

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

K.MIZRA LLC,)	
)	
<i>Plaintiff,</i>)	
)	Civil Action No. 1:24-cv-5442-SDG
v.)	
)	JURY TRIAL DEMANDED
CIENA CORPORATION,)	
)	
<i>Defendant.</i>)	
)	

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff K.Mizra LLC (“K.Mizra”) files this First Amended Complaint for patent infringement against Defendant Ciena Corporation (“Ciena” or “Defendant”) and alleges as follows:

NATURE OF THE ACTION

1. This is a civil action for infringement of U.S. Patent No. 8,782,282 (“the ’282 Patent”); U.S. Patent No. 9,485,176 (“The ’176 Patent”); and U.S. Patent No. 10,735,320 (“the ’320 Patent”) (collectively, the “Patents-in-Suit”). This action arises under the Patent Act of the United States, 35 U.S.C. § 101 *et seq.*

2. Defendant Ciena, a technology company that provides networking equipment and/or systems to provide Ciena’s customers with, among other products, “optical and routing systems, services, and automation software,” has been infringing the Patents-in-Suit in violation of 35 U.S.C. § 271 by manufacturing,

using, importing, selling, and/or offering for sale in the United States products, methods, processes, services and/or systems that infringe the Patents-in-Suit.¹ In particular, and based on information and belief, Ciena’s Blue Planet division provides Operations (or Operational) Support Systems (OSS) to Communication Service Providers (CSPs), including without limitation, the Blue Planet Intelligent Automation Portfolio that “uniquely helps CSPs optimize and automate their operations and streamline the introduction of new services across any network domain or vendor, without creating costly and inefficient operational silos.”² According to Ciena’s website, Blue Planet provides “the industry’s only cloud-native platform that brings together leading inventory, orchestration, and assurance... to enable simplified, end-to-end automation for faster service introduction and monetization.”³

3. Ciena’s Blue Planet Intelligent Automation Portfolio and its components (collectively the “Accused Instrumentalities”), infringe each of the Patents-in-Suit. On information and belief, Ciena’s Blue Planet Intelligent Automation Portfolio⁴ includes without limitation the following products and/or

¹ See, e.g., <https://www.ciena.com/about> (last visited October 14, 2024).

² <https://www.blueplanet.com/about> (last visited October 14, 2024).

³ <https://www.blueplanet.com/cloud-native-platform> (last visited October 14, 2024).

⁴ See, e.g., <https://www.blueplanet.com/products> (last visited October 14, 2024).

services: Blue Planet Inventory⁵; Blue Planet Orchestration (which is comprised of “three modular software products,” Service Order Orchestration (SOO), Multi-Domain Service Orchestration (MDSO), and Network Functions Virtualization Orchestration (NFVO))⁶; Multi-Cloud Orchestration⁷; Wave Services Automation⁸; Bandwidth on Demand⁹; Route Optimization and Analysis¹⁰; IP/MPLS Automation¹¹; 5G Automation Network Slicing¹²; Discovery Resource Adapters¹³; Unified Assurance and Analytics¹⁴; and Blue Planet Manage, Control, and Plan.¹⁵

⁵ <https://www.blueplanet.com/products/inventory.html> (last visited March 14, 2025).

⁶ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

⁷ <https://www.blueplanet.com/solutions/5g-automation.html> (last visited October 14, 2024).

⁸ <https://www.blueplanet.com/solutions/wave-services-automation.html> (last visited October 14, 2024).

⁹ <https://www.blueplanet.com/solutions/bandwidth-on-demand.html> (last visited October 14, 2024).

¹⁰ <https://www.blueplanet.com/products/route-optimization.html> (last visited October 14, 2024).

¹¹ https://www.blueplanet.com/_data/assets/pdf_file/0023/9257/Route_Optimization_and_Analysis_DS_4_2024.pdf (last visited October 14, 2024).

¹² <https://www.blueplanet.com/resources/what-is-network-slicing.html> (last visited October 14, 2024).

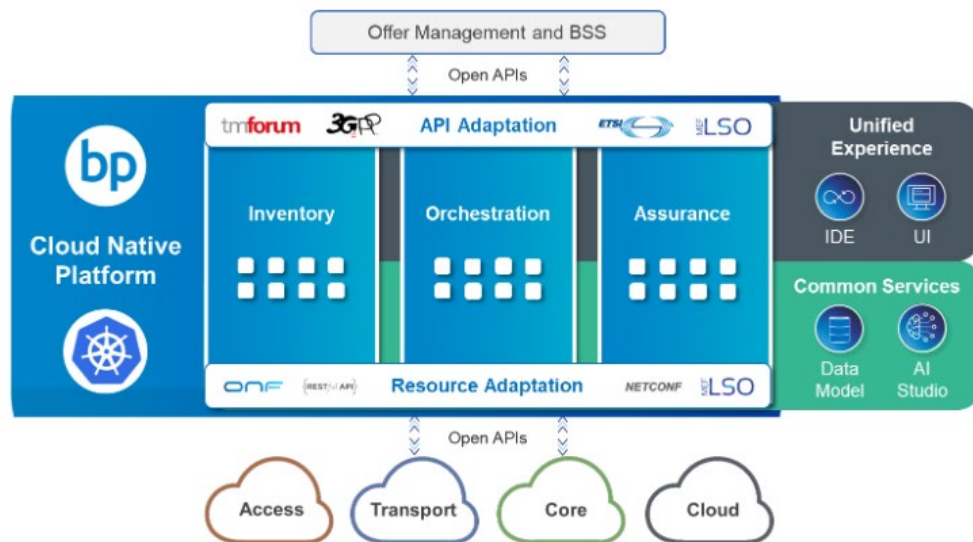
¹³ https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

¹⁴ <https://www.blueplanet.com/products/uaa.html> (last visited October 14, 2024).

¹⁵ See, e.g., <https://www.ciena.com/about/newsroom/press-releases/Ciena-Debuts-New-Blue-Planet-Software-Reinventing-Network-Management.html?campaign=X708817&src=blog> (last visited February 26, 2025) (“Blue Planet MCP integrates management and planning in a single web-based

Blue Planet Cloud Native Platform (CNP)

Blue Planet provides a uniquely open and adaptable OSS solution to help you optimize and automate operations and streamline the introduction of new services across any network domain or vendor. Whether introducing a new service or replacing a legacy system, you can take advantage of a proven and productized architecture—enabling a sustainable approach to OSS modernization that avoids extensive customizations and keeps you thriving in a changing market.



4. On further information and belief, Ciena provides Blue Planet functionality to its customers on a Software-as-a-Service (“SaaS”)¹⁶ model from

client interface.”), <https://www.blueplanet.com/blog/Software-Defined-Control-Brought-to-You-by-the-Letter-C.html#:~:text=With%20respect%20to%20SDN%20control,assurance%20and%20online%20network%20planning> (last visited February 26, 2025).

¹⁶ On information and belief, a SaaS model typically allows users to access applications over the Internet through a subscription model, where the SaaS provider hosts the accessed applications on remote servers managed by or on behalf of the provider. SaaS thus allows consumers of the service to save on deployment, maintenance, and equipment costs in exchange for a subscription or access fee.

systems operated by or on behalf of Ciena.¹⁷ On further information and belief, all advertised Blue Planet functionality, including the Accused Instrumentalities, is made available as a SaaS offering by Ciena. On further information and belief, Blue Planet functionality does not materially differ between SaaS and non-SaaS offerings.

5. K.Mizra seeks appropriate damages, prejudgment and post-judgment interest for Ciena's infringement of the Patents-in-Suit.

THE PARTIES

6. Plaintiff K.Mizra is a Delaware limited liability corporation with its principal place of business at 77 Brickell Avenue, #500-96031, Miami, Florida 33131. K.Mizra is the assignee and owner of the Patents-in-Suit.

7. On information and belief, defendant Ciena is a corporation organized and existing under the laws of Delaware that maintains an established place of business at 1120 Sanctuary Pkwy, Alpharetta, GA 30004.¹⁸ On further information

¹⁷ See, e.g., <https://www.blueplanet.com/blog/blue-planet-powers-your-cloud-first-strategy.html> (last visited March 14, 2025) (“Our Blue Planet Intelligent Automation software, which is built on a container-based microservices architecture, is cloud-native by design. Among many other benefits, this means that all Blue Planet products and solutions can be deployed on-prem or in cloud environments -- without restriction, and with the exact same features. In fact, we have worked closely with Amazon Web Services (AWS), the world's most comprehensive and broadly adopted cloud platform, to make ***Blue Planet available as a SaaS offer.***”) (emphasis added).

¹⁸ <https://www.ciena.com/contact-us/worldwide/alpharetta> (last visited October 14, 2024).

and belief, Ciena can be served through its registered agent Corporate Service Company at 2 Sun Court, Suite 400, Peachtree Corners, Georgia 30092.

JURISDICTION AND VENUE

8. This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.

9. This Court has original jurisdiction over the subject matter of this patent litigation action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. This Court has personal jurisdiction over defendant Ciena because Ciena maintains an established place of business in this District and conducts substantial business activities in this District. Specifically, Ciena conducted business and committed acts of patent infringement in this District, and the State of Georgia. Ciena committed acts of infringement in this District by, among other things, designing, developing, manufacturing, importing, offering to sell, or selling products that infringed the Patents-in-Suit. Further, Ciena, directly and through subsidiaries or intermediaries (including distributors, re-sellers, and others), has purposely and voluntarily placed one or more of the Accused Instrumentalities into the stream of commerce with the intention and expectation that they will be purchased and used by customers in the Northern District of Georgia. On information and belief, the Accused Instrumentalities have been and continue to be purchased and used by customers in the Northern District of Georgia.

11. Ciena has committed and continues to commit acts of infringement of the Patents-in-Suit in violation of the United States Patent Laws and has made, used, sold, offered to sell, and/or imported the Accused Instrumentalities within this District. Ciena's infringement has caused substantial injury to K.Mizra, including within this District.

12. On information and belief, Ciena's Alpharetta, Georgia office is located at 1120 Sanctuary Parkway. On further information and belief, Ciena had, for several years, maintained over 100,000 square feet of office/manufacturing space at its Alpharetta, Georgia location.¹⁹ On further information and belief, Ciena's Alpharetta, Georgia location was and is still being used as an "engineering facility."²⁰ On further information and belief, and in relevant part, employees who have and/or currently work on Ciena's Blue Planet solution at Ciena's Georgia location include individuals holding job titles such as Senior Delivery Architect, Blue Planet²¹; Blue Planet Software & Test Professional Services Delivery Leader²²;

¹⁹ See, e.g., <https://www.globest.com/2000/12/15/ciena-goes-on-leasing-spre-adding-147350-sf-of-officemanufacturing-space-at-two-locations/> (last visited October 14, 2024).

²⁰ See, e.g., Ciena's December 16, 2022 Annual 10-K, <https://investor.ciena.com/static-files/44985a31-27fc-4b69-bfcb-8a1f748b4922> (last visited October 14, 2024) at 43 ("We also have engineering facilities in ... Alpharetta, Georgia...").

²¹ <https://www.linkedin.com/in/saravananp/> (last visited November 19, 2024).

²² <https://www.linkedin.com/in/matt-becker-4322022/> (last visited November 19, 2024).

Senior Manager, Software Test and Automation²³; Senior Director Sales Engineering²⁴; and Senior Delivery Architect.²⁵

13. On information and belief, Ciena also advertised as recently as November 2024 that it was hiring for engineering positions related to the Accused Instrumentalities in Georgia, including System Design and Architecture Engineer²⁶ and Senior Optical DSP Systems Engineer.²⁷

14. In at least one other action for patent infringement, Ciena has admitted that this District is a proper venue for patent infringement actions against it and that venue exists in such action.²⁸

15. By registering to conduct business in Georgia and by maintaining facilities in at least the city of Alpharetta, Ciena has at least one regular and established place of business within the Northern District of Georgia.

²³ <https://www.linkedin.com/in/sharon-n-87461062/> (last visited November 19, 2024).

²⁴ <https://www.linkedin.com/in/manueldamas/> (last visited November 19, 2024).

²⁵ <https://www.linkedin.com/in/mallikarjun-kore-9b679a12/> (last visited November 19, 2024).

²⁶ <https://careers.ciena.com/us/en/job/R025076/Systems-Design-and-Architecture-Engineer-Hybrid-Alpharetta-GA> (last accessed October 14, 2024).

²⁷ <https://careers.ciena.com/us/en/job/R021839/Senior-Optical-DSP-Systems-Engineer> (last accessed October 14, 2024).

²⁸ See Ciena's First Amended Answer and Counterclaims, *Graywire, LLC v. Ciena Corp., et al.*, case no. 1:08-CV-2993 (BBM) (N.D. Ga., Apr. 17, 2009), ¶¶ 9-10 ("...Ciena admits that venue exists under 28 U.S.C. §§ 1391 and 1400...Ciena admits that it is subject to the jurisdiction of this Court...").

16. Venue is proper in this Court pursuant to 28 U.S.C. § 1400(b) on the grounds that Ciena committed acts of infringement in and has a regular and established place of business in this District. Ciena's Blue Planet division has an established place of operation in Ciena's Georgia offices, and Ciena has committed acts of infringement in this District by, among other things, designing, developing, manufacturing, importing, offering to sell, or selling products that infringed the Patents-in-Suit.

THE '282 PATENT-IN-SUIT

17. The '282 Patent is titled "Network Management System" and was issued by the United States Patent Office to inventors Eileen Zhou, Roger Liu, Vijoy Choyi, Moshe Itah, and John Z. Yu.

18. The '282 Patent was fully examined by the USPTO and duly issued on July 15, 2014. The earliest application related to the '282 Patent was filed on December 19, 2003. A true and correct copy of the '282 Patent is attached as Exhibit A.

19. K.Mizra is the owner of all right, title and interest in and to the '282 Patent with the full and exclusive right to bring suit to enforce the '282 Patent.

20. The '282 Patent is valid and enforceable under the United States Patent Laws.

21. Each of the named inventors of the '282 Patent assigned the patent to Hammerhead Systems, Inc., who thereafter assigned them to Brixham Solutions Ltd. Brixham Solutions Ltd. assigned the Patents-in-Suit to Global Innovation Aggregators LLC, who in turn assigned them to K.Mizra. K.Mizra owns the right, title and interest in each of the Patents-in-Suit, including the right to sue for past infringement.

22. The '282 Patent teaches novel systems and methods for improving scalability and efficiency in handling large volumes of events occurring in the network and network management tasks. The '282 Patent's claimed systems and methods combine specific hardware and software components in unconventional ways. In contrast, conventional network management systems (NMS) systems faced several challenges as the size of data communications networks grew in size. As networks expanded, NMS's required increased processing power to manage network performance, identify and fix problems or malfunctions in the network, and plan for further network growth without becoming overwhelmed by the number of events occurring in the network that are generated by network nodes and elements.

23. Through its novel technological innovation, embodiments of inventions disclosed in the '282 Patent provide, *e.g.*, systems and methods for a scalable and robust NMS architecture that can efficiently manage increasing network demands by implementing server clusters, load balancing, and distributed gateway and/or

adapter systems. This allows for incremental addition of network management resources without interrupting network operations, thereby optimizing performance and scalability.

24. The '282 Patent is directed to improvements to computer network technology, more particularly, “a network management system that is robust, scalable, and capable of efficiently handling a growing network.” '282 Patent at 1:23-25. A network management system “refers to a system responsible for managing a network, and facilitates the communication between a carrier's OSS and NEs in the network.” *Id.* at 2:37-40. Prior network management systems (“NMSs”) “face[d] many challenges as networks grow in size[,]” including the “thousands of events [that] can be generated when a fault is discovered[,]” resulting in it “easily be[ing] overwhelmed.” *Id.* at 1:17-22. The Background of the '282 Patent notes that “[i]t would be desirable to develop a network management system that is robust, scalable, and capable of efficiently handling a growing network.” *Id.* at 1:22-25. The problem the inventors sought to address was thus rooted in computer networking technology, *i.e.*, the technical limitations of prior art NMSs in their scalability, efficiency, and robustness. *See id.*; Ex. D (Akl Declaration) at ¶ 33. This problem—NMSs with limited scalability, efficiency, and robustness—is not a problem that arises in longstanding human activity, such as a fundamental economic practice or method of organizing human activity. Ex. D at ¶ 33.

25. Recognizing this problem, the inventors provided a “scalable network management system[,]” (’282 Patent at 2:12-13), with, *e.g.*, a distributed architecture. Specifically, the inventors achieved, *e.g.*, “[h]igh scalability . . . by using server clustering and distributed adapter architecture, with the load balancing scheme to connect the server cluster and NB and SB adapters in northbound and southbound directions respectively.” *Id.* at 7:65-8:2. In this distributed architecture, “multiple instances of such application servers can run simultaneously to distribute a workload and protect each other [where] [e]ach server instance by itself is a complete functioning NMS server that runs independently[.]” *Id.* at 8:12-15. An example of this is shown below:

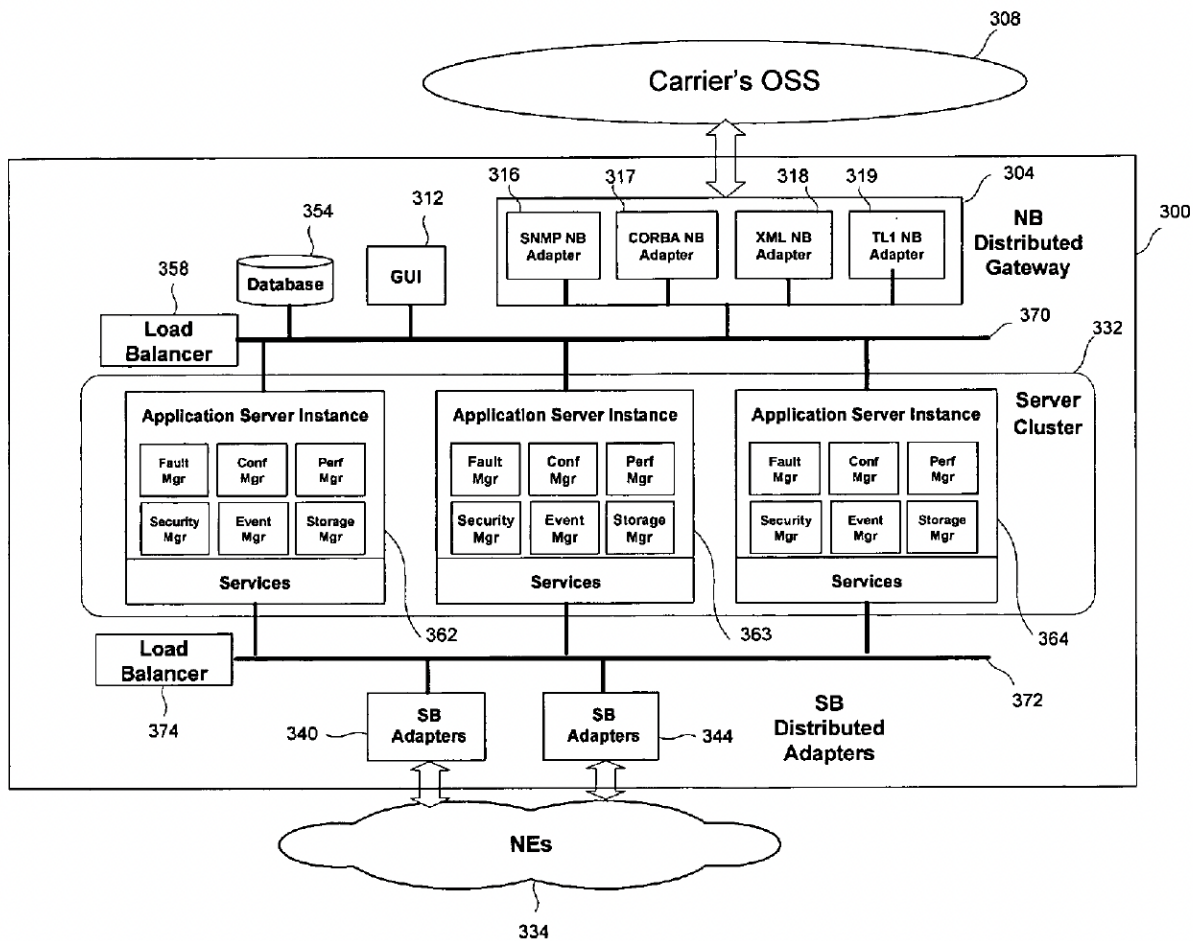


FIG. 3A: NB distributed gateway, SB distributed adapters, server cluster, & load balancers

Id. at FIG. 3A. The disclosed distributed architecture provides a specific, technical solution to a technical problem. Ex. D at ¶ 35. This distributed architecture provides tangible technical benefits—rather than mere abstract ones in the business, mental, or human activity realms—such as the ability to increase NMS processing power, efficiency, and flexibility. '282 Patent at 9:47-60; Ex. D at ¶ 35. The '282 Patent notes that other technical benefits also flow from embodiments of the improved distributed architecture, including:

- “With this architecture of an NB gateway decoupled from NMS application servers, multiple NB gateways, each of which includes a certain number of NB adapters, can be designed and distributed on different workstations for scalability and performance optimization.” *Id.* at 9:39-44.
- “An instance of the server can also be shut down for any reason without interrupting the server functionality as a whole. When a server is shutdown, its associated software modules (NB gate way 304, GUI312, or SB adapters 340 or 344) automatically re-establish the association with another server instance (one of existing servers 362-364 or a standby server) based on certain criterion, such as selecting the lightest loaded server.” *Id.* at 9:58-65.
- “[T]he distributed SB adapter-based NMS architecture can Support a flexible network partitioning to manage different management domains based on the amount of management traffic in each domain in a large scale network.” *Id.* at 9:67-10:2.

