IEEE 1588 Working Group Update

TICTOC
IETF 88
November 2013
Vancouver, BC, Canada

Doug Arnold
Agenda

• Status
• Scope
• Organization
• Subcommittees
• Summary
IEEE Process (simplified)

IEEE Society

Study Group

Sponsorship

PAR

Working Group

Approve PAR

Draft

NESC0M

Approve Draft

Publish

IEEE 1588 Update
TICTOC, IETF 88
Status

• Sponsor
  • Instrumentation and Measurement Society
  • Sponsored previous two 1588 standards

• PAR approved, June

• Working Group
  • First meeting, July
  • Face to face meeting, Lemgo, Germany, Sept.
  • 187 people signed up
  • ~1/2 attended at least one meeting
  • ~1/3 are voting members
Bylaws

• Build from IEEE template, with numerous MUST have requirements

• Must please both Sponsor and IEEE Standards Association

• Rules for membership, establishing quorums, officer selection, meetings, minutes, etc.

• “The Working Group shall: Ensure that the resulting draft has the highest degree of backward compatibility possible with the previous edition of IEEE 1588...”
Highlights from the PAR

- Support for synchronization to better than 1 nanosecond.
- Path asymmetry corrections.
- SNMP-compliant MIB
- Security
- Correcting known errors, including message path and timestamp point issues and layer violation.
- Clarify the layering, interfaces, and protocol, including the behavior of systems that deploy different protocol options.
# Organization: Officers

<table>
<thead>
<tr>
<th>Office</th>
<th>Volunteer</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Project Manager</td>
<td>Kang Lee</td>
<td>NIST</td>
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<td>Co-Chair</td>
<td>John Eidson</td>
<td>Calnex</td>
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<td>Co-Chair</td>
<td>Doug Arnold</td>
<td>Meinberg</td>
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<td>Vice-Chair</td>
<td>Hans Weibel</td>
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<td>Secretary</td>
<td>Silvana Rodrigues</td>
<td>IDT</td>
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<tr>
<td>Editor</td>
<td>John MacKay</td>
<td>Progeny Systems Corp</td>
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Kang          | John E        | Doug         | Hans          | Silvana       | John M        |
Organization

• Plenary conference calls are scheduled once a month
  • Third Wednesday of each month at 11AM Eastern Time

• Five sub committees have been created
  • Architecture, High Accuracy, Maintenance, Management, Security
  • Each sub committee meets once or twice a month via conference call
  • A charter and a requirements document were the first task for each sub-committee

• Two face-to-face plenary meetings (Spring and Fall)
Architecture Subcommittee

• Charter
  • “… clarify the layering, interfaces, and protocol of the standard, including the behavior of systems that deploy different protocol options”
• Requirements document is under discussion within the subcommittee

• Subcommittee agenda
  • Clarify the definitions of ports and clocks
  • Requirements for description of new profiles
  • Revise the description of the architecture and layering
  • New mappings
**High Accuracy Subcommittee**

- **Charter:**
  - “The protocol enhances support for synchronization to better than 1 nanosecond”

- Proposal includes the option to use Synchronous Ethernet for frequency synchronization at the physical layer

- Add clause(s) and/or informative annex to clearly describe the steps when a PTP link is being established for high accuracy

- The requirements document has been finalized
Maintenance Subcommittee

Charter:

• “Incorporate official IEEE interpretations and other known errors or needed clarifications into 1588-2008 in order to provide a clean version as a basis for modifications of the current P1588 working group.

• Once this is done serve as a 'quality control' function for any modifications proposed by other committees to ensure freedom from inconsistencies and backward compatibility issues.”

Items dealt at the IEEE 1588 Interpretations Committee will be addressed

• A proposal to clarify Transparent Clock Source Address has been accepted
Management Subcommittee

• Charter:
  • "The management SC will consider the management of IEEE 1588 clocks, e.g. MIB, related management protocols (SNMP and native management protocol), and OAM mechanisms."

• One goal is to create a single IEEE 1588 SNMP compatible MIB

• Proposal to create metrics for TC and BCs to report a measured quality of a timing stream
Security Subcommittee

• Charter
  • “To specify a security capability for PTP. This capability is expected to be optional”

• The requirements document is based on the IETF document “draft-ietf-tictoc-security-requirements”

• Plan to replace Annex K
Subcommittees Officers

- **Maintenance**: Pat Diamond, John Eidson, Jeff Laird
- **High Accuracy**: Maciej Lipinski, John MacKay, Geoff Garner
- **Architecture**: Rodney Cummings, Doug Arnold, Richard Tse
- **Security**: Karen O'Donoghue, Silvana Rodrigues, Stefano Ruffini, Tal Mizrahi
- **Management**: Hans Weibel, John MacKay, Marcus Seehofer, Richard Schrange
Summary

- PAR Approved
- Includes high accuracy, security, MIB, Architecture
- Fix the TC source address issue. Establish the limits of the scope of IEEE 1588
- Backward compatibility
- About twice as many people involved as last time
  - Detailed work in 5 Subcommittees
  - More structure and organization
IEEE 1588 Update

Thank you!

Please send questions or comments to:

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