



CISCO SYSTEMS, INC. Petitioner,
v.
NETSOCKET, INC., Patent Owner

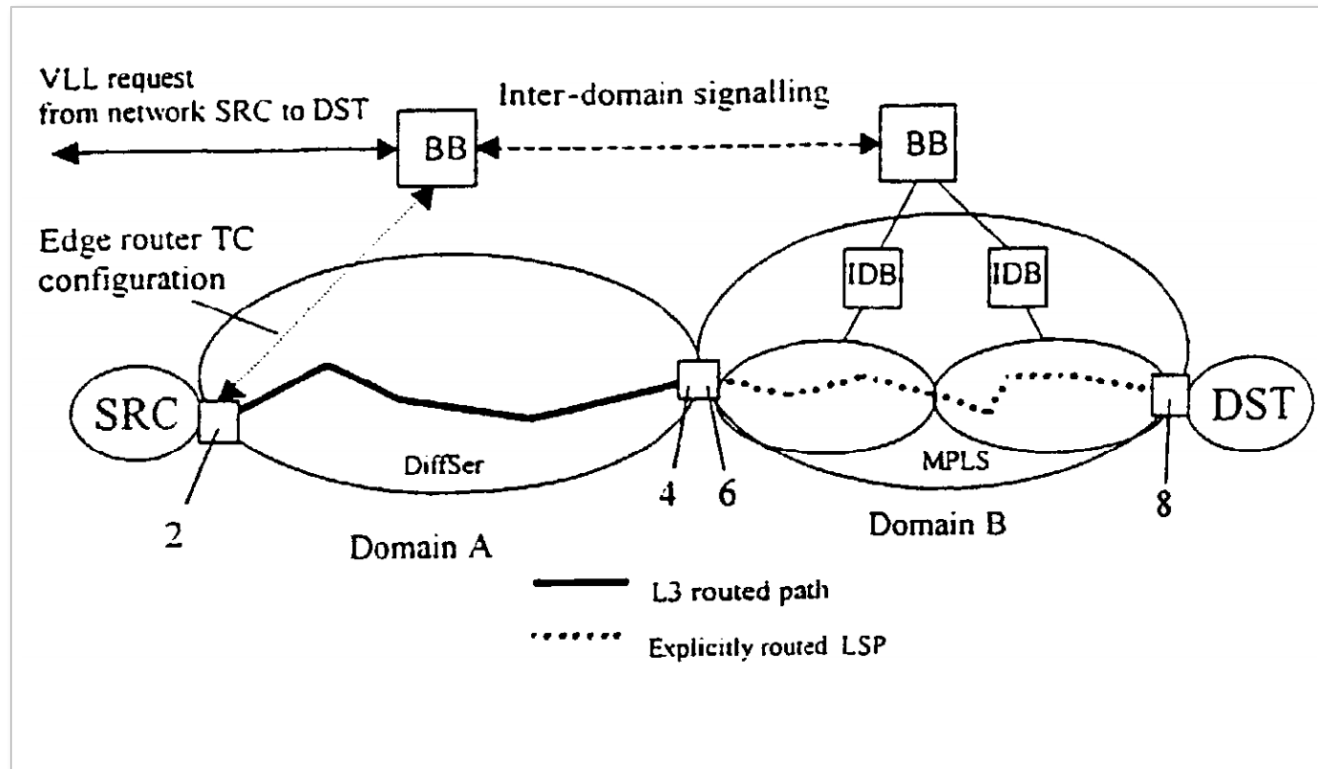
Case No. IPR2023-00607
U.S. Patent No. 7,190,698

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Haynes and Boone, LLP

June 25, 2024



The '698 Patent



Ex.1001, Fig. 4.

1. Method in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL, between a source (SRC) and a destination (DST) in different domains in order to achieve packet transfer between the source (SRC) and the destination (DST), wherein the bandwidth broker (BB) is associated to each network domain and the bandwidth broker (BB) is configured to control a hierarchical routing domain, the method comprises the following steps:

- generate a request from an entity for a Virtual Leased Line, VLL, having a predefined Quality of Service, QoS, from a source network (SRC) to a destination network (DST) and apply the request to a Bandwidth Broker (BB) of a domain A, BB_A , associated to the source network;
 - BB_A establishes the different domains involved to reach the destination network (DST);
 - BB_A directly or indirectly passes requests to all Bandwidth Brokers (BB) of the involved domains regarding a VLL of the predefined QoS from ingress to egress of each domain;
 - each involved bandwidth broker (BB) performs admission control in its domain; v) each involved bandwidth broker (BB) returns a result of the admission control to BB_A that passes it back to the requesting entity and if the request was admitted along all domains between the source (SRC) and the destination (DST) a VLL of the predefined QoS is granted,
- characterized in that step iv) comprises the following step: performing [LSP] Label Switched Path, LSP, setup and passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intra-domain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup.