The improvement over and difference from prior NMSs is a technical one: an NMS with the improved distributed architecture can be enabled to re-establish an association with another server to ensure functionality during an interruption. Ex. D at ¶ 35.

26. The specific technical solutions disclosed in the '282 Patent are tied to and reflected by the claims. For example, claim 1 recites specific and detailed computer operations for utilizing the distributed NMS architecture:

[Preamble] 1. A method, comprising:

[1A] receiving, at a first application server instance selected from a plurality of application server instances based on a load balancing process, first adapter processed information from a first adapter, wherein the first adapter processed information comprises event information received by the first adapter from a network element and processed by the first adapter based on a first communication protocol;

[1B] processing, by the first application server instance, the first adapter processed information based on an event management service to produce application processed information;

[1C] sending, by the first application server instance, the application processed information to a gateway device, wherein the gateway device is one of a plurality of gateway devices respectively associated with the plurality of application server instances and is configured to transfer the application processed information to a second adapter of a plurality of second adapters configured to process the application processed information and transfer the second adapter processed information to an operation support system device; and

[1D] in response to determining that the first application server instance has become disabled, facilitating establishing an association between the first adapter and a second application server instance of the plurality of application server instances and between the gateway device and the second application server instance.

27. As demonstrated in, for example, claim 1 above, certain aspects of the distributed NMS architecture, including distributed application server instances, gateways, and adapters are recited in, for example, claim element 1A as “receiving,

at a first application server instance selected from a plurality of application server instance” as well as recited in claim element 1C as “wherein the gateway device is one of a plurality of gateway devices respectively associated with the plurality of application server instances and is configured to transfer the application processed information to a second adapter of a plurality of second adapters.”

28. Technical, detailed computer operations that implement the distributed NMS architecture are recited in, for example, claim element 1A as “based on a load balancing process, first adapter processed information from a first adapter, wherein the first adapter processed information comprises event information received by the first adapter from a network element and processed by the first adapter based on a first communication protocol.” Likewise, claim element 1B also recites “processing, by the first application server instance, the first adapter processed information based on an event management service to produce application processed information.” Technical, detailed computer operations implementing the distributed NMS architecture are also recited in claim element 1C as “sending, by the first application server instance, the application processed information to a gateway device,” and “configured to process the application processed information and transfer the second adapter processed information to an operation support system device.”

29. An example of a specific technical solution and benefit is recited in claim element [1D]—i.e., the ability “to re-establish the association with another

server instance (one of existing servers 362-364 or a standby server) based on certain criterion[,]” (’282 Patent at 10:63-65), which “results in maximal efficiency and flexibility for any management policy to be implemented as carriers wish.” *Id.* at 9:57-58. Thus, the claim language does not recite a mere abstract idea (*e.g.*, mental process, mathematical concept, method of organizing human activity), rather, it recites specific concrete operations for implementing a technical solution. Ex. D at ¶ 36. Further, the claim language does not merely state a desired result of NMSs with improved efficiency and flexibility, but recites detailed concrete steps of achieving those results by way of the claimed technological solution. *Id.* at ¶ 36. Accordingly, the claim as a whole is directed to an improvement to computer networking technology and not an abstract idea. *Id.* at ¶ 36.

30. Further, claim 1, for example, recites additional elements that provide inventive concepts and “transform the claim into patent-eligible subject matter.” *Id.* at ¶ 37. Specifically, at least the following additional elements were not “well-understood, routine, or conventional” as of 2003:

- “receiving, at a first application server instance selected from a plurality of application server instances based on a load balancing process”;
- “wherein the gateway device is one of a plurality of gateway devices respectively associated with the plurality of application server instances and

is configured to transfer the application processed information to a second adapter of a plurality of second adapters”;

- “in response to determining that the first application server instance has become disabled, facilitating establishing an association between the first adapter and a second application server instance of the plurality of application server instances and between the gateway device and the second application server instance[.]”

Ex. D at ¶ 37.

31. During patent examination, the examiner allowed claim 1 because the closest prior art references “do not sufficiently teach or disclose all of the recited limitations of the amended independent claims, and claim 1 in particular, including the recited feature of ‘in response to determining that the first application server instance has become disabled, facilitating establishing an association between the first adapter and a second application server instance of the plurality of application server instances and between the gateway device and the second application server instance’” Akl Declaration Ex. 2 (3/17/2014 Notice of Allowance, ’282 Patent File History) at 2. That the Patent Office found the closest prior art did not disclose these additional inventive elements supports their being non-routine and unconventional. Accordingly, claim 1 of the ’282 Patent recites additional elements that were not “well-understood, routine, or conventional,” which provide

“something more” sufficient to transform any alleged abstract idea into eligible subject matter. Ex. D at ¶ 38.

THE '176 PATENT-IN-SUIT

32. The '176 Patent is titled “Global IP-Based Service Oriented Network Architecture” and was issued by the United States Patent Office to inventors Ping Pan and Richard Gitlin.

33. The '176 Patent was fully examined by the United States Patent and Trademark Office (“USPTO”) and duly issued on November 1, 2016. The earliest application related to the '176 Patent was filed on August 4, 2006. A true and correct copy of the '176 Patent is attached as Exhibit B.

34. K.Mizra is the owner of all right, title and interest in and to the '176 Patent with the full and exclusive right to bring suit to enforce the '176 Patent.

35. The '176 Patent is valid and enforceable under the United States Patent Laws.

36. Each of the named inventors of the '176 Patent assigned the patent to Hammerhead Systems, Inc., who thereafter assigned them to Brixham Solutions Ltd. Brixham Solutions Ltd. assigned the Patents-in-Suit to Global Innovation Aggregators LLC, who in turn assigned them to K.Mizra. K.Mizra owns the right, title and interest in each of the Patents-in-Suit, including the right to sue for past infringement.

37. The '176 Patent teaches novel systems and methods for improved network traffic routing policies and facilitating internet services across disparate network technologies and service providers. The '176 Patent's claimed systems and methods combine specific hardware and software components in unconventional ways. In contrast, conventional systems faced several challenges due to diversity between access/metro networks and core/backbone networks, which complicated the management of the disparate network interfaces and the provision of consistent network services. For example, conventional network Layer-2 and Layer-3 Quality of Service (QoS) mechanisms were not adequate to satisfy varying internet service requirements such as for multimedia applications, which can have different tolerances for data packet delivery issues, *e.g.*, latency, packet loss, etc. In other words, conventional systems could not adequately meet specific performance requirements or QoS guarantees for video and voice traffic traversing across specific service provider networks.

38. Through its novel technological innovation, the '176 Patent provides, *inter alia*, systems and methods with a service-oriented network architecture, which facilitates the transport of QoS-guaranteed voice and video traffic across disparate provider networks. The '176 Patent discloses leveraging pseudowires to enable the delivery of new services over network deployments that may be operated by different service providers and carriers with diverse network technologies, *e.g.*, both

legacy and new. The '176 Patent discloses aggregating network traffic into pseudowires and routing the traffic accordingly based on routing policies specific to the type of applications associated with the traffic to ensure service level agreements (SLA) and QoS guaranteed by the service providers.

39. The '176 Patent is directed to improvements to computer network technology, more particularly, a Global IP-Based Service-Oriented Network (GIBSON) “architecture [that] provides a solution for providers to transport service-guaranteed user traffic over a multi-provider network.” '176 Patent at 3:16-18. Typically, wireless traffic may travel through multiple networks to reach user devices and back. *See id.* at 1:25-34. These networks, for example, access or metro networks, core or backbone networks, that may be operated by different entities and employ different transport technologies. *See id.* at 1:29-42. One problem that arises from this type of set-up is the relative inability for internet-based services to guarantee a Quality of Service (QoS) of traffic delivery over diverse networks. *See id.* at 1:51-59. According to the '176 Patent, “existing Layer-2 and Layer-3 QoS mechanisms (IEEE 802.1p or DiffServ) may not be adequate[.]” *Id.* at 7:11-13. This problem the inventors sought to address was thus rooted in computer networking technology, i.e., the technical limitations of prior art QoS solutions. *See id.*; Ex. D at ¶ 39. This problem is not something that arises in longstanding human activity, such as a

fundamental economic practice or method of organizing human activity. Ex. D at ¶ 39.

40. Recognizing this problem, the inventors developed a novel GIBSON Architecture that “interfaces with a provider's management plane for service discovery and mapping, and leverages standard-based MPLS Pseudowire techniques to interface with network routers and switches[,]” (*id.* at 3:18-21), thereby ensuring a QoS from the point of view of the application flow. More particularly, the GIBSON architecture is able “encapsulat[e] the data packet based on the application header, such as an TCP, HTTP, or MPEG header.” *Id.* at 5:19-25. This mapping and encapsulating technique enables packets to be “switched based on the Pseudowire application label . . . , [providing] bandwidth enforcement, and/or traffic shaping[.]” *Id.* at 5:41-44.

41. The disclosed GIBSON architecture provides a specific, technological solution to a technological problem. Ex. D at ¶ 41. This architecture provides tangible technological benefits, such as the ability to enforce QoS at the application level over multiple networks. ’176 Patent at 6:1-5;10:18-21; 12:22-23; Ex. D at ¶ 41. As one example, prior Pseudowires “are encapsulated based on IP or layer 2 headers only. Ex. D at ¶ 41. In contrast, the ’176 Patent encapsulates pseudowire labels in “headers associated with layer 4 and above[.]” ’176 Patent at 5:24. This example

improvement over and difference from prior art Pseudowires is thus a technical one.

Ex. D at ¶ 41.

42. This specific technical solution is tied to and reflected by the claims. For example, claim 9 recites specific and detailed computer system for encapsulating and mapping data packets in the GIBSON architecture:

[Preamble] A system, comprising:

[9A] a processor, coupled to a memory that stores instructions, that executes or facilitates execution of the instructions to at least:

[9B] encapsulate a data packet, received by a first node device of a first network associated with a first service provider entity, with a pseudowire label determined based on an application flow identified by an application header of the data packet; and

[9C] select, based on the application flow, a routing policy from a set of application-specific routing policies defined for the first network, wherein the routing policy instructs that the data packet is to traverse at least a second network, comprising a second node device and associated with a second service provider entity, in transit to a third network comprising a third node device and associated with a third service provider entity.

43. Technical, detailed computer operations associated with the GIBSON architecture are recited in, for example, claim elements 9B and 9C. Aspects of a specific technical solution providing a stated technical benefit are also recited in claim element 9C. The '176 Patent describes this as “[i]ndependent of underlying network transport tunneling.” *Id.* at 3:43-44. Thus, the claim language does not recite a mere abstract idea (*e.g.*, mental process, mathematical concept, method of organizing human activity), but specific concrete operations for implementing a

technical solution. Ex. D at ¶ 42. The claim language similarly does not merely claim the desired result improved pseudowires, but detailed concrete steps of achieving the technical solution. *Id.* at ¶ 42. Accordingly, the claim as a whole is directed to an improvement to computer networking technology and not an abstract idea. *Id.* at ¶ 42.

44. Further, claim 9 of the '176 Patent, for example, recites additional elements that that also provide inventive concepts and “transforms the claim into patent-eligible subject matter.” *Id.* at ¶ 43. At least the following additional elements were not “well-understood, routine, or conventional” as of 2006:

- “encapsulate a data packet, received by a first node device of a first network associated with a first service provider entity, with a pseudowire label determined based on an application flow identified by an application header of the data packet;”
- “select, based on the application flow, a routing policy from a set of application-specific routing policies defined for the first network, wherein the routing policy instructs that the data packet is to traverse at least a second network, comprising a second node device and associated with a second service provider entity, in transit to a third network comprising a third node device and associated with a third service provider entity.”

Ex. D at ¶ 43.

45. Specifically, it was not well-understood, routine, and conventional in 2006 to encapsulate data packets with a pseudowire label determined based on an application flow identified by an application header. Ex. D at ¶ 44. Conventional and known pseudowires labeled packets at lower layers, e.g., layers 2 and 3, and not at the application layer. Ex. D at ¶ 44. Similarly, it was not well-understood, routine,

and conventional in 2006 to select a routing policy from a set of application-specific routing policies defined for networks. Ex. D at ¶ 44. Accordingly, claim 9 of the '176 Patent recites additional elements that were not “well-understood, routine, or conventional,” which provide “something more” sufficient to transform any alleged abstract idea into eligible subject matter. Ex. D at ¶ 44.

THE '320 PATENT-IN-SUIT

46. The '320 Patent is titled “Application Wire” and was issued by the United States Patent Office to inventors Ping Pan and Richard Gitlin.

47. The '320 Patent was fully examined by the USPTO and duly issued on August 4, 2020. The earliest application related to the '320 Patent was filed on October 7, 2005. A true and correct copy of the '320 Patent is attached as Exhibit C.

48. K.Mizra is the owner of all right, title and interest in and to the '320 Patent with the full and exclusive right to bring suit to enforce the '320 Patent.

49. The '320 Patent is valid and enforceable under the United States Patent Laws.

50. Each of the named inventors of the '320 Patent assigned the patent to Hammerhead Systems, Inc., who thereafter assigned them to Brixham Solutions Ltd. Brixham Solutions Ltd. assigned the Patents-in-Suit to Global Innovation Aggregators LLC, who in turn assigned them to K.Mizra. K.Mizra owns the right,

title and interest in each of the Patents-in-Suit, including the right to sue for past infringement.

51. The '320 Patent teaches novel systems and methods for improved management of network traffic such as traffic for multimedia applications over a service provider or carrier network, particularly in the context of Multi Protocol Label Switching (MPLS) networks. The '320 Patent's discloses systems and methods that combine specific hardware and software components in unconventional ways. In contrast, conventional MPLS network systems primarily handled data traffic at the network Layer-3 level and below, which limited their ability to provide QoS guarantees at the user application level. Traditional methods like IntServ/RSVP and DiffServ had limitations in scalability and required over-provisioning of network bandwidth to ensure QoS, which was not always feasible. Additionally, these methods required changes to intermediate nodes and equipment, which was not desirable.

52. Through its novel technological innovation, the inventions disclosed in the '320 Patent provide systems and methods for more efficient management and transfer of application traffic across the network, enhancing QoS and flexibility in handling application-specific service requirements and guarantees. The '320 Patent discloses mapping application specific traffic or application flows to pseudowires with an awareness of application protocol requirements, thereby providing a scalable

solution for managing application-specific QoS without requiring changes to the existing equipment at intermediate network nodes.

53. The '320 Patent is directed to improvements to computer network technology, more particularly, to the use of Application Wires that can be used to improve upon conventional QoS techniques. '320 Patent at 4:7-8. According to the Background of the '320 Patent, “[s]ome proposed IP-based models have been developed to address the QoS requirement associated with applications, but some issues remain.” *Id.* at 1:58-60. These models, IntServ/RSVP and DiffServ, required additional processing at intermediate nodes (e.g., deep packet inspection), were not scalable or efficient, and had limited applicability and QoS functionality. *Id.* at 1:58-2:21. The inventors recognized that “[i]t would be useful to have [1] a way to better manage application traffic over a carrier network without requiring changes to the intermediate nodes . . . [2] QoS guarantee . . . at per-application flow level . . . [and] [3] scalability.” *Id.* at 2:22-26. One of the problems the inventors sought to address was thus rooted in computer networking technology, *i.e.*, the technical limitations of prior art QoS solutions. *See id.*; Ex. D at ¶ 45. This problem is not something that arises in longstanding human activity, such as a fundamental economic practice or method of organizing human activity. Ex. D at ¶ 45.

54. To address this and other technical problems, the inventors provided an Application Wire scheme that “maps one or more application flows into

Pseudowires, and is at the same time aware of the application protocol and the protocol requirements associated with application flows.” *Id.* at 3:20-26. In disclosed techniques, the pseudowire “mapping scheme for each application flow is selected based at least in part on the bandwidth and traffic requirement associated with the application” and “may span a plurality of intermediate nodes[.]” *Id.* at 4:39-46. This is shown below:

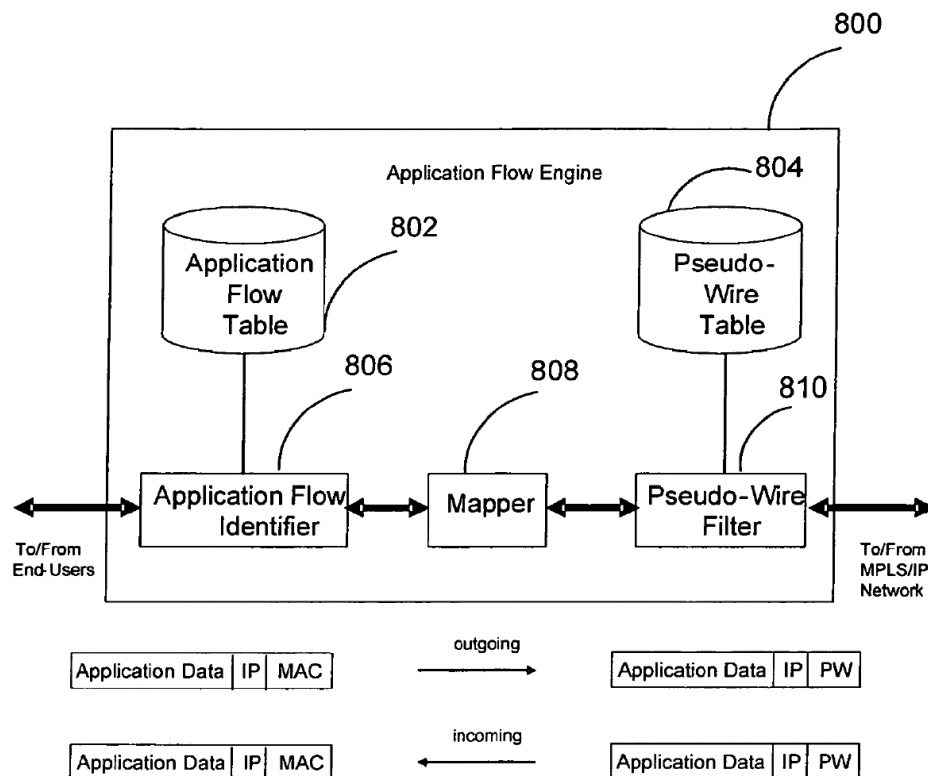


FIG. 8

Id. at FIG. 8.

55. The disclosed Application Wire scheme provides a specific technical solution to a technical problem. Ex. D at ¶ 47. As the '320 Patent explains that the Application Wire mapping technique incorporates QoS parameters “such as average and peak bandwidth of the flow, the burst size, the importance level of the flow” *Id.* at 7:32-34. Moreover, “[u]nlike data transfer schemes where deep packet inspection is required at each intermediate node, the intermediate nodes used in this example can be standard MPLS devices and no change is required to make them support the Application Wire scheme.” *Id.* at 4:46-50. Accordingly, the '320 Patent provides tangible, technical benefits to computer networking functionality and resource usage. Ex. D at ¶ 47. The improvement over and difference from prior art Pseudowires is a technical one. Previous “mapping of one data stream to one Pseudowire [did] not account for the bandwidth demand of individual application generating traffic . . . [thereby making it] difficult to guarantee the quality of service (QoS) for these individual applications.” '320 Patent at 3:62-67. On the other hand, the '320 Patent enables, *e.g.*, pseudowire mapping and usage on a per-application flow basis. *Id.* at 7:47-54; Ex. D at ¶ 47.

56. The specific, technical solution is tied to and reflected by the claims. For example, claim 8 recites specific and detailed computer operations for encapsulating and mapping data packets in the GIBSON architecture:

[Preamble] A device comprising:

[8A] a processor; and a memory that stores instructions executable by the processor to:

[8B] identify information associated with an application flow based on one or more unencapsulated packet headers of the application flow or based on an ingress data stream that includes the application flow;

[8C] in response to identifying the information, and based on stored data mapping application flows to pseudowires [sic], determine a plurality of pseudowires as paths through a multiprotocol label switching (MPLS) network for the application flow, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of pseudowires [sic]; and

[8D] communicate data associated with the sending device application via at least one of the plurality of pseudowires.

57. Technical, detailed computer components and network elements that implement the Application Wires scheme are recited in, for example, claims elements 8A, 8B, and 8D. A specific technical solution providing a stated technical benefit is recited in, for example, claim element 8C. Thus, the claim language does not recite a mere abstract idea (e.g., mental process, mathematical concept, method of organizing human activity), but specific concrete components and their operations for implementing a technical solution. Ex. D at ¶ 48. The claim language similarly does not merely claim the desired result improved pseudowires or QoS, but detailed implementational steps of achieving the technical solution. *Id.* at ¶ 48. Accordingly, the claim as a whole is directed to an improvement to computer networking technology and not an abstract idea. *Id.* at ¶ 48.

