

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,

Petitioner,

v.

IRON OAK TECHNOLOGIES, LLC,

Patent Owner.

IPR2018-01554

Patent 5,966,658

Before PATRICK R. SCANLON, KEVIN W. CHERRY, and
ARTHUR M. PESLAK, *Administrative Patent Judges*.

PESLAK, *Administrative Patent Judge*

JUDGMENT

Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner, Samsung Electronics Co., Ltd. (“Petitioner”), filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claim 1 (“the challenged claim”) of U.S. Patent No. 5,966,658 (Ex. 1001, “the ’658 Patent”). Petitioner submits a Declaration of David H. Williams (Ex. 1002) in support of the Petition. Patent Owner, Iron Oak Technologies, LLC (“Patent Owner”), timely filed a Preliminary Response. Paper 8. Taking into account the arguments presented in Patent Owner’s Preliminary Response, we determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail in challenging claim 1 of the ’658 Patent as unpatentable under 35 U.S.C. § 102.¹ On February 13, 2019, we instituted this *inter partes* review, as to the challenged claim and all grounds presented in the Petition. Paper 9 (“Dec.”).

During the course of trial, Patent Owner timely filed a Patent Owner Response (Paper 12, “PO Resp.”). Petitioner filed a Reply to Patent Owner’s Response (Paper 14, “Reply”). Patent Owner filed a Sur-Reply (Paper 15, “Sur-reply”). An oral hearing was held on November 12, 2019 and a transcript of the hearing has been entered into the record. Paper 23 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claim 1 of the ’658 Patent. For the reasons discussed below, we determine that Petitioner

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. § 102. Because the ’658 Patent was filed before March 16, 2013 (the effective date of the relevant amendment), the pre-AIA version of § 102 applies.

has demonstrated by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102.

A. Related Matters

The parties state that the '658 Patent is the subject of the following civil actions:

- 1) *Iron Oak Techs. LLC v. Dell Inc.*, No. 3:18-cv-1542 (N.D. Tex.);
- 2) *Iron Oak Techs. LLC v. Sharp Elecs. Corp.*, No. 3:17-cv-02699 (N.D. Tex.);
- 3) *Iron Oak Techs. LLC v. Lenovo (United States) Inc. and Lenovo Holding Co.*, No. 3:18-cv-1539 (N.D. Tex.);
- 4) *Iron Oak Techs. LLC v. Acer Am. Corp.*, No. 3:18-cv-1543 (N.D. Tex.);
- 5) *Iron Oak Techs. LLC v. Samsung Elecs. Am. Inc. et al.*, No. 3:17-cv-01259 (N.D. Tex.);
- 6) *Iron Oak Techs. LLC v. Fujitsu Am. Inc.*, No. 3:16-cv-03319 (N.D. Tex.);
- 7) *Iron Oak Techs. LLC v. Toshiba Am. Inc.*, No. 3:16-cv-03320 (N.D. Tex.);
- 8) *Iron Oak Techs. LLC v. Asus Computer Int'l*, No. 3:16-cv-03322 (N.D. Tex.); and
- 9) *Iron Oak Techs. LLC v. Microsoft Corp.*, No. 3:18-cv-0222 (N.D. Tex.).

Pet. 1–2; Paper 7, 1–2.

The '658 Patent is subject to review in

- 1) *Unified Patents Inc. v. Iron Oak Techs., LLC*, IPR2018-00486. Pet. 2, Paper 7, 2; and
- 2) *Microsoft Corp. v. Iron Oak Techs., LLC*, IPR2019-00107. Paper 7, 2.

B. The '658 Patent (Ex. 1001)

The '658 Patent issued on October 12, 1999, and is entitled “Automated Selection of a Communication Path.” Ex. 1001, code (45),

(54). The '658 Patent issued from U.S. Patent Application 08/718,951, filed on September 26, 1996. *Id.* at code (21), (22).

The '658 Patent generally “relates to mobile communications, and more particularly to the automated selection of a communication path.” Ex. 1001, 1:6–8. The '658 Patent describes that “a plurality of alternate communication paths may be available to a mobile communications device.” *Id.* at 1:18–19. Among the types of communication paths disclosed are “a network of satellite-based or land-based transceivers, a public switched telephone network (PSTN), a mobile telecommunications switching office (MTSO), or any other suitable element for communications.” *Id.* at 1:21–25, 2:44–63, Fig. 1.

Figure 1, reproduced below, illustrates a system for selecting an alternate communication path for transmitting a message between vehicle 12 and remote location 14 over alternate communication paths. *Id.* at 3:23–25.

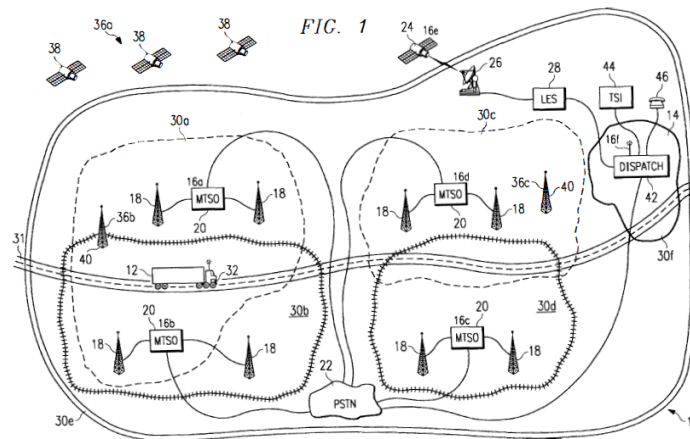


Figure 1 illustrates a system 10 for selecting one of a plurality of communication paths.

The '658 Patent provides that “[c]ommunication over a communication path 16 may be implemented in a voice channel, control

channel, paging channel, part of a seized voice or data channel.” *Id.* at 4:28–31.

The ’658 Patent describes that

[w]hen selecting a communication path 16, processor 72 may consider the functional characteristics of each communication path 16 (e.g., cost of communication, ability to deliver voice and/or data, ability to confirm receipt, propagation delay, speed, current load, or capacity). Processor 72 may also consider the various parameters for the communication (e.g., priority, preferred cost, preferred transmission time, amount of information to be communicated, type of communication, or confirmation of receipt).

Id. at 5:55–64.

The functional characteristics of the communication path and the various parameters for the communication are deemed “communication attributes.” *Id.* at 5:64–66. In one disclosed embodiment, processor 72 selects a communication path based on “the geographical position of the vehicle 12 and the priority of the communication” as the communication attribute. *Id.* at 5:66–6:3, Figs. 4, 5. In a second disclosed embodiment, “each communication attribute corresponds to a characteristic of a communication path 16.” *Id.* at 6:4–6, Figs. 6, 7.

The ’658 Patent describes

In operation, mobile unit 32 may receive a request for communication from either a user . . . or a sensor 82. Such a request for communication may specify various parameters for the communication, including priority, preferred cost, preferred transmission time, amount of information to be communicated, type of communication (e.g., data and/or voice), confirmation of receipt, and the like. This information may be conveyed in the form of one or more communication attributes. . . . Furthermore, processor 72 may retrieve data, such as table 104 [Fig. 4] or table 120 [Fig. 6], relating to various alternate

communication paths 16 from memory 74. Using this information, processor 72 selects the most appropriate communication path 16 for communication.

Id. at 9:52–10:1.

C. Challenged Claim

Petitioner challenges independent claim 1, reproduced below.

1. An apparatus for automatically selecting one of a plurality of communication paths, the apparatus comprising:
a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication; and
a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.

Ex. 1001, 16:31–43.

D. Asserted Grounds of Unpatentability

Petitioner challenges claim 1 of the '658 Patent based on the asserted grounds of unpatentability set forth in the following table (Pet. 3, 16–66):

Claim Challenged	35 U.S.C. §	Reference(s)/Basis
1	102	Le Boudec ²
1	102	Bosack ³
1	102	Oberlander ⁴

² U.S. Patent No. 6,044,075, issued Mar. 28, 2000 (Ex. 1006, “Le Boudec”).

