

**United States Court of Appeals  
for the Federal Circuit**

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**WI-FI ONE, LLC,**  
*Appellant*

v.

**BROADCOM CORPORATION,**  
*Appellee*

**ANDREI IANCU, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES  
PATENT AND TRADEMARK OFFICE,**  
*Intervenor*

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2015-1944

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2013-  
00601.

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Decided: April 20, 2018

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Before DYK, BRYSON, and REYNA, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* BRYSON.

Dissenting opinion filed by *Circuit Judge* REYNA.

BRYSON, *Circuit Judge*.

These three consolidated cases return to the panel on remand from the en banc court. That court reviewed, and overturned, the panel's decision that time-bar determinations by the Patent Trial and Appeal Board ("PTAB" or "Board") in inter partes review proceedings are not appealable. *Wi-Fi One, LLC v. Broadcom Corp.*, 878 F.3d 1364 (Fed. Cir. 2018) (en banc).

The three cases are related appeals from decisions of the PTAB. In each case, the Board held various claims of three patents owned by Wi-Fi One, LLC ("Wi-Fi"), to be invalid for anticipation.

This panel initially wrote a precedential opinion in appeal No. 2015-1944, and decided Appeal Nos. 2015-1945 and 2015-1946 by summary affirmance. *See Wi-Fi One, LLC v. Broadcom Corp.*, 837 F.3d 1329 (Fed. Cir. 2016); *Wi-Fi One, LLC v. Broadcom Corp.*, No. 2015-1945, 668 F.

App'x 893 (Fed. Cir. 2016); *Wi-Fi One, LLC v. Broadcom Corp.*, No. 2015-1946, 668 F. App'x 893 (Fed. Cir. 2016).

Although the en banc court vacated the panel's judgments in all three cases, the en banc opinion addressed only the appealability of the PTAB's time-bar determination under 35 U.S.C. § 315(b). The court did not address the remaining portions of the panel's decision in Appeal No. 2015-1944 or the aspects of the summary affirmances in Appeal Nos. 2015-1945 and 2015-1946 that related to the merits of Wi-Fi's appeals.

The panel now reaffirms the portions of its three prior decisions that were left unaffected by the en banc court's decision. Accordingly, in Appeal No. 2015-1944, parts III and IV of the original panel opinion are reinstated and are reproduced in substance as parts III and IV of this opinion. In part II of this opinion, the panel addresses the merits of Wi-Fi's time-bar claim that the en banc court held to be appealable. On that issue, we affirm the decision of the PTAB. In separate orders, we reinstate the summary affirmances of the PTAB's decisions in Appeal Nos. 2015-1945 and 2015-1946. Because the time-bar issue raised in those cases is identical to the time-bar issue raised in Appeal No. 2015-1944, we affirm the PTAB's decision as to the time-bar issue in those cases as well.

## I

### A

The patent at issue in this case, U.S. Patent No. 6,772,215 ("the '215 patent"), is directed to a method for improving the efficiency by which messages are sent from a receiver to a sender in a telecommunications system to advise the sender that errors have occurred in a particular message.

In the technology described in the patent, data is transmitted in discrete packets known as Protocol Data

Units (“PDUs”). The useful data or “payload” in those packets is carried in what are called user data PDUs (“D-PDUs”). Each D-PDU contains a sequence number that uniquely identifies that packet. The sequence number allows the receiving computer to determine when it either has received packets out of order or has failed to receive particular packets at all, so that the receiver can correctly combine the packets in the proper order or direct the sender to retransmit particular packets as necessary.

The receiver uses a different type of packet, a status PDU (“S-PDU”), to notify the sender of the D-PDUs it failed to receive. The ’215 patent is concerned with organizing the information contained in S-PDUs efficiently so as to minimize the size of the S-PDUs, thus conserving bandwidth.

The patent discloses a number of methods for encoding the sequence numbers of missing packets in S-PDUs. Some of those methods use lists that indicate which packets are missing by displaying the ranges of the sequence numbers of the missing packets. Other methods are based on bitmaps that use binary numbers to report on the status of a fixed number of packets relative to a starting point.

Depending on how many packets fail to be properly delivered and the particular sequence numbers of the errant packets, different methods can be more or less efficient for encoding particular numbers and ranges of errors. In order to leverage the benefits of the different encoding methods, the patent discloses an S-PDU that can combine multiple message types in an arbitrary order, with “no rule on the number of messages or the type of message that can be included in the S-PDU.” ’215 patent, col. 7, ll. 55-57. Using that technology, S-PDUs can be constructed with a combination of the encoding types best suited for the particular errors being encoded,

so that the S-PDU can be more compact than an S-PDU that uses a single encoding type.

## B

In 2010, Wi-Fi's predecessors, Ericsson, Inc., and Telefonaktiebolaget LM Ericsson (collectively, "Ericsson") filed a patent infringement action against D-Link Systems, Inc., and several other defendants in the United States District Court for the Eastern District of Texas. Ericsson alleged infringement of the '215 patent and eight other patents. Following a jury trial, that case resulted in a judgment of infringement as to the '215 patent and two other patents, U.S. Patent Nos. 6,424,625 ("the '625 patent") and 6,566,568 ("the '568 patent"). *See generally Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201 (Fed. Cir. 2014).<sup>1</sup>

In 2013, shortly after judgment was entered in the district court action, Broadcom petitioned for inter partes review of the '215 patent, the '625 patent, and the '568 patent. Broadcom was the manufacturer of two chips that formed the basis for some of the infringement allegations in the district court case, but Broadcom was not a defendant in that litigation. The inter partes review proceeding at issue in this case (PTAB No. IPR2013-00601) concerned the '215 patent. The '568 patent was at issue in PTAB No. IPR2013-00602, which is the subject of Appeal No. 2015-1945 in this court, and the '625 patent was at issue in PTAB No. IPR2013-00636, which is the subject of Appeal No. 2015-1946 in this court.

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<sup>1</sup> During the proceedings before the PTAB, Ericsson assigned its interest in the '215 patent to Wi-Fi. For simplicity, Wi-Fi will be referred to as the patent owner throughout this opinion.

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