Ex.1001, Claim 1.

Key Points

1. The prior art teaches a “[m]ethod in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL”
2. The prior art teaches that “the bandwidth broker (BB) is associated to each network domain”
3. The prior art teaches that “ BB_A establishes the different domains involved to reach the destination network (DST)”
4. The prior art teaches “performing [LSP] Label Switched Path, LSP setup, passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intradomain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup”

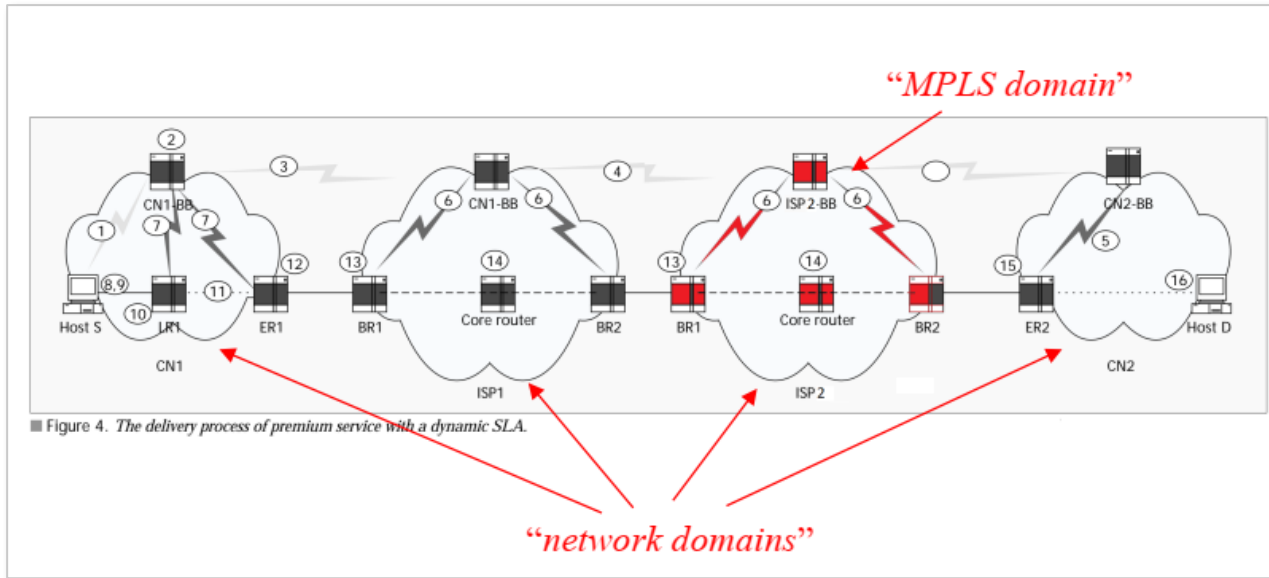
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1. Method in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL, between a source (SRC) and a destination (DST) in different domains in order to achieve packet transfer between the source (SRC) and the destination (DST), wherein the bandwidth broker (BB) is associated to each network domain and the bandwidth broker (BB) is configured to control a hierarchical routing domain, the method comprises the following steps:

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Ex.1001, Claim 1.

Xiao teaches using MPLS together with DiffServ



Ex.1005 (Xiao), Fig. 4; Petition, 23.

MPLS can be used together with differentiated services to provide QoS. In such an architecture, LSPs are first configured between each ingress-egress pair. For LSP(LSR1 → LSR2)

...

Note that, with such schemes, the MPLS effect is confined within the ISPs that use MPLS. Whether a particular ISP's architecture is DS-field-based or MPLS-based is transparent to other ISPs. Therefore, the DS-field based and MPLS-based architectures can easily interoperate.

Ex.1005 (Xiao), 14; Petition, 19-21.

