

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENERAL MOTORS LLC, NISSAN NORTH AMERICA, INC., AND
TESLA INC.,
Petitioner,

v.

NEO WIRELESS LLC,
Patent Owner.

IPR2023-00963
Patent 10,447,450 B2

Before KRISTEN L. DROESCH, HYUN J. JUNG, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

DROESCH, *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

General Motors LLC, Nissan North America, Inc., and Tesla Inc. (collectively “Petitioner”) filed a Petition (Paper 4, “Pet.”) requesting institution of an *inter partes* review of claims 1–18 of U.S. Patent No. 10,447,450 B2 (Ex. 1001, “the ’450 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*, IPR2022-01567 (“Volkswagen IPR”). Paper 3 (“Motion” or “Mot.”). Petitioner also filed a “Notice Ranking and Explaining Material Differences Between Petitions for *Inter Partes* Review of U.S. Patent No. 10,447,450.”¹ Paper 2. A preliminary response was not filed. Neo Wireless LLC (“Patent Owner”) filed a Response to Petitioner’s Motion for Joinder (Paper 8, “Opp.”). Petitioner subsequently filed a Reply in Support of its Motion for Joinder. Paper 9 (“Mot. Reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2022). 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.”

We also have authority to consider Petitioner’s Motion for Joinder. *See* 35 U.S.C. § 315(c); 37 C.F.R. § 42.122.

¹ Petitioner ranks this Petition ahead of the petition filed in IPR2023-00962.

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 states that the real parties-in-interest are General Motors LLC, Nissan North America, Inc., Tesla, Inc., General Motors Company, LG Electronics, Inc., Nissan Motor Acceptance Corporation a/k/a Nissan Motor Acceptance Company LLC, and Quectel Wireless Solutions Co. Ltd. Pet. 3.

Patent Owner states that the real party-in-interest is Neo Wireless LLC. Paper 6, 1.

C. Related Matters

Petitioner lists numerous civil actions in which Patent Owner is the plaintiff and the '450 Patent is involved. Pet. 3–6; Mot. 1. Patent Owner lists ten current district court proceedings involving the '450 Patent and fourteen proceedings that, according to Patent Owner, have been terminated. Paper 6, 1–3. The current district court proceedings include:

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

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

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

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

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

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

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

Neo Wireless, LLC v. FCA US LLC, No. 2:22-cv-11770 (E.D. Mich.).
Pet. 4–5; Paper 6, 1–2.

Both parties further identify IPR2021-01486 (institution denied), IPR2022-01567 (instituted), IPR2023-00763 (institution denied), IPR2023-00793 (instituted, joined to IPR2022-01567), and IPR2023–00962 (concurrently filed) as proceedings before the Board. Pet. 6–7; Paper 6, 1, 4.

In addition, Petitioner also identifies several commonly-assigned U.S. patents that are the subject of IPR2022-01573, IPR2022-01539, IPR2023-00079, IPR2023-00764, IPR2023-00766, IPR2023-00791, IPR2023-00961, and IPR2023-00964. Pet. 7.

D. The '450 Patent (Ex. 1001)

The '450 Patent, titled “Method and System for Multi-Carrier Packet Communication with Reduced Overhead,” issued October 15, 2019, from an application filed August 14, 2017, and claims the benefit of an earlier effective filing date through a series of continuation applications to a provisional application filed on September 28, 2005. Ex. 1001, codes (22), (45), (54), (60), (63).

According to the '450 Patent, “[b]andwidth efficiency is one of the most important system performance factors for wireless communication systems.” Ex. 1001, 1:33–34. In order to support the high degree of

flexibility needed to accommodate different applications having different sized application payloads and different quality of service (“QoS”) requirements in packet-based data communication, however, wireless communication systems generally must provide a high degree of flexibility. *Id.* at 1:34–40. In wireless systems based on the IEEE 802.16 standard, for example, “multiple packet streams are established for each mobile station to support different applications,” and “[a]t the medium access control (MAC) layer, each packet stream is mapped into a wireless connection.” *Id.* at 1:42–47. “Special scheduling messages, DL-MAP and UL-MAP, are utilized to broadcast of the scheduling decisions to the mobile stations.” *Id.* at 1:47–50. According to the ’450 Patent, the MAP scheduling method defined by the IEEE 802.16 standard involves significant control overhead, amounting altogether to 52 bits, representing as much as 32.5% of overall data communication for application such as voice-over-IP (“VoIP”) and resulting in a relatively low spectral efficiency. *Id.* at 1:51–2:13.

