PPVPN Interworking

<draft-kurakami-ppvpn-interworking-00.txt>

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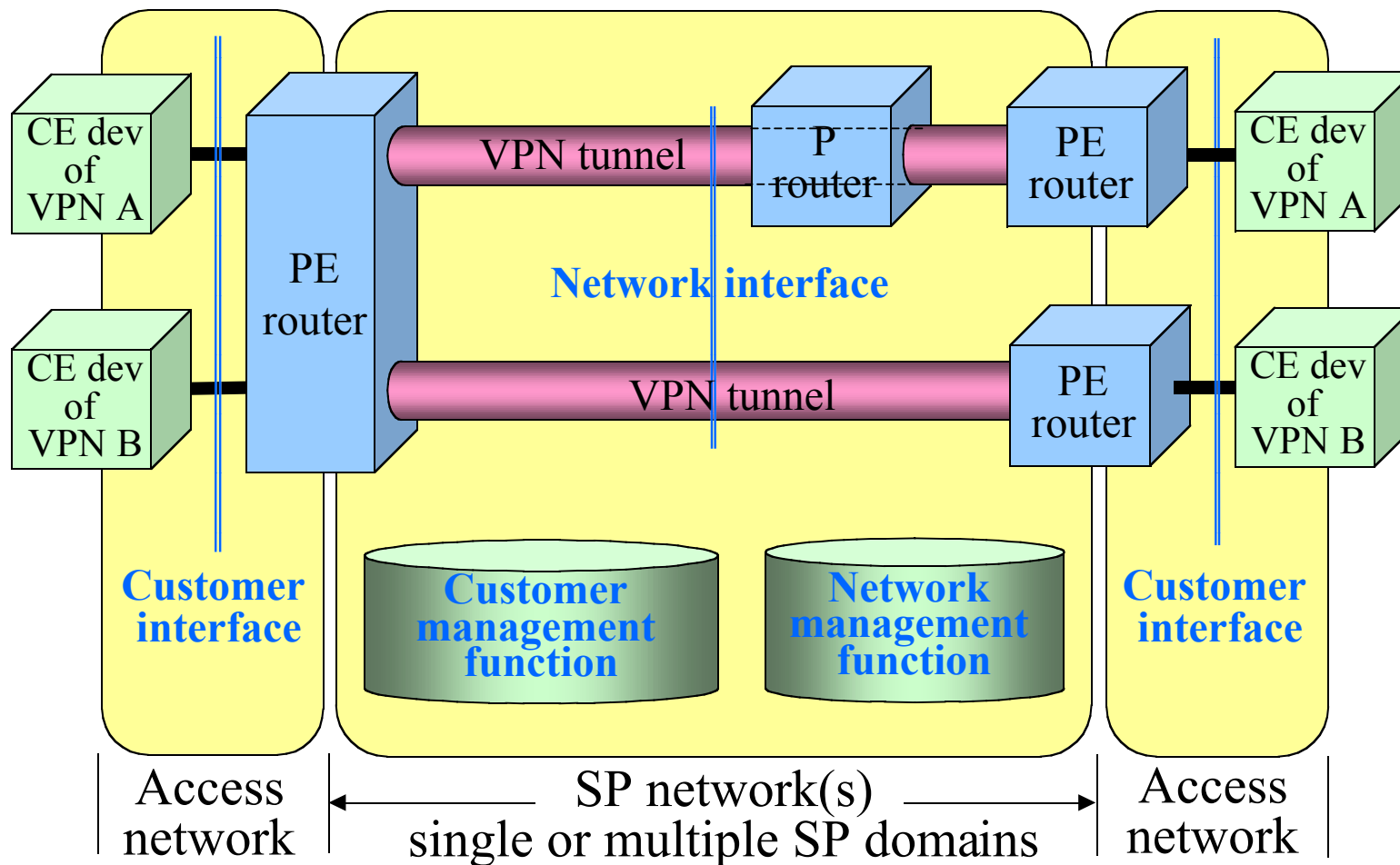Junichi Sumimoto, Muneyoshi Suzuki
NTT

Why PPVPN Interworking?

