

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BROADCOM CORPORATION
Petitioner

v.

TELEFONAKTIEBOLAGET L. M. ERICSSON
Patent Owner

Case IPR2013-00601
Patent 6,772,215

Before KARL D. EASTHOM, KALYAN K. DESHPANDE, and
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Broadcom Corporation (“Petitioner”) filed a petition requesting *inter partes* review of claims 1, 2, 4, 6, 8, 15, 22, 25, 26, 29, 32, 34, 45, 46, 49, 52, and 54 (the “challenged claims”) of U.S. Patent No. 6,772,215 (Ex. 1001, “the ’215 patent”). Paper 3 (“Pet.”). Telefonaktiebolaget L. M. Ericsson (“Patent Owner”) filed an election to waive its preliminary response. Paper 22. We have jurisdiction under 35 U.S.C. § 314.

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides as follows:

THRESHOLD.—The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 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.

Upon consideration of the petition, we determine that the information presented by Petitioner establishes that there is a reasonable likelihood that Petitioner would prevail in showing unpatentability of the challenged claims of the ’215 patent. Accordingly, pursuant to 35 U.S.C. § 314, we institute an *inter partes* review of claims 1, 2, 4, 6, 8, 15, 22, 25, 26, 29, 32, 34, 45, 46, 49, 52, and 54 of the ’215 patent.

A. Related Proceedings

Petitioner and Patent Owner indicate that the ’215 patent is involved in a case captioned *Ericsson Inc., et al. v. D-LINK Corp., et al.*, Civil Action No. 6:10-cv-473 (E.D. Tex.) (“Texas Litigation”), and in an investigation

captioned *In the Matter of Certain Electronic Devices, Including Wireless Communication Devices, Tablet Computers, Media Players and Televisions, and Components Thereof*, ITC Inv. No. 337-TA-862. Pet. 1-2; Paper 6 at 1. Patent Owner also identifies an appeal at the Federal Circuit captioned *Ericsson Inc., et al. v. D-LINK Corp., et al.*, Case Nos. 2013-1625, -1631, -1632, and -1633. Paper 6 at 1. Petitioner also has filed two petitions for *inter partes* review of related patents: IPR2013-00602 (U.S. Patent No. 6,466,568), IPR2013-00636 (U.S. Patent No. 6,424,625).

B. The '215 Patent

The '215 patent relates to the telecommunications field and, in particular, to a method for minimizing feedback responses in Automatic Repeat Request (ARQ) protocols. Ex. 1001, col. 1, ll. 14-17. When data is conveyed between nodes in a network, certain algorithms are used to recover from the transmission of erroneous data and the loss of data between the nodes. *Id.* at ll. 20-23. An algorithm commonly used is referred to as an ARQ protocol. *Id.* at ll. 23-25. Each node, or peer entity, in a network includes a receiver and a sender. *Id.* at ll. 26-29. The units of data conveyed between peer entities are commonly referred to as Protocol Data Units (“PDUs”). *Id.* at ll. 29-30. The basic function of an ARQ protocol is to allow the receiver to request that the sender retransmit PDUs that were lost during transmission or contained errors. *Id.* at ll. 33-37. The receiver can inform the sender about which PDUs were correctly received and/or can inform the sender about which PDUs were *not* correctly received. *Id.* at

ll. 38-41. When the sender receives this information, it retransmits the “lost” PDUs. *Id.* at ll. 41-42. Several ARQ protocols, such as Stop-and-Wait ARQ, Go-back-N ARQ, and Selective-Repeat ARQ, existed at the time that the ’215 patent was filed and were well known. *Id.* at col. 2, ll. 17-21.

Figure 1 of the ’215 patent is reproduced below.

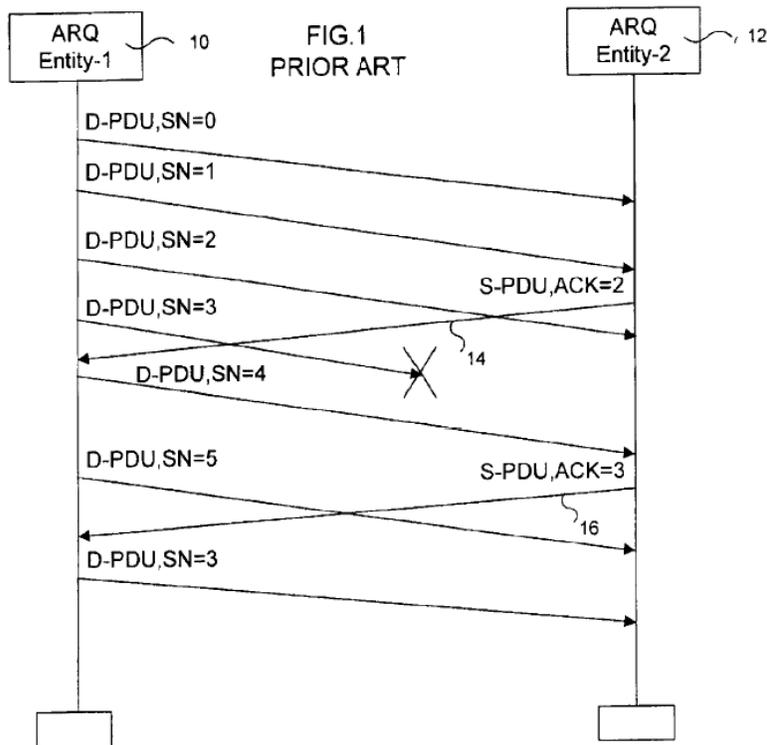


Figure 1 illustrates the use of ARQ protocols. *Id.* at ll. 22-23. A sequence of transmitted Data-PDUs (“D-PDUs”) and Status-PDUs (“S-PDUs”) is shown. *Id.* at ll. 28-29. A D-PDU includes user data, a sequence number (“SN”), and possibly piggybacked error control information. *Id.* at ll. 29-31. The sequence number (“SN”) associated with each D-PDU to identify that specific D-PDU. *Id.* at ll. 32-34. An S-PDU includes status information but no user information. *Id.* at ll. 31-32.

Two main methods are currently used for coding the SNs within S-PDUs: (1) a list of SNs to be retransmitted; and (2) a bitmap to represent the SNs to be retransmitted. *Id.* at ll. 48-52. As such, an S-PDU includes a format identifier that can be used by a receiver to distinguish between the different PDU formats.

Figures 2 and 3 of the '215 patent are reproduced below:

FIG. 2 PRIOR ART	FIG. 3 PRIOR ART
PDU_format=S-PDU	PDU_format=S-PDU
Length=5	SSN=2
SN=3	BITMAP=0100001111111000
SN=4	
SN=5	
SN=9	
SN=16	

Figure 2 shows an S-PDU that uses the list method to code SNs. *Id.* at ll. 60-62. Figure 3 shows an S-PDU that uses the bitmap method to code SNs. *Id.* at col. 3, ll. 18-19. According to the '215 patent, a significant problem with existing ARQ protocols is that fixed length messages are used, which leads to a waste of bandwidth because of the unnecessary overhead information that is transmitted. *Id.* at ll. 46-50.

Table 1 is reproduced below.

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