³ U.S. Patent No. 5,088,032, issued Feb. 11, 1992 (Ex. 1005, “Bosack”).

⁴ U.S. Patent No. 5,509,000, issued Apr. 16, 1996 (Ex. 1, “Oberlander”).

II. ANALYSIS

A. Overview

Petitioner bears the burden of establishing the unpatentability of any claim by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This burden of persuasion never shifts to the patent owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is anticipated under 35 U.S.C. § 102 “only if each and every element as set forth in the claims is found either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). However, this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *See In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). We analyze the asserted grounds based on anticipation in accordance with these principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person having ordinary skill in the art at the time of the application for the '658 Patent “would have had at least a Bachelor’s degree (or equivalent education) in electrical engineering, communications network engineering, or a similar discipline and at least two year additional relevant experience” which “includes work relating to network communications, routing, forwarding, and/or traffic monitoring of network transmissions, such as communication network selection, QoS functionalities, or similar types of technologies.” Pet. 4 (citing Ex. 1002 ¶¶ 20–22). Patent Owner does not dispute Petitioner’s contentions concerning the level of ordinary skill in the art. *See generally* PO Resp.

Based on the foregoing, we adopt Petitioner’s definition of the level of ordinary skill in the art because it appears reasonable and consistent with the ’658 Patent. We note that the asserted prior art of record also reflects this level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Claim Construction

The parties agree that the ’658 Patent expired on September 26, 2016. Pet. 11; PO Resp. 3. Thus, we construe the claims in accordance with the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1279 (Fed. Cir. 2017) (“The Board construes claims of an expired patent in accordance with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).”).

Petitioner requests that we construe the limitation “plurality of ordered lists of communication paths” as “multiple lists, each list containing multiple communication paths stored in a specified order.” Pet. 12. Petitioner next requests that we construe the limitation “a processor operable to receive a request for communication, the request *indicating* a communication attribute” as “a processor operable to receive a request for communication, the request *including* a communication attribute.” *Id.* at 14.

Patent Owner requests that we construe “communication path” as “a path for communication uniquely identified by the elements over which communications are transmitted or received.” PO Resp. 3. Patent Owner next requests that we construe “request for communication” as “a request that a certain communication be made.” *Id.* at 8. Patent Owner also requests

that we construe “communication attribute” as “a characteristic of either: (i) the requested communication or (ii) a communication path to be used for the requested communication.” *Id.* at 8–9.

Based on the entire record and after considering the parties’ respective arguments, we determine that express construction of these claim limitations or any other claim term is not necessary for our decision. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Technologies* in the context of an *inter partes* review).

D. Anticipation by Le Boudec

Petitioner contends that claim 1 is anticipated by Le Boudec. Pet. 31–51. In support thereof, Petitioner identifies the disclosures in Le Boudec alleged to describe the subject matter in the challenged claim. *Id.* Additionally, Petitioner offers declaration testimony from David H. Williams in support of its position. Ex. 1002 ¶¶ 146–197.

In the Patent Owner Response, Patent Owner first contends that “the disclosure of *Le Boudec* is clear and explicit that the table in column 15 of *Le Boudec* discloses **a single set of unordered optimum routes** that can be used for route selection (as opposed to a plurality of ordered lists).” PO Resp. 10–14. Patent Owner further contends that Le Boudec’s lists are not associated with one of a plurality of communication attributes. *Id.* at 14–17.

Having considered all of the evidence and each of the parties’ arguments and for the following reasons, we determine that Petitioner has established by a preponderance of the evidence that claim 1 of the ‘658

Patent is anticipated by Le Boudec. We begin our analysis with a brief overview of Le Boudec. We then address the parties' respective contentions with respect to the challenged claim.

1. Overview of Le Boudec (Ex. 1006)

Le Boudec is a United States Patent issued from an application filed August 13, 1996. Ex. 1006, code (86). Le Boudec is directed to an “Apparatus and Method for Routing a Communication in a Network.” *Id.* at code (54). Figure 1 of Le Boudec is reproduced below:

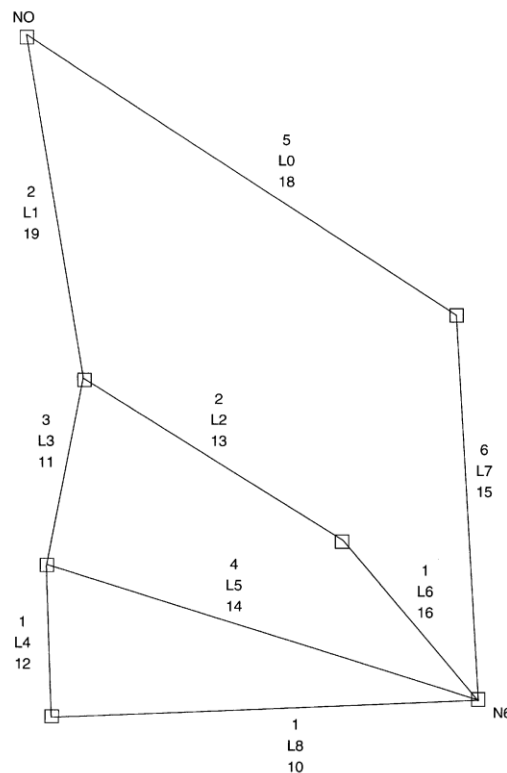


FIG. 1

Figure 1 illustrates a “communication network with internodal links L0–L8.” *Id.* at 7:60–61.

Le Boudec discloses that “[e]ach link in a network has attributes, i.e. characteristics inherent to the link.” *Id.* at 4:12–13. Le Boudec categorizes the attributes as either “additive attributes” or “restrictive attributes.” *Id.* at

4:13–26. An additive attribute is one “which must be added up over the whole length of a route [between nodes] to give their effective value for the route. An example of such an attribute is [signal] delay.” *Id.* at 4:14–16. An example of a restrictive attribute “is the bandwidth of a link, the lowest bandwidth of any of the links in a route determining the bandwidth of the whole route.” *Id.* at 4:22–26.

Le Boudec discloses “assigning a route . . . in response to a request for communication between any two nodes in the network.” *Id.* at 4:8–9. Le Boudec discloses an embodiment based on calculating “the optimum route for one of the additive attributes. For example, the route with the least delay between the two nodes can be calculated.” *Id.* at 8:24–26. After the delays are calculated, “[a]n ordered list of all the links in the network” using the restrictive attribute of bandwidth is created. *Id.* at 8:31–39. A table containing a set of optimal routes that link two nodes and with the minimum possible delay for a given route bandwidth is created. *See id.* at 9:16–30. When a request for communication between nodes is received, “the route with the minimum delay between these nodes which can support the bandwidth specified in the requests is tried first.” *Id.* at 9:30–34. Le Boudec discloses creating a matrix “organized such that for each pair of nodes in the network, a set of optimal routes for various particular values of restrictive attributes is stored.” *Id.* at 11:55–58. Le Boudec also discloses a table of optimal routes between various nodes:

Start and finish	Route	Delay, Bandwidth
A to B	A,C,B	3,2
A to B	A,B	4,1
A to C	A,C	1,2
A to D	A,C,B,D	4,3
A to D	A,C,D	6,2

Table from Column 15, lines 28–24 of Le Boudec Listing Communication Paths.

This table contains different routes between pairs of nodes in the network ordered based on signal delay or bandwidth.

i. Analysis of Claim 1

a. Preamble: “An apparatus for automatically selecting one of a plurality of communication paths, the apparatus comprising:”

Petitioner contends that Le Boudec discloses “an apparatus for automatically selecting one of a plurality of communication paths.” Pet. 31 (citing Ex. 1002 ¶¶ 70–89, 146–165). Specifically, Petitioner contends, *inter alia*, that Le Boudec discloses

that “the invention is based upon a method of deriving routes within a network, selecting a set of these routes which bear a particular relationship to one another, and assigning a route from this set in response to a request for communication between any two nodes in the network,” along with “an apparatus for carrying out this method.”

Id. at 32 (citing Ex. 1006, 4:5–11, Ex. 1002 ¶ 149).

