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Paper 11
Date: May 5, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MERCEDES-BENZ USA, LLC,
Petitioner,

v.

NEO WIRELESS, LLC,
Patent Owner.

IPR2023-00079
Patent 10,965,512 B2

Before HYUN J. JUNG, CHARLES J. BOUDREAU, and MATTHEW S. MEYERS, *Administrative Patent Judges.*

JUNG, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314
Granting Motion for Joinder
35 U.S.C. § 315(c); 37 C.F.R. § 42.122

I. INTRODUCTION

A. Background and Summary

Mercedes-Benz USA, LLC ("Petitioner" or "Mercedes") filed a Petition (Paper 1, "Pet.") requesting institution of an *inter partes* review of claims 1–30 of U.S. Patent No. 10,965,512 B2 (Ex. 1001, "the '512 patent"). Concurrently, Petitioner filed a Motion for Joinder seeking to be joined as a party to *Volkswagen Group of America, Inc. v. Neo Wireless, LLC*, IPR2022-01539 ("Volkswagen IPR"). Paper 3 ("Motion" or "Mot."). Neo Wireless LLC ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.") and a Response to Petitioner's Motion for Joinder (Paper 7 ("Opp.")). Petitioner subsequently filed a Reply in Support of its Motion for Joinder. Paper 9 ("Mot. Reply").

Under 35 U.S.C. § 314, 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." For the reasons that follow, we determine that institution of *inter partes* review is warranted on the same grounds instituted in the Volkswagen IPR and grant Petitioner's Motion for Joinder.

B. Real Parties in Interest

Petitioner identifies Mercedes-Benz USA, LLC; Mercedes-Benz Intellectual Property GmbH & Co. KG; and Mercedes-Benz AG as real parties in interest. Pet. 2. Patent Owner identifies only itself as a real party in interest. Paper 5, 1.

C. Related Matters

Petitioner lists several civil actions in which Neo Wireless, LLC is the plaintiff and the '512 patent is involved. Pet. 2–4. Patent Owner lists ten current proceedings involving the challenged patent and nine proceedings

that, according to Patent Owner, have been terminated. Paper 5, 1–3. The current proceedings include:

In Re: Neo Wireless, LLC Patent Litigation, No. 2:22-md-03034 (E.D. Mich.);

Neo Wireless LLC v. American Honda Motor Co., Inc., No. 2:22-cv-11403 (E.D. Mich.);

Neo Wireless, LLC v. Ford Motor Co., No. 2:22-cv-11402 (E.D. Mich.);

Neo Wireless, LLC v. Tesla Inc., No. 2:22-cv-11408 (E.D. Mich.);

Neo Wireless, LLC v. General Motors Co., No. 2:22-cv-11407 (E.D. Mich.);

Neo Wireless LLC v. Toyota Motor North America, Inc., No. 2:22-cv-11406 (E.D. Mich.);

Neo Wireless, LLC v. Volkswagen Group of America, Inc., No. 2:22-cv-11404 (E.D. Mich.);

Neo Wireless, LLC v. Nissan North America Inc., No. 2:22-cv-11405 (E.D. Mich.);

Neo Wireless, LLC v. Mercedes-Benz USA, LLC, No. 2:22-cv-11769 (E.D. Mich.); and

Neo Wireless, LLC v. FCA US LLC, No. 2:22-cv-11770 (E.D. Mich.). *Id.* at 1–2.

Both parties also identify IPR2022-01539. Pet. 4; Paper 5, 2. We additionally note that Ford Motor Company has filed a petition substantially identical to the instant Petition, along with a motion for joinder as a petitioner in IPR2022-01539. IPR2023-00764, Papers 1, 3.

D. The '512 Patent (Ex. 1001)

The '512 patent issued on March 30, 2021, from an application filed on September 4, 2020, which is a continuation of several previously filed applications, the earliest of which was filed on January 20, 2005. Ex. 1001, codes (22), (45), (63), 1:10–29. The '512 patent also claims priority to a provisional application filed on January 29, 2004. *Id.* at code (60), 1:29–31.

