PW Control Word Stitching

draft-busi-pals-pw-cw-stitching-00

IETF 102 – Montreal

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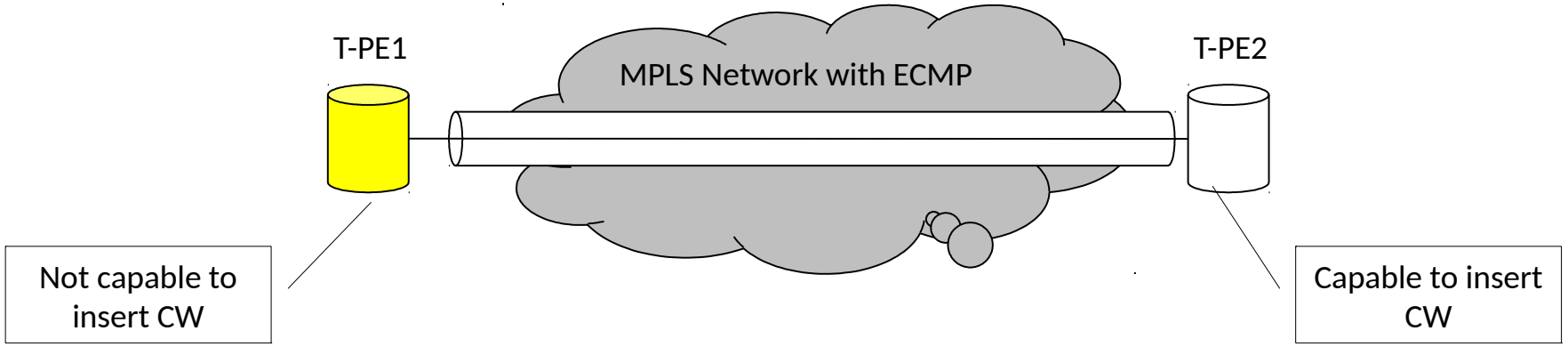
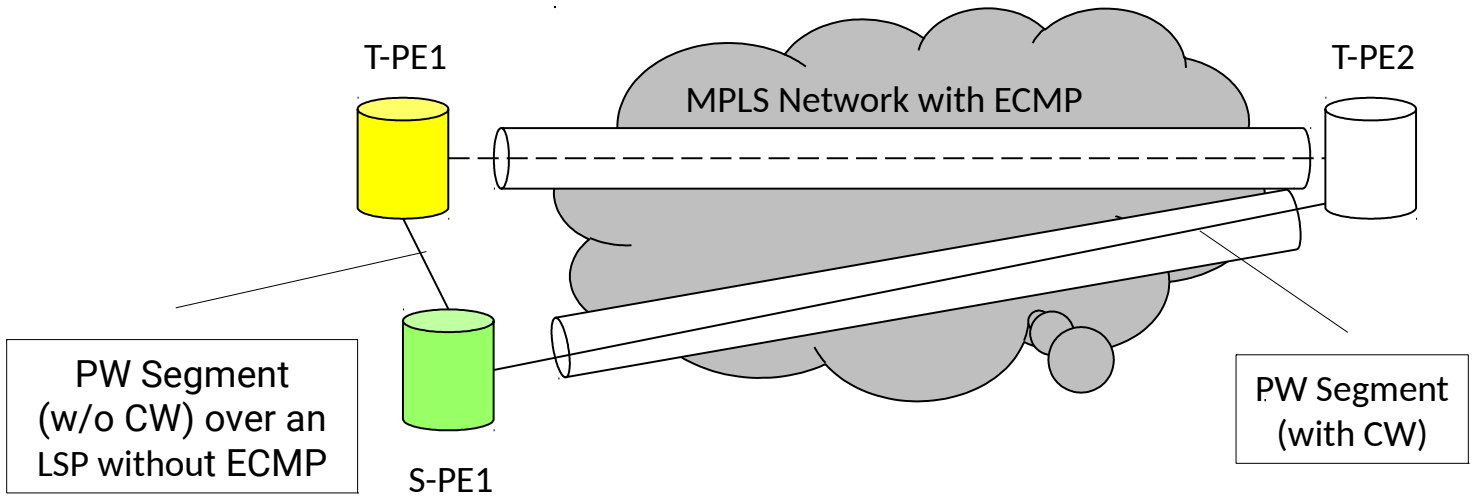
Problem Statement

