

# IEEE 802.1 Shortest Path Bridging Update Summary

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# Acknowledgements

- Several people have contributed to improving the text and discussions
- Peter Ashwood-Smith
  - Material for Clause 12, 17, 28
- Janos Farkas
- Nigel Bragg
- Paul Unbehagen

# Ballot Draft 2.5

## Votes

- Abstain - 36
- Disapprove - 6
- Approve - 0
- Comments- 142

# Ballot Comments

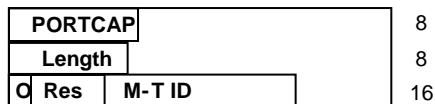
- Definitions, clarification
- Metrics IS-IS and RSTP
- Management Clauses
- IS-IS TLVs
- ECT Migration
- SPBV and SPBM alignment

# Updates

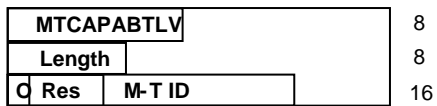
- Marked change Bars
- Clauses 3, 8, 13,
  - Addressing Comments
- Clause 12, 17 new.
- Cause 28 rewrite based on rearrangement.
- Incorporating ECT and aligning SPBV and SPBM
- Management Clauses first draft
- Definitions update removed ECT-VID.

# Clause 28 IS-IS TLVs

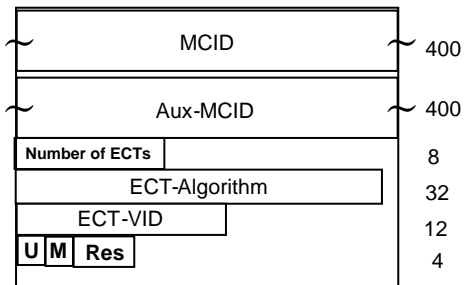
a) Multi Topology Port Capability TLV



b) Multi Topology Aware Capability TLV

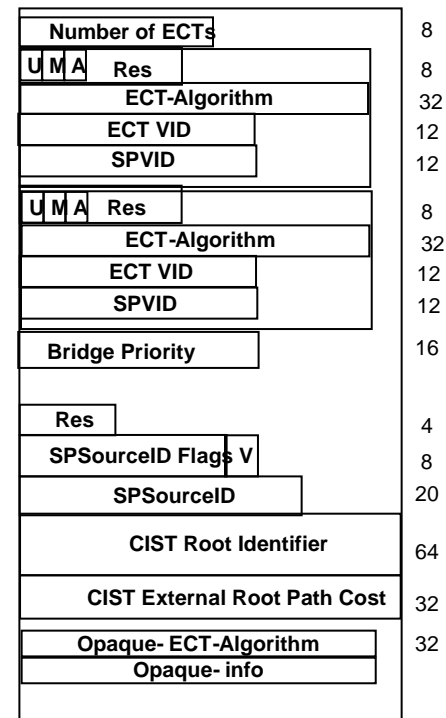


c) Hello PDU BASE-VID sub TLV



Per Bridge

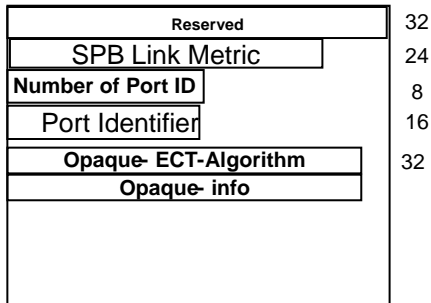
d) SPB Instance sub TLV



Per Bridge

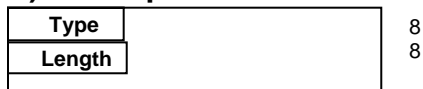
# Clause 28 IS-IS TLVs con't

**e) SPB Link Metric sub TLV**

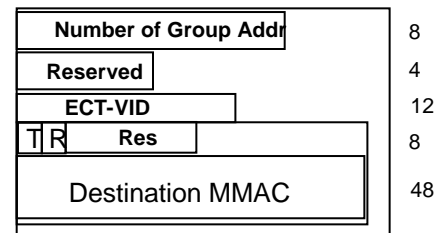


Per Adjacency

**f) Group Address TLV**

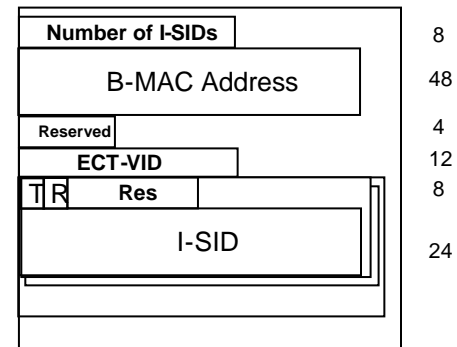


**g) SPBV MAC Address subTLV**



Per Bridge

**h) SPBM Service Identifier and Unicast Address sub TLV**



Per Bridge

# Changes

- Improving Definitions
  - Introduction of 16 ECTs resulted in settling on a consolidated view of SPT Set.
  - Each SPT Set is represented by a single algorithm (separate from the VLAN)
  - VIDs are mapped to FIDs as before.



