IEEE 802.3 YANG Data Model(s) Study Group
Closing Report

Yan Zhuang

Huawei Technologies

San Diego, CA, US

28 July, 2016

IEEE 802.3 YANG Data Model(s) Study Group information

Study Group Organization

Yan Zhuang, Huawei Technologies, Study Group Chair

Peter Jones, Cisco Systems, Ad hoc Chair

Study Group charter

Develop a PAR and CSD for IEEE 802.3 YANG Definitions

Study Group web and reflector information

Reflector information

http://www.ieee802.org/3/YANG/reflector.html

Home page:

http://www.ieee802.org/3/YANG/index.html

Activities this week

- Met on the Monday March 25 and Wednesday March 27,2016
- Major items discussed, decisions made.
  - Review and response to Liaison letter from ITU-T SG15 “LS on generation of YANG modules from Transport Technology UML information models”
  - Comment responses to PAR, CSD responses from EC
  - Approve updated PAR, CSD responses and Objectives
- Updated Study Documentation:
  - Draft PAR:

    http://www.ieee802.org/3/YANG/public/july16/P802-3cf-par-270716.pdf
  - Draft CSD:

    http://www.ieee802.org/3/YANG/public/july16/YANG_SG_csd_v1.6.pdf
  - Draft Objectives:

    http://www.ieee802.org/3/YANG/public/july16/YANG_SG_draft_objectives_v1.6.pptx

Adopted Objectives

Define YANG Models based on IEEE Std 802.3 for:

- Selected MAC/RS and PHYs
- Multi Point Control Protocol (MPCP)
- DTE Power via medium dependent Interface (MDI)
- Operations, Administration, and Maintenance (OAM)

http://www.ieee802.org/3/YANG/public/july16/YANG_SG_draft_objectives_v1.6.pptx

WG Motion

Move that 802.3 approve the IEEE P802.3.2 (P802.3cf) YANG Data Model(s) objectives, as per http://www.ieee802.org/3/YANG/public/july16/YANG_SG_draft_objectives_v1.6.pptx

M: Yan Zhuang

S: Peter Jones

Technical (≥75%)

Y: N: A:

Updated P802.3.2 (P802.3cf) PAR

P802.3.2
Submitter Email: david_law@ieee.org
Type of Project: New IEEE Standard
PAR Request Date: 18-Apr-2016
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for a New IEEE Standard
1.1 Project Number: P802.3.2
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use
2.1 Title: Standard for Ethernet YANG data model definitions
3.1 Working Group: Ethernet Working Group (C/LM/WG802.3)
Contact Information for Working Group Chair
Name: David Law
Email Address: david_law@ieee.org
Phone: +44 1631 563729
Contact Information for Working Group Vice-Chair
Name: Adam Healey
Email Address: adam.healey@broadcom.com
Phone: 6107123508

Updated P802.3.2 (P802.3cf) PAR (continued)

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 8572050050
Contact Information for Standards Representative
Name: James Gilb
Email Address: gilb@ieee.org
Phone: 858-229-4822
4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2018
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2018

Updated P802.3.2 (P802.3cf) PAR (continued)

5.1 Approximate number of people expected to be actively involved in the development of this project: 14
5.2 Scope: This standard defines YANG data models for IEEE Std 802.3 Ethernet.
5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: The purpose of the standard is to define YANG models for IEEE Std 802.3 and publish these models in a machine-readable format.
5.5 Need for the Project: YANG (IETF RFC 6020 or subsequent revision) is a formalized data modeling language that can be used by ~~NETCONF~~ protocols such as NETCONF (NETwork CONFiguration, IETF RFC 6241), a widely accepted network configuration protocol. Other standards development organizations, ~~(~~e.g., Internet Engineering Task Force (IETF) and the Metro Ethernet Forum (MEF)~~)~~, have adopted YANG, and are developing a broad range of YANG data models. Development of standardized YANG models for IEEE Std 802.3 Ethernet will help to reduce the operational cost of managing Ethernet networks.

Updated P802.3.2 (P802.3cf) PAR (continued)

5.6 Stakeholders for the Standard: Ethernet network component suppliers, system suppliers, network management software suppliers,
network administrators.
Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No
7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No
8.1 Additional Explanatory Notes: Item #5.2, #5.4 and #5.5: IEEE Std 802.3 IEEE Standard for Ethernet
Item #5.5: IETF RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)
Item #5.5: IETF RFC 6241 Network Configuration Protocol (NETCONF)

http://www.ieee802.org/3/YANG/public/july16/P802-3cf-par-270716.pdf

WG Motion

Move that 802.3 approve the IEEE P802.3.2 (P802.3cf) YANG Data Model(s) PAR, in http://www.ieee802.org/3/YANG/public/july16/P802-3cf-par-270716.pdf

M: Yan Zhuang

S: Peter Jones

Technical (≥75%)

Y: N: A:

Updated CSD Responses

http://www.ieee802.org/3/YANG/public/july16/YANG_SG_csd_v1.6.pdf

Managed Objects

Describe the plan for developing a definition of managed objects. The plan shall specify one of the following:

a) The definitions will be part of this project.
b) The definitions will be part of a different project and provide the plan for that project or anticipated future project.
c) The definitions will not be developed and explain why such definitions are not needed.

