

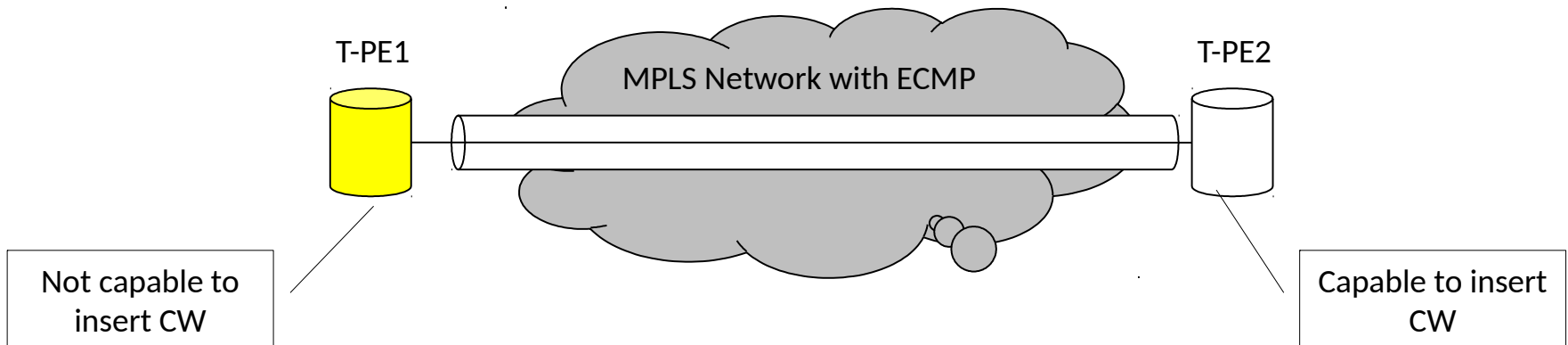
# PW Control Word Stitching

draft-busi-pals-pw-cw-stitching-01  
IETF 103 – Bangkok

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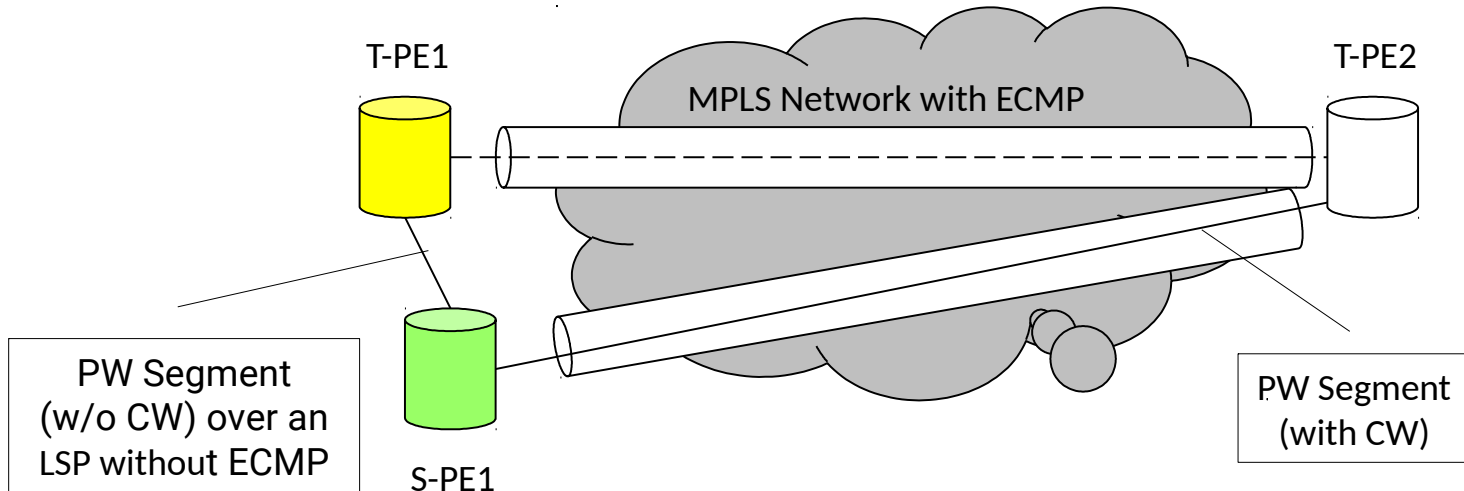
# Problem Statement