Xiao teaches that MPLS and DiffServ domains provide premium service that supports VLLs

Premium Service — Premium service provides low-delay and low-jitter service for customers that generate fixed peak bit rate traffic. Each customer will have an SLA with its ISP. The SLA specifies a desired peak bit-rate for a specific flow or an aggregation of flows. The customer is responsible for not exceeding the peak rate; otherwise, excess traffic will be dropped. The ISP guarantees that the contracted bandwidth will be available when traffic is sent. Premium service is suitable for Internet telephony, videoconferencing, or for creating virtual lease lines for virtual private networks (VPNs) [33].

Ex.1005 (Xiao),11; Petition, 25.

It would have been obvious to a POSITA that when implementing modified Figure 4 that both DiffServ domain ISP1 and MPLS domain ISP2 would support premium service, including virtual lease lines. For instance, Xiao discloses that with “differentiated services,” the source “host S in CN1...use[s] premium service to send data.” Ex.1005, 10, 12; Ex.1003, ¶148. Additionally, Xiao discloses providing “premium service in an MPLS-based architecture.” Ex.1005, 14. To support premium service in MPLS, Xiao performs packet header processing at the ingress and egress of the MPLS domain ISP. Ex.1005, 14. Because the MPLS domain ingress router receives premium service packets and processes them to be transported across the MPLS domain ISP2, a POSITA would have understood that the MPLS domain ISP2 supports premium service. Thus, in the modified Figure 4 (see element [1.0.1]) both the DiffServ domain ISP1 and MPLS domain ISP2 support premium service. Ex.1003, ¶¶149-150.

Petition, 25-26.

Numerous reasons to combine MPLS and DiffServ domains were presented in the Petition

[1] MPLS can be used together with differentiated services to provide QoS. In such an architecture, LSPs are first configured between each ingress-egress pair. For LSP(LSR1 → LSR2)

...

Note that, with such schemes, the MPLS effect is confined within the ISPs that use MPLS. Whether a particular ISP's architecture is DS-field-based or MPLS-based is transparent to other ISPs. Therefore, the DS-field based and MPLS-based architectures can easily interoperate.

Ex.1005 (Xiao), 14; Petition, 19-21.

- [1] Xiao suggests the combination**
- [2] provide redundancy**
- [3] reduce chance of exceeding peak rates thereby avoiding dropping traffic**
- [4] provide potential cost savings**
- [5] provide service to destinations not directly connected to the same ISP**

[2] 135. It would have been obvious to a POSITA to utilize parallel ISPs in Xiao's Figure 4, as shown above, for redundancy. See Ex.1025, 2-3 ("[A] campus contracts one ISP (or a few for redundancy) to deliver its traffic...to all destinations."); Ex.1035, 8 ("Each major institution [is] connected to other

[3] 136. Another reason to utilize parallel ISPs is to reduce the chance of exceeding peak rates and thereby avoid dropping excess traffic. Xiao explains that the customer must not exceed a peak rate—which is defined by the service level agreement ("SLA")—else the excess traffic would be dropped. Ex.1005, 11 ("The

[4] 137. I also note that a parallel ISP may provide cost savings, in instances where one ISP has a cost structure more favorable. Xiao explains that ISPs provide different levels of service at different prices determined by the customer's SLA.

[5] 141. It would have been obvious to utilize a series of ISP domains to provide service to destinations which are not directly connected to the same ISP domain as the source network. Ex.1025, 3 ("The local ISP in turn contracts its

Ex.1003 (Dr. Houh Declaration), ¶¶ 135-141; Petition, 20-22.

Patent Owner's expert testifies that it was important to connect MPLS and DiffServ together

6 Q. So was it known in the art how to make
7 MPLS and DiffServe domains interoperate?
8 ATTORNEY PYMENTO: Objection. Form.
9 A. I would say this was at a very early --
10 again, dates, I can't specifically tell you which
11 dates. But in this time frame, my general
12 recollection is that this was an evolution, a very
13 early time. And so MPLS was very important
14 technology, and so people -- but it wasn't used
15 perhaps in the local area or, say, within the
16 enterprise networks or campus networks, but it was
17 important to make those networks interoperate or
18 to -- or it was important to connect, interconnect
19 them.

Ex.1045 (Dr. Congdon Deposition), 51:6-19; Reply, 10.

Patent Owner Sur-Reply untimely new argument is improper

“A sur-reply may only respond to arguments raised in the corresponding reply.”