# IS-IS Address Suggestion

Untagged	Tagged VLAN
<del>AII1ISs</del>	AII2ISs
AII1ISs-SPB	<del>AII1ISs-SPB</del>

# SPB auto-config

- Need to detail how SPB is configured and how it bootstraps:
- Adding a new bridge to an SPB-Domain
- Adding a new ECT to an SPT-Domain
- How IS-IS is configured.

# Next Steps

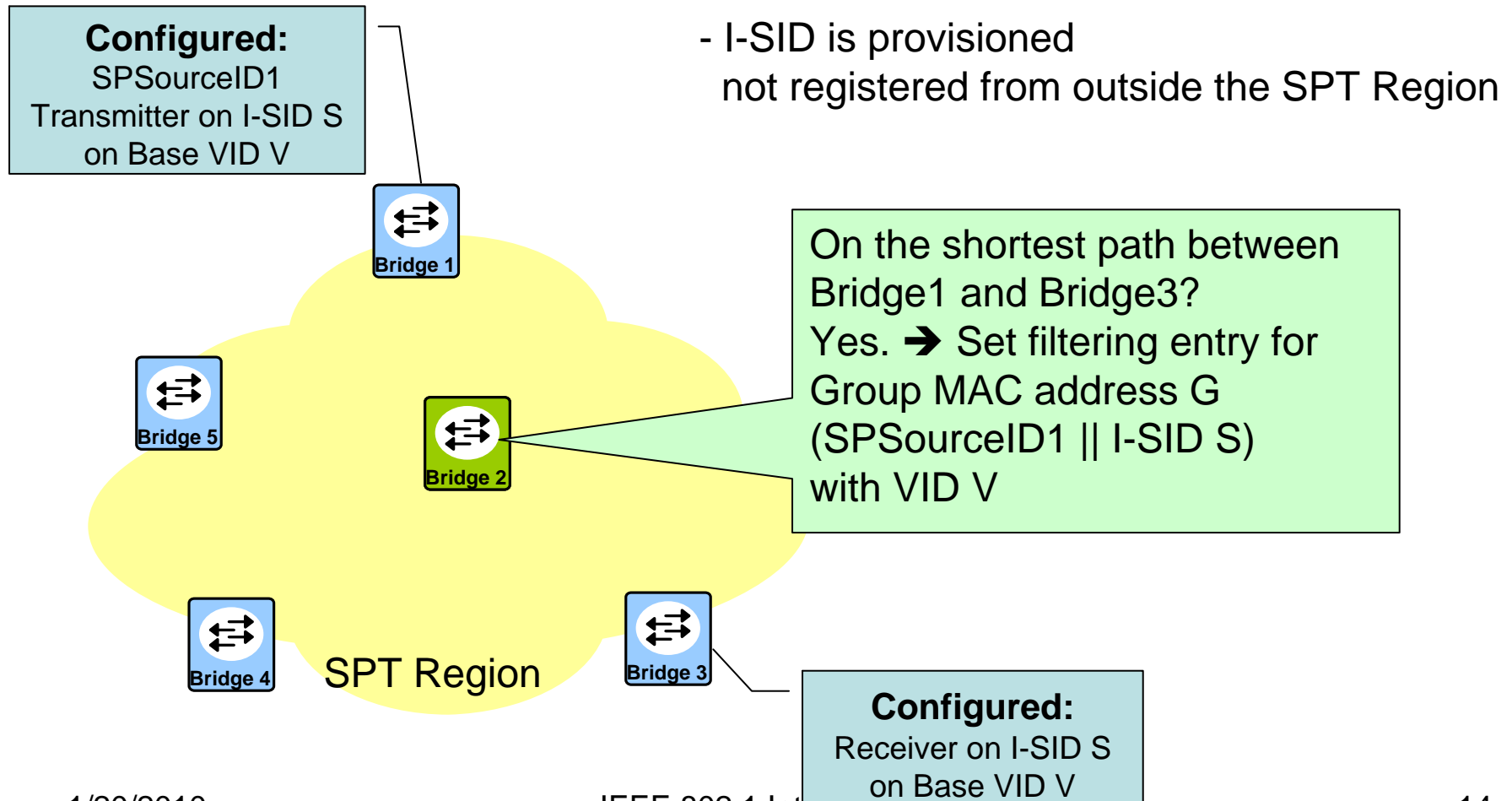
- Continue to revise the document
- Ballot resolution - ready for WG Balloting
- Remove IS-IS over LAN from this version
  - Beyond the scope of current SPB
- Finish and align Digest sections.
  - Agreement Digest
  - MCID
- Add application scenarios – Appendix
  - Typical SPBV and SPBM

