CiscoFusion

– CiscoFusion maintains routers in the network path

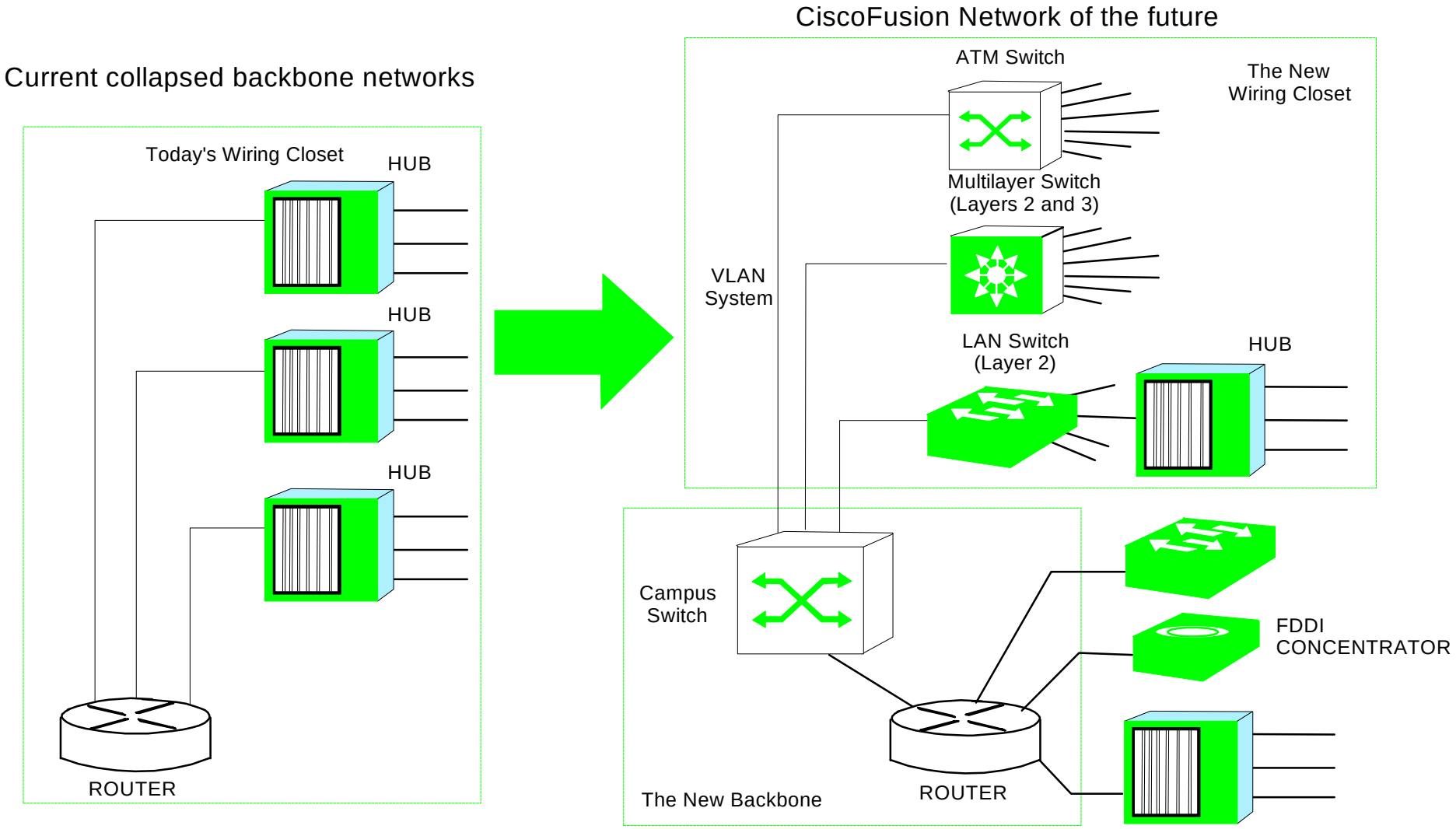

Figure 1 - "CiscoFusion: an architecture for switched internetworks" June 1995

CiscoFusion - Suggested migration

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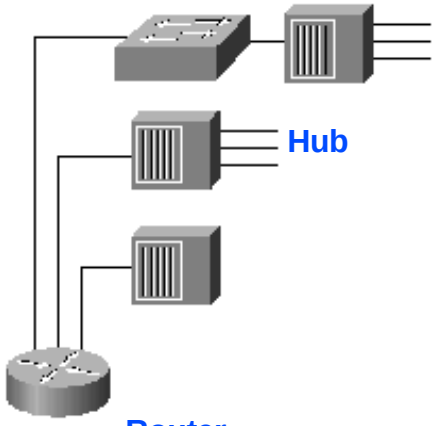
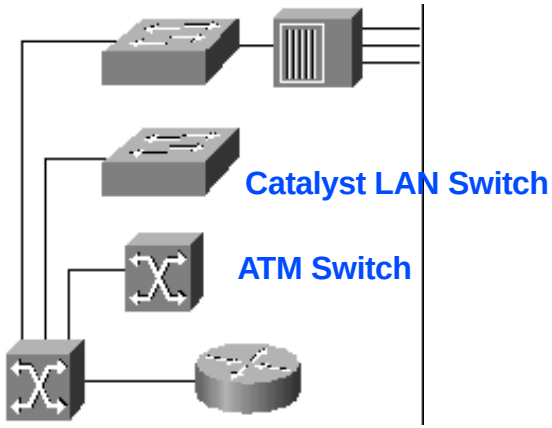


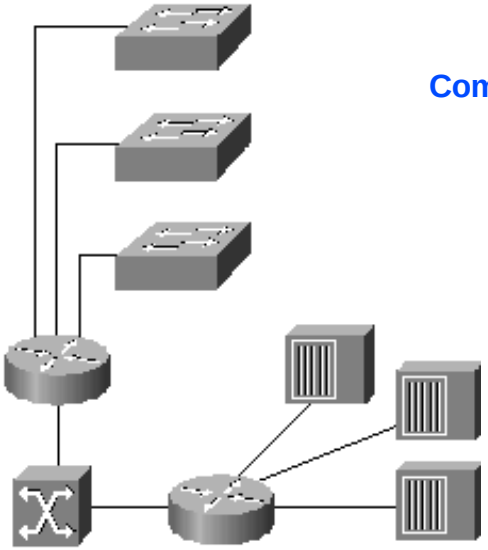