- Being capable of sending Ethernet PW packets with the CW when at least one T-PE is not capable to insert the CW **in already deployed networks**
- [draft-ietf-pals-ethernet-cw](#) describes why use of the CW is RECOMMENDED for Ethernet PWs
  - Use of the PW CW is not possible when at least one T-PE is not capable to use it
- Replacing the old piece of equipment is a possible solution but not always viable
  - This draft does not preclude the possibility of replacing the old piece of equipment but provides an alternative option in case replacement is not viable/desired

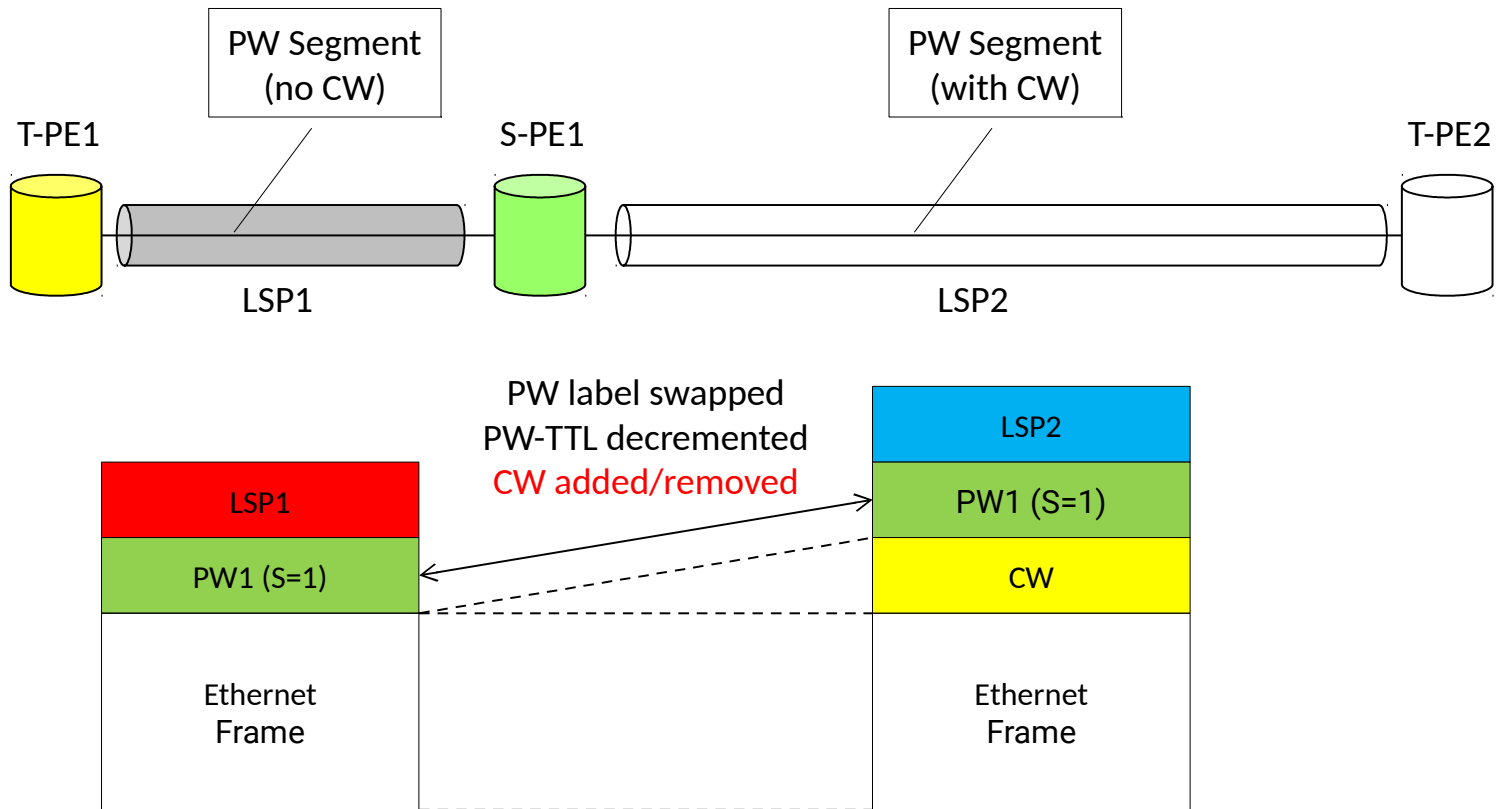


# Proposal

- Introduce a new S-PE type which is capable to switch an Ethernet PW segment, using the CW, with an Ethernet PW segment, not using the CW
  - It is easier to ensure control no ECMP behavior over a Link or a small-sized network
  - It is expected that T-PE1 and S-PE1 are one-hop away at the MPLS layer
- This new S-PE can be added to the network with minimum or no service disruption
  - PW redundancy can be used to move the traffic from the original SS-PW to the new MS-PW (using CW on the PW segment setup over an MPLS network with ECMP)
- **It is assumed that T-PE1 is able to operate without being aware of whether it is terminating SS-PW or MS-PW ([RFC 6073](#))**