Petitioner also contends that Le Boudec’s “routes” correspond to the recited “communication paths.” *Id.* at 35 (citing Ex. 1006, 15:25–34).

Petitioner contends that Figure 7 of Le Boudec illustrates the elements of Le Boudec’s apparatus for automatically selecting one of a plurality of

communication paths. *Id.* at 36 (citing Ex. 1006, Fig. 7, 15:56–16:31, Ex. 1002 ¶ 161). Patent Owner does not dispute Petitioner’s contention that the subject matter of the preamble of claim 1 is disclosed by Le Boudec. *See generally* PO Resp. 9–17.

Based on the arguments and evidence presented by Petitioner, Petitioner establishes that Le Boudec discloses “[a]n apparatus for automatically selecting one of a plurality of communication paths.” Patent Owner does not argue that the preamble is not limiting. *See generally* PO Resp. We do not address whether the preamble is limiting because there is no dispute that Le Boudec discloses the subject matter of the preamble.

b. “a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication”

Petitioner contends that Le Boudec discloses this claim limitation. Pet. 37–48 (citing Ex. 1002 ¶¶ 70–89, 166–190). Specifically, Petitioner contends that Le Boudec “determines and stores a set of optimal routes for each pair of nodes in the network based on attributes . . . which disclose a plurality of ordered lists of communication paths.” *Id.* at 37 (citing Ex. 1002 ¶ 168). Further, Petitioner argues Le Boudec discloses that “several additive attributes can be considered, which forms separate sets of lists of optimal routes, where each route is optimized with respect to one of the additive attributes,” resulting “in separate lists of multiple communication paths (optimal routes) for each additive attribute . . . and for each node pair in the network.” *Id.* at 40 (citing Ex. 1006, 7:40–48, 9:24–34). Petitioner further contends that Le Boudec “discloses that multiple sets of optimal routes (a plurality of ordered lists of communication paths) are created and stored

based on attribute information (e.g., a first set of optimum routes for a first node pair, and a second set of optimum routes for a second node pair).” *Id.* at 38 (citing Ex. 1002 ¶ 170); *see also id.* at 40 (“The sets of optimal routes are a plurality of ordered lists of communication paths.”). Petitioner also contends that because Le Boudec’s

routes (which are determined based on ordered lists of links that are processed according to the disclosed methods to form a set of optimum routes) can be ordered according to various attributes . . . each ordered list is associated with one of a plurality of communication attributes . . . and each attribute represents a separate priority for communication (e.g., least available bandwidth or most constrained link, etc.).

Id. at 39 (citing Ex. 1002 ¶ 171; Ex. 1006, 9:24–34, 9:52–61, 20:40–50).

Petitioner further supports its contention by annotating the table shown in column 15 of Le Boudec, as reproduced below. *Id.* at 44 (citing Ex. 1006, 15:25–35; Ex. 1002 ¶ 180).

Start and finish	Route	Delay, Bandwidth
A to B	A,C,B	3,2
A to B	A,B	4,1
A to C	A,C	1,2
A to D	A,C,B,D	4,3
A to D	A,C,D	6,2

Table from column 15 of Le Boudec with a red box and blue box added by Petitioner. *Id.*

Petitioner contends that this table shows lists of communication paths between various nodes in the network ordered by communication attributes of delay or bandwidth. *Id.* According to Petitioner,

the red box shows a first list of routes (“communication paths”) that are stored in a specific order (e.g., by increasing delay

value (“3” (Route A,C,B), “4” (Route A,B)) The blue box . . . shows a second list of routes (communication paths) that are also stored in a specific order (e.g., by increasing delay value (“4”(Route A,C,B), “6” (route A,B))).

Id. (citing Ex. 1002 ¶ 181).

Petitioner next contends that Le Boudec discloses “the optimum routes (in their respective orders) are stored in RAM 18.” *Id.* at 46 (citing Ex. 1006, 16:9–11).

Patent Owner first contends that Le Boudec does not disclose a memory operable to store a plurality of ordered lists because Le Boudec discloses “**a single set of unordered optimum routes.**” PO Resp. 11. There are two discrete but related parts to this contention. First, Patent Owner contends that Le Boudec’s lists are not “ordered.” *Id.* Second, Patent Owner contends that “*Le Boudec* indicates that the set of optimum routes is stored as a single set in a single list” rather than a plurality of lists. *Id.* We address each separately.

According to Patent Owner, “there is no order to the provided table” and “an inspection of the table in column 15 reveals, ‘delay parameter’ changes in an **unordered** manner, as one scans down the set, from 3 to 4 to 1 to 4 to 6.” *Id.* Further Patent Owner argues that “the bandwidth parameter varies in an **unordered** manner (from 2 to 1 to 2 to 3 to 2). There is simply no order to the provided set of optimal routes.” *Id.* Petitioner responds that the red box in its annotated version of the table from Le Boudec “describes a first list of routes (‘communication paths’) between A and B that are stored in a specific order (e.g., by increasing delay value . . . or decreasing bandwidth attribute value . . .).” Pet. Reply 6. Further, according to Petitioner, the blue box “shows a second list of routes . . . between A and D

that are also stored in a specific order (e.g., by increasing delay value . . . or decreasing bandwidth attribute value . . .).” *Id.*

We agree with Petitioner that the table in column 15 of Le Boudec discloses a first list of routes between nodes A and B and a second list of routes between nodes A and D and that each list is ordered in terms of increasing delay and decreasing bandwidth. Patent Owner does not squarely address this contention. Rather, its contention that the list is unordered is based on evaluating the table as a single list. However, even if we were to consider Patent Owner’s argument that the table in column 15 is a single list that is unordered, this argument is not reconcilable with the table set forth in Figure 6 of the ’658 Patent. In that table, the left hand column 122 contains a list of communication paths and the third column 126, for example, lists the attribute of cost and is arranged in no apparent order from the first to seventh rows. *See* Ex. 1001, Fig. 6. The remaining attribute columns are likewise not in any apparent order. *Id.* We are, thus, not persuaded by Patent Owner’s contention that the lists of routes between nodes A and B and nodes A and D set forth in the table in column 15 of Le Boudec are unordered.

In support of its contention that the table in column 15 of Le Boudec does not disclose the recited “plurality of ordered lists,” Patent Owner directs us to various textual descriptions in Le Boudec wherein Le Boudec refers to the table of column 15 as a singular “set” of routes. PO Resp. 12 (citing Ex. 1006, 4:35–41, 5:27–30, 15:25–44, 16:9–11). Based on the use of the singular as opposed to the plural “sets,” Patent Owner contends that Petitioner improperly asserts that Le Boudec teaches “(a) aggregating the set of routes in the table in column 15 into multiple discrete groups . . . and (b)

separately storing each aggregate group of routes as a separate ‘ordered list’ such that there would be a plurality of ordered lists.” *Id.* at 12–13.

Petitioner responds that Patent Owner’s attorney argument “is contradicted by the disclosures in *Le Boudec* and the testimony of Petitioner’s expert.” Pet. Reply 7. According to Petitioner, *Le Boudec* “discloses that ‘[t]he method illustrated above [for determining optimal routes] is repeated **for all pairs of the network’s nodes** between which communication may be required,’” resulting in “a ‘matrix’ that is ‘organized such that **for each pair of nodes** in the network, **a set of optimal routes for various particular values of restrictive attribute is stored.**’” *Id.* at 8 (citing Ex. 1006, 11:52–58) (alteration in original). Further, Petitioner contends that *Le Boudec* “discloses that the table in column 15 is used to ascertain which routes ‘between two nodes’ (e.g., A to B or A to D) would be optimum when a request for a route ‘between these nodes’ is received based on various attributes.” *Id.* (citing Ex. 1006, 9:24–34).

