

# PBB-TE Requirements

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# PBB-TE Requirements

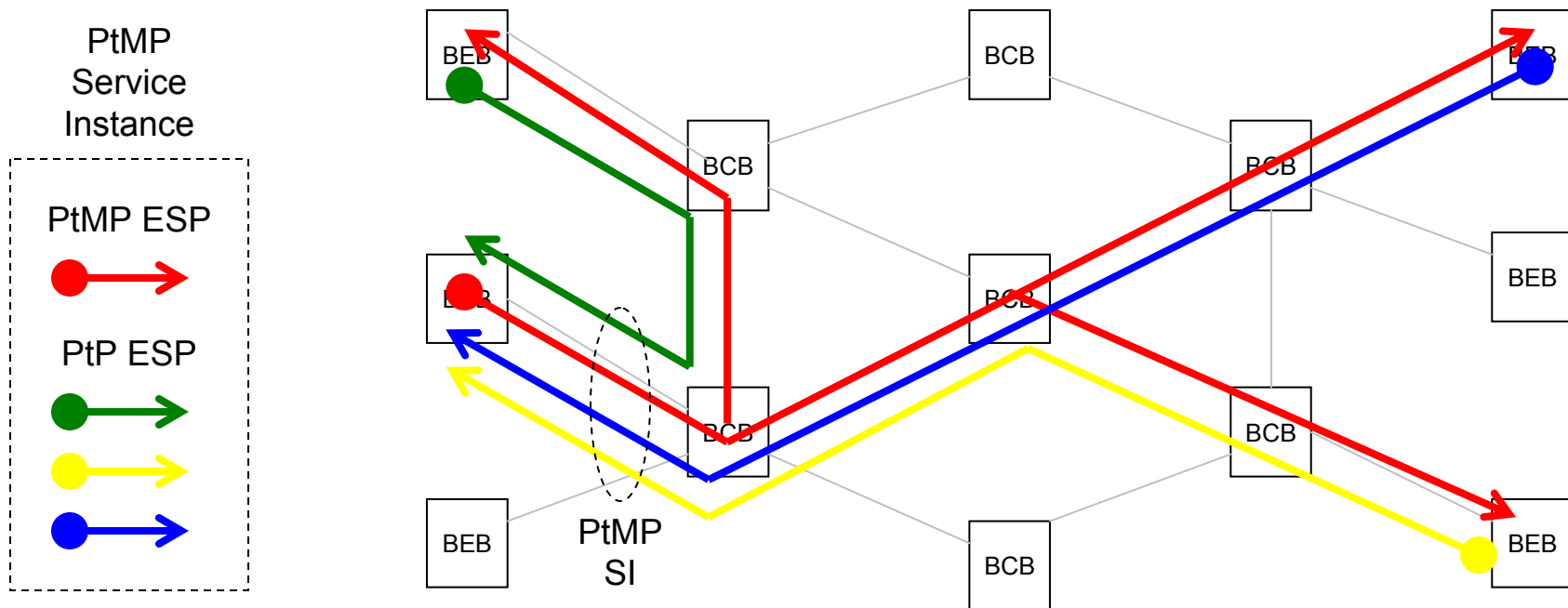
- PtMP SI return path via VLAN
- DCN VLAN
- One-way connectivity test

(intention is to submit these as comments for next .1Qay / .1AB-REV ballots)

General agreement that .1Qay D1.0 is a good base to move forward.