Traditional Collapsed backbone networks

Phase 1



Add ATM and LAN Switches

Phase 2

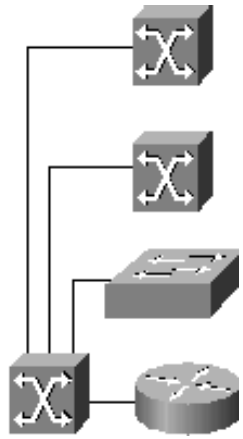


Add another router to connect the LAN switches

Phase 3

Comments:

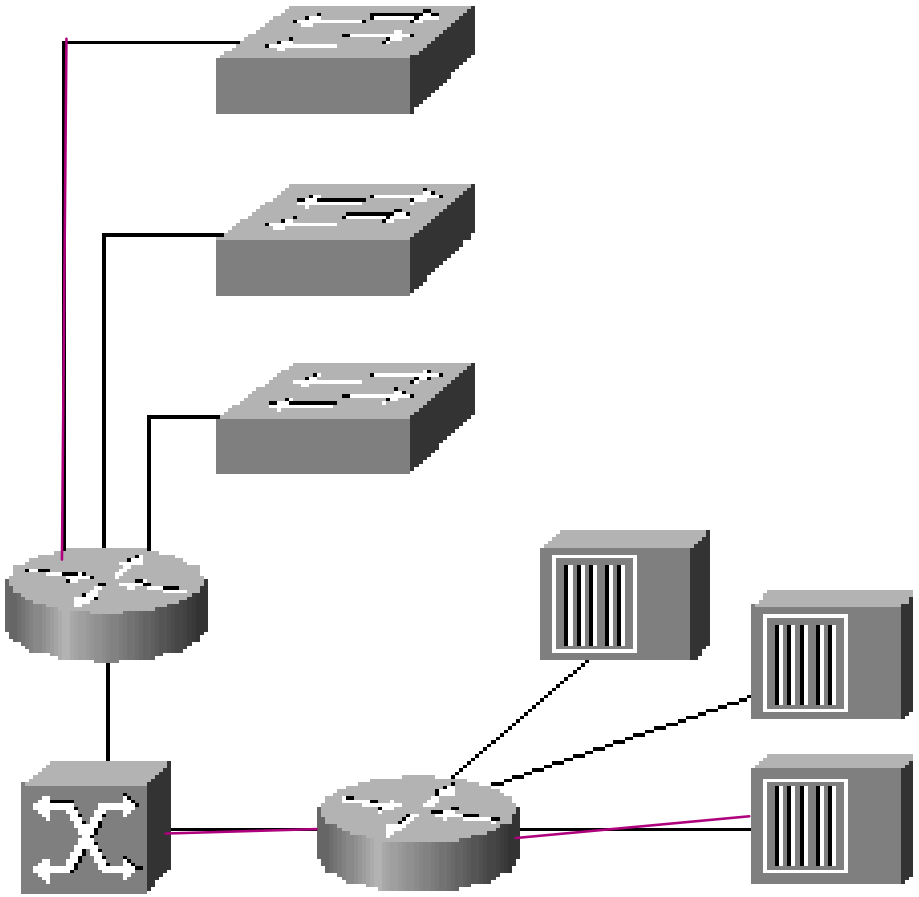
- **Maintains traditional router in the network in all phases (forever !!!)**
- **Cisco is yet to deliver Multi-Layer switching on the Catalyst LAN switches (announced in 1994)**



