UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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HUAWEI DEVICE CO., LTD.,

Petitioner,

v.

OPTIS CELLULAR TECHNOLOGY, LLC,

Patent Owner.

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Case IPR2018-00807
Patent 8,102,833 B2

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Before KALYAN K. DESHPANDE, MICHAEL R. ZECHER, and
JOHN P. PINKERTON, *Administrative Patent Judges*.

PINKERTON, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
*35 U.S.C. § 314(a)*

## I.    INTRODUCTION

Huawei Device Co., Ltd. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–14 of U.S. Patent No. 8,102,833 B2 (Ex. 1001, "the '833 patent").  Paper 3 ("Pet.").  Optis Cellular Technology, LLC ("Patent Owner") filed a Preliminary Response.  Paper 7 ("Prelim. Resp.").  Institution of an *inter partes* review is authorized by statute when "the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."  35 U.S.C. § 314(a).  For the reasons discussed below, we deny institution of *inter partes* review of claims 1–14 of the '833 patent.

### A.    Related Proceedings

Patent Owner has asserted the '833 patent against Petitioner in *Optis Wireless Tech., LLC, v. Huawei Techs. Co.*, No. 2:17-cv-00123-JRG-RSP (E.D. Tex.) (the "Litigation").  Pet. 3; Paper 5, 2.

### B.    The '833 Patent

The '833 patent, entitled "Method for Transmitting Uplink Signals," issued on January 24, 2012, and claims priority to Korean application 10-2008-0068634, filed on July 15, 2008, and U.S. Provisional Applications, Nos. (1) 60/972,244, filed on September 13, 2007; (2) 60/987,427, filed on November 13, 2007; and (3) 60/988,433, filed on November 16, 2007.  Ex. 1001, [30], [60], 1:7–15.

The '833 patent relates generally to user equipment (UE) of a mobile communication system transmitting uplink signals, including ACK/NACK signals, control signals other than ACK/NACK signals, and data signals.

Ex. 1001, [57], 1:21–24. The patent describes that control signals transmitted to the uplink "include uplink ACK/NACK[1] signals for HARQ communication, channel quality indicator (CQI), and preceding matrix index (PMI)." *Id.* at. 1:29–32. The '833 patent specifically distinguishes ACK/NACK signals from control signals other than ACK/NACK signals and states "'control signals' will mean those other than the ACK/NACK signals." *Id.* at 5:15–16; *see also id.* at 1:43–45 (stating "the control signals will mean those except for ACK/NACK signals").

The '833 patent explains that the 3GPP LTE system uses a single carrier frequency division multiplexing access (SC-FDMA) scheme for uplink signal transmission. *Id.* at 1:33–35. According to the '833 patent, the 3GPP LTE system prescribes that data signals and control signals among the uplink signals are first multiplexed and ACK/NACK signals are transmitted to the multiplexed signals by puncturing the data or control signals when uplink ACK/NACK signal transmission is required for downlink data. *Id.* at 1:35–40. As the '833 patent also describes, it was determined that, in 3GPP LTE systems, when the control information is multiplexed with the data information, "the control information is transmitted near a reference signal." *Id.* at 1:45–49. The '833 patent explains that "control signals generally

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[1] Petitioner's expert, Dr. Jonathan Wells, opines that an example of an uplink control signal would be an acknowledgement sent by the UE to the base station to confirm it has received a transmitted data signal. Ex. 1008 ¶ 38. According to Dr. Wells, a positive acknowledgement that the data signal was properly received by the UE is known as an ACK, and a negative acknowledgement if there was some problem receiving the data signal is known as a NACK. *Id.*

require higher reliability than the data signals," and "the ACK/NACK signals require higher reliability than other types of control signals." *Id.* at 1:51–57. Accordingly, the '833 patent describes that, when uplink ACK/NACK signal transmission is required while all the control signals are transmitted by approximating to the reference signal, "problems occur in that the ACK/NACK signals can neither be transmitted by puncturing the control signals arranged near the reference signal nor be transmitted near the reference signal." *Id.* at 1:54–62. Thus, the '833 patent describes a method for transmitting uplink signals by efficiently arranging ACK/NACK signals and other control signals in a resource region considering priority among them. *Id.* at 2:7–10; *see also id.* at 2:25–27 (stating that "arranging the ACK/NACK signals at both symbols near to symbols through which a reference signal is transmitted").

