

Exhibit 1008

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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

LG Electronics Inc.,

Plaintiff,

vs.

Hisense Electronics Manufacturing
Company of America Corporation;
HISENSE USA CORPORATION;
HISENSE INTERNATIONAL (HONG
KONG) AMERICA INVESTMENT
CO., LIMITED (f/k/a HISENSE
INTERNATIONAL AMERICA
HOLDINGS CO., LIMITED); HISENSE
INTERNATIONAL (HK) CO.,
LIMITED; Hisense International Co.
Ltd.; Qingdao Hisense Electronics Co.
Ltd. (f/k/a Hisense Electric Co., Ltd.);
and Hisense Co., Ltd.,

Defendants.

Case No. 2:19-cv-09474 JAK (Ex)

**PLAINTIFF LG ELECTRONICS
INC.'S OPENING CLAIM
CONSTRUCTION BRIEF**

Judge: Hon. John A. Kronstadt
Hr'g Date: September 21, 2020
Time: 10:30 AM
Courtroom: 10B

Note: All exhibits cited in this brief were
attached to [ECF No. 71](#).

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PLAINTIFF'S OPENING CLAIM CONSTRUCTION BRIEF
No. 2:19-cv-09474 JAK (Ex)

1 **I. INTRODUCTION**

2 This is the opening claim construction brief of Plaintiff LG Electronics Inc.
3 (“LGE”). It is limited to the 10 most significant terms for construction, see [ECF No.](#)
4 [70](#), and is limited to 30 pages, see [ECF No. 57](#) at 4:11–:13. The asserted patents cover
5 different features of TVs. Defendants sell competing TVs under the name “Hisense.”

6 **II. LEGAL STANDARDS**

7 Claim construction is generally a “matter of law,” *Markman v. Westview*
8 *Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370
9 (1996), but in limited circumstances it may involve “subsidiary factual disputes,” *Teva*
10 *Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331–33 (2015). In this case,
11 however, “[t]he parties do **not** request any factual findings from the Court related to
12 claim construction.” See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at
13 7:4–:5.¹ Accordingly, there are only issues of law for the Court to decide.

14 The standards for claim construction are well-settled: “[W]ords of a claim are
15 generally given their ordinary and customary meaning” which is “the meaning that the
16 term would have to a person of ordinary skill in the art in question at the time of the
17 invention, i.e., as of the effective filing date of the patent application.” *Phillips v.*
18 *AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (internal quotation
19 marks omitted). This analysis focuses on the intrinsic evidence, which includes the
20 claims themselves, the specification, and the prosecution history. *Id.* at 1314–17.
21 “[T]he context in which a term is used in the asserted claim” and “[o]ther claims of
22 the patent in question” can be instructive as to the meaning of particular claim terms.
23 *Id.* at 1314. Furthermore, “the specification ‘is always highly relevant to the claim
24 construction analysis. Usually, it is dispositive; it is the single best guide to the
25 meaning of a disputed term.’” *Id.* at 1315. The court should also consider the
26 prosecution history; however, “because the prosecution history represents an ongoing

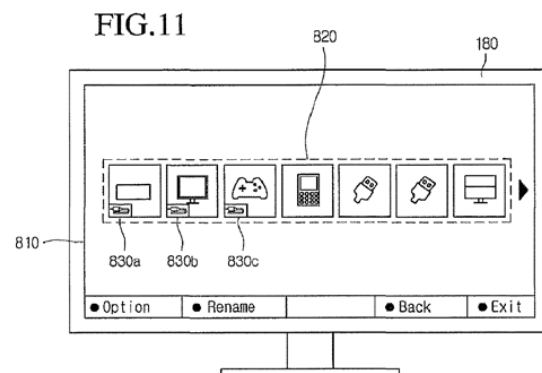
27 ¹ Unless stated otherwise, all emphasis in quotes in this brief has been added.
28

1 negotiation between the PTO and the applicant, rather than the final product of that
 2 negotiation, it often lacks the clarity of the specification and thus is less useful for
 3 claim construction purposes.” *Id.* at 1317. Finally, the court may also consider
 4 extrinsic evidence, such as dictionaries, learned treatises, and expert testimony. *Id.*
 5 However, extrinsic evidence is “less reliable” than intrinsic evidence for several
 6 reasons. *Id.* at 1318. For example, “expert reports . . . generated at the time of and for
 7 the purpose of litigation . . . can suffer from bias that is not present in intrinsic
 8 evidence,” and “there is a virtually unbounded universe of potential extrinsic evidence
 9 of some marginal relevance that could be brought to bear on any claim construction
 10 question.” *Id.*

11 **III. U.S. PATENT NO. 10,334,311**²

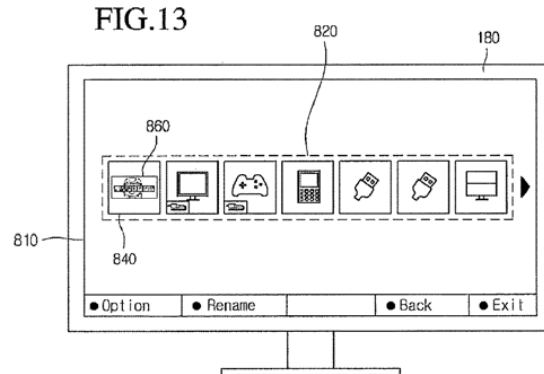
12 **A. Summary of patent and level of ordinary skill**

13 The ’311 patent was effectively filed on September 2, 2011. See [Ex. 2](#). It
 14 provides an easier way for someone watching a TV to select among the various
 15 external devices that may be connected to the TV, as shown, for example, in Figure 11
 16 (reprinted on the right). In Figure 11, the
 17 first three of the external device icons
 18 (820) correspond, from left to right, to a
 19 Blu-ray player, a personal computer (PC),
 20 and a gaming console. The ’311 patent
 21 improves a user’s convenience in
 22 switching to an external device by
 23 showing a “live” image from the external device on the corresponding external device
 24 icon when the user selects the icon by positioning a pointer or box on the icon. For
 25 example, in Figure 13 (reprinted below on the right), when the user selects the first



27 ² A text-searchable version of the ’311 patent, [Ex. 2](#), is available at
 28 <http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=10334311>.

external device icon (840) by placing a pointer or box on that icon, the image on that icon changes from a default image corresponding to the external interface (i.e., the Blu-ray player shown in Figure 11) to a “live” image (860) that is based on the image signal received from the Blu-ray player connected to the TV. See *id.* at 20:53–21:4 & fig.10 at steps S710–20. The user can then recognize the “live” image (860) and decide whether they want to switch the input to that external device (in this case, the Blu-ray player) and view the image on the full screen (810). See *id.* at 21:19–:30 & fig.10 at steps S730–40. By providing the “live” image from the external device on the icon before the user decides whether to switch the input, the ’311 patent makes it easier for the user to be sure they are selecting the right input “in advance,” *id.* at 20:59–:63, which is especially useful given the increasing number of external devices connected to modern TVs.



For purposes of construing the ’311 patent, Plaintiff contends that a person of ordinary skill in the art as of September 2, 2011, would be someone with an undergraduate degree in Computer Science with two years of experience designing the user interface for display devices.

B. Disputed terms

1. “external device icon”

Claims 1, 3, 4, 7, 11, 12, 14, 15, 18, and 21: “external device icon”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
“External device icon” should be construed according to its plain and ordinary meaning, which is an icon corresponding to an external device	A small pictorial on-screen representation of an external device

1 See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-14.

2 Defendants' proposal incorrectly limits an "external device icon" to **only** a
3 "pictorial" representation (thus excluding the use of text), and incorrectly requires that
4 this "pictorial" must **represent** the external device (e.g., by showing a picture of the
5 external device) as opposed to simply **corresponding** to the external device (e.g., by
6 showing an image of an HDMI interface that connects to the external device).

7 Defendants contend that their proposal is "dispositive," resulting in all asserted claims
8 being "not infringed." *Id.* at 3:1–4.³

9 Shortly before this brief was due, however, Defendants unexpectedly sent an
10 email stating that they now "agreed" with Plaintiff's proposed construction. See [Ex.](#)
11 [1A](#) at 7. But even when parties agree on the words of a claim (or the words of a
12 construction), they may still have disputes about the scope of the claim, in which case
13 "the court, not the jury, must resolve that dispute." *O2 Micro Int'l Ltd. v. Beyond*
14 *Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (holding it was error not
15 to construe the claim, even though the parties agreed the term "only if" had a
16 "common meaning," in light of lingering disputes about the scope of the claim).

17 Accordingly, Plaintiff asked Defendants to confirm that their agreement with
18 Plaintiff's construction "also means that [Defendants] now agrees with [Plaintiff]'s
19 position on the two disputes above about the meaning of 'external device icon.'" [Ex.](#)
20 [1A](#) at 2. Defendants responded, "We don't see an *O2 Micro* problem here." *Id.* at 1.
21 But they did not agree there was no longer a dispute, so Plaintiff briefly provides
22 support for its proposed construction so that the Court can resolve the dispute:

23 An "icon" can include **text**. A common example is the "Recycle Bin" icon in
24 Windows. See [Ex. 205](#) at HS-LGE00091553; see also [Ex. 204](#) at HS-LGE00091539
25 (similar). The '311 patent uses the term "icon" consistent with this common meaning.

26 ³ In the accused products, the icons include text and they can show an image of the
27 interface (e.g., HDMI) connected to the external device rather than a picture of the
28 external device itself. See, e.g., Compl. Ex. 2 at 10–13 [[ECF No. 1-2](#)].

