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Paper 9
Date: March 20, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD.,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

IPR2024-01407
Patent 9,179,359 B2

Before HYUN J. JUNG, SCOTT B. HOWARD, and
STEPHEN E. BELISLE, *Administrative Patent Judges.*

JUNG, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

GOOGLE EXHIBIT 1045
GOOGLE v. HEADWATER
IPR2026-00138

I. INTRODUCTION

A. Background and Summary

Samsung Electronics Co. Ltd. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting institution of an *inter partes* review of claims 1–29 of U.S. Patent No. 9,179,359 B2 (Ex. 1001, "the '359 patent"). Headwater Research LLC ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp."). Patent Owner also disclaimed claims 1–25 and 27–29 of the '359 patent, leaving only dependent claim 26 at issue in this proceeding. Ex. 3001 (Disclaimer, dated Jan. 2, 2025); *see also* Prelim. Resp. 1 ("Patent Owner will disclaim all claims of the '359 patent except for claim 26.").

Under 35 U.S.C. § 314 (2024), an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." Upon consideration of the record at this stage and for the reasons explained below, we determine that Petitioner has shown a reasonable likelihood of prevailing with respect to the only remaining claim.

Thus, we institute an *inter partes* review of claim 26 of the '359 patent on all relevant challenges raised. 37 C.F.R. § 42.107(e) (2024) ("No *inter partes* review will be instituted based on disclaimed claims."), § 42.108(a) ("When instituting . . . review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim."); *see also SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

B. Real Parties in Interest

Petitioner identifies Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. as real parties in interest. Pet. 81. Patent Owner identifies itself as the real party in interest. Paper 3, 1.

C. Related Matter

The parties identify *Headwater Research LLC v. Samsung Electronics Co., Ltd.*, 2:23-cv-00641 (E.D. Tex.) as a related matter. Pet. 81; Paper 3, 1.

D. The '359 Patent (Ex. 1001)

The '359 patent issued on November 3, 2015 from an application filed on March 30, 2015 that is a continuation of several previously filed applications, the earliest of which was filed on March 2, 2009 and claims priority to several provisional applications, the earliest of which was filed on January 28, 2009. Ex. 1001, codes (22), (45), (60), (63), 1:9–29.

The Abstract of the '359 patent describes:

> A wireless end-user device has wireless wide-area network (WWAN) and wireless local-area network (WLAN) modems. One or more processors apply a WWAN-specific differential traffic control policy to Internet data service provided using the WWAN modem. Based on the applied policy, an application program interface (API) can indicate to particular applications that Internet data service available via the WWAN modem to other applications is not available to those particular applications.

Id. at code (57).

E. Remaining Challenged Claim

The '359 patent includes 29 claims, all of which Petitioner challenges and of which Patent Owner disclaimed claims 1–25 and 27–29. Claim 1, the only independent claim, and dependent claim 26 are below reproduced.

1. A wireless end-user device, comprising:

> a wireless wide area network (WWAN) modem to receive and transmit Internet data between the device and at least one WWAN when configured for and connected to the at least one WWAN;
>
> a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN; and
>
> one or more processors configured to apply a stored WWAN differential traffic control policy to Internet data service provided using the WWAN modem and the at least one WWAN, and indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy, wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application.
>
> 26. The wireless end-user device of claim 1, wherein the one or more processors are further configured to determine that the different application is an active application based on a user interaction with the different application.

Ex. 1001, 105:50–106:4, 108:11–14.

F. Asserted Prior Art and Proffered Testimonial Evidence

Petitioner identifies the following references as prior art in the asserted grounds of unpatentability:

Name	Reference	Exhibit
Freund	US 5,987,611, issued Nov. 16, 1999	1012
Shell	US 2004/0224668 A1, published Nov. 11, 2004	1005
Cole	US 2008/0080458 A1, published Apr. 3, 2008	1006
Montemurro	US 2009/0207817 A1, published Aug. 20, 2009	1009
Araujo	US 2009/0217065 A1, published Aug. 27, 2009	1008

Petitioner contends that "[t]he references are prior art under §§ 102(a), 102(b), and/or 102(e)."[1] Pet. 1–2. Petitioner also provides a Declaration of Dr. Kevin R. B. Butler. Ex. 1003. Patent Owner provides a Declaration of Mr. Erik de la Iglesia. Ex. 2010.

G. Asserted Grounds

Petitioner asserts that claims 1–29 are unpatentable on several grounds, and of those, Petitioner contends that claim 26 is unpatentable on the following ground:

Claim Challenged	35 U.S.C. §	References/Basis
26	103(a)	Shell, Cole

Pet. 1. Petitioner's other grounds are directed to claims that Patent Owner has disclaimed. Pet. 1; Ex. 3001.

II. 35 U.S.C. § 314(a)

The parties dispute whether we should use our discretion to deny the Petition. Pet. 80–81; Prelim. Resp. 12–23.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) instructs us to consider whether to deny institution in certain circumstances when there is parallel district court litigation, upon consideration of six factors:

[1] The relevant sections of the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16, 2013. Because the '359 patent issued from an application filed before that date, our citations to 35 U.S.C. §§ 102 and 103 in this Decision are to their pre-AIA versions. *See also* Pet. 1 (stating that "[t]he '359 patent claims priority to several provisional applications as early as 1/28/2009 ('Critical Date')").

> 1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> 2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> 3. investment in the parallel proceeding by the court and the parties;
>
> 4. overlap between issues raised in the petition and in the parallel proceeding;
>
> 5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
>
> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

Fintiv, Paper 11 at 6.