The '512 patent provides "methods to define the transmission formats of the cell-specific and common pilot subcarriers that enable a receiver to perform different system functions." Ex. 1001, 3:37–40. According to the '512 patent, "signal reception can be improved by manipulating phase values of the pilot subcarriers and by using power control." *Id.* at 3:43–45.

The '512 patent describes that, for "multi-carrier wireless communications," such as "orthogonal frequency division multiple access (OFDMA)," "network information provided by a portion of total subcarriers such as pilot subcarriers" facilitates "important system functions such as frequency synchronization and channel estimation." Ex. 1001, 1:36–38, 3:55–57. The "pilot subcarriers are divided into two different groups according to their functionalities." *Id.* at 3:10–12. "The first group is called 'cell-specific pilot subcarriers,' and will be used by the receiver 104 to extract information unique to each individual cell." *Id.* at 3:17–19. "The second group is termed 'common pilot sub-carriers,' and are designed to possess a set of characteristics common to all base stations of the system." *Id.* at 3:25–27.

E. Illustrative Claim

The '512 patent includes claims 1–30, all of which Petitioner challenges. Of the challenged claims, claims 1, 8, 15, and 23 are independent. Reproduced below is claim 1.

> 1. An orthogonal frequency division multiple access (OFDMA)-compatible base station that uses subcarriers in a frequency domain and time slots in a time domain, the OFDMA-compatible base station comprising:
>
> a plurality of antennas; and
>
> a transmitter operably coupled to the plurality of antennas; the transmitter configured to:
>
> insert first pilots of a first type onto a first plurality of subcarriers, wherein the first pilots are cell-specific pilots; and
>
> insert data and second pilots of a second type onto a second plurality of subcarriers;
>
> wherein at least some subcarriers of the first plurality of subcarriers or the second plurality of subcarriers are beam-formed; and
>
> the plurality of antennas configured to transmit the first plurality of subcarriers and the second plurality of subcarriers in at least one of the time slots;
>
> wherein the second type is different than the first type and wherein the first pilots do not interfere with the second pilots.

Ex. 1001, 9:46–67.

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
Tong	US 7,120,395 B2, issued Oct. 10, 2006	1005
Li	US 2002/0163879 A1, published Nov. 7, 2002	1007
Smee	US 2004/0131007 A1, published July 8, 2004	1017
Ketchum	US 2004/0179627 A1, published Sept. 16, 2004	1006
Kim	WO 2004/049618 A1, published June 10, 2004	1004

Pet. 5–6. Petitioner states that "all references relied upon herein are prior art as of January 29, 2004," "[t]he '512 patent's earliest possible priority date." *Id.* at 5–6. According to Petitioner, Kim, Tong, Ketchum, and Smee are

prior art under, at least, pre-AIA 35 U.S.C. § 102(e); and Li is prior art under, at least, pre-AIA 35 U.S.C. § 102(b).[1] *Id.* at 6.

Petitioner also provides a Declaration of Mr. Bruce McNair. Ex. 1038. Petitioner states that it cites to the Declaration which "adopt[s] the opinions set forth in EX1003, the declaration of Dr. Paul Min submitted in IPR2022-01539," and Petitioner "notes there are corresponding, identical opinions in Dr. Min's declaration." Pet. 1 n.1 (citing Ex. 1038 ¶ 2). Patent Owner provides a Declaration of William P. Alberth Jr. Ex. 2001.

G. Asserted Grounds

Petitioner asserts that claims 1–30 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	References/Basis
1–30	103(a)	Kim, Tong
1, 3, 4, 6–8, 10, 11, 13–15, 17, 18, 20, 22, 23, 25, 26, 28, 30[2]	103(a)	Ketchum, Li
5, 12, 21, 29	103(a)	Ketchum, Li, Smee

Pet. 6.

II. ANALYSIS

Joinder for purposes of an *inter partes* review is governed by 35 U.S.C. § 315(c), which states:

[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 '512 patent claims priority to 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. 5–6 (stating but not conceding that "[t]he '512 patent's earliest possible priority date is January 29, 2004").
[2] Petitioner omits claim 30 for the second ground in its "Statutory Grounds for the Challenge" but provides arguments for claim 30. Pet. 6, 78.

> JOINDER.—If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter parties review under section 314.