For example, Figures 15–16 show icons (in the upper left) with text, and Figure 16 shows that the second “external device icon” (841) is named “PC View,” which can be changed with the “Rename” button at the bottom of the screen. Similarly, a contemporaneous presentation by the inventor corresponding to Figure 16 shows “external device icons” with text. See [Ex. 201](#) at LG-HISENSE00049294.

The “external device icon” just needs to **correspond** to the external device; it does not need to show a picture of the external device. This can be seen in Figures 11 and 13 above, *supra* pp. 2–3, where the fifth and sixth “external device icons” (820) do not show pictures of those external devices but instead **correspond** to those external devices by showing images of the **USB interfaces** that connect to those external devices. Similarly, claim 9 makes clear the icon can be of the “external **interface**” rather than of the external **device**. Figure 10 at step S720 states “external device **corresponding** to icon,” and similar language was used during prosecution, see [Ex. 202](#) at LG-HISENSE00028658.

Defendants’ proposed construction, in contrast, would exclude the preferred embodiments discussed above, which “is rarely, if ever, correct.” *Duncan Parking Techs., Inc. v. IPS Grp., Inc.*, 914 F.3d 1347, 1364 (Fed. Cir. 2019).

2. “select” / “selected” / “selectable”

Claims 1, 3, 4, 7, 11, 12, 14, 15, 18, and 21: “select,” “selected,” “selectable”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
“select,” “selected” “selectable” should be construed according to its plain and ordinary meaning, which includes selection by placing a cursor on or highlighting an icon. The plain and ordinary meaning is not limited to a two-step process (e.g., placing a cursor on an icon and then pressing OK).	Choose [chosen, able to be chosen] other than simply by positioning a pointer on the thing to be chosen

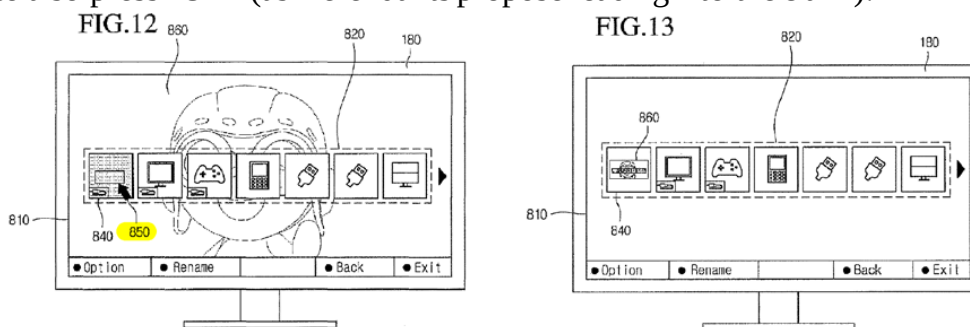
See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-14 to -15.

The parties dispute whether “select[ing]” can be satisfied by positioning a

1 pointer (or cursor, or box) on an icon. Defendants' proposal incorrectly excludes
2 "positioning a pointer on the thing to be chosen" from the construction of "select."⁴

3 Defendants' proposal directly contradicts the claim language: Claim 4, which
4 depends on claim 1, states, "wherein the first and second external device icons are
5 **selectable** via a **cursor positioned on** the first and second external device icons
6 respectively." [Ex. 2](#), '311 patent, claim 4. Similarly, dependent claim 2 states that the
7 icon is "highlight[ed] . . . in response to . . . being **selected**," which the specification
8 explains happens "when the pointer 850 is **positioned**" on the icon. [Id.](#) at 20:64–67.

9 Defendants' proposal also excludes the preferred embodiment. Figure 10 is a
10 flow chart for the preferred embodiment described above, *supra* pp. 2–3, and shows
11 that if a "pointer [is] **positioned** on [a] specific icon" at step S710, then a "live" image
12 from the "external device corresponding to [that] icon" is displayed at step S720, thus
13 satisfying the "selected" limitation of claim 1 ("change the first default image to a first
14 image based on the first image signal in response to the first external device icon
15 being **selected** if the first external device is connected to the image display device").
16 See [Ex. 2](#), '311 patent, at 20:50–59, 21:1–4 & figs.10, 12, 13. Figures 12 and 13 also
17 show the same "selected" limitation of claim 1 being satisfied when a pointer (850,
18 highlighted in yellow below) is positioned on the external device icon **without** the
19 need to also press "OK" (as Defendants propose reading into the claim):



26 ⁴ Defendants' proposal is an attempt to manufacture an artificial non-infringement
27 argument, on the basis that the icons in the accused products are selected by
28 positioning a yellow box on them (without the need to also press "OK" on the remote
control). See, e.g., Compl. Ex. 2 at 10–13 [[ECF No. 1-2](#)]; [Ex. 1](#) at 3:5–7.

“As shown in FIG. 12, when the pointer 850 is **positioned on the first external device icon** 840 among the plurality of external device icons 820, the control unit 170 may display an image signal 860, which is inputted from an external device related [sic] the first external device icon 840 (for example, a [Blu-ray Disc] player) . . . in operation S720.” *Id.* at 20:53–:59.⁵ Figure 13 is the same except the “live” image 860 is displayed on the area where the icon 840 is displayed (as in claim 1) instead of on the full screen 810 (as in Figure 12). *Id.* at 21:1–:4. Defendants’ proposal, which excludes “select[ing]” by “positioning a pointer on the thing to be chosen,” therefore excludes the preferred embodiment, which “is rarely, if ever, correct.” *Duncan Parking*, 914 F.3d at 1364.

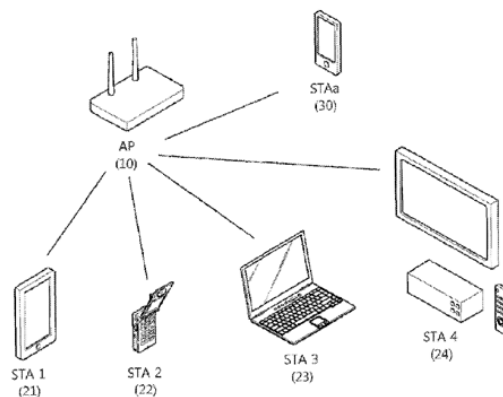
IV. U.S. PATENT NO. 9,271,191⁶

A. Summary of patent and level of ordinary skill

The ’191 patent was effectively filed on June 29, 2010. See [Ex. 3](#). The patent concerns “Wireless Local Area Networks” (WLAN), commonly referred to as Wi-Fi. See [Ex. 528](#), O’Hara Expert Report, ¶ 22.

The “invention relates to . . . a method of a station (STA) transmitting a data frame in a WLAN system.” [Ex. 3](#), ’191 patent, at 1:23–:26. An exemplary WLAN system is illustrated in Figure 1 of the ’191 patent (reprinted on the right). This WLAN system includes a so-called Basic Service Set (BSS) which is “a set of stations

Figure 1



⁵ The presentation by one of the inventors shortly before the effective filing date of the ’311 patent also shows “select[ing]” by positioning the pointer on the external device icon, without the need to also press “OK” as Defendants would require. See [Ex. 201](#) at LG-HISENSE00049293–94.

⁶ A text-searchable version of the ’191 patent, [Ex. 3](#), is available at <<http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=9271191>>.

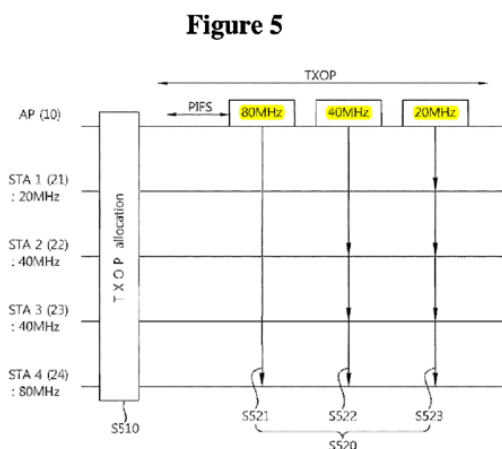
(STAs) which can communicate with each other,” here, a tablet (STA 1), a smartphone (STA 2), a laptop computer (STA 3), a smart TV (STA 4), and a wireless router (AP). *Id.* at 3:50–:59. The router 10 is called an Access Point (AP) station because, in addition to communicating with the other stations in the BSS, it can also connect to other networks (e.g., the Internet) using a so-called distribution service (DS). *Id.* The ’191 patent further explains that an AP station is not required when the BSS operates in an Ad-Hoc mode (e.g., a Wi-Fi network of mobile devices connected to each other at a remote camp site with no Internet or phone service). *Id.* at 3:60–:67.

At the time of the ’191 patent, the IEEE had promulgated a standard for Wi-Fi networks called 802.11n. *Id.* at 1:34–:50. That standard supported High-Throughput (HT), with bandwidths up to 40 MHz, and a newer version of the standard (called 802.11ac) had been proposed for Very High Throughput (VHT), with bandwidths up to 160 MHz. *Id.* at 1:50–:55, 5:62–:67; see also *id.* at 1:15–:18; *Ex. 307*, Provisional Application, at LG-HISENSE00029056–58. The inventors of the ’191 patent were working on the new 802.11ac standard and recognized that, without regulating transmissions of different bandwidths, “there may be generated interference with an AP or an STA or both” so that “reliability may become problematic.” *Ex. 3*, ’191 patent, at 2:1–:11; *Ex. 528*, O’Hara Expert Report, ¶¶ 39–50.

