UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SCR Networks LLC, Plaintiff, v. Cisco Systems Inc., Defendant.	Case No. 2:24-cv-349 **COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff SCR Networks LLC ("SCR" or "Plaintiff") hereby asserts the following claims for patent infringement against Defendant Cisco Systems Inc., ("Cisco" or "Defendant"), and alleges as follows:

SUMMARY

1. SCR owns United States Patent No. 7,266,085 (the "'085 Patent" or the "Asserted Patent").

2. Defendant infringes the Asserted Patent by implementing, without authorization, SCR's proprietary technologies in a number of their products including, *inter alia*, their ASR 1001-X Router and other 8000 Series, ASR 1000 Series, 4000 Family Integrated Services Routers, 1900 Series, and Catalyst 8500 Series. Further, the Cisco ASR 1001-X Router is configured with IOS Release 15M&T that includes the functionality to implement Mobile Ad-hoc Networks (MANET) (the "Accused Products").

3. By this action, SCR seeks to obtain compensation for the harm it has suffered as a result of Defendant's infringement of the Asserted Patent.

NATURE OF THE ACTION

4. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.

5. Defendant has infringed and continue to infringe, and at least as early as the filing and/or service of this Complaint, have induced and continue to induce infringement of, and have contributed to and continue to contribute to infringement of, at least one or more claims of SCR's Asserted Patent at least by making, using, selling, and/or offering to sell their products and services in the United States, including in this District.

6. SCR is the legal owner by assignment of the Asserted Patent, which was duly and legally issued by the United States Patent and Trademark Office ("USPTO"). SCR seeks monetary damages for Defendant's infringement of the Asserted Patent.

THE PARTIES

7. SCR is a Delaware limited liability company having an address of 251 Little Falls Drive, Wilmington, Delaware 19808. SCR is the owner of intellectual property rights at issue in this action.

8. On information and belief, Defendant Cisco Systems Inc.,. is a Delaware Corporation with its principal place of business at 300 East Tasman Dr. San Jose, CA 95134 USA. Upon information and belief, Cisco may be served thru its registered agent at CORPORATION SERVICE COMPANY DBA CSC - LAWYERS INCO, 211 E. 7TH STREET, SUITE 620 AUSTIN, TX 78701

9. On information and belief, Defendant directly and/or indirectly develops, designs, manufactures, distributes, markets, offers to sell and/or sells infringing products and services in the United States, including in the Eastern District of Texas, and otherwise direct infringing

activities to this District in connection with their products and services.

JURISDICTION AND VENUE

10. As this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*., this Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Defendant, in part because Defendant does continuous and systematic business in this District, including by providing infringing products and services to the residents of the Eastern District of Texas that Defendant knew would be used within this District, and by soliciting business from the residents of the Eastern District of Texas. For example, Defendant is subject to personal jurisdiction in this Court because, *inter alia*, Defendant has a regular place of business in the District, and directly and through agents regularly does, solicits, and transacts business in the Eastern District of Texas.

12. In particular, Defendant has committed and continues to commit acts of infringement in violation of 35 U.S.C. § 271, and has made, used, marketed, distributed, offered for sale, sold, and/or imported infringing products in the State of Texas, and engaged in infringing conduct within and directed at or from this District. For example, Defendant has purposefully and voluntarily placed the Accused Products into the stream of commerce with the expectation that the Accused Products will be used in this District. The Accused Products have been and continue to be distributed to and used in this District. Defendant's acts cause and have caused injury to SCR, including within this District.

13. Venue is proper in this Judicial District as Cisco maintains an office at 2300 E President George Bush Hwy, Richardson, TX 75082. On information and belief, Defendant has each have significant ties to, and presence in, the State of Texas and the Eastern District of Texas,

making venue in this Judicial District both proper and convenient for this action.

THE '085 PATENT

14. The '085 Patent is entitled "Access and Routing Protocol for Ad Hoc Network Using Synchronous Collision Resolution and Note State Dissemination," and was issued on September 4, 2007. A true and correct copy of the '085 Patent is attached as Exhibit A.

15. The '085 Patent was filed on March 21, 2002, as U.S. Patent Application No. 10/104,336.

16. SCR is the owner of all rights, title, and interest in and to the '085 Patent, with the full and exclusive right to bring suit to enforce the '085 Patent, including the right to recover for past infringement.