- Being capable of sending Ethernet PW packets with the CW when at le ast one T-PE is not capable to insert the CW
- draft-ietf-pals-ethernet-cw describes why use of the CW is RECOMMEN DED 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 alwa ys viable
  - This draft does not preclude the possibility of replacing the old piece of equipm ent but provides an alternative option in case replacement is not viable/desired

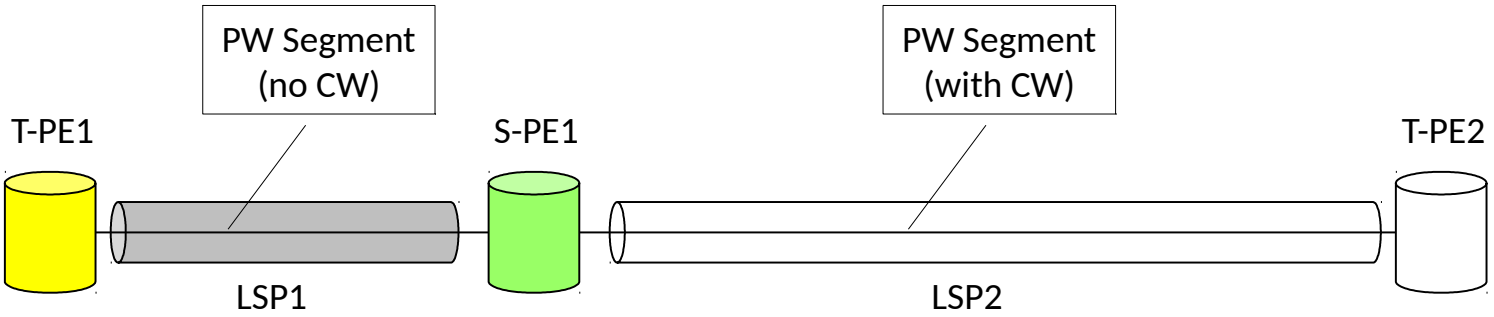


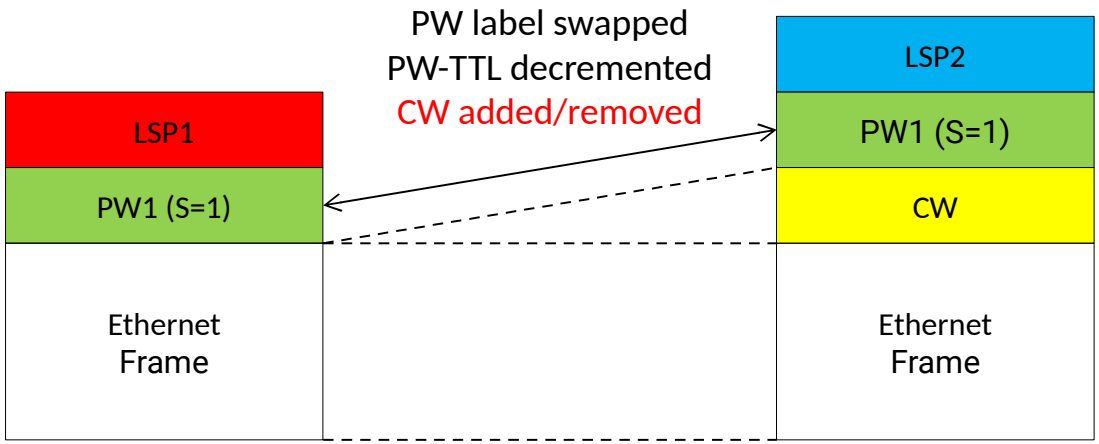
Proposal

- Introduce a new S-PE type which is capable to switch an Ethernet PW segment, us ing 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 disruptio n
  - 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 ter minating SS-PW or MS-PW (RFC 6073)**