We are not persuaded by Patent Owner’s contention that *Le Boudec* does not disclose a *plurality* of ordered lists of communication paths for the following reasons. Patent Owner does not dispute that the table in column 15 contains two routes for communication between nodes A and B and two different routes for communication between nodes A and D. *See generally* PO Resp. Between nodes A and B, the first path is node A to node C to node B and the second path is directly from node A to node B. Ex. 1006, 15:30–31. Similarly, between nodes A and D, the first path is node A to node C to node B to node D and the second path is node A to node C to node D. *Id.* at 15:33–34. Patent Owner’s contention, which is attorney argument, does not squarely address the textual disclosure cited by Petitioner that *Le*

Boudec discloses creating a matrix containing a set of optimal routes for all pairs of network nodes for various values of restrictive attributes. *See id.* at 11:52–58. Based on the table in column 15 and the associated textual description just discussed, we agree with Petitioner that Le Boudec discloses a plurality of ordered lists of communication paths. We also note that Patent Owner does not dispute that Le Boudec’s optimum routes are stored in memory. *See generally* PO Resp.; Ex. 1002 ¶ 160; Ex. 1006, 15:36, 16:9–11.

Patent Owner’s next contends that Le Boudec does not disclose that the plurality of ordered lists of communications are each associated with one of a plurality of communication attributes as required by claim 1. PO Resp. 14. Patent Owner contends that the table in column of 15 of Le Boudec associates the plurality of lists “with *multiple characteristics* of the route, such as delay and bandwidth.” *Id.* at 15. According to Patent Owner, “*Le Boudec* specifies that minimally two attributes must be used.” *Id.* Patent Owner contends that Le Boudec’s embodiments require both an additive attribute as well as a restrictive attribute be associated with each of its lists. *Id.* at 15–16 (citing Ex. 1006, 4:27–34, 8:12–10:3, 10:4–14:10, 14:12–15:44).

Petitioner, in the Reply, contends that claim 1 “recites that ‘each ordered list [is] **associated with one** of a plurality of communication attributes.’ . . . It does not recite that each ordered list is associated with **only** one attribute.” Pet. Reply 11. In support of this contention, Petitioner cites to various disclosures in the ’658 Patent where, according to Petitioner, the ’658 Patent describes “that an ordered list can be associated with more than one communication attribute.” *Id.* at 11–12 (citing Ex. 1001, Abstr., 1:51–

52, 5:52–6:6, 7:24–27, 11:29–37, 14:42–49, 15:47–16:10, Figs. 3, 6, 7).

Patent Owner does not squarely address this contention by Petitioner but counters that

the “red box” data items alleged by Petitioner include two entries, the first with delay and bandwidth data of 3 and 2, respectively, and the second with delay and bandwidth number of 4 and 1 respectively. Since *none of the data items in the alleged “red box” list include the same delay or bandwidth numbers, it cannot be said that the alleged “red box” list, is “associated with” any specific delay or bandwidth number* as would be required for a showing that the alleged ‘red box’ list is associated with one of a plurality of communication attributes as required by claim 1.

Sur-reply 3–4 (emphasis added). For the following reasons, we are not persuaded by Patent Owner’s contentions.

Patent Owner’s position has evolved from arguing in the Patent Owner Response that the table in column 15 of Le Boudec does not correspond to the limitations in claim 1 because the lists are associated “with *multiple characteristics* of the route, such as delay and bandwidth” (PO Resp. 15) to arguing that the lists are not associated with any specific value of delay or bandwidth in the Sur-Reply (Sur-reply 4). With respect to the argument in the Sur-Reply, Patent Owner does not provide any claim construction argument, analysis, or even a reference to any part of the Specification of the ’658 Patent to support the contention that claim 1 requires that the lists be associated with a specific value of a communication attribute. See Sur-reply 1–4; see also PO Resp. 3–9 (addressing proposed construction of various claim terms but not addressing this contention). In the absence of supporting evidence and analysis, we decline to adopt a construction of claim 1 whereby the phrase “each ordered list associated with one of a plurality of communication attributes” means that “each

ordered list is associated with *a specific value of* one of a plurality of communication attributes” because such a construction would require us to add the italicized words or their equivalent to claim 1, and we find no support for such a construction in the ’658 Patent. Patent Owner’s argument in the Sur-Reply, which is based on such a construction, is thus, not persuasive.

We are also unpersuaded by the contention raised in the Patent Owner Response that the lists identified by Petitioner in the table set forth in column 15 of Le Boudec do not meet the limitations of claim 1 because the lists are associated with more than one communication attribute. As noted by Petitioner in the Reply, Figure 6 of the ’658 Patent sets forth a list of communication paths associated with more than one attribute. *See* Ex. 1001, Fig. 6. Figure 6 appears substantially the same as the table in column 15 of Le Boudec wherein the second column lists the routes between nodes, corresponding to column 122 in Figure 6, and the third column lists both delay and bandwidth for each route. Figure 6 includes propagation delay in column 136 as well as other attributes for each path. *See id.* At oral argument, Patent Owner argued, for the first time, that Figure 6 of the ’658 Patent does not apply to claim 1 but that Figure 4 corresponds to claim 1. Tr. 38:26–39:20. Even if this argument was timely made in Patent Owner’s briefings, it would not be persuasive because it would require us to improperly limit claim 1 to the embodiment disclosed in Figure 4 of the ’658 Patent. *See i4i Ltd. P’ship v. Microsoft Corp.*, 598 F. 3d 831, 843 (Fed. Cir. 2010) (“Generally, a claim is not limited to the embodiments described in the specification unless the patentee has demonstrated a ‘clear intention’ to limit the claim’s scope with ‘words or expressions of manifest exclusion or

restriction.”). Further, Patent Owner does not persuasively explain, for example, why the red box, shown in the annotated table of Le Boudec, does not constitute two ordered lists, i.e., a first list of routes between nodes A and B ordered according to increasing delay and a second list of routes between nodes A and B ordered according to decreasing bandwidth.

Based on the arguments and evidence presented by Petitioner discussed above and, after considering Patent Owner’s contentions, Petitioner establishes that Le Boudec discloses “a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication.”

- c. *“a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.”*

Petitioner contends that Le Boudec discloses this claim limitation. Pet. 48–51 (citing Ex. 1002 ¶¶ 70–89, 191–197). Specifically, Petitioner refers to Figure 7 of Le Boudec and contends that “*Le Boudec* discloses that a second microprocessor 20 ‘receives incoming route requests from network users’ and in ‘accordance with the requirements of the route requests, the second microprocessor selects a route from the set of optimal routes stored in RAM.’” *Id.* at 48 (quoting Ex. 1006, 16:12–16); *see also id.* at 50. Petitioner further contends that “*Le Boudec* discloses that requests for communications include (and therefore also indicate) attribute(s) that are used to compare to stored . . . optimal paths to allow for selection of the path that meets the attribute criteria for communicating signals between nodes.”

Id. at 48. Petitioner supports this contention by reference to disclosure in Le Boudec that “[t]he set of optimum routes is then consulted when a request for a route is received and a route from the set which meets the criteria contained in the request is assigned.” *Id.* at 49 (quoting Ex. 1006, 5:23–30). Patent Owner does not dispute Petitioner’s contention that Le Boudec discloses this limitation. *See generally* PO Resp. 9–17.

Based on the arguments and evidence presented by Petitioner discussed above, Petitioner establishes that Le Boudec discloses “a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.”

Summary of Analysis

Based on all the evidence of record and after considering all of Patent Owner’s contentions, we determine that Petitioner has established by a preponderance of the evidence that claim 1 of the ’658 Patent is anticipated by Le Boudec.

E. Anticipation by Bosack

Petitioner contends that claim 1 is anticipated by Bosack. Pet. 16–31. In support thereof, Petitioner identifies the disclosures in Bosack alleged to describe the subject matter in the challenged claim. *Id.* Petitioner offers declaration testimony from David H. Williams in support of its position. Ex. 1002 ¶¶ 98–145.

In the Patent Owner Response, Patent Owner contends, *inter alia*, that Bosack does not select “a communication path from one of a plurality of ordered lists of communication paths.” PO Resp. 23. In support of this

contention, Patent Owner argues that in Bosack, “the communication is carried out through the transmission of data packets **among several paths** with metrics falling within a specified range.” *Id.* at 23–24 (citing Ex. 1005, 2:66–67).