17. The '085 Patent is valid and enforceable under the United States patent laws.

18. The '085 Patent recognized several problems with existing ad hoc mobile networks. In fact, the '085 Patent described these problems at great length. Exhibit A at 1:30-12:60. Specifically, a protocol for use with ad hoc networks that integrated medium access control and routing such that they provided quality of service while conserving energy of individual mobile nodes and while allowing maximum use of wireless channels minimizing collisions of concurrent communications was described as lacking in the prior art. Exhibit A at 12:61-67.

19. The '085 Patent described solutions to these problems that include, among other things, inferring connectivity links between nodes based on node states, building routing tables based on route metrics of said connectivity links, and routing packets based on said routing tables. Exhibit A at 52:50-54.

COUNT I: INFRINGEMENT OF THE '085 PATENT

20. SCR incorporates by reference and re-alleges paragraphs 1-19 of this Complaint as

if fully set forth herein.

21. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '085 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, the Accused Products.

22. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 21 of the '085 Patent in connection with the Accused Products. This description is based on publicly available information. SCR reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

21(preamble): A method of operating an Ad Hoc wireless network, which comprises: Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method in accordance with the preamble.

For instance, Defendant provides products configured with IOS Release 15M&T that includes the functionality to implement Mobile Ad-hoc Networks (MANET) ("ad hoc wireless network") using the OSPFv3 routing protocol.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_nat/configuration/15-mt/nat-15-mt-book.html

Open Shortest Path First version 3 (OSPFv3) Extensions optimize OSPFv3 behavior for more efficient routing in Mobile Ad Hoc Networks (MANETs). The OSPFv3 extensions improve routing efficiency and reduce overhead traffic in MANET environments so that network clusters can scale to support more users. The OSPFv3 extensions boost performance for delay-sensitive, mission-critical voice, video, and data traffic, and it facilitates the integration of wireless MANETs with existing wire-line products.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

MANET Protocols

The protocols described in this guide support Mobile Ad-hoc Networks (MANETs). MANET-routing protocols provide signaling among MANET routers, including scope-limited flooding and point-to-point delivery of MANET routing protocol signaling in a multi-hop network. Packets may be unicast or multicast and use any appropriate transport protocol.

Source: https://www.cisco.com/c/en/us/td/docs/solutions/GGSG-Engineering/15-4-3M/config-guide/Configuration-Guide/Protocols.pdf, Page 2.

Mobile Ad Hoc Networking

Mobile Ad Hoc Networks (MANETs) are an emerging type of wireless networking, in which mobile nodes associate on an extemporaneous or ad hoc basis. MANETs are both self-forming and self-healing, enabling peer-level communications between mobile nodes without reliance on centralized resources or fixed infrastructure.

Source: https://www.cisco.com/c/en/us/products/ios-nx-os-software/mobile-ad-hoc-networking/index.html

21(a): disseminating node state information among nodes wherein disseminating node state information comprises applying set of rules for selecting node states to be included in a node state packet;— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of disseminating node state information among nodes wherein disseminating node state information comprises applying set of rules for selecting node states to be included in a

node state packet.

For instance, IOS Release 15M&T implements MANET using the OSPFv3 routing protocol. While joining the MANET using the OSPFv3 protocol, the mobile wireless nodes share ("disseminating") information such as network address, location, and timestamps ("node state information") with the other nodes in the network.

```
!
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service alignment detection
!
hostname Router1
```

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

```
Device# show ospfv3
 Routing Process "ospfv3 1" with ID 10.0.0.1
 Supports IPv6 Address Family
 Event-log enabled, Maximum number of events: 1000, Mode: cyclic
 Initial SPF schedule delay 5000 msecs
 Minimum hold time between two consecutive SPFs 10000 msecs
 Maximum wait time between two consecutive SPFs 10000 msecs
 Minimum LSA interval 5 secs
 Minimum LSA arrival 1000 msecs
 LSA group pacing timer 240 secs
 Interface flood pacing timer 33 msecs
 Retransmission pacing timer 66 msecs
 Number of external LSA 0. Checksum Sum 0x000000
 Number of areas in this router is 0. 0 normal 0 stub 0 nssa
 Graceful restart helper support enabled
 Reference bandwidth unit is 100 mbps
```

Source: https://content.cisco.com/chapter.sjs?