37 C.F.R. § 42.23(b); *Google LLC v. Uniloc 2017 LLC*, IPR2020-00447, Paper 24 at 13–14 (PTAB May 11, 2021).

What matters is the remaining claim language that the interoperation allows “establish[ing] a virtual leased line, VLL,” between a source (SRC) and a destination (DST) in different domains in order to achieve packet transfer between the source (SRC) and the destination (DST).” Xiao does not show any details or results of the interoperation beyond the paltry two sentences that describe the possibility of interoperation. In fact, Xiao states the limitations of the prior art interoperation,

Patent Owner Sur-Reply, 8.

Patent Owner Sur-Reply argues for the first time that what matters is “establish[ing] a virtual leased line, VLL,” which was never argued in the Response.

Key Points

1. The prior art teaches a “[m]ethod in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL”
2. The prior art teaches that “*the bandwidth broker (BB) is associated to each network domain*”
3. The prior art teaches that “ BB_A establishes the different domains involved to reach the destination network (DST)”
4. The prior art teaches “performing [LSP] Label Switched Path, LSP setup, passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intradomain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup”

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Ex.1001, Claim 1.

The Xiao and Schelen-1 teach that each network domain has a bandwidth broker to perform admission control

A BB can be a host, a router, or a software process on an exit router. It is configured with the organizational policies and manages the resources of a domain. A domain may also have backup BBs. Since all hosts must cooperate to share a limited amount of resources specified by the SLA, it is technically better to have a BB to allocate resources.

Ex.1005 (Xiao), 11; Petition, 28-29.

For a dynamic SLA, resource allocation is closely related to the signaling process. The BB in the customer domain uses RSVP to request resources from its ISP. At the ISP side, admission control decisions can be made in a distributed manner by the boundary routers, or centrally by a BB. If boundary

Ex.1005 (Xiao), 12; Petition, 28-29.

We propose an architecture where clients can make advance reservations through agents. For each routing domain in the network there will be an agent responsible for admission control on behalf of the routers in the domain. Requests involving several routing do-

Ex.1032 (Schelen-1), 451; Petition, 29.

Gibson's admission manager corresponds to a "*bandwidth broker*" associated with the MPLS domain

7:1-28, 7:46-48, Fig. 1. A POSITA would have understood that Gibson's admission manager, which is part of the management layer, maintains network topology, and provides admission control, corresponds to a "*bandwidth broker*," as construed. Claim Construction Section VII.A; *see also* analysis at [1.4] and [5.1]; Ex.1003, ¶¶162-163.

Petition, 29.

Referring again to FIG. 1, it can be seen that the admission managers 30, 31 and the connection managers 32, 33, 34 as well as the administrative server 35 are depicted above the MPLS network. The admission managers, connection managers and administrative server can be thought of as a "management layer" of the communications network.

Ex.1006 (Gibson), 6:11-16; Petition, 29.

Each admission manager is responsible for maintaining network topology information and using this to select a route across the network. When an admission manager receives a

...

communications network.) In this way an admission manager effectively provides admission control to the communication network. Communication between an admission

Ex.1006 (Gibson), 7:26-48; Petition, 29.

Both experts agree that an entity that provides admission control is a bandwidth broker

60. Thus, a POSITA would have understood that term “*bandwidth broker*” includes entities that manage policies for resources by, for example, maintaining database of resources, providing admission control, configuring the network, and communicating with neighboring bandwidth brokers to allocate resources across multiple domains.

Ex.1003 (Dr. Houh Declaration), ¶60; Petition, 11.

1 A. Yeah. So in April 2000 time frame, a
2 bandwidth broker was some -- again, some kind of
3 entity, say -- let's say a software entity or a
4 software running on a hardware entity that was
5 responsible for managing resource allocations,
6 doing admission control and managing resource
7 allocations in a domain or in a local area network.
8 Again, depending on the scope of the bandwidth
9 broker, you could have multiple of those within a
10 network domain.

Ex.1045 (Dr. Congdon Deposition), 40:1-10; Reply, 14.

Numerous reasons to implement a bandwidth broker in the MPLS domain were presented in the Petition

[1]

A BB can be a host, a router, or a software process on an exit router. It is configured with the organizational policies and manages the resources of a domain. A domain may also have backup BBs. Since all hosts must cooperate to share a limited amount of resources specified by the SLA, it is technically better to have a BB to allocate resources.

Ex.1005 (Xiao), 11; Petition, 28-29.

For a dynamic SLA, resource allocation is closely related to the signaling process. The BB in the customer domain uses RSVP to request resources from its ISP. At the ISP side, admission control decisions can be made in a distributed manner by the boundary routers, or centrally by a BB. If boundary

Ex.1005 (Xiao), 12; Petition, 28-29.