1. Overview of Bosack (Ex. 1005)

Bosack is a United States Patent issued from an application filed January 29, 1988. Ex. 1005, code (22). Bosack is directed to a “Method and Apparatus for Routing Communications among Computer Networks.” *Id.* at code (54). Figure 2 of Bosack is reproduced below:

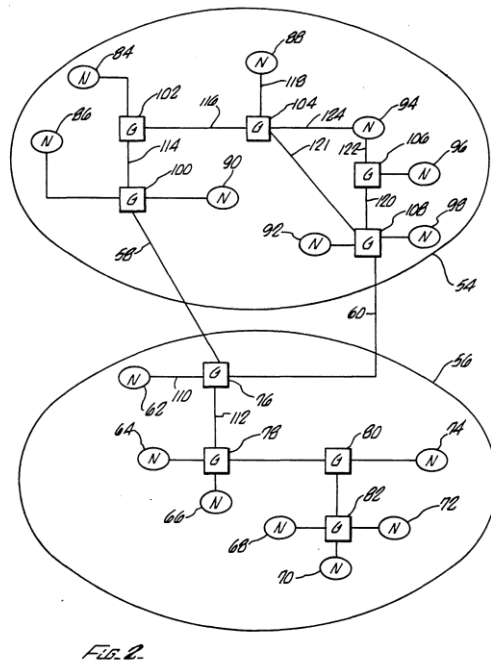


Figure 2 of Bosack illustrates computer network systems 54 and 56 interconnected by links 56 and 60. *Id.* at 3:32–33.

“[L]inks 58 and 60 might be a land microwave repeater link and a satellite link, respectively.” *Id.* at 3:35–36. Network system 56 comprises “computer networks 62–74 interconnected by gateway circuits 76–82.” *Id.*

at 3:36–38. Network system 54 comprises “computer networks 84–98 interconnected by gateway circuits 100–108.” *Id.* at 3:38–40.

In Bosack, the gateway circuits identify

all destinations for which it has a directly connected interface. . . . For each identified path, the gateway stores the identity of the gateway circuit which is the “next hop” on the path and a vector of metric information describing the path. The metric information includes topological delay time for a transmission, the path bandwidth for the narrowest bandwidth segment of the path, the channel occupancy of the path, and a count of the gateway circuits through which the path runs (the “hop count”). Based on this metric information, a single “composite metric is calculated for the path. *When a data transmission is received, the gateway examines the various paths in accordance with a predetermined algorithm which uses the composite metric to determine a best path for transmission. The data transmission is then directed over that best path.* If more than one path exists, the data may be directed in multiplex fashion over two or more paths with the amount of data on each path related to the quality of the path.

Id. at 1:63–2:17 (emphasis added); see also *id.* at Fig. 4, step E, 8:40–53.

i. Analysis of Claim 1

- a. Preamble: “An apparatus for automatically selecting one of a plurality of communication paths, the apparatus comprising:”*

Petitioner contends that Bosack discloses an apparatus for automatically selecting one of a plurality of communication paths as set forth in the preamble to claim 1. Pet. 16–20 (citing Ex. 1002 ¶¶ 61–69, 99–118). Petitioner contends that Bosack “discloses an ‘apparatus for routing data transmissions among computer networks’ that includes gateway circuits, each of which can identify path(s) to each destination computer.” *Id.* (citing Ex. 1005, Abstr.). Petitioner specifically contends that Bosack discloses calculating “a vector of metric information describing” each path

and when a transmission is received, “the gateway examines the various paths in accordance with a predetermined algorithm which uses the composite metric to determine a best path for transmission’ and ‘[t]he data transmission is then directed over that best path.” *Id.* at 17 (citing Ex. 1002, ¶¶ 101–103; Ex. 1005, 1:67–2:2, 2:8–17, 2:39–60) (alteration in original). Patent Owner does not dispute Petitioner’s contention that the subject matter of the preamble of claim 1 is disclosed by Bosack. *See generally* PO Resp. 17–24.

Based on the arguments and evidence presented by Petitioner, Petitioner establishes that Bosack discloses “[a]n apparatus for automatically selecting one of a plurality of communication paths.” Patent Owner does not argue that the preamble is not limiting. *See generally* PO Resp. We do not address whether the preamble is limiting because there is no dispute that Bosack discloses the subject matter of the preamble.

- b. *“a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication”*

Petitioner contends that Bosack discloses this claim limitation. Pet. 20 (citing Ex. 1002 ¶¶ 61–69, 119–134). Petitioner specifically directs us to disclosure in Bosack of RAM 126 that keeps “separate lists of paths to each destination” where the “**paths are selected and ordered** according to the composite metric-defined by Eq. 1.” *Id.* at 20–21 (citing Ex. 1005, 6:44–48). Petitioner asserts that Bosack’s equation 1 “considers bandwidth, delay, and K values associated with types of service for communications in the network” and discloses “an exemplary table of such information” which reflects the information stored in RAM 126. *Id.* at 21 (citing Ex. 1005,

4:37–5:15, 6:31–48, Table 1; Ex. 1002 ¶¶ 119–120). Petitioner further asserts that the separate lists in Bosack’s Table 1 “are associated with ‘one of a plurality of communication attributes’” (*id.* at 21–22 (citing Ex. 1002 ¶ 121)) because “each path in a particular list is associated with a metric that is determined from parameters or characteristics (‘attributes’) relating to the given communication path (e.g. delay time and path bandwidth) and representing a separate priority for the path” (*id.* at 23 (citing Ex. 1001, 3:64–4:23, 5:55–6:8, Ex. 1005, 5:55–6:8, 10:36–56, Ex. 1002 ¶¶ 125–126)).

Patent Owner contends that Bosack does not disclose this limitation because “where there is only one usable communications link from the gateway at issue to the target destination, there is no memory storing a plurality of ordered lists of communication paths . . . since there is only one usable path.” PO. Resp. 23. Petitioner counters that “*Bosack* discloses computer networks that are interconnected with gateways, where: ‘Each gateway **identifies all destination computers** to which it is connected and **identifies the path or paths to each destination computer.**’” Pet. Reply 15 (quoting Ex. 1005, Abstr.) (internal quotation marks added). According to Petitioner, Bosack discloses that metric information of paths to different destinations is stored as tables in memory 126. *Id.* (citing Ex. 1005, 4:64–67). Petitioner directs us to Bosack’s Table 1, which we reproduce below:

TABLE 1	
<u>Destination 1</u>	
Path A:	Port 1, Next hop gateway 2 comp. metric = 1.7
Path B:	Port 2, Next hop gateway 3 comp. metric = 3.2
<u>Destination 2</u>	
Path A:	Port 3, Next hop gateway 4 comp. metric = 4.0
<u>Destination 3</u>	
Path A:	Port 1, Next hop gateway 2 comp. metric = 2.0
Path B:	Port 2, Next hop gateway 6 comp. metric = 1.0
Path C:	Port 4, Next hop gateway 7 comp. metric = 3.0
.	
.	
.	
<u>Destination N</u>	
Path A:	Port 1, Next hop gateway 2 comp. metric = 5.0
Path B:	Port 2, Next hop gateway 3 comp. metric = 1.0

Table 1 of Bosack illustrates composite metrics for various paths between destinations. Ex. 1005, 5:1–15.

Petitioner notes that Table 1 illustrates that Destination 2 has only one available path in contrast to the other destinations, which have multiple paths. See Pet. Reply 16. Petitioner also directs our attention to Table 104 set forth Figure 4 of the '658 Patent and in particular to the “[c]olumn titled ‘attribute D’” where only one path is available in Regions 1, 2, 3, 4, and 6. See *id.* at 16–17 (citing Ex. 1001, Fig. 4).

Based on Table 1 in Bosack, we are not persuaded by Patent Owner’s argument that because there may be only one communication link available to a particular destination that Bosack does not disclose a plurality of ordered lists of communication paths because there are multiple other destinations listed with multiple links. In addition, as noted by Petitioner, Figure 4 of the '658 Patent discloses circumstances where only one path is available for a particular communication attribute. See Ex. 1001, Fig. 4 (Column titled “Attribute D” in Table 104), 11:37–67). We note that Patent

Owner does not dispute that Bosack's lists are "ordered" based on Bosack's metric discussed above. *See generally* PO Resp. 17–24.

