

IEEE 1588 Working Group Update

TICTOC

IETF 90

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Toronto, Canada

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Organization

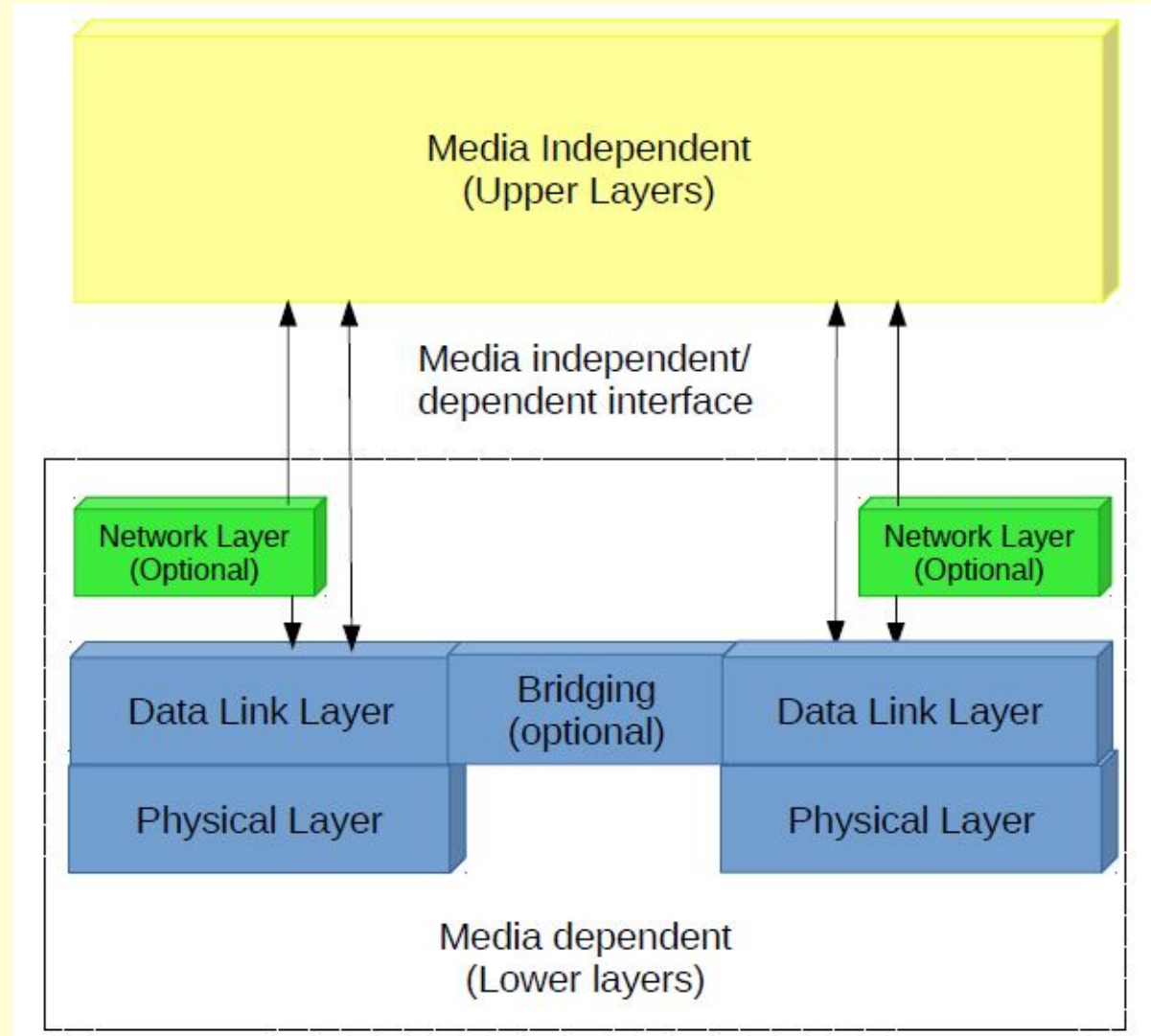
- Co-chairs
 - John Eidson, john.eidson@calnexsol.com
 - Doug Arnold, doug.arnold@meinberg-usa.com
- Working Group
 - Mailing list 223 people
 - 48 voting members
- 5 subcommittees
 - Upkeep (formerly maintenance)
 - Architecture
 - Security
 - Management
 - High Accuracy

Upkeep – Hot Issue: OUIs

- IEEE Registration Authority (RA) introduced new OUI structure
 - As of January 2014
 - Smaller blocks of unique numbers available, with larger number of bits for organization ID
 - Intended to prevent running out of numbers, mainly due to need for MAC addresses
- Impact to IEEE 1588
 - If clockID is formed by mapping EUI-48 to EUI-64, duplicate clockIDs could be created
 - Complicated by need for backward compatibility with IEEE 1588-2008

Architecture

- Split protocol into media dependent and media independent layers
 - Media independent is BMCA, management
 - Media dependent is timing messages, delay measurement
- Purpose: allow for mappings in transport media which already has a delay measurement mechanisms built in
 - E.g. Wifi, EPON
- Long term vision:
 - IEEE 1588 is media independent only
 - Layer 1&2 standards include time transfer mechanism



Security

General philosophy

- Authentication of source and message integrity are important
- Confidentiality is not

Message authentication proposals

- Announce message TLV with hash code based on IPSEC
- Announce message TLV with hash code similar to IEC 61850 GOOSE message security
- Mapping to IPSEC

Key distribution Proposals

- Group key, similar to IEC 61850 GOOSE message security
- TESLA

Management

- “SNMP compliant” MIB
 - Stated in PAR
- To be based on IETF:TICTOC IEEE 1588 MIB
- Open Issue: how to handle profiles
 - Branches for each profile
 - Separate MIB for each profile

High Accuracy

- Based on CERN white Rabbit extension to PTP
 - L1 syntonization
 - Calibration of asymmetries
 - High resolution time stamps
- Current issue: L1 Syntonization
 - Should L1 syntonization clock hierarchy be the same or independent of PTP time transfer hierarchy

Meetings

- Online
 - Working group 1/ month
 - Each subcommittee 1-2/month
- Face to face
 - Austin Texas, September 2014
 - San Francisco, January 2015
 - Kista Sweden (near Stockholm), May 2015

IEEE 1588 Update

Thank you!

Please send questions or comments to:

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