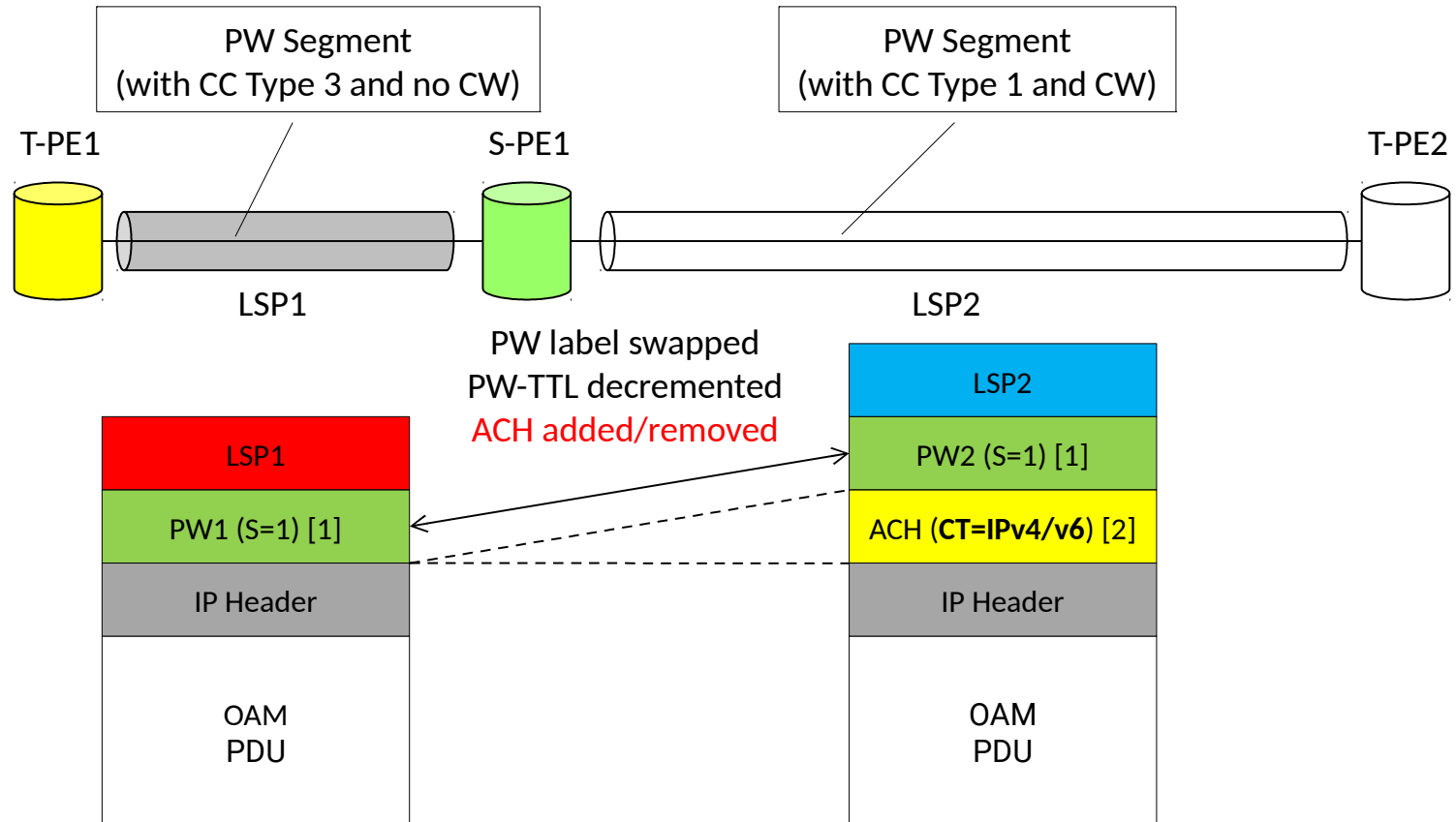


# CW Stitching procedure



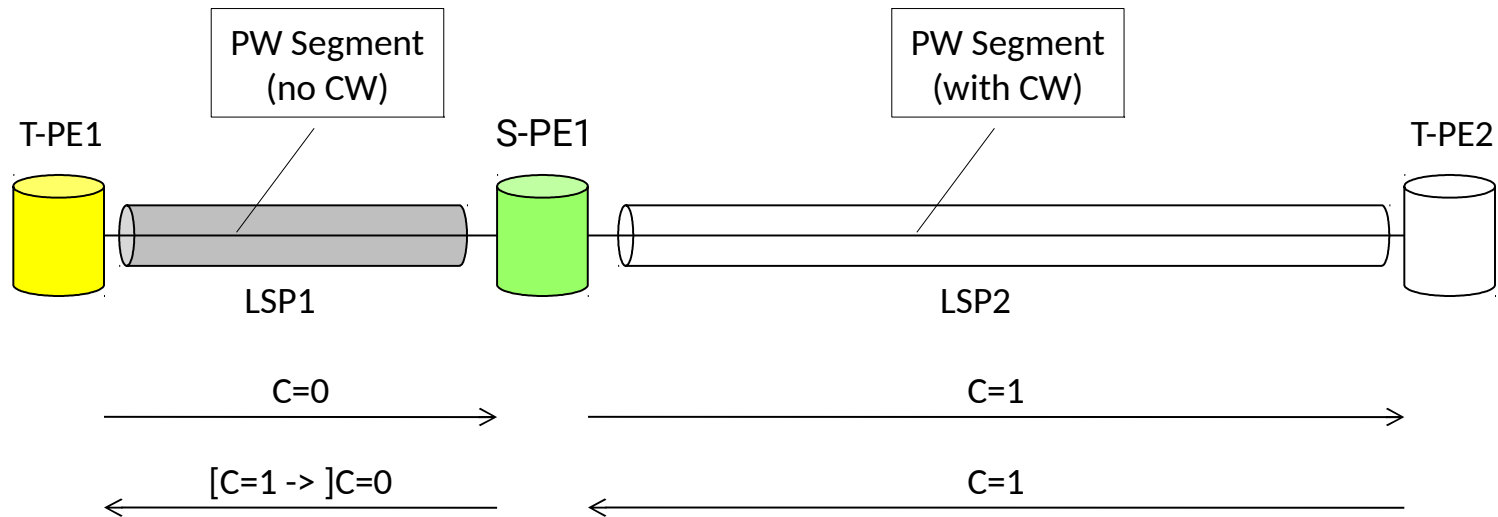
**No changes are required in T-PE1 and T-PE2 nor in intermediate P nodes**

# VCCV Stitching procedure for CC Type 3



- [1] S-PE1 needs to know the TTL distance in the PW layer to T-PE1 and T-PE2 to differentiate between VCCV messages and data packets
- [2] ACH Channel Type is set based on the IP version in the IP header

