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Paper 7
Date: July 21, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CORNING OPTICAL COMMUNICATIONS LLC,
Petitioner,

v.

DALI WIRELESS, INC.,
Patent Owner.

IPR2021-00408
Patent 10,506,454 B2

Before MELISSA A. HAAPALA, *Senior Lead Administrative Patent Judge*, and KARL D. EASTHOM and SHARON FENICK, *Administrative Patent Judges*.

FENICK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

Corning Optical Communications LLC ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–19 (the "challenged claims") of U.S. Patent No. 10,506,454 B2 (Ex. 1001, "the '454 patent"). Paper 2

("Pet."), 1. Dali Wireless, Inc. ("Patent Owner"), filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

The Board has authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the Petition and the Preliminary 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." For the reasons that follow, we institute an *inter partes* review as to the challenged claims of the '454 patent on all grounds of unpatentability presented.

B. Real Parties in Interest

Petitioner identifies Corning, Inc., and Corning Research and Development Corp. as additional real parties in interest. Pet. 1. Patent Owner identifies no additional real parties in interest. Paper 4, 1.

C. Related Matters

Petitioner and Patent Owner each identify *Dali Wireless Inc. v. Corning Optical Communications LLC*, Case No. 3:20-cv-06469-EMC (N.D. Cal.) ("the related district court action") as a related action involving the '454 patent.[1] Pet. 1; Paper 4, 1.

D. The '454 Patent

The '454 patent, titled "Optimization of Traffic Load in a Distributed Antenna System," describes dynamically routing signals in a Distributed

[1] According to Petitioner, the case is in the early stages, a stay is likely, and no trial date has yet been set. *See* Pet. 81–83. Patent Owner did not present arguments towards exercising discretion to deny institution under 35 U.S.C. § 314(a). *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). We do not consider this issue further.

Antenna System (DAS) as part of a distributed wireless network. Ex. 1001, codes (54), (57), 1:15–17. The patent describes traffic monitoring and optimization to provide flexibility to manage, control, enhance, and facilitate radio resource efficiency and usage, and the overall performance of the distributed wireless network. *Id.* at 1:17–19, 4:13–17. One example of a DAS is provided in Figure 1, reproduced below.

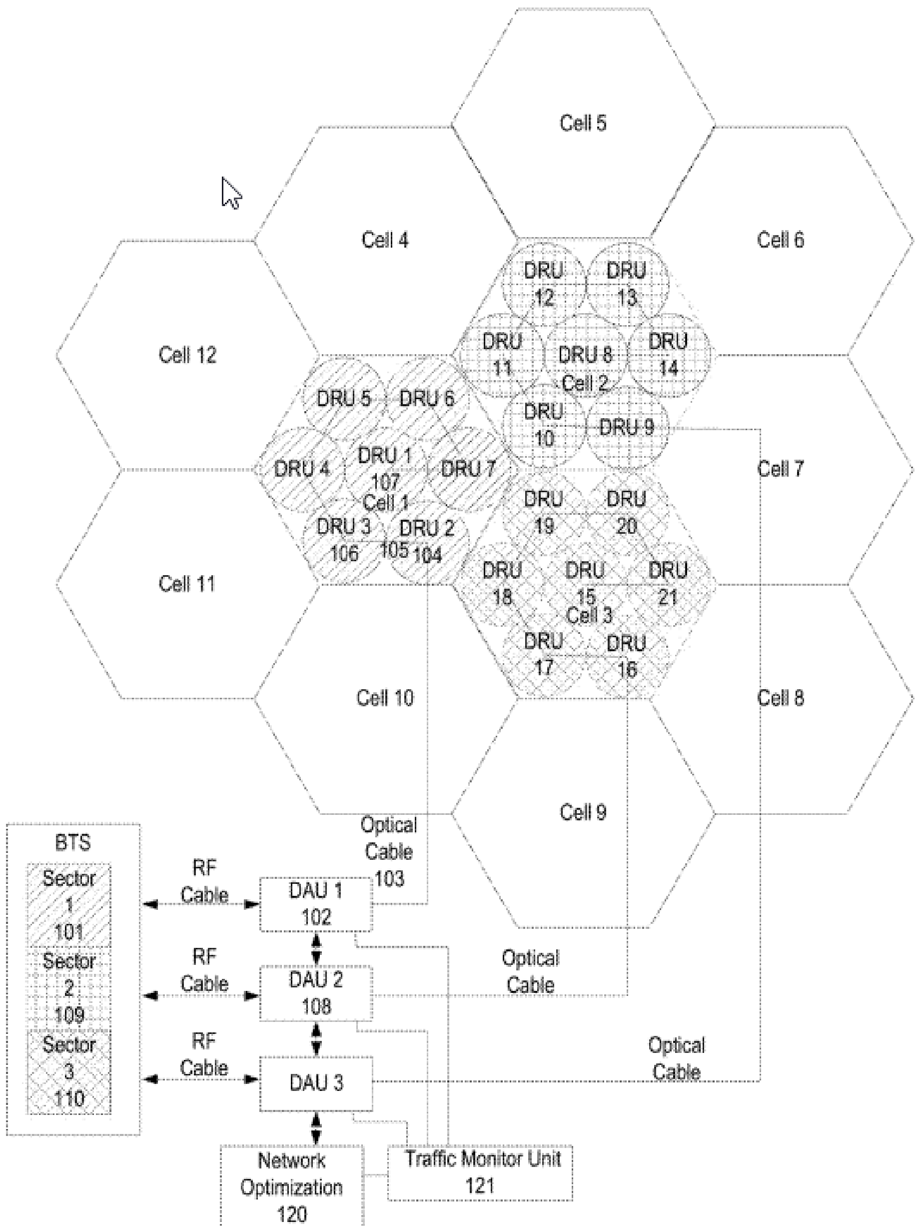

FIG. 1

Figure 1 is a block diagram showing a DAS system employing multiple Digital Access Units (DAUs) and Digital Remote Units (DRUs).