# MVRP and SPB

# MMRP Background

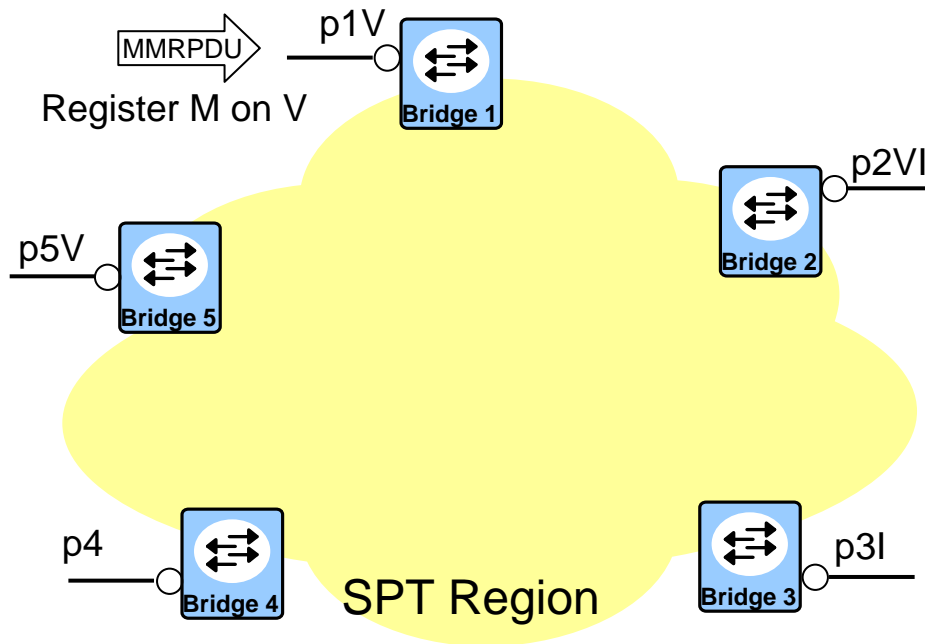
- IS-IS performs MAC address registration inside an SPT Region both in SPBV and SPBM modes
- SPBM
  - Group MAC Addresses is locally significant
  - No interworking is needed with MMRP
- SPBV
  - ISIS-SPB needs to interwork with MMRP on boundary ports
- Note: an SPT Region is seen as a single bridge from outside the Region

# SPBM Group MAC Address Registration



# SPBV MAC Address Registration – 1

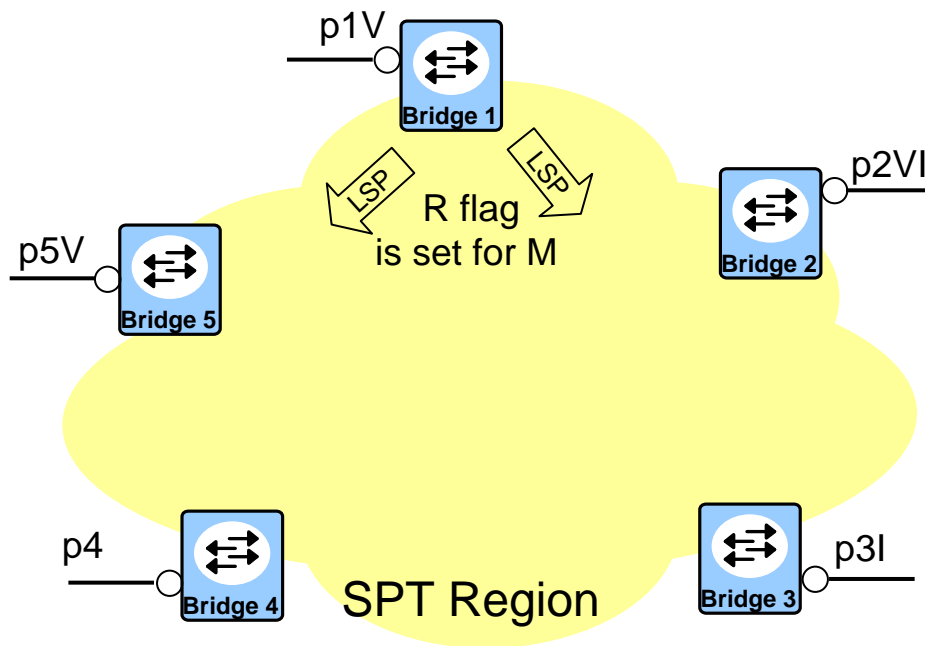
- MMRPDU arrives registering to receive address M in VLAN V on port p1



