

PBB-TE 1:1 Protection With Load Sharing

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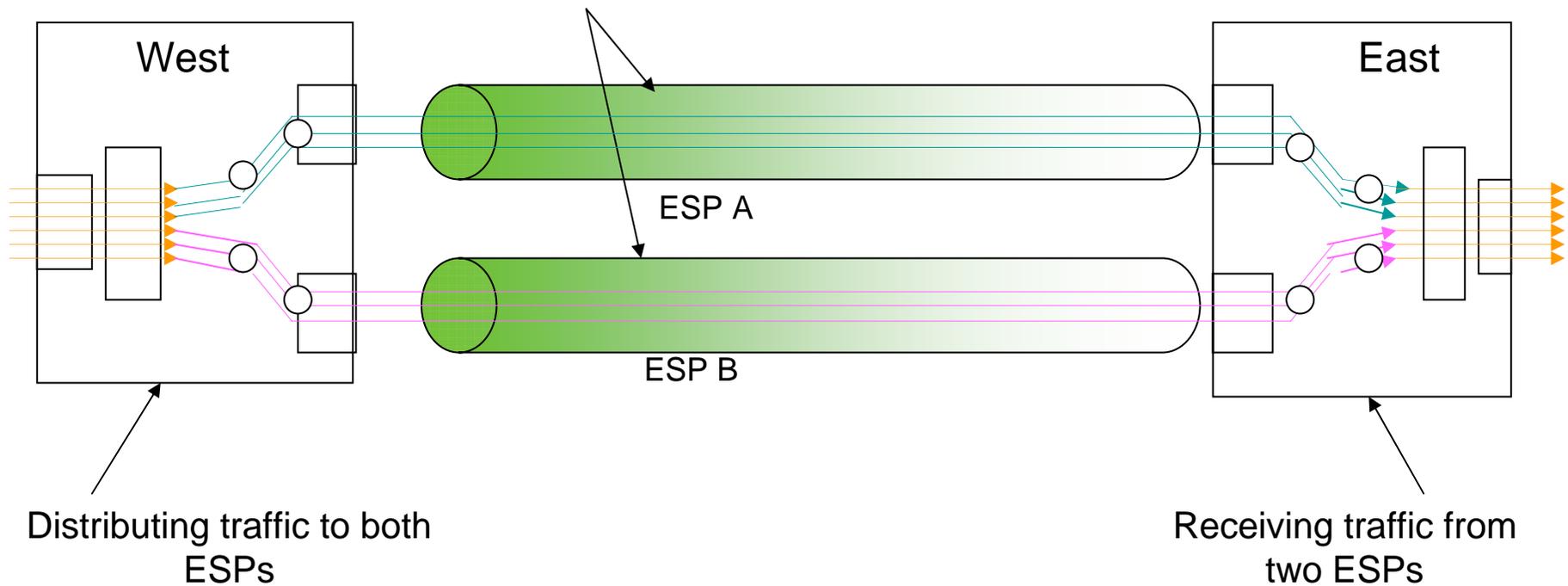
Ben Mack-Crane