A. Factor 1: Stay

According to Petitioner, "neither party has requested a stay in the co-pending litigation." Pet. 80. Patent Owner argues that a stay is unlikely to be granted, because of the progress in the litigation. Prelim. Resp. 14–15 (citing Ex. 2001 ("Docket Control Order" from related litigation), 1, 4–6).

Because the related litigation is not stayed and there is insufficient evidence that a stay may or may not be granted if trial is instituted, *Fintiv* factor 1 is neutral.

B. Factor 2: Proximity to Trial Date

Petitioner acknowledges that "[t]he Board will likely issue its Final Written Decision around March 2026, which is 5 months after the scheduled trial (10/6/2025)." Pet. 80 (citing Ex. 1051, 8; Ex. 1053 (Federal Court Management Statistics (Dec. 31, 2023)), 1). Patent Owner argues that (1) the expected trial date is consistent with the statistics for the Eastern District of Texas, (2) institution has been denied for less time between trial date and due date for a final written decision, and (3) Petitioner provides no

evidence that the trial will not proceed on the set date. Prelim. Resp. 15–19 (citing Pet. 80; Ex. 1051, 3, n.4, 8–9; Ex. 2001, 1; Ex. 2003 (Eastern District of Texas Case Management Statistics)).

Because the trial in the related litigation is set to start about five months before the due date for a final written decision in this proceeding, *Fintiv* factor 2 favors exercising our discretion to deny institution.

C. Factor 3: Investment in Parallel Proceeding

Petitioner argues that it "filed this Petition months ahead of the one-year time bar, while litigation is still in its early stages" and that "[b]eyond exchanging preliminary infringement/invalidity contentions, the parties and the District Court have yet to expend significant resources on invalidity." Pet. 80. Patent Owner argues that, by the time the institution is decided, claim construction briefing will be completed, a "*Markman* hearing will be a week away," and fact discovery will be "less than two months from completion." Prelim. Resp. 19 (citing Ex. 2001, 4–5). Patent Owner also argues that Petitioner unduly delayed filing its Petition and offers no explanation for that delay. *Id.* (citing Pet. 82; Ex. 2004 ("Unopposed Motion for Extension of Time to Move, Answer or Otherwise Respond to Plaintiff's Complaint and Waiver of Foreign Service Requirement" from related litigation), 1; Ex. 2005 ("Order Granting Extension of Time to Respond to Complaint")).

The docket control order of the related proceeding indicates that a claim construction hearing is scheduled for April 4, 2025, fact discovery is scheduled to be completed by May 19, 2025, and expert discovery is to be completed by June 23, 2025. Ex. 2001, 4, 5.

Thus, the parties have expended significant effort on this case, but the claim construction hearing will not occur until after institution, and it is not

apparent that the district court has yet invested significant effort related to invalidity issues.

As for the timing of the Petition's filing, Patent Owner acknowledges that the Petition was filed "four months before the statutory deadline." Prelim. Resp. 22; *see also Fintiv*, Paper 11, 11 ("If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution . . . ."). The preliminary record does not make it clear if the timing of the Petition's filing imposed any unfair costs to Patent Owner. *See id.* (stating that "the parties should explain facts relevant to timing").

As a result, *Fintiv* factor 3 is neutral.

D. Factor 4: Overlap with Parallel Proceeding

Petitioner stipulates that it "agrees not to pursue any grounds raised in the IPRs, any grounds raised within Samsung's invalidity contentions that were raised or could have been raised in the IPRs, or any grounds Samsung could have reasonably raised before the PTAB, in this district court litigation or any parallel proceeding." Ex. 1054, 1. Petitioner's stipulation is similar to that provided in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A).

Patent Owner argues that, in related litigation, the same remaining claim (claim 26) is at issue, the same prior art has been asserted, and the same proposed combination has been presented. Prelim. Resp. 20–21.

Based on Petitioner's stipulation, we determine there would be no overlap between issues raised in the Petition and in the parallel proceeding, thereby saving the resources of the District Court. *Fintiv* factor 4, therefore, weighs strongly against exercising our discretion to deny institution.

E. Factor 5: Whether Petitioner and Defendant are the Same Party

The parties agree that Petitioner includes defendants in the parallel litigation. Pet. 81; Prelim. Resp. 21.

Because Petitioner and defendants in the related litigation are the same, *Fintiv* factor 5 weighs somewhat in favor of denying institution. *Fintiv*, Paper 11, 6.

F. Factor 6: Merits and Other Considerations

Petitioner argues that "the merits of this Petition are compelling." Pet. 81. Patent Owner argues that (1) Petitioner's arguments "suffer from significant weaknesses and gaps in proof," (2) "Petitioner unduly delayed in filing the Petition" with no explanation, and (3) a family member of Cole was submitted during original prosecution. Prelim. Resp. 22–23 (citing Ex. 1002 (excerpts from prosecution history), 177, 553; Ex. 1006, Figs. 1–11; Ex. 1051, 2–5; Ex. 2008, 1–11).

As discussed below, we determine on the present record that Petitioner's proposed combination of Shell and Cole shows a reasonable likelihood of demonstrating that claim 26 is unpatentable, so we do not agree that Petitioner's arguments "suffer from significant weaknesses and gaps in proof." *See Fintiv*, Paper 11, 15–16 (stating "there may be strengths or weaknesses regarding the merits that the Board considers as part of its balanced assessment").

Regarding the previously submitted reference related to Cole, Patent Owner does not explain adequately how the previous consideration of Cole relates to our discretion under § 314(a), and, even if Patent Owner did so, it insufficiently shows that the proposed combination was considered during prosecution. Prelim. Resp. 22–23; *see also Fintiv*, Paper 11, 16 ("The parties should explain whether [for example, considerations implicated by

35 U.S.C. § 325(d)] exist in their proceeding and the impact of those facts and circumstances on efficiency and integrity of the patent system.”).

