

EFM OAM

Schedule and Work Plan

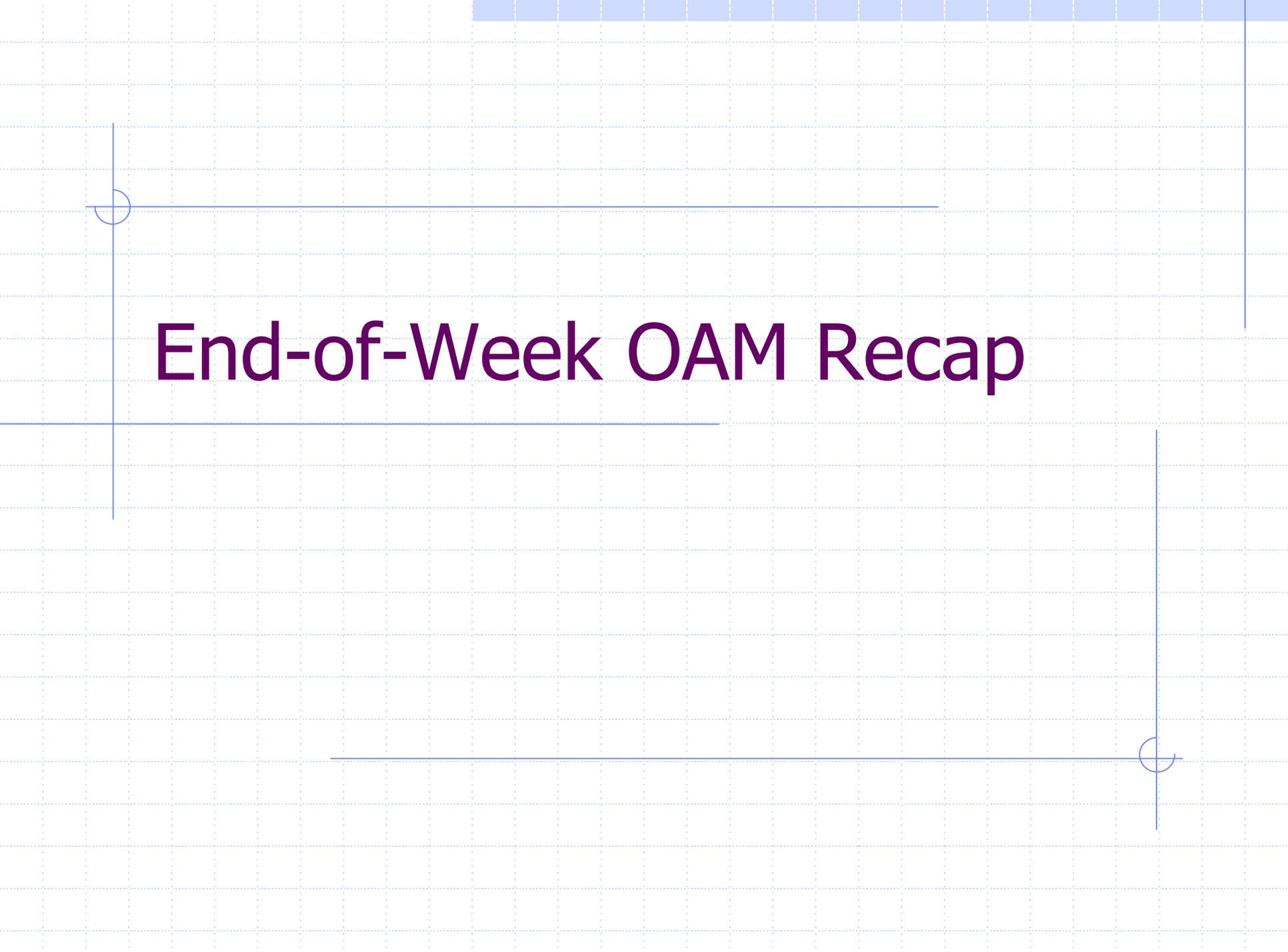
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November, 2002

EFM OAM Status

- Draft 1.1 reviewed
 - Received more than 270 comments
 - 140+ TR/T
 - Areas of controversy
 - Loopback
 - State machines
 - Layering
 - Clause 22/45

