

Service Requirements for Provider Provisioned Virtual Private Networks (PPVPN)

draft-ietf-ppvpn-requirements-00.txt

Presented by Dave McDysan

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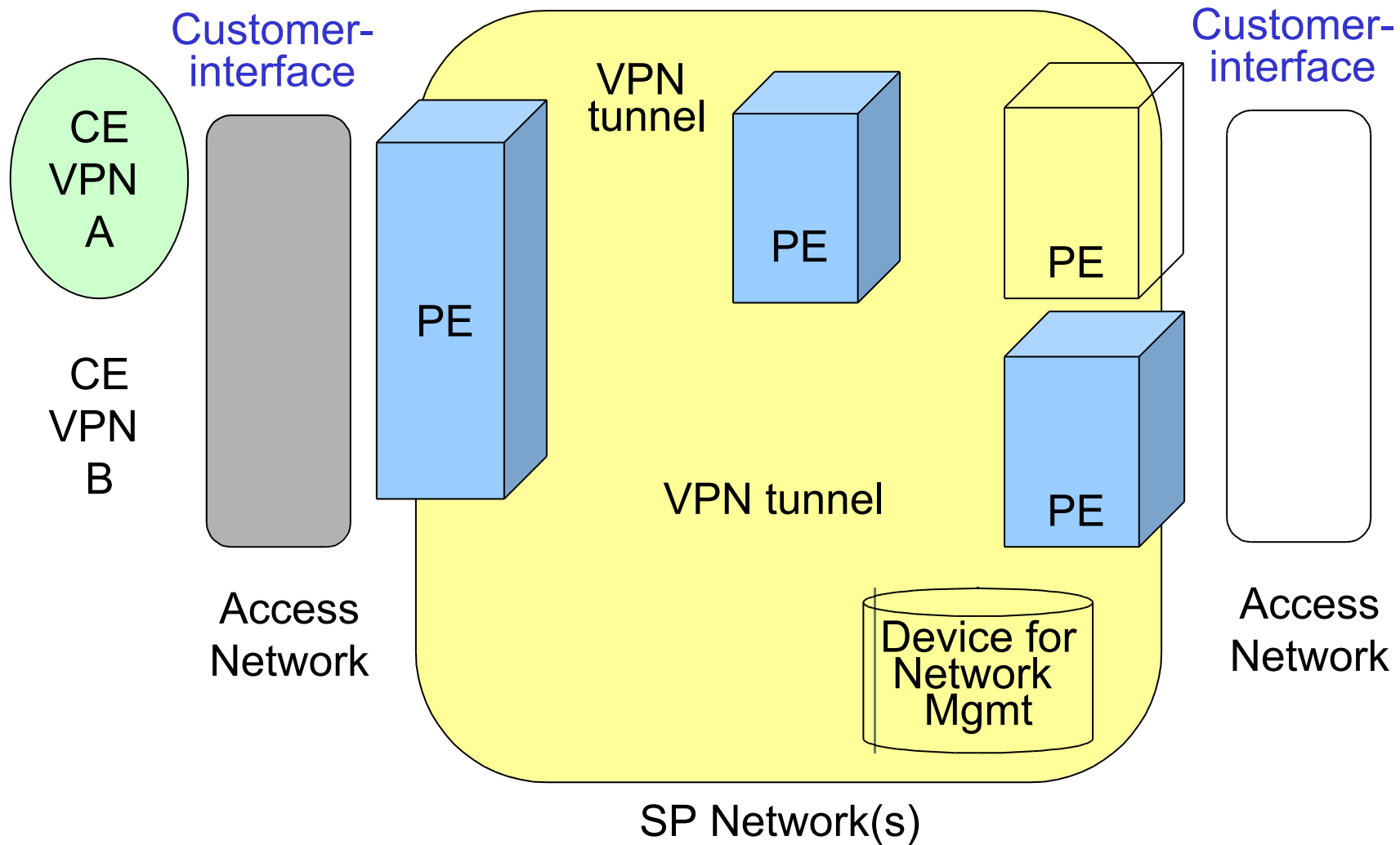
Objectives of Document

- Define terminology
- Identify requirements applicable to a number of approaches
- Provide a “checklist” to evaluate applicability of individual approaches
- Categorized requirements as:
 - General
 - Customer-driven
 - Service provider driven
- Many requirements taken from Y.1311, Y.1311.1 (Requires review/ validation by ppvpn WG)
 - <http://nbvpn.francetelecom.com/ituRelated.html>