As for the alleged delay in filing, Patent Owner acknowledges that the Petition was filed “four months before the statutory deadline,” (Prelim. Resp. 22) so, as discussed above for *Fintiv* factor 3, the timing of the Petition’s filing does not weigh in favor of or against exercising our discretion to deny the Petition.

In sum, on the facts of this proceeding, *Fintiv* factor 6 is neutral.

G. Conclusion on Fintiv Factors

Based on a holistic analysis of the *Fintiv* factors taking into consideration “whether efficiency and integrity of the system are best served by denying or instituting review” (*Fintiv*, Paper 11 at 6), we decline to exercise our discretion under 35 U.S.C. § 314(a) to deny institution of *inter partes* review.

III. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent [claim] it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

Petitioner contends that the challenged claims of the ’359 patent are unpatentable under § 103. Pet. 1. A claim is unpatentable under § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

B. Level of Ordinary Skill in the Art

Petitioner’s declarant opines that a person of ordinary skill in the art “would have had (1) at least a bachelor’s degree in computer science, computer engineering, electrical engineering, or a related field, and (2) at least two years of industry experience in services and application implementation in communication networks.” Ex. 1003 ¶ 15. The declarant also opines that “[a]dditional graduate education could substitute for professional experience, and vice versa.” *Id.*

“For purposes of [its] Preliminary Response, Patent Owner does not challenge that definition.” Prelim. Resp. 5 (citing Pet. 13 n.2; Ex. 1003 ¶ 15); *see also* Ex. 2010 ¶ 27 (stating “[f]or purposes of . . . my analysis, I do not disagree with this proposed level of skill in the art”). Based on the

preliminary record, we adopt the presently undisputed level of ordinary skill provided by Petitioner's declarant to determine whether there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition.

C. Claim Construction

In an *inter partes* review, the claims are construed

> using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

"Petitioner submits that no formal claim constructions are necessary" and "reserves the right to respond to any constructions offered by Patent Owner or adopted by the Board." Pet. 2. "Patent Owner agrees" that no formal claim constructions are necessary for purposes of its Preliminary Response. Prelim. Resp. 6 (citing Pet. 2).

At this stage, we do not need to interpret expressly any claim term. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. Asserted Obviousness of Claim 26 Based on Shell and Cole

1. Shell (Ex. 1005)

Shell "relates to increasing the level of automation when establishing and managing network connections" and "is particularly useful in mobile

devices for which available connection methods change frequently" and have "different wireless network adapters for connecting to home and corporate networks." Ex. 1005 ¶¶ 3, 13; *see also id.* ¶ 36 (describing implementation in "network computing environments" with "mobile telephones, PDAs, pagers, and the like" and in "distributed computing environments" where devices are linked by "wireless links").

Figure 1 of Shell is below reproduced.

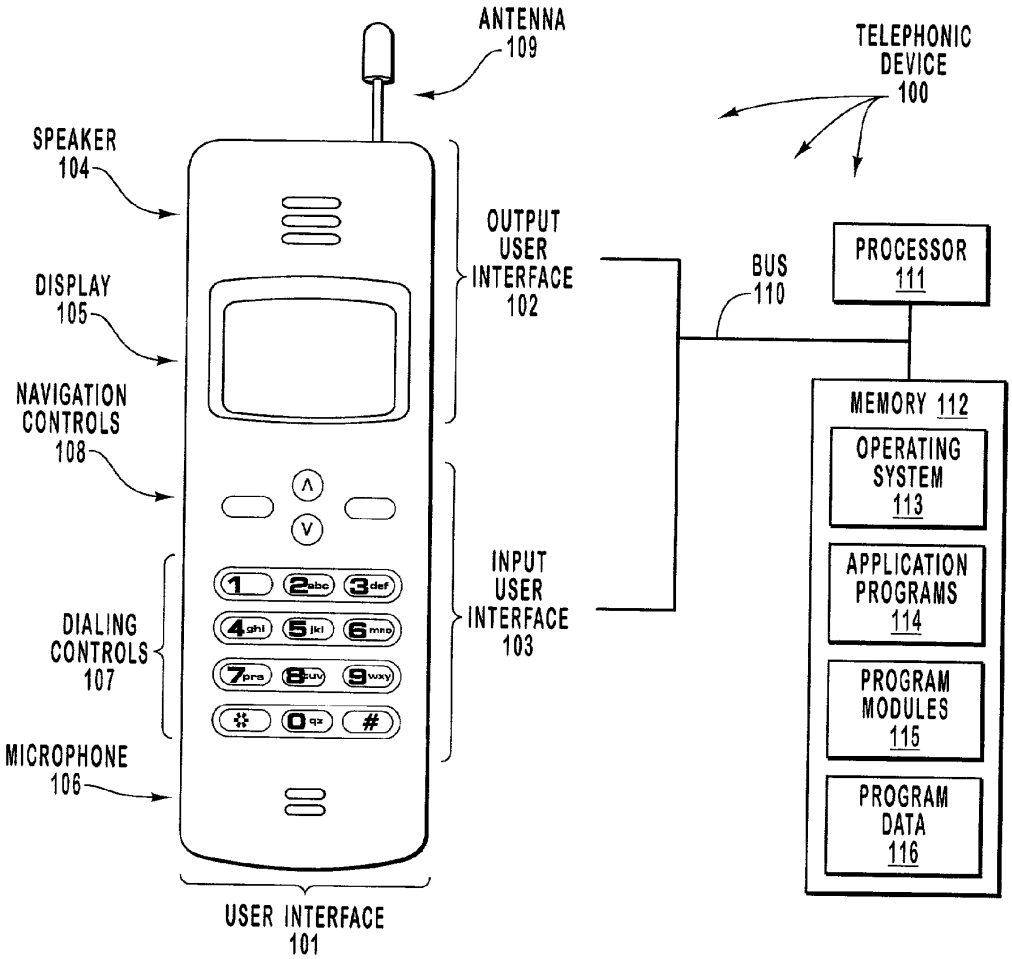

FIG. 1

Figure 1 shows "an example of a mobile computing device that provides a suitable operating environment" for Shell. Ex. 1005 ¶ 25. Telephonic device 100 includes processor 111 and memory 112. *Id.* ¶¶ 38, 40.

