UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner

v.

DYNAMIC MESH NETWORKS, INC.
D/B/A MESHDYNAMICS,
Patent Owner

U.S. Patent No. 7,885,243
Issue Date: February 8, 2011

Title: HIGH PERFORMANCE WIRELESS NETWORKS USING DISTRIBUTED CONTROL

Inter Partes Review No. IPR2025-01304

PATENT OWNER'S PRELIMINARY RESPONSE

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TABLE OF AUTHORITIES

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	[Reserved]
2002	Cisco's Answer to Dynamic Mesh Networks, Inc.'s Complaint for Patent Infringement, *Dynamic Mesh Networks, Inc. et al. v. Cisco Systems, Inc.*, No. 2:25-cv-00781 (EDTX), Dkt. 29 (September 18, 2025)
2003	Declaration of Mr. Francis daCosta in Support of Patent Owner's Request for Discretionary Denial
2004	June 22, 2022 Letter to Chief Executive Officer of Cisco Systems, Inc., Charles H. Robbins, from Mr. Francis daCosta, founder of MeshDynamics
2005	August 2009 Presentation entitled "High Level Overview" provided to Cisco Systems, Inc.
2006	Cisco's Amended Complaint, *Cisco Systems, Inc. v. Dynamic Mesh Networks, Inc. d/b/a MeshDynamics et al.*, No. 5-25-cv-06441 (NDCA), Dkt. 5 (July 31, 2025)
2007	MeshDynamics' Notice of Readiness, *Dynamic Mesh Networks, Inc. et al. v. Cisco Systems, Inc.*, No. 2:25-cv-00781 (EDTX), Dkt. 32 (September 19, 2025)
2008	Judge Wise's Civil Standing Order in Northern District of California, available at https://cand.uscourts.gov/sites/default/files/standing-orders/NW-CivilStandingOrder_05-06-25.pdf
2009	Docket, *Cisco Systems, Inc. v. Dynamic Mesh Networks, Inc. d/b/a MeshDynamics et al.*, No. 5-25-cv-06441 (NDCA)
2010	MeshDynamics' Local Rule 3-1 and 3-2 Initial Disclosures, *Dynamic Mesh Networks, Inc. et al. v. Cisco Systems, Inc.*, No. 2:25-cv-00472 (EDTX) (July 18, 2025)
2011	Judge Gilstrap's Order Setting Scheduling Conference, *Dynamic*

	Mesh Networks, Inc. et al. v. Cisco Systems, Inc., No. 2:25-cv-00781 (EDTX), Dkt. 35 (October 29, 2025)

Pursuant to 37 C.F.R. § 42.107, Dynamic Mesh Networks, Inc. d/b/a MeshDynamics ("MeshDynamics" or "PO") files this preliminary response setting forth reasons why the Petition for *inter partes* review ("IPR") of claims 1-7 and 9-13 of U.S. Patent No. 7,885,243 ("'243 patent"), as requested by Petitioner Cisco Systems, Inc. ("Cisco" or "Petitioner"), should be denied.

I. INTRODUCTION

The Petition's obviousness combinations constitute classic hindsight analysis that cannot support a finding of obviousness. They are a patchwork reconstruction of the '243 patent's claimed invention relying upon no less than ***three*** (and up *to* ***five***) alleged prior art references. Petitioner engages in various machinations and impermissible inferences to argue that its base combination of Ogier, Shapiro, and Herzog would reveal the inventions claimed in the '243 patent. But the systems, requirements, and purposes discussed in each of those references are very different, and Petitioner cannot use anything in those references to explain why they would be combined.

Most egregiously, Petitioner purports to incorporate Herzog's centralized policy server into the combined system of Ogier and Shapiro (both intentionally decentralized systems) to determine how traffic is routed in the combined system that Petitioner constructs. But ***no*** prior art reference discloses or suggests ***any*** benefit for such a server in the context of Ogier and Shapiro. Petitioner simply adds a server

to meet the "access server" limitation in the '243 patent—despite the fact that Petitioner's own prior art reference indicates that none is appropriate. That is impermissible.

Not a single prior art reference talks about distributed systems with the addition of a centralized server like Herzog. In the absence of descriptions and explanations in the prior art itself to justify the unlikely combination of Ogier, Shapiro, and Herzog, there is nothing in this record to motivate one of skill in the art to combine these disparate systems—other than the desire to retrospectively cobble together pieces from the prior art to arrive at the invention claimed in the '243 patent.