"To join a party to an instituted [*inter partes* review (IPR)], the plain language of § 315(c) requires two different decisions." *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1332 (Fed. Cir. 2020). "First, the statute requires that the Director (or the Board acting through a delegation of authority) . . . determine whether the joinder applicant's petition for IPR 'warrants' institution under § 314." *Id.* "Second, to effect joinder, § 315(c) requires the Director to exercise his discretion to decide whether to 'join as a party' the joinder applicant." *Id.*

A. Whether the Petition Warrants Institution

Petitioner states that its "Petition is substantively the same as the Volkswagen IPR petition," that "[t]here are no substantive differences between the Petition and the Volkswagen IPR petition," and that "Petitioner has copied the substance of the Volkswagen IPR petition and its accompanying expert declaration." Mot. 2, 5, 6.

Petitioner also states that "[w]hile Petitioner uses its own expert declarant, the expert's declaration agrees with the facts, analysis, and conclusions of the expert declaration in the Volkswagen IPR and does not contain any new opinions not included in the Volkswagen IPR expert declaration." Mot. 6. Petitioner further states that its "expert Mr. McNair would not be relied on if the Volkswagen IPR petitioner's expert remains available." *Id.* at 8.

Patent Owner notes that the Petition "is of the sort that has been called a 'copycat' petition, for it is nearly identical to the Petition filed in IPR2022-01539." Prelim. Resp. 1. Patent Owner responds that "much as the Petition in this case repeats the same grounds as those set forth in [IPR2022-01539], the present preliminary response repeats the same reasons and same supporting evidence set forth in Patent Owner's preliminary response in that case." *Id.* at 3; *see also id.* at 9–24 (arguing, for the first ground, that Petitioner fails to show "cell-specific pilots" and "beam-formed"), 24–46 (arguing, for the second ground, that Petitioner fails to show "cell-specific pilots" and "in at least one of the time slots").

We instituted an *inter partes* review in the Volkswagen IPR. *See* IPR2022-01539, Paper 7 ("1539 Dec. on Inst."). We incorporate our previous analysis regarding the asserted grounds of unpatentability, and conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '512 patent challenged in the Petition for the same reasons. *See* 1539 Dec. on Inst. 9–55. Therefore, we determine that the Petition warrants institution of *inter partes* review on all claims and all grounds asserted in the Petition. 37 C.F.R. § 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. Whether to Join Petitioner as a Party to the Volkswagen IPR

Joinder may be authorized when warranted, but the decision to grant joinder is discretionary. *See* 35 U.S.C. § 315(c); 37 C.F.R. § 42.122. We determine whether to grant joinder on a case-by-case basis, taking into account the particular facts of each case, substantive and procedural issues,

and other considerations. When exercising that discretion, we are mindful that patent trial regulations, including the rules for joinder, must be construed to secure the just, speedy, and inexpensive resolution of every proceeding. *See* 35 U.S.C. § 316(b); 37 C.F.R. § 42.1(b).

Any motion for joinder must be filed "no later than one month after the institution date of any *inter partes* review for which joinder is requested." 37 C.F.R. § 42.122(b). Petitioner filed its Petition and Motion for Joinder before we decided whether to institute review in IPR2022-01539, and, thus, the Motion is timely.

As the moving party, Petitioner has the burden of proof in establishing entitlement to the requested relief. 37 C.F.R. §§ 42.20(c), 42.122(b). A motion for joinder should: (1) set forth the reasons why joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; (3) explain what impact (if any) joinder would have on the trial schedule for the existing review; and (4) address specifically how briefing and discovery may be simplified. *See Kyocera Corp. v. SoftView LLC*, IPR2013-00004, Paper 15 at 4 (PTAB Apr. 24, 2013); PTAB E2E Frequently Asked Question H5, *available at* https://www.uspto.gov/patents/ptab/ptab-e2e-frequently-asked-questions.