"During operation, an application included in a computing device may request access to a remote resource located in a destination network," and the "request may be received by a connection planner, which analyzes a variety of factors to determine the most appropriate connection method to connect to the destination network," such as available resources, priority of the request, and connection parameters. Ex. 1005 ¶ 33. "[C]onnection requests may be prioritized so that higher priority requests cause lower priority requests to release a connection method so it may be used by the higher priority request." *Id.* ¶ 13. "[F]or example, a voice call may be given higher [] priority over data calls that share the same modem." *Id.*; *see also id.* ¶ 57 (stating "[f]or example, voice requests may be assigned a higher priority than data requests"). As another example, "a request from an application that is currently active may be assigned a higher priority than a request from an application running in the background." *Id.*

"A connection manager . . . manages one or more connection service providers that may facilitate the creation of different types of network connections," and "may determine what connection method is most appropriate for establishing a connection at a particular time." Ex. 1005 ¶ 32. The connection manager can "consider a priority associated with a request." *Id.* ¶ 17. A "connection service provider associated with the connection manager may cause a system level Application Programmer Interface ('API') to create a connection from a local computing device to the destination network." *Id.* ¶ 33.

In one embodiment, "connection manager modules 210 and connection service provider modules 220 operate between application modules 200 and system level APIs 230" so as to "offer[] a level of abstraction" that "reduce[s] the programming complexity associated with

creating connections that utilize different APIs or utilize the same APIs in different manners." Ex. 1005 ¶¶ 22, 45, Fig. 2. "Connection planner 211 evaluates the available connection methods and selects a 'most appropriate' connection method to service a request." *Id.* ¶ 55.

"During operation, connection manager modules 210 may cause resources to be released from and allocated to connection methods" and "may notify application modules 200 of such changes." Ex. 1005 ¶ 92. "For example, application modules may be notified that a connection will be established, that a connection is currently active, that connection is being disconnected, that no connection is currently active, that a connection to a resource is blocked for some reason, or any other notification associated with the connection to resources." *Id.*

2. Cole (Ex. 1006)

Cole particularly relates "to a connection manager operable to implement a deferred configuration technique." Ex. 1006 ¶ 2. Cole describes "wireless connection schemes," such as "wireless local area network (WLAN) connection" and "wireless wide area network (WWAN) connection," and a user having to configure and manage "WLAN connection" and "WWAN (i.e., over a cellular network)" connection. *Id.* ¶¶ 3, 4. Cole also describes "communication management tools [that] typically employ various explicit rules or heuristics for making the connection choice," such as selecting "the connection having the highest bandwidth or highest signal strength." *Id.* ¶ 6.

Figure 2 of Cole is below reproduced.