The inventors of the ’191 patent also recognized that this interference could be avoided with a rule requiring the bandwidth for subsequent transmissions to get narrower — “from a wider channel

bandwidth to a narrower channel bandwidth”

— as shown in the example of Figure 5 (reprinted on the right with highlighting), where a station (e.g., AP 10) transmits multiple data units during a so-called transmission opportunity (TXOP), starting with a transmission on a wide bandwidth of



80 MHz (at step S521), followed by a transmission on a narrower 40 MHz bandwidth (at step S522), followed by a transmission on an even narrower 20 MHz bandwidth (at step S523). See [Ex. 3](#), '191 patent, at 10:38–:45 & fig.5. In particular, the invention of the '191 patent requires that “a channel bandwidth used to transmit a PPDU [i.e., a data frame] ***must be same or narrower than*** a channel bandwidth used for ***a preceding*** PPDU transmitted.” [Id.](#) As a result of this rule, the sub-channels on which the station does not transmit anymore can be safely used by other nearby stations, without the risk of interference or collisions. [Id.](#) at 10:45–:57; [Ex. 528](#), O’Hara Expert Report, ¶¶ 48–56.

For purposes of construing the '191 patent, Plaintiff contends that a person of ordinary skill in the art as of June 29, 2010, would have been familiar with the IEEE 802.11-2007 standard and the 802.11n-2009 amendment which were in force at the time, and would have had a bachelor’s degree or higher in electrical engineering, computer science, software engineering, or a related field, and two to three years of experience working in the field of network design or software development related to the 802.11 standard of the time. See [Ex. 528](#), O’Hara Expert Report, ¶¶ 91–92; [Ex. 601](#), Shoemake Dep., at 47:9–48:5 (similar).

B. Disputed terms

1. “station”

Claims 1, 6, 11, 16: “station”	
<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
No construction necessary (i.e., plain and ordinary meaning). To the extent an express construction is required, a “station” refers to: “either an Access-Point (AP) station (such as a wireless router at home) or a non-AP station (such as a laptop, smartphone, or smart television) that includes Medium Access Control (MAC) and a physical layer interface to the wireless medium”	“access point”

1 See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-25 to -29.

2 The parties dispute whether a “station” is limited to an “access point” (AP), as
3 Defendants propose,⁷ or includes both AP and non-AP stations, as Plaintiff proposes.

4 Defendants’ proposal directly conflicts with dependent claims 4, 9, 14, and 19,
5 which specifically allow a “station” to be “a non-Access Point (AP) station.” See [Ex.](#)
6 [3](#), ’191 patent. That alone should end the inquiry. But there is more. Defendants’
7 proposal also renders superfluous dependent claims 3, 8, 13, and 18, which allow a
8 “station” to be “an Access Point (AP) station.” [Id.](#) Defendants’ proposal also directly
9 conflicts with the specification, which specifically defines the term “station”: “STA
10 refers to **both** an AP **and** a non-AP STA.” [Id.](#) at 4:4–:5.⁸ The specification repeatedly
11 indicates that the term “station” includes non-AP stations. See, e.g., [id.](#) at 1:22–:26
12 (“The present invention relates to . . . a station (STA) transmitting a data frame . . .”);
13 [id.](#) at 3:51–:59 (“The BSS is a set of stations (STAs)” and can include “non-AP
14 STAs”); [id.](#) at 3:60–:67 (“an Independent BSS (IBSS)” only has “non-AP STAs . . .
15 managed in a distributed manner”); [id.](#) at 4:6–:12 (“A non-AP STA is an STA which
16 is not an AP.”); [id.](#) at 4:13–:20 (“If a direct link is set up between the STAs, the STAs
17 can directly communicate with each other.”); [id.](#) at 4:33–:42 (“an AP and/or an STA
18 senses a radio channel or a medium before starting transmission”); [id.](#) at 5:15–:23
19 (“during [the TXOP] a specific AP or a specific STA or both can transmit a frame”).

20 Furthermore, neither the problem to be solved (i.e., collisions/interference), nor
21 the ’191 patent’s claimed solution (i.e., a rule requiring the bandwidth to get

22
23 ⁷ Defendants’ proposed construction is an obvious attempt to import a limitation
24 into the claim to create a non-infringement argument on the basis that the accused
products (televisions) are not an “access point” (AP). See, e.g., Compl. Ex. 3 at 1
[[ECF No. 1-3](#)]; [Ex. 1](#) at 3:8–:10.

25 ⁸ Consistent with Plaintiff’s proposal, the specification also defines the term
26 “station” to include “Medium Access Control (MAC)” and a “physical layer
27 interface” to the wireless medium, consistent with the IEEE 802.11 standard in effect
at the time. See [Ex. 3](#), ’191 patent, at 4:1–:4; [Ex. 304](#), IEEE 802.11-2007 standard, at
HS-LGE00003633 (defining “station (STA)”). Defendants do not appear to dispute
28 this part of Plaintiff’s proposal.

narrower), nor the benefits of the solution (e.g., less interference and greater throughput), are limited to AP stations. See [id.](#) at 2:1–:12, 2:20–:31, 10:38–:57; [Ex. 528](#), O’Hara Expert Report, ¶¶ 39–56, 112; [Ex. 603](#), O’Hara Dep., at 165:19–169:13.

Finally, both experts agree that the ’191 patent and the 802.11 standard both define the term “station” to include both AP and non-AP stations. See [Ex. 526](#), Shoemake Expert Report, ¶ 46 (“This definition [of ‘station’ in the IEEE 802.11-2007 standard] is broad enough to encompass both AP and non-AP stations.”); [Ex. 601](#), Shoemake Dep., at 74:13–:20 (“I think the inventors [at 4:10–:12 of the ’191 patent] are simply pointing out that a non-access-point station is a type of station.”); [Ex. 528](#), O’Hara Expert Report, ¶¶ 95–112 (same).

2. “a preceding data unit of a plurality of data units”

Claims 1, 6, 11, 16: “a preceding data unit of a plurality of data units”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
No construction necessary (i.e., plain and ordinary meaning). To the extent an express construction is required, “a preceding data unit of a plurality of data units” refers to: there are multiple data units, including (i) a data unit referred to as the preceding data unit, which comes immediately before (ii) another data unit referred to as the non-initial data unit	“a data unit transmitted earlier than one or more other data units”

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-29 to -30.

Plaintiff’s proposed construction correctly limits “preceding” to the data unit **immediately** before, consistent with the ordinary meaning in light of the specification, while Defendants contend that **any** earlier data unit — including the “initial” data unit — is a “preceding” data unit. See [Ex. 528](#), O’Hara Report, ¶¶ 114, 152–53. This claim construction dispute is closely related to the dispute over the next term for construction discussed in the next section, so for efficiency Plaintiff addresses both disputes in the next section. The Court should reject Defendants’ proposed construction here because it relies primarily on *extrinsic* evidence, which is less

reliable than the intrinsic evidence, *see supra* p. 2. For example, Defendants rely on an unusual dictionary for their proposed construction, *see* [Ex. 310](#), Chambers Concise Dictionary, along with a conclusory expert report, *see* [Ex. 526](#), Shoemake Expert Report, ¶¶ 152–60. The intrinsic evidence, discussed in the next section, compels Plaintiff’s proposed construction, and is consistent with (i) the more common dictionary definition for “preceding,” *see* [Ex. 309](#), Merriam-Webster Dictionary (“existing, coming, or occurring ***immediately*** before in time or place”), (ii) the way the term “preceding” was actually used before this lawsuit by skilled artisans discussing the same issue, *see* [Ex. 308](#), IEEE Document 802.11-11/0081r1, slides 3–4 & 7; [Ex. 5](#), 802.11ac-2013 standard, at 151, and (iii) the detailed report of Plaintiff’s expert, *see* [Ex. 528](#), O’Hara Expert Report, ¶¶ 114, 152–72.

3. **“select[ing] . . . a transmit bandwidth parameter of a non-initial data unit . . . which is narrower than a transmit bandwidth parameter of the preceding data unit”**

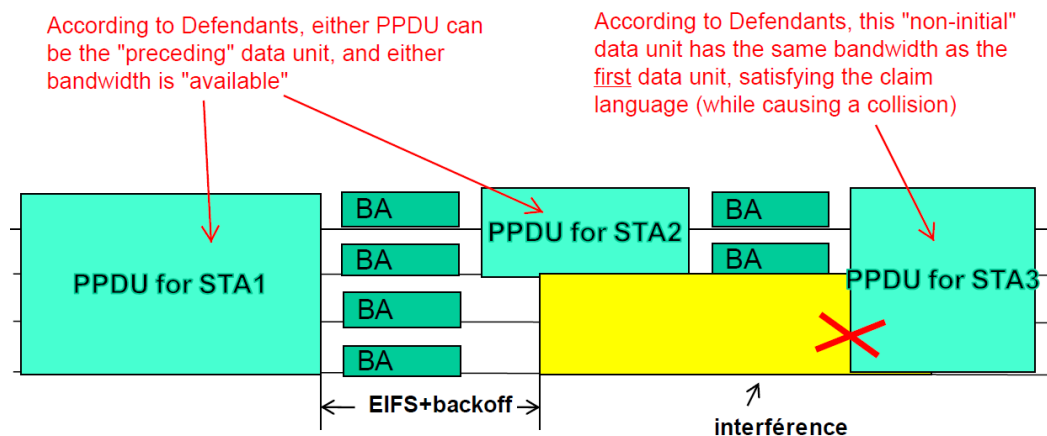
Claims 1, 6: “select[ing] . . . a transmit bandwidth parameter of a non-initial data unit of the plurality of data units from available bandwidth parameters, wherein the available bandwidth parameters include a first available bandwidth parameter which is same as a transmit bandwidth parameter of the preceding data unit of the plurality of data units and a second available bandwidth parameter which is narrower than a transmit bandwidth parameter of the preceding data unit”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
Plain and ordinary meaning, which requires that the transmit bandwidth parameters that are available to be selected for the non-initial data unit are limited to (i) the transmit bandwidth parameter of the preceding data unit and to (ii) one or more transmit bandwidth parameters which are narrower than the transmit bandwidth parameter of the preceding data unit.	“station”: separately construed “available bandwidth parameter”: “bandwidth parameters the station is able to use during the TXOP” “preceding data unit of a plurality of data units”: separately construed. In view of these other proposed constructions the longer term does not need construction.