With the goal of improving spectral efficiency, the ’450 Patent describes a system and method for minimizing the control overhead in a multi-carrier wireless communication network by using a “time-frequency resource.” Ex. 1001, 2:13–16, 2:45–47. One or more zones in the time-frequency resource may be designated for particular applications, such as VoIP applications. *Id.* at code (57), 2:47–50. By grouping applications of a similar type together within a zone, a reduction can be achieved in the number of bits necessary for mapping a packet stream to a portion of the time-frequency resource. *Id.* at 2:50–54.

Figure 3 of the '450 Patent is reproduced below.

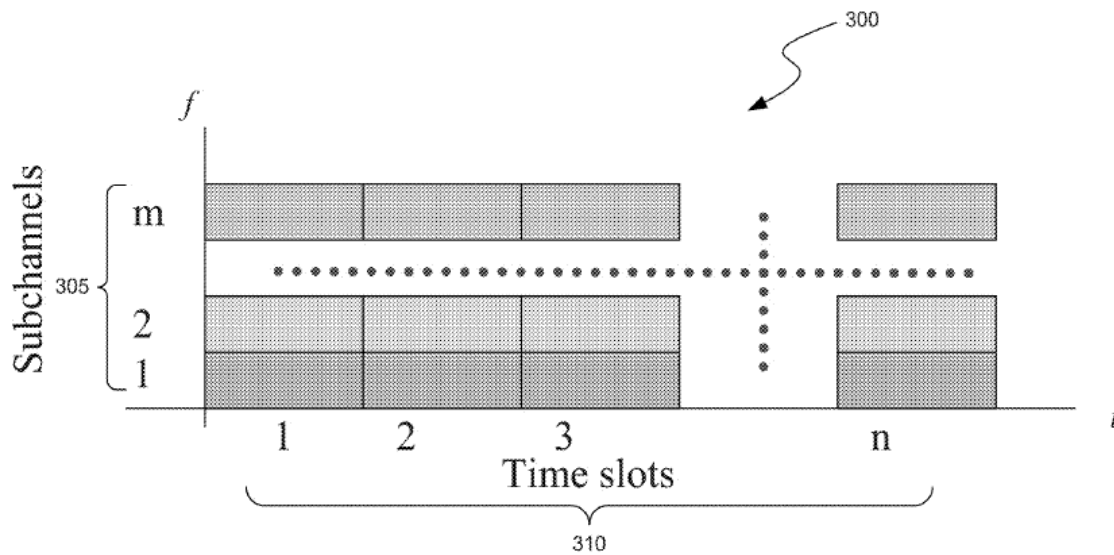


FIG. 3

Figure 3 is a block diagram depicting a division of communication capacity in a physical media resource (e.g., radio or cable) into frequency and time domains. Ex. 1001, 2:25–26, 4:16–18. With reference to Figure 3, “[t]he frequency is divided into two or more subchannels 305, represented as subchannels 1, 2, . . . m ,” and “[t]ime is divided into two or more time slots 310, represented in the diagram as time slots 1, 2, . . . n .” *Id.* at 4:18–22. The '450 Patent explains that “[t]he canonical division of the resource by both time and frequency provides a high degree of flexibility and fine granularity for resource sharing between multiple applications or multiple users of the resource.” *Id.* at 4:22–26.

Figure 6 of the '450 Patent is reproduced below.