In addition to the facial lack of motivation to combine Ogier, Shapiro, and Herzog, the Petition also impermissibly relies extensively on expert testimony to fill the gap between the alleged Ogier-Shapiro-Herzog combination and the claimed invention of the '243 patent. Because Petitioner cannot demonstrate a reasonable likelihood that the challenged claims are obvious, much less without hindsight reconstruction and conclusory expert gap-filling, the Board should deny institution.

II. THE '243 PATENT

The '243 patent is directed towards "an adaptive wireless network" with "central control but distributed intelligence." Ex. 1001, 2:53-3:3. The "adaptive wireless network" comprises "Access Points (AP) that provide embedded intelligence at the edge of the network, are application aware and provide cost

effective distributed sensing and control of the network." *Id.* The network further comprises "a centralized access server," which sets "the characteristics of the network … to be anything between the two extremes of low latency to high throughput, based on the needs of applications running in the enterprise." *Id.*

The Access Server sets "latency/throughput constraints that causes each AP node to change their relationships to each other and consequently the character of the network." *Id.*, 3:31-34. This approach to modify the network is "decentralized"—"[t]he Access Server does not change the characteristics of each node, it simply sets the parameters governing the characteristic of the network—and let the AP nodes reconfigure their relationships to meet the objectives set by the Access Server." *Id.*, 3:42-48.

III. CLAIM CONSTRUCTION

Petitioner argues that the claim term "a means for switching two-way data communication from a first associated parent node to a second associated parent node based on the functioning parameters of the wireless mesh network" should be interpreted under 35 U.S.C. § 112(f). Pet., 8. PO takes no claim construction position at this stage of the proceeding because construction is unnecessary to deny institution of the Petition. *See Real Time Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)) ("The Board is required to construe 'only those terms ... that are in

controversy, and only to the extent necessary to resolve the controversy.'").

IV. PETITIONER FAILED TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAIMS ARE OBVIOUS

Cisco's asserted grounds are deficient for failing to establish a prima facie case of obviousness for the modifications proposed for the independent claims and for the combinations of references it presents for the dependent claims. To show obviousness, Cisco was supposed to "demonstrate both 'that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.'" *Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016) (internal citations omitted, emphasis added). To satisfy its burden, a petitioner must "articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness"—"mere conclusory statements" will not suffice. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Cisco's combinations fail to establish a prima facie case of obviousness.

All asserted grounds of unpatentability (Grounds 1-5) involve the same combination of Ogier, Shapiro, and Herzog. Pet., 4-5. However, as explained in detail below, a POSITA would not have been motivated to combine Ogier, Shapiro, and Herzog in a manner that renders the challenged claims obvious. At least for this reason, Petitioner has failed to demonstrate a reasonable likelihood that any of the

asserted grounds renders the challenged claims obvious.

A. Overview of Ogier.

Ogier is directed towards a "mobile ad hoc network," wherein each node in the network locally determines its own routing path "without the use of [network access] servers." Ex. 1003, Title, Abstract, [0002], [0018], [0043]. "For example, a pair of nodes 18 is considered to have established a bi-directional link [24], if each node 18 can reliably receive messages from the other." *Id.*, [0044]. "Such a bi-directional link 24 between the two nodes A and B is represented by a pair of unidirectional links (A, B) and (B, A). Each link has at least one positive cost (or metric) that can vary in time, and for any given cost, such cost for the link (A, B) may be different from that for the link (B, A)." *Id.* "[E]ach routing node 14 has complete link-state information," and "applies a path selection algorithm to compute preferred paths to all possible destinations, and to update these paths when link states are updated." *Id.*, [0198]. The above process for each node to determine its routing path does not depend on nor involve an access server.

While Ogier discloses a server 40, its purposes are "hosting application programs, delivering information or Web pages, hosting databases, handling electronic mail ("e-mail"), or controlling access to other portions of the Internet 30." *Id.*, [0039]. Server 40 does not provide network parameters to Ogier's nodes 18.