- [1] Xiao suggests the combination
- [2] provide admission control
- [3] scaling benefits
- [4] minimizing reservation state and overhead

[2]

166. Also, in view of Schelen-1 and Gibson, it would have been obvious to associate a bandwidth broker with Xiao's MPLS ISP domain in modified Figure 4, to provide admission control within that network domain. Additionally, it was known that having a bandwidth broker associated with each domain provides scaling benefits. *See e.g.*, Ex.1025, 1 ("[H]aving a **Bandwidth Broker (BB)** as the **resource manager for each domain ... scale[s] well** in the global, heterogeneous Internet."); Ex.1011, 17 ("For each routing domain in the network there is a [bandwidth broker] responsible for admission control in the domain...with **favorable scalability properties.**"). Thus, a POSITA would have been motivated apply the bandwidth broker teachings of Schelen-1 and Gibson such that a bandwidth broker is associated with each of Xiao's domains (including the MPLS domain) to provide admission control and to obtain scaling benefits.

[4]

167. Additionally, it was known that associating a bandwidth broker with each domain allows for "**minimiz[ing] reservation state and admission control overhead**" since "reservations from different sources to the same destination domain are aggregated in agents as their paths merge toward the destination."

Ex.1003 (Dr. Houh Declaration), ¶¶166-167; Petition, 30-31.

Patent Owner's expert testifies that it was recognized as desirable to use a bandwidth broker

21 Basically, it was recognized that it was
22 technically desirable to have been a bandwidth
23 broker to allocate resources, to provide quality of
24 service, scaling, and interoperable solutions. Is
25 that correct?

2 A. Yeah, that's -- that's an important aspect
3 of it. I mean -- yes. I mean, that's a true
4 statement. I guess the -- clearly, the motivation
5 was to continue -- in general, the motivation for
6 quality of service over the internet was to provide
7 service for applications that require -- had
8 different requirements at the time. So, you know,
9 things like voice calls, voice and video over the
10 internet, it was believed that we needed special
11 service, quality of service for those applications
12 to communicate.

Ex.1045 (Dr. Congdon Deposition), 42:21-43:12; Reply, 11-12.

Key Points

1. The prior art teaches a “[m]ethod in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL”
2. The prior art teaches that “the bandwidth broker (BB) is associated to each network domain”
3. The prior art teaches that “ BB_A establishes the different domains involved to reach the destination network (DST)”
4. The prior art teaches “performing [LSP] Label Switched Path, LSP setup, passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intradomain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup”

The '698 Patent

1. Method in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL, between a source (SRC) and a destination (DST) in different domains in order to achieve packet transfer between the source (SRC) and the destination (DST), wherein the bandwidth broker (BB) is associated to each network domain and the bandwidth broker (BB) is configured to control a hierarchical routing domain, the method comprises the following steps:

- i) generate a request from an entity for a Virtual Leased Line, VLL, having a predefined Quality of Service, QoS, from a source network (SRC) to a destination network (DST) and apply the request to a Bandwidth Broker (BB) of a domain A, BB_A , associated to the source network;
 - ii) BB_A establishes the different domains involved to reach the destination network (DST);
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Ex.1001, Claim 1.

Xiao teaches that CN-1 bandwidth broker “establishes the different domains involved”

Service level agreement (SLA)

A service contract between a customer and a service provider that specifies the forwarding service a customer should receive. A customer may be a user organization or another provider domain (upstream domain).

Ex.1005 (Xiao), 9; Petition, 40.

Based on SLA information, Xiao teaches that the bandwidth broker CN1-BB signals its ISP domain to request services for external communications. Ex.1005, 12; *see also* Ex.1005, 12 (“In Fig. 4, host S in CN1 wants to use premium service to send data to host D in CN2. CN1 has a dynamic SLA with ISP1...Host S sends an RSVP PATH message to the local BB, CN1-BB...CN1-BB sends the PATH message to ISP1-BB.”). It would have been obvious to a POSITA that for the bandwidth broker CN1-BB to send the PATH message to the bandwidth broker ISP1-BB of the ISP1 domain, the bandwidth broker CN1-BB would have established that the ISP1 domain was involved to reach the domain of the destination corporate network CN2. Ex.1003, ¶¶208-209.