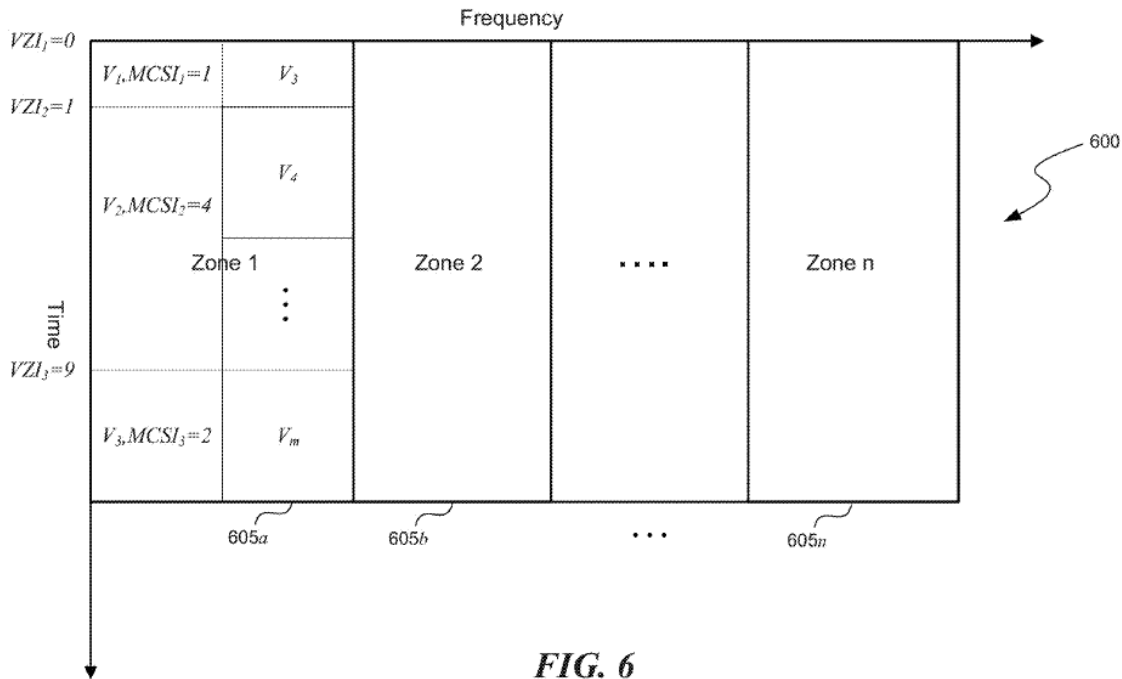


FIG. 6

Figure 6 is a block diagram of a frequency-time resource utilized by a wireless communication network. Ex. 1001, 2:32–33, 5:32–34. Figure 6 depicts an alternative way of managing multiple packet streams in order to overcome the inefficiencies associated with the mapping of packet streams in typical wireless systems based on the IEEE 802.16 standard. *Id.* at 5:34–43. In Figure 6, time-frequency resource 600 is divided into zones 605a, 605b, . . . 605n, each of which is associated with a particular type of application (e.g., VoIP, video applications). *Id.* at 5:43–49. “[B]y grouping like applications together[,] the amount of control overhead in MAC headers is reduced.” *Id.* at 5:50–52. More particularly, according to the '450 Patent, “[w]hen applications of a similar type are grouped together within a zone, a reduction in the number of bits necessary for mapping a packet stream to a time-frequency segment can be achieved.” *Id.* at 5:54–57. “In some embodiments, the identification of the time-frequency segment

associated with a particular packet stream can be indicated by the starting time-frequency coordinate and the ending time-frequency coordinate relative to the starting point of the zone.” *Id.* at 5:57–61.

If the time-frequency resource is divided into two or more zones, the amount of control information necessary to map to a location relative to the starting point of the zone may be significantly less than the amount of information necessary to map to an arbitrary starting and ending coordinate in the entire time-frequency resource.

Id. at 5:64–6:2.