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-30 to -32.

Plaintiff's proposed construction requires the bandwidth of each non-initial data unit to be the **same or narrower** than the bandwidth of the preceding data unit (i.e., the one coming immediately before, as discussed in the section above), while Defendants' proposed construction allows the bandwidth to get **wider** from one data unit to the next, which could result in collisions, just like in the prior-art 802.11n standard that the '191 patent identified as the source of the problem to be solved.⁹ See [Ex. 528](#), O'Hara Expert Report, ¶¶ 114, 152–53. The difference between the proposed constructions for this term and the term "preceding" is illustrated below, where the "non-initial" data unit (PPDU for STA3 on the right) is transmitted after two data units with different bandwidths (PPDU for STA1, and PPDU for STA2):

Example of Defendants' Proposed Construction:

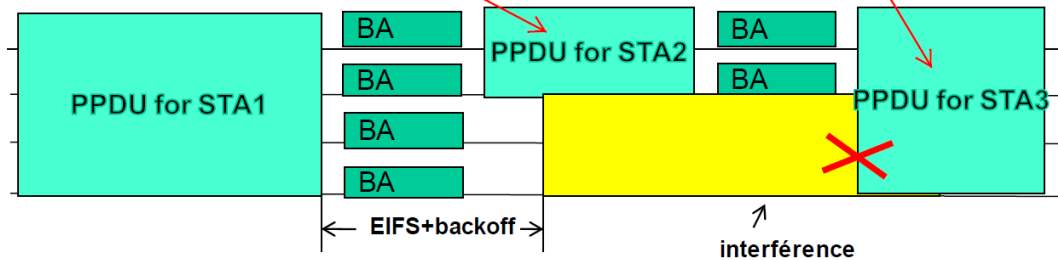


⁹ Defendants' proposed construction for the term "preceding" discussed in the previous section, which is incorporated by reference into the longer term here, is an obvious attempt to invalidate all of the asserted claims of the '191 patent in light of the 802.11n prior art, see [Ex. 1](#) at 3:11–:12, as shown by the IPR petition that Defendants filed that relies on the same overbroad claim construction proposed here. See [Ex. 311](#), IPR2020-01164, at 12–16 (Defendants' proposed claim construction for their IPR); [Ex. 312A](#), Shoemake Declaration in IPR2020-01164, ¶ 18 (opining that the asserted claims of the '191 patent are invalid under Defendants' proposed claim construction in light of the 802.11n prior art); [Ex. 601](#), Shoemake Dep., at 155:16–:24, 158:14–:24 (same). Defendants' proposed construction in the IPR is relevant because in an IPR, claims must be "construed using the same claim construction standard" as in district court. 37 C.F.R. § 42.100(b).

Examples of Plaintiff's Proposed Construction:

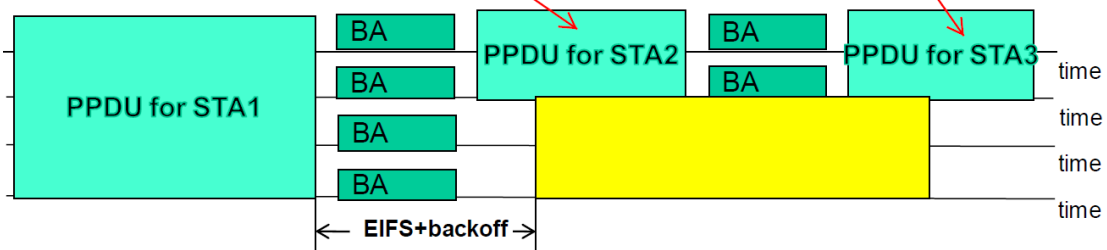
According to Plaintiff, in this example, only this PPDU is the "preceding" data unit, and only this bandwidth (or narrower) is "available" to the non-initial data unit, according to the claim language

According to Plaintiff, this "non-initial" data unit has a bandwidth that is broader than the "preceding" data unit, and thus this example (which results in a collision) does not satisfy the claim language



According to Plaintiff, in this example, only this PPDU is the "preceding" data unit, and only this bandwidth (or narrower) is "available" to the non-initial data unit, according to the claim language

According to Plaintiff, this "non-initial" data unit has a bandwidth that is the same as the "preceding" data unit, and thus this example satisfies the claim language (and avoids a collision)



[Ex. 528](#), O'Hara Report, ¶ 114 (annotating Ex. 308 slides 3–4); see also [Ex. 601](#),

Shoemaker Dep. at 189:9–:20 (admitting Defendants' proposed construction allows the non-initial data unit to have "a bandwidth which is **broader** than the bandwidth of the data unit which was transmitted immediately before").

The '191 patent recognized a problem with the prior-art 802.11n Wi-Fi standard: that standard allowed the bandwidth to change "freely" from a narrower bandwidth to a broader bandwidth, which could result in a "collision," also known as "interference." See [Ex. 3](#), '191 patent, at 2:1–:11, 10:54–:57; [Ex. 528](#), O'Hara Report,

¶¶ 39–50. This problem was also recognized in the Provisional Application incorporated by reference. See [Ex. 3](#), ’191 patent, at 1:15–:18 (incorporating by reference); [Ex. 307](#), Provisional Application, at LG-HISENSE00029065 (“collision may occur when 40 MHz data packets are transmitted after transmission of 20 MHz data packets”); [Ex. 603](#), O’Hara Dep., at 168:4–:16.

The solution disclosed by the ’191 patent avoids collisions by requiring the “bandwidth of a subsequent data frame of the plurality of data frames is **same to or narrower** than a bandwidth of a **preceding** data frame of the plurality of data frames which is last previously transmitted before the subsequent data frame.” [Ex. 3](#), ’191 patent, at 2:27–:31 (Summary of the Invention); [Ex. 528](#), O’Hara Expert Report, ¶¶ 48–50, 115–26, 154–67. The “Detailed Description of the Invention” repeats this requirement: “[A] channel bandwidth used to transmit a PPDU must be **same or narrower** than a channel bandwidth used for a **preceding** PPDU transmitted. *That is*, there is proposed a method of adapting the bandwidth **from a wider** channel bandwidth **to a narrower** channel bandwidth.” [Ex. 3](#), ’191 patent, at 10:38–:45; see also, e.g., [id.](#) fig.5 (showing the bandwidth going from 80 MHz, to 40 MHz, to 20 MHz). The use of the phrase “[t]hat is” in the specification is significant, because it shows that the applicant is providing a definition, specifically that the reference to a bandwidth that is the “same or narrower” than the “preceding” data unit **requires** the bandwidth to go from “wider” to “narrower” — contrary to Defendants’ proposed construction, which would permit the bandwidth to go from narrower to wider. See, e.g., *SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1200 (Fed. Cir. 2013) (holding that the use of “i.e.,” which is Latin for “that is,”¹⁰ signals “an intent to define the word to which it refers,” and construing the claims consistent with that definition).

Plaintiff’s proposed construction is consistent with the specification, as discussed above, as well as the plain and ordinary meaning of the claim language, and

¹⁰ See, e.g., <<https://www.merriam-webster.com/dictionary/i.e.>>.

1 nothing in the prosecution history suggests a different interpretation. See Exs. [302–](#)
 2 [03](#), Prosecution Histories for the parent to the ’191 patent and for the ’191 patent; [Ex.](#)
 3 [528](#), O’Hara Expert Report, ¶¶ 57–70 (summarizing the prosecution histories).
 4 Plaintiff’s proposed construction is also consistent with the extrinsic evidence, as
 5 discussed in the previous section. See *supra* p. 12 (citing Exs. [5](#), [308–09](#), [528](#)).