Peer to Peer: traditional networks typically support end systems operating in client-server mode. In an ad hoc network, mobile nodes can communicate and exchange information without prior arrangement and without reliance on centralized resources

Predominantly Wireless: historically networks have been mostly wired, and enhanced or extended through wireless access. The ad hoc environment is essentially wireless, but can be extended to support wired resources

Highly Dynamic: mobile nodes are in continuous motion and ad hoc networking topologies are constantly changing

Collectively, these characteristics will enable ad hoc networks to deliver timely information to a new and under-served class of users. Ad hoc networking solutions can be applied to virtually any scenario that involves a cadre of highly mobile users or platforms (which may include stationary devices as well), a strong need to share IP-based information, and an environment in which fixed infrastructure is impractical, impaired, or impossible.

Source:

https://www.cisco.com/c/dam/en_us/solutions/industries/docs/gov/Mobile_Ad_Hoc_Networking_Demonstration.pdf, Page 8

In the simplest example, selective peering determines if an adjacency should be formed when a new neighbor is discovered (a hello is received from a new neighbor). If the neighbor is not in the OSPF link state database, or if it is not reachable in the Shortest Path Tree (SPT), then the adjacency is formed. If the neighbor is in the OSPF link state database and is reachable, the neighbor is kept in the two-way state if the configured number of redundant paths to this neighbor is already formed.

Topology changes might cause the number of redundant paths to a given neighbor to fall below the configured level. When this occurs, selective peering can bring up adjacencies that were previously kept in the two-way state.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

Mobile Ad Hoc Networking

Mobile Ad Hoc Networks (MANETs) are an emerging type of wireless networking, in which mobile nodes associate on an extemporaneous or ad hoc basis. MANETs are both self-forming and self-healing, enabling peer-level communications between mobile nodes without reliance on centralized resources or fixed infrastructure.

Source: https://www.cisco.com/c/en/us/products/ios-nx-os-software/mobile-ad-hoc-networking/index.html

21(b): transmitting the selected node states in a node state packet;— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of transmitting the selected node states in a node state packet.

For instance, the mobile wireless nodes in the MANET share information such as network address, location, and timestamps in the form of data packets ("node state packet") with the other nodes in the network. Based on the shared information, the OSPFv3 protocol computes the topology of the network to select the shortest path for communication. In MANET, the nodes are mobile and continuously change their location. Therefore, upon information and belief, the information regarding a node ("node states") is shared with the other nodes only when the node is below a predefined threshold distance ("a set of rules") from the other nodes.

An OSPFv3 process can be configured to be either IPv4 or IPv6. The **address-family** command is used to determine which AF will run in the OSPFv3 process, and only one address family can be configured per instance. Once the AF is selected, you can enable multiple instances on a link and enable address-family-specific commands.

Different instance ID ranges are used for each AF. Each AF establishes different adjacencies, has a different link state database, and computes a different shortest path tree. The AF then installs the routes in the AF-specific RIB. LSAs that carry IPv6 unicast prefixes are used without any modification in different instances to carry each AF's prefixes.

The IPv4 subnets configured on OSPFv3-enabled interfaces are advertised through intra-area prefix LSAs, just as any IPv6 prefixes. External LSAs are used to advertise IPv4 routes redistributed from any IPv4 routing protocol, including connected and static. The IPv4 OSPFv3 process runs the Shortest Path First (SPF) calculations and finds the shortest path to those IPv4 destinations. These computed routes are then inserted in the IPv4 RIB (computed routes are inserted into an IPv6 RIB for an IPv6 AF).

Source: https://content.cisco.com/chapter.sjs

```
Device# show ospfv3
 Routing Process "ospfv3 1" with ID 10.0.0.1
 Supports IPv6 Address Family
 Event-log enabled, Maximum number of events: 1000, Mode: cyclic
 Initial SPF schedule delay 5000 msecs
 Minimum hold time between two consecutive SPFs 10000 msecs
 Maximum wait time between two consecutive SPFs 10000 msecs
 Minimum LSA interval 5 secs
 Minimum LSA arrival 1000 msecs
 LSA group pacing timer 240 secs
 Interface flood pacing timer 33 msecs
 Retransmission pacing timer 66 msecs
 Number of external LSA 0. Checksum Sum 0x000000
 Number of areas in this router is 0. 0 normal 0 stub 0 nssa
 Graceful restart helper support enabled
 Reference bandwidth unit is 100 mbps
```