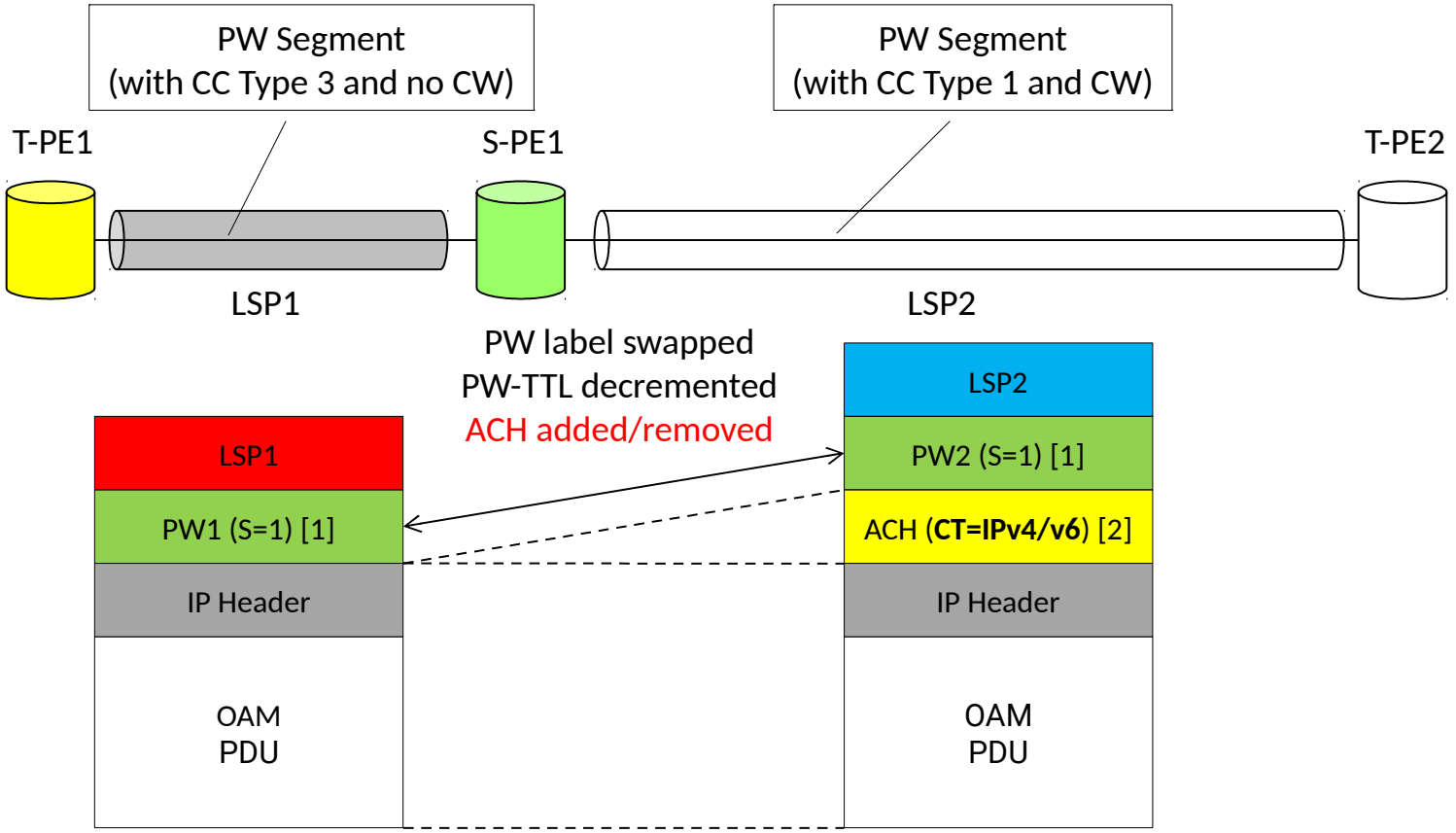


CW Stitching procedure





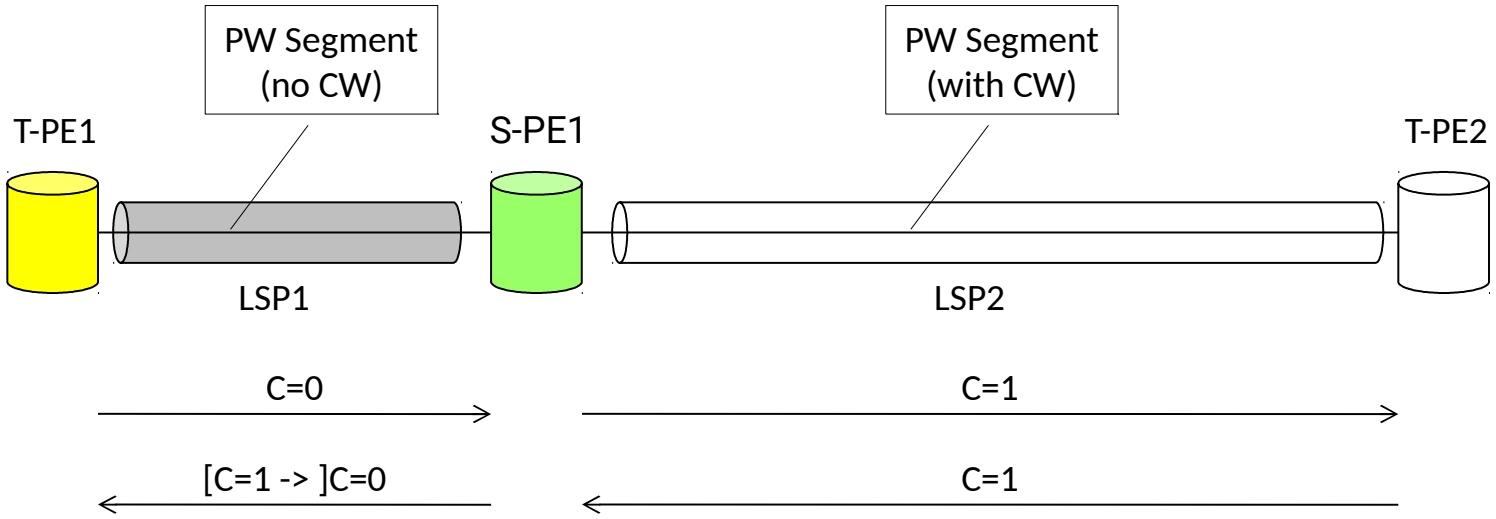
VCCV Stitching procedure for CC Type 3



[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

