

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENERAL MOTORS LLC, NISSAN NORTH AMERICA, INC.,
TESLA, INC., and AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

NEO WIRELESS, LLC,
Patent Owner.

IPR2023-00961
Patent 10,965,512 B2

Before HYUN J. JUNG, JO-ANNE M. KOKOSKI, and
STEPHEN E. BELISLE, *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*

General Motors LLC, Nissan North America, Inc., Tesla, Inc., and American Honda Motor Co., Inc., (collectively, “Petitioner”) filed a Petition (Paper 3, “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” or “VW IPR”). Paper 2 (“Motion” or “Mot.”). Neo Wireless LLC (“Patent Owner”) filed a Response to Petitioner’s Motion for Joinder (Paper 7, “Opp.”) but did not file a Preliminary Response. Petitioner subsequently filed a Reply in Support of its Motion for Joinder. Paper 8 (“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 General Motors LLC; Nissan North America, Inc.; Tesla, Inc.; American Honda Motor Co., Inc.; General Motors Co.; LG Electronics, Inc.; Nissan Motor Acceptance Corporation a/k/a Nissan Motor Acceptance Company LLC; Quectel Wireless Solutions Co. Ltd.; and Honda Development & Manufacturing of America, LLC as real parties in interest. Pet. 2–3.

Patent Owner only identifies 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. 3–4; Mot. 1. Patent Owner lists current district court 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.

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Both parties also identify IPR2022-01539 (the Volkswagen IPR), IPR2023-00079, and IPR2023-00764. Pet. 4; Paper 5, 1. We instituted review in IPR2023-00079 (“Mercedes IPR”) and granted a motion for joinder filed by petitioner Mercedes-Benz USA LLC (“Mercedes-Benz”). *Mercedes-Benz USA LLC v. Neo Wireless, LLC*, IPR2023-00079, Paper 11 (PTAB May 5, 2023) (Decision Granting Institution and Granting Motion for Joinder). The parties in the Mercedes IPR settled their dispute with respect to IPR2023-00079, IPR2022-01539, and the related district court litigation, and a Joint Motion to Terminate with respect to Mercedes-Benz was granted. *Volkswagen Group of America, Inc. v. Neo Wireless, LLC*, IPR2022-01539, Paper 21 (PTAB Aug. 15, 2023); *Mercedes-Benz USA LLC v. Neo Wireless, LLC*, IPR2023-00079, Paper 15 (PTAB Aug. 15, 2023).

We also instituted review in IPR2023-00764 (“Ford IPR”) and granted a motion for joinder filed by petitioner Ford Motor Co. *Ford Motor Co. v. Neo Wireless, LLC*, IPR2023-00764, Paper 15 (PTAB July 17, 2023) (Decision Granting Institution and Granting Motion for Joinder).

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

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