Section 2 (MAC) CRG Summary

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Summary

- 342 comments for Clauses 5, 6, 8, G, H, I

Clause	Editorials	Technicals	Punts	Total
5	23	29		52
6	59	114	1	174
8	20	38	1	59
G	2	4		6
H	9	3		12
I	36	3		39
	149	191	2	342

- All technical comments dealt with (resolved or deferred to WG)
- Editors granted editorial license on all editorial comments
- 34 comments rejected
- 7 comments deferred to WG

Issues Covered – Clause 5

- Service definition fixes
- Primitives definition adjustments
- Reflective client behavior still disallowed
- Opcodes and operands
- Reference model

Issues Covered – Clause 6

- Terms/Defs
- A0 rate calculation, STQ/A1/A0 provisioning
- Shaper text/Clause9 integration
- Promiscuous mode
- sendX/ringlet selection
- TTL setting/decrementing
- Ringlet naming
- Reachability
- Table 6.1 fixes
- Shapers/Fig 6.2/6.4 mods
- Stage Queue implementation
- Rx State Table/Flowchart
- Tx State Tables/Flowcharts

Issues Covered – Clause 8

- Minimum Frame Size
- Maximum Frame Size
- HEC initial value=0
- CRC is done in Enet bit order
- Fairness Frame Parity Sense (odd)

Issues Covered – Annexes G,H,I

- Accept Annex G as normative
- CRC handling clarifications
- Update example code to reflect Clause 6
- Spatial shaper examples

Rejected Comments

- 123
  - Clause 5.2.2, page 48, line 44
  - Comment: I don't believe the last sentence of this paragaph is correct. If Class A traffic is committed, but absent during an interval, then the fairness algorithm can not take advantage of this temporary increase in available bandwidth for other applications. However, I assume that for Class B traffic, if it is temporarily not there, then this unused bandwidth is usable by other traffic (Excess class B and Class C traffic).
  - Resolution: The assumption about classA is incorrect. classA can be reclaimed.
- 177
  - Clause 5.3.1.1, page 50, line 17
  - Comment: sourceAddress is a required primitive. Whether in implementation it is provided by the MAC chip or not is outside the scope of the standard.
  - Resolution: The only client that uses Source Address is a bridge. It is optional for all other clients.

Rejected Comments

- 129
  - Clause 5.3.1.1, page 50, line 35
  - Comment: The MACProtection parameter is NOT described in Clause 6.2
  - Resolution: MACProtection is mentioned in 6.2 (6.2.2, 6.2.4, etc.).
- 133
  - Clause 5.3.2.3, page 51, line 44
  - Comment: Why should we specify the ability to optionally receive FCS-errored frames?
  - Resolution: Some higher layers need FCS errored frames. Sending these, optionally, allows higher layer agnosticism.

Rejected Comments

- 141
  - Clause 5.3.3, page 52, line 12
  - Comment: The concept of flush and its use is introduced without precedence and a resolution in this draft. I can not find an appropriate presentation or a motion to add this to D1.0. While, it may be useful, needs a detailed proposal with text and state machines for changes in the appropriate clauses.
  - Resolution: flush was accepted at last meeting. This reflects that decision. [ed: See D0.3 612.]
- 223
  - Clause 6.4, page 63, line 46
  - Comment: The usefullness of a physical stage queue should be stated
  - Resolution: The standard does not specify any physical implementation of the logical stage queue.

Rejected Comments

- 237
  - Clause 6.5.1, page 64, line 27
  - Comment: "The client’s subclassA1, classB, and classC traffic is additionally shaped by shaperD (shaper for downstream), to constrain the client to sustain the downstream allocated subclassA0 rate.“
    Shaping the client's A1, B, and C traffic doesn't sustain the downstream allocated subclassA0 rate. The Transit's A1, B and C should also pass through shaperD.
  - Resolution: Transit traffic can not be shaped, and does not need to be since the add traffic will be correctly shaped to avoid consuming A0 bandwidth.

Rejected Comments

- 255, 256, 258, 259, 261, 262, 263, 265, 266, 267, 268, 275, 277, 279, 280, 281, 283, 284
  - Clause 6.6-6.7, page 66-77
  - Comment: [ed: Various technical comments against an editorial note.]
  - Resolution: Editor's note will be removed in next draft.
    - [ed: The attractive nuisance will be removed and such an inappropriate comment magnet will not repeated.]

Rejected Comments

- 301
  - Clause 6.8, page 79, line 29
  - Comment: Row "11" needs to check packet header if it is a bridged packet or not.
  - Resolution: No such thing as a flood bit. No definition of a bridged frame.
- 310
  - Clause 6.8, page 81, line 11
  - Comment: Row 6.16-11 needs to check whether flood bit is set
  - Resolution: There is no flood bit to check.

Rejected Comments

- 348
  - Clause 8, page 103, line 1
  - Comment: SInce we are accepting no changes after the September meeting we need to have a discussion in New Orleans to satisfy ourselves that the frame format that we accept has sufficient flexibility to accommodate changes we may need later on (including the next revision of the RPR standard and requirements for Bridging that we chose to not address within this document.). Until that discussion has taken place and we are satisfied that our frame format will address not only the concerns for the capabilities spelled out in this document, but allows RPR to grow in function over time, we should not accept the present frame format.
  - Resolution: The comment and the proposed resolution propose no changes to the text.

Rejected Comments

- 353
  - Clause 8.2, page 104, line 1
  - Comment: Figure 8.1 - RPR data frame format does not provide control bits for the following type of frames:
    p. 150 Figure 10.2 - Topology packet format
    p. 165 Figure 11.5 - Protection switch packet format
  - Resolution: The frame types mentioned are not data frames and are not covered by Figure 8.1.
- 392
  - Clause 8.4.1, page 110, line 27
  - Comment: Using Bit 0 of the ring control field as a parity bit for fairness messages does almost nothing to protect this field. In the other frame formats the bit is reserved and thus set to 0. Parity is supposed to detect all single bit errors. In about 1/4th of the instances, a single bit error in the packet type field of a data frame will convert the frame to a fairness frame with valid parity. The FCS should detect that these are invalid frames but if we are relying on that why do we need a parity bit.
  - Resolution: Dup of 3473.

Rejected Comments

- 481
  - Clause 10.4.1.1.3, page 151, line 14
  - Comment: Jumbo frame are currently known as 9216bytes frame.
    What if another terms will be defined in the future for other frame size, for example "Extra Jumbo frame", or "Mini Jumbo frame", or ...
  - Resolution: There is no need to support any more than the 2 frame sizes.
- 3444
  - D0.3: Clause 8.1, page 80, line 18
  - Comment: Protocol type field is not needed to be protected by HEC. In general, protocol type is not seen or modified by the MAC and should not alter the behavior of the MAC.
  - Resolution:
    - D0.3: Punt to FFAH.
    - D1.0: Rejected.

Rejected Comments

- 3473, 3474
  - D0.3: Clause 8.5, page 86, line 29
  - Comment: Using bit 0 as a parity bit does little to protect ther fairness packet. Given that there is no default setting for this bit in a data packet, Flipping the bit that differentiates a Fairness packet and a data packet can easily cause a fairness
  - packet to look like a data packet.
  - Resolution:
    - D0.3: Punt to FFAH.
    - D1.0: Can not be mistaken for data frame due to lack of HEC and due to short size.

Comments Deferred To WG

- 249
  - Clause 6.5.5, page 65, line 36
  - Comment: Text is needed for shapers.
  - CRG: Non-unanimous acceptance of proposed resolution
    - Based upon the text of 6.5.5 and the editorial note of subclauses 6.6 and 6.7, create standard subclauses 6.6 and 6.7 with the text provided in "jl_cls06_MAC_6.6_0926.fm/pdf".
- 296
  - Clause 6.8, page 79, line 7
  - Comment: The special processing of fairness frames, which have a distinct length and integrity check is unacceptable. Computer backplane has learned long ago to have one form of integrity check, not a bit-selectable form, where that bit controls the parity mode.

Comments Deferred To WG

- 360
  - Clause 8.2.1, page 104, line 35
  - Comment: The frame format has a multitude of problems, including:
    - 1) Inefficient use of bits
    - 2) 16-bit (as opposed to 32-bit) aligned.
    - 3) Different header and payload check values
    - 4) No support for basic-bridge flooding
    - 5) No duplicate suppression for local multicast and broadcast.
    - 6) The type field is isolated from the payload, to which it may apply.
- 385
  - Clause 8.4, page 110, line 1
  - Comment: The fairness format has a multitude of problems, including:
    - 1) Loss of protection due to parity-only (affects other frames also).
    - 2) A CRC-covered bit specifies if CRC is used, so a single-bit failure of this bit can effectively cause a large multiple-bit error.
    - 3) Nonstandard length.

Comments Deferred To WG

- 3469
  - D0.3: Clause 8.5, page 86, line 1
  - Comment: Fairness packets do not have a HEC. This is a problem for Type B fairness messages which are broadcast.
- 3470
  - D0.3: Clause 8.5, page 86, line 1
  - Comment: The Fairness frame format should be the same as the control packet format. Any savings in bandwidth is in the noise and multiple frame formats complicates design unnecessarily

Comments Deferred To WG

- 3722
  - D0.3: Clause I.2.3, page 347, line 1
  - Comment: There is no clause for Spatial sendC generation.
  - CRG: To do so would require the development of appropriate multi-choke fairness text.

Action Items

- Kshitij Kumar requested to provide a contribution on latency bounds for classB (see #209)
- Leon Bruckman and Steve Wood requested to provide contribution(s) on Center vs. Edge wrap (see #335)
  - Do we need both?
  - Is one better than the other? If so, for what scenarios?
  - Can they coexist?
  - What are the different implications on the client?

Open Issues

- Exact jitter bounds for classA and classB
- Shaper/sendX definitions and uses
  - Resolved if xxx is accepted
- Ringlet selection for wrapped station
- HEC-32
- Location/coverage of type field in frame format
- Fairness frame format
- Bridging, misordering, duplication effects on frame format and data path
- Implementation guidelines content and completion