58. Further, claim 1, for example, recites additional elements that provide inventive concepts and “transform the claim into patent-eligible subject matter.” *Id.* at ¶ 49. Specifically, at least the following additional claim element was not “well-understood, routine, or conventional” as of 2005:

- “in response to identifying the information, and based on stored data mapping application flows to pseudowires [sic], determine a plurality of pseudowires as paths through a multiprotocol label switching (MPLS) network for the application flow, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of pseudowires [sic]; and”

Ex. D at ¶ 49.

59. For example, it was not well-understood, routine, and conventional in 2005 to determine a plurality of pseudowires as paths through a MPLS network based distributed mapping of the application flow via at least one of the plurality of pseudowires. Ex. D at ¶ 50. The '320 Patent explains that previous techniques performed one-to-one mapping of application flows to pseudowires rather than distributed mapping. '320 Patent at 3:62-66. The Patent Office similarly also found this feature to be novel in view of the closest prior art, stating in the Notice of Allowance: “the prior art of record, either alone or in combination, fails to teach or suggest identifying information from a flow based on an unencapsulated packet header or ingress stream, wherein the flows are mapped to pseudowires in a MPLS network based on stored information wherein the stored information indicates, for the sending device application, a mapping of the flow via a pseudowire and the data

associated with the application is communicated via the pseudowire.” Akl Declaration Ex. 3 (3/25/2020 Notice of Allowance, ’320 Patent File History) at 2. Accordingly, claim 8 of the ’320 Patent recites additional elements that were not “well-understood, routine, or conventional,” which provide “something more” sufficient to transform any alleged abstract idea into eligible subject matter. Ex. D at ¶ 50.

K.MIZRA’S PRE-LITIGATION COMMUNICATIONS WITH CIENA

60. On or about February 13, 2024, K. Mizra sent letters to Ciena’s Senior Intellectual Property Counsel and VP of Intellectual Property (the “Notice Letters”) as a “notice to Ciena that Ciena’s products have and are continuing to infringe various claims of K. Mizra’s patents.”²⁹ In relevant part, the Notice Letters informed Ciena that K.Mizra’s patent portfolio “cover[ed] various aspects of pseudowire technology such as those made and used in Ciena products.”³⁰

61. In further relevant part, the Notice Letters informed Ciena of its infringement of at least the ’282, ’176, and ’320 Patents via attached infringement claim charts that detailed K.Mizra’s allegations of infringement on an element-by-element basis for certain claims.³¹ The claim charts for the ’282, ’176, and ’320

²⁹ True and correct copies of February 13, 2024 letters from Charles Hausman of K.Mizra to Raymond Gabriel and Robert Kucler of Ciena are attached hereto as Exhibit D.

³⁰ Exhibit D.

³¹ Exhibit D.

Patents included citations to supporting documents, including content found at the following URLs:

- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-227/build/site/mcp-docs/api-guide/APICollections.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/TAPI.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/Topology.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/Overview.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html#provision-eline-pwhand;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html;
- https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html#packet-infrastructure-management;
- [https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/L3VPNservice.html#viewing-l3-vpn-service:~:text=Create%20%22L3%20VPN%20service%22](https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/L3VPNservice.html#viewing-l3-vpn-service:~:text=Create%20%22L3%20VPN%20service%22;);
- <https://www.ciena.com/insights/articles/What-is-FlexEthernet-and-Why-is-it-so-Important.html>; and

- <https://www.ciena.com/insights/articles/How-utility-network-managers-can-gain-critical-visibility-to-meet-user-demands.html>.

62. On information and belief, each of the URLs listed in Paragraph 37 above were at all times under the possession, custody, and/or control of Ciena.

63. After K.Mizra informed Ciena of its infringement of the Patents-in-Suit via the Notice Letters' claim charts and citations to Ciena documentation, K.Mizra learned that the URLs listed in at least Paragraph 37 were no longer available for access by the time of filing of this Complaint. On further information and belief, at least some of the links listed in Paragraph 37 were made unavailable mere weeks following K.Mizra's Notice Letters. On further information and belief, each of the above-listed links now redirects either to a "403" error page or a general Ciena content page, indicating that the individual URL could not be found and displayed.

64. Additionally, K.Mizra's claim charts attached to the February 13, 2024 Notice Letters included certain diagrams and graphics obtained from Ciena's websites as part of the element-by-element infringement analysis. In several instances, those graphics have since been changed on Ciena's website following delivery of the Notice Letters.

65. As an example, certain graphics at the following URLs that K.Mizra had cited in its infringement charts attached to the Notice Letters had been changed and/or omitted from the cited webpage by the filing of this Complaint:

- <https://www.blueplanet.com/solutions/5g-automation.html>; and

- https://www.blueplanet.com/_data/assets/pdf_file/0021/81264/5G_Automation_Network_Slicing_SB1.pdf.

66. K.Mizra did not receive any communication and/or correspondence from Ciena in response to its February 13, 2024 Notice Letters.

COUNT I: INFRINGEMENT OF THE '282 PATENT

67. K.Mizra re-alleges and incorporates by reference all of the foregoing paragraphs.

68. On information and belief, Ciena has directly infringed, literally and/or by the doctrine of equivalents, individually and/or jointly, one or more claims of the '282 Patent, including at least claim 1, in violation of 35 U.S.C. § 271, et seq., by using in this District and in the United States certain products and/or services, including but not limited to those, relating to the Accused Instrumentalities. In particular, and as a non-limiting example, Ciena's Blue Planet SaaS product/service offerings directly infringe at least claim 1. As another non-limiting example, to the extent that Ciena sells, offers to sell, maintains, and/or troubleshoots the Blue Planet functionality discussed herein for its customers who install, maintain, and/or operate products and/or systems incorporating such functionality, Ciena at least indirectly infringes one or more claims of the '282 Patent in violation of at least 35 U.S.C. §§ 271(b) and/or (c).

69. Based on publicly available information, Ciena's Accused Instrumentalities meet all elements of at least claim 1 of the '282 Patent.

70. Claim 1 of the '282 Patent provides:

[Preamble] 1. A method, comprising:

[1A] receiving, at a first application server instance selected from a plurality of application server instances based on a load balancing process, first adapter processed information from a first adapter, wherein the first adapter processed information comprises event information received by the first adapter from a network element and processed by the first adapter based on a first communication protocol;

[1B] processing, by the first application server instance, the first adapter processed information based on an event management service to produce application processed information;

[1C] sending, by the first application server instance, the application processed information to a gateway device, wherein the gateway device is one of a plurality of gateway devices respectively associated with the plurality of application server instances and is configured to transfer the application processed information to a second adapter of a plurality of second adapters configured to process the application processed information and transfer the second adapter processed information to an operation support system device; and

[1D] in response to determining that the first application server instance has become disabled, facilitating establishing an association between the first adapter and a second application server instance of the plurality of application server instances and between the gateway device and the second application server instance.

71. Regarding the preamble of claim 1, to the extent the preamble is determined to be limiting, the Accused Instrumentalities perform the claimed

method as set forth herein. For example, Ciena documents detail the services (outlined below in red) provided by Ciena to its customers³²:

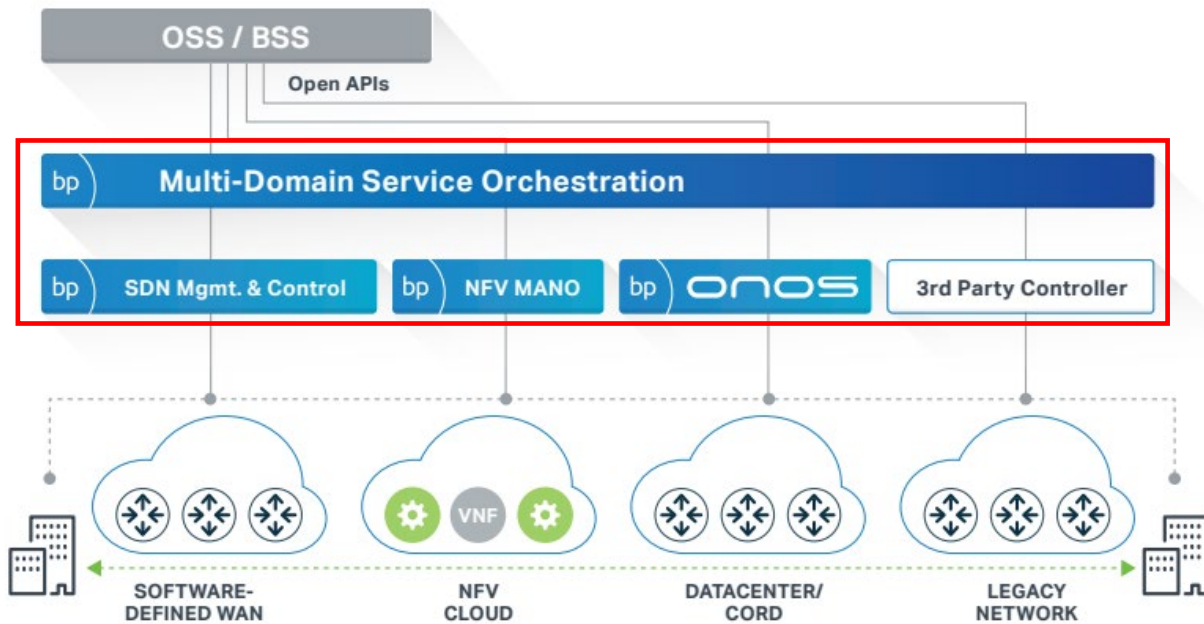


Figure 2. Blue Planet serves four primary use cases to meet our customers' business and operational requirements

72. As a further example, Ciena states that “Blue Planet facilitates a vendor-agnostic and modular approach to automating the network service lifecycle in multi-domain environments. Beyond eliminating technology silos, this gives network operators more freedom to use the best-of-breed (physical and virtual) network

³²

<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024) (emphasis added).

components of their choice, and allows them to focus on delivering services instead of managing appliances.”³³

73. As a further example, Ciena states that “Blue Planet supports both Ciena and non-Ciena domains (e.g., access, metro, core, cloud) through the use of resource adapters to interface with a single multi-domain service orchestration layer.”³⁴

74. Thus, to the extent the preamble of claim 1 is limiting, Ciena performs the preamble of claim 1 at least by using and/or providing the Blue Planet Intelligent Automation Portfolio as a SaaS offering.

75. Limitation [1A] requires “receiving, at a first application server instance selected from a plurality of application server instances based on a load balancing process, first adapter processed information from a first adapter, wherein the first adapter processed information comprises event information received by the first adapter from a network element and processed by the first adapter based on a first communication protocol.” On information and belief, Ciena, through the Accused Instrumentalities, performs this step of the claimed method by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from

³³

<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024).

³⁴ <https://www.blueplanet.com/blog/Ciena-Blue-Planet-unveils-the-dawn-of-service-orchestration-prx.html> (last visited October 14, 2024) (emphasis added).

Ciena’s Blue Planet Intelligent Automation Portfolio. For example, on information and belief, Ciena provides “SDN Management and Control” that employs various FCAPS³⁵ management functions that control and manage various elements in a network.³⁶ Thus, on information and belief, Ciena utilizes a plurality of application server instances that receive various data from network elements. In the figure below, taken from Ciena documentation, Blue Planet utilizes “[o]pen interfaces & protocols” to communicate with “[m]ulti-vendor physical & virtual network elements.”³⁷

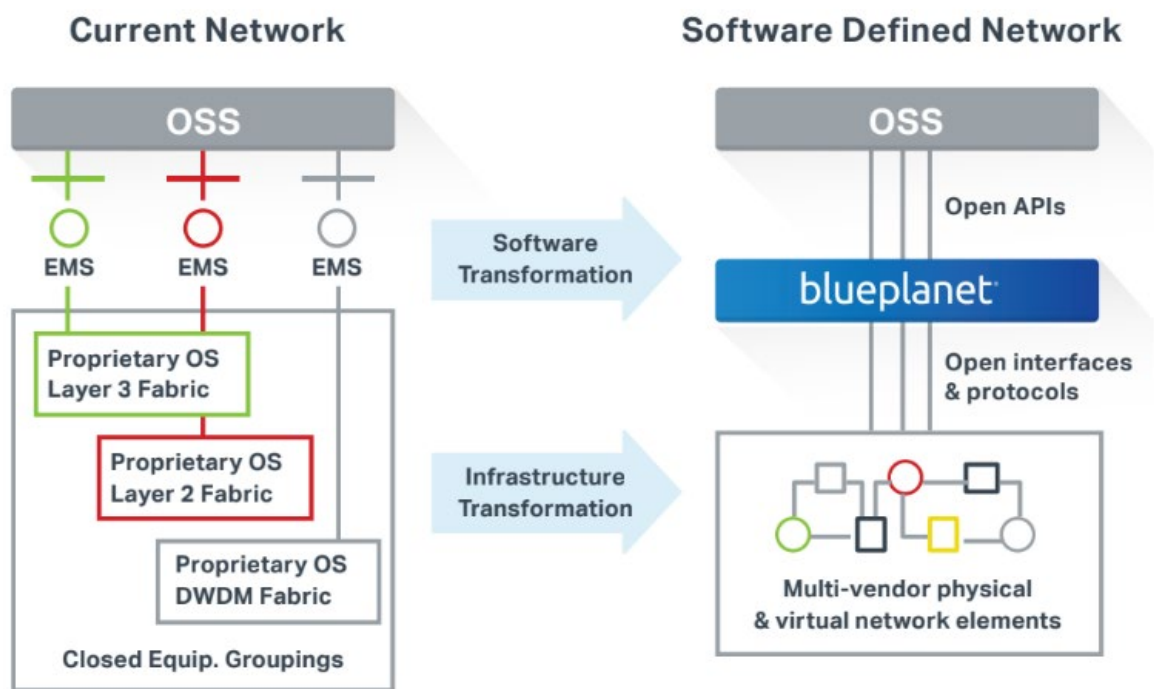
³⁵ On information and belief, “FCAPS” refers to Fault, Configuration, Accounting, Performance, Security. *See, e.g.*, <https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024).

³⁶

<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024).

³⁷

<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024).

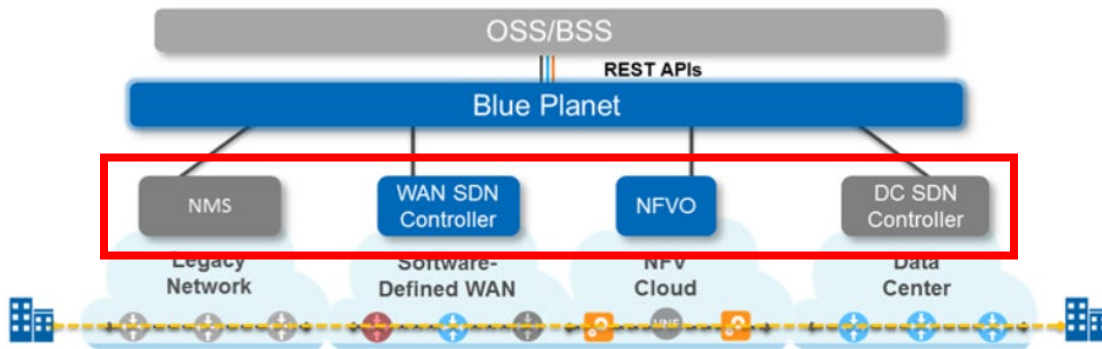


76. As a further example, in the figure below, a plurality of application server instances is identified in red.³⁸ On information and belief, Ciena also advertises that “Blue Planet supports both Ciena and non-Ciena domains (e.g., access, metro, core, cloud) *through the use of resource adapters* to interface with a single multi-domain service orchestration layer. ... Additionally, open APIs expose critical data to northbound platforms in our software stack.”³⁹ In other words, and based upon information and belief, Blue Planet uses resource adapters (satisfying

³⁸ <https://www.blueplanet.com/blog/Ciena-Blue-Planet-unveils-the-dawn-of-service-orchestration-prx.html> (last visited October 14, 2024) (emphasis added).

³⁹ <https://www.blueplanet.com/blog/Ciena-Blue-Planet-unveils-the-dawn-of-service-orchestration-prx.html> (last visited October 14, 2024) (emphasis added).

the claims’ “first adapter” limitation) to allow network elements to connect to and communicate with its application server instances, and ultimately communicate with an external OSS/BSS.



77. Additionally, other Ciena documentation discloses that “[t]he Resource adapter controller manages RAs and coordinates provisioning of network elements across multiple RA instances,” which demonstrates the load-balancing process Ciena operates as required by claim element [1A].⁴⁰

78. Ciena describes its Discovery Resource Adapters as “discover[ing], collect[ing], and abstract[ing] all types of inventory data from physical, virtual, and logical network resources... RAs are developed for a vendor’s specific family of products. For communicating southbound with network functions, RAs can use any

⁴⁰ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-227/build/site/mcp-docs/api-guide/APICollections.html (last visited July 18, 2024). On information and belief, the document appears to be no longer available on Ciena’s website.

open standard protocol... or other native interfaces supported by the device.”⁴¹

Additionally, Ciena states that “Discovery RAs serve as a technology- and vendor-agnostic abstraction framework for collecting data from any virtual or cloud-based network function, or physical network element—including from Ciena, Cisco, Nokia, Fortinet, Infinera, Juniper, and many other vendors.”⁴² “RAs can interface directly with any data source including inventory management systems, Element or Network Management Systems (EMS/NMS), and domain controllers, as well as directly with underlying network functions.”⁴³ Notably, Ciena advertises that its Discovery Resource Adapters “[c]apture[] all types of inventory data from network resources... either direct from the device family or an EMS.” The figure below also shows examples of communication protocols employed by Ciena Discovery Resource Adapters.⁴⁴

41

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

42

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

43

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

44

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

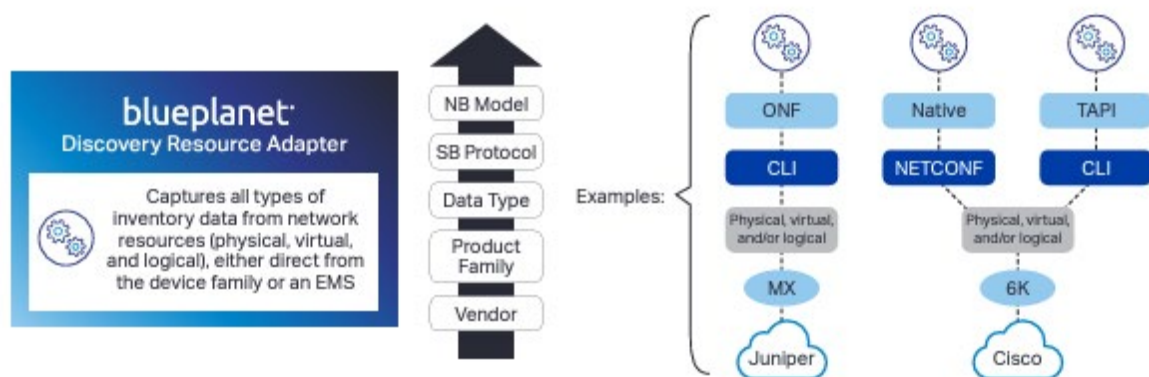


Figure 1. Discovery Resource Adapter architecture showcasing support for vendor, product family, data type, southbound protocol, and northbound model

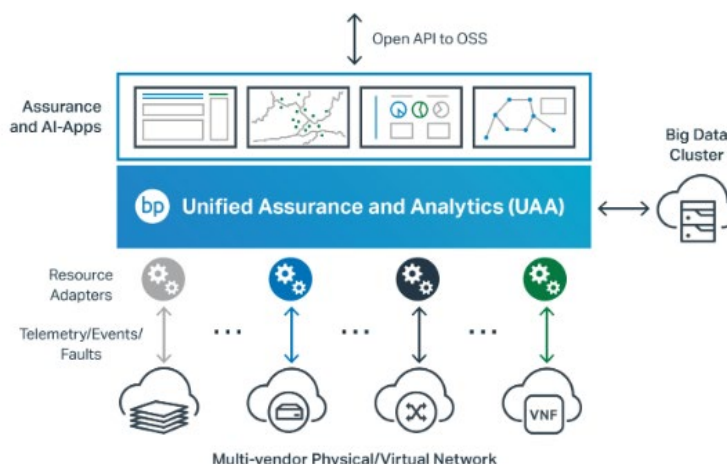
79. As a further example, and as depicted in the figure below, Ciena discloses that information such as telemetry, event, and/or fault data is collected by its Resource Adapters to feed into, for example, Blue Planet’s Unified Assurance and Analytics (UAA).⁴⁵ Ciena’s UAA Resource Adapters provide “comprehensive device support that includes discovery of all physical, virtual, and service inventory, as well as support for key protocols including SNMP, TL-1, APIs, Netconf, and streaming telemetry, among others.”⁴⁶ As a further non-limiting example, a Ciena UAA Resource Adapter “will discover each device’s inventory, begin processing traps or alarms, and start polling for metrics supported for that device.”⁴⁷

⁴⁵ <https://www.blueplanet.com/products/uaa.html> (last visited October 14, 2024).