Premium Service — Premium service provides low-delay and low-jitter service for customers that generate fixed peak bit rate traffic. Each customer will have an SLA with its ISP. The SLA specifies a desired peak bit-rate for a specific flow or an aggregation of flows. The customer is responsible for not exceeding the peak rate; otherwise, excess traffic will be dropped. The ISP guarantees that the contracted bandwidth will be available when traffic is sent. Premium service is suitable for Internet telephony, videoconferencing, or for creating virtual lease lines for virtual private networks (VPNs) [33].

Ex.1005 (Xiao), 10-11; Petition, 40.

Petition, 40; *see also* Petition 40-43.

Patent Owner does not address Xiao's teachings

Since Petitioner fails to show how the combination of Xiao, Schelen-1, and Gibson discloses, teaches, or suggests “wherein the bandwidth broker (BB) is associated to each network domain,” it therefore cannot disclose, teach, or suggest “BB_A establishes the different domains involved to reach the destination network (DST).” *See supra* Sections VI.A.1 and VI.A.2; Ex. 2004, ¶ 46.

Patent Owner Response, 17-18; Reply, 15.

Schelen-1 teaches that the bandwidth broker “*establishes the different domains involved*”

A reservation agent is a host that is responsible for reserving resources on a part of the Internet. Typically there is one reservation agent responsible for each autonomous system (AS) in the Internet (an AS is an administrative domain containing a number of routers running a routing protocol internally). Such reservation agents advertize themselves periodically on a well known multicast address, giving their identity and which routing domain (AS) they are responsible for.

Ex.1032 (Schelen-1), 452; Petition, 43-44.

In view of Schelen-1’s disclosure, it would have been obvious to a POSITA for each of the bandwidth brokers associated with Xiao’s domains (see [1.0.3]) to communicate via a multicast address. This would allow for each bandwidth broker to establish the existence of all other bandwidth brokers and their respective domains. With this information, in the present example, the customer domain bandwidth broker CN1-BB would become aware of the involved bandwidth brokers (ISP1-BB, ISP2-BB, CN2-BB) and which domains they are responsible for (DiffServ domain ISP1, MPLS domain ISP2, and destination customer domain CN2), so that a PATH message request may be sent to reserve ISP resources

Petition, 43-44.

Patent Owner's implicit construction is meritless

Schelen-1 does not remedy the deficiencies of Xiao. *Id.*, ¶ 47. As a preliminary matter, a person of ordinary skill in the art would understand that Schelen-1 does not describe that one bandwidth broker, BB_A “establishes the different domains involved to reach the destination network (DST)” but that every reservation agent in Schelen-1 must work *together*.

Patent Owner Response, 18.

words, Petitioner admits that Schelen-1 only discloses each bandwidth broker establishing their own domain and communicating with each other. But the claim language explicitly recites that *one BB*, BB_A, establishes *all the different domains* required to reach the destination network.

Patent Owner Sur-Reply, 13.

Patent Owner contends that Schelen-1's teaching is insufficient because “every reservation agent in Schelen-1 must work *together*.” Resp. 18 (emphasis in original). This argument is meritless. Patent Owner does not identify a claim limitation that precludes a bandwidth broker from communicating with other bandwidth brokers on a multicast address to establish the different domains involved. Ex.1046, ¶16.

Reply, 16.

Key Points

1. The prior art teaches a “[m]ethod in a packet based communication network including network domains, wherein at least one domain is a Multiprotocol Label Switching MPLS domain, to establish a virtual leased line, VLL”
2. The prior art teaches that “the bandwidth broker (BB) is associated to each network domain”
3. The prior art teaches that “ BB_A establishes the different domains involved to reach the destination network (DST)”
4. The prior art teaches “performing [LSP] Label Switched Path, LSP setup, passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intradomain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup”