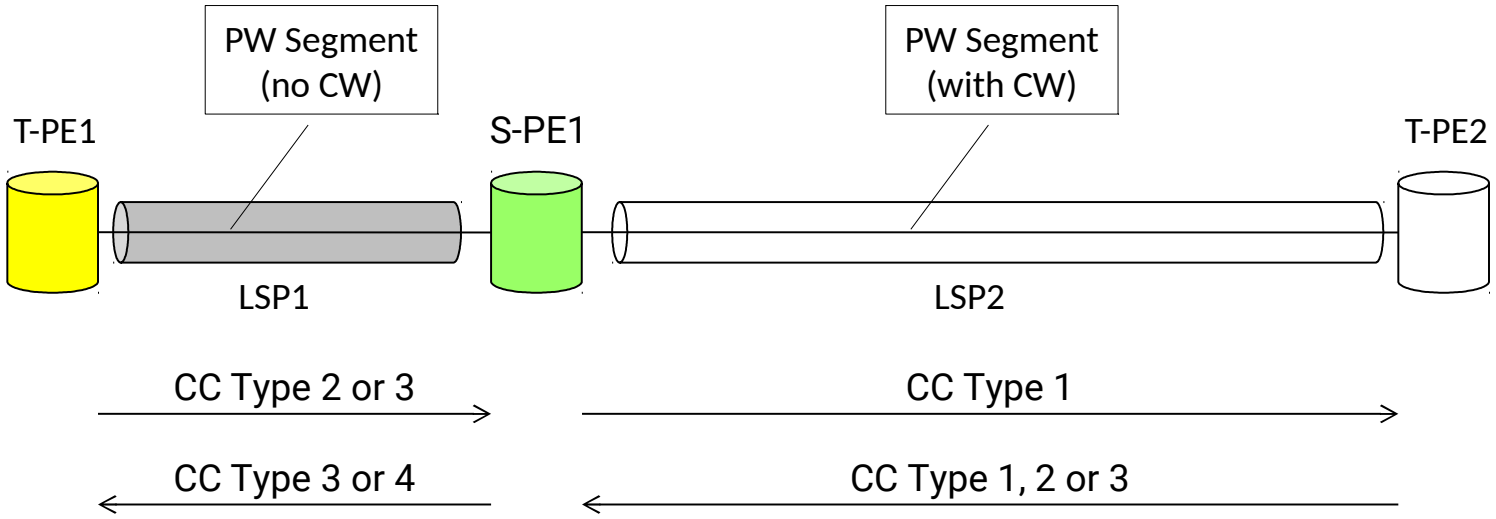


Protocol rules implemented by S-PE1 to be updated

- 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

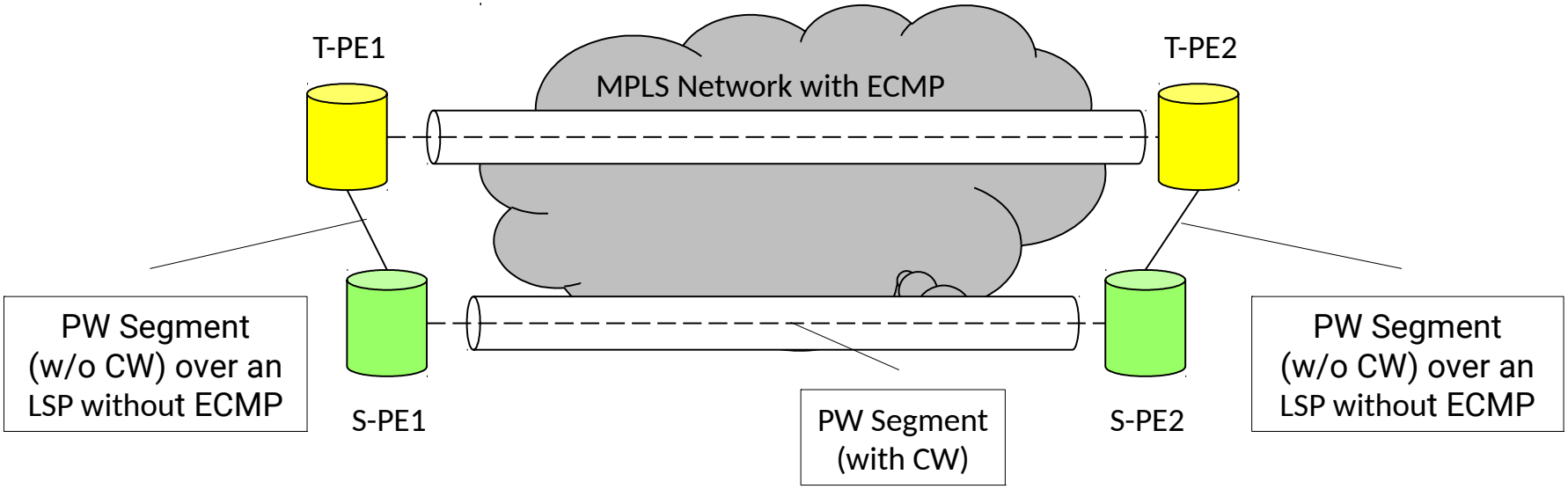


