



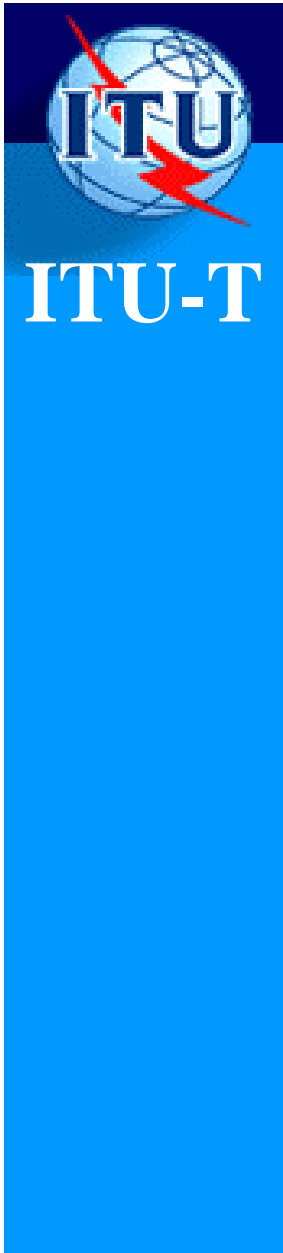
International Telecommunication Union



The Future Packet-Based Network - Issues & Questions

Keith Dickerson
Head of Standards, BT

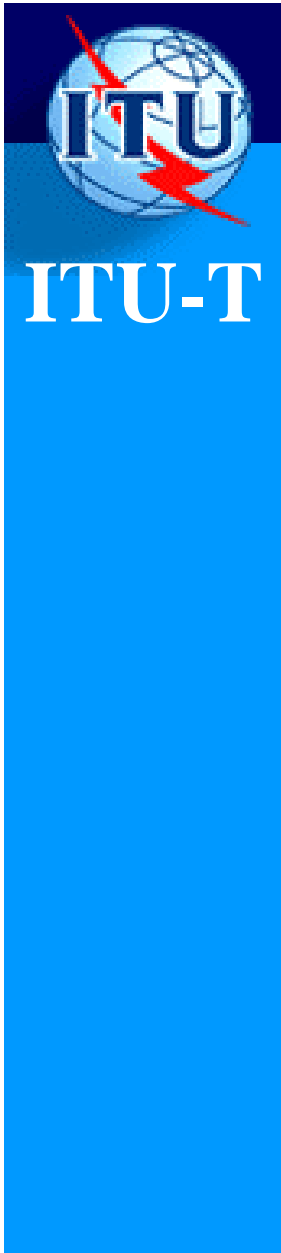
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Scope

- Problems with Current Transport Layer Protocols
- FPBN Requirements
- FPBN Architecture
- Questions





Problems with current transport layer protocols

- Need to support different traffic types
- Need to protect control and management planes from user-plane traffic
- Need to guarantee and charge for Service Level Agreements
- Need to ensure emergency services get through
- Need to provide adequate security
- Need to identify and locate faults
- Need to monitor performance



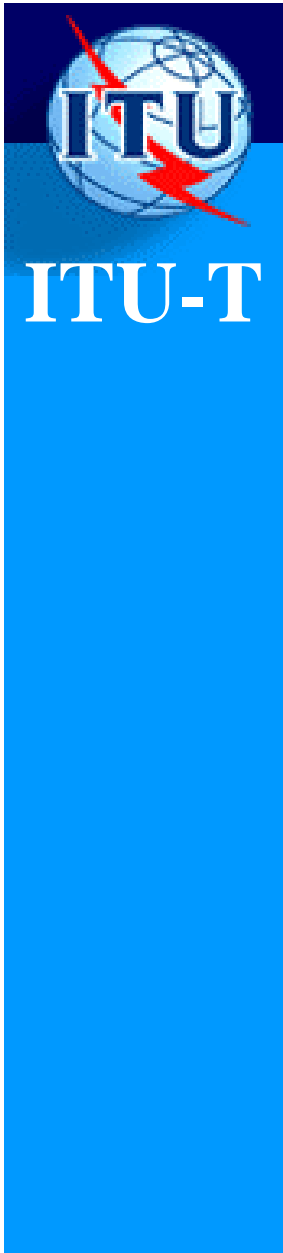
FPBN Requirements (1)