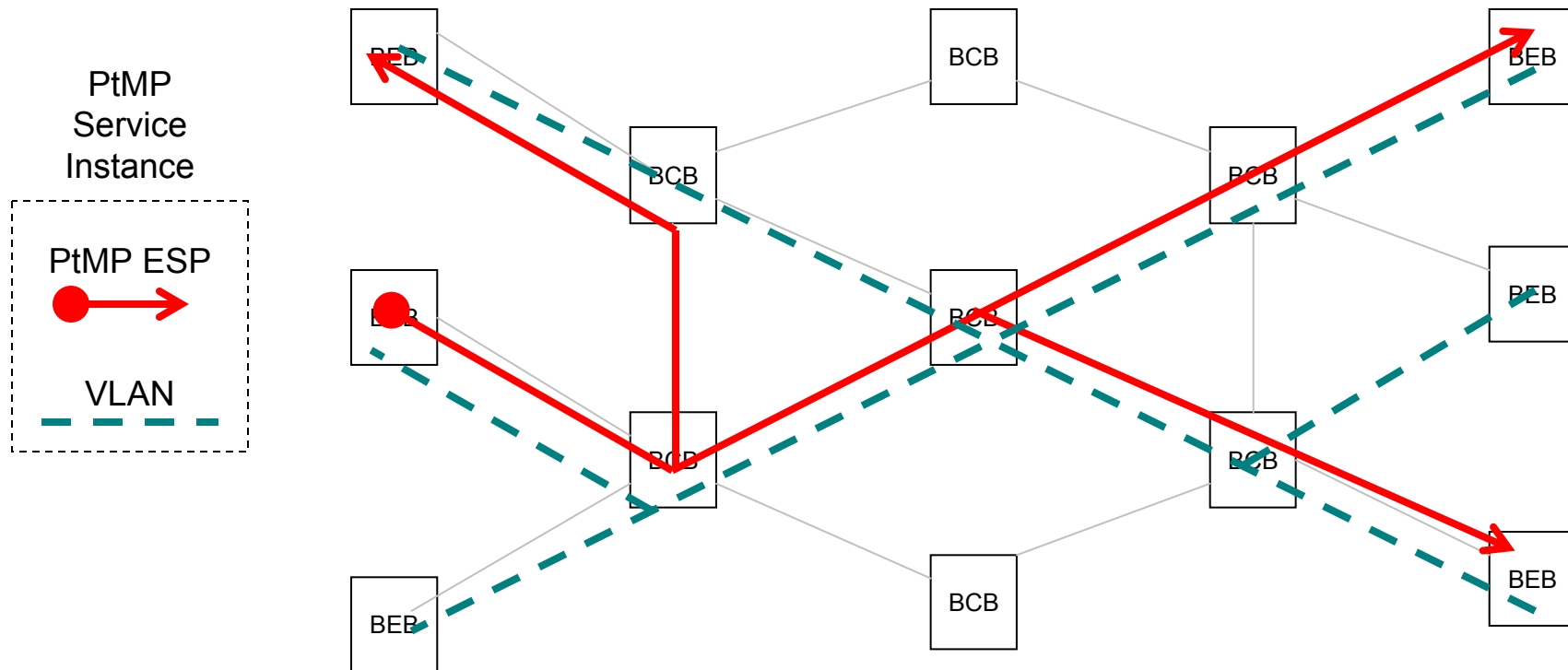
# PtMP Service Instance

- D1.0 introduces concept of PtMP *Service Instance*
  - Distinct from PtMP ESP
- *Costly* to require provisioning of N P2P ESPs
  - Per return-path TE sometimes not needed for PtMP



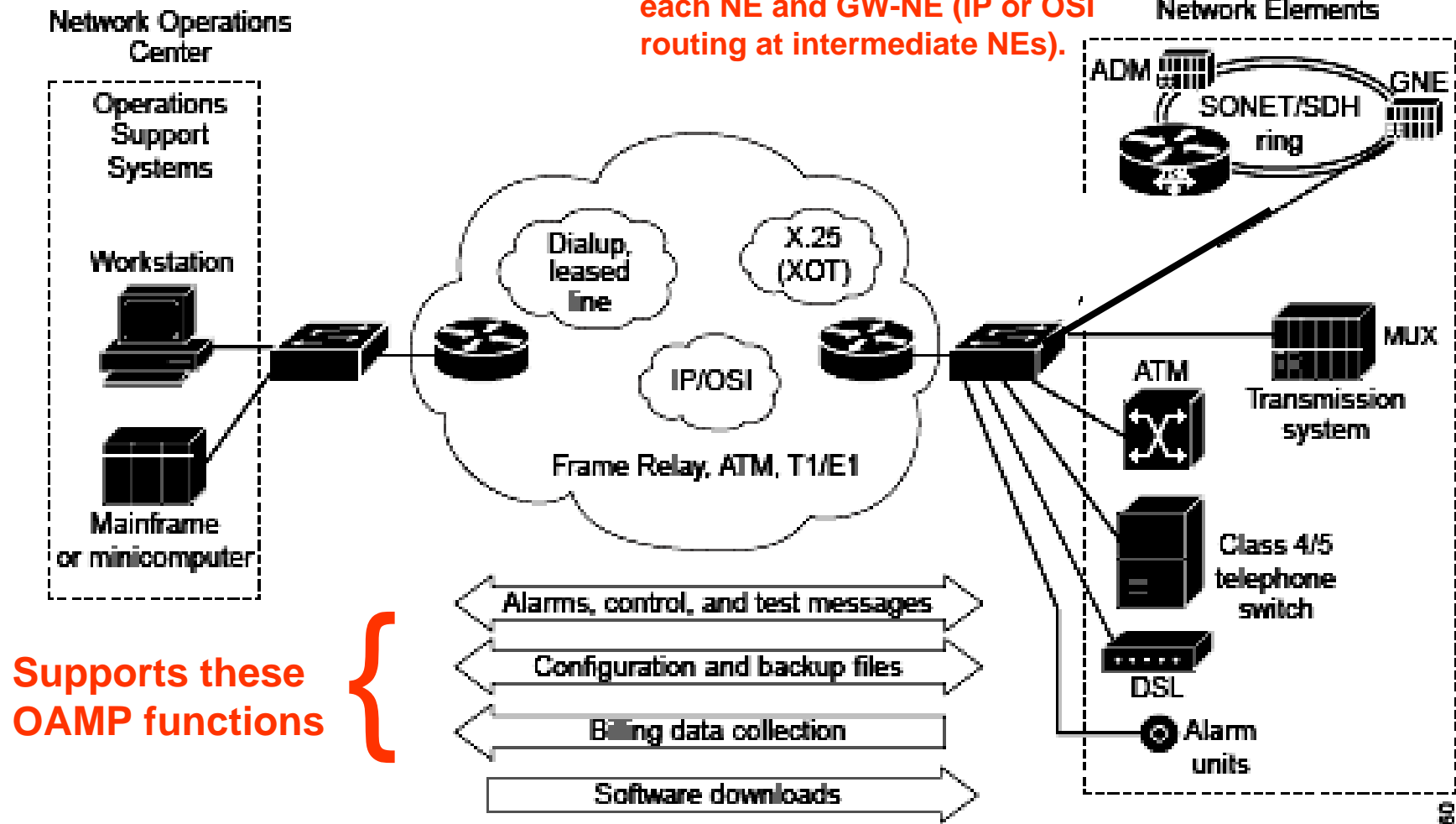
# Do not restrict other types of PtMP SI