Source: https://content.cisco.com/chapter.sjs

In the simplest example, selective peering determines if an adjacency should be formed when a new neighbor is discovered (a hello is received from a new neighbor). If the neighbor is not in the OSPF link state database, or if it is not reachable in the Shortest Path Tree (SPT), then the adjacency is formed. If the neighbor is in the OSPF link state database and is reachable, the neighbor is kept in the two-way state if the configured number of redundant paths to this neighbor is already formed.

Topology changes might cause the number of redundant paths to a given neighbor to fall below the configured level. When this occurs, selective peering can bring up adjacencies that were previously kept in the two-way state.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

An RAR-compliant radio might not advertise link metrics to the router before a new OSPFv3 neighbor is discovered. You can configure OSPFv3 to wait for link metrics before considering a neighbor for OSPFv3 peering. You can specify a minimum metric threshold. If the radio-reported link metric is above this threshold, the neighbor will be held in two-way state. With this configuration, full peering with neighbors with poor link metrics can be effectively prevented.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

21(c): inferring connectivity links between the nodes based on the node state information;— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of assigning route metrics to the connectivity links using node state information.

For instance, a mobile wireless node in the MANET transmits information such as network address, location, and timestamps in the form of data packets ("node state packet") to the other nodes in the network when the node is below a threshold distance from the other nodes.

```
!
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service alignment detection
!
hostname Router1
```

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

```
Device# show ospfv3
Routing Process "ospfv3 1" with ID 10.0.0.1
Supports IPv6 Address Family
Event-log enabled, Maximum number of events: 1000, Mode: cyclic
Initial SPF schedule delay 5000 msecs
Minimum hold time between two consecutive SPFs 10000 msecs
Maximum wait time between two consecutive SPFs 10000 msecs
Minimum LSA interval 5 secs
Minimum LSA arrival 1000 msecs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msecs
Retransmission pacing timer 66 msecs
Number of external LSA 0. Checksum Sum 0x000000
Number of areas in this router is 0. 0 normal 0 stub 0 nssa
Graceful restart helper support enabled
Reference bandwidth unit is 100 mbps
```

Source: https://content.cisco.com/chapter.sjs?

Step 4	**ospfv3** [*process-id*] **area area-id ipv6** [**instance instance-id**] (Router-if)# **ospfv3 6 area 0 ipv6** (Router-if)# **ospfv3 6 area 0 ipv4**	Attaches the OSPFv3 process to an interface. **Note** The instance number defaults to 0 for ipv6.

Source:

https://content.cisco.com/chapter.sjs?uri=/searchable/chapter/www.cisco.com/content/en/us/td/docs/solutions/GGSG-Engineering/15-4-3M/config-guide/Configuration-Guide/Manet.html.xml

In the simplest example, selective peering determines if an adjacency should be formed when a new neighbor is discovered (a hello is received from a new neighbor). If the neighbor is not in the OSPF link state database, or if it is not reachable in the Shortest Path Tree (SPT), then the adjacency is formed. If the neighbor is in the OSPF link state database and is reachable, the neighbor is kept in the two-way state if the configured number of redundant paths to this neighbor is already formed.

Topology changes might cause the number of redundant paths to a given neighbor to fall below the configured level. When this occurs, selective peering can bring up adjacencies that were previously kept in the two-way state.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

21(d): building routing tables based on route metrics.— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of inferring connectivity links between the nodes based on the node state information.

For instance, based on the received node information such as network address, location, and timestamps, the OSPFv3 protocol computes the topology of the network to select the shortest path ("connectivity links") for communication.

Preferred Path

By using the preferred path, a network designer can specify the primary link, based upon bandwidth or priority, to reduce costs or to use a specific carrier.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-mbl-ntwks.html

In the simplest example, selective peering determines if an adjacency should be formed when a new neighbor is discovered (a hello is received from a new neighbor). If the neighbor is not in the OSPF link state database, or if it is not reachable in the Shortest Path Tree (SPT), then the adjacency is formed. If the neighbor is in the OSPF link state database and is reachable, the neighbor is kept in the two-way state if the configured number of redundant paths to this neighbor is already formed.