EFM OAM Plan for the week

- Not a complicated week:
- Tuesday Morning
 - Comment Resolution
- Tuesday Afternoon
 - Comment Resolution
- Wednesday Morning
 - Comment Resolution
 - Joint with Copper – Clause 22/45
 - Joint with P2MP – Layering, Loopback, PAUSE
- Wednesday Afternoon
 - Comment Resolution



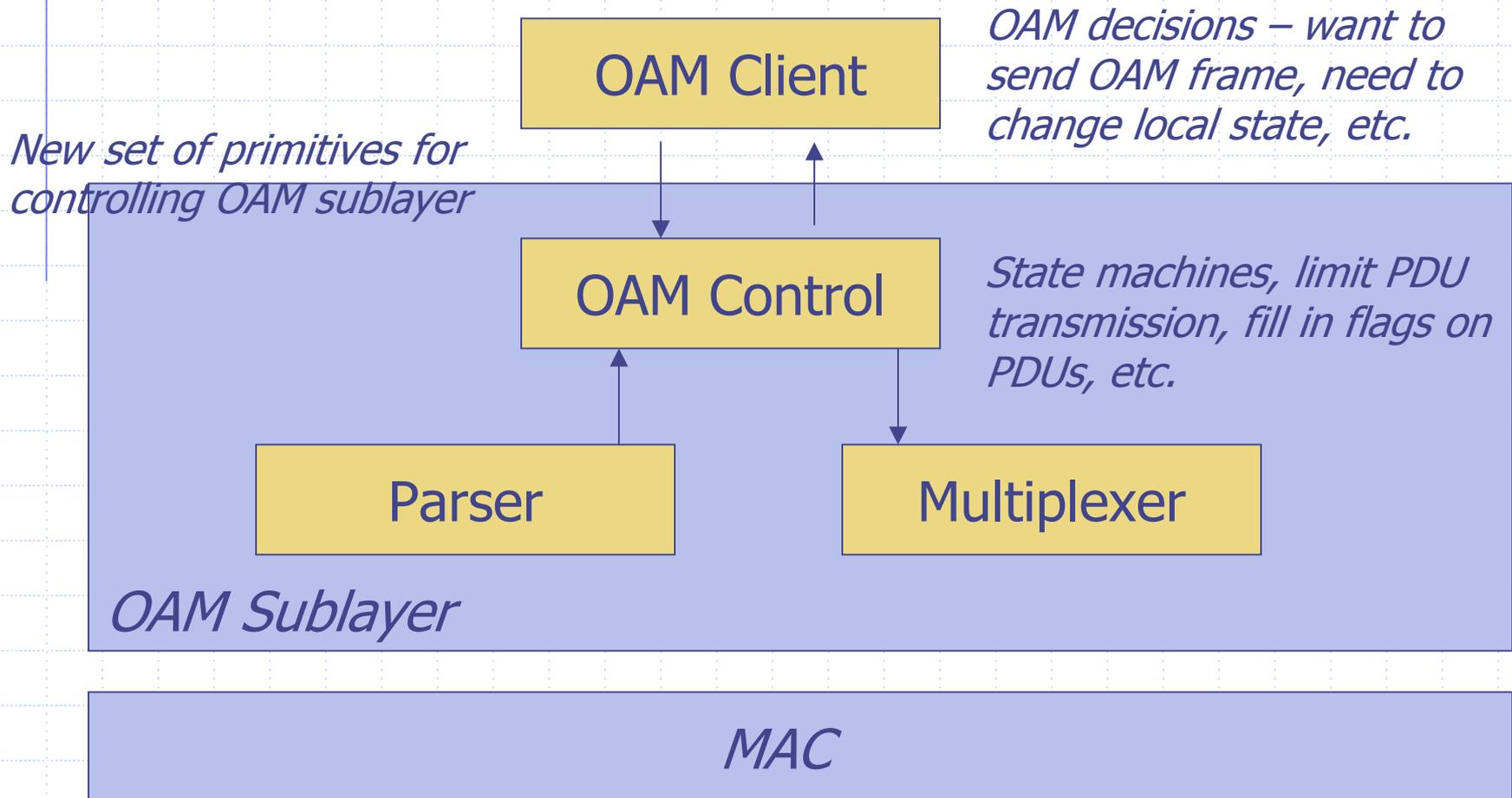
End-of-Week OAM Recap

OAM Recap - Summary

- All comments resolved!
 - 22 TR
 - 115 T
 - 132 E
 - 269 total (applause applause)
 - Major thanks to Kevin, Ben, David, & all who helped.
- Major issues of the week:
 - OAM layering issues
 - Loopback
 - Event handling
 - Pause
 - Ping
 - Clause 22/45 interaction