The FPBN shall:

- provide both connectionless & connection-oriented services
- support both public and private network services
- support an appropriate range of QoS including best effort and guaranteed services
- allow a smooth migration from current cl-ps and co-ps networks
- interwork with current cl-ps and co-ps networks
- support arbitrary network topologies



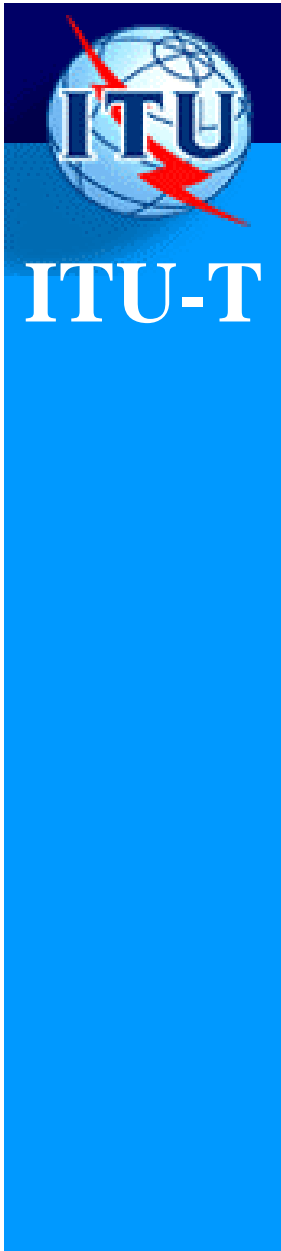


FPBN Requirements (2)

- secure, protect and transport customer traffic as appropriate to the requirements of the service
- detect, and recover from, facility and equipment failures and performance degradation
- offer comprehensive OAM functions for each plane
- secure the internal control and management plane traffic from attack
- offer performance and behavior isolation between different traffic sources and types
- support lawful intercept

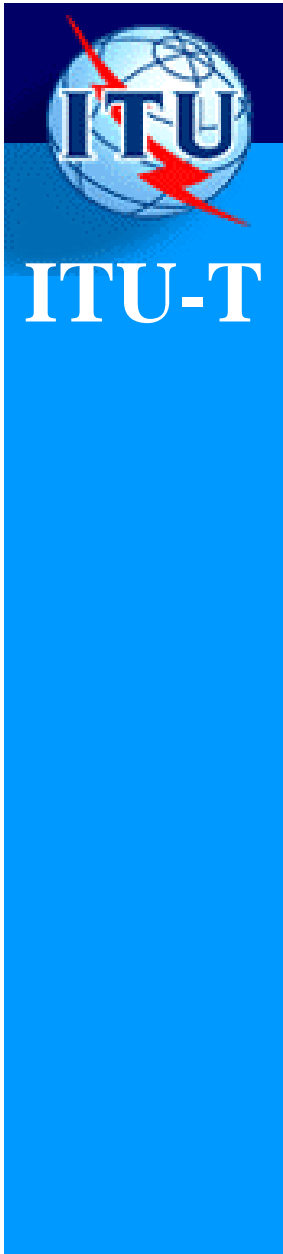


FPBN Requirements (3)