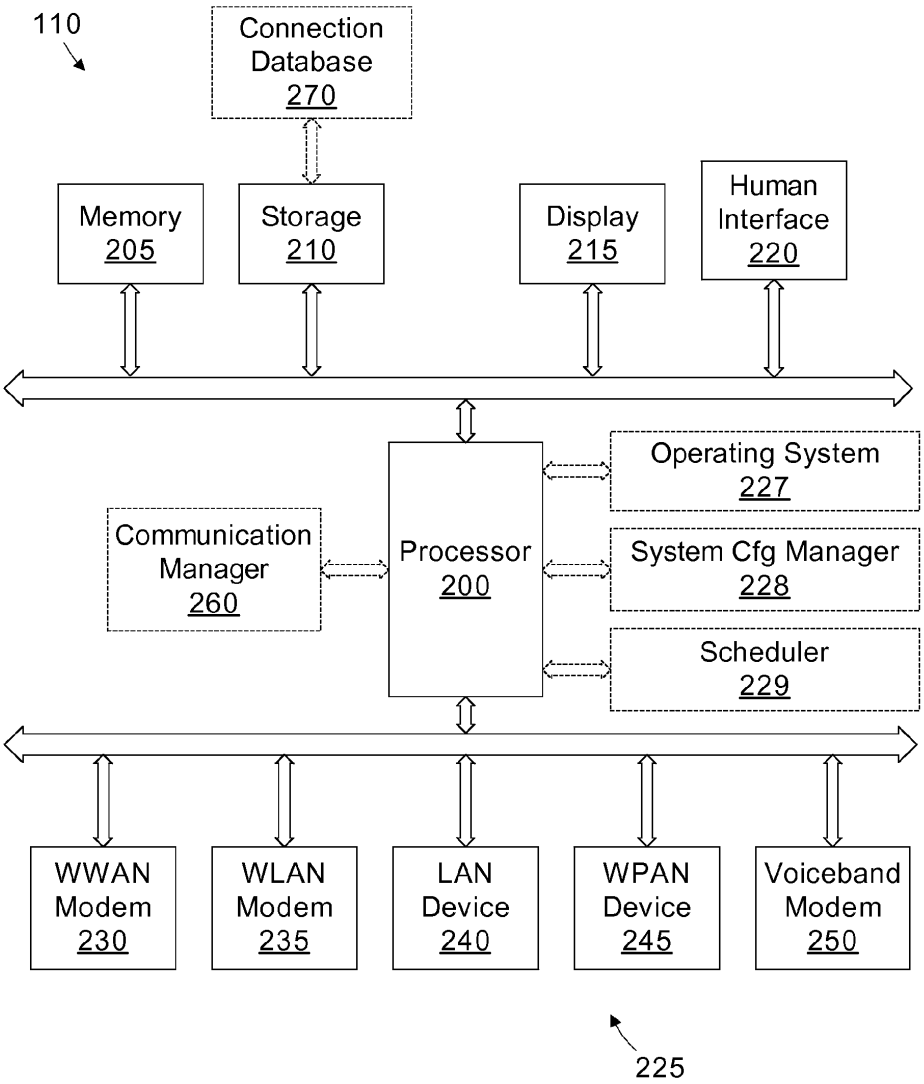

Figure 2

Figure 2 shows "a simplified block diagram of a mobile device." Ex. 1006 ¶ 18. Mobile device 110 includes processor 200 and communication interfaces 225, such as WWAN modem 230 and WLAN modem 235. *Id.* ¶¶ 34, 35; *see also id.* ¶ 31 (describing mobile device 110 interfacing with communication networks 130). Connection manager 260 can monitor connection times and bandwidth, "may monitor the available connections and mobile device state," and can "prompt the user when there is sufficient

bandwidth, battery, and communication capability" for a particular activity. *Id.* ¶¶ 38, 80. Connection manager 260 can determine if actions consuming bandwidth can be postponed, may postpone automatically certain background tasks, and can query the user to determine if an action should be postponed. *Id.* ¶ 85; *see also id.* ¶ 9 (describing "applications [that] may be classified as background applications"), ¶ 88 (describing the deferring of downloads of large files), ¶ 89 (describing prompting a user to complete synchronizing files after connecting to a LAN).

3. Independent Claim 1

Petitioner argues that, to the extent the preamble is limiting, Shell's telephonic device 100 that can run in a "suitable operating environment" and includes "a general-purpose computing device" with antenna 109 for "wireless capabilities" discloses "[a] wireless end-user device." Pet. 16–17 (citing Ex. 1003 ¶¶ 75–76; Ex. 1005 ¶¶ 36, 38, Fig. 1); *see also id.* at v (labeling the preamble "[1.pre]").

For "a wireless wide area network (WWAN) modem to receive and transmit Internet data between the device and at least one WWAN when configured for and connected to the at least one WWAN," Petitioner argues that Shell describes logic for accessing networks, thereby suggesting telephonic device 100 connects with a cellular network, i.e., a wide area network. Pet. 17 (citing Ex. 1003 ¶¶ 77–82; Ex. 1005 ¶ 55); *see also id.* at v (labeling the limitation "[1.1]"). Petitioner also argues that Cole describes WWAN modem 230 that can be for a mobile device for connecting to WWAN 130 in a public place. *Id.* at 17–18 (citing Ex. 1003 ¶ 77; Ex. 1006 ¶¶ 31, 35, 88, Fig. 2). According to Petitioner, Cole's modem configuration represents implementation details for Shell's telephonic device 100, and telephonic device 100 would incorporate WWAN modem 230 to

communicate data for Internet service activities and to maintain Internet connectivity by switching automatically to the most appropriate WWAN. *Id.* at 18–20 (citing Ex. 1003 ¶¶ 78–82; Ex. 1005 ¶¶ 6–8; Ex. 1006 ¶¶ 6, 31, 88; Ex. 1018 ¶¶ 95, 125).

For "a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN," Petitioner argues that Cole describes WLAN modem 235 for connecting to WLAN 140 and other communication networks 120 and that WLAN modem 235 can be a Wi-Fi connection. Pet. 20–22 (citing Ex. 1003 ¶ 83; Ex. 1006 ¶¶ 31, 35, 88, Fig. 2); *see also id.* at v (labeling the limitation "[1.2]"). Petitioner also argues that Cole's modem configuration represents implementation details for Shell's telephonic device 100, and that telephonic device 100 would incorporate WLAN modem 235 to handle the necessary network protocols, manage data for Internet service activities, and to maintain Internet connectivity by switching automatically to supported WLAN. *Id.* at 22–23 (citing Ex. 1003 ¶¶ 84–86; Ex. 1005 ¶¶ 6–8; Ex. 1006 ¶¶ 4, 6, 31, 38, 88; Ex. 1018 ¶¶ 95, 125).

For "one or more processors configured to apply a stored WWAN differential traffic control policy to Internet data service provided using the WWAN modem and the at least one WWAN," Petitioner argues that Shell's telephonic device 100 includes processor 111 and that Cole describes mobile device 110 with processor 200. Pet. 23–24 (citing Ex. 1003 ¶ 87; Ex. 1005 ¶¶ 40, Fig. 1; Ex. 1006 ¶¶ 15, 34, 91); *see also id.* at v (labeling the limitation "[1.3]"). Petitioner also argues that Shell discloses "'connection manager modules' regulating network access by applications on telephonic device 100" by, for example, "prioritizing connection requests, determining

an appropriate method for establishing a network connection, granting a connection access request, etc." *Id.* at 24–25 (citing Ex. 1003 ¶ 88; Ex. 1005 ¶¶ 13, 17, 32; Ex. 1006 ¶¶ 9, 80, 85).