6 Under Defendants’ proposal, the bandwidth of the **initial** data unit controls the
 7 bandwidth of **all** subsequent data units, because the initial data unit is always a
 8 “preceding” data unit according to Defendants. Thus, Defendants’ proposal
 9 effectively replaces the claim term “preceding” with the word “initial”: “wherein the
 10 available bandwidth parameters include a first available bandwidth parameter which is
 11 same as a transmit bandwidth parameter of the ~~preceding~~ **initial** data unit of the
 12 plurality of data units and a second available bandwidth parameter which is narrower
 13 than a transmit bandwidth parameter of the ~~preceding~~ **initial** data unit.” See, e.g., [Ex.](#)
 14 [311](#), Defendants’ IPR Petition, at 15 (arguing that a “preceding data unit”
 15 encompasses an “initial data unit”). Defendants’ interpretation is contrary to the
 16 express claim language (which says “preceding” not “initial”), as well as related claim
 17 language that **distinguishes** between the terms “preceding” and “initial.” See [Ex. 313](#),
 18 Grandparent to the ’191 patent, claim 5 (“wherein the transmit bandwidth parameter
 19 of the **preceding** data unit of the plurality of data units is the CTS bandwidth when the
 20 **preceding** data unit is an **initial** data unit of the plurality of data units”); [Ex. 528](#),
 21 O’Hara Expert Report, ¶ 171. Defendants’ proposed construction is also inconsistent
 22 with the specification, as explained above, and tellingly is not even supported by
 23 Defendants’ own expert, who opined on the phrase “preceding data unit” in isolation
 24 but not the claim language “select[ing] . . . a transmit bandwidth parameter of a non-
 25 initial data unit . . . which is narrower than a transmit bandwidth parameter of the
 26 preceding data unit,” which provides important context. See [Ex. 526](#), Shoemake
 27 Expert Report, ¶¶ 152–60; [Ex. 601](#), Shoemake Dep., at 53:1–16.

4. **“transmit, during the TXOP, a preceding data unit of a plurality of data units, wherein the preceding data unit comprises a control field indicating a selected bandwidth for the preceding data unit; transmit, during the TXOP, a preceding data unit of a plurality of data units, wherein the preceding data unit comprises a control field indicating a selected bandwidth for the preceding data unit”**

Claim 16: “transmit, during the TXOP, a preceding data unit of a plurality of data units, wherein the preceding data unit comprises a control field indicating a selected bandwidth for the preceding data unit; transmit, during the TXOP, a preceding data unit of a plurality of data units, wherein the preceding data unit comprises a control field indicating a selected bandwidth for the preceding data unit”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
“transmit, during the TXOP, a preceding data unit of a plurality of data units, wherein the preceding data unit comprises a control field indicating a selected bandwidth for the preceding data unit” (not indefinite)	<i>Indefinite.</i> The claimed transmission of two preceding data units renders it indefinite which “preceding data unit” is being referred to in subsequent limitations.

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-39 to -40.

As shown above, claim 16 as printed in the patent repeats the exact same limitation twice. That apparently was a typo, which neither the applicants nor the Examiner noticed during prosecution. See [Ex. 528](#), O’Hara Report, ¶ 66 (citing [Ex. 303](#), ’191 prosecution history, at LG-HISENSE00029310). In any event, the proper construction of the repeated limitation is the same as if the limitation had only been written once, see [id.](#) ¶¶ 137–51, for at least two reasons.

First, under the normal rules of claim construction, it is clear from the specification that there is only one “preceding” data unit for each “non-initial” data unit, as discussed above, *supra* pp. 11–16, and thus even though claim 16 repeats the limitation “transmit . . . a preceding data unit,” a person of ordinary skill would understand there is still just one claimed “preceding” data unit that is transmitted. See [Ex. 528](#), O’Hara Expert Report, ¶¶ 138–46. Simply put, the words are repeated, but

1 the repeated words refer to the same thing. Nothing in the prosecution history
 2 suggests otherwise. See [id.](#) ¶¶ 145, 147. To the contrary, the prosecution history
 3 suggests the repeated limitation was simply a typo. [Id.](#)

4 Second, and independent of the first argument, the Court is permitted to correct
 5 obvious typographical errors like the one here: “[A] district court can correct a patent
 6 only if (1) the correction is not subject to reasonable debate based on consideration of
 7 the claim language and the specification and (2) the prosecution history does not
 8 suggest a different interpretation of the claims.” *CBT Flint Partners, LLC v. Return*
 9 *Path, Inc.*, 654 F.3d 1353, 1358 (Fed. Cir. 2011) (reversing summary judgment of
 10 indefiniteness and correcting claim language). That test is easily met here. See [Ex.](#)
 11 [528](#), O’Hara Expert Report, ¶¶ 147–48. As discussed above, the specification makes
 12 clear that there is only one “preceding” data unit for each “non-initial” data unit, and
 13 the prosecution history does not suggest a different interpretation. [Id.](#)

14 Defendants argue the repeated limitation renders the claim indefinite. See [Ex.](#)
 15 [501](#), Defendants’ Invalidity Contentions, at 43:1–44:5. But Defendants’ argument is
 16 based on a contrived hypothetical of having a first “preceding data unit” of 40 MHz
 17 and a subsequent “preceding data unit” of 20MHz, which makes no sense since it calls
 18 a subsequent unit “preceding,” and is also directly contrary to the specification of the
 19 ’191 patent which requires the subsequent data unit to have a bandwidth that is the
 20 same or narrower than the preceding one, as discussed above, not broader as in
 21 Defendants’ hypothetical. As Defendants admit, their hypothetical is not disclosed in
 22 the ’191 patent. See [id.](#) Neither is that hypothetical claimed in claim 16. Tellingly,
 23 Defendants’ own expert did not provide any opinions agreeing with Defendants’
 24 position, see generally [Ex. 526](#), and Defendants’ expert had no trouble understanding
 25 claim 16 in his expert report to the Patent Office, see [Ex. 312A](#), ¶¶ 265–71, where he
 26 was required to “us[e] the same claim construction standard” as here, 37 C.F.R.
 27 § 42.100(b). That is objective evidence that claim 16 “inform[s] those skilled in the
 28 art about the scope of the invention with reasonable certainty” and thus is **not**

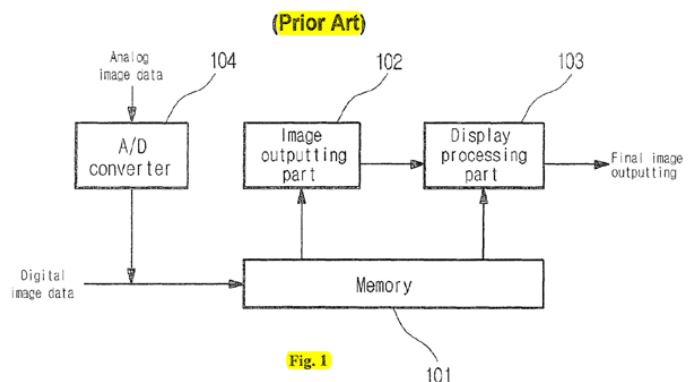
indefinite. *See, e.g., Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1384 (Fed. Cir. 2015) (reversing and finding claims not indefinite); accord Ex. 528, O'Hara Expert Report, ¶¶ 149–51.

V. U.S. PATENT NO. 7,839,452¹¹

A. Summary of patent and level of ordinary skill

The '452 patent was effectively filed on August 8, 2000. *See Ex. 4*. The patent is directed to “an image display device in a digital TV.” *Id.* at 1:16–:17. At the time, “many people believe[d] that a digital revolution [wa]s taking place.” *Id.* at 1:21–:27. For example, digital TVs were being developed with video compression techniques like MPEG which allowed increasing the number of broadcasting channels and improving image quality, including displaying video images with higher resolutions. *Id.* at 1:38–:55; 2:54–:58.

The '452 patent addresses a specific problem for digital TVs: receiving broadcast data in text format, e.g., program information, and efficiently displaying this information on the screen at the proper resolution. *Id.* at 2:4–:11, 3:44–:46. The prior-art solution involved memory (101) to store video image data and text data converted into bit map data, and a display processing part (103) to mix the bit maps of the image data and the text data and to output the final image on a predetermined display screen. *Id.* at 2:23–:45 & fig.1 (reprinted above with yellow highlighting); *cf. id.* fig.4. The '452 patent explains that “[t]o provide the various resolution as mentioned above, the image data and the text data should be convertible

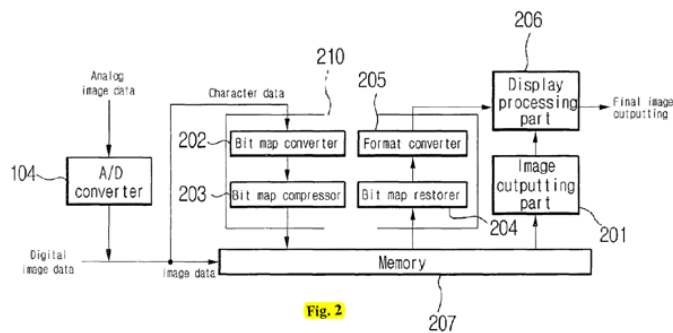


¹¹ A text-searchable version of the '452 patent, Ex. 4, is available at <http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=7839452>.

1 according to variation of the resolution.” *Id.* at 2:59–:61. To handle the varying
 2 resolution for the text data, the prior-art solution required storing multiple bitmaps
 3 with different resolutions. *Id.* at 2:66–3:21. The use of multiple bitmaps, however,
 4 required a large memory space. *Id.* at 3:22–:36.

5 The solution disclosed by the ’452 patent, in contrast to the prior art, “is capable
 6 of converting into various kinds of resolution by using single bit map data in the
 7 digital TV.” *Id.* at 1:15–:18. In

8 particular, the ’452 patent
 9 discloses “a data processing part
 10 for executing bit map
 11 conversion, compression,
 12 restoration and format-



13 conversion for text data.” *Id.* at 3:59–4:7 & fig.2 (reprinted above with yellow
 14 highlighting). The bit map converter 202 converts the received text data which is not
 15 bit map data into bit map data. *Id.* at 5:42–:64. The bit map compressor 203
 16 compresses that bit map data before storing it into memory. *Id.* at 5:65–6:15. The bit
 17 map decompressor 204 reads that compressed data from the memory and restores the
 18 original bit map data. *Id.* at 6:16–:22. The format converter 205 adjusts the resolution
 19 of the restored bit map data to correspond to the resolution of the display. *Id.* at 6:23–
 20 :29. “[T]herefore, the format conversion of the format converter 205 can display
 21 various resolution with a few number of bit map data, and the memory space occupied
 22 by the bit map data can be considerably reduced.” *Id.* at 6:36–:39.