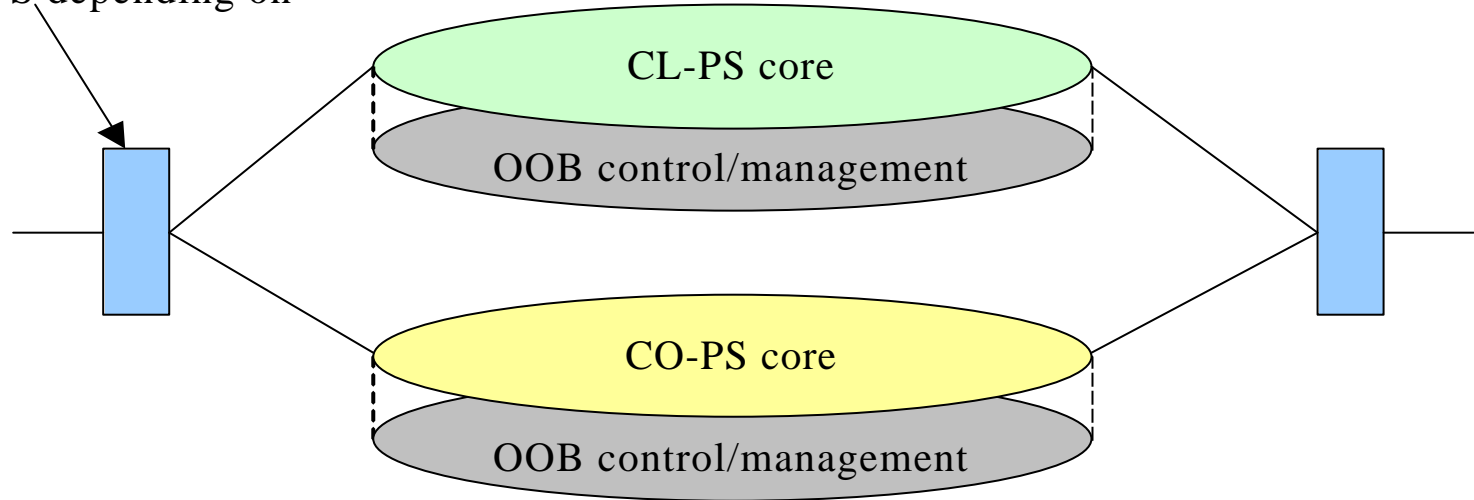
- be able to monitor the traffic conditions and bill for the service delivered
- be able to distinguish between urgency and importance
- support services that require in-order delivery of packets
- support out-of-band control and management planes
- attempt to keep traffic flowing while recovering from failures
- only deliver traffic from the intended source to the intended destination(s)