- Various technical approaches are already on the market. Defining and specifying a limited number of approaches (BGP-VPN, VR, IPsec VPN, L2-VPN) as well as achieving interoperability within each approach are included in the working items of the ppvpn WG.

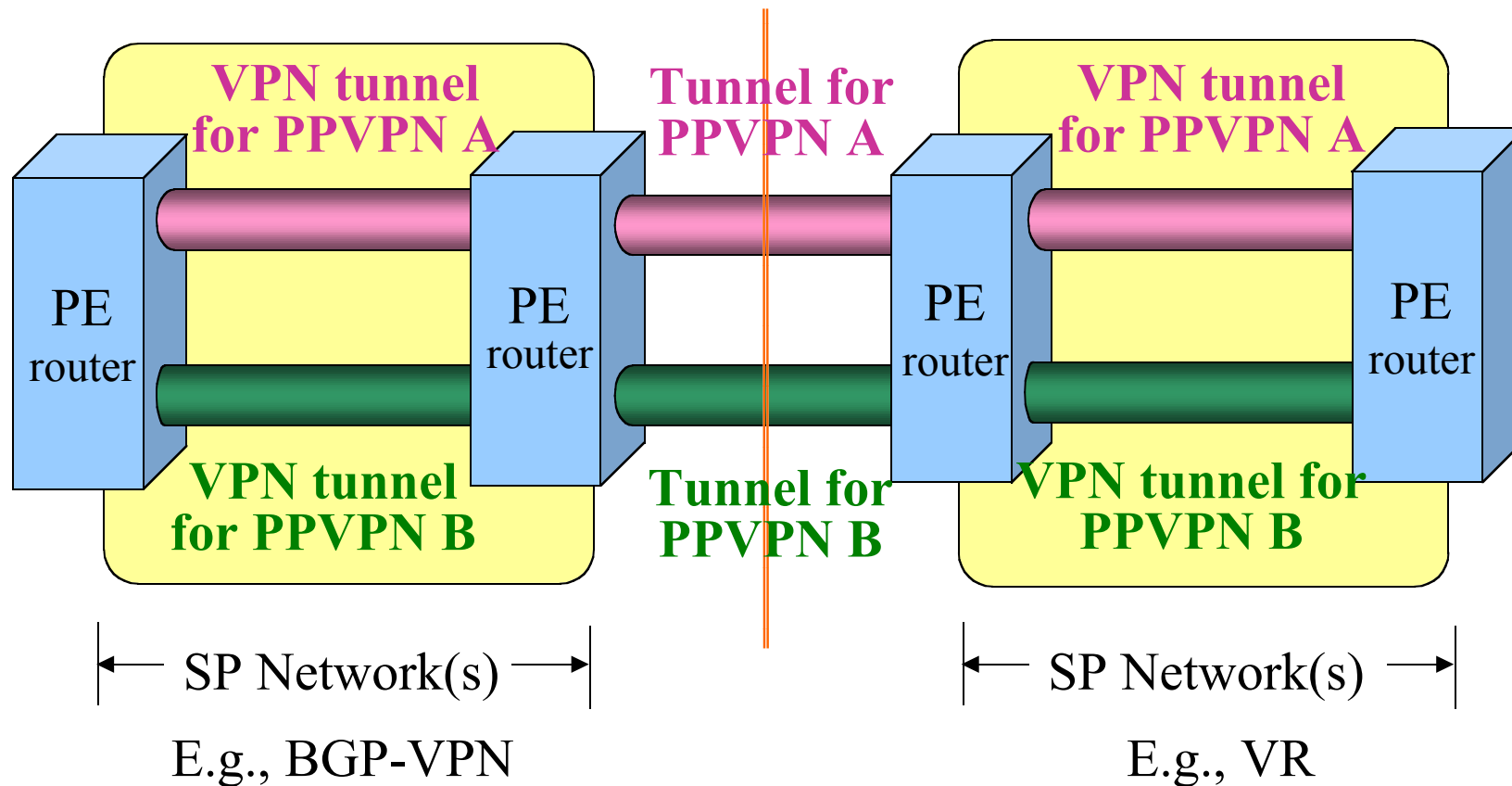- Inter-AS VPN interconnections are explicitly stated to be considered in ppvpn WG.