- E.g., P2MP ESP forward with VLAN (CL) return
- No problem to give this type a distinct name



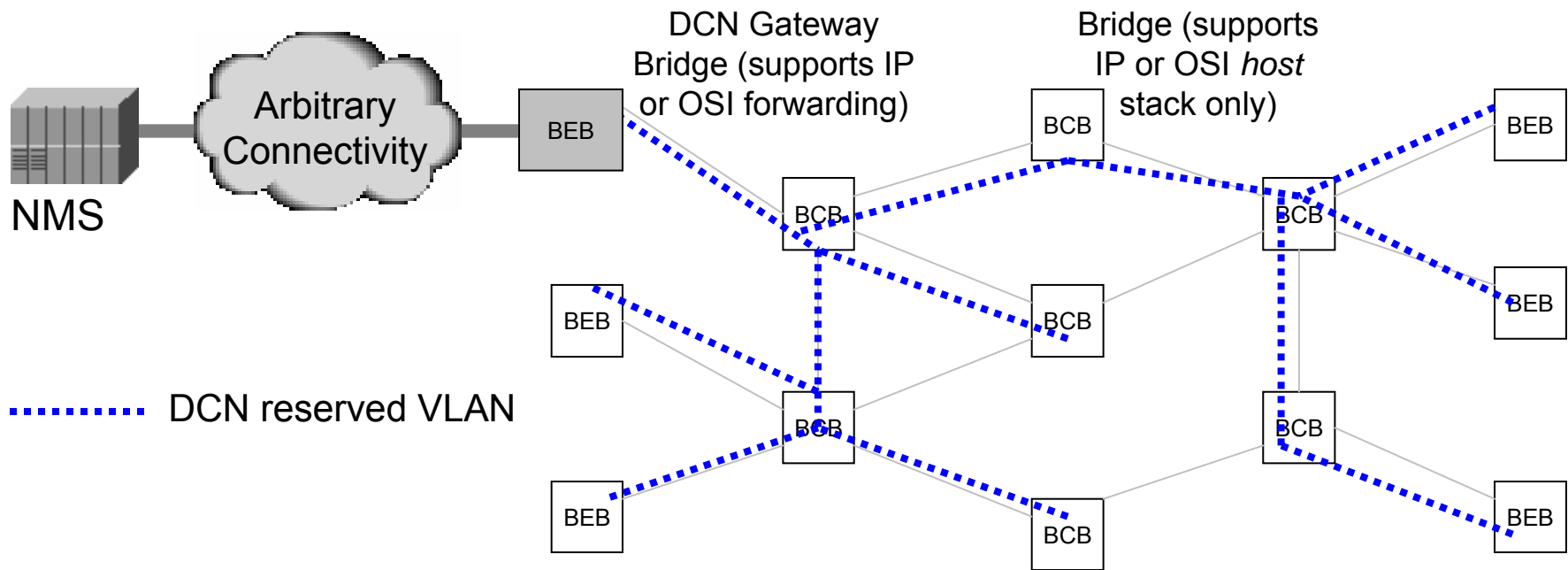
# DCN *essential* in SONET/SDH Transport

Eliminate P2P Channel between each NE and GW-NE (IP or OSI routing at intermediate NEs).