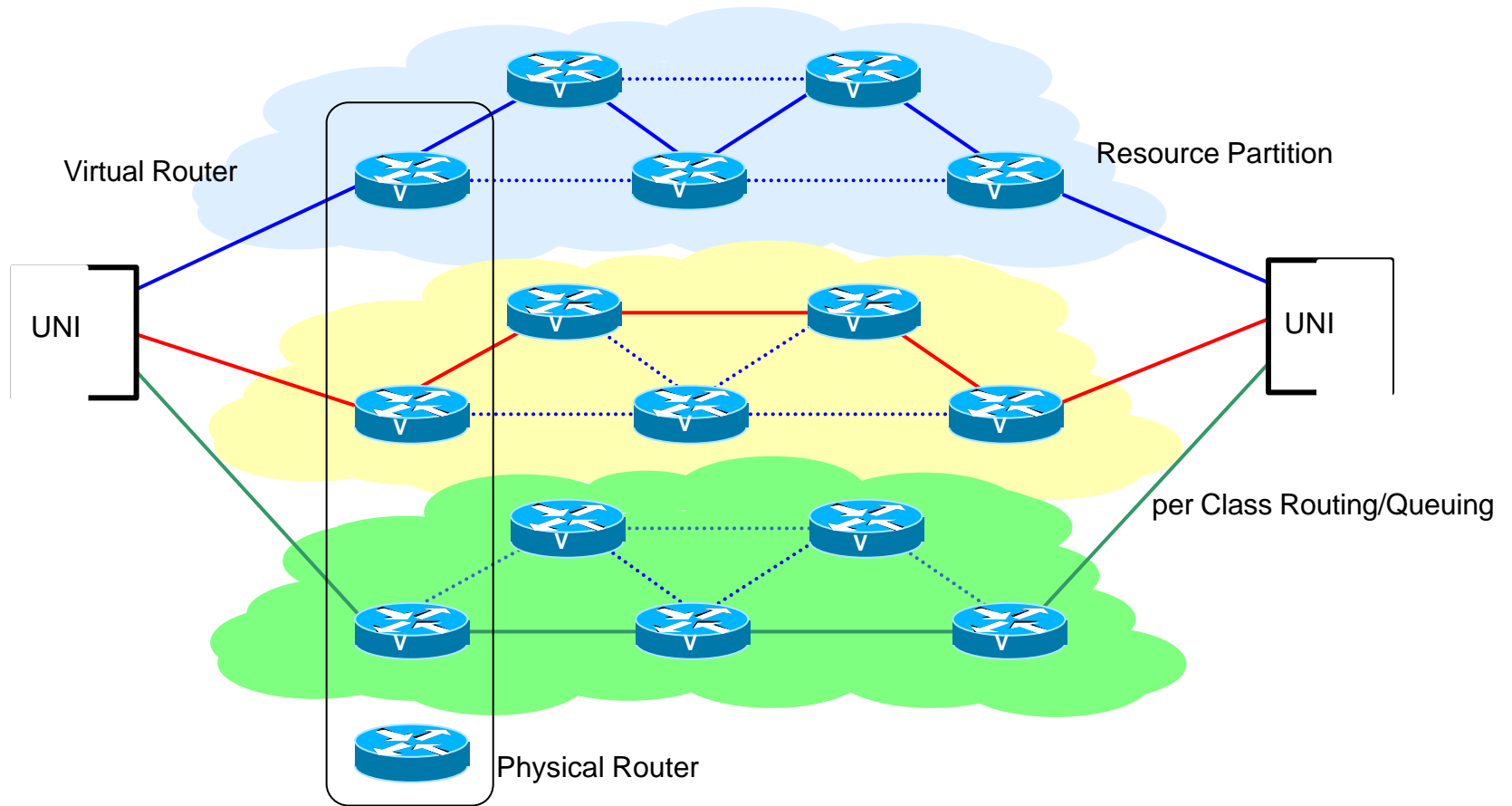
FPBN Architecture?

Traffic goes either CL-PS or CO-PS depending on service

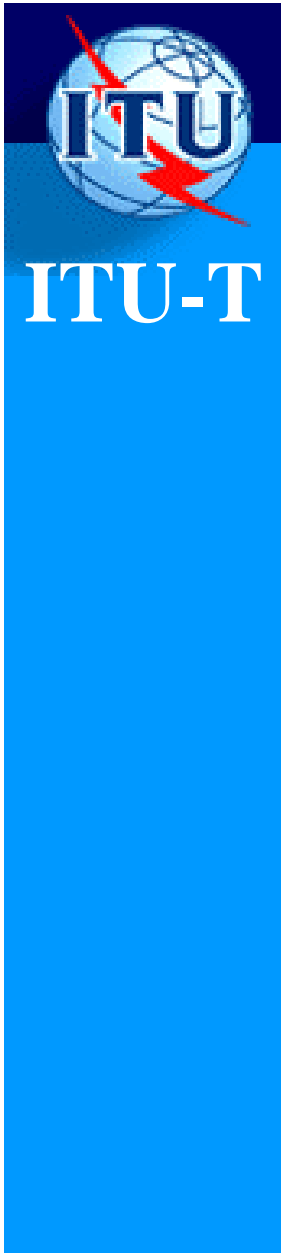




Virtual Router



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Questions

- Can FPBN provide QoS cost-effectively for all services?
- Can FPBN provide security cost-effectively?
- How will the FPBN interwork with MPLS?