B. Overview of Shapiro.

Shapiro is directed towards "methods and systems for dynamically routing data through a network of nodes containing dynamic routing tables." Ex. 1004, [0001]. Like Ogier, the nodes in Shapiro determine their own routing path without involving an access server. *Id.*, [0009]. A transmitting node receives data and "an associated destination list" and "identifies a destination for the data from the destination list." *Id.* "The node then references a dynamic routing table for routing information to the destination. Next, the node determines an efficient method of transmitting the data based on the routing information, and transmits the data to a neighbor node based on the determination of the efficient method." *Id.* The "dynamic routing table is constructed for each node of the network as the network is established. Upon startup of a node, the node forms connections to a number of neighbor nodes selected from a neighbor node table." *Id.*, [00061]. "Once connected to selected neighbor nodes, a node creates an initial dynamic routing table, also known as a one-hop table because each node in the table is only one hop away." *Id.*, [0063]. Then, each node creates a "dynamic routing table 610," which "contains the number of hops to each neighbor node" and "[t]he goodness factor associated with each route, or neighbor," which is determined without input from an access server "by pinging the neighbor node." *Id.*

C. Overview of Herzog.

Herzog is directed towards "Policy-based Networking," which is "a technique for controlling network operation and influencing the way data packets are handled by network nodes (some data packets are given priority of other data packets, for example)." Ex. 1005, [0023]. "A policy is a formal set of statements that define how the network's resources are allocated among the network's clients (e.g., computer systems connected to the network)." *Id.* For example, the policy may include "an action (or rule) giving high priority to network data associated with the CEO of a company." *Id.* Herzog's "policy rule" may assign a priority (e.g., High, Medium, Low, Lowest) of an application (e.g., Video, Audio) for a user (e.g., CEO). *See id.*, [0041]-[0062]. Herzog discloses a policy system 104, which "automates and translates the policy rules into a set of lower-level instructions that network devices understand." *Id.*, [0029]. Herzog's "policy system 104 typically resides on the server 102." *Id.*

D. A POSITA Would Have Had No Reason to Combine Herzog with Ogier and Shapiro.

Contrary to Petitioner's manufactured motivation to combine, a POSITA would not have any reason to modify Ogier and/or Shapiro to include Herzog's policy system and associated server. According to Petitioner, "a POSITA would have found it obvious to combine Ogier and Shapiro with Herzog to incorporate a policy server" to "provide network nodes with 'a set of lower-level instructions' specifying

the link cost definition (e.g., LC_1 or LC_2), the goodness factor, and the weight *W*." Pet., 22. This is nothing but hindsight reconstruction of the '243 patent's invention. *See TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citing *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1368 (Fed. Cir. 2012)) ("Although the *KSR* test is flexible, the Board 'must still be careful not to allow hindsight reconstruction of references … without any explanation as to *how or why* the references would be combined to produce the claimed invention.'") (emphasis in original).

The challenged claims of the '243 patent recite Access Point ("AP") nodes in a mesh network that each determine parent nodes based on the functioning parameters of the wireless mesh network ***set by the mesh network's access server***. Ex. 1001, claims 1, 9, 12, 13 (emphasis added). In contrast, Ogier and Shapiro merely disclose distributed or "ad hoc" networks in which each node determines for itself the routes to transmit data through the network. Importantly, neither Ogier nor Shapiro discloses a server for providing network nodes with parameters for determining routing paths.

Ogier discloses a "mobile ad hoc network," wherein each node in the network locally determines its own routing path "without the use of [network access] servers." Ex. 1003, Title, Abstract, [0002], [0018], [0043]. Ogier explains that "each routing node 14 has complete link-state information," and "applies a path selection

algorithm to compute preferred paths to all possible destinations, and to update these paths when link states are updated." *Id.*, [0198]. This process is executed locally in each routing node—Ogier's routing nodes each determines its own routing path without involving an access server. Similarly, the nodes in Shapiro each create its own "dynamic routing table" comprising "the number of hops" and "the goodness factor associated with each route." Ex. 1004, [0009], [0061]-[0063]. Like in Ogier, Shapiro's nodes do not depend on an access server to provide information or parameters for creating the "dynamic routing table." Thus, to the extent a POSITA would have been motivated to combine Ogier and Shapiro, the combined Ogier-Shapiro network nonetheless does not involve nor require any server for the purpose of determining routing paths for the network nodes. The Petition's motivation-to-combine arguments are premised on the idea that Ogier and Shapiro need a network access server. That premise is wrong.