23 For purposes of construing the ’452 patent, Plaintiff contends that a person of
 24 ordinary skill in the art as of August 8, 2000, would have had at least a bachelor’s
 25 degree in electrical engineering, computer science, or computer engineering, and at
 26 least two years of experience working in the field of display technology. See *Ex. 415*,
 27 Hart Expert Report, ¶¶ 74–75; *Ex. 602*, Havlicek Dep., at 48:13–49:7 (similar).

B. Disputed terms

1. “bit map conversion” / “a bit map converter” / “convert[s] the text data into [the] bit map data”

Claims 1, 2, 12, 20: “bit map conversion” / “a bit map converter” / “convert[s] the text data into [the] bit map data”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
The terms “[execute] bit map conversion,” “a bit map converter,” and “convert[s] the text data into [the] bit map data” are not indefinite and, in context, require: converting text data which is not bit map data into bit map data	“Convert text data into bitmap data”

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-44 to -47.

The parties agree that these related terms require converting text data into bit map data. The only dispute is whether this conversion is applied only to text data that is not already bit map data, as Plaintiff proposes, or includes converting text data which is already a bit map into another bit map, as Defendants’ proposal allows.

Defendants’ proposed construction improperly conflates the claim term “bit map conversion” (and its variants) with the claim term “format-conversion” (and its variants) discussed in the next section. Both experts agree that the language of the claims is clear in light of the specification. See, e.g., [Ex. 410](#), Havlicek Declaration, ¶ 53 (“The language of the challenged claims is clear to a [person of ordinary skill in the art] and is readily understood in light of the description in the patent and the prosecution history, even though some of the terminology used is not conventional in the art.”); [Ex. 415](#), Hart Expert Report, ¶ 103 (“I agree with Dr. Havlicek on this point.”). And the clear claim language differentiates between two types of “conversion”: “bit map conversion” and “format-conversion.” See, e.g., [Ex. 4](#), ’452 patent, claims 1, 12, and 20. “Format-conversion,” as discussed in the next section, refers to adjusting the resolution of the bit map, meaning it converts one bit map into another bit map with a different resolution. See *infra* pp. 23–24.

1 In contrast to “format-conversion,” “bit map conversion” is limited to
 2 converting text data which is not already bit map data into bit map data. Claims 5 and
 3 14 expressly address the situation where the text data includes bit map data and
 4 provide that “the bit map converter converts the text data into the bit map data, if it is
 5 determined that the text data is not the bit map data.” See [Ex. 4](#), ’452 patent, claims 5
 6 and 14. Similarly, claims 6 and 15 provide that “the bit map converter bypasses the
 7 text data, if it is determined that the text data is the bit map data.” *Id.* claims 6 and
 8 15.¹² The ’452 specification explains that if “the text data exists as the bit map data,
 9 there is no need for an additional process of converting the text data into the bit map
 10 data.” *Id.* at 5:54–:58. Thus, contrary to Defendants’ proposal, the ’452 patent
 11 expressly teaches that “bit map conversion” is not performed on text data which is
 12 already a bit map.

13 The rest of the specification further supports that the “bit map converter” only
 14 converts text data which is not already bit map data into bit map data. See, e.g., *id.* at
 15 4:18–:21 (“The bit map converter converts the text data into the bit map data, if it is
 16 determined that the text data is not the bit map data and bypasses the text data, if it is
 17 determined that the text is the bit map data.”); *id.* at 7:21–:26 (“In other words, if it is
 18 determined that the text data is not the bit map data, the bit map converter 202
 19 converts the text data into the bit map data, using one of the first bit map data and the
 20 second bit map data stored in the memory 207. If it is determined that the text data is
 21 the bit map data, however, the bit map converter 202 bypasses the text data.”).
 22
 23

24 ¹² Although claims 5–6 and 14–15 are dependent claims, they do not narrow or
 25 further define the term “bit map conversion” in the independent claims, but instead
 26 add other limitations. In particular, claims 5–6 and 14–15 add limitations “if it is
 27 determined” in claims 2 and 12 that the “text data is the bit map data.” According to
 28 claims 5–6 and 14–15, what happens in that situation is that the “bit map conversion”
 in the independent claims only converts text data which is not already bit map data
 into bit map data, as Plaintiff proposes.

2. **“format-conversion” / “converted in format” / “a format converter” / “convert the format of the . . . bit map data to correspond with display resolution”**

Claims 1, 3, 12, 20: “format-conversion” / “converted in format” / “a format converter” / “convert the format of the . . . bit map data to correspond with display resolution”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
The terms “format-conversion [for text data to be displayed on the display],” “converted in format,” “a format converter,” and “convert the format of the . . . bit map data to correspond to with display resolution”, in context, require: adjusting the resolution of the bit map data to correspond to the resolution of the display	“Convert bit map data [to correspond to a display resolution]”

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-44 to -47.

The parties agree that “format-conversion” (and its variants) acts on bit map data as its input, and that the result of the “conversion” corresponds to a display resolution. The proper construction, however, does not permit conversion to *any* arbitrary display resolution, but rather *the* resolution of “the display” previously recited in the preamble. This is accomplished by adjusting the resolution of the bit map data, consistent with Plaintiff’s proposal.

For example, the preamble of claim 1 recites a “digital television having *a display*” and requires “format-conversion for text data to be displayed on *the display*.” See [Ex. 4](#), ’452 patent, claim 1. The term “the display” refers back to “a display” of the digital television recited in the preamble. Thus, the claimed “format-conversion” acts on a bit map and results in another bitmap which is specifically formatted to be displayed on *the* display of the digital television (not any arbitrary display resolution).

The specification confirms that this “format-conversion” requires adjusting the resolution of the bit map data to correspond to the resolution of the display (not any arbitrary display resolution). For example, the ’452 patent explains that the prior art

1 “does not have any function of converting the text data into the display format
2 *according to the variation of resolution*” and “has to store the *bit map data*
3 *corresponding to the kinds of the resolution*, in order to display the image according to
4 each resolution.” *Id.* at 2:62–:66, 3:29–:33. Instead of using multiple bit maps for
5 different resolutions as in the prior art, the claimed “format-conversion” “adjust[s] the
6 resolution” in the “horizontal and vertical directions” to correspond to “*the* display
7 resolution.” *Id.* at 4:21–:24; *see also id.* at 6:23–:29.

8 The ’452 patent explains in detail how this “format-conversion” works with
9 reference to specific examples that adjust the resolution in the horizontal and vertical
10 directions to correspond to the display resolution. *Id.* at 7:41–:44 (“In this case, the
11 decompressed bit map data is converted in format by means of the format converter
12 205, such that the bit map data corresponds to the predetermined display resolution.”).
13 For example, the ’452 patent discloses how the resolution of a single bit map (e.g.,
14 720x480) can be adjusted in different ways depending on the resolution of the display
15 (e.g., a display resolution of 1280x720 requires “having [the bit map’s] horizontal
16 direction increased by 1.78 times and the vertical direction increased by 1.5 times”;
17 and a display resolution of 1920x1080 requires “having the [bit map’s] horizontal
18 direction increased by 2.67 times and the vertical direction increased by 2.25 times”).
19 *Id.* at 7:59–:61, 8:17–:24.

20 Plaintiff’s proposed construction is consistent with the understanding of a
21 person of ordinary skill and also supported by the report of an expert in the field. *See*
22 *Ex. 415*, Hart Expert Report, ¶¶ 91–98.

3. “an arbitrary receiving part”

Claim 1: “an arbitrary receiving part”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
The term “an arbitrary receiving part” is not indefinite and has its plain and ordinary meaning which, in context, refers to: a receiver of a digital or analog broadcast from any source	“Part for receiving analog image data”

See Ex. 1, Joint Claim Construction and Prehearing Statement, at A-47 to -48.