The '833 patent describes transmitting information in accordance with the SC-FDMA scheme in which information sequences are transmitted using one "resource block" and one "sub-frame." *Id.* at 5:31–40. Each sub-frame includes two slots, and each slot includes 7 SC-FDMA symbols. *Id.* at 5:40–45, cl. 3. Two of the 14 SC-FDMA symbols in each sub-frame are used as reference signals that are pilot signals. *Id.* at 5:40–43. Each resource block includes 12 OFDM (orthogonal frequency division multiple access) subcarriers and 7 SC-FDMA symbols in one slot. *Id.* at 5:37–40. The '833 patent explains that, at this time, the number of modulation symbols of the information that can be transmitted to the uplink becomes 12*12=144. *Id.* at 5:43–45. The '833 patent further explains that 144 information sequences can be transmitted through 12 virtual subcarriers and 12 SC-FDMA

symbols, which "can be represented by a matrix structure of 12*12 called a time-frequency mapper."  *Id.* at 5:46–49.

An annotated version of Figure 6 of the '833 patent is reproduced below.
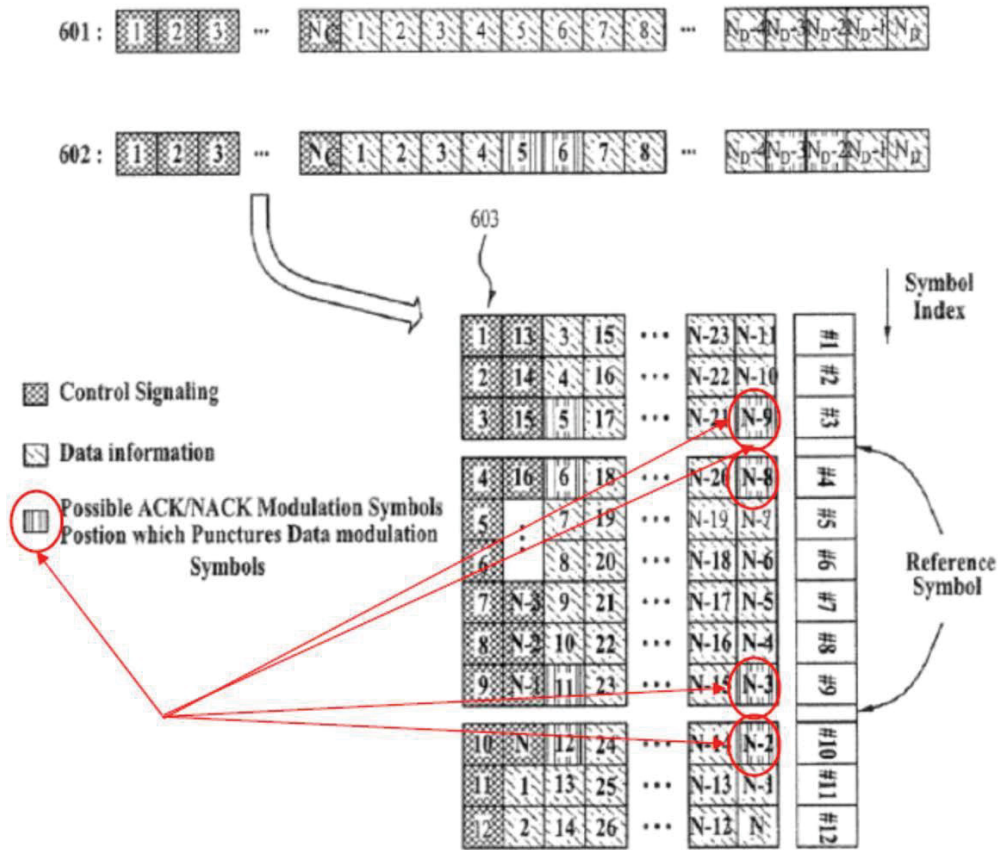


The annotated version of Figure 6 above is a diagram illustrating a method for transmitting uplink signals in accordance with one embodiment of the '833 patent.  *Id.* at 3:33–35, 6:49–51.  This figure includes three portions, arranged vertically, and is slightly annotated by Patent Owner with red lines and circles showing the location of possible ACK/NACK symbols. The top portion of Figure 6 (labeled 601) is a horizontal strip of small,

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