The Petition offers three "motivations" to combine Ogier-Shapiro with Herzog. Pet., 23-24. First, the Petition argues that Herzog should be combined with Ogier-Shapiro because the Ogier-Shapiro combination lacks a way to provide nodes with parameters for computing link costs. *Id.*, 23. This argument assumes that Petitioner's premise—that there is a need for a "network manager" to affect the routing of traffic in the network—is true. But the premise is not true, and it is not supported by the references themselves. *See supra*. Moreover, adding Herzog's

"policy server" to the Ogier-Shapiro combination is implicitly based on hindsight because Ogier-Shapiro lack that system component, yet the claims of the '243 patent recite an "access server" that sets one or more functioning parameters of the wireless mesh network. Ex. 1001, claims 1, 9, 12, 13. The motivation to add Herzog's policy server only comes from the need to match the claims of the '243 patent.

The Petition's second motivation to combine argues that combining Herzog's policy server with Ogier-Shapiro would only amount to combining prior art elements according to known methods to yield a predictable result. Pet., 24. This argument is entirely conclusory. The Petition says that all that is required to combine Herzog with Ogier-Shapiro is a "communications link to connect Herzog's policy server to the Ogier-Shapiro subnet." That argument defies logic and common sense. The Petition makes no effort to explain how merely adding a communications link (e.g., a cable) would result in a system that operates according to the claims of the '243 patent. Regardless, the mere fact that Herzog is compatible and *could* be combined with Ogier-Shapiro (it is not) is not a sufficient reason to combine these references. *Johns Manville Corp. v. Knauf Insulation, Inc.*, IPR2018-00827, Paper 9, 17 (PTAB Oct. 16, 2018) (denying institution based on lack of showing of expectation of success; citing *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017)). Mere compatibility of the references is likewise not sufficient. *Id.*

The Petition's third motivation to combine argues that Ogier and Shapiro

contemplate a network that is managed by an administrator. Pet., 24. But again, Petitioner overstates the teachings of Ogier and Shapiro. Petitioner asserts that Ogier teaches a system that includes an administrative authority that enforces network policies. *Id.* But the "administrative authority" cited by Petitioner has nothing to do with setting policies for selecting routes through a network. Instead, Ogier's administrative authority can enforce a policy of not exposing internal IPv4 addresses outside of its subnet. Ex. 1003, [0302], [0315], [0325]. Petitioner also argues that Shapiro "describes a 'network manager' that controls network traffic." Pet., 24. Again, this mischaracterizes Shapiro.

Consistent with Ogier and Shapiro's disclosure, the parameters for calculating link cost (as described in Ogier) and goodness factor (as described in Shapiro) are programmed in the network nodes. *See* Ex. 1003, Title, Abstract, [0002], [0018], [0043], [0198]; Ex. 1004, [0009], [0061]-[0063]. Neither Ogier nor Shapiro discloses or suggests that the "administrative authority" (in Ogier) or the "network manager" (in Shapiro) may effectuate changes to routing protocols or parameters on-the-fly during runtime, let alone doing so via a server. Nor does Herzog disclose or suggest any policy rule for changing how network nodes determine their routing paths. Indeed, the exemplary policy rules disclosed in Herzog all relate to the priority of network data associated with, e.g., an application, a user, and/or a time-of-day. *See, e.g.*, Ex. 1005, [0034]-[0039], [0051]-[0056], [0061]-[0062], [0065]-[0076].

A POSITA thus would have found no suggestions in the prior art to incorporate Herzog's policy server into the Ogier-Shapiro network. *Cook Grp., Inc. v. Bos. Sci. Scimed, Inc.*, 809 F. App'x 990, 1001 (Fed. Cir. 2020) ("where the motivation to combine rests on a modification alleged to improve the primary reference … the Board may consider whether the modification renders the reference inoperable for its intended function in deciding whether a [POSITA] would have a motivation to combine the references").

Petitioner's proffered reason to combine Herzog with Ogier and Shapiro is untethered to any express disclosure in the prior art. Rather, the Petition's reason to combine Herzog with Ogier and Shapiro—to configure characteristics of a ***distributed network*** using a ***centralized server*** (Pet., 22-24)—came not from the prior art, but from the '243 patent, which provides:

> Accordingly, there is a need for, and an objective of the present invention, to develop ***an adaptive wireless network***, based on "smart" communication devices such as Access Points (AP) that provide embedded intelligence at the edge of the network, are ***application aware and provide cost effective distributed sensing and control of the network***. An additional objective of this invention is to ***allow the characteristics of the network to be set by a centralized access server***, which can thus "tune" the character of the network to be anything between the two extremes of low latency to high throughput, based on the needs of applications running in the enterprise.