- NE attached to OSS via Data Communications Network (DCN)
- Key advantage: No need for N distinct P2P channels to GW

# DCN similarly required for PBB-TE

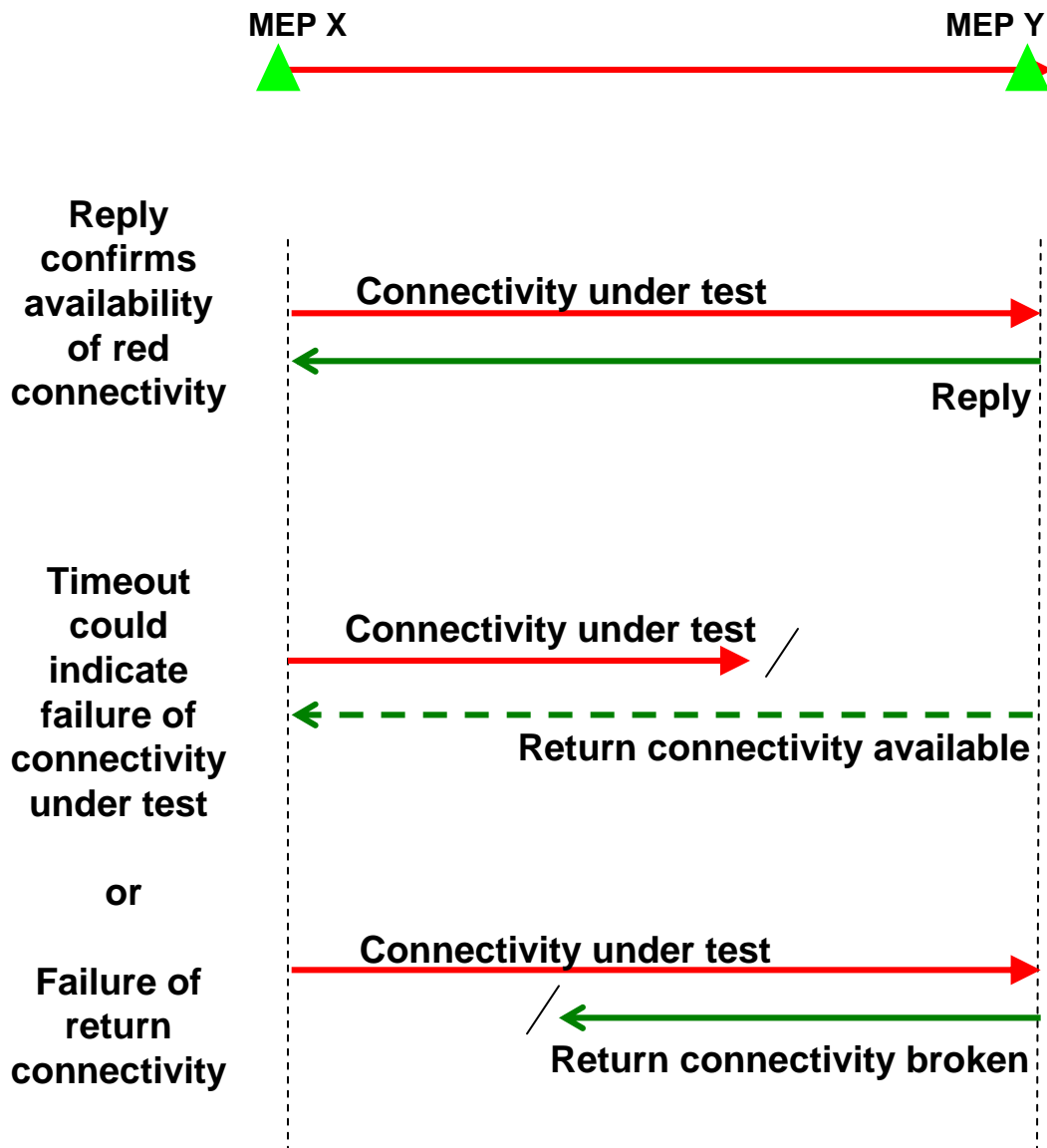


- DCN VLAN protocol *already* available in bridge
  - introduce reserved VID value
- No need for IP or OSI forwarding stack
  - except in GW Bridge(s)
  - but still need IP or OSI *host* stack in all bridges
  - or use IP or OSI forwarding at each Bridge (optional)