In the example according to one embodiment of the invention, as shown in Figure 1, a three-sector base station (BTS) includes sectors 101, 109, and 110, which provide downlink signals to DAU 1 102, DAU 2 108 and DAU 3, respectively. *Id.* at 2:20–24, 5:2–4 ("A typical base station comprises 3 independent radio resources, commonly known as sectors."), 5:60–65, 6:62–63, 7:2–4. The DAUs "function as the interface between the base stations and digital remote units (DRUs)." *Id.* at 4:60–63. DAU 1 102 is connected to and transports signals to DAU 2 108, and DAU 2 108 is connected to DAU 3. *Id.* at 6:23–24, 7:2–4. The inter-networking of the DAUs facilitates the routing of DRU signals among the multiple DAUs and supports transport of radio frequency (RF) downlink and uplink signals between the base station (BTS) and the DRUs. *Id.* at 6:23–29, 7:4–7, 17:41.

Groups of DRUs, such as DRU 1 107, DRU 2 104, DRU 3 106, and DRU 4 through DRU 7 in Figure 1 are daisy chained together to achieve network coverage for a specific geographical area, which is identified as a cell (e.g. Cell 1). *Id.* at 5:65–6:1, 6:48–60. In this way each individual base station sector's radio resources are transported to a given geographical area through the daisy-chained DRUs in that area. *Id.* at 6:54–60. Thus, for example, downlink RF signals from BTS Sector 1 101 are received by DAU 1 102. *Id.* at 6:62–63. DAU 1 102 translates these signals to optical signals that are transported via optical cable 103 to DRU 2 104. *Id.* at 6:63–66. Optical cable 105 transports the optical signals to DRU 3 106, from where they are passed to each DRU in the daisy chain of Cell 1, ending at DRU 1 107. *Id.* at 6:66–7:4.

Additionally, traffic monitoring unit 121 tracks and collects traffic load at each DAU in the network, and stores this information in the network optimization unit 120. *Id.* at 7:8–12, 10:31–38, Fig. 9 (element 910). Network performance may be expressed by key performance indicators (KPIs) collected from different parts of the network. *Id.* at 5:52–54, 10:31–38, 11:48–50. Quality of service (QoS) metrics are determined by KPIs. *Id.* at 5:52–59, 11:25–31, 11:48–50, 11:54–55, 14:41–42, 14:50–51, Fig. 10.

Optimization of the network is performed in one embodiment as per a method illustrated in Figure 9, reproduced below.

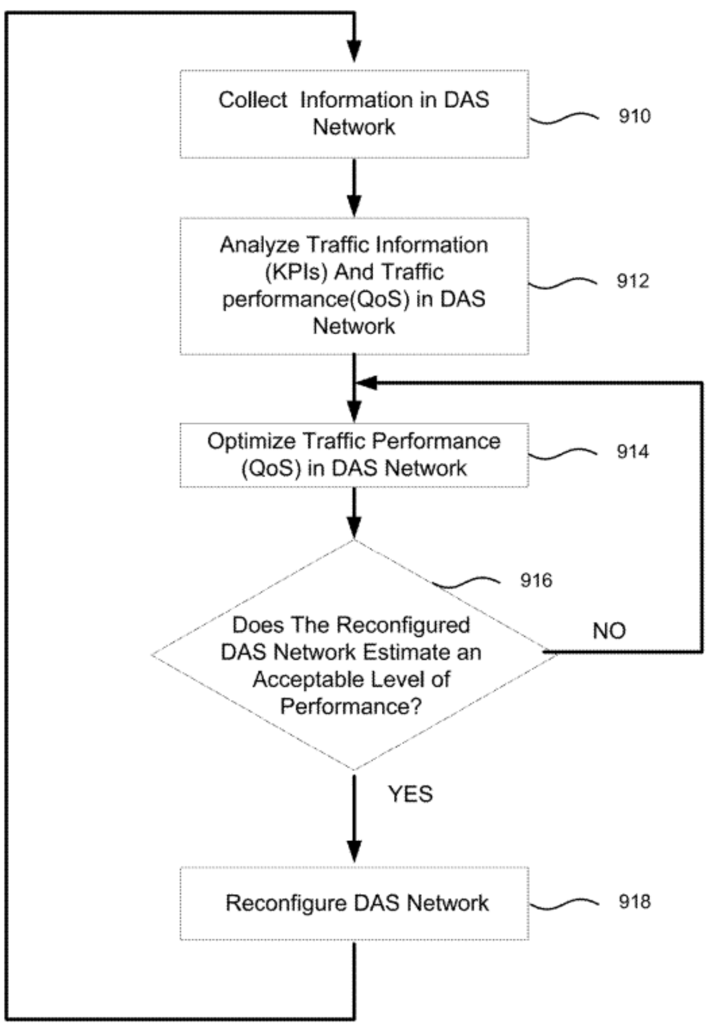

FIG. 9

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