The ’450 Patent further explains that “[w]ithin each zone 605a, 605b, . . . 605n, the time-frequency resource may be further divided in accordance with certain rules to accommodate multiple packet streams $V_1, V_2, \dots V_m$.” Ex. 1001, 6:3–6. “For example, as depicted in Figure 6, zone 605a is divided into multiple columns and the packet streams are arranged from top down in each column and from left to right across the columns.” *Id.* at 6:6–9. “The width of each column can be a certain number of subcarriers, and each packet stream $V_1, V_2, \dots V_m$ may be associated with an application.” *Id.* at 6:9–11. “For example, V_1 is the resource segment to be used for the first voice packet stream, V_2 is the resource segment to be used for the second voice packet stream, etc.” *Id.* at 6:12–14. Further, according to the ’450 Patent, “[w]hen the zones are further subdivided into time-frequency segments in accordance with certain rules, a mapping of packet streams to segments may be achieved using a one-dimensional offset with respect to the origin of the zone rather than the two-dimensional (i.e., starting time-frequency coordinate and ending time-frequency coordinate relative to the starting point of the zone) mapping method discussed above.” *Id.* at 6:22–29.

The '450 Patent further describes use of a “basic resource unit,” which is the resource utilized by the highest available modulation coding scheme (“MCS”) associated with a particular packet stream, such that the resources used by other MCSs can be represented as integer multiples of the basic unit. Ex. 1001, 6:45–52. Once the MCS is selected for each packet stream contained in a particular zone, the offset to a segment representing a particular packet stream may be easily calculated, and the index for any selected packet stream is defined as the sum of all basic resource units associated with each packet stream preceding the selected packet stream, with an optional adjustment depending on the location where the division of the time-frequency resource is started. *Id.* at 7:7–18. The '450 Patent explains that “[u]sing basic resource units as the granularity of a location offset to the packet stream reduces the number of bits required to represent its location with the zone.” *Id.* at 7:28–30.

E. Illustrative Claim

Claims 1, 7, and 13 are independent, and claims 2–6, 8–12, and 14–18 depend therefrom, respectively. Claim 1, reproduced below, is illustrative of the challenged claims.

1. An operating method for a wireless network comprising at least a base station and a mobile station, the wireless network employing a frame structure of multiple frames for transmission, each frame comprising a plurality of time intervals, each time interval comprising a plurality of orthogonal frequency division multiplexing (OFDM) symbols, and each OFDM symbol containing a plurality of frequency subcarriers, the method comprising:

- assigning an identifier to the mobile station;

transmitting a signal containing information from the base station to the mobile station over a segment of time-frequency resource, the segment having a starting time-frequency coordinate and the segment comprising N time-frequency resource units within a time interval, each unit containing a set of frequency subcarriers in a group of OFDM symbols, where $N=2, 4$, or 8 ; and

receiving by the mobile station the transmitted signal; and

recovering by the mobile station the information from the received signal based on the starting time-frequency coordinate and N in conjunction with the identifier assigned to the mobile station.

Ex. 1001, 12:47–67.

F. Evidence

Petitioner relies on the following prior art references in the asserted grounds of unpatentability (Pet. 10):

Name	Reference	Exhibit
Vijayan089	Vijayan et al., US 2005/0058089 A1, published March 17, 2005	1005
Wu	Wu et al., US 2005/0063345 A1, published March 24, 2005	1008
Vijayan475	Vijayan et al., US 2005/0141475 A1, published June 30, 2005	1006
Choi	Choi et al., US 2005/0243774 A1, published November 3, 2005	1009
Laroia	Laroia et al., US 2005/0277429 A1, published December 15, 2005	1007

Petitioner also relies on a Declaration of Matthew C. Valenti, Ph.D.

Ex. 1048.

G. Asserted Patentability Challenges

Petitioner asserts that claims 1–18 are unpatentable under 35 U.S.C. § 103(a) on the following grounds (Pet. 10):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 7–11, 13–17	103 ²	Vijayan089, Laroia
1–5, 7–11, 13–17	103	Vijayan475, Wu
6, 12, 18	103	Vijayan089, Laroia, Choi
6, 12, 18	103	Vijayan475, Wu, Choi

II. ANALYSIS

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

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

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. §§ 102 and 103 effective March 16, 2013. Because the ’450 Patent claims the benefit of an earlier effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA versions of §§ 102 and 103.

