

# Multi Tenant VNO use case

draft-kumaki-actn-multitenant-vno-00

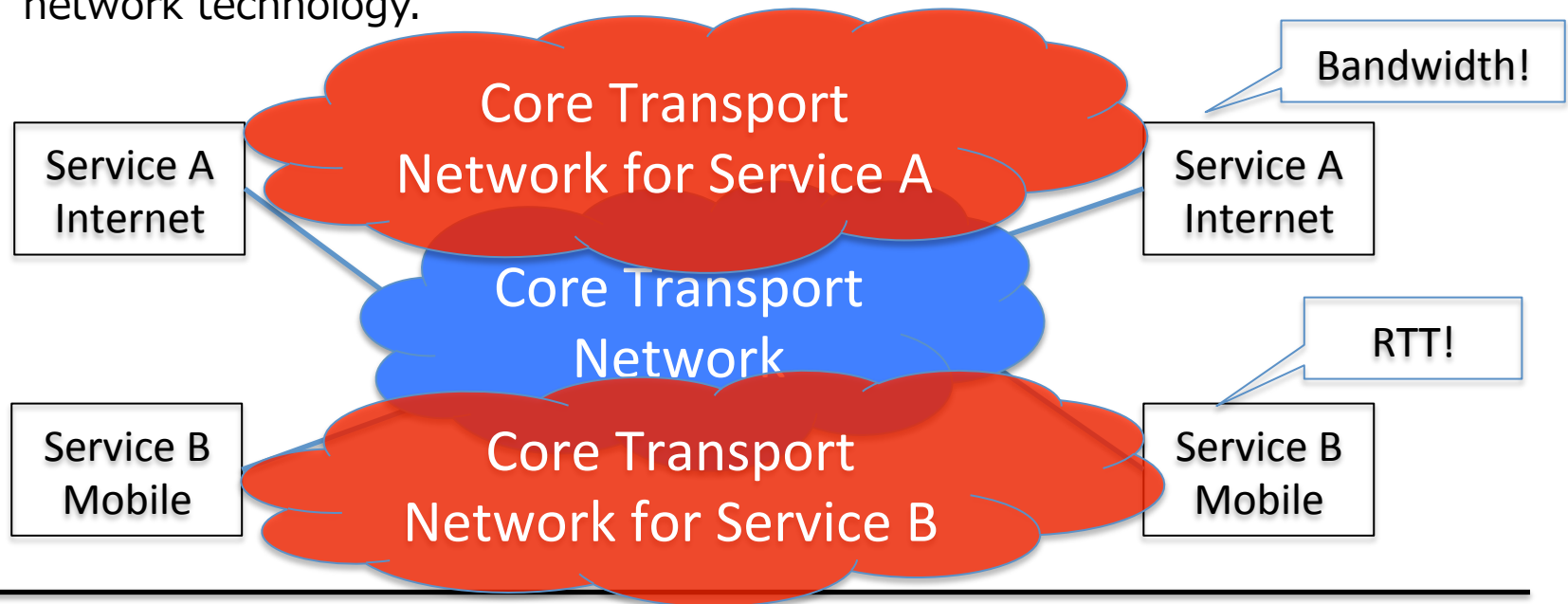
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# Problem Statements