Lucy Yong

Linda Dunbar

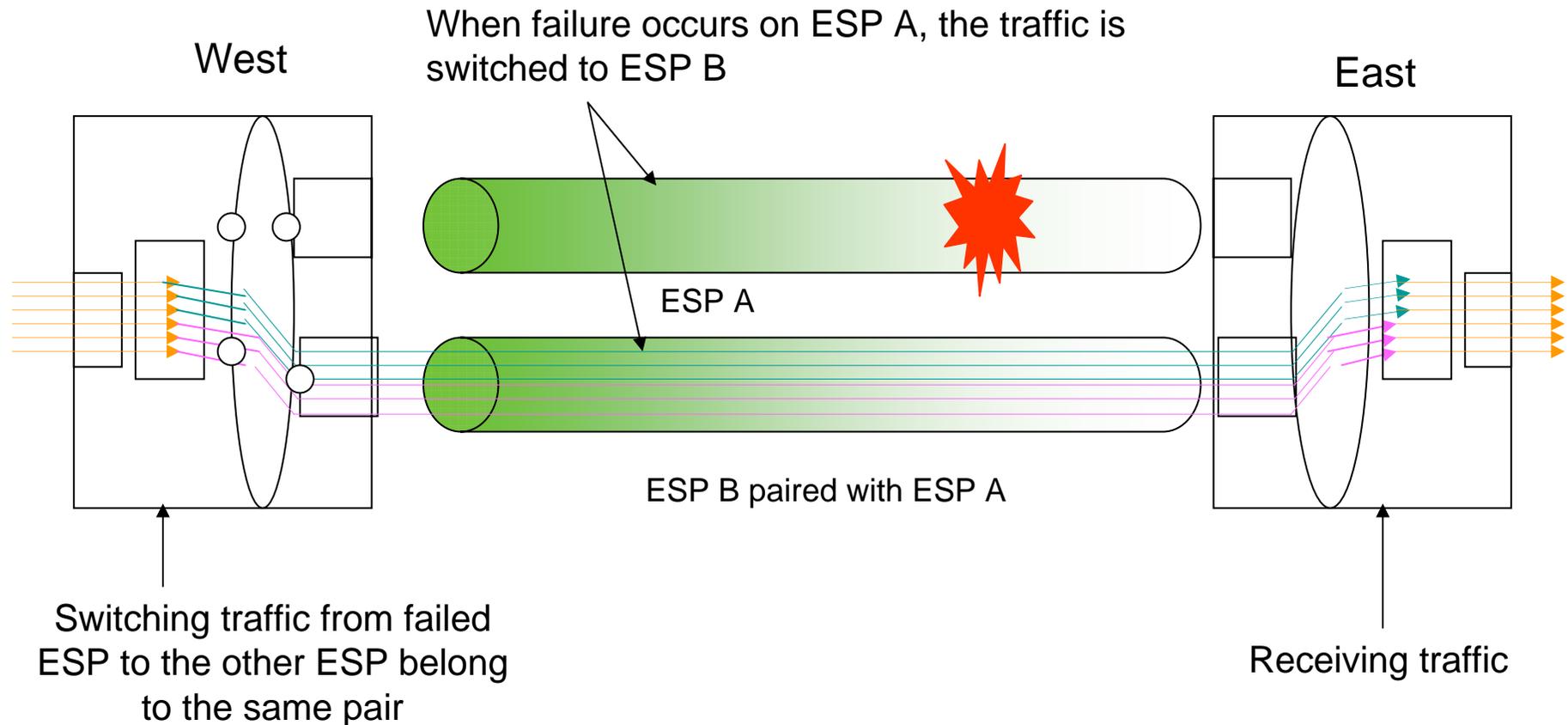
The Intent of 1:1 Protection with Load Sharing

Normal traffic distributed between two ESPs
which is paired as one Protection Group



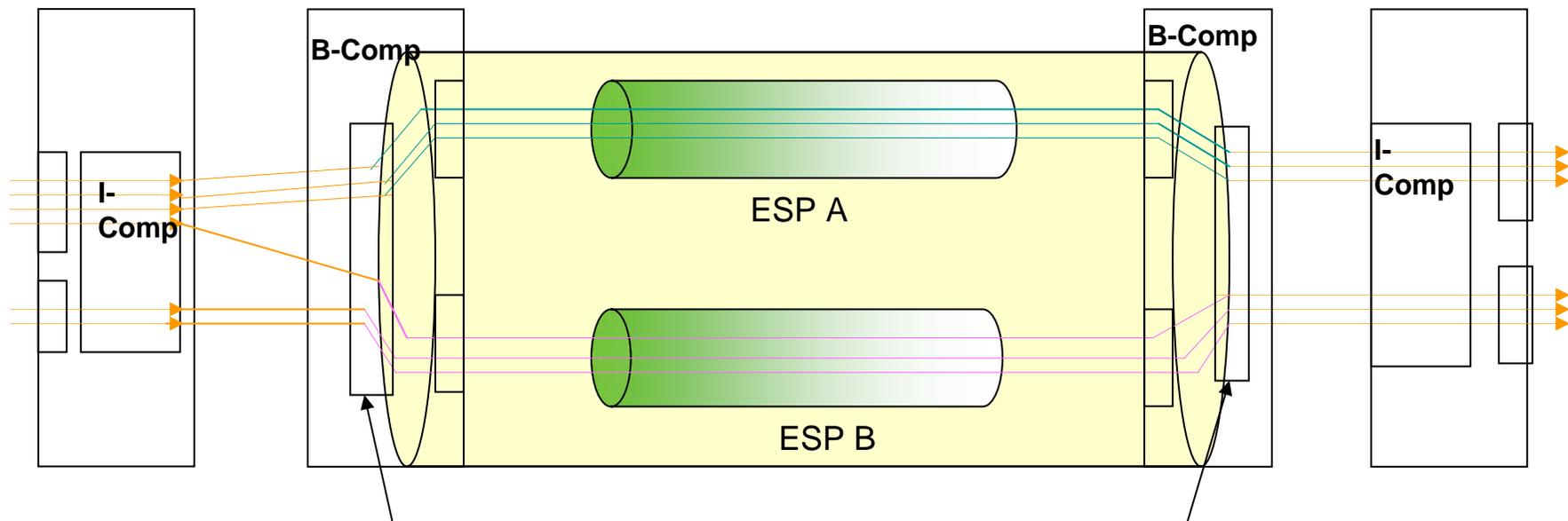
When one ESP fails:

- Traffic from the failed ESP is switched to the other ESP, in the same way as 1:1 protection without load sharing.



