

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01466
Patent 8,611,404 B2

Before SALLY C. MEDLEY, KALYAN K. DESHPANDE, and
TREVOR M. JEFFERSON, *Administrative Patent Judges*.

DESHPANDE, *Administrative Patent Judge*.

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

I. INTRODUCTION

Cisco Systems, Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 6, 10, 11, 15, 16, and 20 of U.S. Patent No. 8,611,404 B2 (Ex. 1001, “the ’404 patent”). Paper 1 (“Pet.”). TQ Delta, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that 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.” After considering the Petition, the Preliminary Response, and associated evidence, we conclude that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of claims 6, 10, 11, 15, 16, and 20 of the ’404 patent. Thus, we authorize institution of an *inter partes* review of claims 6, 10, 11, 15, 16, and 20 of the ’404 patent as unpatentable over Bowie, Yamano, and ANSI T1.413.

A. Related Proceedings

Petitioner indicates that the ’404 patent is the subject of several district court proceedings. *See* Pet. 1. Petitioner further indicates that the ’404 patent is involved in *ARRIS Group, Inc. v. TQ Delta, LLC.*, Case IPR2016-01160 (PTAB Dec. 14, 2016). *Id.*

B. The ’404 Patent (Ex. 1001)

The ’404 patent discloses a method and apparatus for establishing a power management sleep state in a multicarrier system. Ex. 1001, 1:31–33. The ’404 patent discloses an asynchronous digital subscriber loop (ADSL) system having a first transceiver located at the site of a customer’s premises (“CPE transceiver”) and a second transceiver located at the local central

telephone office (“CO transceiver”). *Id.* at 3:62–67. The transceivers include a transmitter section for transmitting data over a digital subscriber line and a receiver section for receiving data from the line. *Id.* at 4:14–17. The transceivers further include a clock, controller, frame counter, and a state memory. *Id.* at 4:58–5:15. Typically, data is communicated in the form of a sequence of data frames, sixty-eight frames for ADSL, followed by a synchronization frame. *Id.* The sixty-nine frames comprise a “superframe.” *Id.*

The power down operation of the CPE transceiver begins on receipt of a power-down indication. *Id.* at 6:27–30. The CPE transceiver responds to the power down indication by transmitting to the CO transceiver an “Intend to Enter Sleep Mode” notification. *Id.* at 6:39–42. The CO transceiver responds by transmitting an “Acknowledge Sleep Mode” notification to the CPE transceiver, and the CPE transceiver transmits an “Entering Sleep Mode” notification to the CO transceiver. *Id.* at 6:53–65. The CO transceiver detects the notification and transmits its own “Entering Sleep Mode” notification. *Id.* at 6:65–67. The CO transceiver stores its state in its own state memory corresponding to the state memory of the CPE transceiver. *Id.* at 6:67–7:2. The CO transceiver continues to advance the frame count and the superframe count during the period of power-down in order to ensure synchrony with the CPE transceiver when communications are resumed. *Id.* at 7:9–12. The CO transceiver further continues to monitor the subscriber line for an “Exiting Sleep Mode” notification, and the CPE transceiver transmits this signal when it receives an “Awaken” indication. *Id.* at 7:57–64. In response to the “Awaken” signal, CPE transceiver retrieves its store state from state memory and restores full power to its

circuitry. *Id.* at 7:64–66. CO Transmitter detects “Exit Sleep Mode” notification and restores its state and power. *Id.* at 8:1–4.

C. Illustrative Claim

Petitioner challenges claims 6, 10, 11, 15, 16, and 20 of the ’404 patent. Pet. 12–62. Claims 6, 11, and 16 are independent claims. Claim 6 is illustrative of the claims at issue and is reproduced below:

6. An apparatus comprising a transceiver operable to:
 - receive, in a full power mode, a plurality of superframes, wherein the superframe comprises a plurality of data frames followed by a synchronization frame;
 - receive, in the full power mode, a synchronization signal;
 - transmit a message to enter into a low power mode;
 - store, in a low power mode, at least one parameter associated with the full power mode operation wherein the at least one parameter comprises at least one of a fine gain parameter and a bit allocation parameter;
 - receive, in the low power mode, a synchronization signal;and
 - exit from the low power and restore the full power mode by using the at least one parameter and without needing to reinitialize the transceiver.

Ex. 1001, 10:29–43.

D. The Alleged Ground of Unpatentability

The information presented in the Petition sets forth a proposed ground of unpatentability of claims 6, 10, 11, 15, 16, and 20 of the ’404 patent under 35 U.S.C. § 103(a) as follows (*see* Pet. 12–62):¹

¹ Petitioner supports its challenge with the Declaration of Sayfe Kiaei, Phd. (Ex. 1003).

References	Claims Challenged
Bowie, ² Yamano, ³ and ANSI T1.413 ⁴	6, 10, 11, 15, 16, and 20

II. ANALYSIS

A. Claim Construction

The Board interprets claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. “Synchronizing Signal”

Petitioner argues that the ’404 patent specification does not define “synchronization signal.” Pet. 11 (citing Ex. 1003, 20). Rather, Petitioner argues that the ’404 patent describes a “timing reference signal 62[] is transmitted from the transmitter with which the receiver 16 communicates (e.g., the CO transmitter).” *Id.* (citing Ex. 1001, 5:39–41). Petitioner argues that the signal may be “a pure tone of fixed frequency and phase which is synchronized with the Master Clock in the transmitter.” *Id.* (citing Ex. 1001,

² U.S. Patent No. 5,956,323; issued Sep. 21, 1999 (Ex. 1005) (“Bowie”).

³ U.S. Patent No. 6,075,814; issued Jun. 13, 2000 (Ex. 1006) (“Yamano”).

⁴ *Network and Customer Installation Interfaces – Asymmetric Digital Subscriber Line (ADSL) Metallic Interface*, AMERICAN NATIONAL STANDARDS INSTITUTION (ANSI) T1.413-1995 STANDARD (Ex. 1007) (“ANSI T1.413”).

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