According to Petitioner, one of ordinary skill in the art would have recognized that Shell's handling of network connection requests "encompasses examples of applying a ***traffic control policy*** described in the '359 patent, such as 'block/allow settings,' 'throttle settings,' 'adaptive throttle settings,' and 'QoS class settings'" and the uses of such traffic control policies. Pet. 25–27 (citing Ex. 1001, 85:59–86:24; Ex. 1003 ¶¶ 89–91; Ex. 1005 ¶¶ 13, 33, 57, Fig. 5A). Petitioner also argues that one of ordinary skill in the art would have found it obvious that the disclosures in Shell and Cole about regulating network access on WWAN networks, such as prioritizing connections for applications and load monitoring, provide a WWAN differential traffic control policy. *Id.* at 27–29 (citing Ex. 1003 ¶¶ 92, 93; Ex. 1005 ¶¶ 13, 55, 92; Ex. 1006 ¶¶ 88, 89).

Regarding one or more processors configured to "indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy," Petitioner argues that Shell discloses connection manager modules handling network access, providing notification data to an application module regarding a network connection request, and providing connection specific parameters. Pet. 29 (citing Ex. 1003 ¶ 94; Ex. 1005 ¶¶ 13, 48, 55, 92), 30 (citing Ex. 1003 ¶¶ 96, 97; Ex. 1005 ¶ 92); *see also id.* at v (labeling the limitation "[1.4]"). Petitioner also argues that Cole's WWAN modem 230 in the proposed combination would handle connection requests and Shell's processor 111 would provide notification data related to

a network connection request to a requesting application module. *Id.* at 29 (citing Ex. 1003 ¶¶ 95, 96; Ex. 1005 ¶¶ 13, 55, 92; Ex. 1006 ¶¶ 15, 34, 91).

Petitioner further argues that Shell's connection manager modules are associated with APIs and functionalities of the connection manager modules can be implemented through known techniques using system-level APIs and applications. Pet. 30–31 (citing Ex. 1005, code (57), ¶¶ 9, 22, 45–48, 70). Petitioner additionally argues that APIs providing network-related information and communicating with applications were known and that it would have been obvious to use APIs in such ways. *Id.* at 31–32 (citing Ex. 1003 ¶¶ 99–102; Ex. 1010; Ex. 1013).

For "wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application," Petitioner argues that Shell's connection manager modules provide notification data that includes network access conditions. Pet. 32 (citing Ex. 1003 ¶ 103; Ex. 1005 ¶¶ 48, 70, 92); *see also id.* at v (labeling the limitation "[1.5]"). Shell also discloses, according to Petitioner, that an application can request "piggy back" connection to access resources already accessed by another application and such a request can be denied. *Id.* (citing Ex. 1003 ¶ 104; Ex. 1005 ¶¶ 70, 92). Petitioner, thus, argues that the connection manager modules would provide notification data to a first application regarding whether a "piggy back" request is denied but network access is still available by the first application. *Id.* at 32–33 (citing Ex. 1003 ¶ 105).

a) Petitioner's Asserted Reason for Combining

Petitioner argues that power management becomes important when applications make network connection requests at a high rate. Pet. 12–13 (citing Ex. 1003 ¶¶ 65–66; Ex. 1006 ¶¶ 11, 78). According to Petitioner, a known power management technique was selective adjustment between available network connections, and the technique increased available bandwidth and reduced network congestion. *Id.* at 13 (citing Ex. 1003 ¶ 67; Ex. 1006 ¶ 78). Petitioner also argues that WLANs were known to typically provide more bandwidth but at greater cost. *Id.* (citing Ex. 1003 ¶ 67).

One of ordinary skill in the art, Petitioner argues, would have, thus, been motivated to look to references, such as Cole, that provided mobile devices with network access while addressing cost, power, and network selection. Pet. 13–14 (citing Ex. 1003 ¶ 68; Ex. 1006, code (57), ¶¶ 14–15, 78, 83, 88, 98). Petitioner also argues that Cole describes Internet access control techniques based on conditions, such as power state change and load on current communication links, and that applying Cole to Shell would have "promoted more efficient communications and network access connectivity." *Id.* at 14 (citing Ex. 1003 ¶ 68; Ex. 1006 ¶¶ 83, 98).

Using Cole's techniques, the proposed combination, Petitioner explains, would have evaluated network and power conditions, determined whether to apply an Internet access control, evaluated further conditions, such as whether the application is running in the foreground or background, and then determined the priority of packets traveling over the selected network. Pet. 14 (citing Ex. 1003 ¶ 68; Ex. 1005 ¶ 92; Ex. 1006 ¶¶ 11, 78, 83, 88, 98). Petitioner also argues that one of ordinary skill in the art would have incorporated Cole's communication manager 260 into Shell's connection manager modules 210 and would have incorporated Cole's

WWAN modem 230 and WLAN modem 235 for "various kinds of network connections." *Id.* at 14–15 (citing Ex. 1003 ¶ 70; Ex. 1005 ¶ 32, Fig. 1; Ex. 1006 ¶ 31). Petitioner further argues that the proposed combination would have included the processors, non-transitory memory, and display, as taught by both references, to perform the recited operations. *Id.* at 15 (citing Ex. 1003 ¶¶ 71–72; Ex. 1005 ¶¶ 38–44, Fig. 1; Ex. 1006 ¶¶ 34, 40, Fig. 2).

Petitioner additionally argues that one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed combination because it "would have required only routine programming knowledge well within [ordinary] skill," "would have amounted to nothing more than the use of a known technique to improve similar devices . . . in a similar way," and would have been "combining prior art elements according to known methods to yield predictable results." Pet. 15–16 (citing Ex. 1003 ¶¶ 73, 74; Ex. 1005 ¶¶ 36, 40; Ex. 1006 ¶¶ 34, 35, Fig. 2).

