## 25 Gb/s Editorial Considerations

IEEE 802.3 25 Gb/s Ethernet Study Group

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## Introduction

- Propose a tentative structure for the new amendment.
- Review hierarchical architectures.
- Identify topics to address to move forward.


## New Clauses/Annexes

| Clause | Changes |
| :---: | :---: |
| X | Introduction to $25 \mathrm{~Gb} / \mathrm{s}$ networks |
| X+1 | 25G RS + XXVMII |
| $x+2$ | 25G PCS *** |
| X+3 | 25G FEC |
| X+4 | 25G PMA |
| $x+5$ | 25GBASE-CR PMD (copper cable) *** |
| $x+6$ | 25GBASE-KR PMD (backplane) |
| X+7 | 25GBASE-SR PMD (MMF optical) |
| Annex ( $\mathrm{X}+4$ ) A | XXVAUI chip-to-chip |
| Annex ( $X+4$ ) B | XXVAUI chip-to-module |
| Annex ( $X+5$ ) A | 25GBASE-CR TP parameters and channel characteristics |
| Annex ( $\mathrm{X}+5$ ) B | 25GBASE-CR cable/host use cases *** |
|  | *** indicates Clauses/Annexes that need significant work |

## Amended Clauses/Annexes

| Clause | Changes | Changes |
| :--- | :--- | :--- |
|  | Front matter | Project information |
| 1 | Introduction | New def., abbr., etc. |
| 4 | MAC | Add 25G support. |
| 30 | Management | New objects. |
| 45 | MDIO | New registers/fields. |
| 69 | Introduction to ... backplanes | Add 25G support. |
| 73 | AN for backplane and ... cable assembly | Add 25G support, no FEC, alt. host. |
| 74 | BASE-R FEC | Add 25G support, if req’d. |
| 78 | EEE | Add 25G support |
| $\boldsymbol{\text { G }}$ | 干ime Syne | Add 25G support |
| AN31B | MAC Pause operation | Add 25G support |
| AN93A | Specs. for Electrical Channels (COM) | Add 25GBASE-CR4/KR4 references. |

## Backplane 25GBASE-KR



## Cable 25GBASE-CR



Note:
XXVAUI is a single lane $25 \mathrm{~Gb} /$ s interface.
Other implementations to be discussed and could be put in an Annex similar to Annex 83C.

## Optical 25GBASE-SR

| MAC |  |
| :--- | :---: |
| RS |  |
| XXVMII |  |
| PCS |  |
| FEC |  |
| PMA |  |
| PMD |  |
| MDI |  |
| Medium |  |


| MAC device |
| :---: |
| Optics |
| Connector |
| Fiber |
| SR PHY and |
| MAC |


| MAC   <br> RS   <br> XXVMII   <br> PCS   <br> FEC   <br> PMA   <br> XXVAUI   <br> PMA   <br> PMD   <br> MDI   <br> Medium   |
| :--- |


| MAC device |
| :---: |
| C2M Interface |
| Optics |
| Connector |
| Fiber |
|  |
| SR PHY and |
| MAC |



## Big Ticket Items to Resolve

- As evidenced by the ad hoc summary slides presented at the interim there are two areas that need to be addressed in order for work to proceed.
- See: http://www.ieee802.org/3/25GSG/public/Sept14/brown 25GE 02 0914c.pdf
- PCS/AM/FEC selection
- Based on CL49 or CL82?
- Using AMs? If so, what form?
- How to map into CL91 transcoder?
- CL91 RS-FEC only? CL74 FEC also?
- Copper host/cable/FEC combinations
- Channel budget allocations? How many? No-FEC mode viable?
- How to manage host/cable/FEC combinations?


## Consensus topics?

- PCS/FEC architecture.
- Cable/host budgetary permutations and considerations.
- Cable/host management considerations.
- Other topics?