⁴⁶ https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

⁴⁷ https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

Blue Planet Unified Assurance and Analytics



80. Furthermore, Ciena advertises that “[o]pen southbound interfaces and Resource Adapters (RAs) enable Blue Planet to communicate with control and/or manage a wide array of multi-vendor network functions (physical, virtual, or whole domain) using a variety of protocols and interfaces including CLI, OpenFlow, TL1, NETCONF/YANG, and others.”⁴⁸

81. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [1A] of the ’282 Patent.

82. Limitation [1B] requires: “processing, by the first application server instance, the first adapter processed information based on an event management

48

<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024).

service to produce application processed information.” Ciena, through the Accused Instrumentalities, performs this step of the claimed method by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from Ciena’s Blue Planet Intelligent Automation Portfolio. For example, as shown above in at least the figure following paragraph 78, Ciena’s Blue Planet Discovery Resource Adapter “[c]aptures all types of inventory data from network resources (physical, virtual, and logical), either direct from the device family or an EMS”⁴⁹ which demonstrates that first adapter information is processed based on an event management service.

83. As a further example, Ciena advertises that its “[a]ssurance and AI-powered analytics applications run on the UAA platform—you can combine them in any way to help address specific use cases” and goes on to list as included applications “Fault Management”—advertised as “[c]onsolidation of faults and events into a single pane of glass for unified monitoring and management”—and “Performance Management”—advertised as comprising “[a]nomaly detection using baselining normal performance and configuration of thresholds.”⁵⁰ As a non-limiting example, Ciena’s Resources Adapters collect telemetry, event, and/or fault data (i.e.,

⁴⁹

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

⁵⁰ <https://www.blueplanet.com/products/uaa.html> (last visited October 14, 2024).

first adapter processed information) from network elements. According to Ciena’s documentation, that first adapter processed information is then further processed by, for example, the Fault Management and/or the Performance Management applications (a non-limiting example of the recited “event management service” element), to produce application processed information.⁵¹

Blue Planet UAA comprises the following software components:

UAA platform provides core functions for unified data collection, processing, and storage. It also supplies the ML library used by AI-powered assurance applications.

UAA Resource Adapters (RAs) collect real-time, multisource telemetry and assurance data and provide the interface between the network and UAA platform. Our RAs support over 1,300 products across more than 135 vendors today, and those numbers are growing.

Assurance and AI-powered analytics applications run on the UAA platform—you can combine them in any way to help address specific use cases. Applications include:

- **SLA Management:** SLA thresholding and monitoring with customer-centric views and control
- **Services Assurance:** Dynamic service visualization and modeling of relationships between application, physical, and virtual components
- **Ethernet Assurance:** MEF Y.1731 compliant ethernet service monitoring with customer impact analysis
- **Fault Management:** Consolidation of faults and events into a single pane of glass for unified monitoring and management
- **Performance Management:** Anomaly detection using baselining normal performance and configuration of thresholds

84. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [1B] of the ’282 Patent.

⁵¹ <https://www.blueplanet.com/products/uaa.html> (last visited October 14, 2024).

See also

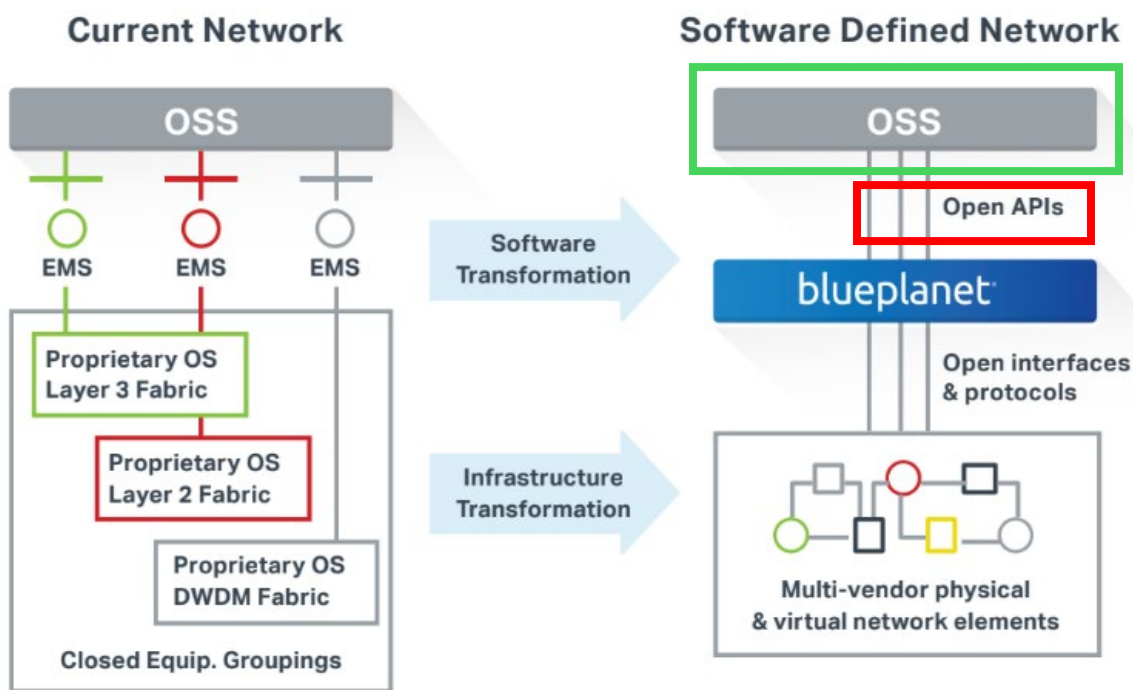
<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024) (stating that one of the four “primary use cases” served by Blue Planet is “SDN Management and Control: Fault, Configuration, Accounting, Performance, Security (FCAPS) management and control of multi-vendor and multi-layer physical network elements”).

85. Limitation [1C] requires: “sending, by the first application server instance, the application processed information to a gateway device, wherein the gateway device is one of a plurality of gateway devices respectively associated with the plurality of application server instances and is configured to transfer the application processed information to a second adapter of a plurality of second adapters configured to process the application processed information based on a second communication protocol to produce second adapter processed information and transfer the second adapter processed information to an operation support system device.” Ciena, through the Accused Instrumentalities, performs this step of the claimed method by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from Ciena’s Blue Planet Intelligent Automation Portfolio. For example, as seen in the figures below,⁵² Blue Planet incorporates a plurality of gateway devices to communicate with an OSS (appearing in a green box). In particular, the depiction of multiple “Open APIs” (appearing in a red box) being used to communicate between Blue Planet systems/software and OSS/BSS at least indicates the existence of a plurality of Blue Planet gateway devices using that plurality of “Open APIs” incorporated into Blue Planet. On information and belief, a gateway device or plurality of gateway devices must exist between different

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<https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024) (emphasis added).

portions of a network or different networks to allow communication between them. Thus, to communicate with third-party OSS/BSS systems, Blue Planet must inherently incorporate or make use of gateway devices. On further information and belief, the depiction of multiple “Open APIs” also indicates the existence of the required plurality of second adapters within Blue Planet’s system to allow communication of data between Blue Planet and third-party OSS/BSS.



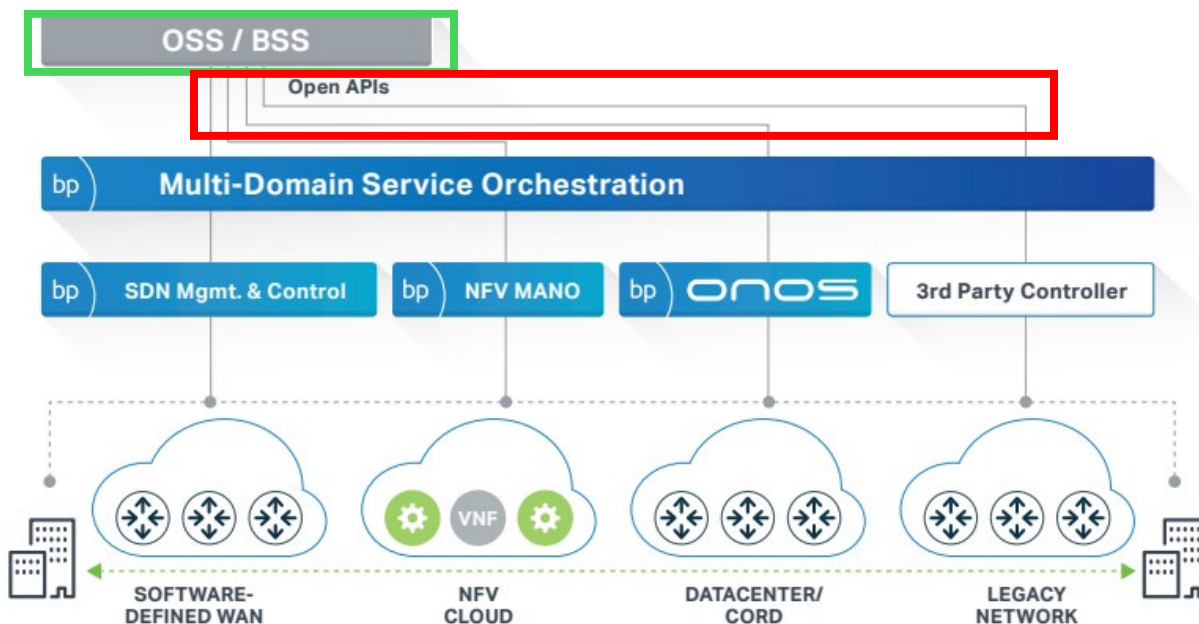


Figure 2. Blue Planet serves four primary use cases to meet our customers' business and operational requirements

86. As a further example, and as shown in at least the figure below, the highlighted “NB Model” or northbound model sends data from the Blue Planet system to other OSS systems.⁵³ This makes likely the existence of northbound resource adapters (i.e., the claim’s required “second adapter”) facilitating communication between Blue Planet and third-party OSS/BSS. The figure below also discloses various elements associated with gateway devices (outlined in green), including without limitation ONF, TAPI, etc., that communicate with the Ciena Blue

⁵³

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024) (emphasis added).

Planet Resource Adapters (e.g., the second adapter, outlined in purple). Further, the figure below discloses different protocols such as NETCONF and CLI.

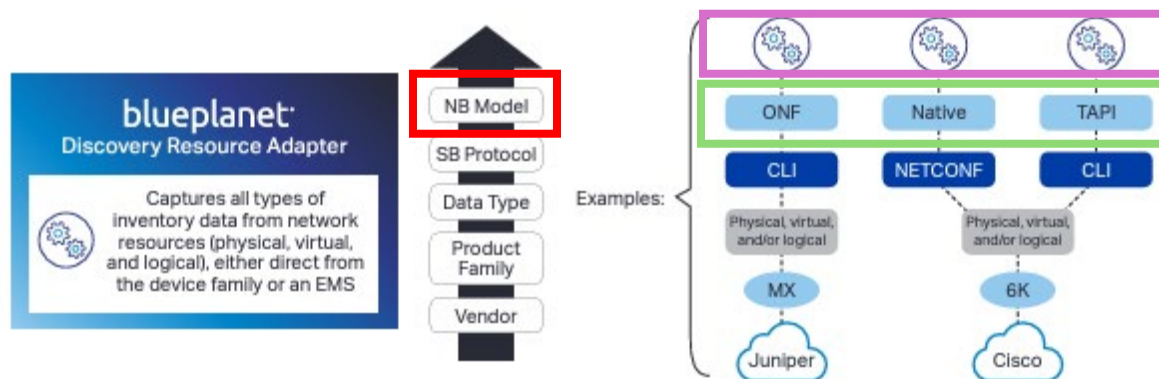


Figure 1. Discovery Resource Adapter architecture showcasing support for vendor, product family, data type, southbound protocol, and northbound model

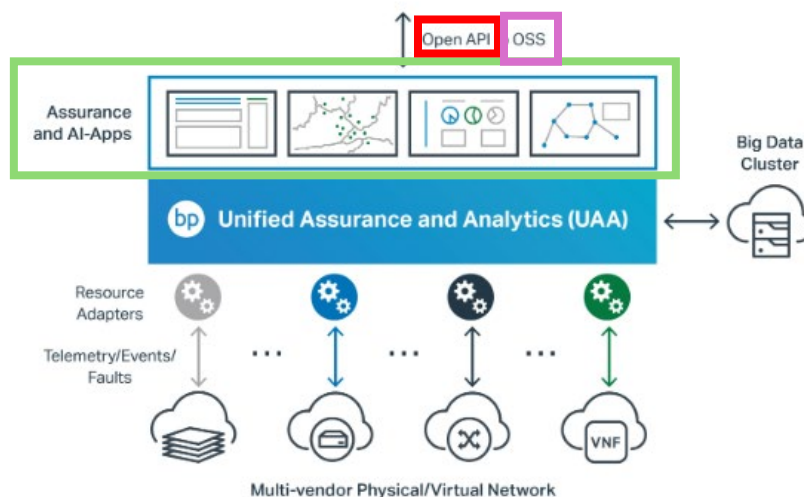
87. According to Ciena documentation, “TAPI is a standard for coordinating machine-to-machine communication particularly for the purposes of synchronizing network state information between two systems. The TAPI Bulk Sync APIs designed to efficiently and reliably synchronize bulk state data from a source system (in this case, MCP) to a destination system.”⁵⁴ Thus, Ciena, via its Blue Planet system, employs a gateway device out of a plurality of gateway devices that is configured to transfer network data. The disclosed “bulk state data from a source system” satisfies the claim limitation “transfer the second adapter processed

⁵⁴ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/TAPI.html (last visited July 18, 2024). On information and belief, this document appears to be no longer available on Ciena’s website. *See also* https://web.archive.org/web/20220811144917/https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/TransportServiceMgmt.html (last visited October 14, 2024).

information.” Further, Ciena’s “destination system” satisfies the claimed “operation support system device.”

88. As a further example, Ciena’s Blue Planet UAA documentation depicts various elements of claim limitation [1C]. As shown in the figure below, Ciena discloses transferring “Assurance and AI-apps” (outlined below in green) (i.e., the required “application processed information”) via “Open APIs” (outlined below in red) to “OSS” (outlined below in purple) (i.e., “operation support system device”).⁵⁵

Blue Planet Unified Assurance and Analytics



89. Ciena documentation further demonstrates the claimed “second adapter of a plurality of second adapters configured to process” data and transferring said

⁵⁵ <https://www.blueplanet.com/products/uaa.html> (last visited October 14, 2024) (emphasis added).

data to an “operation support system device.” For example, Ciena software release notes state that “[t]he Resource Adapter (RA) Framework allows MCP to mediate to external models.”⁵⁶

90. As a further example, Ciena documentation discloses that “RAs can use any open standard protocol such as Network Configuration Protocol (NETCONF), Representational State Transfer (REST), or other native interfaces supported by the device such as Command Line Interface (CLI). RAs provide flexible northbound adaptation to a standard data model. This flexible architecture ensures a standard mediation framework exists between the southbound network function and the northbound tailored solutions.”⁵⁷

⁵⁶ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/Topology.html (last visited July 18, 2024). On information and belief, the document appears to be no longer available on Ciena’s website. *See also* https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024) (“RAs can interface directly with any data source including existing inventory management systems, Element or Network Management Systems (EMS/NMS)...”); <https://manuals.plus/m/e0a8a7f7c005eb2cfdb698612b839a7dd4355f8b778f751030300cc66c0ce957.pdf> (last visited October 14, 2024), at Figure 1; https://www.analysysmason.com/globalassets/x_migrated-media/media/analysys_mason_ciena_blue_planet_profile_march2019_rma073.pdf (last visited October 14, 2024), Figure 6 (“The [Blue Planet (BP)] platform also communicates through northbound open APIs to third party OSS/BSS.”).

⁵⁷

https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

91. As a further example, Ciena documentation discloses that “RAs can interface directly with any data source including existing inventory management systems, [and] Element or Network Management Systems (EMS/NMS) [...]”⁵⁸

92. Further, as discussed earlier herein, Ciena uses “Open APIs” to communicate between Blue Planet and third-party OSS/BSS. It is well known in the art that APIs—or Application Programming Interfaces—facilitate the transfer of data between different systems and/or system components in specific ways to allow those systems to interact. The use of “Open APIs” to communicate between Blue Planet and third-party OSS/BSS components thus at least indicates the existence of a “second adapter of a plurality of second adapters configured to process the application processed information based on a second communication protocol to produce second adapter processed information and transfer the second adapter processed information to an operation support system device.”

93. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [1C] of the ’282 Patent.

94. Limitation [1D] requires: “in response to determining that the first application server instance has become disabled, facilitating establishing an

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https://www.blueplanet.com/_data/assets/pdf_file/0023/137516/Discovery_Resource_Adapters_for_Blue_Planet_Inventory_DS.pdf (last visited October 14, 2024).

association between the first adapter and a second application server instance of the plurality of application server instances and between the gateway device and the second application server instance.” Ciena, through the Accused Instrumentalities, performs this step of the claimed method by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from Ciena’s Blue Planet Intelligent Automation Portfolio. For example, Ciena documentation states that “Northbound REST clients scale is achieved using a high-availability proxy (HAProxy) software load balancer... HAProxy uses a floating virtual IP (VIP) address to provide redundancy. All REST clients point to the MCP ‘Site IP’ virtual IP address. This approach achieves both scale and redundancy when interfacing with Northbound clients.”⁵⁹

95. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [1D] of the ’282 Patent.

96. Thus, Ciena’s operation and maintenance of the Accused Instrumentalities satisfies each and every limitation of claim 1 of the ’282 Patent.

97. On information and belief, Ciena has directly used the Accused Instrumentalities in Ciena data centers, particularly in providing its customers access

⁵⁹ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/Overview.html (last visited February 26, 2024). On information and belief, this document appears to be no longer available on Ciena’s website.

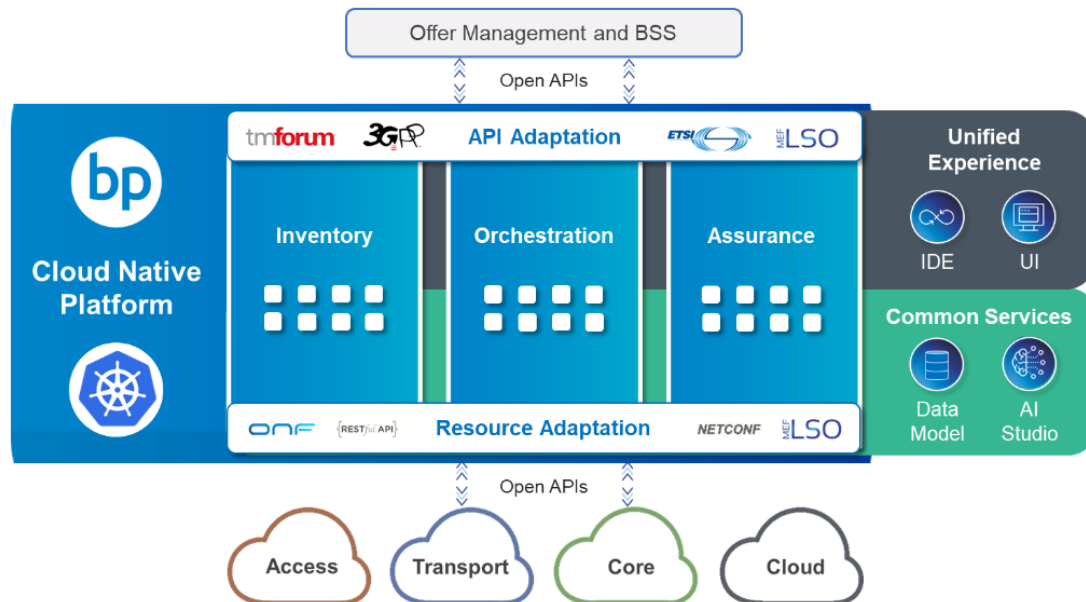
to and use of its Blue Planet SaaS offerings,⁶⁰ and has directly used the Accused Instrumentalities when setting up, running, troubleshooting, and/or operating the Accused Instrumentalities on behalf of itself or its customers. As evidenced by the non-limiting examples below, support for these statements is located throughout Ciena's websites.

98. On information and belief, the Accused Instrumentalities are used in data centers, including data centers hosting or serving Blue Planet SaaS products/services for Ciena or on its behalf. For example, as shown below, Ciena advertises that its Blue Planet solution may be deployed “on premises, in any private or public cloud.”⁶¹

⁶⁰ See, e.g., <https://www.blueplanet.com/blog/blue-planet-powers-your-cloud-first-strategy.html> (last visited March 14, 2025).

⁶¹ <https://www.blueplanet.com/resources/what-is-cloud-native-oss> (last visited October 14, 2024).