4. Dependent Claim 26

Claim 26 depends directly from claim 1 and recites "wherein the one or more processors are further configured to determine that the different application is an active application based on a user interaction with the different application." Ex. 1001, 108:11–14.

Petitioner argues that Shell's connection manager modules 210 assign priorities to network connection requests based on a current state of the requesting application, such as assigning a higher priority to an active application instead of an application running in the background. Pet. 47 (citing Ex. 1005 ¶¶ 57, 92). Petitioner also argues that voice requests are assigned higher priority than data requests. *Id.* (citing Ex. 1005 ¶ 57). Petitioner, thus, argues that

> An application that provides a voice-related connection request (***different application***) involves a determination that a user is likely to interact with the application (e.g., voice call) (***user interaction with the different application***), and thus, prioritization by the connection manager modules involves ***determin[ing] that the different application is an active application***.

Id. (citing Ex. 1003 ¶¶ 139–140; Ex. 1005 ¶¶ 8, 13, 14).

5. Preliminary Response

Patent Owner responds that, for claim 26, Petitioner relies only on Shell and does not assert that Shell would be modified. Prelim. Resp. 6 (citing Pet. 27, 47). According to Patent Owner, it would not have been obvious to modify Shell to arrive at claim 26. *Id.* (citing Ex. 2010 ¶ 47). Patent Owner argues that Petitioner contends that Shell discloses the subject matter of claim 26 "in conclusory fashion" and without "any explanation." Prelim. Resp. 6–7 (citing Pet. 47). In Patent Owner's view, the only supporting evidence is "the equally conclusory expert testimony." *Id.* at 7 (citing Ex. 1003 ¶¶ 139–140; Ex. 2010 ¶¶ 45–46).

Patent Owner also argues that Petitioner's theory for claim 26 fails for three independent reasons. Prelim. Resp. 7 (citing Ex. 2010 ¶¶ 32–43), 12 (citing Ex. 2010 ¶¶ 44, 47). For its first reason, Patent Owner contends that "a determination that a user is likely to interact with the application" is not the same as "determin[ing] that the different application is an active application based on a user interaction with [that] application." *Id.* at 8 (citing Ex. 2010 ¶¶ 35–36). According to Patent Owner, "the claim recites its 'active application' determination being "based on a user interaction with" that application, not based on the inference that a user is ***likely*** to interact with the application. *Id.*

For its second reason, Patent Owner contends that, even if Petitioner is arguing "***actual*** user interaction (as opposed to just the ***potential*** for user interaction . . .)," Petitioner fails to explain why Shell would have been understood to disclose that an application with a voice-related connection request involves determining a user is likely to interact or has interacted with the application. Prelim. Resp. 8 (citing Pet. 47; Ex. 2010 ¶¶ 37–39). Patent Owner argues that, even if one of ordinary skill in the art has inferred that a voice-related connection request likely means that a user will interact or has interacted with the requesting application, Petitioner fails to explain why processors would be configured to determine whether the application is active based on user interaction, as required by claim 26. *Id.* at 8–9 (citing Ex. 2010 ¶ 37).

In Patent Owner's view, one of ordinary skill in the art would have prioritized voice requests over data requests in view of Shell, regardless of user interaction. Prelim. Resp. 9 (citing Ex. 2010 ¶ 38). Patent Owner also argues that Petitioner fails to explain why it would have been obvious to modify Shell's prioritization based on user interaction with a requesting application and that Petitioner fails to explain why Shell discloses such a technique. *Id.* (citing Ex. 2010 ¶¶ 38–39, 44, 47).

For its third reason, Patent Owner contends that claim 26 "does not require simply determining whether an application is active; it ***also*** requires determining whether the application is active ***based on a user interaction*** with that application." Prelim. Resp. 9–10 (citing Pet. 47; Ex. 2010 ¶¶ 40–43). Patent Owner argues that Petitioner fails to explain why Shell's active application determination would be based on user interaction with the application. *Id.* at 10 (citing Pet. 47). Patent Owner also argues that, in Shell, a voice application could be deemed active by merely requesting a

voice connection without any user interaction. *Id.* (citing Ex. 2010 ¶ 41). Patent Owner further argues that there is no need or benefit for processors to evaluate user interaction and, if voice-related connection requests were simply prioritized, the system would operate consistent with Shell's teachings and Petitioner's "implicit assertion that applications that are likely to be interacted with by users should be prioritized over other applications." *Id.* at 10–11 (citing Ex. 1005 ¶ 57; Ex. 2001 ¶ 41).

According to Patent Owner, prioritizing voice requests may be prioritizing applications that have been interacted with under certain circumstances but that does not disclose or render obvious a processor basing its determination of the active application on user interaction. Prelim. Resp. 11–12 (citing Ex. 2010 ¶¶ 42–43).

6. Petitioner Shows a Reasonable Likelihood of Prevailing

Based on the present record, Petitioner shows a reasonable likelihood of prevailing in its challenge that the combination of Shell and Cole teaches, suggests, or would have been understood to disclose the limitations of claim 26 and that one of ordinary skill in the art would have combined Shell and Cole in the manner asserted with a reasonable expectation of success.

Petitioner cites portions of Shell that disclose, "if a user attempts to use a telephone line for a voice call, a user may need to cause a current data connection to be disconnect[ed] before a voice call may be established" (Ex. 1005 ¶ 8), "a voice call may be given higher [] priority over data calls that share the same modem" (*id.* ¶ 13), and "a user may request access to a resource that is accessed by connecting to destination network," such as "when a user attempts a voice call on a telephone line that is currently being used for a data connection" (*id.* ¶ 14). Pet. 47 (citing Ex. 1005 ¶¶ 8, 13, 14).

