

Update on P802.1CQ Status

Roger Marks (EthAirNet Associates)

2019-09-19

Update regarding IEEE 1722 and MAAP

- P802.1CQ Editor (Marks) attended IEEE 1722 meeting on 2019-07-30
 - Presented a report on P802.1CQ status
 - Took note of draft liaison response from 802.1 to 1722, as approved 2019-07-18
 - “Thank you for the information regarding the July 30 IEEE 1722b teleconference meeting. It is our expectation that the P802.1CQ Editor will offer a personal presentation on the status of the work.”
 - Active discussions with Dave Olsen (1722 Chair), Don Pannell, 1722 Secretary), etc.
 - Presented a list of issues related to coordination
 - Slides attached to this slide set

Update regarding IEEE 1722b

- We had understood from a prior liaison statement that the 1722 WG was engaged in a 1722b amendment project.
- Have learned that we had misunderstood and that there is currently no such project. Participants are generally interested in developing a PAR. The proposed scope is under discussion.

Update regarding IEEE 1722 Source

- During meeting of 2019-07-30, discussed interest of P802.1CQ Editor in obtaining access to IEEE Std 1722-2016 document source for use in developing P802.1CQ.
- The source was subsequently provided.
- Still need to work further with IEEE-SA staff to obtain access to IEEE Std 1722-2016 by the 802.1 participants

Update on 1722 EtherType

- 1722 had earlier offered to “carve out a range of Ethertype Subtypes ... for sole use of IEEE 802.1.”
- During meeting on 2019-07-30, discussed issues regarding 1722 EtherType assignment
- At that time, the “AVTP” EtherType used in IEEE 1722 was assigned by IEEE RA to a private company
 - Noted that 802.1 participants may be uncomfortable making use of such an EtherType
- 1722 leaders indicated that this situation resulted from an historical oversight that should be corrected
- After suitable followup discussion and action by 1722 Chair, the EtherType was reassigned:
 - EtherType 22F0 assigned to “IEEE 1722 Working Group”

New contribution

- Received a large (19 page) new contribution cq-nayak-DMAD-0919-v01.pdf on 2019-09-05
- This followed a discussion among the authors and Glenn Parsons, at the start of which the authors were not aware of P802.1CQ.
- Subject is “Duplicate MAC Address Detection”
- In some offline discussions, it was noted that the proposal has some commonality with the current draft PALMA-C (and 1722 MAAP) but some differences as well.
- P802.1CQ editor indicated that the contribution could be discussed on future teleconferences.

Teleconference Request

- Would like to request agenda time in future TSN teleconfernces.
- Request:
 - Oct 15, 11:00-12:00
 - Nov 5, 11:00-12:00

Update on P802.1CQ and MAAP: Personal Views

Roger Marks (EthAirNet Associates)
2019-07-30

P802.1CQ

- Project for standard on “Multicast and Local Address Assignment”
- Active since 2016, but progress was slow
 - Assigned to two different Task Groups, each of which is now inactive
 - Good progress starting around 2018
 - Assigned to 802.1 TSN Task Group as of July 2019
 - Has been communicating with IEEE 1722 WG on MAAP

P802.1CQ PAR

- P802.1CQ: “(Draft) Standard for Local and Metropolitan Area Networks: Multicast and Local Address Assignment”
 - Approved 2016-02-05; Times out 2020-12-31
 - <https://mentor.ieee.org/omniran/dcn/19/omniran-19-0033-00-00TG.pdf>
- CSD
 - <https://mentor.ieee.org/802-ec/dcn/15/ec-15-0105-01-ACSD-802-1cq.pdf>
- *Scope: This standard specifies protocols, procedures, and management objects for locally-unique assignment of 48-bit and 64-bit addresses in IEEE 802 networks. Peer-to-peer address claiming and address server capabilities are specified.*
- *Need: Currently, global addresses are assigned to most IEEE 802 end station and bridge ports. Increasing use of virtual machines and Internet of Things (IoT) devices could exhaust the global address space. To provide a usable alternative to global addresses for such devices, this project will define a set of protocols that will allow ports to automatically obtain a locally-unique address in a range from a portion of the local address space. Multicast flows also need addresses to identify the flows. They will benefit from a set of protocols to distribute multicast addresses. Peer-to-peer address claiming and address server capabilities will be included to serve the needs of smaller (e.g. home) and larger (e.g. industrial plants and building control) networks.*