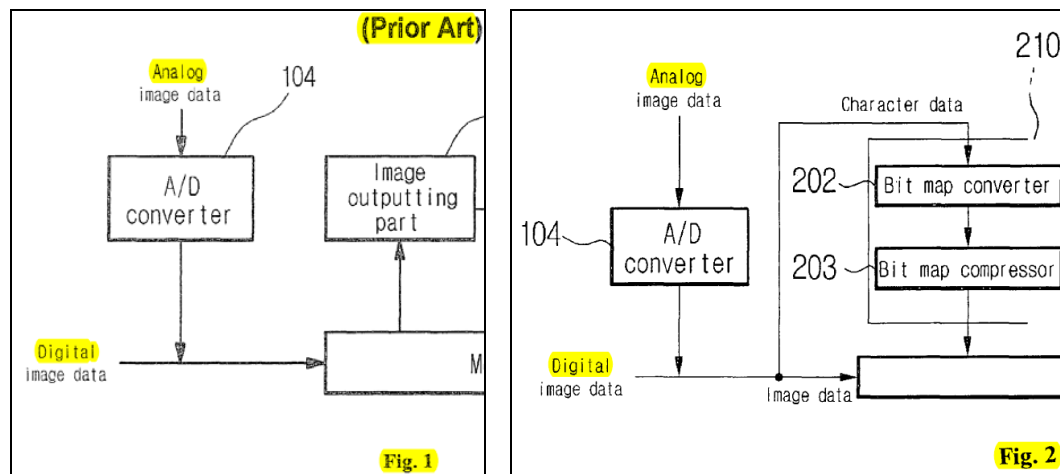
Defendants previously asserted that “an arbitrary receiving part” is indefinite, see Ex. 501, Defendants’ Invalidity Contentions, at 21:19–22:2, but Defendants appear to have dropped that contention in favor of their proposed construction limiting the term to only **analog** image data.¹³ Defendants’ proposed construction is incorrect because it excludes receiving **digital** data.¹⁴ Defendants’ proposal directly contradicts the claim language, which states that the “arbitrary receiving part” is for a “**digital** television.” Ex. 4, ’452 patent, claim 1. Defendants’ proposal also excludes the preferred embodiment, which is “rarely, if ever, correct.” *Duncan Parking*, 914 F.3d at 1364. For example, the Summary of the Invention explains that image data is “inputted from an arbitrary receiving part” which “receive[s] one of **digital** image data **and analog** image data.” Ex. 4, ’452 patent, at 4:1–:3. The Detailed Description of the Preferred Embodiments similarly explains that the claimed “arbitrary receiving part” may receive both analog and digital broadcasts. In describing the embodiment

¹³ To the extent Defendants still contend the term is indefinite, they are incorrect because the ’452 patent provides “reasonable certainty” about the meaning of the term with numerous explanations in the specification, as discussed below. See, e.g., *Nevro Corp. v. Boston Sci. Corp.*, 955 F.3d 35, 39–40 (Fed. Cir. 2020) (reversing finding of indefiniteness because “the patents provide reasonable certainty about the claimed inventions’ scope”).

¹⁴ Defendants’ proposed construction is an obvious attempt to avoid infringement on the basis that the accused products (digital televisions) do not receive analog data. See, e.g., Compl. Ex. 4 at 1 [ECF No. 1-4]. The United States outlawed most analog television broadcasts over a decade ago. See, e.g., <https://en.wikipedia.org/wiki/Digital_television_transition_in_the_United_States>.

of Figure 2, the specification explains that “image data [is] inputted from the arbitrary receiving part (which is not shown)” and “the receiving part can receive one of **digital** image data **and analog** image data.” *Id.* at 6:40–:48.

In addition, a person of ordinary skill reading the Background of the Invention would understand that “an arbitrary receiving part” can receive either digital or analog broadcasts: “the conventionally developed image display device in the digital TV receives each of the text data and image data of **an arbitrary digital broadcasting**” and “may receive **analog broadcasting**, in addition to the digital broadcasting.” *Id.* at 2:23–:28, 2:46–:53. The patent notes that sources of digital and analog broadcasts are numerous, such as “public wave broadcasting, cable broadcasting and video on demand at the digital TV.” *Id.* at 2:23–:28. The patent indicates that the “arbitrary receiving part” in the claimed invention (as shown in Figure 2 below on the right, with yellow highlighting) is no different than the “arbitrary receiving part” in the prior art (as shown in Figure 1 below on the left, with yellow highlighting) with respect to the ability to receive both analog and digital data:



The extrinsic evidence further supports Plaintiff’s construction. The ATSC A/65 standard, which was published in May 2000, before the effective filing date of the ’452 patent, was a standard for **digital** televisions receiving **digital** broadcasts. See, e.g., [Ex. 421](#), ATSC A/65 standard, at LG-HISENSE00049723 (“Under the

adopted ATSC standard for **digital** TV around 3 or 4 **digital** TV channels can be safely supported in a single physical channel without congestion.”); *see also* [Ex. 418](#), Sarnoff presentation on ATSC (Apr. 8, 2000), at 7–9 (similar). Defendants’ expert agrees that this ATSC standard applies to digital televisions in the United States, and agrees that a digital television is a receiver. [Ex. 602](#), Havlicek Dep., at 143:22–144:10, 148:10–149:2. Thus, the extrinsic evidence, like the intrinsic evidence, confirms that “an arbitrary receiving part” for a “digital television,” as in claim 1 of the ’452 patent, would not be limited to receiving only analog image data, as proposed by Defendants.

4. **“a display processing part configured to mix image data read from the image outputting part and the bit map data converted in format by the data processing part”**

Claim 1: “a display processing part configured to mix image data read from the image outputting part and the bit map data converted in format by the data processing part”

<u>Plaintiff’s Proposed Construction</u>	<u>Defendants’ Proposed Construction</u>
converted in format: adjusting the resolution of the bit map data to correspond to the resolution of the display No further construction is required, and the claim is not subject to 35 U.S.C. § 112 ¶ 6.	“display processing part configured to mix image data read from the image outputting part and the bit map data converted in format by the data processing part” is governed by 35 U.S.C. § 112(6) Function: mix image data read from the image outputting part and the bit map data converted in format by the data processing part Corresponding structure: the only structure that allegedly performs this function is itself defined functionally, therefore no structure is disclosed as required under 35 U.S.C. § 112 ¶ 6. Therefore the claim is invalid.

See [Ex. 1](#), Joint Claim Construction and Prehearing Statement, at A-50 to -51.

The construction for “converted in format” is provided in the section above. The primary dispute here is whether § 112, ¶ 6 applies. This term does not include the

word “means,” which “creates a rebuttable presumption that § 112, ¶ 6 does **not** apply.” *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018). Furthermore, Defendants cannot overcome this presumption because the words of this claim were well understood to refer to a definite structure. See [Ex. 415](#), Hart Expert Report, ¶¶ 77–90; *Zeroclick*, 891 F.3d at 1007.

For example, Figure 1 is captioned “Prior Art” and “illustrates a conventional image display device in a digital TV” having “a display processing part 103.” See [Ex. 4](#), ’452 patent, at 2:12–:19 & fig.1; see also [Ex. 415](#), Hart Expert Report, ¶¶ 78–80. The inventive digital television of the ’452 patent, as illustrated in Figures 2–3, also uses such a “display processing part” 206 and 306. See [Ex. 4](#), ’452 patent, at 5:22–:24, 6:60–7:6, 8:35–:37, 9:4–:6 & figs.2–3; see also [Ex. 415](#), Hart Expert Report, ¶¶ 81–82. As Defendants’ expert admits, the “display processing parts” in Figures 1, 2, and 3 all function in a “substantially similar . . . way.” [Ex. 602](#), Havlicek Dep., at 61:20–62:1. The ’452 patent explains that “[a] method of mixing the image data and the bit map data in the **display processing part** 206 **is well known**, and an explanation of it will be excluded in this detailed description for the sake of brevity.” [Ex. 4](#), ’452 patent, at 7:3–:6. Omitting unnecessary details in the ’452 patent about the “display processing part” was not only permissible given that it was well known, it was actively encouraged by the Federal Circuit and Patent Office: A “patent need not teach, and **preferably omits**, what is well known in the art.” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 959 F.3d 1091, 1102 (Fed. Cir. 2020); accord MPEP § 2164.01, at 2100-129 (7th ed. rev. 1, Feb. 2000), available at https://www.uspto.gov/web/offices/pac/mpep/old/E7R1_2100.pdf.

Furthermore, as explained by Plaintiff’s expert Dr. Hart, a “display processing part” referred to a well-known part of digital televisions which processed digital images for outputting those images on a display. See [Ex. 415](#), Hart Expert Report, ¶¶ 82–90. For example, a textbook published years before the effective filing date of the ’452 patent describes several examples of known structures for display processing

1 corresponding to the claimed “display processing part.” The structural examples
 2 include Display-Processor Systems; graphics processors; video controllers; and
 3 commercially available examples such as Power Iris 4D/240GTX processor and
 4 Pixelworks’s PW164 “ImageProcessor.” See *id.* ¶¶ 83–88 (discussing [Ex. 403](#),
 5 *Computer Graphics* (2d ed. 1997), at LG-HISENSE00050061, 77, 80–85, and [Ex.](#)
 6 [404](#), PixelWorks PW164 Image Processor). Tellingly, Defendants themselves have
 7 repeatedly asserted that a “display processing part” was a well-known structure in the
 8 prior art. See *id.* ¶¶ 99–110 (citing, e.g., Exs. [405](#), [406](#), [407](#)); [Ex. 601](#), Havlicek Dep.,
 9 at 73:19–75:18 (similar). And Defendants’ expert — before learning about this claim
 10 construction dispute — filed a declaration in the Patent Office asserting that a “display
 11 processing part” was well known, not indefinite as Defendants now contend. See [Ex.](#)
 12 [410A](#), Havlicek Declaration, ¶¶ 85–87, 169–70; [Ex. 602](#), Havlicek Dep., at 101:7–
 13 102:13 (“[W]hen I was developing the IPR declaration, I was not considering
 14 anything about the District Court case. I was not in the loop on that.”). That is
 15 significant, because the claims in an IPR must be “construed using the same claim
 16 construction standard” as in district court. 37 C.F.R. § 42.100(b). Defendants’ expert
 17 also agreed that even if a word gets its *name* from a function — such as “display,”
 18 “heating element,” or “diving gear” — the word can still refer to a well known
 19 structure. [Ex. 602](#), Havlicek Dep., at 55:11–58:16. The same is true for “display
 20 processing part.”