Based on the arguments and evidence presented by Petitioner discussed above, and after considering Patent Owner's contentions, Petitioner establishes that Bosack discloses "a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication."

- c. *"a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute."*

Petitioner contends that Bosack discloses this claim limitation. Pet. 28 (citing Ex. 1002 ¶¶ 61–69, 135–145). Petitioner contends that Bosack determines the best path for a transmission by "computing a metric composite according to a formula . . . that considers path bandwidth B_c , topological delay D_c , and reliability r , so that the path with the smallest metric number will be the best path." *Id.* at 19 (citing Ex. 1005, 2:29–50, 5:27–34); *see also id.* at 17 (citing Ex. 1005, 2:8–17). Petitioner further contends that Bosack discloses directing a data transmission "over that best path." *Id.* (citing Ex. 1005, 2:39–60). Petitioner further contends that Bosack "explains that the gateway circuits are designed to handle multiple 'types of service,' which is a specification 'in a data packet that modifies the way paths are to be evaluated.'" *Id.* at 29 (citing Ex. 1005, 6:31–51, 7:4–8, 7:14–8:53, 10:27–55). Petitioner further contends that a set of paths is maintained for each type of service so that "processor 124 selects the set of

data structures associated with the type of service specified in the packet (‘indicating a communication attribute’)” and then “selects a path with an acceptable composite metric (‘automatically select a communication path from an ordered list associated with the indicated communication attribute’).” *Id.* at 29–30 (citing Ex. 1002 ¶ 141; Ex. 1005, 1:67–2:14, 6:31–51, 8:30–53). In support of this contention, Petitioner directs us to Bosack at column 6, lines 34 to 36 and the Declaration of David H. Williams at paragraph 142. *Id.* at 30 (citing Ex. 1002 ¶ 142; Ex. 1005, 6:34–36). Mr. Williams’s Declaration provides that “a person of ordinary skill in the art would have understood that *Bosack* discloses that the processor (e.g., microprocessor 124) is further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.” Ex. 1002 ¶ 142. Column 6, lines 34 to 36 of Bosack provides “certain protocols allow the packet to specify the relative importance of high bandwidths, low delay or high reliability.” Ex. 1005, 6:34–36.

Patent Owner counters that, in Bosack, “where there are multiple usable paths for a given requested communication, there is no selection of a communication path from one of a plurality of ordered lists of communication paths.” PO Resp. 23. According to Patent Owner, Bosack discloses that, rather than selecting a single path, “the communication is carried out through the transmission of data packets ***among several paths*** with metrics falling within a specified range.” *Id.* at 23–24 (citing Ex. 1005, 2:66–67). Patent Owner further contends that Petitioner acknowledged that, “in *Bosack*, ‘traffic can be split among several routes in parallel to provide effective bandwidth.’” *Id.* at 24 (citing Pet. 19).

Petitioner responds that Patent Owner is “conflating the recited ‘**select** a communication path’ with actually ‘**transmitting** through only a single path,’ which is **not recited** in claim 1.” Pet. Reply 18. Petitioner contends that “claim 1 does not require **transmitting** any data, much less transmitting through a single communication path, after ‘**select[ing]** a communication path.’” *Id.* Petitioner further contends that Patent Owner’s “attempt to read unrecited limitations into claim 1, i.e., ‘transmitting through only a single path,’ is unsupported by the intrinsic record and improper.” *Id.* (citing *Resonate Inc. v. Alteon Websystems, Inc.*, 338 F.3d 1360, 1364 (Fed. Cir. 2003)). Petitioner further contends that whether Bosack transmits a communication through one or more paths is irrelevant because claim 1 “only requires a processor be ‘operable to automatically **select** a communication path from an ordered list associated with the indicated communication attribute.’” *Id.* at 19. In the Sur-Reply, Patent Owner does not squarely address this argument by Petitioner. *See generally* Sur-reply 4–8; *but see* Tr. 52:16–22 (“Claim 1 actually says we’re going to, we’re going to select a communication path . . . I don’t think that necessarily says that you have to transmit it.”). For the following reasons, we agree with Petitioner and are not persuaded by Patent Owner’s contention.

First, Patent Owner fails to squarely address Bosack’s disclosure of using “the composite metric to determine a best path for transmission. The data transmission is then directed over that best path.” Ex. 1005, 2:12–14. Second, we agree with Petitioner that claim 1 does not require transmission of the communication over a single path but only recites that the processor be operable to select a communication path. We also note that Patent Owner did not request that we construe claim 1 to require that the processor be

operable to select a communication path *and* to transmit the communication only over the selected path. *See generally* PO Resp. 3–9. Although Patent Owner is correct that Petitioner acknowledges that “traffic can be split among several routes in parallel to provide effective bandwidth” (Pet. 19 (citing Ex. 1005, 5:27–34)), the splitting of traffic among several routes relates to the transmission of the communication, which is unrelated to claim 1, and, in any event is disclosed in Bosack as optional. *See* Ex. 1005, 2:14–16 (“If more than one path exists, the data *may be* directed in multiplex fashion over two or more paths”), 2:66–67 (“Traffic *can* be distributed over parallel paths”) (emphasis added).

Based on the arguments and the evidence presented by Petitioner discussed above and after considering Patent Owner’s contentions, Petitioner establishes that Bosack discloses “a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.”

Summary of Analysis

Based on all the evidence of record and after considering all of Patent Owner’s contentions, we determine that Petitioner has established by a preponderance of the evidence that claim 1 of the ’658 Patent is anticipated by Bosack.

F. Anticipation by Oberlander

Petitioner contends that claim 1 is anticipated by Oberlander. Pet. 51–66. In support thereof, Petitioner identifies the disclosures in Oberlander alleged to describe the subject matter in the challenged claim. *Id.* Petitioner

offers declaration testimony from David H. Williams in support of its position. Ex. 1002 ¶¶ 90–97, 198–238.

In the Patent Owner Response, Patent Owner contends that “there are no portions of *Oberlander* that disclose each ordered list is associated with one of the set of attribute 310 values.” PO Resp. 25.

Overview of Oberlander (Ex. 1007)

Oberlander is a United States Patent issued from an application filed June 10, 1994. Ex. 1007, code (22). *Oberlander* is directed “to a method and apparatus for routing information to a particular person (i.e., subscriber) via a particular destination device and over a particular network within a communication system.” *Id.* at 1:8–11. *Oberlander* notes that “the typical business individual may nonetheless prefer to receive a particular type of information at a particular one of her communicating devices.” *Id.* at 1:27–30. Figure 1 of *Oberlander* is reproduced below:

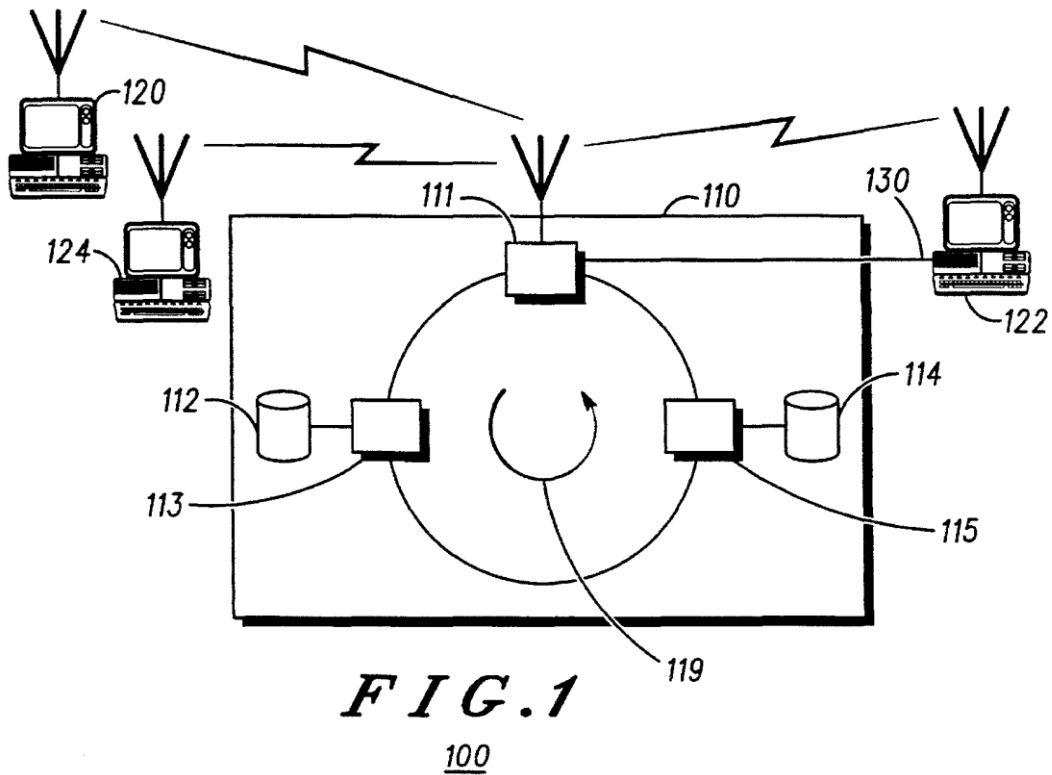


Figure 1 illustrates in block diagram form a communication system. *Id.* at 1:55–56.

Communication system 100, shown in Figure 1, “employs both wireless and wireline communication networks comprising a server 110 and a plurality of subscriber devices.” *Id.* at 2:29–32.

Figure 3 of Oberlander is reproduced below:

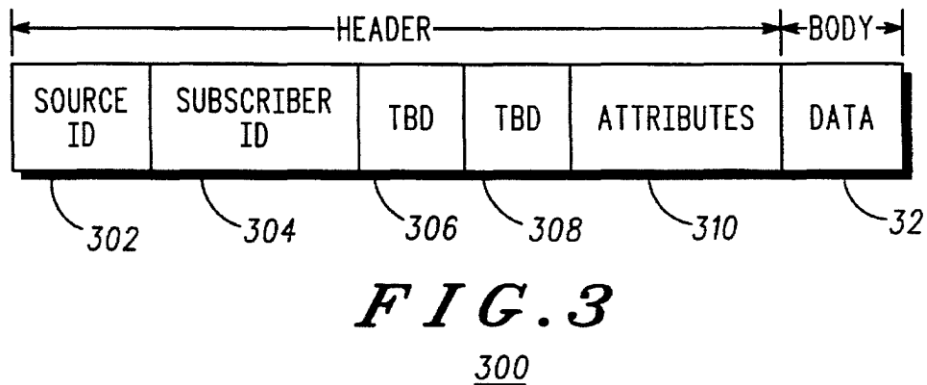


Figure 3 depicts the structure of a message for use within the communication system of Figure 1. *Id.* at 1:59–60.

Message 300 includes attributes field 310. *Id.* at 3:48–53. The attributes field 310 “maintains information specific to the message 300” such as “message originator, message priority, message data format, message logical size, message security requirements, message transmitted size, and message compressed size.” *Id.* at 3:66–4:5.

Oberlander discloses a data base structure that “comprises a plurality of records 510, each record comprises a subscriber ID field 502, a device ID field 504, a network ID list field 505 and a logic function field 506.” *Id.* at 4:43–46. Each record 510 represents “a rule that conditionally maps a subscriber and a selected device 120-124 to a prioritized list of communication networks.” *Id.* at 4:46–49. Oberlander discloses generating a key “to determine which network to use for transmission of the message . . . by applying the set of attribute 310 values of the message in question to the logic function within field 506 of each data base 500 record.” *Id.* at 4:64–5:1.

i. Analysis of Claim 1

a. Preamble: “An apparatus for automatically selecting one of a plurality of communication paths, the apparatus comprising:”

Petitioner contends that Oberlander discloses an apparatus for automatically selecting one of a plurality of communication paths as set forth in the preamble to claim 1. Pet. 51 (citing Ex. 1002 ¶¶ 90–97, 198–238). Specifically, Patent Owner contends that Oberlander “discloses an ‘apparatus’ for routing information within a communication system (100) based upon evaluating various attributes (310) of the information to be routed.” *Id.* (citing Ex. 1007, Abstr.). According to Petitioner, Oberlander’s

“apparatus performs processing steps that include receiving a message (300) having a first set of message attributes (310), each attribute having a value.” *Id.* (citing Ex. 1007, Abst.). Petitioner further contends that Oberlander discloses applying the attribute values to a logic function to allow “a data base record to be selected” to route the message. *Id.* at 51–52 (citing Ex. 1002 ¶¶ 198–200, Ex. 1007, Abst.). Patent Owner does not dispute Petitioner’s assertions. *See generally* PO Resp. 24–25.

Based on the arguments and evidence presented by Petitioner, Petitioner establishes that Oberlander discloses “[a]n apparatus for automatically selecting one of a plurality of communication paths.” Patent Owner does not argue that the preamble is not limiting. *See generally* PO Resp. We do not address whether the preamble is limiting because there is no dispute that Oberlander discloses the subject matter of the preamble.

- b. “a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication”*

Petitioner contends that Oberlander discloses this limitation. Pet. 59 (citing Ex. 1002 ¶¶ 90–97, 220–230). Specifically, Petitioner contends that Oberlander’s database 114 is “used by NMM 115 that maintains records 510 that include a network ID list field 510 which maps a subscriber and device 120-124 to a prioritized list of communication networks” and that Oberlander “discloses a database structure for database 114 used by NMM 115 ‘in order to select a communication network for transmission of the message in question.’”⁵ *Id.* at 59–60 (citing Ex. 1002 ¶ 222; Ex. 1007, 4:38–

⁵ “NMM” refers to “network mobility manager.” Ex. 1007, 3:4–5.

51, Figs. 1, 5). Petitioner further contends that each record 510 in Oberlander's Figure 5 "may include multiple lists of prioritized communication networks which may be considered for transmitting a message 300." *Id.* at 60 (citing Ex. 1007, 4:51–61). Petitioner also contends that Figure 6 of Oberlander discloses "the structure of a single network ID list 505 as shown in Figure 5" and that each entry 610 in Figure 6 of Oberlander "includes a network identifier field 614 that identifies a communication network which may be available for transmission of message 300." *Id.* at 61 (citing Ex. 1002 ¶ 224, Ex. 1007, 5:5–6, 5:22–25, Fig. 6). Petitioner further notes that Oberlander states that "each network ID list 505 is organized such that the most favored network appears in the first network identifier field (e.g., Network Identifier 0). In this fashion the most favored network is always tried first, prior to attempting to transmit a message over a lower priority or less desirable network." *Id.* (quoting Ex. 1007, 5:26–31). Petitioner next contends that Oberlander discloses a memory, i.e., database 114 operable to store

a plurality of ordered lists of communication paths (e.g., record 510 including a prioritized list of communication networks for consideration for transmitting message 300), where each ordered list (e.g. record 510 including network ID list 505) is associated with one of a plurality of communication attributes (e.g., attribute field 310 that may include attributes relating to message priority, message security requirements, etc.).

Id. at 61–62 (citing Ex. 1007, 3:66–4:6, 5:26–31, 6:8–14, 8:21–9:2; Ex. 1002 ¶ 226). Petitioner further contends that Oberlander's message attributes such as message priority and security requirements "are associated with the ordered list of communication networks in list 505 of database 114 because *Oberlander* explains that NMM 115 applies the set of attribute 310 values of a message 300 to the logic function within field 506 of each database 500

record 510.” *Id.* at 62 (citing Ex. 1007, 4:62–5:5, Ex. 1002 ¶ 227); *see also id.* at 56 (describing that Oberlander’s “Figures 7a and 7b reflect logic functions 700 that describe the priority for the security requirements for a particular message 300”).