# CW Stitching Signalling

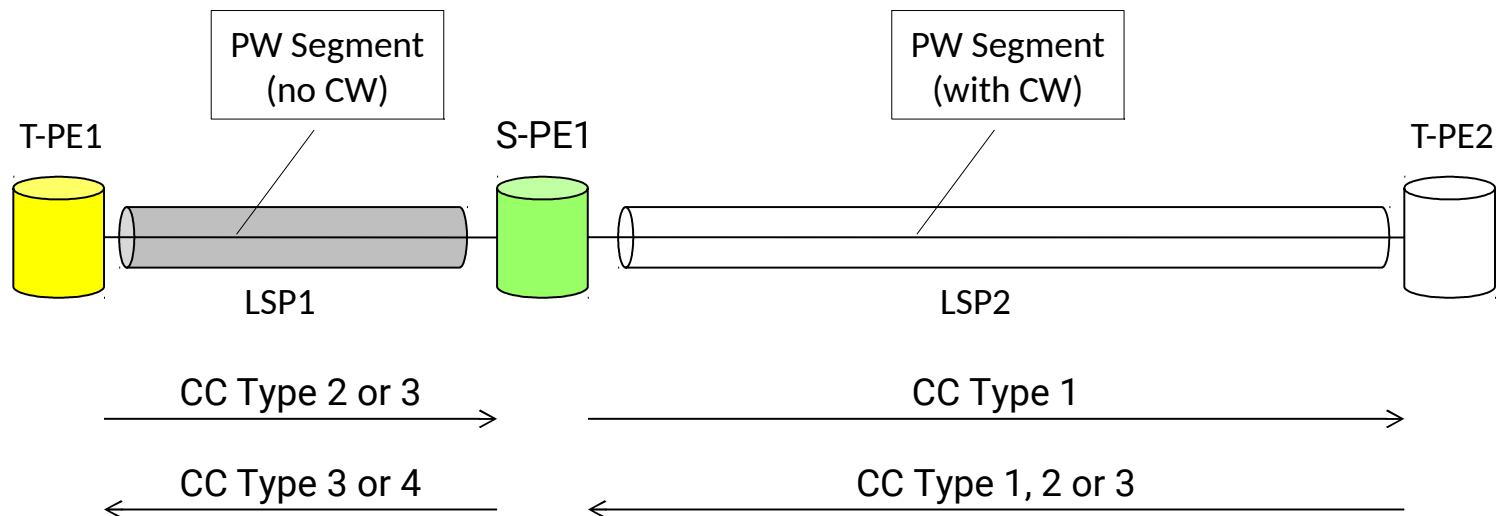


Protocol rules implemented by S-PE1 to be updated

- S-PE1 behaves on one PW segment as if support for CW has been always signalled on the other PW segment