- From the SPs' point of view, multi-vendor PPVPN interworking among different approaches must be supported since it significantly increases flexibility in deploying PPVPN.

Reference Model for Layer 3 NBVPN

CE dev of VPN A

CE dev of VPN B

PE router

Network interface

VPN tunnel

P router

PE router

PE router

VPN tunnel

PE router

CE dev of VPN A

CE dev of VPN B

Customer interface

Customer management function

Network management function

Customer interface

Access network

SP network(s)
single or multiple SP domains
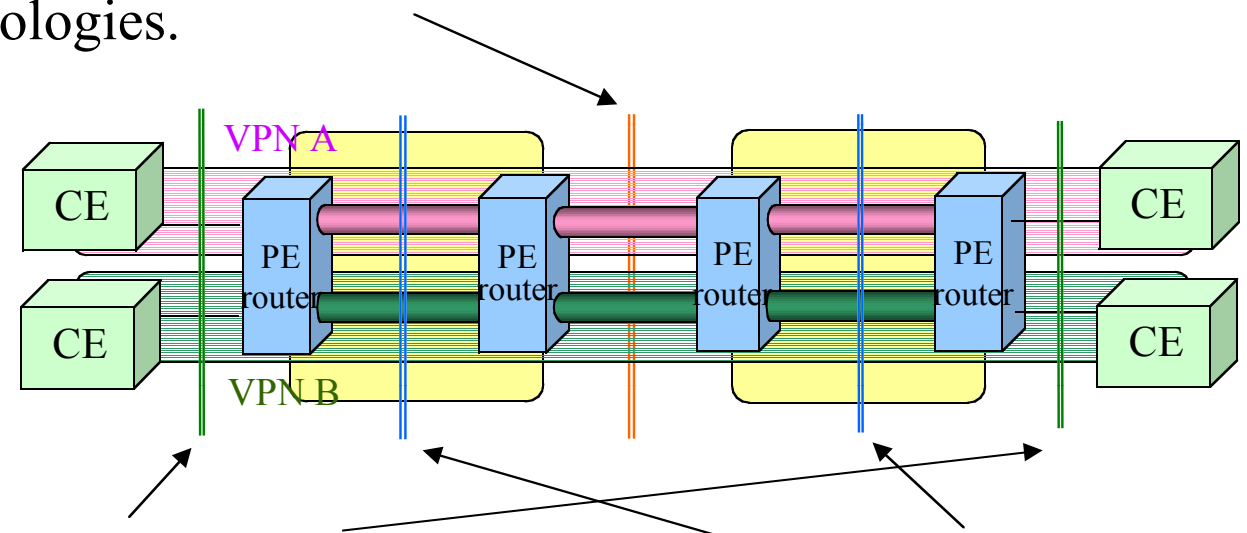
Access network

Interworking Interface

**Interworking interface to which the
proposed method is to be applied**

Difference among three types of interfaces

Interworking interface:
Supported by a kind of tunnels, which are located on interconnections among SP networks based on different technologies.