Both ESPs are paired

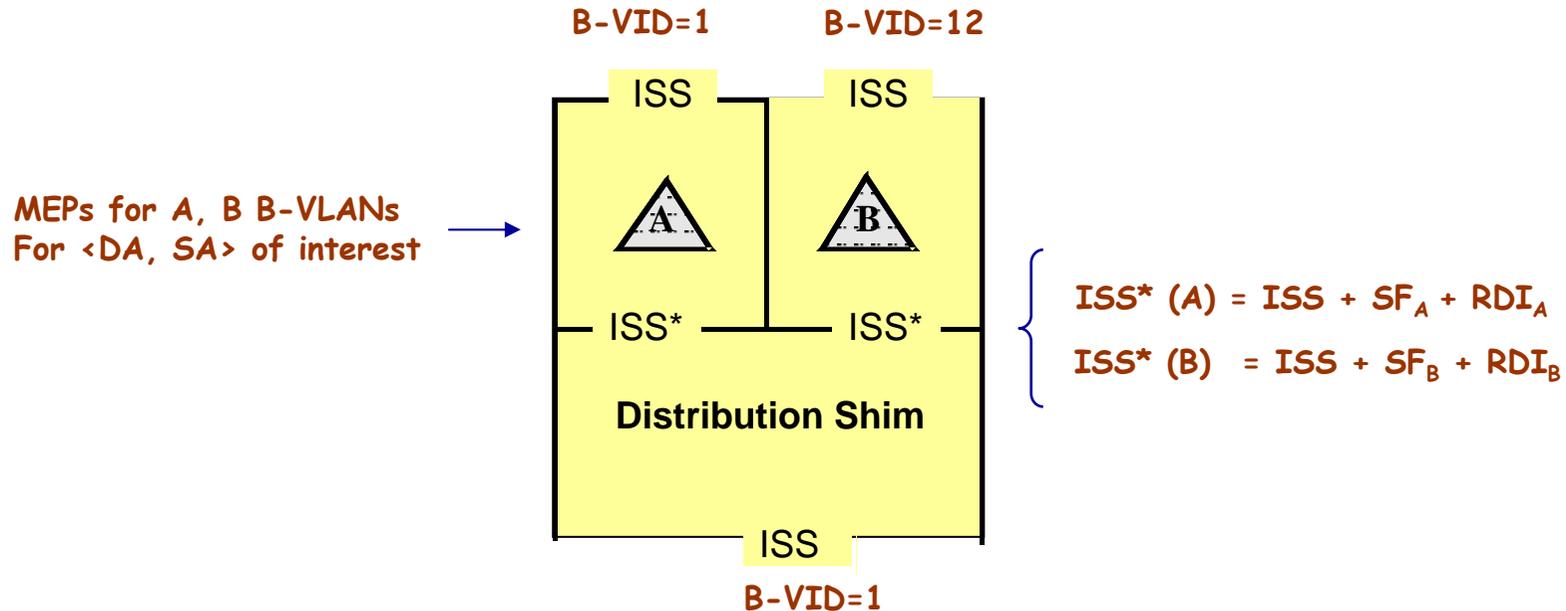
- Service instances are distributed between two ESPs by a “shim” (Distribution Shim).
- Even though two ESPs have different VIDs, there is one Group VID for this protection group. The Group VID could be the VID for ESP-A, ESP-B, or a new VID value.



Load Distribution Shim. Traffic is distributed between the paired ESPs.

The Distribution Shim also perform the switching upon receiving Path Failure indication.

Using Dave Martin's APS Shim



- APS Shim proposed by Dave Martin is now called “Distribution Shim”, which has the same functions, with the extra capability of distributing service instances among 2 ESPs when both ESPs are working



PBB-TE
IEEE P802.1Qay



Benefit of 1:1 protection with load sharing

- Less number of service instances to switch over when one failure occurs => less traffic is impacted by the failure.
- Allow distribution of traffic for given ESPs across multiple routes.
- When PBB and PBB-TE running together over same network, 1:1 protection with load sharing gives better bandwidth utilization to best effort traffic.