**No protocol changes needed on T-PE1 and T-PE2**

# VCCV Stitching Signalling

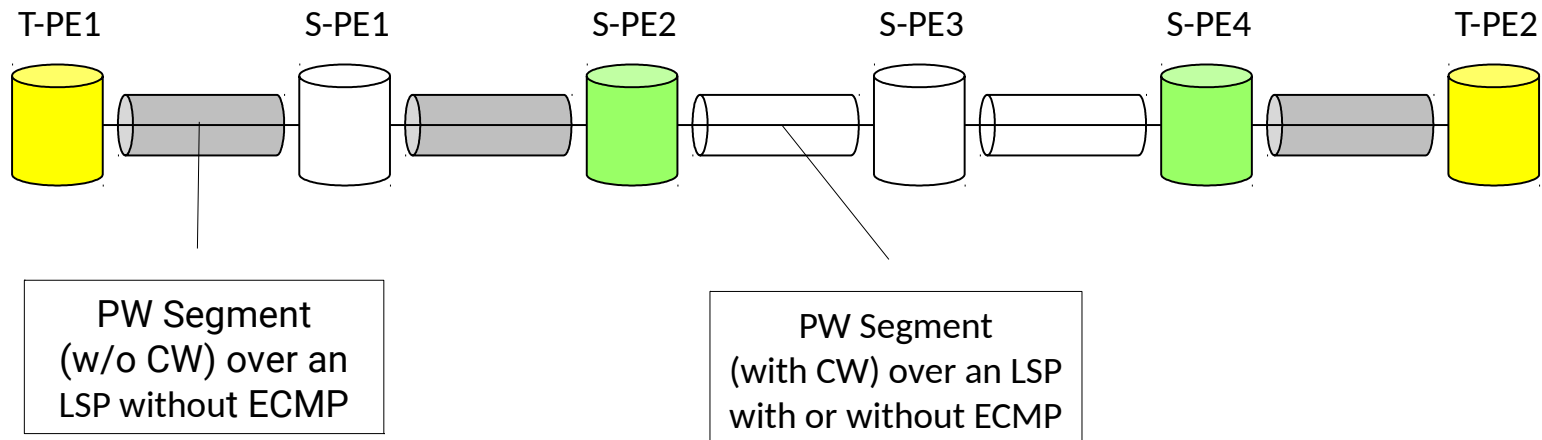
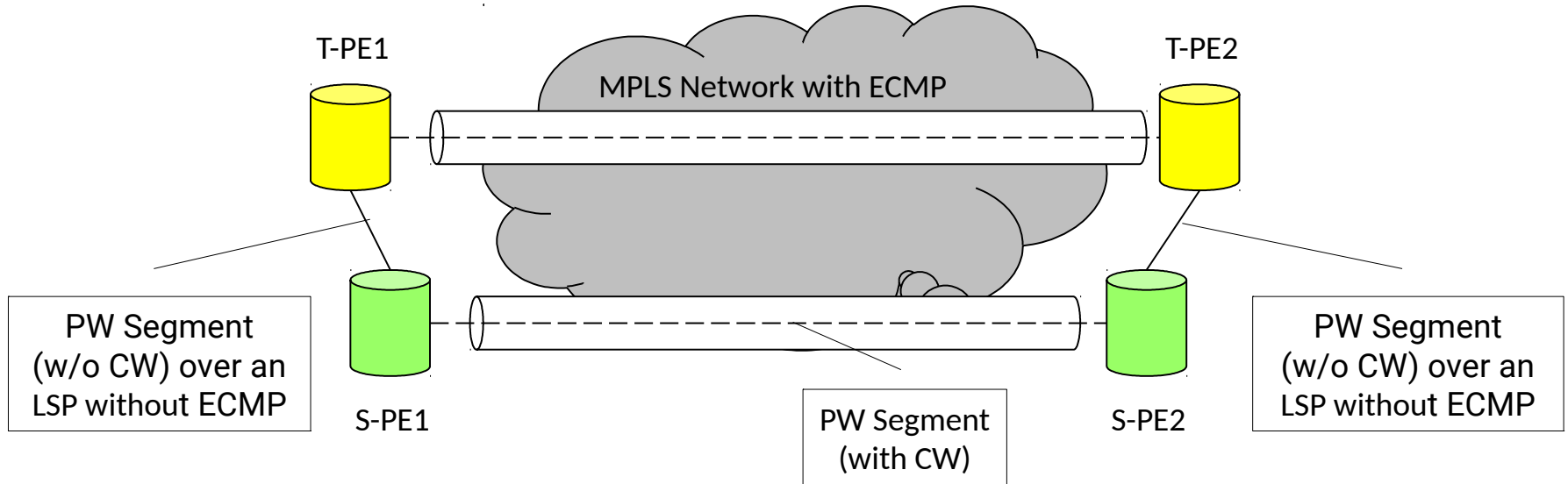


## Protocol rules implemented by S-PE1 to be updated

- S-PE1 advertises support for CC Type 1 to T-PE2 only if T-PE1 has advertised support for a CC Type S-PE1 is capable to stitch to CC Type 1
- S-PE1 advertises to T-PE1 support for all the CC Types it is capable stitch to CC Type 1 only if T-PE2 advertises support for CC Type 1
- S-PE1 can advertise support for ACH-based CV types if and only if it supports VCCV stitching for CC Type 4

**No protocol changes needed on T-PE1 and T-PE2**

# Other Deployment Scenarios





# History

- Draft presented at IETF 102 (MPLS WG)
  - Thanks to Himanshu and Jeff for their online and offline comments
- Comments addressed by clarifying
  - targeting existing deployments
  - not change/impact to other PE or P nodes
  - sequence number MAY be used (RFC4448)

# Next Steps

- Validate the current assumptions
  - How many devices not being capable to use the PW CW exist in the network?
  - What are their capabilities in terms of CC/CV types and (re-)configuration of TTL?
- Further comments to improve the proposal are welcome
- The authors believe the document is ready for WG adoption