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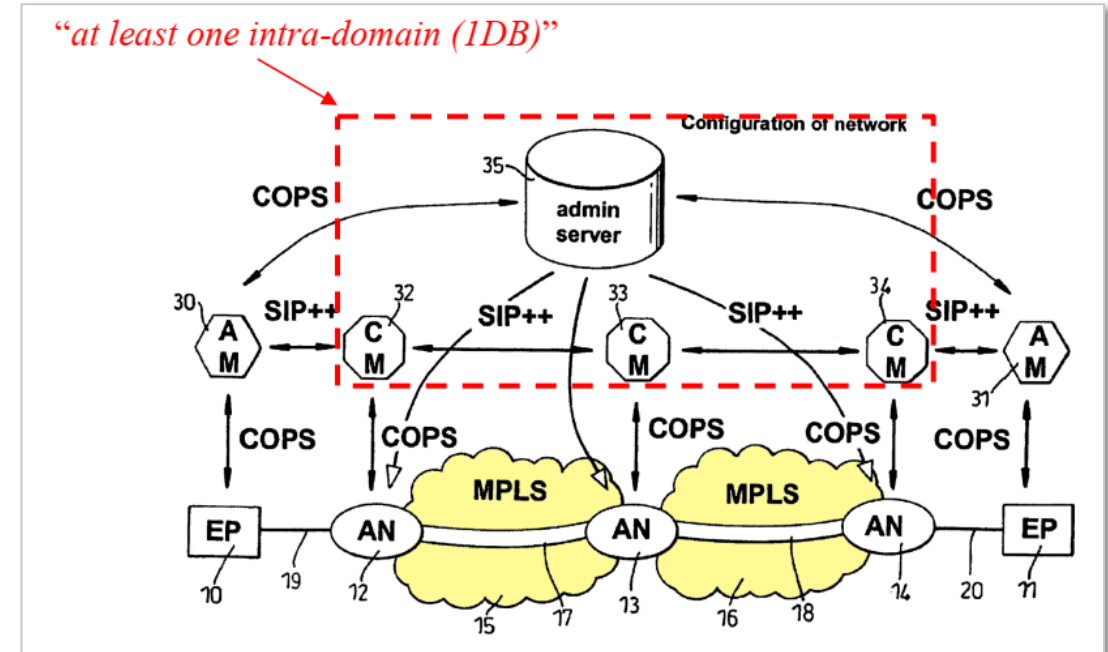
characterized in that step iv) comprises the following step:
performing [LSP] Label Switched Path, LSP, setup and passing resource requests from the Bandwidth Broker (BB) to at least one intra-domain (IDB), wherein each intra-domain broker (IDB) is responsible for admission control and the Label Switched Path, LSP, setup.

Ex.1001, Claim 1.

Gibson's administrative server and connection managers correspond to an “*intra-domain broker*”

Accordingly, Gibson's administrative server (an MPLS traffic engineering server that manages policy, has topology information, and sets up LSPs) and connection manager (an administrative entity that manages policy, has topological information, sets up LSPs, and performs admission control within its MPLS area) together render obvious “*at least one intra-domain (IDB)*.” Ex.1003, ¶269.

Petition, 60.



Ex.1006 (Gibson), Fig. 1; Petition, 58.

one. Although pictured as a single entity in FIG. 1, an administrative server 35 may take the form of multiple servers that administer their local area.

Ex.1006 (Gibson), 8:22-24; Petition, 59.

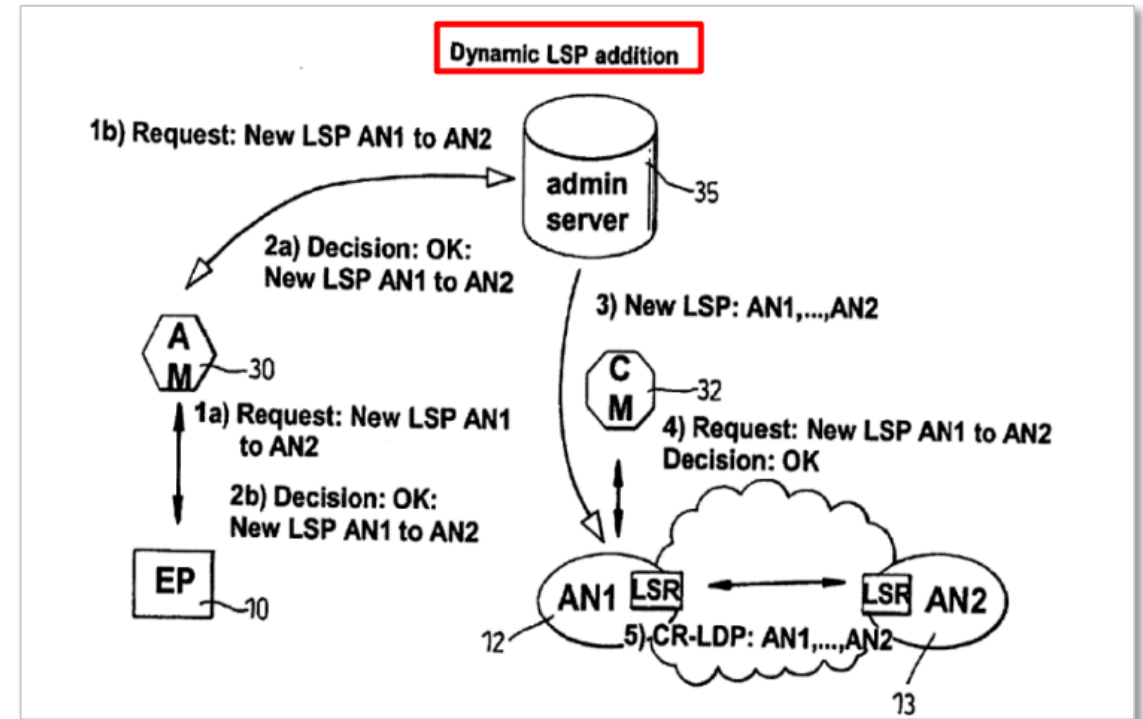
Xiao and Gibson teach performing “*LSP setup*”