Ex. 1001, 2:53-63; *see also id.*, 3:1-3 ("…central control but distributed intelligence…."). Petitioner used the '243 patent's disclosure as a roadmap to reconstruct the claimed invention. Such hindsight reconstruction does not, and cannot, render the challenged claims obvious. *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332, 1337 (Fed. Cir. 2005) (finding the use of the invention as a roadmap improper).

E. The Combination of Ogier, Shapiro, and Herzog Does Not Disclose or Suggest "Switching … from a First Associated Parent Node to a Second Associated Parent Node Based on the Functioning Parameters of the Wireless Mesh Network."

Independent claims 1, 9, 12-13 all recite: "an access server … sets one or more functioning parameters of the wireless mesh network" and "switching … from a first associated parent node to a second associated parent node ***based on the functioning parameters of the wireless mesh network***." Ex. 1001, claims 1, 9, 12-13 (emphasis added). Petitioner argues that the Ogier-Shapiro-Herzog combination discloses this limitation because "link costs are computed as either:

- $LC_1 = 1 + W*GF$; or
- $LC_2 = (LD + bias) + W*GF$."

Pet., 17 (citing Ex. 1002, ¶¶82-85), 42. And each node in the combined Ogier-Shapiro-Herzog network "receives from Herzog's server a 'set of lower-level instructions'—including the link-cost definition (LC_1 vs. LC_2), goodness factor

(GF), and/or weight (W)—which the node then uses to compute the link cost and to select the routing path and path tree." Pet., 42 (citing Ex. 1002, ¶¶168–169).

The Petition's mapping for this limitation is manufactured by Petitioner and its expert. Pet., 42; Ex. 1002, ¶¶168-170. While Ogier discloses that "the cost of a link can be one, for minimum-hop routing, or the link delay plus a constant bias," nowhere does it teach or suggest switching between these two ways of computing link cost, let alone receiving instructions from a server for that purpose. Ex. 1003, [0044]. Likewise, while Shapiro discloses a "goodness factor" for determining routing (Ex. 1004, [0048]), it does not disclose receiving parameters from a server to alter how "goodness factor" is calculated. And while Herzog discloses a policy server, it does not disclose any policy rule that changes the parameters for determining or switching routing paths. Ex. 1005, [0022]. The Petition relies solely on expert testimony to cobble together a combined system comprising nodes that receive parameters from a server for changing routing paths, when none of the prior art, either alone or in combination, discloses or suggests any such functionality. Pet., 17 (citing Ex. 1002, ¶¶82-85); 42 (citing Ex. 1002, ¶¶168–170).

Thus, to the extent a POSITA is motivated to combine Ogier, Shapiro, and Herzog (they would not be), the combined Ogier-Shapiro-Herzog system nonetheless does not teach or suggest the claimed "switching … from a first associated parent node to a second associated parent node based on the functioning

parameters of the wireless mesh network" that are set by the "access server." The Petitioner's expert's conclusory testimony alone cannot fill the gap between the prior art and the challenged claims.

V. CONCLUSION

For the foregoing reasons, the Board should deny institution of *inter partes* review.

Dated: December 10, 2025

Respectfully submitted,

By: */s/ Elizabeth Bernard*

Elizabeth Bernard (USPTO Reg. No. 51,465)*
Erin Hadi (USPTO Reg. No. 79,904)*
ebernard@daignaultiyer.com
ehadi@daignaultiyer.com
DAIGNAULT IYER LLP
8229 Boone Boulevard, Suite 450
Vienna, VA 22182

**Not admitted in Virginia*

Attorneys for Dynamic Mesh Networks, Inc.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that this Patent Owner Preliminary Response has 4,004 words as counted by the word-processing system used to prepare this document. This word count complies with the 14,000 word limit under 37 C.F.R. § 42.24(b)(1).

Dated: December 10, 2025

Respectfully Submitted,

By: */s/ Elizabeth Bernard*
Elizabeth Bernard
USPTO Reg. No. 51,465

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing Patent Owner Preliminary Response was served electronically via email on December 10, 2025, on the following counsel of record for Petitioner:

Taeg Sang Cho
Michael Wueste
Lindsey Miller
Ryan Thorne
Desmarais LLP
tcho@desmaraisllp.com
mwueste@desmaraisllp.com
lmiller@desmaraisllp.com
rthorne@desmaraisllp.com
Cisco-DynamicMesh-IPR@desmaraisllp.com

Dated: December 10, 2025

Respectfully Submitted,

By: */s/ Elizabeth Bernard*
Elizabeth Bernard
USPTO Reg. No. 51,465