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 identical to the petition in the V[olkswagen] IPR.” Mot. 4. Petitioner also states that its “expert declaration of Dr. Matthew C. Valenti is substantively identical to the declaration filed in the V[olkswagen] IPR petition.” *Id.* at 9; *see id.* at 5 n.1. Petitioner further states that it “will not rely on expert testimony beyond that submitted by the V[olkswagen] IPR Petitioner unless the V[olkswagen] IPR Petitioner is terminated from the case prior to any necessary depositions.” *Id.* at 8.

We instituted an *inter partes* review in the Volkswagen IPR. *See* IPR2022-01567, Paper 8 (“1567 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 ’450 Patent challenged in the Petition for the same reasons. *See* 1567 Dec. on Inst. 10–73. 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 no later than one month after the institution decision in IPR2022-01567, and, thus, the Motion is timely.³

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).

³ We instituted review in IPR2022-01567 on May 4, 2023. The Petition and Motion for Joinder were filed on June 5, 2023 (the Monday immediately following Sunday June 4, 2023).

1. Motion for Joinder

Petitioner argues that joinder is appropriate because it will promote an efficient determination of the patentability of the '450 Patent in a single proceeding without prejudice to any party. *See* Mot. 4–5. Petitioner contends that its Petition does not add additional complexity to the grounds in the Volkswagen IPR, because it “challenges the validity of the '450 patent on identical grounds to those in the V[olkswagen] IPR” and its “supporting materials—including its supporting expert declaration, exhibits, and exhibit numbering—are substantially identical to those presented in the V[olkswagen] IPR.” *Id.* at 6 *see id.* at 6–7 (citing *Sony Corp. v. Memory Integrity, LLC*, IPR2015-01353, Paper 11 at 5–6 (PTAB Oct. 5, 2015)). According to Petitioner, although they use their own expert declarant, the expert’s declaration agrees with and adopts the facts, analysis, and conclusions of the expert declaration in the V[olkswagen] IPR and does not contain any new opinions not included in the V[olkswagen] IPR expert declaration.” *Id.* at 6 (citing *Everlight Elecs. Co. v. Document Security Sys., Inc.*, IPR2018-01260, Paper 12 at 6–7 (PTAB Nov. 14, 2018)). Petitioner contends that joinder will not affect the schedule in the Volkswagen IPR, and agrees to adhere to all applicable deadlines set forth in the Volkswagen IPR Scheduling Order. *See id.* at 7. Petitioner further asserts that joinder will simplify briefing and discovery because Petitioner has agreed to consolidated filings and an understudy role. *See id.* at 7–8. More specifically, in the understudy role, Petitioner agrees to the following conditions:

- (a) Petitioners shall not make any substantive filing and shall be bound by the filings of the V[olkswagen] IPR

Petitioner, unless a filing concerns termination and settlement, or issues solely involving Petitioners;

(b) Petitioners shall not present any argument or make any presentation at oral hearing unless an issue solely involves Petitioners, or when addressing Board-approved motions that do not affect the V[olkswagen] IPR Petitioner, or its respective position;

(c) Petitioners shall not seek to cross-examine or defend the cross-examination of any witness, unless the topic of cross-examination concerns issues solely involving Petitioners;

(d) Petitioners shall not seek discovery from Patent Owner on issues not solely involving Petitioners;

(e) Petitioners will not rely on expert testimony beyond that submitted by the V[olkswagen] IPR Petitioner unless the V[olkswagen] IPR Petitioner is terminated from the case prior to any necessary depositions. If the V[olkswagen] IPR Petitioner is not terminated from the case prior to any necessary depositions, Petitioners agrees to rely entirely on, and be bound by, the expert declarations and depositions in the V[olkswagen] IPR. Petitioners's expert declaration of Dr. Matthew C. Valenti is substantively identical to the declaration filed in the V[olkswagen] IPR petition. *See, e.g., Noven Pharm., Inc. v. Novartis AG*, IPR2014-00550, Paper 38 at 5 (PTAB April 10, 2015). Unless and until the current petitioner in IPR2022-01567 ceases to participate in the instituted V[olkswagen] IPR, Petitioners will not assume an active role.