VPN A

CE

CE

PE router

PE router

PE router

PE router

CE

CE

VPN B

Customer interface:
Supported by access links, each of which does not necessarily have an identifier of VPN.
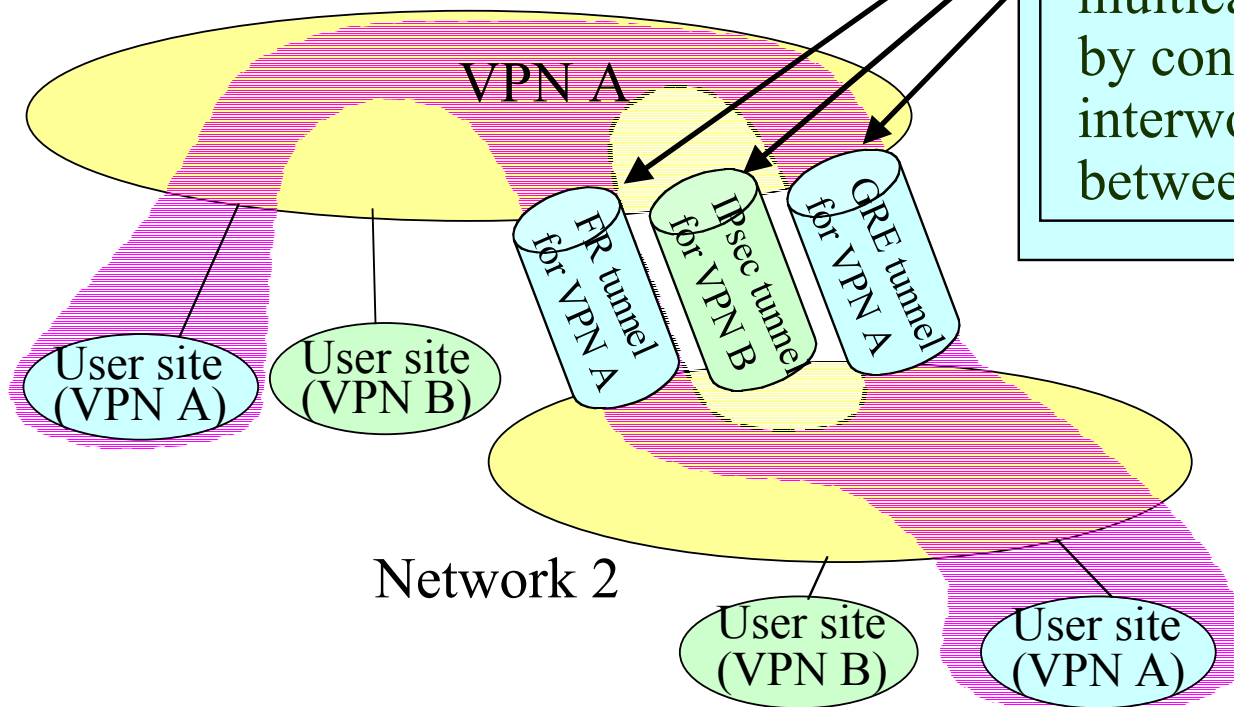
Network interface:
Supported by VPN tunnels, which are not located in interconnections among SP networks based on different technologies.

Overview of Proposed Method

GRE, IPsec, Frame relay, or ATM AAL5 is used at the interworking interface.

Network 1

VPN A

FR tunnel for VPN A

IPsec tunnel for VPN B

GRE tunnel for VPN A

User site (VPN A)

User site (VPN B)

Network 2

User site (VPN B)

User site (VPN A)

- Each connection (tunnel) is mapped to one VPN.
- Both data packets and routing packets (unicast, multicast) are transferred by connections for VPN interworking as tunnels between PE routers.

- Security/privacy (CUG)
- Quality of service
- Extranets (NAT, filtering)
- Dynamic routing
- Multicasting

are supported.

Summary and Follow-up

- From the SPs' point of view, PPVPN interworking among different approaches is strongly demanded.

- The interworking interface, that is different from the customer/network interface, should be considered.

- Proposed simple method using GRE, IPsec, Frame relay, or ATM AAL5 for interworking connections which satisfies the typical VPN service requirements.

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- We hope that PPVPN interworking will become a working item of ppvpn WG.