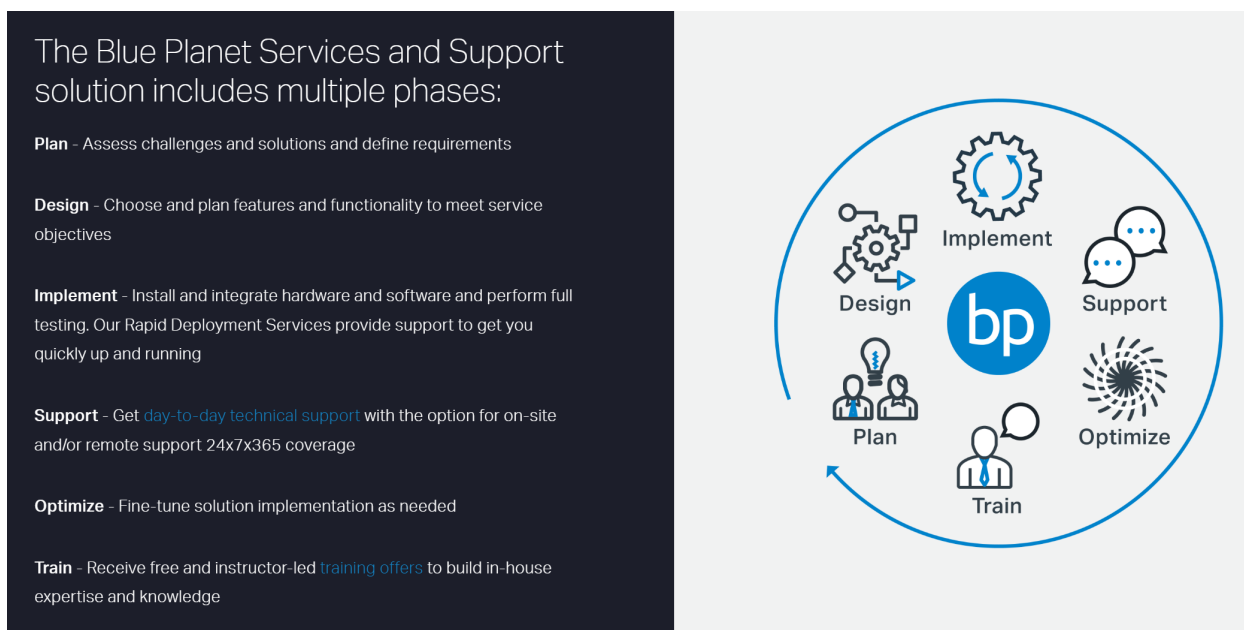
Built on a ultra-modern Kubernetes-based architecture, the Blue Planet Cloud Native Platform (CNP) can be deployed on premises, in any private or public cloud—including AWS, Google, Microsoft and even in any multi-cloud mix of public and private clouds—with complete feature consistency. In addition to deployment flexibility, Blue Planet CNP also provides cloud-native support services that streamline the transition and ensure interoperability.



Blue Planet's Cloud Native Platform and applications

99. As a further example, as shown below, Ciena provides its customers with technical support for planning, deployment, and maintenance of its Blue Planet solution.⁶²

⁶² <https://www.blueplanet.com/support> (last visited October 14, 2024). *See also* <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024) (“Customers can also take advantage of the Blue Planet Community, which is dedicated to helping you enrich your Blue Planet experience no matter where you are in your journey in network transformation.”).



100. On information and belief, and based on publicly available information, Ciena provides customers who have purchased or subscribed to Blue Planet’s SaaS and/or potential customers of its Blue Planet solution with multiple sources of technical support. For example, Ciena documents describe “the service elements, features, activities and deliverables related to the Blue Planet SaaS products.”⁶³ Further, Ciena provides “[a]ccess to software library including latest updates and new, innovative product features” as well as “Blue Planet expertise to assist with product use, configuration, and troubleshooting issues.”⁶⁴ On further information and belief, Ciena provides a customer forum where technical information about its

⁶³ <https://www.blueplanet.com/blue-planet-contract-documents/blue-planet-support-software-as-a-service> (last visited March 6, 2025).

⁶⁴ <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024) (providing domestic and international contact information for technical support).

products and/or services may be discussed by its personnel and customers.⁶⁵ On further information and belief, Ciena also provides a learning portal for its customers and potential customers to learn about the Accused Instrumentalities and their deployments and implementations.⁶⁶ On further information and belief, Ciena provides access to instructional and informational videos about its Accused Instrumentalities.⁶⁷ On further information and belief, Ciena also provides a “DevOps Exchange” “[d]edicated to Blue Planet developers in a technical role” that “provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.”⁶⁸

⁶⁵ <https://my.ciena.com/CienaPortal/s/blue-planet> (last visited October 14, 2024).

⁶⁶ <https://www.blueplanet.com/learning> (last visited October 14, 2024).

⁶⁷ <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024).

⁶⁸ <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024). On information and belief, login information to the DevOps exchange may be entered at https://developer.blueplanet.com/signin/?return_url=https://developer.blueplanet.com/index.html (last visited October 14, 2024).

Blue Planet DevOps Exchange

Dedicated to Blue Planet developers in a technical role, the Blue Planet DevOps Exchange provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.

Existing or new members login

101. On information and belief, Ciena has and continues to advertise its partnerships with its customers internationally and in the United States.⁶⁹ For example, Ciena has touted its partnership with its customer Consolidated Communications⁷⁰, and its integration of the Blue Planet solution to “provide Consolidated Communications with next generation network automation and control by leveraging ... the multi-vendor Blue Market Multi-Domain Service Orchestration (MDSO) and Blue Planet Route Optimization and Analysis (ROA) software.”⁷¹ As

⁶⁹ See, e.g., <https://www.blueplanet.com/about/press-releases> (last visited October 14, 2024) (listing various news articles regarding Ciena’s partnerships with customers).

⁷⁰ On information and belief, Consolidated Communications is a third-party broadband provider and Ciena customer “serving customers across a 20-plus state service area.” See <https://www.consolidated.com/about-us> (last visited October 14, 2024).

⁷¹ <https://www.blueplanet.com/about/press-releases/consolidated-communications-builds-5g-ready-network-with-cienas-adaptive-ip-solution.html> (last visited October 14, 2024).

another example, Ciena has and continues to advertise its business relationship with its customer DISH Network Corporation: “Blue Planet is a key component within [DISH’s] 5G platform, allowing [DISH] to dynamically manage all of [its] network inventory and service order in real-time.”⁷²

102. Ciena was not licensed or otherwise authorized by K.Mizra to make, use, import, sell, or offer to sell any products and/or services covered by the ’282 Patent, and Ciena’s conduct is, in every instance, without K.Mizra’s consent.

103. Ciena undertook the infringing actions despite an objectively high likelihood that such activities infringe the ’282 Patent, which has been duly issued by the USPTO and presumed valid.

104. Since at least the date of first learning of the ’282 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has continued its infringing activities. As such, Ciena has willfully infringed the ’282 Patent.

105. Since at least the date of first learning of the ’282 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has also indirectly infringed and continues to indirectly infringe the ’282 Patent at least in violation of 35 U.S.C. § 271(b). Ciena has actively induced, for example, network service providers such as its customers Consolidated Communications and/or DISH to

⁷² <https://www.blueplanet.com/about/press-releases/dish-selects-blue-planet-automation-software-to-accelerate-5g-services.html> (last visited October 14, 2024).

directly infringe the '282 Patent by performing the method of claim 1 as detailed above throughout the United States, including within this Judicial District, by, among other things, advertising and promoting the use of the Accused Instrumentalities in various websites, including providing and disseminating product descriptions, operating manuals, technical documentation, instructional and/or informational videos, and other instructions on how to implement the Accused Instrumentalities. Examples of such advertising, promotion, and/or instruction include without limitation the documents cited in the paragraphs above. Ciena did so knowing and intending that its customers and end users commit these infringing acts, despite its knowledge of the '282 Patent, thereby specifically intending for and inducing its customers to infringe the '282 Patent through the customers' normal and customary use of the Accused Instrumentalities.

106. As a result of Ciena's infringement of the '282 Patent, K.Mizra has suffered substantial injury and is entitled to recover all damages caused by Ciena's infringement to the fullest extent permitted by the Patent Act, together with prejudgment interest and costs for Cisco's wrongful conduct, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

COUNT II: INFRINGEMENT OF THE '176 PATENT

107. K.Mizra re-alleges and incorporates by reference all of the foregoing paragraphs.

108. On information and belief, Ciena has directly infringed, literally and/or by the doctrine of equivalents, individually and/or jointly, one or more claims of the '176 Patent, including at least claim 9, in violation of 35 U.S.C. § 271, et seq., by using in this District and in the United States certain products and/or services, including but not limited to those, relating to the Accused Instrumentalities. In particular, and as a non-limiting example, Ciena's Blue Planet SaaS product/service offerings directly infringe at least claim 9. As another non-limiting example, to the extent that Ciena sells, offers to sell, maintains, and/or troubleshoots the Blue Planet functionality discussed herein for its customers who install, maintain, and/or operate products and/or systems incorporating such functionality, Ciena at least indirectly infringes one or more claims of the '176 Patent in violation of at least 35 U.S.C. §§ 271(b) and/or (c).

109. Based on publicly available information, Ciena's Accused Instrumentalities meet all elements of at least claim 9 of the '176 Patent.

110. Claim 9 of the '176 Patent provides:

[Preamble] A system, comprising:

[9A] a processor, coupled to a memory that stores instructions, that executes or facilitates execution of the instruction to at least:

[9B] encapsulate a data packet, received by a first node device of a first network associated with a first service provider entity, with a pseudowire label determined based on an application flow identified by an application header of the data packet; and

[9C] select, based on the application flow, a routing policy from a set of application-specific routing policies defined for the first network, wherein the routing policy instructs that the data packet is to traverse at least a second network, comprising a second node device and associated with a second service provider entity, in transit to a third network comprising a third node device and associated with a third service provider entity.

111. Regarding the preamble of claim 9, to the extent the preamble is determined to be limiting, the Accused Instrumentalities, and in particular Ciena's Blue Planet SaaS product/service offerings that are hosted on servers by or on behalf of Ciena for use by Ciena's customers, comprises the claimed system as set forth herein. For example, Ciena documents⁷³ provide:

⁷³ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

Blue Planet Orchestration

Accelerate service velocity, improve service agility, and reduce service fulfillment OPEX

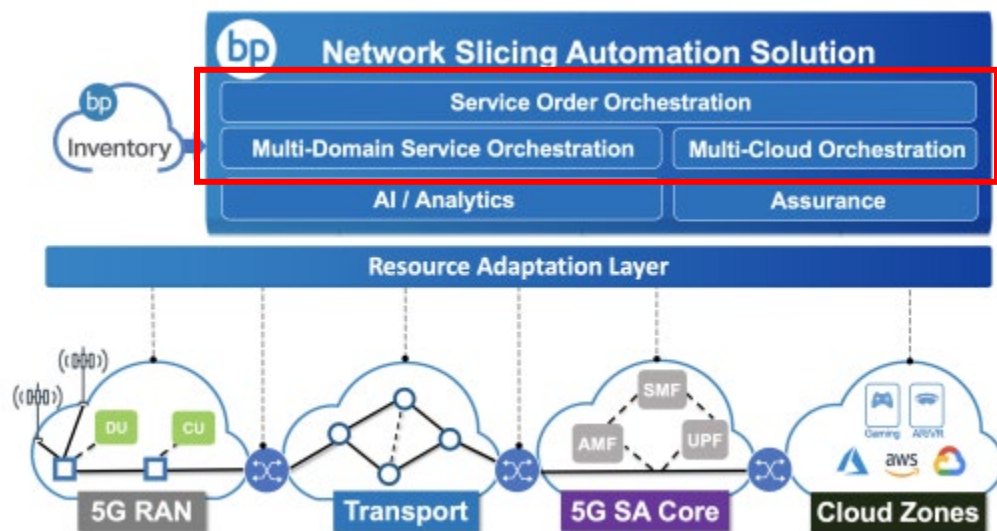
Blue Planet Orchestration (BPO) is a suite of open, modular, and vendor-agnostic product applications that help network operators improve customer experience, reduce OPEX, and achieve their business goals by automating service fulfillment end-to-end across complex multi-vendor and multi-domain networks.

The BPO suite is built on the Blue Planet Cloud Native Platform (CNP), a modern operations support system (OSS) that converges design, delivery, and assurance software applications to eliminate inefficient operational silos and help networks streamline the introduction and delivery of innovative services across network domains and vendors. Both the CNP and BPO suite can be flexibly deployed in private and public clouds or consumed in an elastic software-as-a-service (SaaS) model, letting you automate your order-to-service processes in complete alignment with your technical and business needs.

112. As a further example, Ciena states that “BPO consists of three modular software products—Service Order Orchestration (SOO), Multi-Domain Service Orchestration (MDSO), and Multi-Cloud Orchestration (MCO) that can be deployed individually or combined to fully automate the order-to-service process.”⁷⁴

⁷⁴ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

113. As a further example, Ciena has depicted its Network Slicing Automation Solution as set forth below.⁷⁵ As shown below, Ciena discloses implementing operations across multiple domains and may work across various technology layers (*see, e.g.,* red highlighted section).



114. As a further example, Ciena states that its “Blue Planet products and services facilitate end-to-end visibility and management across physical and virtual components.”⁷⁶

115. As a further example, Ciena states: “Vendor and technology agnostic, [MDSO] discovers network resources and uses model-driven abstraction and templating to provide automated, repeatable, and policy-based service orchestration

⁷⁵ <https://www.blueplanet.com/solutions/5g-automation.html> (last visited October 10, 2023) (emphasis added). On information and belief, the current version of this webpage has been edited to exclude the above graphic.

⁷⁶ <https://www.ciena.com/insights/why/Why-NFV.html> (last visited October 14, 2024).

and activation end to end across network layers and domains.”⁷⁷ Further, Ciena describes its BPO suite as “fully programmable,” facilitating “service innovation” and avoiding “costs and risks associated with customizing legacy Operational Support Systems (OSS)” to let its customers “automate [their] order-to-service processes in complete alignment with [their] technical and business needs.”⁷⁸

116. As a further example, Ciena has depicted its Blue Planet 5G Network Slicing Architecture as set forth below, which depicts service orchestration for different types of application flows or services such as “Gaming AR/VR,” “AWS,” “Google Cloud,” etc. (*see red highlighting*).⁷⁹

⁷⁷ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

⁷⁸ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

⁷⁹ https://www.blueplanet.com/_data/assets/pdf_file/0021/81264/5G_Automation_Network_Slicing_SB1.pdf (last visited August 22, 2024) (emphasis added). On information and belief, the current version of this webpage has been edited to exclude the above graphic.

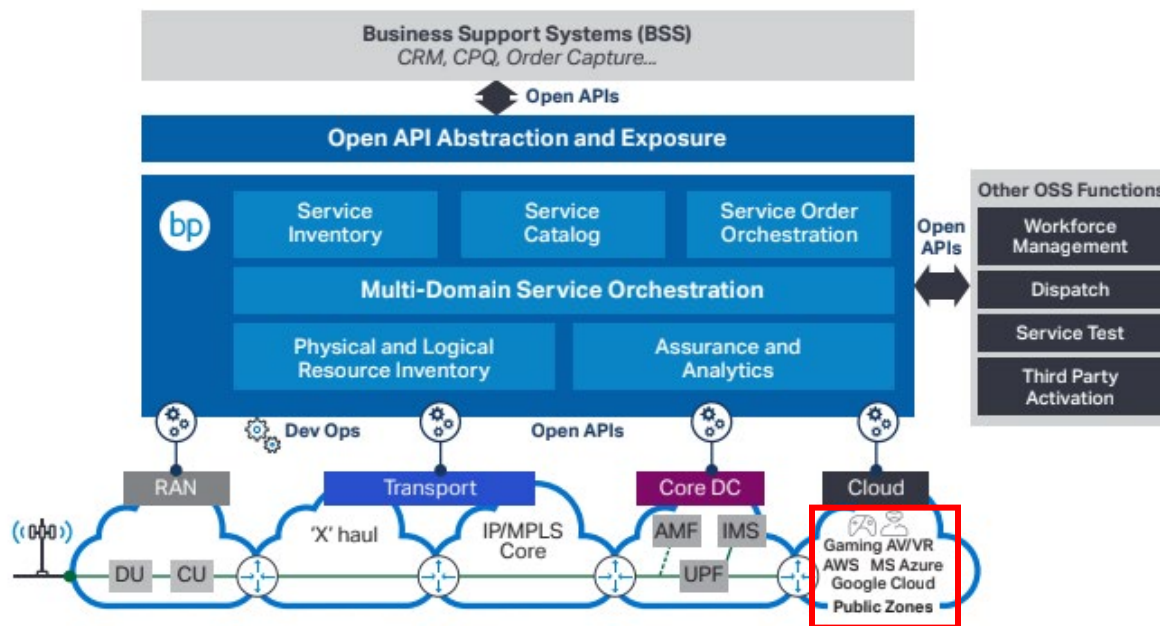


Figure 1. Blue Planet 5G Network Slicing solution architecture

117. As a further example, Ciena “partition[s] network resources and guarantee[s] SLAs by leveraging FlexE in the access portion of the networks and segment routing in the core—both standardized processes. These allow [Ciena] to have bandwidth guarantees and a Class of Service (CoS) structure.”⁸⁰ On information and belief, Blue Planet users may remotely adjust the parameters and quality of service of their network offerings, which allows users to have a single management/control interface that reduces the complexity of service operations.⁸¹

⁸⁰ <https://www.ciena.com/insights/articles/2022/addressing-mid-market-opportunities-by-utilizing-network-convergence> (last visited October 14, 2024).

⁸¹ See also <https://www.ciena.com/insights/articles/What-is-FlexEthernet-and-Why-is-it-so-Important.html> (last visited August 22, 2024) (“The net benefit [of FlexE] is the ability to remotely adjust service bandwidth as needed, more efficiently utilize each networking layer, and improve end-to-end manageability of the network.”). On information and belief, the webpage appears to be no longer available on Ciena’s website.

118. Thus, to the extent the preamble of claim 9 is limiting, Ciena's Blue Planet SaaS comprises the claimed system as set forth in detail below.

119. Limitation [9A] requires "a processor, coupled to a memory that stores instructions, that executes or facilitates execution of the instructions to at least..." On information and belief, Ciena's Blue Planet SaaS products/services satisfy this claim limitation because in order to provide SaaS products/services to its customers, Ciena must install, operate, and/or maintain Blue Planet software on physical systems that incorporate at least one processor that is coupled to a memory that stores the computer instructions that, when executed, provide Ciena's customers to access and use Blue Planet functionality in accordance with Blue Planet SaaS product/service offerings. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet SaaS satisfies limitation [9A] of the '176 Patent.

120. Limitation [9B] requires that an infringing system "encapsulate a data packet, received by a first node device of a first network associated with a first service provider entity, with a pseudowire label determined based on an application flow identified by an application header of the data packet." On information and belief, Ciena, through the Accused Instrumentalities, satisfies this limitation of the claimed system at least by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from Ciena's Blue Planet Intelligent Automation

Portfolio. For example, on information and belief, the Blue Planet SaaS software that runs on servers operated by or on behalf of Ciena at least facilitates the execution of software that encapsulates data packets with a pseudowire label.

121. As shown in the figure below, Ciena makes use of pseudowires in its Blue Planet solution, which encapsulate data packets associated with a service or application flow.⁸² On information and belief, the pseudowires are mapped to, or associated with, a service (i.e., an application flow). In other words, the evidence below indicates that particular services will use specific pseudowires for transferring data.

3. Click on the **Pseudowires** tab.

The Pseudowires tab displays the set of pseudowires, both protected and unprotected, that are associated with the service. There is a checkbox to the left of each pseudowire in the list.

122. As a further example, and as shown in the figure below, Ciena documentation discloses that Blue Planet may use “Ethernet” thus indicating a “first network associated with a first service provider identity (outlined in red below).⁸³

⁸² https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html (last visited October 20, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

⁸³ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html (last visited October 20, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

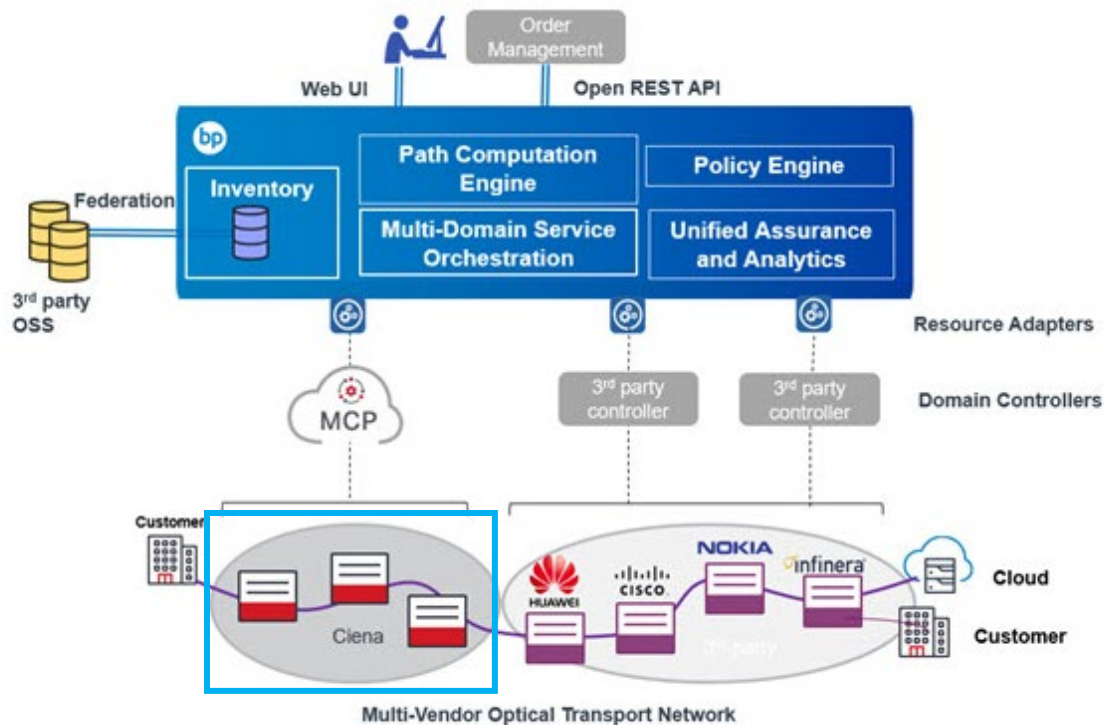
The Ciena documentation depicted below also discloses the use of pseudowires (outlined in blue).