Remove the router and add multi-layer switching to Catalyst switches

Phase 4

Cisco Systems
CiscoFusion - Suggested migration



Result : Add another router to connect the LAN switches

Phase 3

Switching Framework Comparison

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IBM Switched Virtual Network

Roadmap for migration to switched networks

- Switchcentric with integrated dispersed routing and LAN Emulation

Proven routing software integrated with switching

Route forwarding function at the periphery of the network including the end stations

End to End switching enables high network quality of service

Cost effective 25 Mbps ATM desktop solutions

Addresses SNA and router based network migration

Comprehensive, superior Network & Systems management

Extensive network design and support services

CiscoFusion (tm)

Marketecture for migration to switched networks

- Routercentric with accommodation to switched network evolution

IOS is router software modified to work with switching networks

Route forwarding function in the intermediate internetworking devices

Maintains router in the network path

No 25 Mbps offering yet

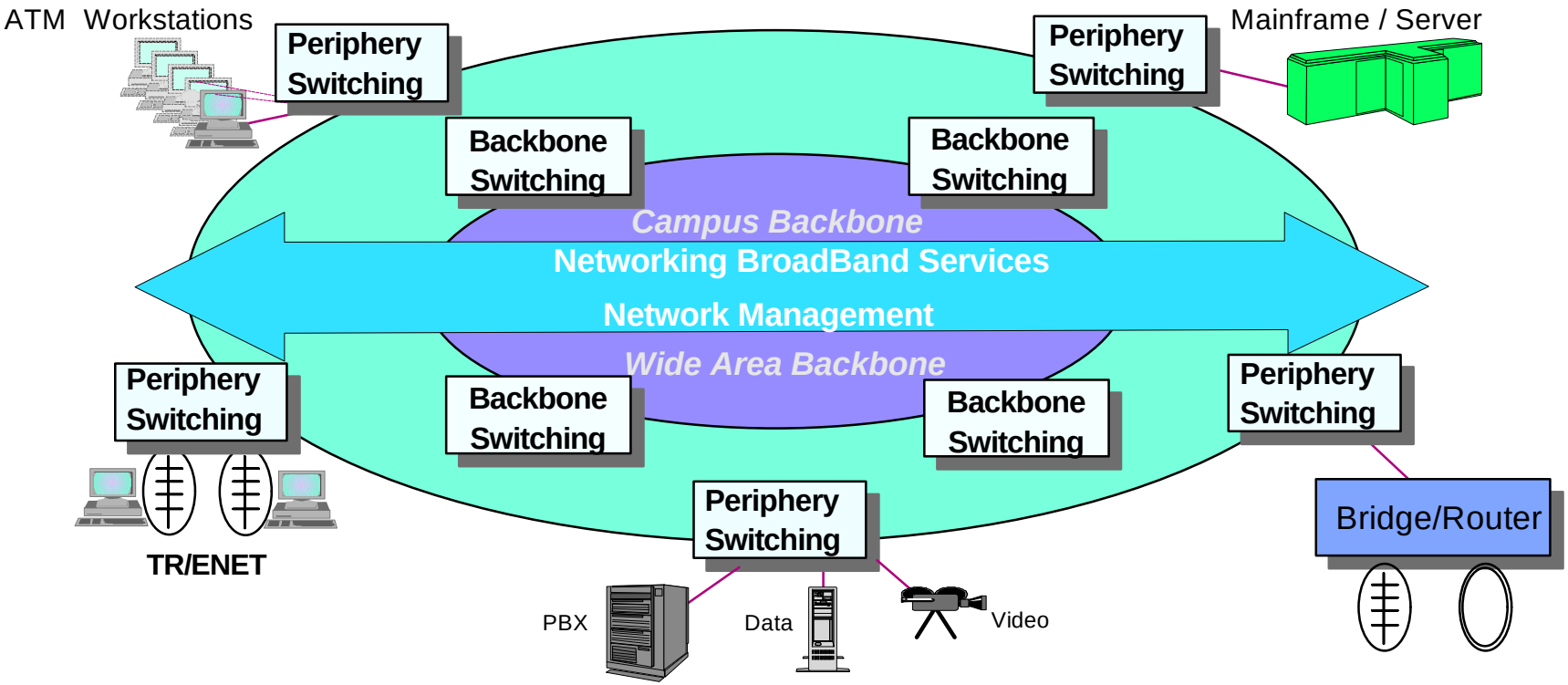
Does not address IBM/SNA network migration questions