- This project will develop YANG models from Clause 30 objects in IEEE Std 802.3-2015 and published amendments to enable ~~NETCONF (RFC6241)~~ management of IEEE Std 802.3 Ethernet using protocols such as NETCONF (NETwork CONFiguration, IETF RFC 6241).

Coexistence

A WG proposing a wireless project shall demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

a) Will the WG create a CA document as part of the WG balloting process as described in Clause 13?

b) If not, explain why the CA document is not applicable

- A CA document is not applicable because the proposed project is not a wireless project.

Broad Market Potential

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

a) Broad sets of applicability.

b) Multiple vendors and numerous users.

- The proposed standard will enable the use of YANG model of 802.3 managed objects for a wide variety of IEEE Std 802.3 Ethernet devices. When combined with protocols, such as NETCONF, network operators will gain interoperable and more flexible network management tools supported across all IEEE Std 802.3 compliant network elements.
- Many users of IEEE Std 802.3 Ethernet are transitioning from MIBs/SNMP to YANG/NETCONF to operate their networks. Both IEEE Std 802.3 and NETCONF are already supported and used by multiple vendors/network operators/network users.

Compatibility

Each proposed IEEE 802 LMSC standard should be in conformance with IEEE Std 802, IEEE 802.1AC, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG prior to submitting a PAR to the Sponsor.

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q?
b) If the answer to a) is "no", supply the response from the IEEE 802.1 WG.
c) Compatibility with IEEE Std 802.3
d) Conformance with the IEEE Std 802.3 MAC
e) Managed object definitions compatible with SNMP

- In defining YANG models for IEEE Std 802.3, the proposed project shall comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q.
- This work is fully aligned to and coordinated with equivalent work taking place in 802.1.
- Compatibility with SNMP is not applicable for this project.

Distinct Identity

Each proposed IEEE 802 LMSC standard shall provide evidence of a distinct identity. Identify standards and standards projects with similar scopes and for each one describe why the proposed project is substantially different.

Substantially different from other IEEE 802.3 specifications / solutions.

- This project provides YANG model definitions for selected areas of IEEE 802.3 to meet expressed customer needs in configuring and operating IEEE 802.3 Ethernet. There is no other IEEE 802 standard or approved project that overlaps with the scope of this project.

Technical Feasibility

Each proposed IEEE 802 LMSC standard shall provide evidence that the project is technically feasible within the time frame of the project. At a minimum, address the following items to demonstrate technical feasibility:

a) Demonstrated system feasibility.
b) Proven similar technology via testing, modeling, simulation, etc.
c) Confidence in reliability.

- YANG data models are in use today in networks in vendor-specific implementations.
- Other SDOs (e.g., MEF and IETF) have already defined YANG data models for managing and operating networks.
- The proposed standard will use ~~the NETCONF protocol (RFC6241) and~~ the YANG data modeling language (RFC6020 or subsequent revision).

Economic Feasibility

Each proposed IEEE 802 LMSC standard shall provide evidence of economic feasibility. Demonstrate, as far as can reasonably be estimated, the economic feasibility of the proposed project for its intended applications. Among the areas that may be addressed in the cost for performance analysis are the following:

a) Balanced costs (infrastructure versus attached stations).
b) Known cost factors.
c) Consideration of installation costs.
d) Consideration of operational costs (e.g., energy consumption).
e) Other areas, as appropriate.

- The additional resources required to support the YANG data model and protocols such as NETCONF ~~protocol~~ are ~~those of software protocols with~~ well-bounded and understood ~~requirements~~.
- There is no known impact on installation cost of network equipment supporting YANG with protocols such as NETCONF.
- The industry-wide effort to adopt ~~NETCONF/~~YANG data modelling aims to reduce operational costs associated with managing devices from multiple vendors.

WG Motion

Move that 802.3 approve the IEEE P802.3.2 (P802.3cf) YANG Data Model(s) CSD “Managed Objects”, “Coexistence”, “Broad Market Potential”, “Compatibility”, “Distinct Identity”, “Technical Feasibility”, and “Economic Feasibility” responses, as per 0716_YANG_close_report.pdf

M: Yan Zhuang

S: Peter Jones

Technical (≥75%)

Y: N: A:

WG Motion

Move that the IEEE 802.3 Working Group request the extension of the YANG Data Model(s) Study Group.

M: Yan Zhuang

S: Peter Jones

(≥50%)

Y: N: A:

WG Motion

Approve IEEE_802d3_to_ITU_SG15_YANG_0716_draft.pdf

with editorial license granted to the Chair (or his appointed agent) as liaison communication from the IEEE 802.3 Working Group to ITU-T Study Group 15

M: Yan Zhuang

S: Peter Jones

Technical (≥75%)

Y: N: A:

Next Step

- If the PAR is approved, the Task Force will hold its first meeting at the IEEE 802.3 November Plenary:
  - Week of November 7th,2016 - San Antonio, USA
- We will still meet as a Study Group at 802.3 September Interim:
  - Week of September 12th, 2016 - Ft. Worth, Texas, USA
- Else, will meet as the study group

Questions?

Thank you!