# IEEE 802.1 Shortest Path Bridging Update Summary For Discussion

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# Current Activities

- Closing on technical details
- Proposal for Equal Cost Trees (Multipath)
  - Mick, Peter, Nigel
- Digests
  - Configuration Digest and Backwards compatibility
  - Agreement Digest
- Clause 28 Updates
  - Realignment of IS-IS TLVs for the above
- Open Ballot Comment resolution
  - Continuing offline

# Plans

- Update the text
- Clause 12 new text
- Next Task Group Ballot start (End December 09)

# Where are we?

- Need to close on technical issues presented today
  - Digests
  - Backwards compatibility
  - Equal Cost Tree Strategy
- Write Management Clauses 12, 17
- PICs
- Clean up the document

# Configuration Digest

- Created from the MST Configuration Table
- Included in the MST Configuration Identifier (MCID)
- Roles of Configuration Digest
  - Determines the boundaries of an SPT Region
  - Ensures consistent VID to FID and FID to MSTID allocations within the region
  - Ensures consistent control protocol operation for each VLAN within the Region
- Does not specify
  - SPT Set assignment to a VLAN
  - ECT algorithm for the SPT Set
  - SPVID or SPTID allocation

# Migrating Configuration Digest

- While there are many networks that would never need to migrate MCID the question is what do you do if you need to migrate.
- Two solutions partition the region or allow a seamless migration.
  - We handle the partitioning today
  - Migration can be enabled by allowing two MCID to be computed and being able to accept either.

# VIDs Naming

- Base VID – MSTP and SPB
- Primary VID – 802.1ag and SPB
- ECT VID – SPB for identifying SPT Sets

We are adopting a policy of naming behavior of VIDs. In a particularly topology Base VID Primary VID and ECT VID could all be the same VID Value.

# Agreement Digest

- Carried in SPT BPDUs
  - Agreement Digest
    - 32-byte LSP Digests XOR-ed
  - LSP Digest
    - SHA-256 on certain LSP fields
    - TLVs
      - Intermediate System Neighbors
      - SPB Link Metric sub TLV
      - SPB Instance sub TLV

| Agreement Digest Format Selector |
| --- |
| LSDB Digest |

| LSP Identifier |
| --- |
| Flags |
| TLVs |

- Roles of Agreement Digest
  - Loop prevention
  - Conflicting SPTID: no data frame exchange on the affected SPT

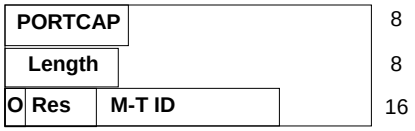
# IS-IS Adjacency

- Adjacency is formed if
  - Neighbors have one Area Address in common
    - and one MT ID in common for point to point adjacency
  - Neighbors implement the same ECT algorithm
  - Neighbors assign the same SPT Set, i.e. the same ECT Algorithm, to a given ECT VID
- Conflicts not breaking adjacency
  - SPBM Service Identifier and Unicast Address sub TLV
  - Group MAC Address subTLV

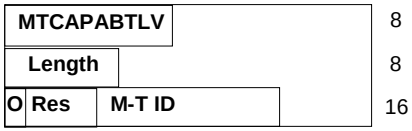
# IS-IS Data Structures

## Proposal from Peter Ashwood-Smith

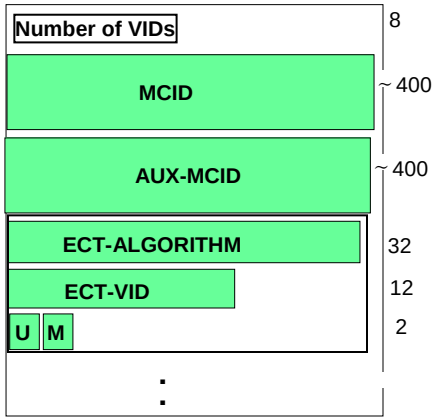
a ) Multi Topology Port Capability TLV



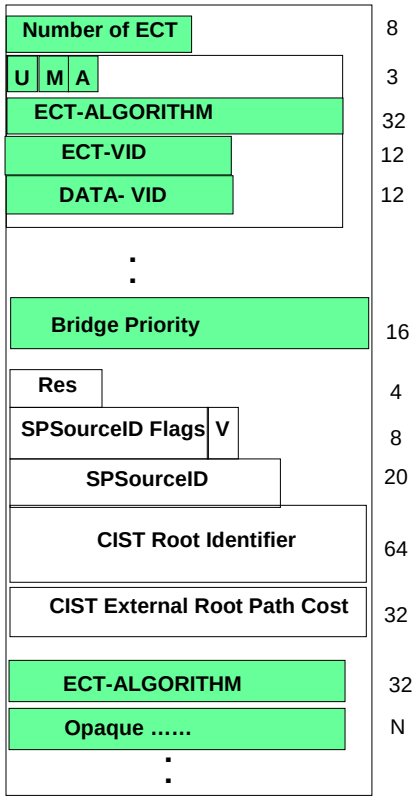

b ) Multi Topology Aware Capability TLV




c ) Hello PDU BASE -VID sub TLV

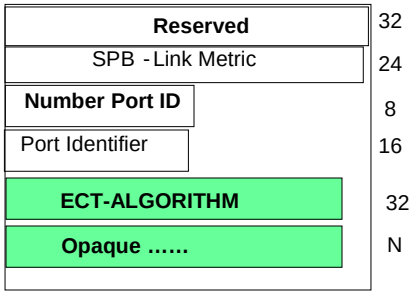



d ) SPB Instance sub TLV




Per Bridge

e ) SPB Link Metric sub TLV

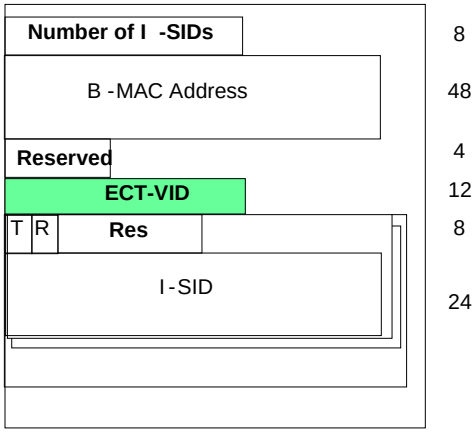



Per Adjacency

# IS-IS Data Structures Cont

## Proposal from Peter Ashwood-Smith

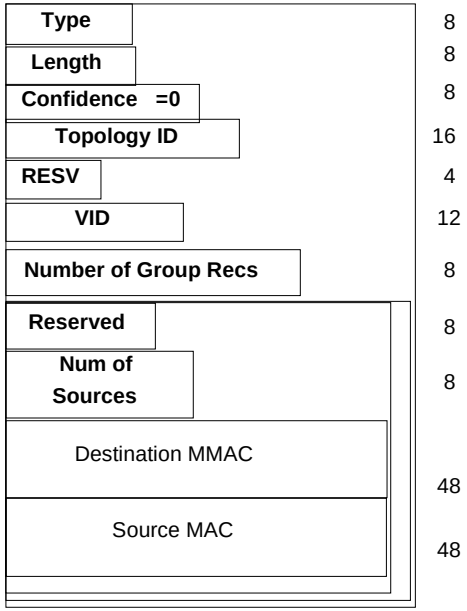
**h ) SPBM Service Identifier and Unicast Address sub TLV**




Per Bridge

**f ) Group Address TLV**


**g ) Group MAC Address subTLV**




Per Bridge

# Fat Tree Example