Topology changes might cause the number of redundant paths to a given neighbor to fall below the configured level. When this occurs, selective peering can bring up adjacencies that were previously kept in the two-way state.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

Directional radios that operate on a narrow beam tend to model the network as a series of physical point-to-point connections with neighbor nodes. This point-to-point model does not translate gracefully to multihop, multipoint device environments because it increases the size of each device's topology database and reduces routing efficiency.

Effective networking in a MANET environment therefore requires mechanisms by which

- Devices and radios can interoperate efficiently, and without impacting operation of the radio network.
- Radio point-to-point and device point-to-multipoint paradigms can be rationalized.
- Radios can report status to devices for each link and each neighbor.
- Devices can use this information to optimize routing decisions.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-manet-enh-pppoe-rtr-2-radio-links.html

The neighbor up/down signaling capability provides faster network convergence by using link-status signals generated by the radio. The radio notifies the device each time a link to another neighbor is established or terminated by the creation and termination of PPP over Ethernet (PPPoE) sessions. In the device, the routing protocols (Open Shortest Path First version 3 [OSPFv3] or Enhanced Interior Gateway Routing Protocol [EIGRP]) respond immediately to these signals by expediting formation of a new adjacency (for a new neighbor) or tearing down an existing adjacency (if a neighbor is lost). For example, if a vehicle drives behind a building and loses its connection, the device immediately senses the loss and establishes a new route to the vehicle through neighbors that are not blocked. This high-speed network convergence is essential for minimizing dropped voice calls and disruptions to video sessions.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-manet-enh-pppoe-rtr-2-radio-links.html

21(e): assigning route metrics to the connectivity links using the node state information; and building routing tables based on route metrics.— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of assigning route metrics to the connectivity links using the node state information; and building routing tables based on route metrics.

For instance, for the selected paths ("connectivity links") between the nodes, the OSPFv3 protocol computes metrics such as latency, link quality, and remaining resources, for example, remaining battery power using the nodes information such as network address, location, and timestamps ("node state information").

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **ospfv3** [*process-id*] **manet peering link-metrics** [*threshold*]
5. **end**

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

Radio-Aware Link-Metrics Tuning for OSPFv3

The RAR-compliant radio reports link-quality metrics to the router that are used by OSPFv3 as link metrics. You can fine-tune to adjust how these radio metrics are used by OSPFv3:

1. Configure how the radio-reported bandwidth, latency, resource, and relative link-quality metrics are converted to an OSPFv3 link cost.
2. Configure a hysteresis threshold on this resultant link cost to minimize the propagation of LSAs that report link-metric changes.

OSPFv3 receives raw radio-link data and computes a composite. In computing these metrics, you should consider these factors (see the figure "OSPF Cost Calculation for VMI Interfaces"):

- Maximum data rate--the theoretical maximum data rate of the radio link, in bytes per second
- Current data rate--the current data rate achieved on the link, in bytes per second
- Resources--a percentage (0 to100) that can represent the remaining amount of a resource (such as battery power)
- Latency--the transmission delay packets encounter, in milliseconds
- Relative link quality (RLQ)--a numeric value (0 to 100) representing relative quality, with 100 being the highest quality

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

An RAR-compliant radio might not advertise link metrics to the router before a new OSPFv3 neighbor is discovered. You can configure OSPFv3 to wait for link metrics before considering a neighbor for OSPFv3 peering. You can specify a minimum metric threshold. If the radio-reported link metric is above this threshold, the neighbor will be held in two-way state. With this configuration, full peering with neighbors with poor link metrics can be effectively prevented.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

21(f): building routing tables based on the route metrics.— Defendant makes, uses, sells, and/or offers to sell a device or system that practices the method of assigning route metrics to the connectivity links using the node state information; and building routing tables based on route metrics.

For instance, based on the computed metrics such as latency, link quality, and remaining resources for the selected paths, a routing table is built using OSPFv3 protocol for each node in the MANET. The routing tables include information about the shortest possible communication paths.

