does not suggest a real-time view of media sources of the TV comprising VOD subservice sources, EPG subservice sources, and media subservice sources as claimed.

5. Ground 2: Melnychenko, Chen, and Lee-1 do not suggest serving EPG information in a read-only format (claims 3 and 12)

Expert testimony must be "based on sufficient facts and data." Fed. R. Evid. 702(b). "Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight." 37 C.F.R. § 42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 12 at *5 (PTAB Feb. 10,

2023) (*precedential*) (Director Vidal stating that “the Board was correct in giving little weight to Petitioner’s expert because the expert declaration merely offered conclusory assertions without underlying factual support and repeated, verbatim, Petitioner’s conclusory arguments.”).

Here, Petitioner argues that “Kim renders obvious” EPG information in a read-only format because the “purpose [of EPG information] is to provide information to the user about the broadcast program currently displayed and therefore may not be edited.” Paper 1 [Pet.], 71-72 (*citing* Ex. 1003 [Lippman Decl.], ¶ 281 where this allegation is made verbatim). But Petitioner’s expert provides no underlying facts to support this conclusion and merely repeats the Petitioner’s allegations verbatim. Under *Xerox*, this opinion is entitled to no weight.

Moreover, a person of ordinary skill in the art at the time of invention would have known that EPG information could be edited. Ex. 2010, ¶157-162. Indeed, Dr. Surati provides an example from the approximate time of invention of the ’805 Patent suggesting that it would have been beneficial to personalize or edit EPG information. *Id.* (*citing* Ex. 2013). This evidence directly contradicts Petitioner’s contention that EPG information could not have been edited.

Petitioner bears the burden of proving that Kim’s EPG information is read-only. 35 U.S.C. §316(e). Petitioner’s unsupported assertion that Kim’s EPG

information could not be edited is directly contradicted by the evidence of the state of the art. Petitioner therefore has not met its burden of proving obviousness.

V. CONCLUSION

For the foregoing reasons, Petitioner has not met its burden to prove the Challenged Claims unpatentable. Patent Owner respectfully requests that the Board find all Challenged Claims not unpatentable in view of Petitioner's prior art.

Dated: August 23, 2024

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner's Response (the "POR") consists of 8,878 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/Minghui Yang/

Date: August 23, 2024

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following documents were served
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**PATENT OWNER'S RESPONSE
EXHIBITS 2010-2014**

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