# Proposal

- Provision DCN-VID value on each bridge
  - Or use well-known value if agreement
- Detect inconsistencies in DCN-VID via LLDP
- Extend CFM to use DCN-VID (more on this)
- *CC required* on DCN VLAN

# Loopback cannot verify 'one-way' connectivity



**Red arrow is the forward connectivity to be tested.**  
**Green arrow shows return connectivity identified to carry LBR from Target to Origin.**

**Problem:** Timeout could indicate failure of the forward connectivity, failure of the return connectivity, or both. Note that this observation is independent of whether the connectivity is by VLAN (CL) or ESP (CO). It is a statement about the Loopback operation.

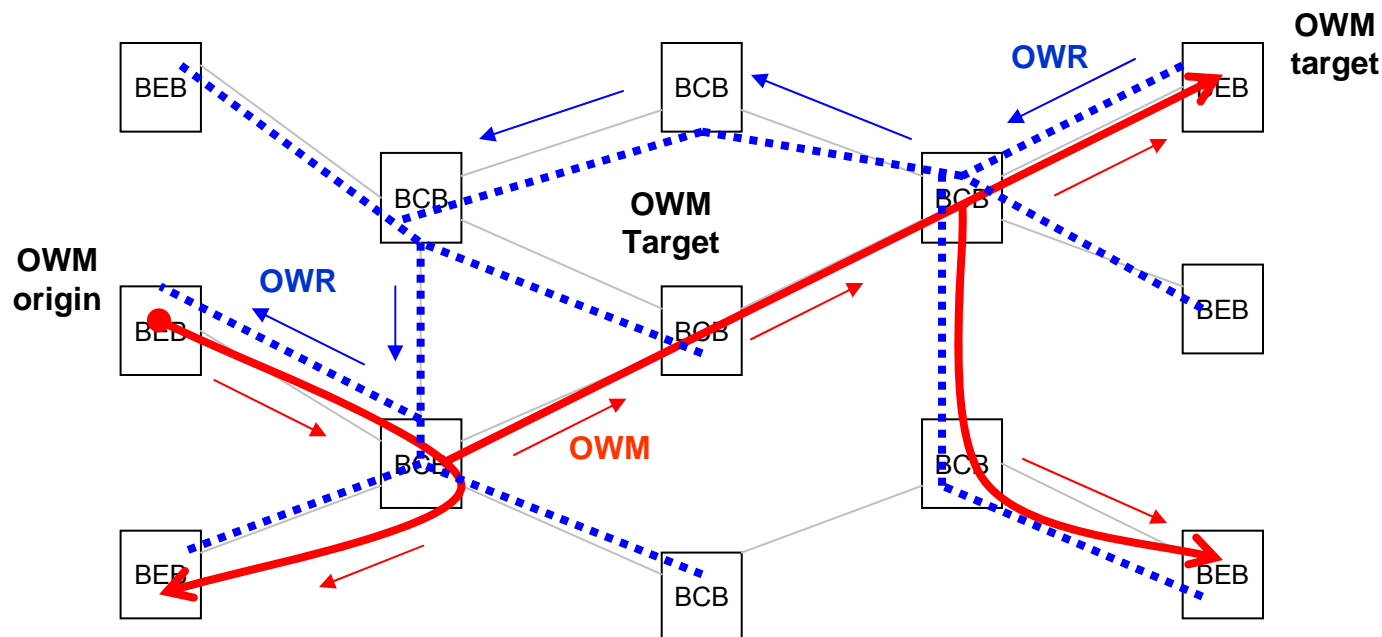


# Loopback does *not* test an individual ESP

- Loopback tests the *combination* of forward and return connectivity
  - Not individual unidirectional ESP
- Cannot distinguish among the following cases:
  - The forward path is broken
  - The return path is broken
  - The forward and return paths are both broken
- The ‘one-way operation’ tests a *single* direction of connectivity and tells you whether:
  - The one-way connectivity is intact
  - The one-way connectivity has failed
  - The result cannot be determined because the return connectivity (e.g., DCN path) has failed
- Eliminates dependence on state of a second path

# Proposal

- Add CFM operation to test one-way connectivity to specific target on ESP
- OWM similar in format to PBB-TE LBM
- OWR sent on DCN whose integrity is guaranteed by CC (within limits of CC interval)
  - Option to issue Loopback operation on DCN if long CC interval is a concern.



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