
Restructuring the draft

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**Ethernet in the First Mile
IEEE 802.3ah Task Force**



Background

- Like many previous projects, EFM defines changes to existing clauses in IEEE Std 802.3, and introduces new clauses.
- As an amendment, the material in P802.3ah would normally be published initially as a separate document and eventually merged into IEEE Std 802.3.

Changes to existing clauses

- **Clause 1 definitions, abbreviations, references**
- **Clause 22 management registers**
 - Allow access to Clause 45 registers
 - Support for OAMPDU transmission on “one way” links
- **Assign identifiers administered by 802.3**
 - Annex 43B; slow protocols, Annex 31A; MAC Control opcodes
- **Management**
 - Clause 30, Annex 30A, Annex 30B, Clause 45
- **P2MP**
 - Clause 4; ifsStretch, Clause 35; RS extensions for LLID, Clause 36 changes to support FEC & burst mode operation
- **OAM**
 - Clause 24, 36, 46; OAMPDU transmission on “one way” link

Point of concern

- This has stimulated concern because all readers may have trouble identifying the requirements that are introduced by and unique to EFM, regardless of whether they care about EFM
- This has been a growing concern about the standard as a whole, for some time, getting worse with every new project

Ballot comments

- **Several comments submitted during WG ballot on P802.3ah suggest restructuring all of IEEE Std 802.3 into various partitions (or even separate 802.3 standards) e.g. “legacy”, “carrier grade”, etc.**

Partitioning

- **This is a non-trivial exercise, and requires more thought, more definition, and a great deal of work unrelated to EFM**
- **This suggestion runs contrary to and is outside the scope of the P802.3ah PAR, which requires us to produce an amendment to the base standard, formatted as a series of clauses**

Proposal summary

- **The concerns can be addressed without performing a total restructuring of IEEE Std 802.3 as part of the EFM project:**
 - **Avoid making changes to existing clauses where possible**
 - **Where change to an existing clause is required, and is unique to EFM, create a new clause that incorporates the existing clause by reference, and adds the required change**
- **This will result in a more self-contained document for EFM**
- **Provides significant insulation from the effects of any overall restructuring of IEEE Std 802.3**

Avoid changing IEEE Std 802.3

- **Clause 24, 36, 46: changes to allow transmission of OAMPDUs on “one way” links**
 - Consolidate in Clause 66: Extensions of the 10 Gigabit RS, 100BASE-X PCS, and 1000BASE-X PCS for OAM, which incorporates 24, 36, 46 by reference, in the style of Clause 26
 - Renumber current 66/66A to 67/67A



Avoid changing IEEE Std 802.3

- ~~Rename EFM optical port types?~~

Current	New
100BASE-LX10	100BASE-LOX10
100BASE-BX10-D,U	100BASE-BOX10-D,U
1000BASE-LX10	1000BASE-LOX10
1000BASE-BX10-D,U	1000BASE-BOX10-D,U
1000BASE-PX10-D,U	1000BASE-POX10-D,U
1000BASE-PX20-D,U	1000BASE-POX20-D,U

Avoid changing IEEE Std 802.3

- **Clause 4: changes to ifsStretch for FEC**
 - Eliminate by using a different rate adaptation method that leaves Clause 4 alone
- **Clause 35, 36: changes to support FEC and burst mode operation**
 - already consolidated in Clause 65
 - change references from Clause 36 PCS to Clause 66 PCS



Where change is unavoidable

- **Additions to Clause 1 definitions, abbreviations, references**
 - Style manual constraint
- **Change to Clause 22 management registers**
 - Allow access to Clause 45 registers
 - Not unique to EFM, “service to humanity”
 - Support for OAMPDU transmission on “one way” links
 - No other method for assigning these bits
- **Assign identifiers administered by 802.3**
 - Annex 43B; slow protocols, Annex 31A; MAC Control opcodes
 - No other method for assignment
- **Changes related to management**
 - Clause 30, Annex 30A, Annex 30B, Clause 45
 - 802.3 management is monolithic

Revising IEEE Std 802.3

- **IEEE-SA rules will require us to do a revision**
- **This task must be given a very high priority**
- **Will be discussed in 802.3 WG in November**
- **Partitioning the std will be discussed at that time**



Revising IEEE Std 802.3

- **Revising management is a very large task**
 - **Clause 30 attributes are not easily partitioned**
 - **Clause 45 registers are not easily partitioned**
 - **There is no obvious way to break the monolith**
 - **A reasonable approach to solving this problem is key to any partitioning proposal**



Revising IEEE Std 802.3

- **Not a job for the EFM Task Force**
- **Will require new PAR(s) & significant study**
- **IEEE Std 802.3 will require revision in the very near future no matter what we do in EFM**
- **Proposed restructuring of P802.3ah will make it somewhat easier**
 - **The clauses added by P802.3ah can stand on their own**
 - **Changes to existing clauses are minimized**
- **Proposed restructuring will minimize the potential harm to EFM from possible future partitioning**

Motion

- **Adopt as the response to comments 952, 837, 1167:**

Direct the editors to implement the changes described on slides 8, 10 of frazier_1_0903.pdf

M: Diab

S: Squire

all Y 30 N 0 A 1

dot3 Y 26 N 0 A 3