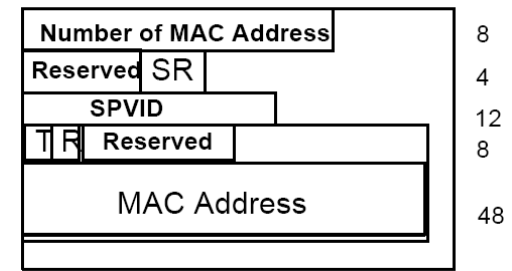
V: is in the member set of VLAN V  
(Base VID = V)  
I: ingress filtering is on  
M: Group MAC Address

# SPBV MAC Address Registration – 2

- IS-IS advertises that p1 is a Receiver of address M in VLAN V (R flag is set)



g) SPBV MAC Address subTLV



Per Bridge

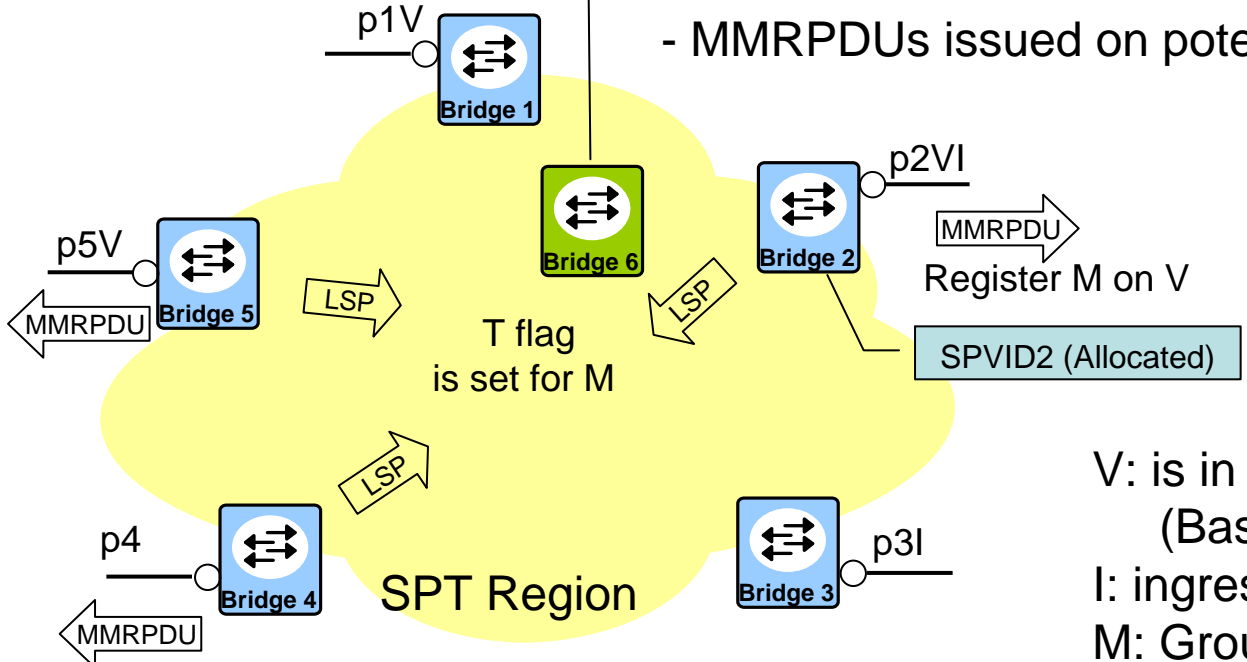
V: is in the member set of VLAN V  
 (Base VID = V)  
 I: ingress filtering is on  
 M: Group MAC Address



# SPBV MAC Address Registration – 3

If on the shortest path between Bridge1 and Bridge2, then set filtering entry for M with SPVID2

- IS-IS advertises which ports (p2, p4, p5) are potential Transmitter of address M in VLAN V (They advertise M in context of V, with the T flag set, when they see the first registration of M in V)
- IS-IS sets the SPTs with the corresponding SPVIDs
- MMRPDUs issued on potential Transmitter ports



V: is in the member set of VLAN V  
(Base VID = V)  
I: ingress filtering is on  
M: Group MAC Address

# Configuring SPBV MAC Registration

- Default operation: SPTs are set-up for all potential Transmitters for M on V
- SPTs can be reduced by configuration
- Force\_T\_Off
  - Configured on a member port of a VLAN, to eliminate it as a candidate transmitter
  - If Set, then corresponding SPT is not set-up
  - Default value is Clear