Petitioner also cites, and there is no substantial dispute at this stage, that Shell teaches prioritizing voice requests for data requests and active application requests over background application requests. Pet. 47; Prelim. Resp. 9; Ex. 1003 ¶ 140; Ex. 1005 ¶ 57; Ex. 2010 ¶¶ 38, 40. Specifically, Shell discloses that "[p]riorities may also be assigned to connection requests based on the current state of applications associated with the connection requests," such as "a request from an application that is currently active may be assigned a higher priority" and "voice requests may be assigned a higher priority than data requests." Ex. 1005 ¶ 57.

Considering these disclosures together with the cited paragraphs of Petitioner's declaration, Petitioner sufficiently shows on the present record that one of ordinary skill in the art would have understood that, in Shell, when a user attempts a voice call, the user can cause a current data connection to disconnect, because (1) a voice-related connection request will be made, (2) the request for voice connection will be prioritized over data requests, and (3) the request will also be prioritized if it is coming from an active application rather than an application running in the background. Pet. 47; Ex. 1003 ¶ 140; Ex. 1005 ¶¶ 8, 13, 14, 57.

On the preliminary record, the relied-upon portions of Shell adequately show a determination of whether an application is an active application for prioritization purposes and disconnecting a current data connection due to a user attempting to make a voice call. Ex. 1005 ¶¶ 8, 13, 14, 57. The attempt to make a voice call would be a user interaction resulting in a request for a voice connection that would be prioritized over the data request of another application using the current data connection. *See* Ex. 1005 ¶¶ 8, 13, 14, 57. The attempt to make a voice call also involves a user interacting with an application to make it an active

application that would be prioritized over an application running in the background. *See* Ex. 1003 ¶ 140.

Petitioner, thus, sufficiently shows for institution that Shell's processor is "configured to determine that the different application is an active application based on a user interaction with the different application," as required by claim 26. Pet. 47; Ex. 1003 ¶ 140.

Turning to Patent Owner's responsive argument that determining a likely interaction with an application is not the same as determining an active application based on user interaction with that application (Prelim. Resp. 8), Petitioner's position appears to be that, in an attempt to make a voice call, an application requesting a voice connection has had user interaction to make it an active application and will likely have further user interaction to make a voice connection request (*see* Pet. 47; Ex. 1003 ¶ 140).

Petitioner does not appear to be relying only on an inference that a user is likely to interact with an application requesting a voice connection but, instead, appears to be arguing that, in attempting a voice call, the user has to interact with that application to attempt that voice call and cause that same application to become an active application. *See* Pet. 47; Ex. 1003 ¶ 140. Petitioner's citations to Shell and its declaration support that understanding. *See* Pet. 47; Ex. 1003 ¶ 140; Ex. 1005 ¶¶ 8, 13, 14, 57, 92.

As for Patent Owner's argument that, if Petitioner is arguing actual user interaction, Petitioner fails to explain how Shell's processor is configured to determine that an application is active based on user interaction with the application (Prelim. Resp. 8–12), the present record supports that Shell's processor can determine whether an application is active or running in the background. *See* Ex. 1005 ¶ 57. The present record also supports that, when Shell's user attempts to make a voice call with an

appropriate application, Shell's processor can determine that the application is active. *See id.*

According to Petitioner, a user attempting a phone call in Shell, would result in an active application prioritized over background applications and a voice request prioritized over data requests, and such an attempt or user interaction would fall within the scope of claim 26. *See* Pet. 47. According to Patent Owner, claim 26 requires that the processor has to determine from the user interaction that an application is active. *See* Prelim. Resp. 8–12. This dispute would benefit from (1) a proposed interpretation of "configured to determine that the different application is an active application based on a user interaction with the different application," (2) further development of what one of ordinary skill in the art would have understood from Shell's disclosure, or (3) both.

Regarding Shell prioritizing voice requests over data requests regardless of user interaction, Petitioner's position appears to be that one of ordinary skill in the art would have understood that a user interaction can play a part when voice requests are made or when an application becomes active. *See* Pet. 47; Ex. 1003 ¶ 140. Patent Owner's responses at this stage do not address sufficiently why claim 26 would not include determining an application is active based on user interaction that caused the application to become active. *See* Prelim. Resp. 6–12. Petitioner, on the other hand, shows sufficiently for institution that the ordinarily skilled artisan would have understood that, in Shell, user interaction can cause a voice request to be made or an application to become active. *See* Pet. 47; Ex. 1003 ¶ 140; Ex. 1005 ¶¶ 8, 13, 14.

For the reasons above, after considering the parties' positions and the record at this stage, Petitioner shows a reasonable likelihood of prevailing in

its challenge that the combination of Shell and Cole would have rendered obvious claim 26

We, therefore, institute review of the only remaining challenged claim on the only remaining relevant ground set forth in the Petition. 37 C.F.R. §§ 42.107(e), 42.108(a); *see also SAS*, 138 S. Ct. at 1354.

IV. CONCLUSION

After considering the evidence and arguments presented in the Petition and the cited evidence, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in proving that claim 26 of the '359 patent is unpatentable, and thus, we institute an *inter partes* review on all relevant challenges. 37 C.F.R. §§ 42.107(e), 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim or any underlying factual and legal issues.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claim 26 of U.S. Patent No. 9,179,359 B2 is instituted with respect to all relevant grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of U.S. Patent No. 9,179,359 B2 shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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