Mot. 7–8. In a footnote, Petitioner adds “should the V[olkswagen] IPR Petitioner's participation in the V[olkswagen] IPR terminate, Petitioners would take over primary responsibility for subsequent filings and discovery.” *Id.* at 9 n.2.

2. Patent Owner's Response to Motion for Joinder

Patent Owner responds that joinder “should only be granted with additional conditions limiting [Petitioner]'s participation as joined understudy petitioner.” Opp. 1. Patent Owner notes that Petitioner

“concedes that measures limiting its joined participation are appropriate, and pre-emptively agrees to several such limits.” *Id.* at 2 (citing Mot. 1–2, 7–10). Patent Owner, however, contends that Petitioner does not make clear what its “understudy” role entails. *See id.* at 2 (citing Mot. 1–2). In Patent Owner’s view, the Board should make explicit that the “understudy” role means that Petitioner will not make any substantive filing, not make oral hearing presentations, not seek to take cross-examination testimony, and not seek other discovery. *See id.* at 2–3. “Unless the promised ‘understudy role’ is expressly clarified as discussed below, Patent Owner respectfully opposes granting the subject joinder request.” *Id.* at 3.

Patent Owner argues that joinder should only be granted with the following additional conditions:

- (1) That [Petitioner] 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; and
- (2) That [Petitioner]’s exhibits, including its separate expert declaration (Ex. 1048), not be added to the record of this case, and that [Petitioner] have no right as understudy petitioner to submit any separate exhibits or other materials.

Opp. 3. Patent Owner also argues that joinder should only be granted if Petitioner “is given no right thereby to participate, as a joined party, without express prior Board authorization.” *Id.* at 4; *see also id.* at 6–9 (similar arguments with citations to past Board proceedings).

Patent Owner also contends that Petitioner’s conditions on its participation are vague and leave open a possibility that Petitioner can insert itself unilaterally, contrary to past Board conditions on joinder. *See*

Opp. 4–7, 11–12 (citing Mot. 2, 7–10). Patent Owner asserts that Petitioner “has not promised not to submit its own separate evidence” and has done so already, including submitting separate witness testimony. Opp. 4; *see also id.* at 10–11 (citing Ex. 1048). Patent Owner also contends that allowing Petitioner to present its own separate, different evidence would hinder a “just, speedy, and inexpensive resolution” of the joined proceeding. *See id.* at 11–12.

Patent Owner further asserts that should joinder be granted, Dr. Valenti’s Declaration should be withdrawn. *See* Opp. 11. According to Patent Owner, “[i]n other proceedings, the Board has granted joinder only on the simple, efficient condition that the joined petitioner use the witness declaration of the existing party, and indeed that, if it has filed a declaration, that the declaration be withdrawn.” *Id.* at 12 (citing *Mylan Pharms. Inc. v. Janssen Oncology, Inc.*, IPR2016-01332, Paper 21 at 9–11 (PTAB Jan. 10, 2017); *Argentum Pharma. LLC v. Janssen Oncology, Inc.*, IPR2016-01317, Paper 9 (PTAB Sept. 19, 2016); *Sony Corp. of Am. v. Network-I Security Sols., Inc.*, IPR2013-00386, Paper 16 at 7 (PTAB July 29, 2013)). Patent Owner further contends that Petitioner’s exhibits should not become exhibits in the Volkswagen IPR. *See id.* at 12–13. Patent Owner notes that Petitioner’s exhibits “appear identical to exhibits Volkswagen has previously filed” (*id.* at 12 (citing Exs. 1001–1047)) and argues that our rules “generally deny parties the right to the filing of duplicative exhibits without express Board authorization.” *Id.* at 12–13 (citing 37 C.F.R. § 42.6(d)).

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

Petitioner replies that Patent Owner’s additional condition that Petitioner 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 is unnecessary because Petitioner's stipulated conditions are consistent with the Board's practice. *See* Mot. Reply 2–3 (quoting Mot. 7–9; citing *Sony v. Memory Integrity*, Paper 11 at 6–7; *Advanced Micro Devices, Inc. v. Monterey Research, LLC*, IPR2021-00776, Paper 13 at 22 (PTAB Oct. 13, 2021); *Taiwan Semiconductor Mfg. Co., Ltd. v. Arbor Global Strategies, LLC*, IPR2021-00736, Paper 9 at 8 (PTAB Jun. 11, 2021)).