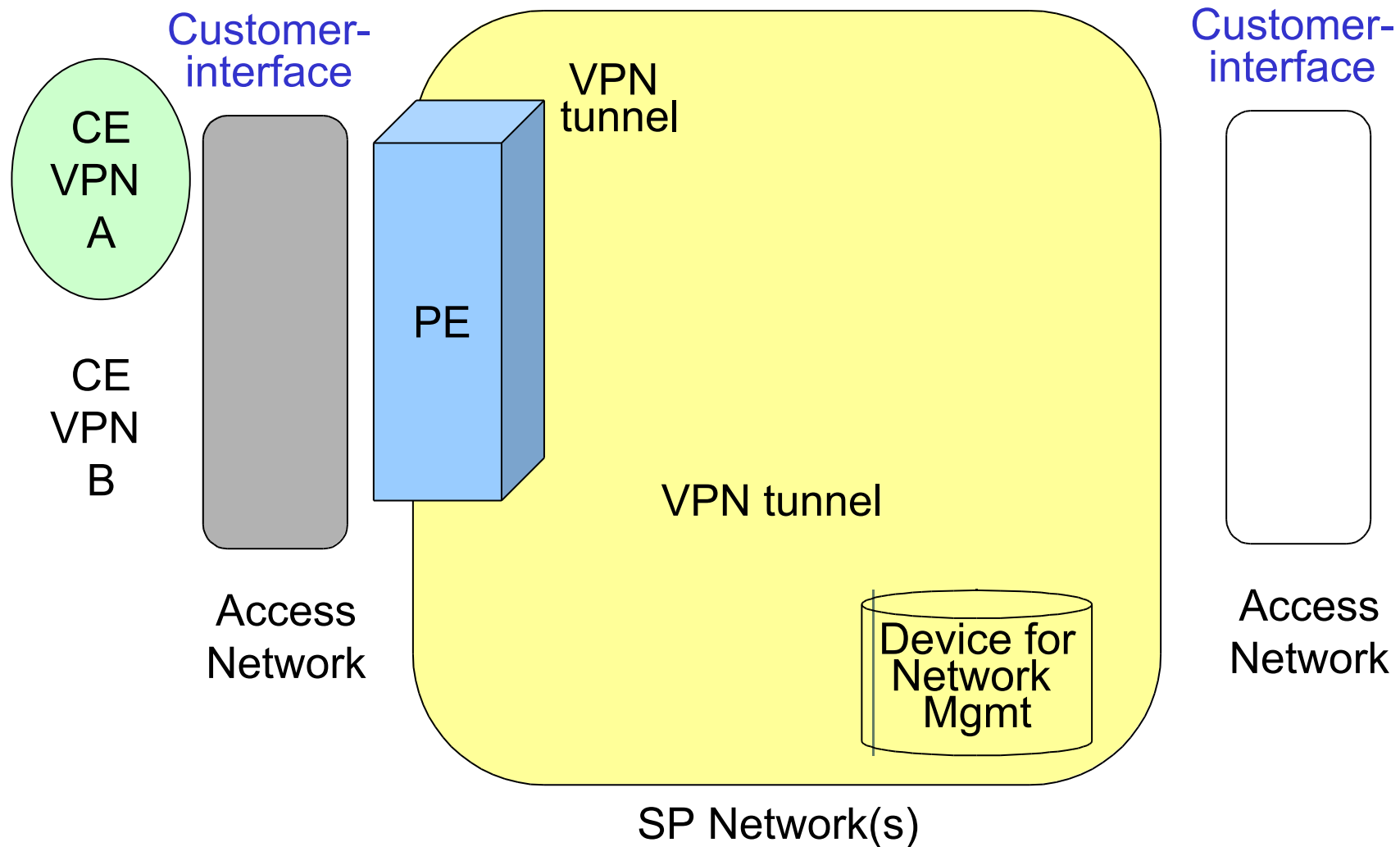
Definitions and Terminology

- “Private” in VPN used in ownership sense
- Customer/organization/subscriber is a set sites
- Intranet is sites of single customer
- Extranet is sites of multiple customers
- Layered VPN Services: L2 and L3
- Customer (facing) Equipment (CE) device
- Provider (facing) Edge (PE) switch/router
- VPN Tunnels
 - L3: MPLS, GRE, IPsec, (add IP/IP)
 - L2: FR, ATM, MPLS, Ethernet VLAN?