Protected					
Protection role	NE	NE	Labels	Name	ID
Primary	5160_0054_e00301	87m_0061_e00301	11755, 17552	daDH_3	1551
	87m_0061_e00301	5142_0053_e00301	11330, 18538	daDH_4	1551
Backup	5160_0054_e00301	5160_0055_e00301	15578	daDH_5	1551

Unprotected				
NE	NE	Labels	Name	ID
5142_0053_e00301	87m_0061_e00301	12623	daDH_1	1551355030
87m_0061_e00301	5160_0055_e00301	12128	daDH_2	1551355031

123. The illustration below also shows a first network associated with a service provider, which is outlined in blue.⁸⁴ On information and belief, the first network is comprised of network nodes or elements that receive and send data packets.

⁸⁴ <https://www.blueplanet.com/solutions/wave-services-automation.html> (last visited October 14, 2024) (emphasis added).



124. As a further example, and as shown in the figure below, Ciena documentation discloses that Blue Planet makes use of “pseudowires supporting a service that uses MPLS transport.”⁸⁵

⁸⁵ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html (last visited October 20, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

If you want to view	Then
information about the pseudowires supporting a service that uses MPLS transport.	Click Pseudowires. <i>Pseudowires and LSPs details display, including the following information:</i>
	<div>NOTE</div> <p>The list of pseudowires is not in any particular order.</p>

125. As a further example, Ciena documentation discloses using multi-segment pseudowires on different endpoints related to a particular Ethernet service. As shown below, and on information and belief, a “first node device” is the “root node” discussed in Ciena documentation.⁸⁶

Retrieve an E-Tree single-root service

This API call applies to service discovery and inventory of an E-Tree single-root service over Static MPLS transport only with:

- Multi-segment pseudowire (MS-PW) (6.x (as leaf), 8700 (as leaf or root), 6500 Packet Fabric (as leaf or root))
- Single-segment pseudowire (SS-PW) (6.x (as leaf), 8700 (as leaf or root), 6500 Packet Fabric (as leaf or root))

126. On information and belief, and as shown in the figure below, Ciena documentation discloses “endpoints” that are configured as “root” nodes for particular pseudowires. The excerpts below also demonstrate the definition of various endpoints, which correspond to the claim’s required first, second, and third

⁸⁶ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html#provision-eline-pwhand (last accessed October 23, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

node devices, each with their own “id.” According to Ciena, “[t]he endpoint ‘role’ has a single ‘root.’ The ‘role’ of each of the other endpoints is ‘leaf.’”⁸⁷

```

    "endPoints": {
      "data": [
        {
          "type": "endPoints",
          "id": "1484498907288457250:1"
        },
        {
          "type": "endPoints",
          "id": "1484498907288457250:2"
        },
        {
          "type": "endPoints",
          "id": "1484498907288457250:3"
        }
      ]
    },

    "included": [
      {
        "id": "1484498907288457250:1",
        "type": "endPoints",
        "attributes": {
          "role": "root",
          "directionality": "bidirectional"
        }
      },

```

127. As a further example, Ciena documentation discloses the use and configuration of multi-segment pseudowires on different endpoints, as shown below.

88

⁸⁷ https://software.ciena.com/releases/notes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html (last accessed October 23, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

⁸⁸ https://software.ciena.com/releases/notes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html (last accessed October 23, 2023). On

Provision a three-point E-Line service with pseudowire protection

You can use the MCP REST API to provision an E-Line service with Pseudowire protection (for both single-segment and multi-segment Pseudowires), and select one or more specific LSP tunnels to carry the A-Z, A-Z', and Z-Z' routes.

This capability is also supported in cases where the LSP path includes linear Q-in-Q spurs.

Note: The example below shows the configuration of a three-point protected E-Line service; but with minor variations the same API call can be used to provision a conventional two-point E-Line service instead.

```

"settings": {
  "node": "87_5783n2",
  "dmmEnabled": false,
  "slmEnabled": false,
  "ccmTransmitEnabled": true,
  "role": "A_UNI",
  "details": [
    "settings": {
      "node": "87_5783n4",
      "dmmEnabled": false,
      "slmEnabled": false,
      "ccmTransmitEnabled": true,
      "role": "Z_ENNI",
      "details": [
        "settings": {
          "node": "87_5783n5",
          "dmmEnabled": false,
          "slmEnabled": false,
          "ccmTransmitEnabled": true,
          "role": "Z_PRIME_ENNI",
          "details": [

```

128. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [9B] of the '176 Patent.

129. Limitation [9C] further requires an infringing system to “select, based on the application flow, a routing policy from a set of application-specific routing policies defined for the first network, wherein the routing policy instructs that the data packet is to traverse at least a second network, comprising a second node device and associated with a second service provider entity, in transit to a third network comprising a third node device and associated with a third service provider entity.” On information and belief, Ciena, through the Accused Instrumentalities, satisfies this limitation of the claimed system at least by operating, maintaining, and enabling others to operate, utilize, or otherwise benefit from Ciena’s Blue Planet Intelligent

information and belief, this document appears to be no longer available on Ciena’s website.

Automation Portfolio. For example, on information and belief, the Blue Planet SaaS software that runs on servers operated by or on behalf of Ciena at least selects a routing policy based on application flow as claimed.

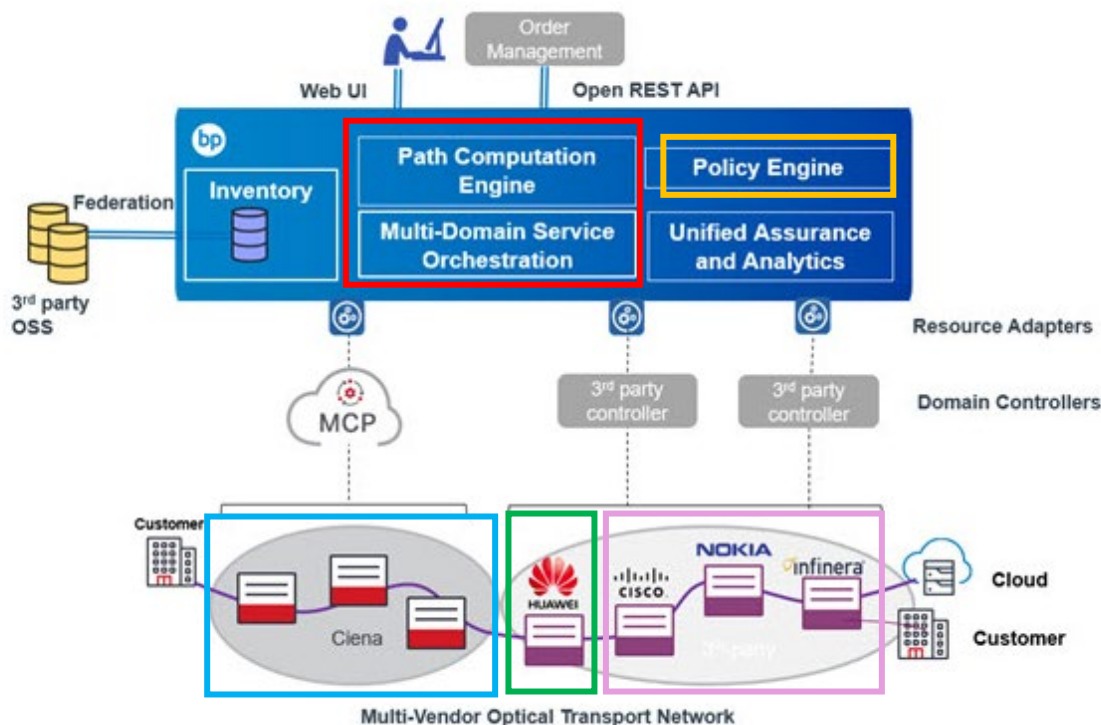
130. As a further example, Ciena documentation describes its Multi-Domain Service Orchestration.⁸⁹ Ciena’s Blue Planet documentation discloses that for a particular application flow (e.g., the “policy-based service orchestration”), Blue Planet will automatically “orchestrat[e] and activat[e] end to end across network layers and domains.”

Vendor and technology agnostic, MDSO discovers network resources and uses model-driven abstraction and templating to provide automated, repeatable, and policy-based service orchestration and activation end to end across network layers and domains. MDSO also improves troubleshooting efforts by unifying service and network visualization and correlating service-related issues with network events, and provides DevOps-style onboarding that simplifies the incorporation of new resources and technologies, streamlines new feature introduction, and accelerates new service creation.

⁸⁹ <https://www.blueplanet.com/products/orchestration.html> (last visited October 14, 2024).

131. As a further example, Ciena has depicted its Blue Planet solution as shown in the following figure.⁹⁰ The “Path Computation Engine” and “Multi-Domain Service Orchestration” (highlighted in red), for example, satisfy the claimed limitation of “select[ing]... a routing policy,” and the “Policy Engine” (highlighted in orange), for example, satisfies the claim limitation “set of application-specific routing policies defined for the first network.” Further, the claim’s required “first network associated with a first service provider entity” is identified below by the blue box (indicating, in this example, a network associated with Ciena). The claim’s required “second network... associated with a second service provider entity” is identified below by the green box (indicating, in this example, a network associated with Huawei). And the claim’s required “third network... associated with a third service provider entity” is identified by the purple box (indicating, in this example, networks associated with Cisco, Nokia, and Infinera).

⁹⁰ <https://www.blueplanet.com/solutions/wave-services-automation.html> (last visited October 14, 2024) (emphasis added).



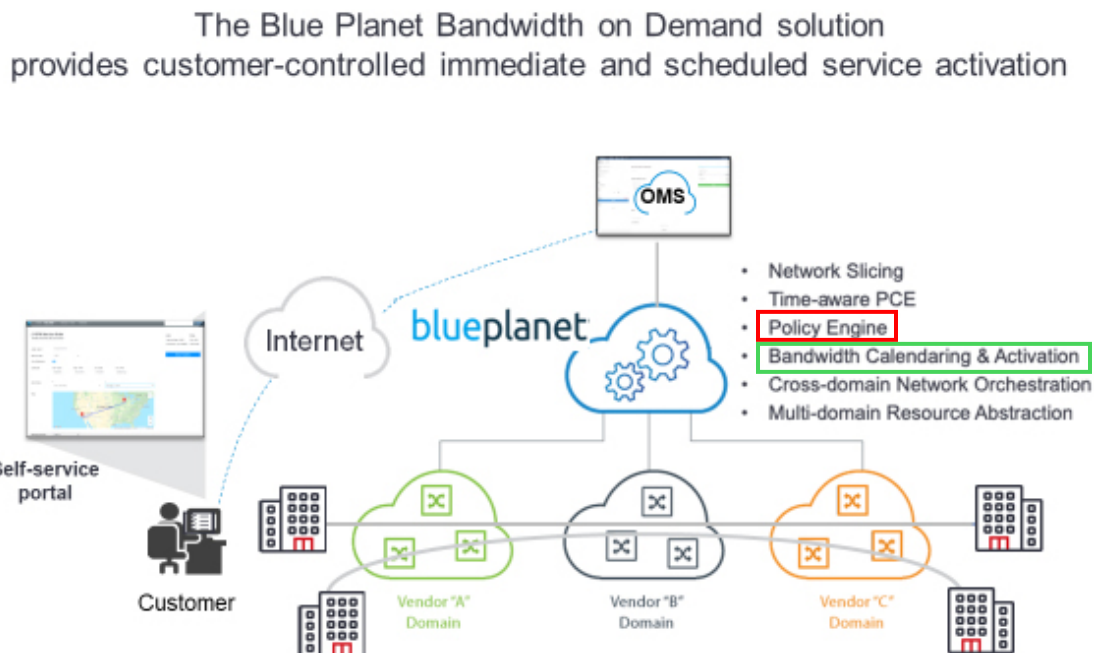
132. As a further example, Ciena’s Blue Planet solution offers “Bandwidth on Demand” and enables “clients [to] create, modify, terminate and schedule services,” such that network resources are reserved for particular application flows.⁹¹

133. As a further example, Ciena includes the following illustration in describing its “Bandwidth On Demand” feature.⁹² As shown below, Ciena discloses the presence of a policy engine with a set of application-specific routing policies (e.g., “Policy Engine,” identified in red below). On information and belief, Blue

⁹¹ <https://www.blueplanet.com/solutions/bandwidth-on-demand.html> (last visited October 14, 2024).

⁹² <https://www.blueplanet.com/solutions/bandwidth-on-demand.html> (last visited October 14, 2024).

Planet enables the reservation of network resources for different clients according to their service and/or application needs (e.g., “Bandwidth Calendaring & Activation,” identified in green below). On further information and belief, Ciena discloses that the data may traverse multiple domains from a first network associated with a first service provider entity (denoted below as “Vendor ‘A’ Domain”), through a second network associated with a second service provider entity (denoted below as “Vendor ‘B’ Domain”), to a third network associated with a third service provider entity (denoted below as “Vendor ‘C’ Domain”).



134. As a further example, Ciena’s documentation discloses that during the provisioning of an Ethernet service, a user can assign a Class of Service (CoS)⁹³, which mapping can be rearranged for “adjacent service provider[s].”⁹⁴ Thus, the Blue Planet solution operates in a multiple service provider and multiple domain environment, in which data packets for particular services are routed accordingly.

135. As a further example, and as shown in the figure below, Ciena documentation discloses that provisioning an Ethernet service in its Blue Planet solution may include parameters such as “ingressCosSetting,” such that packets at the ingress of an endpoint or node are analyzed to comply with service orchestration parameters.⁹⁵

⁹³ A Class of Service (CoS) is defined by Ciena to mean “[a] queuing discipline in which an algorithm compares fields of packets or CoS tags to classify packets and assign them to queues of differing priority.” *See, e.g.*, <https://www.ciena.com/insights/telecom-glossary#LetterC> (last visited October 14, 2024).

⁹⁴ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html#provision-eline-cos-options (last accessed October 23, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

⁹⁵ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html#provision-eline-cos-options (last accessed October 23, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

POST {MCP_SERVER}/bpocore/market/api/v1/resources

Note that in the following API calls:

- L2_SVC_FACADE_PRODUCT_ID is a product ID to create Layer-2 Service in Facade.
- SVC_RSC_ID is the Facade resource ID of the Layer-2 service.

Note in particular the following CoS parameters for the service endpoints the sample call provided below:

"ingressCosSetting": { "ingressCosPolicy": "L2PcpCos"

"ingressCosSetting": { "ingressCosPolicy": "custom", "ingressCosMapName": "CustomCosMap"

136. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet satisfies limitation [9C] of the '176 Patent.

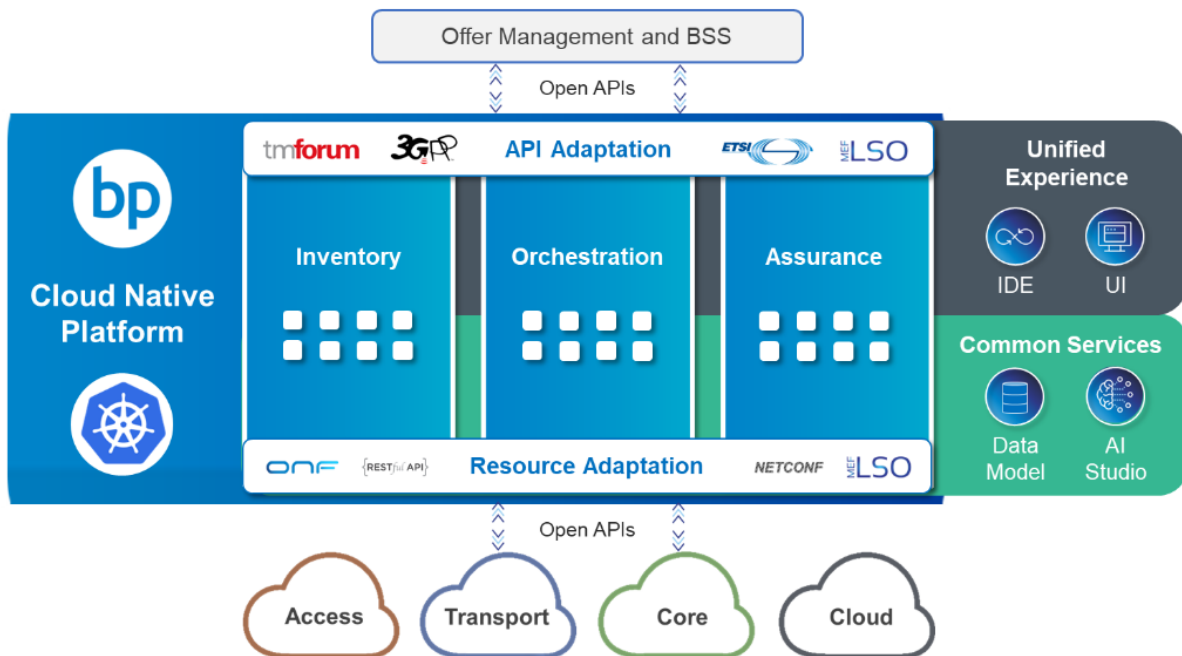
137. Thus, Ciena's operation and maintenance of the Accused Instrumentalities satisfies each and every limitation of claim 9 of the '176 Patent.

138. On information and belief, Ciena has directly used the Accused Instrumentalities in Ciena data centers and has directly used the Accused Instrumentalities when setting up, running, troubleshooting, and/or operating the Accused Instrumentalities on behalf of itself or its customers. As evidenced by the non-limiting examples below, support for these statements is located throughout Ciena's websites.

139. On information and belief, the Accused Instrumentalities are used in data centers, including data centers hosting or serving Blue Planet SaaS products/services for Ciena or on its behalf. For example, as shown below, Ciena

advertises that its Blue Planet solution may be deployed “on premises, in any private or public cloud.”⁹⁶

Built on a ultra-modern Kubernetes-based architecture, the Blue Planet Cloud Native Platform (CNP) can be deployed on premises, in any private or public cloud—including AWS, Google, Microsoft and even in any multi-cloud mix of public and private clouds—with complete feature consistency. In addition to deployment flexibility, Blue Planet CNP also provides cloud-native support services that streamline the transition and ensure interoperability.

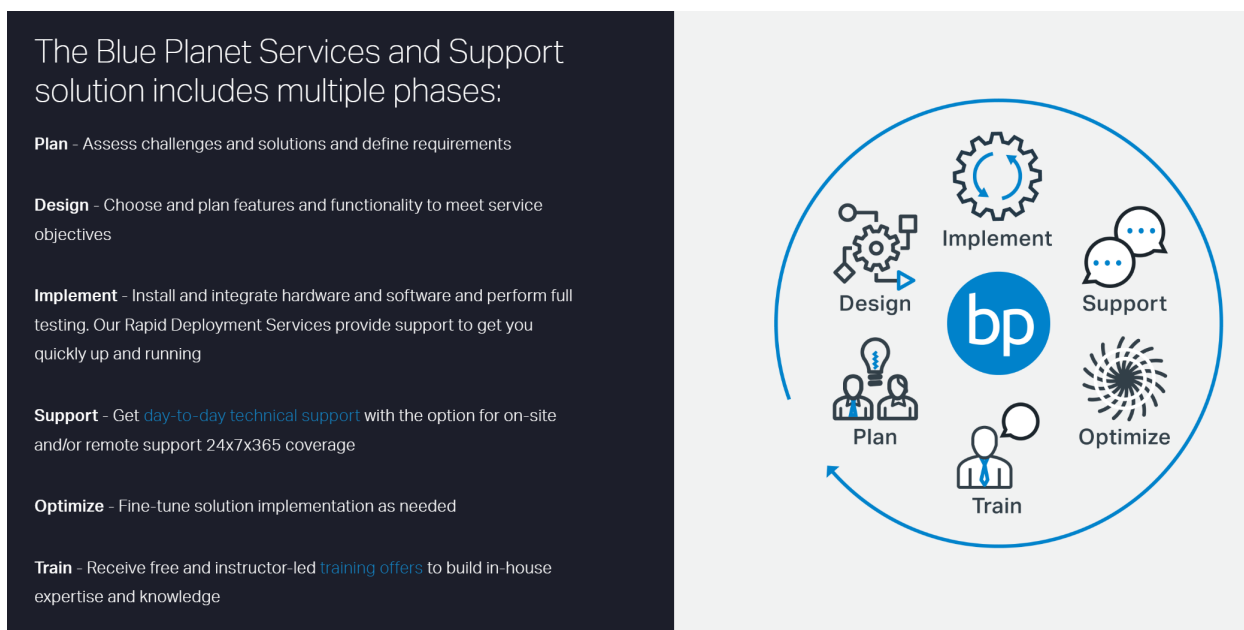


Blue Planet's Cloud Native Platform and applications

140. As a further example, as shown below, Ciena provides its customers with technical support for planning, deployment, and maintenance of its Blue Planet solution.⁹⁷

⁹⁶ <https://www.blueplanet.com/resources/what-is-cloud-native-oss> (last visited October 14, 2024).