P802.1CQ: Key Developments

- 2016-01
 - DCB drafted Table of Contents and named an Editor (Marks)
- 2016-02-16
 - Editor created D0.1 containing the draft Table of Contents
- 2018-03
 - 802.1 WG Chair closed DCB TG and moved P802.1CQ to OmniRAN TG
- 2019-07
 - 802.1 Acting WG Chair moved P802.1CQ to TSN TG
 - Editor established project web page under TSN (2019-07)
 - <https://1.ieee802.org/tsn/802-1cq/>
 - See web page for contribution list
 - Editor's Draft D0.2 based on contributions

Proposed Schedule

- Difficult to complete work before PAR timeout (Dec 2020)
- Hope to gain more participation and interest from TSN
- Aim for:
 - TG ballot November 2019
 - WG ballot March 2020
 - SA ballot November 2020
 - and PAR extension
 - Conclude July 2021
- Schedule to be discussed in TSN
- Teleconferences to be scheduled

IEEE Std 1722 MAAP Communications

- 2019-03
 - Presented “Investigating the Multicast Usage Model for P802.1CQ” to 802.1 TSN TG, requesting views on the role of IEEE 1722 “MAC Address Acquisition Protocol” (MAAP)
 - omniran-19-0009-02
 - Liaison from 802.1 to IEEE 1722 Working Group
 - omniran-19-0017-01
- 2019-07
 - Response from IEEE 1722 WG
 - “During the development of MAAP, it was realized by the group, that IEEE 802.1 would be a better keeper of this standard if it ever needed to be enhanced and/or improved.”
 - P802.1CQ Editor has drafted a response to encourage an 802.1 response 2019-07-18
 - Reply from 802.1
 - Draft: <http://ieee802.org/1/files/public/docs2019/liaison-response-IEEE-1722-MAC-allocation-0719-v01.pdf>

Personal Views on July 18 Draft Liaison to 1722

- P802.1CQ was assigned to TSN, and a draft is available
- Will provide claiming-based and server-based protocols
 - PALMA-S: client-server method based DHCP
 - PALMA-C: claiming method based on MAAP
- could make normative reference to MAAP, or...
- open to adopting and maintaining MAAP, ensuring backward compatibility and alignment with PALMA-C
 - PALMA-C and MAAP could be separate, with common parts
 - PALMA-C need not generally use the MAAP reserved address range
 - may differ in the message format
 - 1722 message format may be large for 802.1, especially the unused 8-byte Stream ID
- P802.1CQ Editor will offer a personal presentation on July 30
- Should develop a list of issues to be decided if the transfer of MAAP into P802.1CQ is to proceed
- Hope to exchange drafts (and share IEEE Std 1722 to 802.1)
 - And share IEEE 1722 source files with P802.1CQ editor

P802.1CQ/MAAP Issue List

- Will AVTP EtherType (22F0) be assigned to IEEE?
- Will MAAP be moved to 802.1CQ, or invoked by reference?
- Will MAAP be a subset of the more general PALMA-C?
- Will PALMA-C use the AVTP EtherType?
- Will MAAP subtype (FE) be assigned to 802.1CQ?
- Will a few additional AVTP subtypes be assigned to 802.1CQ?
- “Reserved MAAP MAC addresses” are reserved for 1722 and use the 1722 OUI; this material need not be transferred (P802.1CQ needs to avoid these addresses are not used)
- What will be the sequence of actions?
- How will 1722 participants ensure that MAAP is handled properly?

Next steps

- Agree on a list of issues
- 1722 Working Group could communicate its view regarding:
 - AVTP EtherType reassignment to IEEE
 - Views on transferring MAAP into P802.1CQ
 - Openness to permanent subtype assignment
 - [will this be recorded in the amended IEEE 1722?]
 - Schedule for initiating and developing P1722b