1. Motion for Joinder

Petitioner argues that joinder is appropriate because it "challenges the same claims, on the same grounds, and relies on the same prior art as the Volkswagen IPR petition." Mot. 2; *see also id.* at 4–5 (arguing similarly). Petitioner also argues that "good cause exists for joinder, so that the Board, consistent with 37 C.F.R. § 42.1(b), can efficiently 'secure the just, speedy, and inexpensive resolution' of this proceeding and the Volkswagen IPR." *Id.* at 5. Petitioner further argues that "[t]his is Petitioner's first challenge

against the '512 patent at the PTAB, and there is no risk of prejudice or abuse." *Id.*

Petitioner states that it "does not seek to introduce grounds or claims not currently in the Volkswagen IPR and seeks only to join the proceeding if and as instituted." Mot. 6. Petitioner also contends that its Petition "does not seek to broaden the scope of the Volkswagen IPR" and "[t]here are no new issues for the Board to address. *Id.* at 6–7. According to Petitioner, "no additional burden would be created for the Board" and "[j]oinder would therefore lead to an efficient resolution." *Id.* at 2–3.

"Petitioner stipulates that if joinder is granted, it will act as an 'understudy,'" "will not assume an active role unless the Volkswagen IPR petitioner ceases to participate in the proceeding," and "agrees to take an 'understudy' role, which will simplify briefing and discovery." Mot. 3, 7.

> Petitioner agrees, upon joining the Volkswagen IPR, that the following conditions . . . shall apply so long as the Volkswagen IPR petitioner remains an active party:
>
> a. all filings by Petitioner in the Volkswagen IPR shall be consolidated with the filings of the Volkswagen IPR petitioner, unless a filing concerns issues solely involving Petitioner;
>
> b. Petitioner shall not be permitted to raise any new grounds not instituted by the Board in the Volkswagen IPR, or introduce any argument or discovery not introduced by the Volkswagen IPR petitioner;
>
> c. Petitioner shall be bound by any agreement between Patent Owner and the Volkswagen IPR petitioner concerning discovery and depositions; and
>
> d. Petitioner at deposition shall not receive any direct, cross examination, or redirect time beyond that permitted under either 37 C.F.R. § 42.53 or any agreement between Patent Owner and the Volkswagen IPR petitioner.

Id. at 7–8.

Petitioner also states that it "will not rely on expert testimony beyond that submitted by the Volkswagen IPR petitioner unless the Volkswagen IPR petitioner is terminated from the case prior to any necessary depositions," and "Mr. McNair would not be relied on if the Volkswagen IPR petitioner's expert remains available." Mot. 8. Petitioner argues that "the proposed joinder will neither unduly complicate the Volkswagen IPR nor delay its schedule," "will not unduly prejudice any party," and "will not add any new substantive issues, delay the schedule, burden deponents, or increase needless filings." *Id.* at 3.

2. Patent Owner's Response to Petitioner's Motion for Joinder

Patent Owner responds that, if review is instituted in IPR2022-01539, joinder should be granted "only with further limits" in addition to the ones quoted above from the Motion. Opp. 1–2 (citing Mot. 3, 7–8), 9–10. The further conditions are:

> (1)That Mercedes be denied any right to participate in the joined proceeding, including filing papers, engaging in discovery, or participate in depositions and oral argument, jointly or otherwise, without first obtaining authorization from the Board; In other words, Patent Owner requests that the Board strictly hold Mercedes to a silent understudy role;
>
> (2) That Mercedes' exhibits, including its separate purported expert declaration (Ex. 1038), not be added to the record of this case, and that Mercedes have no right as understudy petitioner to submit any separate exhibits or other materials; and
>
> (3) If the Board rejects Patent Owner's condition (1) immediately above, and grants Mercedes a right to jointly participate, that Volkswagen be shown to have accepted the role Mercedes has proposed that it will play.

Id. at 2.

Patent Owner argues that without "clarity on what 'understudy' means," there would be "unacceptable risks of making the original case, if instituted, substantially more complicated, expensive, and unfair." Opp. 2. Patent Owner would oppose granting joinder without the express clarifications provided in its further conditions. *Id.* at 3, 9–10.

