
Q-2022-Rev PICS Progress

Update, issues encountered, proposed strategy

Supporting material (work in progress)

<https://www.ieee802.org/1/files/private/q-2022-rev-drafts/d2/802-1Q-2022-Rev-d2-1.pdf>

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Issue—Initial and structural

- Q-2022 PICS unclear/inconsistent as to what has to be completed
- PICS conditions designed for much simpler claims (single protocol, simple system) claims
- Based on 802.1D non-VLAN aware Bridge with numbered ports
- Successive additions by declaring 'global variables', adding tables and marking up existing Table entries
 - Fairly clear when looking at text of individual amendment, increasingly obscure when looking at entire 802.1Q standard
 - Imagine coding for a machine with no concept of subroutine, but just sequential instructions conditionally executed on a number of global flags, not necessarily declared before instruction encountered, ~ 90 pages of code.
- PICS items are auto-numbered in large tables, any removal or reorganization means trackability is difficult
- Peer-to-peer protocols, but end station PICS is a separate Annex
 - Not a complete list of bridge functionality, but content is mainly duplicative
 - Annex A/B split ignored by CFM, which duplicates in a single Table

Structural change

- Keep as close as possible to original PICS design, but ...
- Use PICS Tables that reflect conditional use (all/most items applicable for specific claims)
- PICS Table to be completed for 'top-level' claim or if referenced from another completed Table, all conditions for completing a Table apply to all items in the Table
 - Removes need for complex multi-condition Status entries per PICS Item
 - Only a few Tables need completion for simple cases
- Make it clear what Tables are to be completed for each top-level capability, don't assume user has read and memorized 'the rules'
- Group Tables by introduction of feature/capability
 - Matches proposed organization of Clause 1.3 Introduction
 - Result of multiple attempts to determine feasible structure
- Items and claims should be additive, not subtractive

Issue and changes—Accuracy

- Purpose of PICS is to draw attention to and act as a check that conformance claims match normative text conformance
 - Not to refine/substitute/or enlarge on consequences of normative text as in some cases in Q-2022-PICS, probably need additional text in the PICS to make this clear, and (for review) that literal normative text quotes not required
 - No changes (so far) in normative referenced text, although review has identified a number of cases that need work
- Many Q-2022-PICS cross-references incorrect, others not clickable
 - Cross-reference format improvements (with thanks to Norm) help with locating correct item, e.g. one 'd)' out of the very many in any referenced clause
- Q-2022-PICS referencing text sometimes expansive/tutorial
 - Does not really help, increases PICS size, harder to view all related items
- Q-2022-PICS have number of prohibited 'X' items, which do not match normative text, apparent ad-hoc 'emphasis'

Issue, changes—Unwanted inheritance

- ‘Component’ approach has served us well, but lazy use in some cases, e.g. ...
 - BEB I-component is a VLAN-component, CFM has PICS items for VLAN-component, but normative text has much restrictive MEP placement in I-components
 - TPMR is defined in terms of T-component, which is defined as much reduced subset of VLAN-component, TPMR CFM MIP requirements do not match BEB T-component requirements
 - DCB allowed to implement ‘any VLAN Component’ option, but unclear how some options MMRP/MVRP/MSRP will/can work with reflective relay without additional specification.
- Need a more constructive, ‘start with the simple and add’ approach
 - Otherwise any capability B that ‘inherits’ from an existing capability A, will auto inherit any change to A (desirable, practicable, understandable or not).
 - Propose VLAN—unaware MAC Bridge has first set of Tables, basic set used by VLAN-component (which adds)
 - Propose (no text yet) very simple TPMR specific Table(s), not subtraction.

Conformance clause

- PICS work to date references existing conformance clause 5 unchanged
- However, the existing conformance clause is a sprawling beast, and could be much clearer
 - No suggestion to add or remove existing functionality, but conflicts and errors in description of functionality could be usefully fixed, otherwise this will get pushed to next Revision (rather not)
- Propose getting the PICS straight, which will (on current plan) align it with 1.3 Introduction, and bring it near to alignment with the successive development of 802.1 amendments
 - Clearer correspondence to amendment history should be beneficial to those who still think of 802.1Q in terms of individual amendments going back 20+ years
- After PICS is straight, could straighten Conformance clause to same pattern, verifying cross-references work.
 - No suggestion to change main normative text (outside Clause 5) except where broken or contradictory