Poor track record meeting network management challenges

Limited network support and service capabilities

NHD Framework

Switched Virtual Networking (SVN)



- ✓ **Switched Infrastructure with advanced Traffic Management and QoS support**
- ✓ **Distribute adaptation and layer-3 functions to the periphery of the network**
- ✓ **Select and optimize data paths thru switched network**
- ✓ **SVN Components:**
  - Frame/ATM Switches (workgroup, campus, WAN)
  - ATM adapters (10/100 Ethernet, FDX Token-Ring, 25mb ATM, 155mb ATM)
  - Multiprotocol Switched Services (MSS) and Networking Broadband Services
  - Network Management

Tag Switching

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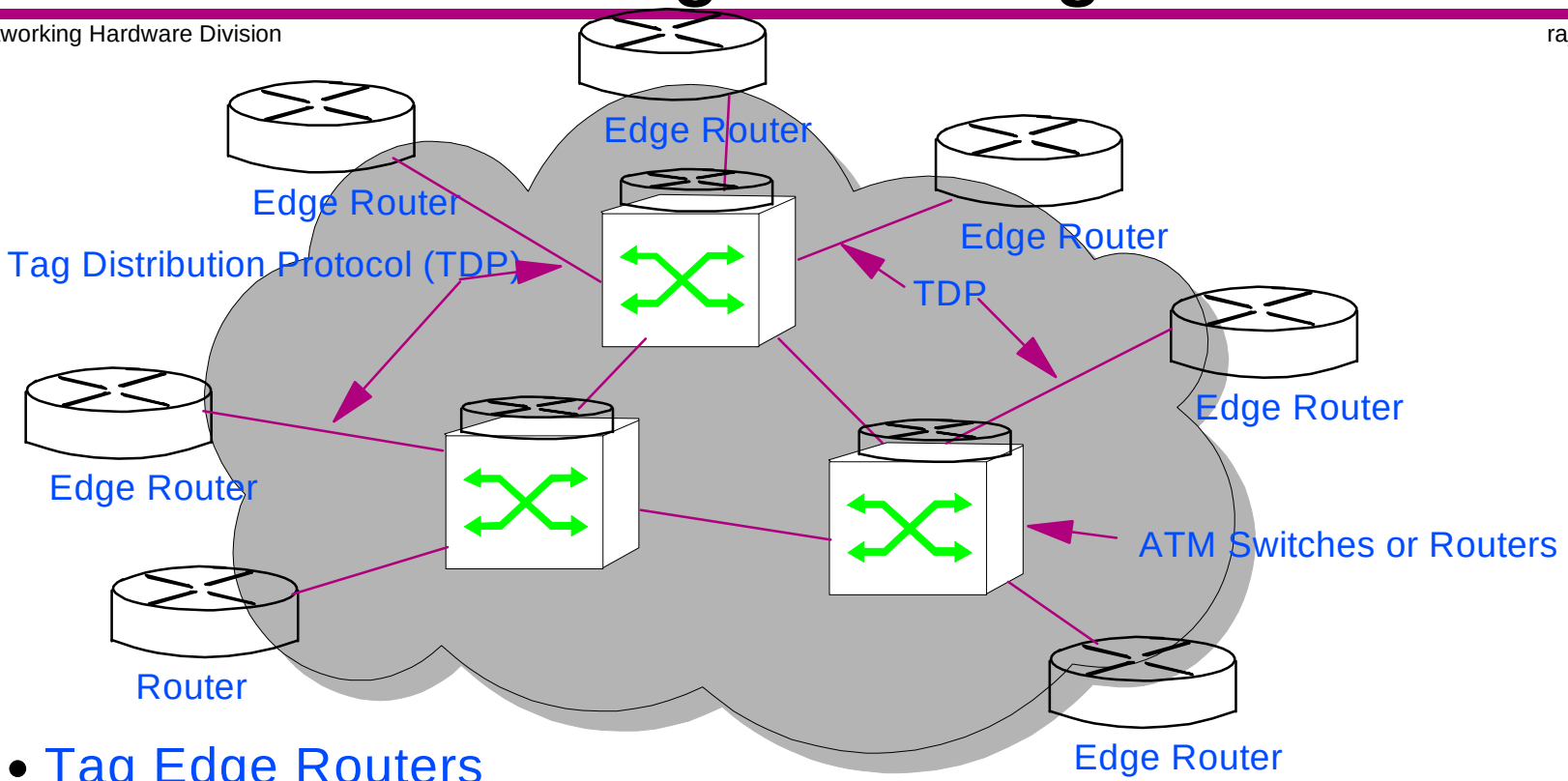
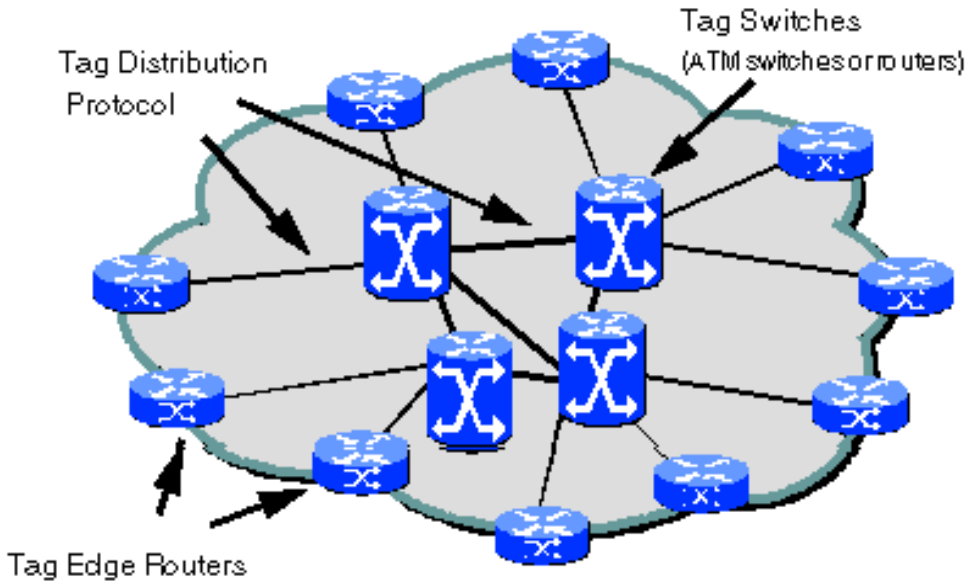


- Tag Edge Routers
  - ➡ Located at the boundary of the Internet, perform value added network layer services and apply tags to packets
- Tag Switches
  - ➡ Switch tagged packets or cells based on tags
  - ➡ May support Layer 3 routing or layer 2 switching
- Tag distribution protocol
  - ➡ Distribute tag info between devices in the tag switched network.
  - ➡ Works in conjunction with OSPF, BGP ...,

Tag Switching Contd...



- Tag Switching process
  - ➡ Network devices exchange reachability info using routing protocols like OSPF, IGRP
  - ➡ New Cisco Tag Distribution Protocol establish tag-to-destination network mappings
  - ➡ Ingress edge routers in tag switching network perform Layer 3 services (NetFlow services) and adds tag to packet
  - ➡ Packets switched based on tags using tag swapping
  - ➡ Egress edge routers removes the tags and deliver the packets
- Cisco plans for tag switching
  - ➡ Standardize portions of Tag Switching via IETF
  - ➡ Deliver products starting in 1H97