In Patent Owner's view, Petitioner "has not promised not to submit its own separate evidence" and has done so already by submitting its own declaration. Opp. 3. Patent Owner argues "there is no apparent reason why [Petitioner] should be given any right to take any action in the proceedings without prior express Board permission." *Id.* Patent Owner also argues that Petitioner "should be granted no right to file any exhibits in the joined case" and has "***not*** agree[d] to not file separate exhibits," such as its own declaration. *Id.* at 5–6 (citing Mot. 3; Ex. 1038). Patent Owner notes that Petitioner "has not limited itself, or Volkswagen, from presenting different arguments with respect to [Petitioner]'s separate witness." *Id.* at 6. Patent Owner further argues that Petitioner's exhibits "should not become part of the record of the joined proceedings." *Id.*

According to Patent Owner, Petitioner's promises of cooperation are unsubstantiated and insufficient, and Petitioner "does not aver that Volkswagen has agreed to abide by them." Opp. 7–8 (quoting Mot. 7–8). Patent Owner describes "risks of disruption" if Volkswagen has not agreed. *Id.* at 8–9.

3. Petitioner's Reply in Support of its Motion for Joinder

Petitioner replies that, "[i]nstead of a substantive opposition," Patent Owner argues for additional conditions that should not be imposed if joinder is granted. Mot. Reply 1. Petitioner argues that there would be no additional burden on Patent Owner, as described in the Motion. *Id.* at 1–2

(citing Mot. 6–8). Petitioner also argues that Patent Owner's additional conditions "are essentially duplicative of the restrictions that Petitioner already proposes on its participation in the Volkswagen IPR and are thus unnecessary" because they "are adequate to eliminate the chance of duplicative briefing and any additional burden in the Volkswagen IPR." *Id.* at 2.

"Petitioner agrees to rely entirely on, and be bound by, the declaration and deposition of Dr. Paul Min in the Volkswagen IPR, assuming that the Volkswagen IPR petitioner does not terminate its IPR before Dr. Min is deposed." Mot. Reply 3. Petitioner also states that it "is willing to meet and confer with the Board and all involved parties regarding the conduct of the joined proceeding, if necessary." *Id.* at 4.

4. Determining that Joinder is Appropriate

Upon considering the parties' arguments and the evidence presented, we are persuaded that it is appropriate under these circumstances to join Petitioner to the Volkswagen IPR. Petitioner challenges the same claims that are challenged in the Volkswagen IPR on the same grounds using the same prior art and evidence. Petitioner explicitly agrees that it will take an "understudy role" in the Volkswagen IPR, and has shown that the trial schedule will not be affected at all by joinder. *See* Mot. 7–8.

At this stage, Patent Owner's further conditions are not necessary. *See* Opp. 2. If Petitioner fails to abide by its own conditions, then Patent Owner should meet and confer with Petitioner and contact the Board, if the parties cannot come to an agreement.

For the reasons discussed above, joinder to the Volkswagen IPR would result in the just, speedy, and inexpensive resolution of Petitioner's

challenge. *See* 37 C.F.R. § 42.1(b). Accordingly, we grant Petitioner's Motion for Joinder and join Petitioner as a party to the Volkswagen IPR.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–30 of U.S. Patent No. 10,965,512 B2 is instituted with respect to all grounds set forth in the Petition;

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. 10,965,512 B2 shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial;

FURTHER ORDERED that Petitioner's Motion for Joinder (Paper 3) with IPR2022-01539 is *granted*, and Petitioner is hereby joined as petitioner in IPR2022-01539;

FURTHER ORDERED that the grounds on which trial in IPR2022-01539 were instituted are unchanged, and no other grounds are added in IPR2022-01539;

FURTHER ORDERED that the Scheduling Order entered in IPR2022-01539 (Paper 8) shall govern the trial schedule in IPR2022-01539;

FURTHER ORDERED that Petitioner's role in IPR2022-01539 shall be limited as stated by Petitioner in the Motion for Joinder (Paper 3) unless and until Volkswagen is terminated from that proceeding;

FURTHER ORDERED that the case caption in IPR2022-01539 shall be changed to reflect joinder of Mercedes-Benz USA, LLC as petitioner in accordance with the attached example;

FURTHER ORDERED that a copy of this Decision be entered into the record of IPR2022-01539; and

FURTHER ORDERED that all further filings shall be made in IPR2022-01539.

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[1] Mercedes-Benz USA, LLC filed a motion for joinder and a petition in IPR2023-00079, which were granted, and, therefore, has been joined as petitioner in this proceeding.