OAM Recap – OAM Client

- Defined an OAM Client where OAM decisions happen



OAM Recap – OAM Client

- OAM Client interacts with other layers via defined set of primitives which control actions and variables
 - MA_OAM.indicate(version, flags, code, data) – indication that new OAM PDU has arrived along with the content of that PDU
 - MA_OAM_LL.indicate – link lost timer has expired (no OAM detected)
 - MA_OAM_STATE.indicate(local_state, local_loopback) – indication to the OAM client that the local discovery or loopback state has changed
 - MA_OAM_DG.request – request to immediately transmit an OAM PDU with the dying gasp big set
 - MA_OAM.request(version, flags, code, data) – request to queue an OAMPDU for transmit in the next available OAM slot
 - MA_OAM_STATE.request(local_oam_state, oam_satisfied, lots more) – updates variables for controlling OAM
- Eliminated some state machines – replaced with a set of rules governing operation (simplification)

OAM Recap - Loopback

- Many comments on loopback operation
 - Many focused on P2MP operation
- Changes:
 - Added counter for the number of data frames interrupted/dropped because of OAM (accurately know why frames dropped)
 - Working to eliminate unnecessary OAM frames during loopback state (more accurate loopback operation)
 - Added OAM Client – helps with some layering issues with P2MP – magic black box that makes decisions to send OAM PDUs and which may magically share information with MPCP

OAM Recap – Event Handling

- Came in with event notifications that were semi-reliable
 - Could send asynchronous notification
 - Main transport was Event Indicator bit to far end which caused it to come read local event table for what happened
- Had major movement to simplify event operation
 - Asynchronous Event Notifications only
 - Event Notification contains TLV for every event
 - No Event table – send it and forget it!
 - No Event Indicator flag – don't need it
 - Defined events to be periodic states rather than threshold crossings
 - Errored second, etc.
 - Event Notifications happen as long as state persists
 - No state information needs to be kept
- **ASSUMPTION – EVENT NOTIFICATION NO MORE RELIABLE THAN UNDERLYING MEDIA**

OAM Recap – No Ping

- Came in with an Ping Request/Response OAMPDU that tested connectivity with peer
- At the last meeting, defined Information OAMPDUs which are periodically transmitted with min/max rates
- Always know if in communication with far end
- Since Ping just tested connectivity, it added nothing as the OAM Discovery process already determines this

OAM Recap – Clause 22/45

- Clause 22/45 Interaction
 - Uses Clause 22 registers 13 and 14 as address/data registers for controlling access to Clause 45 variables
 - Access Clause 45 with MDC/MDIO
 - See pannell_oam_1_1102.pdf
- Motion: Accept pannell_oam_1_1102.pdf, with the exception of the electrical interface modifications, as the baseline for Clause 22 to Clause 45 MMD register access.
- Results:
 - All voters: 26/2/9
 - 802.3 voters: 19/2/7

OAM Recap – Comments

- Motion: Adopt the OAM comment responses (22, 24, 30, 36, 43B, 55) to D1.1 as the basis for creating D1.2.
 - Results of STF:
 - Moved: D. Pannell
 - Second: D. Romascanu
 - Results:
 - All voters: 16/0/0
 - 802.3 voters: 12/0/0
 - Moved: On behalf of OAM STF:
 - Plenary results:
 - All: 66/0/15
 - 802.3:

OAM Recap – Liaison

- Motion: Accept the liaison response to Q.12/15.
 - Moved: M. Squire
 - Second: D. Pannell
 - Results:
 - All: acclamation
 - 802.3: