“Distinguished minimum latency traffic in a converged traffic environment”
DMLT

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Reflector and Web

- CFI information posted at page <http://www.ieee802.org/3/cfi/request_1112_1.html> with a link to the presentation - the presentation itself can be found at the link <http://www.ieee802.org/3/cfi/1112_1/CFI_01_1112.pdf>.
- Study Group reflector

stds-802-3-DMLT@listserv.ieee.org

To subscribe to the DMLT-reflector, send an email to: ListServ@ieee.org with the following in the body of the message (do not include "<>"):
subscribe stds-802-3-DMLT <yourfirstname> <yourlastname>

- Study Group web page URL:

http://www.ieee802.org/3/DMLT/

What SG DMLT did in between

- Met in Victoria, BC, at May 16 and 17, 2013
- Joint meeting with 802.1/TSN and 802.3/DMLT at Thursday, May 16, 2013
- Several presentations on PAR, 5C, objectives and technical feasibility
- Continued to refine PAR, 5c and Objectives
- Conducted numerous straw polls and motions
- Adopted final SG versions of PAR, 5C and objectives
- Requested David Law, 802.3 WG chair to pre-submit the PAR and 5C (and objectives) to the 802.3 WG and 802 EC
- Prepared tutorial for Geneva, 2013-07-15
- Presentation to ITU workshop 2013-07-13

Draft PAR (P802.3br) title & scope

- SG DMLT proposes a PAR title:

IEEE Standard for Ethernet

Amendment Specification and Management Parameters for

Interspersing Express Traffic.

- Scope:
  - The scope of this project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add a support for interspersed express traffic.

Draft PAR (P802.3br)

- **5.5 Need for the Project:**
  - Adoption of Ethernet into new market areas, including but not limited to, automotive, industrial automation, transportation (aircraft, railway and heavy trucks) has generated a need to converge low latency and best effort traffic streams.
  - Currently this functionality requires multiple networks with parallel links.
  - IEEE Std 802.3 currently does not have support for interspersed express traffic.
  - This project will allow the needs of IEEE P802.1Qbu to be met with a single physical link between bridges.

5C

- See DMLT web site for details

Objectives (1) – Approved in SG

1. Preserve the IEEE 802.3 Ethernet frame format at the MAC client service interface.
2. Preserve minimum and maximum frame size of the current IEEE 802.3 standard.
3. Use the Clause 4/4a MAC without alteration.
4. Support full duplex point-to-point operation only.
5. Support a speed of 100 Mb/s and above at the MAC/PLS service interface.
6. Preserve relevant MAC/PLS service interface.
7. Does not degrade (increase) ~~Preserve an~~ undetected bit error ratio (BER)) ~~of less than or equal to 10^{-10}~~ at the MAC/PLS service interface. L.W.1
8. ~~Provide normal FCS protection-error-detection coverage~~.

L.W.1 The topic 8 is redundant to topic 7. Therefore intended to delete.
Winkel, Ludwig; 16.05.2013

Objectives (2) – Approved in SG

9. Provide affirmative assurance that both end of the link have this capability before operating in this mode. ~~E.g. Capability discovery and configuration.~~
   - ~~Use of LLDP expected.~~
10. Provide a mechanism for reduced access latency where the reduced access latency is significantly less than one maximum packet transmit time.
11. Maximum latency for DMLT frame transmission (ahead of the non-DMLT frame) will be as close to the minimum packet size + IPG (1st and last) as practically possible.
    - ~~No padding allowed in the M-Frames ('segmented' non-DMLT frames); that is, the lowest range of M-Frame sizes may be between 64~127 bytes.~~
12. Quantify the maximum access latency of the DMLT transmit path.
13. Provide two MAC service interfaces at each end of the DMLT link, as the means to distinguish between the DMLT and the ~~best effort~~ ordinary traffic.
    - Optional MAC Control sub-layer shall be confined to the ordinary ~~best-effort~~ MAC Service Interface.

Objectives (3) – Approved in SG

14. Address the impact between Energy-Efficient Ethernet and DMLT operation.
15. This project will be media independent.
16. Require no changes to existing Point-To-Point full-duplex PHYs.
17. Consider providing, at the MAC Client Service interface, a primitive that holds the transmit path in the express position.
18. “M-Frame in the wild” should be constructed such that it will not be forwarded by non-DMLT-capable devices.
    - Buffer repeater e.g. legacy TPMR would be “ in the wild“.

Objectives – OPEN & Consideration

1. ~~"M-Frame in the wild" should be recognized by the non-DMLT capable stations [to be detected as an error and] not be considered as a valid frame. [error, e.g. FCS error | Framing Error].~~ *SG note: This was considered and replaced by 18 on the objectives list.*
2. Preserve [Clause 4/4a] frame format on the respective physical medium.
3. Support of the Point to Multipoint (P2MP) is not a goal.
   - Downstream Support presents fewer challenges.

Goals for the week

- Meet Tuesday, Wednesday 9:00 am – 6:00pm and Thursday morning (if needed)
- SG DMLT approved 18 objectives. 3 potential objectives remain for further discussion during the Geneva meeting.
- Respond to questions from other 802 WG on PAR and 5C by Wednesday at 5PM
- Respond to questions on PAR, 5C and objectives from 802.3 WG
- Request Task Force status from 802.3 WG at closing plenary
- Request SG extension
- Plan for next meeting

THANK YOU

for your attention