

# SPB Resiliency for Multipoint Connections

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# Outline

- › Resiliency approaches
- › SPB restoration
- › Protection switching based on SPB
- › Fast re-route
- › Summary

# Resiliency Approaches

## › Protection switching

- Both the working and the protection are determined and set-up a priori
- OAM for connectivity monitoring
- Fault Management switches from the working path to the protection path in case of failure
- Challenge: keep congruency

## › Restoration

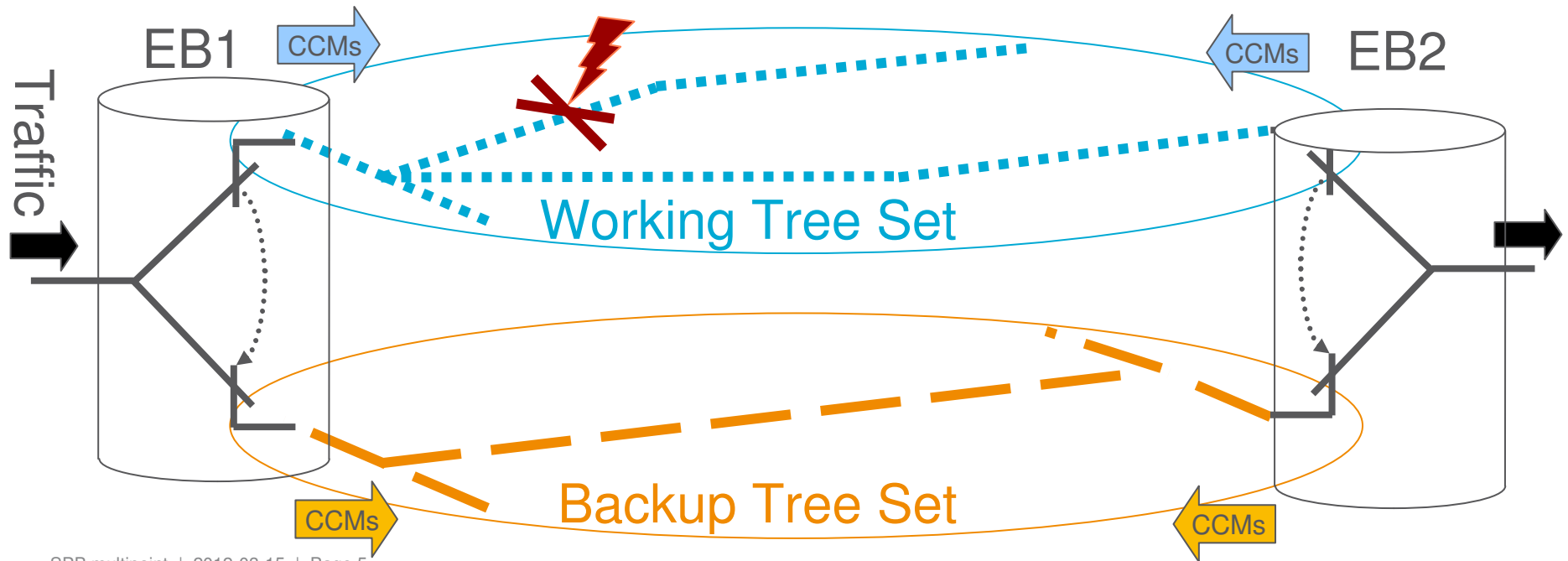
- Dynamic control protocol establishes the forwarding paths
- Failure is detected by the dynamic control protocol as a topology change
- Forwarding paths are updated according to the new topology by the dynamic control protocol

# SPB Restoration

- › ISIS-SPB restores the forwarding paths after a failure
- › Measured failover time
  - 34 ms for 12-node topology

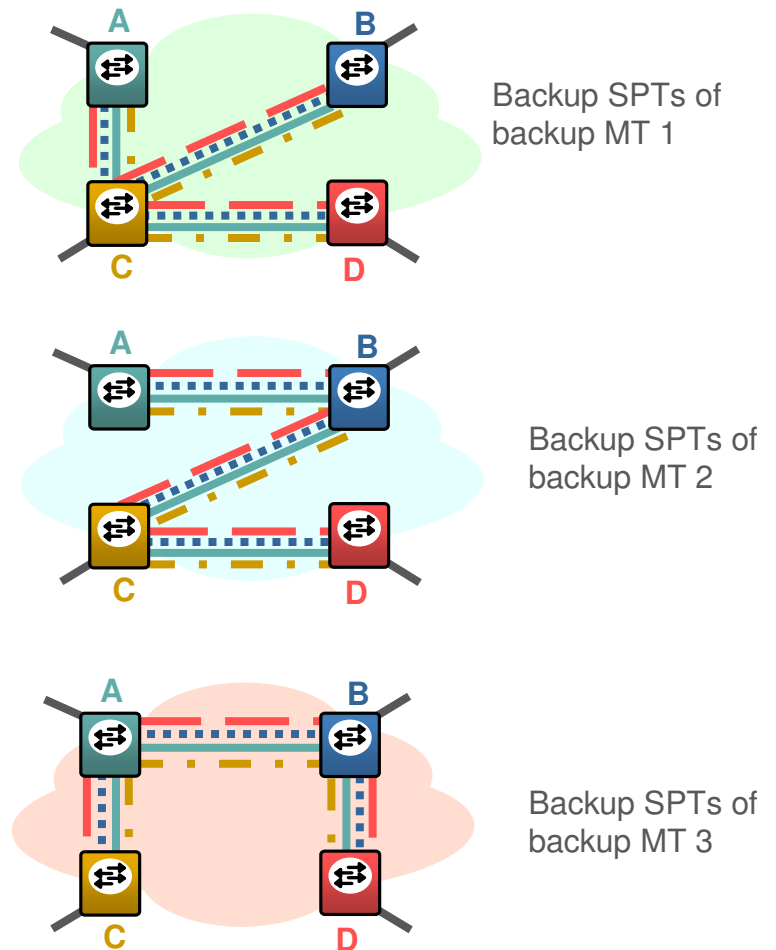
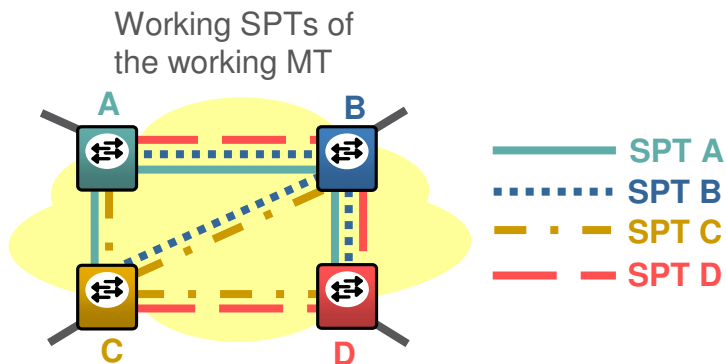
# Protection Switching for Multipoint Connectivity Based on SPB

- › IS-IS Multi Topology can be used set-up the working and the protection SPT Sets, which have distinct Base VIDs
- › Protection switching between the Base VIDs in case of a failure



# Example SPTs

- › Protection against
  - single link failure
  - single node failure



# Fast Re-Route

- › Local switching to safe alternate
  - Implemented by the Alternate Port of RSTP and MSTP
  - Implemented by Loop Free Alternate (LFA) in IP-FRR
- › Challenge: keep congruency of SPTs

# Summary

- › Failover time provided by ISIS-SPB may be satisfactory
- › It is possible to implement protection switching for multipoint services based on SPB