Petitioner also replies that Patent Owner's condition that Petitioner's exhibits, including its separate expert declaration (Ex. 1048) should be withdrawn if joinder is granted and that Petitioner has no right to submit any separate exhibits or other materials is inconsistent with the Board's practice. *See id.* at 3–5 (citing *Everlight*, Paper 12 at 6–7; *Splunk Inc. v. Sable Networks, Inc.*, IPR2022-00228, Paper 9 at 8 (PTAB Apr. 4, 2022); *MSN Labs. Private Ltd. v. Bausch Health Ireland Ltd.*, IPR2023-00016, Paper 12 at 3–4 (PTAB Nov. 29, 2022); *Mylan v. Janssen*, Paper 21 at 11; *Argentum v. Janssen*, Paper 9 at 5–6; *Sony v. Network-I Security Sols.*, Paper 16 at 7).

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. 7–9; Mot. Reply 1;

see also Opp. 2 (Petitioner “has said it ‘will act as an understudy’ until the target IPR petitioner is no longer a party in the proceeding.”).

At this stage of the proceeding, we determine Patent Owner’s additional conditions are not necessary. *See* Opp. 2–3. 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, we determine that 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, an *inter partes* review of claims 1–18 of the ’450 Patent is instituted with respect to all grounds raised 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 the ’450 Patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial;

FURTHER ORDERED that Petitioner’s Motion for Joinder (Paper 3) with IPR2022-01567 is *granted*, and Petitioner is hereby joined as a petitioner in IPR2022-01567;

FURTHER ORDERED that the asserted grounds of unpatentability on which the Board instituted *inter partes* review in IPR2022-01567 are

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unchanged, and no other grounds of unpatentability are added in IPR2022-01567;

FURTHER ORDERED that the Scheduling Order (Paper 9) entered in IPR2022-01567, and any modifications thereto, shall govern the schedule of the joined proceeding;

FURTHER ORDERED that Petitioner's role in IPR2022-01567 shall be limited as stated by Petitioner in the Motion for Joinder (Paper 2) unless and until Volkswagen is terminated from the proceeding in IPR2022-01567;

FURTHER ORDERED that the case caption in IPR2022-01567 shall be changed to reflect joinder of Petitioner as a petitioner in accordance with the attached example;

FURTHER ORDERED that a copy of this Decision shall be entered into the record of IPR2022-01567; and

FURTHER ORDERED that all further filings shall be made in IPR2022-01567.

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For PETITIONER:

Timothy W. Riffe
Usman A. Khan
FISH & RICHARDSON P.C.
IPR18768-0206IP1@fr.com
PTABInbound@fr.com

Reginald J. HillNicole A. Keenan
JENNER & BLOCK LLP
rhill@jenner.com
nkeenan@jenner.com

For PATENT OWNER:

Kenneth Weatherwax
Parham Hendifar
LOWENSTEIN & WEATHERWAXLLP
weatherwax@lowensteinweatherwax.com
hendifar@lowensteinweatherwax.com
NeoWireless_IPRs@lowensteinweatherwax.com

Hamad M. Hamad
CALDWELL, CASSADY & CURRY P.C.
hhamad@caldwellcc.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
AMERICAN HONDA MOTOR CO., INC., GENERAL MOTORS LLC,
NISSAN NORTH AMERICA, INC., AND TESLA, INC.,⁴
Petitioner,

v.

NEO WIRELESS LLC,
Patent Owner.

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⁴ American Honda Motor Co. Inc. was joined as a petitioner to this proceeding based on a petition and motion for joinder filed in IPR2023-00793, which were granted. General Motors LLC, Nissan North America, Inc., and Tesla, Inc., were joined as a petitioner to this proceeding based on a petition and motion for joinder filed in IPR2023-00963, which were granted.