21 For at least these reasons, a person of ordinary skill in the art reading the ’452
 22 patent would understand that the term “display processing part” in the claimed
 23 invention referred to a definite structure well known in the prior art, as opposed to
 24 functional language subject to § 112, ¶ 6. See, e.g., *Samsung Elecs. Am., Inc. v.*
 25 *Prisua Eng’g Corp.*, 948 F.3d 1342, 1353–54 (Fed. Cir. 2020) (holding the claim term
 26 referred to structure, and § 112, ¶ 6 did not apply, because a “digital processing unit”
 27 would be understood as a reference to “an image processing device that *people in the*
 28 *art are generally familiar with*”); *Zeroclick*, 891 F.3d at 1007–08 (holding § 112, ¶ 6

1 does not apply where terms are “used not as generic terms or black box recitations of
2 structure or abstractions, but rather as specific references to conventional graphical
3 user interface programs or code, *existing in prior art* at the time of the inventions.”).

4 **VI. CONCLUSION**

5 For these reasons, the Court should adopt Plaintiff’s proposed constructions.
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1 Dated: August 12, 2020

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EXHIBITS

Note: All exhibits cited in this brief were attached to [ECF No. 71](#).

- [Ex. 1](#): Joint Claim Construction and Prehearing Statement (July 15, 2020) [ECF No. 69]
- [Ex. 1A](#): Emails with Defendants about the term “external device icon” in the ’311 patent (Aug. 7, 2020) (redacted)
- [Ex. 2](#): U.S. Patent No. 10,334,311 [LG-HISENSE00000040–70]
- [Ex. 3](#): U.S. Patent No. 9,271,191 [LG-HISENSE00000071–93]
- [Ex. 4](#): U.S. Patent No. 7,839,452 [LG-HISENSE00000094–106]
- [Ex. 5](#): IEEE Standard 802.11ac-2013 (Dec. 11, 2013)
- [Ex. 201](#): LGE PowerPoint (May 25, 2011) [LG-HISENSE00049289–97]
- [Ex. 202](#): Prosecution history for U.S. Patent No. 10,334,311 [LG-HISENSE00028467–978]
- [Ex. 203](#): Microsoft Computer Dictionary (4th ed. 1999) [HS-LGE00091518–20]
- [Ex. 204](#): Macintosh Human Interface Guidelines (1992) [HS-LGE00091529–46]
- [Ex. 205](#): Computer Desktop Encyclopedia (9th ed. 2001) [HS-LGE00091551–53]
- [Ex. 206](#): Webster’s New World College Dictionary (4th ed. 2000) [HS-LGE00091554–56]
- [Ex. 301](#): U.S. Patent No. 9,271,191 [LG-HISENSE00000071–93]
- [Ex. 302](#): Prosecution history for U.S. Patent Application No. 14/186,572 [LG-HISENSE00037971–8276]
- [Ex. 303](#): Prosecution history for U.S. Patent No. 9,271,191 [LG-HISENSE00029285–568]
- [Ex. 304](#): IEEE Standard 802.11-2007 (June 12, 2007) [HS-LGE00003571–4803]
- [Ex. 305](#): IEEE Standard 802.11n-2009 (Oct. 29, 2009) [HS-LGE00008377–912]
- [Ex. 306](#): IEEE 802.11-09/0992r11 (May 18, 2010) (802.11ac VHT framework) [LG-HISENSE00049034–42]
- [Ex. 307](#): Provisional Application No. 61/359,796 for U.S. Patent No. 9,271,191 (June 29, 2010) [LG-HISENSE00029025–70]
- [Ex. 308](#): IEEE 802.11-11/0081r1 (Jan. 17, 2011) [LG-HISENSE00048538–45]

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PLAINTIFF’S OPENING CLAIM CONSTRUCTION BRIEF
No. 2:19-cv-09474 JAK (Ex)

- 1 [Ex. 309](#): Merriam-Webster Online [LG-HISENSE00050095]
2 [Ex. 310](#): Chambers Concise Dictionary (2d ed. 2009) [HS-LGE00091547–50]
3 [Ex. 311](#): Defendants’ IPR Petition in IPR2020-01164 (June 23, 2020) (excerpts)
4 [Ex. 312](#): Defendants’ expert declaration by Matthew B. Shoemake, Ph.D. in
5 IPR2020-01164 (June 23, 2020) (excerpts)
6 [Ex. 312A](#): Defendants’ expert declaration by Matthew B. Shoemake, Ph.D. in
7 IPR2020-01164 (June 23, 2020) (complete)
8 [Ex. 313](#): U.S. Patent No. 8,699,442 [LG-HISENSE00037927–48]
9 [Ex. 314](#): Joint Claim Construction and Prehearing Statement (July 15, 2020) [ECF
10 No. 69]
11 [Ex. 317](#): Demonstrative used in the deposition of Robert O’Hara on the ’191 patent
12 (July 29, 2020)
13 [Ex. 318](#): Demonstrative used in the deposition of Robert O’Hara on the ’191 patent
14 (July 29, 2020)
15 [Ex. 401](#): U.S. Patent No. 7,839,452 [LG-HISENSE00000094–106]
16 [Ex. 402](#): Prosecution history for U.S. Patent No. 7,839,452 [LG-
17 HISENSE00029740–887]
18 [Ex. 403](#): Foley et al., *Computer Graphics* (2d ed. 1997) [LG-HISENSE00050051–
19 85]
20 [Ex. 404](#): PixelWorks Note (Aug. 16, 1999) [LG-HISENSE00050086–87]
21 [Ex. 405](#): Defendants’ Invalidity Contentions, Ex. A-02 (“Abe”) (excerpts)
22 [Ex. 406](#): Defendants’ Invalidity Contentions, Ex. A-03 (“Tsukagoshi ’256”) (excerpts)
23 [Ex. 407](#): Defendants’ Invalidity Contentions, Ex. A-05 (“Mitani”) (excerpts)
24 [Ex. 408](#): IEEE Dictionary (7th ed. 2000) [HS-LGE00091521–28]
25 [Ex. 409](#): Defendants’ IPR Petition in IPR2020-01208 (June 23, 2020) (excerpts)
26 [Ex. 410](#): Defendants’ expert declaration by Joseph P. Havlicek, Ph.D. in IPR2020-
27 01208 (June 23, 2020) (excerpts)
28 [Ex. 410A](#): Defendants’ expert declaration by Joseph P. Havlicek, Ph.D. in IPR2020-
01208 (June 23, 2020) (complete)
[Ex. 411](#): Joint Claim Construction and Prehearing Statement (July 15, 2020) [ECF
No. 69]
[Ex. 413](#): Defendants’ expert declaration of Dr. Joseph Havlicek regarding claim
construction of U.S. Patent No. 7,839,452 (July 15, 2020)

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PLAINTIFF’S OPENING CLAIM CONSTRUCTION BRIEF
No. 2:19-cv-09474 JAK (Ex)

- 1 [Ex. 414](#): CV of Joseph P. Havlicek, Ph.D.
- 2 [Ex. 415](#): Plaintiff's expert report John C. Hart re: claim construction of U.S. Patent
- 3 No. 7,839,452 (July 15, 2020)
- 4 [Ex. 415A](#): CV of John C. Hart, Ph.D. (Ex. A to Hart report)
- 5 [Ex. 415B](#): Materials considered by John C. Hart (Ex. B to Hart report)
- 6 [Ex. 416](#): ATSC Standard A/69 (June 25, 2002)
- 7 [Ex. 417](#): Translation of Japanese Patent Publication JP-9-275563 (Oku) (Oct. 21,
- 8 1997)
- 9 [Ex. 418](#): Sarnoff presentation on ATSC (Apr. 8, 2000)
- 10 [Ex. 419](#): ATSC Standard A/52 (Dec. 20, 1995) [LG-HISENSE00049298-437]
- 11 [Ex. 420](#): ATSC Standard A/53 (Sept. 16, 1995) [LG-HISENSE00049438-511]
- 12 [Ex. 421](#): ATSC Standard A/65 (Rev. A) (May 31, 2000) [LG-HISENSE00049650-
- 13 789]
- 14 [Ex. 422](#): U.S. Patent 6,456,340 (filed Apr. 19, 1999)
- 15 [Ex. 501](#): Defendants' Invalidity Contentions (Apr. 27, 2020)
- 16 [Ex. 526](#): Defendants' declaration of Dr. Matthew B. Shoemake regarding claim
- 17 construction of U.S. Patent No. 9,271,191 (July 15, 2020)
- 18 [Ex. 527](#): CV of Matthew B. Shoemake, Ph.D.
- 19 [Ex. 528](#): Plaintiff's expert report of Robert O'Hara re: claim construction of U.S.
- 20 Patent No. 9,271,191 (July 15, 2020)
- 21 [Ex. 528A](#): CV of Robert O'Hara (Ex. A to O'Hara report)
- 22 [Ex. 528B](#): Materials considered by Robert O'Hara (Ex. B to O'Hara report)
- 23 [Ex. 529](#): WO 2012/002705 A2 [LG-HISENSE00037268-301]
- 24 [Ex. 601](#): Deposition of Matthew B. Shoemake, Ph.D. (July 24, 2020)
- 25 [Ex. 602](#): Deposition of Joseph P. Havlicek, Ph.D. (July 27, 2020)
- 26 [Ex. 603](#): Deposition of Robert O'Hara (July 29, 2020)
- 27
- 28