⁹⁷ <https://www.blueplanet.com/support> (last visited October 14, 2024). *See also* <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024).



141. On information and belief, and based on publicly available information, Ciena provides customers who have purchased or subscribed to Blue Planet’s SaaS and/or potential customers of its Blue Planet solution with multiple sources of technical support. For example, Ciena documents describe “the service elements, features, activities and deliverables related to the Blue Planet SaaS products.”⁹⁸ As a further example, Ciena provides “[a]ccess to software library including latest updates and new, innovative product features” as well as “Blue Planet expertise to assist with product use, configuration, and troubleshooting issues.”⁹⁹ On further

(“Customers can also take advantage of the Blue Planet Community, which is dedicated to helping you enrich your Blue Planet experience no matter where you are in your journey in network transformation.”).

⁹⁸ <https://www.blueplanet.com/blue-planet-contract-documents/blue-planet-support-software-as-a-service> (last visited March 6, 2025).

⁹⁹ <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024) (providing domestic and international contact information for technical support).

information and belief, Ciena provides a customer forum where technical information about its products and/or services may be discussed by its personnel and customers.¹⁰⁰ On further information and belief, Ciena also provides a learning portal for its customers and potential customers to learn about the Accused Instrumentalities and their deployments and implementations.¹⁰¹ On further information and belief, Ciena provides access to instructional and informational videos about its Accused Instrumentalities.¹⁰² On further information and belief, Ciena also provides a “DevOps Exchange” “[d]edicated to Blue Planet developers in a technical role” that “provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.”¹⁰³

¹⁰⁰ <https://my.ciena.com/CienaPortal/s/blue-planet> (last visited October 14, 2024).

¹⁰¹ <https://www.blueplanet.com/learning> (last visited October 14, 2024).

¹⁰² <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024).

¹⁰³ <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024). On information and belief, login information to the DevOps exchange may be entered at https://developer.blueplanet.com/signin/?return_url=https://developer.blueplanet.com/index.html (last visited October 14, 2024).

Blue Planet DevOps Exchange

Dedicated to Blue Planet developers in a technical role, the Blue Planet DevOps Exchange provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.

Existing or new members login

142. On information and belief, Ciena has and continues to advertise its partnerships with its customers internationally and in the United States.¹⁰⁴ For example, Ciena has touted its partnership with its customer Consolidated Communications¹⁰⁵, and its integration of the Blue Planet solution to “provide Consolidated Communications with next generation network automation and control by leveraging ... the multi-vendor Blue Market Multi-Domain Service Orchestration

¹⁰⁴ See, e.g., <https://www.blueplanet.com/about/press-releases> (last visited October 14, 2024) (listing various news articles regarding Ciena’s partnerships with customers).

¹⁰⁵ On information and belief, Consolidated Communications is a third-party broadband provider and Ciena customer “serving customers across a 20-plus state service area.” See <https://www.consolidated.com/about-us> (last visited October 14, 2024).

(MDSO) and Blue Planet Route Optimization and Analysis (ROA) software.”¹⁰⁶ As another example, Ciena has and continues to advertise its business relationship with its customer DISH Network Corporation: “Blue Planet is a key component within [DISH’s] 5G platform, allowing [DISH] to dynamically manage all of [its] network inventory and service order in real-time.”¹⁰⁷

143. Ciena was not licensed or otherwise authorized by K.Mizra to make, use, import, sell, or offer to sell any products and/or services covered by the ’176 Patent, and Ciena’s conduct is, in every instance, without K.Mizra’s consent.

144. Ciena undertook the infringing actions despite an objectively high likelihood that such activities infringe the ’176 Patent, which has been duly issued by the USPTO and presumed valid.

145. Since at least the date of first learning of the ’176 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has continued its infringing activities. As such, Ciena has willfully infringed the ’176 Patent.

146. Since at least the date of first learning of the ’176 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has also indirectly infringed and continues to indirectly infringe the ’176 Patent in violation of at least

¹⁰⁶ <https://www.blueplanet.com/about/press-releases/consolidated-communications-builds-5g-ready-network-with-cienas-adaptive-ip-solution.html> (last visited October 14, 2024).

¹⁰⁷ <https://www.blueplanet.com/about/press-releases/dish-selects-blue-planet-automation-software-to-accelerate-5g-services.html> (last visited October 14, 2024).

35 U.S.C. § 271(b). Ciena has actively induced, for example, network service providers such as its customers Consolidated Communications and/or DISH to directly infringe the '176 Patent at least making and using the system covered by claim 9 as detailed above throughout the United States, including within this Judicial District, by, among other things, advertising and promoting the use of the Accused Instrumentalities in various websites, including providing and disseminating product descriptions, operating manuals, technical documentation, instructional and/or informational videos, and other instructions on how to implement the Accused Instrumentalities. Examples of such advertising, promotion, and/or instruction include without limitation the documents cited in the paragraphs above. Ciena did so knowing and intending that its customers and end users commit these infringing acts, despite its knowledge of the '176 Patent, thereby specifically intending for and inducing its customers to infringe the '176 Patent through the customers' normal and customary use of the Accused Instrumentalities.

147. As a result of Ciena's infringement of the '176 Patent, K.Mizra has suffered substantial injury and is entitled to recover all damages caused by Ciena's infringement to the fullest extent permitted by the Patent Act, together with prejudgment interest and costs for Cisco's wrongful conduct, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

COUNT III: INFRINGEMENT OF THE '320 PATENT

148. K.Mizra re-alleges and incorporates by reference all of the foregoing paragraphs.

149. On information and belief, Ciena has directly infringed, literally and/or by the doctrine of equivalents, individually and/or jointly, one or more claims of the '320 Patent, including at least claim 8, in violation of 35 U.S.C. § 271, et seq., by using in this District and in the United States certain products and/or services, including but not limited to those, relating to the Accused Instrumentalities.

150. Based on publicly available information, Ciena's Accused Instrumentalities meet all elements of at least claim 8 of the '320 Patent.

151. Claim 8 of the '320 Patent provides:

[Preamble] A device comprising:

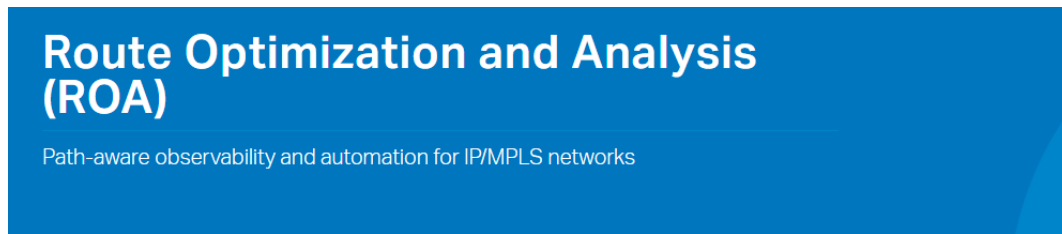
[8A] a processor; and a memory that stores instructions executable by the processor to:

[8B] identify information associated with an application flow based on one or more unencapsulated packet headers of the application flow or based on an ingress data stream that includes the application flow;

[8C] in response to identifying the information, and based on stored data mapping application flows to psuedowires [sic], determine a plurality of pseudowires as paths through a multiprotocol label switching (MPLS) network for the application flow, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of psuedowires [sic]; and

[8D] communicate data associated with the sending device application via at least one of the plurality of pseudowires.

152. Regarding the preamble of claim 8, to the extent the preamble is determined to be limiting, the Accused Instrumentalities, and in particular Ciena's Blue Planet SaaS product/service offerings that are hosted on servers by or on behalf of Ciena for use by Ciena's customers, comprises the claimed device as set forth herein. For example, as shown in the figure below, Ciena documents describe Blue Planet's "Route Optimization and Analysis (ROA)" feature, which involves "IP/MPLS networks" and states that ROA has "path computation and provisioning capabilities."¹⁰⁸



Assure and automate your IP/MPLS network and services

Modern IP/MPLS networks are built on a vendor-agnostic, ecosystem approach with thousands of routing paths—each carrying a myriad number of critical services and 5G network slices.

These dynamic networks need next-gen analytics and observability for informed decision-making and to enable faster activation, assurance, and automation of IP/MPLS services and slices. But traditional monitoring tools fall short of delivering meaningful insights that correlate network performance and routing behavior with service delivery.

Blue Planet® Route Optimization and Analysis (ROA) fills this visibility and management gap in your IP/MPLS networks. It delivers observability into IP/MPLS network and overlay services, including 5G network slices from any tower to the data center. And with ROA's path computation and provisioning capabilities, you are on the path to service automation.

¹⁰⁸ <https://www.blueplanet.com/products/route-optimization.html> (last visited October 14, 2024).

153. As a further example, Ciena describes ROA as being “used by the world’s leading network operators, enterprises, and government entities to assure the delivery of critical Layer 3 services across the cloud.”¹⁰⁹ Further, as shown in the figure below, ROA “recommends new TE tunnels to split traffic and automatically provisions them, helping alleviate congestion.”

ROA leverages routing and traffic data to enable automation of service provisioning and assurance. Its IP/MPLS Automation module’s built-in PCE can compute the best route from a source to destination and uses ROA’s PCEP support to automatically provision a new RSVP-TE or segment mouting TE tunnel. The module also provides recommendations based on traffic matrices to identify congested links or links with the longest paths (most hops) to optimize. It then recommends new TE tunnels to split traffic and automatically provisions them, helping alleviate congestion.

154. As a further example, Ciena states that its “IP/MPLS Automation also enables policy-driven automated optimization for existing TE tunnels to alleviate congestion. Based on traffic matrices, it can identify heavily congested links or links with most hops and use optimization algorithms to split among multiple paths, thereby optimizing the network and alleviating congestion.”¹¹⁰

¹⁰⁹

https://www.blueplanet.com/_data/assets/pdf_file/0023/9257/Route_Optimization_and_Analysis_DS_4_2024.pdf (last visited October 14, 2024).

¹¹⁰ <https://www.blueplanet.com/products/route-optimization.html> (last visited October 14, 2024).

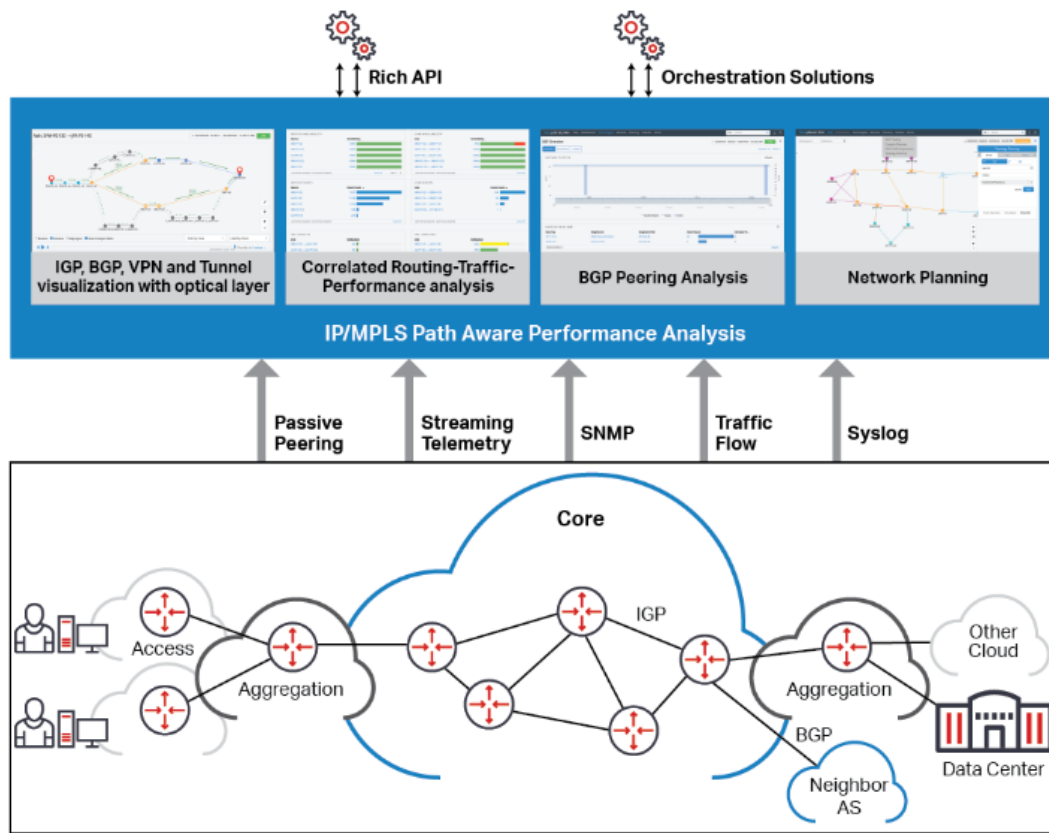
155. Thus, to the extent the preamble of claim 8 is limiting, Ciena satisfies the preamble of claim 8 at least by providing its Blue Planet SaaS product/service offerings.

156. Limitation [8A] requires “a processor; and a memory that stores instructions executable by the processor to...” On information and belief, Ciena’s Blue Planet SaaS products/services satisfy this claim limitation because in order to provide SaaS products/services to its customers, Ciena must install, operate, and/or maintain Blue Planet software on physical systems that incorporate at least one processor that is coupled to a memory that stores the computer instructions that, when executed, provide Ciena’s customers to access and use Blue Planet functionality in accordance with Blue Planet SaaS product/service offerings. Accordingly, based on information and belief, and based upon publicly available information, Ciena, through its operation and/or maintenance of Blue Planet SaaS satisfies limitation [8A] of the ’320 Patent.

157. Limitation [8B] requires the infringing device to “identify information associated with an application flow based on one or more unencapsulated packet headers of the application flow or based on an ingress data stream that includes the

application flow.” On information and belief, Ciena’s Blue Planet SaaS satisfies this limitation.¹¹¹

How Blue Planet ROA helps



158. As shown in the figure above, Blue Planet SaaS operates in an IP/MPLS environment. Further, the figure above demonstrates that application traffic flow is analyzed by the Blue Planet solution, indicating that it identifies information associated with an application flow.

¹¹¹ <https://www.blueplanet.com/products/route-optimization.html> (last visited October 14, 2024).

159. As another example, Ciena advertises that “Blue Planet is orchestrating and controlling mission critical services and applications,”¹¹² which further demonstrates that Blue Planet identifies information associated with an application flow. Other examples demonstrating that Blue Planet identifies information associated with application flows appear in various other instances on Ciena’s website. For example, Ciena advertises Blue Planet’s ability to maintain “the availability and performance of critical SCADA applications”¹¹³ and that Blue Planet “delivers a real-time view of the IP/MPLS topology with correlated traffic flow and performance metrics to help network operators visualize how routing behavior affects service delivery and optimizes the delivery of critical services.”¹¹⁴

160. As a further example, and as shown in the figure below, Ciena discloses that Blue Planet performs network slicing for specific user equipment application flows such as gaming and mobile.¹¹⁵

¹¹² <https://www.ciena.com/insights/why/Why-NFV.html> (last visited October 14, 2024).

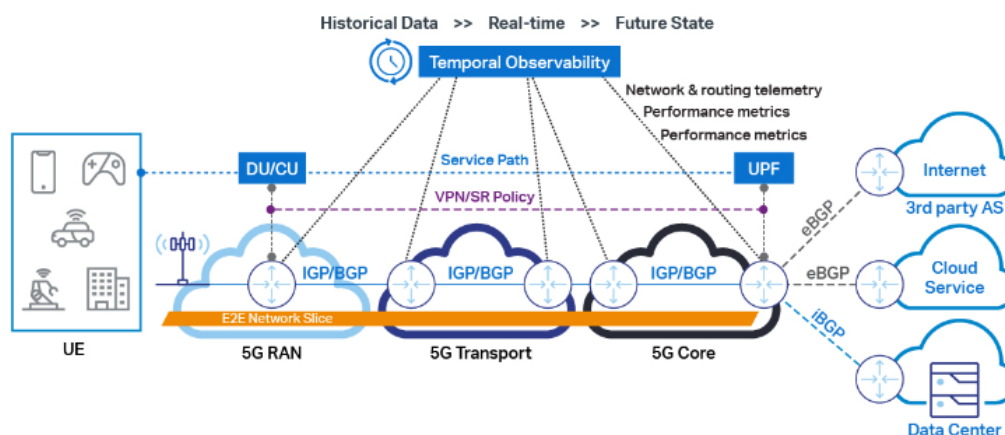
¹¹³ <https://www.ciena.com/insights/articles/How-utility-network-managers-can-gain-critical-visibility-to-meet-user-demands.html> (last visited August 22, 2024). On information and belief, this document appears to be no longer available on Ciena’s website.

¹¹⁴ <https://www.blueplanet.com/accelerate-digital-transformation> (last visited October 14, 2024).

¹¹⁵ <https://www.blueplanet.com/accelerate-digital-transformation> (last visited October 14, 2024).

5G network slicing assurance

The viability of future 5G services hinges on the ability to activate, monitor, and assure thousands of network slices in real-time. What's more, assuring network slice SLAs is a necessary step toward monetizing 5G slices, and this requires a new kind of network monitoring—one that understands the traffic, service, and path from the device to the application in the cloud across multiple protocols and technology domains.



161. As a further example, Ciena documentation discloses that Blue Planet is capable of provisioning service (e.g., Layer 2 services and L3VPN) for specific customers and associating customer names with specific tunnels, thus identifying information associated with an application flow based on an ingress data stream that includes the application flow.¹¹⁶

¹¹⁶ See, e.g., https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/L3VPNservice.html#viewing-l3-vpn-service:~:text=Create%20%22L3%20VPN%20service%22 (last visited October 23, 2023); https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PackageInfrastructureMgmt.html#packet-infrastructure-management (last visited October 23, 2023). On information and belief, neither of these documents appears to be available on Ciena's website any longer.

162. As a further example, Ciena documentation discloses that Blue Planet is used to configure peer routers for specific customers or applications. In at least one example, Ciena states that “there are two exit routers labeled as LAX-P-101 and ORD-P-122 has direct peering with Google, whereas LAX-P-101 takes a longer route, traversing through multiple transit AS’s, with AS 3356 as the last hop before reaching the Google prefix. BGP prefers shorter AS path routes, so it dictates that the direct peering routers should be used.”¹¹⁷ Thus, Blue Planet identifies traffic based on ingress data streams at particular peered routers.

163. Accordingly, based on information and belief, and based upon publicly available information, Blue Planet satisfies limitation [8B] of the ’320 Patent.

164. Limitation [8C] further requires an infringing device to “in response to identifying the information, and based on stored data that mapping application flows to [pseudowires], determine a plurality of pseudowires as paths through a multiprotocol label switching (MPLS) network for the application flow, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of [pseudowires].” On information and belief, Ciena’s Blue Planet SaaS satisfies this limitation.

¹¹⁷ https://www.blueplanet.com/_data/assets/pdf_file/0026/94670/understanding-bgp-peering-relationships-with-advanced-route-and-traffic-analysis.pdf (last visited October 14, 2024).

165. As an example, Ciena documents describe Blue Planet’s “Route Optimization and Analysis (ROA)” feature as “fill[ing] [a] visibility and management gap in your IP/MPLS networks” and states that ROA has “path computation and provisioning capabilities.”¹¹⁸

166. As a further example, as shown in the figure below, Ciena discloses the use of a plurality of pseudowires in its implementation of Blue Planet.¹¹⁹

Protection role	NE	NE	Labels	Name	ID
Primary	5160_0054_e00301	87m_0061_e00301	11756, 17552	daDH_3	1551355032
	87m_0061_e00301	5142_0053_e00301	11330, 18538	daDH_4	1551355033
Backup	5160_0054_e00301	5160_0055_e00301	15578	daDH_5	1551355030

NE	NE	Labels	Name	ID	Signaling
5142_0053_e00301	87m_0061_e00301	12623	daDH_1	1551355030	static
87m_0061_e00301	5160_0055_e00301	12126	daDH_2	1551355031	static

¹¹⁸ <https://www.blueplanet.com/products/route-optimization.html> (last visited October 14, 2024).

¹¹⁹ https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html (last visited October 23, 2023) (emphasis added). On information and belief, this document appears to be no longer available on Ciena’s website.