Patent Owner responds that Oberlander does not “associate each list with one attribute value.” PO Resp. 25. Patent Owner contends that Oberlander’s attributes field 310 contains “more than one attribute.” *Id.* (citing Ex. 1007, 3:66–4:5). Patent Owner concedes that Oberlander “discloses that the ‘set of attribute 310 values’ is applied to the ‘logic function with field 506 of each data base 500 record’” but contends that “there are no portions of *Oberlander* that disclose each ordered list is associated with one of the set of attribute 310 values.” *Id.*

In the Petitioner Reply, Petitioner contends that Patent Owner’s contention is based on an implied claim construction “requiring each ordered list be associated with **only one** attribute of a plurality of attributes” and such a construction “is unduly narrow, lacks support, and excludes numerous embodiments in the ’658 patent.” Pet. Reply 22. Petitioner next contends that logic functions 700, 710, or 720 shown in Figures 7B, 7D, and 7F of Oberlander “delimit[] messages based on either one of size, content, or origin (i.e., only one of a plurality of attributes).” *Id.* at 23 (citing Ex. 1007, 5:58–59, 6:27–28, 7:1–2). Petitioner further contends that these “logic functions may be one that is associated with a certain device and network shown in Figure 5” and “are used to determine how to route a message.” *Id.* at 23–24 (citing Ex. 1007, 4:38–46, 8:2–9:2, 9:26–39). According to Petitioner, because “there is only a single logic function delimiting the message based on a single attribute . . . regardless of whether the messages

may include one or more attributes, *Oberlander* discloses that each ordered list is associated with **only one** of a plurality of attributes.” *Id.* at 24.

In the Sur-Reply, Patent Owner contends that Petitioner failed to establish “that one of the items associated with each of a plurality of *Oberlander*’s network ID lists . . . contain[s] something that can properly be characterized as a ‘communication attribute’ ‘representing a separate priority for communication’ as required by claim 1.” Sur-reply 10. Patent Owner contends that the subscriber ID 502 and device ID 504 in Figure 5 are not communication attributes because subscriber ID 502 “identifies the desired recipient for the message to be sent – **not** a priority of communication – and the Device ID 504 merely indicates the device to which the communication should be delivered.” *Id.* Patent Owner further contends “the conditioning logic function 506 associated with the database entries 510 is a **logic function** to which the information contained in the attribute field of one of *Oberlander*’s received message is applied” and “are not ‘communication parameters’ reflecting a priority of communication.” *Id.* at 11 (citing Ex. 1007, 4:65–5:5). For the following reasons, we determine that Petitioner has established that *Oberlander* discloses this claim limitation.

Based on the following passages of *Oberlander*, we find that *Oberlander* discloses a plurality of ordered lists of communication paths. Figure 5 of *Oberlander* discloses a data base structure containing, for each Subscriber ID, *inter alia*, “a plurality of records 510” and “a network ID list field 505.” Ex. 1007, 4:39–46. Further, “each record 510 represents a rule that conditionally maps a subscriber and a selected device 120-124 to prioritized list of communication networks.” *Id.* at 4:47–49. Figure 6 of *Oberlander* discloses “the structure of a single network ID list 505 as shown

in Fig. 5.” *Id.* at 5:6–7. Further, “each network ID list 505 is organized such that the most favored network appears in the first network identifier field” and “the most favored network is always tried first, prior to attempting to transmit a message over a lower priority or less desirable network.” *Id.* at 5:26–31. Thus, Oberlander discloses a plurality of ordered lists of communication paths between subscribers and selected devices as shown in Figure 5.

Patent Owner does not dispute that Oberlander discloses a plurality of ordered lists of communication paths. *See generally* PO Resp. 24–25. Rather, the crux of Patent Owner’s arguments revolve around whether Oberlander’s lists are each “associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication.” *Id.*; Sur-reply 10–11.

We initially note that Oberlander’s message 300 contains attributes field 310 that includes various attributes. Ex. 1007, 3:66–4:9. However, as Petitioner correctly notes, at least Figures 7a and 7b of Oberlander disclose applying a logic function based on a single communication attribute. For example, Oberlander discloses that “Fig. 7b is a graphical representation of a logic function that delimits messages based upon size.” *Id.* at 5:58–59, Fig. 7b. Oberlander further discloses in connection with Figure 9 that “the attribute 310 values of the received message 300 are applied to the logic function of the retrieved record at block 912 by NMM 115. At block 914 a check is performed by NMM 115 to determine whether the logic function is true or false” based on the message attribute values. *Id.* at 8:46–51, Fig. 9. If the logic function is true at step 914, “flow proceeds to block 918, where the network ID list stored in field 505 of the retrieved record is written by

NMM 115 into Null field 308 of the message 300.” *Id.* at 8:61–64, Fig. 9. As a result, in the case of the logic function shown in Figure 7b, the network ID list stored in field 505 would be associated with the single communication attribute of message size. Thus, assuming the correctness of Patent Owner’s contention that claim 1 requires the ordered lists to be associated with only one communication attribute, Oberlander discloses such lists in connection with the application of the logic functions illustrated in Figures 7a and 7b to the lists in Figure 5. Consequently, even under Patent Owner’s construction, the lists are associated with the communication attribute of message size when the logic function shown in Figure 7b is applied to the list of prioritized networks in Figure 5.

Based on the arguments and evidence presented by Petitioner discussed above and after considering all of Patent Owner’s arguments, Petitioner establishes that Oberlander discloses “a memory operable to store a plurality of ordered lists of communication paths, each ordered list associated with one of a plurality of communication attributes, each communication attribute representing a separate priority for communication.”

- c. *“a processor operable to receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.”*

Petitioner contends that Oberlander discloses this limitation. Pet. 63 (citing Ex. 1002 ¶¶ 90–97, 231–238). Petitioner contends that “Figure 1 of *Oberlander* shows an exemplary flow diagram 119 that depicts processes performed by server 110 ‘upon receipt of an incoming information message from, for example, device 120.’” *Id.* (citing Ex. 1007, 2:63–66). Petitioner

further contends that “[a]ll messages entering and exiting server 110 pass through CM 111. DMM 113 selects a destination device address to be appended to the received message, and NMM 115 selects one or a plurality of communication networks (‘communication paths’) for transmission of the [message].”⁶ *Id.* at 63–64 (citing Ex. 1007, 3:12–15). Petitioner further contends that Oberlander discloses “that processing unit 220 (which can be a microprocessor) operates operating system software stored in ROM 230 and uses RAM 240 to control inbound and outbound traffic carried by path 250 and transceiver 200.” *Id.* at 64 (citing Ex. 1007, 3:34–40, Fig. 2). Petitioner further contends that processing unit 220 receives message 300 “and performs the processes disclosed in connection with Figure 9 for server 110” and selects “an available network . . . based on the ordered prioritized list of networks.” *Id.* at 65 (citing Ex. 1002 ¶ 235; Ex. 1007, 4:52–5:5, 5:26–31). Petitioner also contends that in Oberlander, “the request indicates a communication attribute . . . because . . . message 300 includes attribute field 310 that is part of message 300 that is received by CM 111, and attribute field 310 . . . is used with logic functions 506 of each record 510 to select the most favored communication network to transmit the message 300 to the destination device.” *Id.* at 65–66 (citing Ex. 1002 ¶ 236).

Patent Owner does not dispute that Oberlander discloses a processor operable to receive a request for communication and to automatically select a communication path. *See generally* PO Resp. 24–25.

Based on the arguments and evidence presented by Petitioner, Petitioner establishes that Oberlander discloses “a processor operable to

⁶ “CM” refers to “communication manager,” and “DMM” refers to “device mobility manager.” Ex. 1007, 3:2–4.

receive a request for communication, the request indicating a communication attribute, the processor further operable to automatically select a communication path from an ordered list associated with the indicated communication attribute.”

Summary of Analysis

Based on all the evidence of record and after considering all of Patent Owner’s contentions, we determine that Petitioner has established by a preponderance of the evidence that claim 1 of the ’658 Patent is anticipated by Oberlander.

III. CONCLUSION

In summary:

Claim	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1	102	LeBoudec	1	
1	102	Bosack	1	
1	102	Oberlander	1	
Overall Outcome			1	

IV. ORDER

For the foregoing reasons, it is hereby:

ORDERED, based on a preponderance of the evidence, that claim 1 of U.S. Patent 5,966,658 is unpatentable as set forth in the summary table above; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 5,966,658

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