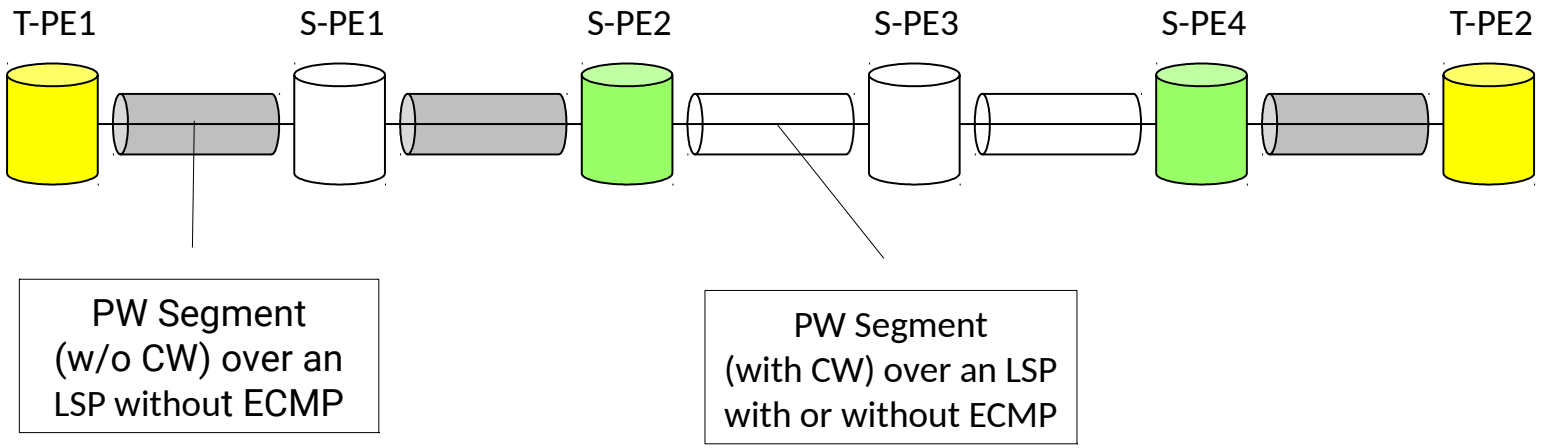
Protocol rules implemented by S-PE1 to be updated

- 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





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