167. On information and belief, and as shown in the figure above (highlighted in red), the Blue Planet solution makes use of multiple pseudowires. The claim limitation “plurality of pseudowires corresponding to paths through the MPLS network” is satisfied as shown above (highlighted in purple). Further, Ciena discloses the nodes that make use of the plurality of pseudowires (highlighted in green), and that pseudowires are associated with or “mapped to” specific services or certain customer data flows.¹²⁰

168. As a further example, and as shown in the figure below, Ciena discloses that Blue Planet provisions services with different and multiple pseudowires.¹²¹ On information and belief, Ciena enables the selection of one or more LSP tunnels to carry traffic, which demonstrates a distributed mapping for every service that is provisioned.

¹²⁰ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/user-guide/PacketInfrastructureMgmt.html (last visited October 23, 2023) (“The Pseudowires tab displays the set of pseudowires, both protected and unprotected, that are associated with the service.”). On information and belief, this document appears to be no longer available on Ciena’s website.

¹²¹ https://software.ciena.com/releases/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html (last visited October 30, 2023). On information and belief, this document appears to be no longer available on Ciena’s website.

Provision a three-point E-Line service with pseudowire protection

You can use the MCP REST API to provision an E-Line service with Pseudowire protection (for both single-segment and multi-segment Pseudowires), and select one or more specific LSP tunnels to carry the A-Z, A-Z', and Z-Z' routes.

This capability is also supported in cases where the LSP path includes linear Q-in-Q spurs.

Note: The example below shows the configuration of a three-point protected E-Line service; but with minor variations the same API call can be used to provision a conventional two-point E-Line service instead.

169. As a further example, and as shown in the figure below, Ciena discloses that Blue Planet uses stored data (e.g., update-able Table Maps) for pseudowire services and flows.¹²²

Table Map Update

During PW-Handoff service create, if AN endpoint node is SAOS 6x then, on it's neighbouring AGN node, additional table map update CLI will be executed, to add PWHE peer IP in the prefix-list, when peer IP is not already there in prefix-list.

170. As a further example, and as shown in the figure below, Ciena discloses that Blue Planet is capable of provisioning services for specific applications (e.g., gaming, VR, Google Cloud), which demonstrates that the services are provisioned for specific applications and/or for specific customers.¹²³

¹²² https://software.ciena.com/releasenotes/MCP-DOCS_5.2-217/build/site/mcp-docs/api-guide/PacketServiceMgmt.html (last visited October 30, 2023). On information and belief, this document appears to be no longer available on Ciena's website.

¹²³ https://www.blueplanet.com/_data/assets/pdf_file/0021/81264/5G_Automation_Network_Slicing_SB1.pdf (last visited August 22, 2024) (emphasis added). On information and belief, the current version of this webpage has been edited to exclude the above graphic.

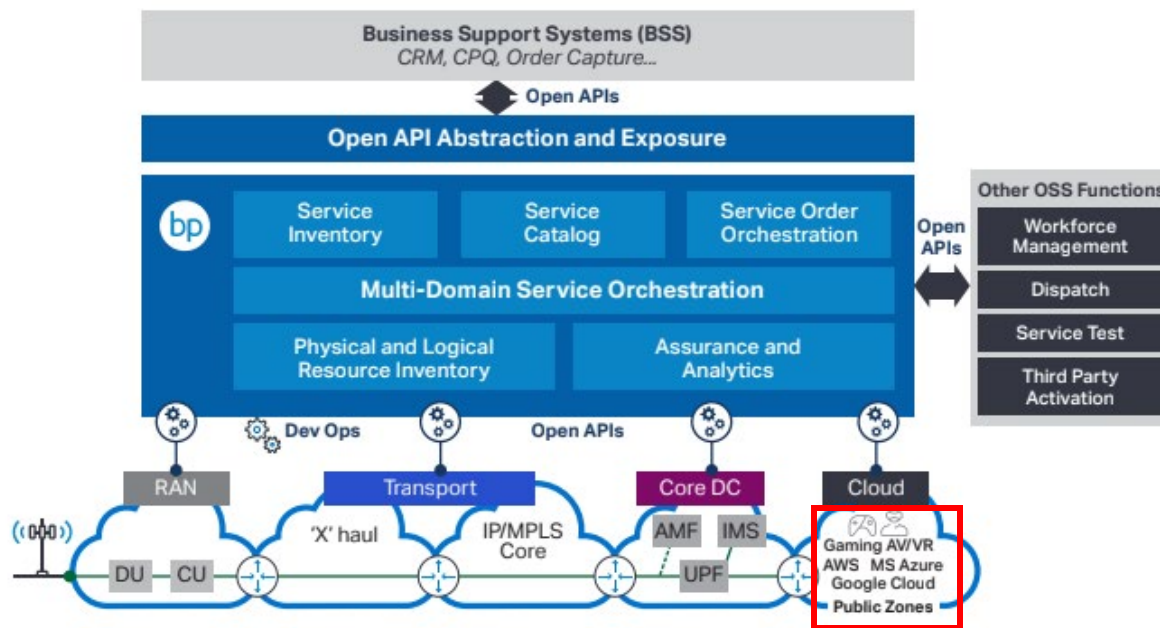


Figure 1. Blue Planet 5G Network Slicing solution architecture

171. Accordingly, based on information and belief, and based upon publicly available information, Blue Planet satisfies limitation [8C] of the '320 Patent.

172. Limitation [8D] further requires an infringing device to “communicate data associated with the sending device application via at least one of the plurality of pseudowires.” On information and belief, Blue Planet satisfies limitation [8D] of the '320 Patent. For example, and as shown in the figure below, Ciena documentation discloses that Blue Planet splits traffic into multiple transport paths (the TE tunnels), which demonstrates a distributed mapping of the service or application flow with multiple pseudowires through which data is communicated.¹²⁴

¹²⁴

https://www.blueplanet.com/_data/assets/pdf_file/0023/9257/Route_Optimization_and_Analysis_DS_4_2024.pdf (last visited October 14, 2024). Ciena advertises

Indeed, Ciena describes Blue Planet Route Optimization and Analysis (ROA) as “recommend[ing] new TE tunnels to split traffic and automatically provisions them, helping alleviate congestion.” The recommendation of new TE tunnels comprises, for example, “data associated with the sending device application.”

ROA leverages routing and traffic data to enable automation of service provisioning and assurance. Its IP/MPLS Automation module's built-in PCE can compute the best route from a source to destination and uses ROA's PCEP support to automatically provision a new RSVP-TE or segment mouting TE tunnel. The module also provides recommendations based on traffic matrices to identify congested links or links with the longest paths (most hops) to optimize. It then recommends new TE tunnels to split traffic and automatically provisions them, helping alleviate congestion.

173. Accordingly, based on information and belief, and based upon publicly available information, Blue Planet satisfies limitation [8D] of the '320 Patent.

174. Thus, Ciena's operation and maintenance of the Accused Instrumentalities satisfies each and every limitation of claim 8 of the '320 Patent.

175. On information and belief, Ciena has directly used the Accused Instrumentalities in Ciena data centers and has directly used the Accused Instrumentalities when setting up, running, troubleshooting, and/or operating the Accused Instrumentalities on behalf of itself or its customers. As evidenced by the

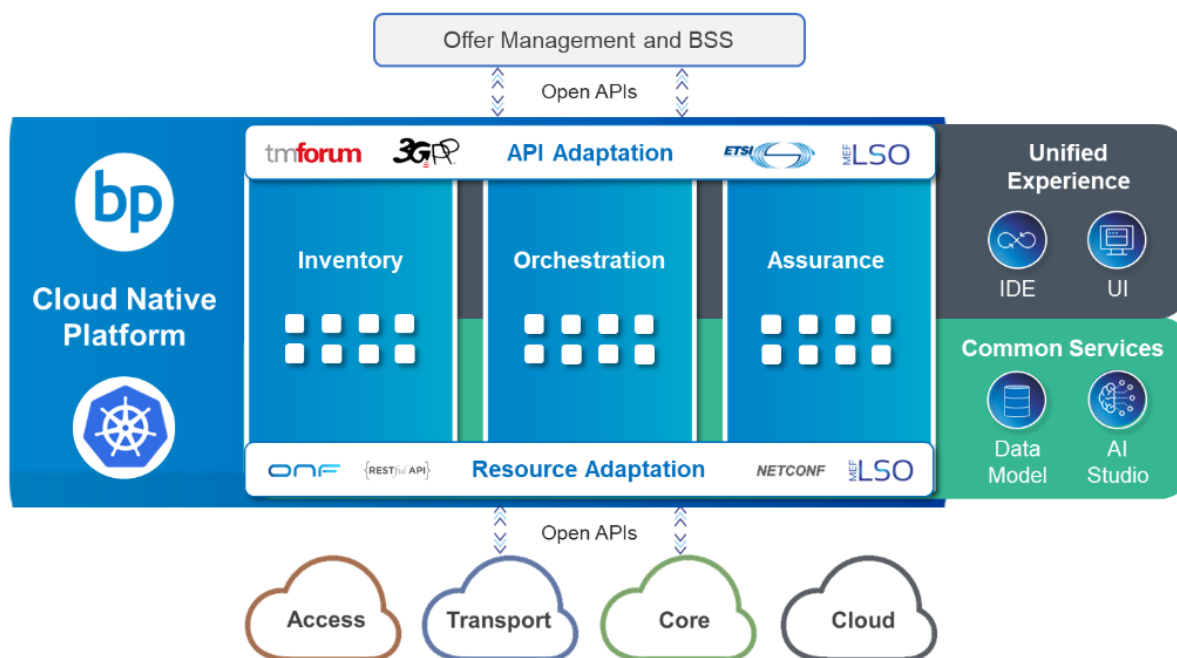
that Blue Planet “comput[es] and provision[s] transport paths to deploy new services.”

non-limiting examples below, support for these statements is located throughout Ciena's websites.

176. On information and belief, the Accused Instrumentalities are used in data centers, including data centers hosting or serving Blue Planet SaaS products/services for Ciena or on its behalf. For example, as shown below, Ciena advertises that its Blue Planet solution may be deployed “on premises, in any private or public cloud.”¹²⁵

¹²⁵ <https://www.blueplanet.com/resources/what-is-cloud-native-oss> (last visited October 14, 2024).

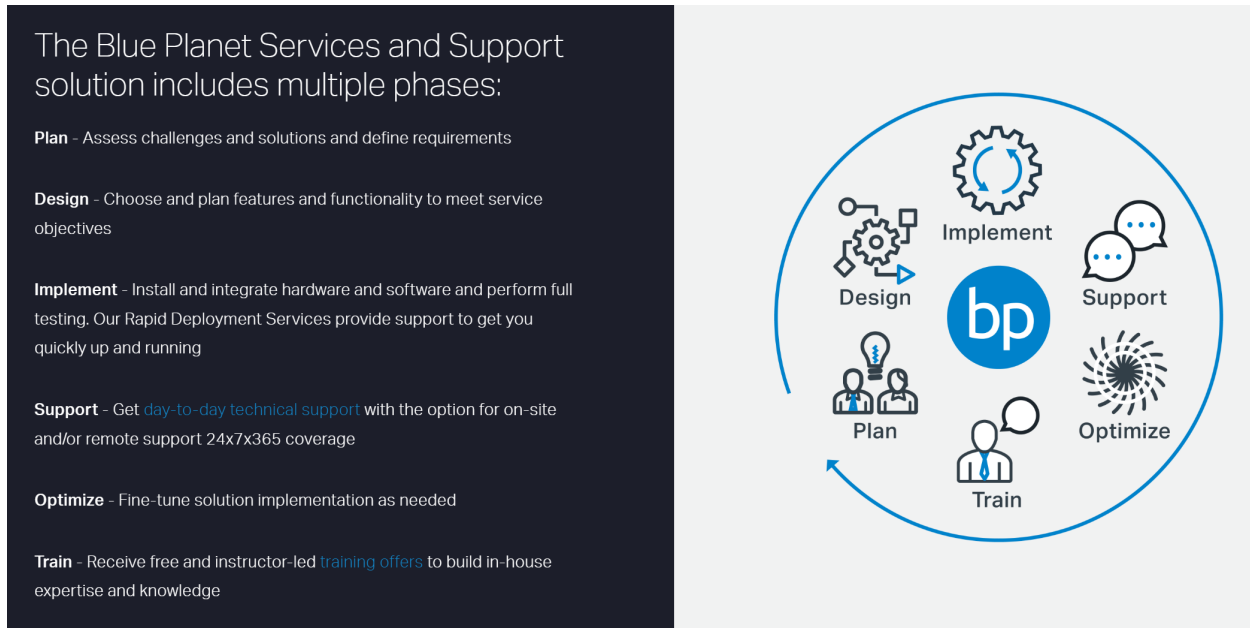
Built on a ultra-modern Kubernetes-based architecture, the Blue Planet Cloud Native Platform (CNP) can be deployed on premises, in any private or public cloud—including AWS, Google, Microsoft and even in any multi-cloud mix of public and private clouds—with complete feature consistency. In addition to deployment flexibility, Blue Planet CNP also provides cloud-native support services that streamline the transition and ensure interoperability.



Blue Planet's Cloud Native Platform and applications

177. As a further example, as shown below, Ciena provides its customers with technical support for planning, deployment, and maintenance of its Blue Planet solution.¹²⁶

¹²⁶ <https://www.blueplanet.com/support> (last visited October 14, 2024). *See also* <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024) (“Customers can also take advantage of the Blue Planet Community, which is dedicated to helping you enrich your Blue Planet experience no matter where you are in your journey in network transformation.”).



178. On information and belief, and based on publicly available information, Ciena provides customers who have purchased or subscribed to Blue Planet’s SaaS and/or potential customers of its Blue Planet solution with multiple sources of technical support. For example, Ciena documents describe “the service elements, features, activities and deliverables related to the Blue Planet SaaS products.”¹²⁷ As a further example, Ciena provides “[a]ccess to software library including latest updates and new, innovative product features” as well as “Blue Planet expertise to assist with product use, configuration, and troubleshooting issues.”¹²⁸ On further information and belief, Ciena provides a customer forum where technical

¹²⁷ <https://www.blueplanet.com/blue-planet-contract-documents/blue-planet-support-software-as-a-service> (last visited March 6, 2025).

¹²⁸ <https://www.blueplanet.com/support/contacts> (last visited October 14, 2024) (providing domestic and international contact information for technical support).

information about its products and/or services may be discussed by its personnel and customers.¹²⁹ On further information and belief, Ciena also provides a learning portal for its customers and potential customers to learn about the Accused Instrumentalities and their deployments and implementations.¹³⁰ On further information and belief, Ciena provides access to instructional and informational videos about its Accused Instrumentalities.¹³¹ On further information and belief, Ciena also provides a “DevOps Exchange” “[d]edicated to Blue Planet developers in a technical role” that “provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.”¹³²

¹²⁹ <https://my.ciena.com/CienaPortal/s/blue-planet> (last visited October 14, 2024).

¹³⁰ <https://www.blueplanet.com/learning> (last visited October 14, 2024).

¹³¹ <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024).

¹³² <https://www.blueplanet.com/learning/blue-planet-overview> (last visited October 14, 2024). On information and belief, login information to the DevOps exchange may be entered at https://developer.blueplanet.com/signin/?return_url=https://developer.blueplanet.com/index.html (last visited October 14, 2024).

Blue Planet DevOps Exchange

Dedicated to Blue Planet developers in a technical role, the Blue Planet DevOps Exchange provides access to tools and technical resources ranging from basic learning materials to advanced programming documentation.

Existing or new members login

179. On information and belief, Ciena has and continues to advertise its partnerships with its customers internationally and in the United States.¹³³ For example, Ciena has touted its partnership with its customer Consolidated Communications¹³⁴, and its integration of the Blue Planet solution to “provide Consolidated Communications with next generation network automation and control by leveraging ... the multi-vendor Blue Market Multi-Domain Service Orchestration

¹³³ See, e.g., <https://www.blueplanet.com/about/press-releases> (last visited October 14, 2024) (listing various news articles regarding Ciena’s partnerships with customers).

¹³⁴ On information and belief, Consolidated Communications is a third-party broadband provider and Ciena customer “serving customers across a 20-plus state service area.” See <https://www.consolidated.com/about-us> (last visited October 14, 2024).

(MDSO) and Blue Planet Route Optimization and Analysis (ROA) software.”¹³⁵ As another example, Ciena has and continues to advertise its business relationship with its customer DISH Network Corporation: “Blue Planet is a key component within [DISH’s] 5G platform, allowing [DISH] to dynamically manage all of [its] network inventory and service order in real-time.”¹³⁶

180. Ciena was not licensed or otherwise authorized by K.Mizra to make, use, import, sell, or offer to sell any products and/or services covered by the ’320 Patent, and Ciena’s conduct is, in every instance, without K.Mizra’s consent.

181. Ciena undertook the infringing actions despite an objectively high likelihood that such activities infringe the ’320 Patent, which has been duly issued by the USPTO and presumed valid.

182. Since at least the date of first learning of the ’320 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has continued its infringing activities. As such, Ciena has willfully infringed the ’320 Patent.

183. Since at least the date of first learning of the ’320 Patent, which is no later than the date of the Notice Letters as detailed herein, Ciena has also indirectly infringed and continues to indirectly infringe the ’320 Patent at least in violation of

¹³⁵ <https://www.blueplanet.com/about/press-releases/consolidated-communications-builds-5g-ready-network-with-cienas-adaptive-ip-solution.html> (last visited October 14, 2024).

¹³⁶ <https://www.blueplanet.com/about/press-releases/dish-selects-blue-planet-automation-software-to-accelerate-5g-services.html> (last visited October 14, 2024).

35 U.S.C. § 271(b). Ciena has actively induced, for example, network service providers such as its customers Consolidated Communications and/or DISH to directly infringe the '320 Patent at least by making and using the device covered by claim 8 as detailed above throughout the United States, including within this Judicial District, by, among other things, advertising and promoting the use of the Accused Instrumentalities in various websites, including providing and disseminating product descriptions, operating manuals, technical documentation, instructional and/or informational videos, and other instructions on how to implement the Accused Instrumentalities. Examples of such advertising, promotion, and/or instruction include without limitation the documents cited in the paragraphs above. Ciena did so knowing and intending that its customers and end users commit these infringing acts, despite its knowledge of the '320 Patent, thereby specifically intending for and inducing its customers to infringe the '320 Patent through the customers' normal and customary use of the Accused Instrumentalities.

184. As a result of Ciena's infringement of the '320 Patent, K.Mizra has suffered substantial injury and is entitled to recover all damages caused by Ciena's infringement to the fullest extent permitted by the Patent Act, together with prejudgment interest and costs for Cisco's wrongful conduct, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

COMPLIANCE WITH 35 U.S.C. § 287

185. K.Mizra has never manufactured or sold a product.

186. On information and belief, at no point in time before Ciena was put on actual notice via K.Mizra's February 2024 Notice Letters did K.Mizra have any licensee to any of the Patents-in-Suit that manufactured or sold a product that practices any of the Patents-in-Suit.

187. On information and belief, at no point in time did Global Innovation Aggregators LLC ever manufacture or sell a product, or have any licensee to any of the Patents-in-Suit that manufactured or sold a product that practices any of the Patents-in-Suit.

188. On information and belief, at no point in time did Brixham Solutions Ltd. ever manufacture or sell a product, or have any licensee to any of the Patents-in-Suit that manufactured or sold a product that practices any of the Patents-in-Suit.

189. Hammerhead Systems, Inc. ceased to do business in approximately 2009, and approximately five years before the first of the Patents-in-Suit issued from the USPTO.

DEMAND FOR JURY TRIAL

K.Mizra LLC respectfully requests a trial by jury of all triable issues.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff K.Mizra LLC respectfully requests that the Court enter judgment in its favor against Defendant Ciena Corporation, granting the following relief:

- A. That the Court enter judgment for K.Mizra on all causes of action asserted in this Complaint;
- B. That the Court enter judgment in favor of K.Mizra and against Ciena for monetary damages to compensate it for Ciena's infringement of the Patents-in-Suit pursuant to 35 U.S.C. § 284, including costs and pre and post-judgment interest as allowed by law;
- C. That the Court enter judgment in favor of K.Mizra and against Ciena for accounting and/or supplemental damages for all damages occurring after any discovery cutoff and through the Court's entry of final judgment;
- D. That the Court adjudge Ciena's infringement of the Patents-in-Suit to be willful dated from February 13, 2024 when Ciena was put on actual notice of infringement of the Patents-in-Suit;
- E. That the Court enter judgment that this case is exceptional under 35 U.S.C. § 285 and enter an award to K.Mizra of its costs and attorneys' fees; and

F. That the Court award K.Mizra all further relief as the Court deems just and proper.

Dated: March 14, 2025

Respectfully submitted,

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Counsel for Plaintiff K.Mizra LLC

CERTIFICATION OF COMPLIANCE AND SERVICE

Pursuant to LR 7.1(D), the undersigned counsel I certify that the foregoing has been prepared in Times New Roman 14 point, one of the fonts and points and approved by the Court in LR 5.1(C). I further certify that on March 14, 2025, I electronically filed the foregoing document with the Clerk of Court using the CM/ECF system which will send a copy to all counsel of record.

/s/ Timothy Dewberry
Timothy Dewberry