Radio-Aware Link-Metrics Tuning for OSPFv3

The RAR-compliant radio reports link-quality metrics to the router that are used by OSPFv3 as link metrics. You can fine-tune to adjust how these radio metrics are used by OSPFv3:

1. Configure how the radio-reported bandwidth, latency, resource, and relative link-quality metrics are converted to an OSPFv3 link cost.
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- Maximum data rate--the theoretical maximum data rate of the radio link, in bytes per second
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- Relative link quality (RLQ)--a numeric value (0 to 100) representing relative quality, with 100 being the highest quality

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

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Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/15-mt/mob_ntwks-15-mt-book/imo-adhoc-ospfv3-ext.html

A device's collection of LSA data is stored in a link-state database. The contents of the database, when subjected to the Dijkstra algorithm, result in the creation of the OSPF routing table. The difference between the database and the routing table is that the database contains a complete collection of raw data; the routing table contains a list of shortest paths to known destinations via specific device interface ports.

OSPFv3, which is described in RFC 5340, supports IPv6 and IPv4 unicast AFs.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_ospf/configuration/xe-3e/iro-xe-3e-book/ip6-route-ospfv3.pdf, Page 2

This capability requires that a Radio-Aware Routing (RAR)-compliant radio be connected to a device through Ethernet. The device always considers the Ethernet link to be up. If the radio side of the link goes down, the device waits until a routing update timeout occurs to declare the route down and then updates the routing table. The figure below shows a simple device-to-radio link topology.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ntwks/configuration/xe-17-2/mob_ntwks-xe-17-book/imo-manet.html

show ospfv3 [*process-id*] [*address-family*] **border-routers** **Example:** `Device# show ospfv3 border-routers`	Displays the internal OSPFv3 routing table entries to an ABR and ASBR.

Source: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_ospf/configuration/xe-3e/iro-xe-3e-book/ip6-route-ospfv3.pdf, Page 14

23. Additionally, Defendant has been and/or currently are active inducers of infringement of the '085 Patent under 35 U.S.C. § 271(b) and contributory infringer of the '085 Patent under 35 U.S.C. § 271(c).

24. At least as early as August of 2023, Defendant has had actual knowledge of the '085 Patent.

25. Defendant has provided the Accused Products to their customers and, on

information and belief, instructions to use the Accused Products in an infringing manner while being on notice of (or willfully blind to) the '085 Patent and Defendant's infringement. Therefore, on information and belief, Defendant knew or should have known of the '085 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts.

26. Defendant knowingly and intentionally encourages and aid at least its end-user customers to directly infringe the '085 Patent.

27. Defendant' end-user customers directly infringe at least one or more claims of the '085 Patent by using the Accused Products in their intended manner to infringe. Defendant induces such infringement by providing the Accused Products and instructions to enable and facilitate infringement, knowing of, or being willfully blind to the existence of, the '085 Patent. On information and belief, Defendant specifically intend that its actions will result in infringement of one or more claims of the '085 Patent, or subjectively believe that their actions will result in infringement of the '085 Patent, but took deliberate actions to avoid learning of those facts, as set forth above.

28. Additionally, Defendant contributorily infringes at least one or more claims of the '085 Patent by providing the Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '085 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The Accused Products are specially designed to infringe at least one or more claims of the '085 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

29. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '085 Patent was and continues to be willful and deliberate, entitling SCR to enhanced damages.

30. Additional allegations regarding Defendant's knowledge of the '085 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

31. Defendant's infringement of the '085 Patent is exceptional and entitles SCR to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

32. SCR is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '085 Patent.

33. SCR is entitled to recover from Defendant all damages that SCR has sustained as a result of Defendant's infringement of the '085 Patent, including, without limitation, a reasonable royalty.

PRAYER FOR RELIEF

WHEREFORE, SCR respectfully requests:

A. That Judgment be entered that Defendant has infringed at least one or more claims of the '085 Patent, directly and/or indirectly, literally and/or under the doctrine of equivalents;

B. An award of damages sufficient to compensate SCR for Defendant's infringement under 35 U.S.C. § 284, including an enhancement of damages on account of Defendant's willful infringement;

C. That the case be found exceptional under 35 U.S.C. § 285 and that SCR be awarded its reasonable attorneys' fees;

D. Costs and expenses in this action;

E. An award of prejudgment and post-judgment interest; and

F. Such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, SCR respectfully demands a trial by jury on all issues triable by jury.

Respectfully submitted,

Dated: May 9, 2024

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