802.1Qbp – ECMP
Editor’s Notes and Issues

Ben Mack-Crane
(ben.mackcrane@huawei.com)
Clauses in 802.1Qbp D0.0

- 1, 3, 4: Overview, Definitions, Abbreviations
  - Placeholders
- 6. Support of the MAC Service
  - Added primitive parameter: filtering_information
  - Added shim for F-TAG processing
- 8. Principles of bridge operation
  - Added new FDB entry type: Dynamic Selection Entry
- 9. Tagged frame format
  - Added description of F-TAG
- 27. Shortest Path Bridging (SPB)
  - Added subclause to 27.17 to describe ECMP
- 28. ISIS-SPB Link State Protocol
  - Added single SPT Set ECMP ECT-ALGORITHMs (28.9)
Clause 6 – Support of the MAC Service

- Added new **filtering_information** parameter
  - Picked a generic name in case other enhanced filtering features are added in the future (try to avoid new parameter for each)
  - Indicated that the filtering_information is not required – that is, the Relay can filter frames without this additional information
  - Used the same dodge as used for connection_identifier – that is, that protocol entities in the stack that do not specify what they do with filtering_information pass it transparently (so we do not have to touch all the clauses)
- Added clause for **Support for Flow Filtering**
  - Describes F-TAG processing shim
  - Includes both tag generation and removal/insertion
- **Issues/Questions**
  - One shim or two (tag generation, tag processing)
  - How to support untagged (no B-TAG) case
Clause 8 – Principles of bridge operation

• Added **Dynamic Selection Entry** (new FDB entry type)
  – Port map specifies set from which one must be selected
  – Same information structure as Dynamic Filtering Entry
  – Only one Dynamic Filtering/Selection Entry in the FDB for any given FID/MAC
  – Created by ISIS-SPB for individual address ECMP

• Changed filtering process description and Table 8-7
  – Show where Dynamic Selection Entry is used in filtering process
  – Show change to application of individual “wildcard” entry (.1aq)

• Issues/Questions
  – Need to add description of the **dynamic selection process** (where should this be placed?)
  – Should Table 8-7 be changed in 802.1aq?
Clause 9 – Tagged frame format

• Added **F-TAG** description
  – Filtering tag (as opposed to VLAN tag)
  – Selection based on discussion in Santa Fe
  – See bp-mackcrane-tag-format-0711.ppt
Clause 27 – Shortest Path Bridging (SPB)

• Added paragraph to introduction
  – Describes SPBM behavior with ECMP
• Added clause 27.10 Loop Mitigation
  – Describes loop mitigation provided by TTL in F-TAG
• Changed clause 27.17 Equal cost shortest paths, ECTs, and load spreading
  – Added introductory text describing two load spreading methods: ECT VLANs and ECMP
  – Added subclause on ECMP (only high level description so far)
• Issues/Questions
  – Failed to delete text of clause 27.16 (oops! Nothing changed there.)
  – Do we need to add requirements for ECMP in clause 27.1?
  – Do we need an ECMP example in clause 27.18?
Clause 28 – ISIS-SPB Link State Protocol

• Added clause 28.9 ECMP Algorithms
  – Describes ECMP ECT Algorithms using single SPT Sets
  – Table of ECT-ALGORITHM IDs
• Changed SPBM Service Identifier and Unicast Address (ISID-ADDR) TLV
  – As per side discussion in Santa Fe
  – Added option to associate I-SID with ECT-ALGORITHM (rather than B-VID)
• Issues/Questions
  – Can we safely change the I-SID to B-VID association and require that only one B-VID can use each ECT-ALGORITHM?
  – Do we want to support additional multicast load spreading options?
Clauses still needed for 802.1Qbp

• 1, 3, 4: Overview, Definitions, Abbreviations
• 5. Conformance
  – Add conformance requirements for SPBM ECMP support
• 8. Principles of bridge operation
  – Dynamic selection process description (hash-based selection)
• 12. Management
• 17. MIB
• Annex A. PICS
• TBD (depending on issue resolution and further study)
  – CFM clauses (18-22)
  – CN clauses (30-33)
  – SRP (35)