Reference Model for CE-Based VPNs



Reference Model for Network-Based VPNs



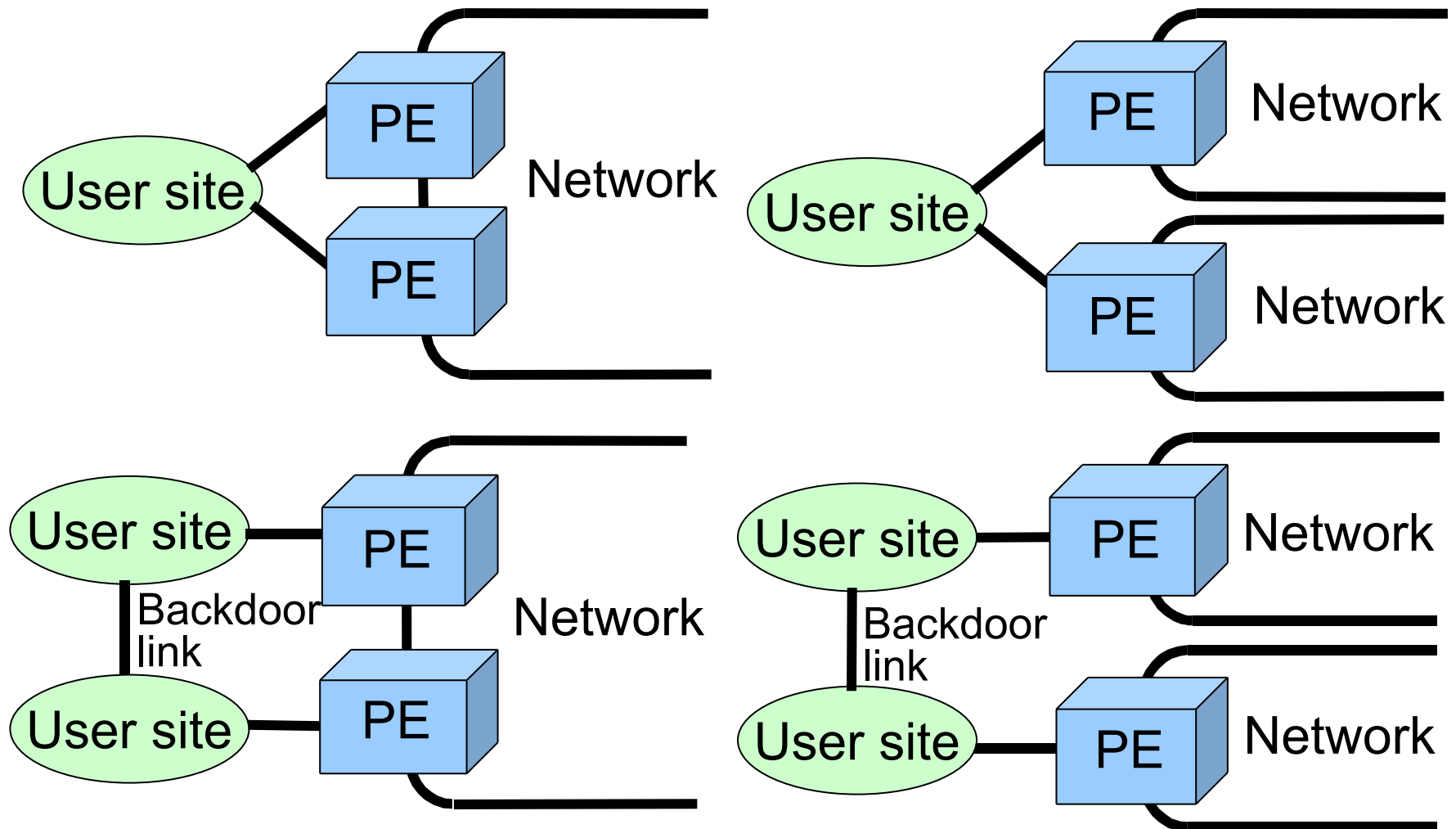
General Requirements

- Support arbitrary topology
- Constrained distribution of data and routing information
- Support overlapping IP addresses
- Security for data, routing, & access
- Management of service, resources
- Interoperability within same solution
- Interworking between solutions desirable

Customer Requirements

- Service provider independence
- Support unicast and multicast traffic
- No restriction on CE routing protocol
- Service Level Agreement support
- Customer management
- Security & Integrity
- Minimal migration impact
- Dedicated and dial-in access
- Internet reachable over VPN access network
- Hybrid VPN scenarios desirable

Examples of Dual-homing Arrangements



Service Provider Requirements

- Scalability: VPNs, sites per VPN, routes per VPN, change rate
- Learn VPN membership dynamically
- Service Level Agreements and Specs
- Quality of service support
- Inter-AS (SP) support
- Isolation of traffic and processing
- Tunneling mechanism independence
- Backbone technology independence
- Provide protection & restoration options

Service Provider Requirements (continued)

- Support carrier's carrier (i.e., ppvpn wholesale)
- Management: At least FCAPS
- Support for migration between solutions
- Isolation, security, authentication & identification
- Provisioning routing, access, security
- Provide access to value-added services
- Interoperability between vendors
- Interworking between solutions

Next Steps

- Resolve overlap in outline & content, fill in TBDs
- Clean up editorial comments
- Clearly state MUST, MAY, SHOULD
- Continued alignment with framework
- Please comment on nbvpn (ppvnp) Email exploder
 - What is missing?
 - What is over specified?
 - Help resolve OPEN ISSUES in document
- WG charter goal is submission to IESG for consideration as Informational RFC after August 2001 meeting

OPEN ISSUES

- Precise definition of Port-Based (L2) VPNs
 - Are Ethernet VLAN services within scope?
 - Are only L2 VPNs implemented over IP(MPLS) in scope? Native FR & ATM networks out of scope.
- Precise definition of CE and PE
- Align definitions with framework (See 2.x)
- Give timeframe AND numerical scaling (See)
- Which identifiers are needed? (See 5.3)
- What items are important in SLAs? (See 5.5)

OPEN ISSUES

- How should QoS be spec'd? (See 5.6)
- Agree on Management rqmts (See 5.14)
 - Detail service creation & provisioning?
 - Move policy-mgmt to framework doc?
 - Need information model requirements
- Include other Tunneling Technologies?
 - IP/Optical, IP/Switched Circuit