Second, Xiao discloses that “[w]ith MPLS, LSPs are set up between each ingress-egress pair.” Ex.1005, 17. The “LSP setup can be...data-driven (i.e., triggered by the request of a flow or traffic trunk).” Ex.1005, 13. It would have been obvious to POSITA that because the LSP set up may be triggered by the request, the LSP set up is performed, at least in part, when the bandwidth broker performs admission control in response to the request (*see* [1.4]). Thus, Xiao renders obvious “*that step iv) comprises the following step: performing [LSP] Label Switched Path, LSP, setup.*” Ex.1003, ¶253.

Petition, 54.

In the context of the above figure, Gibson discloses that the administrative server works with a connection manager to set up “a new LSP,” in response to the admission manager’s request. Ex.1006, 8:55-9:10; *see also* Ex.1006, 8:11-14 (“...registration of new label switch paths...”); Ex.1003, ¶257.

Petition, 55.



Ex.1006 (Gibson), Fig. 2; Petition, 55.

Patent Owner's expert testifies that dynamic LSP addition teaches performing "*LSP setup*"

24 Would a prior art teaching of dynamic
25 addition of a new LSP path be sufficient to teach
1 performing LSP setup as recited in Claim 1?
2 ATTORNEY PYMENTO: Objection. Form.
3 A. Well, provided it contains the additional
4 limitations, wherein each intradomain broker is
5 responsible for admission control. So it has to do
6 with admission control as well. I mean, there's
7 additional limitations to the claim than just doing
8 the LSP setup. But if it did those other
9 limitations, then, yeah, that would be the case.

Ex.1045 (Dr. Congdon Deposition), 71:24-72:9; Reply, 23.

Patent Owner's expert testifies that the intra-domain broker performs the "*LSP setup*"

14 Q. Do you have an understanding in the
15 context of the claim which entity is performing the
16 LSP setup?

17 A. As the claim is stated, it's the -- that
18 there's a request from a bandwidth broker to at
19 least one intradomain, 1DB, or IDB, intradomain
20 broker, where each intradomain broker is
21 responsible for admission control and
22 label-switched path setup.

23 So the intradomain broker is ultimately
24 performing the setup, at least one.

Ex.1045 (Dr. Congdon Deposition), 68:14-24; Reply, 22.

Patent Owner's argument about Gibson's COPS interface is meritless

Pet. at 57; Ex. 2004, ¶ 66. However, Gibson's administrative server cannot be an intra-domain broker since "[t]he Administrative Server 35 has a COPS interface to all the admission managers at the edge of the network." Ex. 1006, 8:49-50; Ex. 2004,

Patent Owner Response, 26-27.

across heterogeneous domains. For MPLS networks the LSP set-up mechanism used in [RATES] is used. This includes setting up FEC-associations in MPLS edge-devices and to distribute labels for LSP-set-up in the MPLS core-devices. For DiffServ networks all that is

Ex.1001, 6:60-64; Reply, 24.

Patent Owner provides no explanation or evidence that communicating via a COPS interface renders Gibson's administrative server incapable of being an "intra-domain broker." The evidence is entirely against Patent Owner's position since the '698 patent describes an intra-domain bandwidth broker using RATES, which performs LSP set up using COPS. Ex.1001, 6:60-64 ("For MPLS networks the LSP set-up mechanism used in [RATES] is used"); Ex.1016, 9 ("RATES has

Reply, 24.

ingress router. Given that RATES needs COPS extensions to be implemented at the ingress routers for LSP set-up, provision of classifiers has been bundled into COPS extensions. This has the additional advantage

Ex.1016 (RATES), 9; Reply, 24.



The bridge to possible