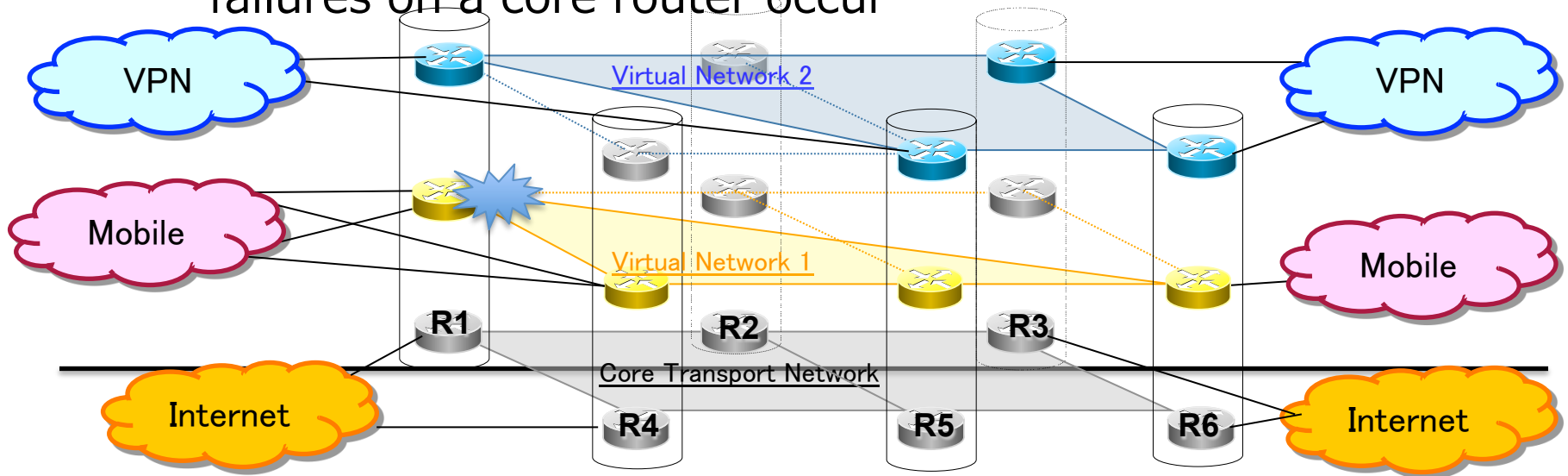
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- Plan to provide multi services in common core transport network
  - Each service has different requirements for the common core transport network
    - Bandwidth, RTT, Jitter, network topology, BGP/OSPF routes, IP/MPLS,...
  - To meet these requirements results in an inefficient use of network resources and complex operation in each service and core transport network
  - A network operator for each service can not create dedicated core transport network's topology and assign dedicated network resources using current network technology.



# Vertical Network Consolidation

- Vertical Network Consolidation
  - Each service has a virtual network in a common core transport network
  - each "service" operator expects to have an isolated virtual network on the backbone that can be managed independently.
  - In this model, we can provide a network wholesale service without carriers' carriers in RFC4364.
  - Just one service is affected if routing/signaling process failures on a core router occur



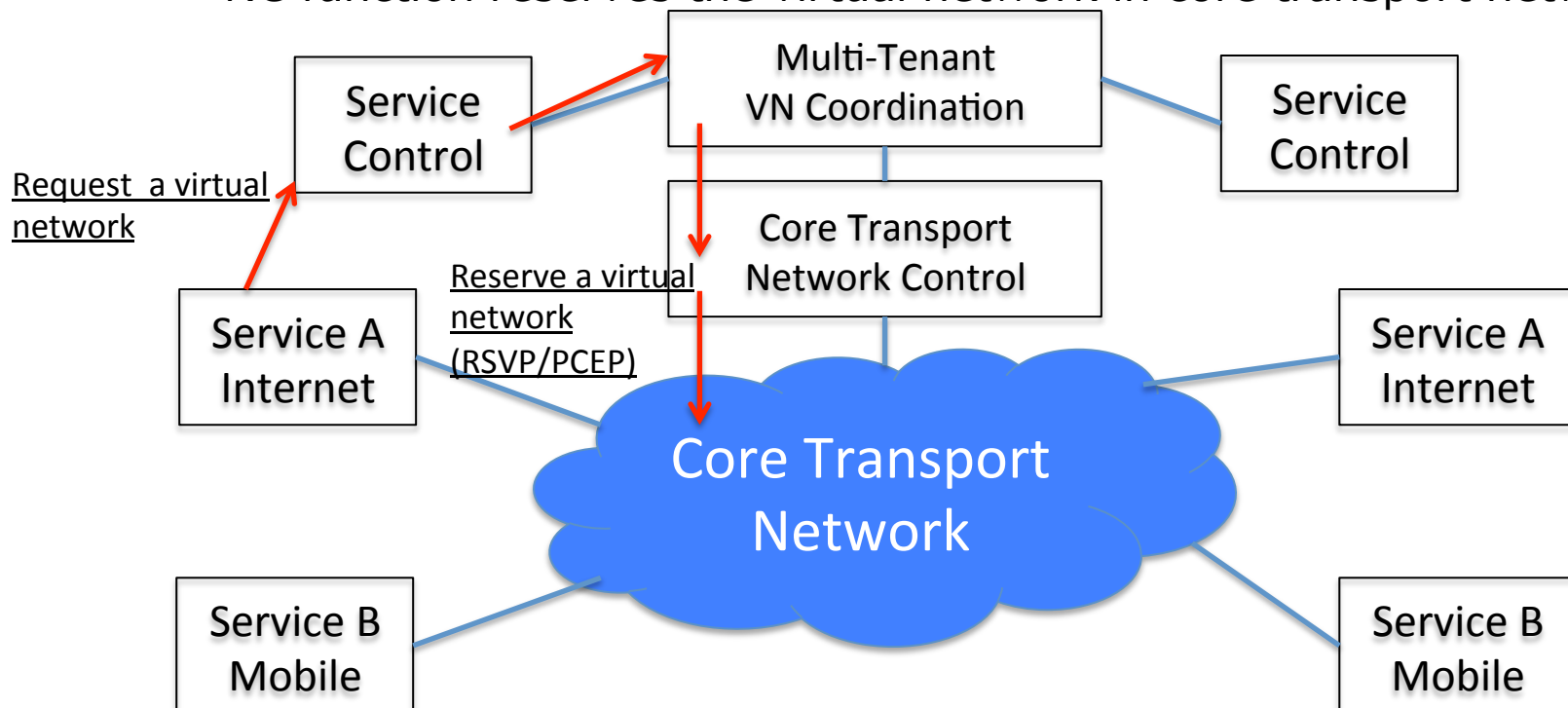
# What we expect in ACTN

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- Efficient use of core transport network resources
    - Virtual Network Controller provides an optimal virtual network for each service which meets requirements
  - Fast deployment of a new service
    - Virtual Network Controller dynamically provides a virtual network for a new service
    - Virtual Network Controller may change the existing virtual network for other services to optimize an efficient use of network resources and meet requirements for every services
  - Control of core transport network by service network operator
    - Each service network operator can control each virtual network by sending a request to virtual network controller
      - Service network operator becomes VNO(Virtual Network Operator)
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# Use case: Multi Tenant VNO

- Multi-tenant virtual network coordination(VNC) function creates and assigns a virtual network for each service
  - VNC receives requirements from each service control agent
  - VNC requests a virtual network for each service to network control(NC) function
  - NC function reserves the virtual network in core transport network



# The requirements for MTVNO

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- Dynamic Binding of Virtual Network
    - provide a new virtual network dynamically
  - Separate Operation of Virtual Network
    - restrict a control of a virtual network of a service from other service network operator
  - QoS and SLA
    - provide a virtual network which meets requirements from a network operator of each service
  - Virtual Network diversity
    - provide a diverse virtual network for diversity purpose
  - Security
    - restrict a connectivity between different services through the common core transport network
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# Next steps

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- Need more comments and feedback
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Backup slides



# Horizontal Network Consolidation

- Horizontal Network Consolidation
  - Create multi-domain topology on the common core transport network
  - One service or some services accommodate at the dedicated PEs or the shared PEs
  - In this model, we can't provide a network wholesale service without carriers' carriers in RFC4364.
  - All services are affected if routing/signaling process failures on a core router occur

