802.1AS-Rev: Data Set Enhancements

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Review of Assumptions for Data Sets

- Build .1AS on foundation of 1588
  - As opposed to .1AS that is disjoint from 1588
  - Benefits: Shared tools, shared code, shared management, ...

- We are 'getting it right' for YANG
  - 1588 WG has cleaned up data sets
    - Serves as information model for YANG
  - Possible for MIB to remain as-is

- Use 1588-rev data sets as foundation of .1AS-rev data sets
  - Many new features same in both
    - E.g. Multiple domains
Changing Data Sets and not MIB

- Can we change the data sets without changing MIB?
  - I.e. Change .1AS clause 14 but not clause 15?
- Answer: Yes
  - .1AS-rev D4.2 below, retains MIB compatibility

14.6.4 pttPortEnabled

The value is equal to the value of the Boolean pttPortEnabled (see 10.2.4.13).

15.5 IEEE 802.1AS MIB module

```
ieee8021AsPortDSPttPortEnabled  OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-write
REFERENCE "14.6.4"
```
Implications for YANG

• YANG module for .1AS-rev:
  Augment of 1588-rev YANG module
  • YANG in future PARs (not ongoing revs)
  • Enables management of a product with multiple 1588 profiles
  • Analogous to 802.1Q port's augment of IETF Interface

• What is an augment?
  • Augmenting module adds members to augmented module
  • Augmenting isn't forced to use every member in augmented
  • But... if a member is used... it is used as-is
    • Same name, data type, description, ...
Comparison of Data Sets in .1AS-rev and 1588-rev
Comparison of Data Sets

• I compared data set members, categorizing each as:
  • Same: Specs are same in both
  • Augment: Exists in .1AS-rev but not 1588-rev
  • New: 1588-rev that we need in .1AS-rev
    • Small subset of new 1588-rev members
  • Diff: Exists in both, but specs differ
    • We need to repair the difference

• I submitted .1AS-rev comments for each New and Diff
  • Same and Augment don't need a change to .1AS-rev

• Subsequent slides discuss a few New/Diff topics
New: Multiple Instances (1 of 2)

• 1588-rev uses term 'PTP Instance' for each distinct implementation (i.e. domain)

• Top-level data sets are a list of PTP Instances
  • 'PTP Node' is the product that contains the list

• Proposal: Add description of this as 14.1.1
  • Next slide contains excerpts from current 1588-rev draft, which we can use as a starting point
New: Multiple Instances (2 of 2)

The following hierarchy summarizes the managed data sets within a PTP Node:

- `instanceList[]`
  - `defaultDS`
  - `currentDS`
  - `parentDS`
  - `timePropertiesDS`
  - `portList[]`
    - `portDS`

The `instanceList` is indexed using a number that is unique per PTP Instance within the PTP Node, applicable to the management context only (i.e., not used in PTP messages). The `domainNumber` of the PTP Instance must not be used as the index to `instanceList`, since it is possible for a PTP Node to contain multiple PTP Instances using the same `domainNumber`.\[1\]
New: services.commonPdelay.<xyz>

- Data set for common Pdelay is a TODO in both
- Best location seems to be as a 'service' in PTP Node
  - Special PTP Instance is wrong, since it doesn't sync time
- Make commonPdelay independent of PTP Instances
  - Exchange path delay and rate ratio, not configuration
  - E.g. Do not infer common Pdelay interval from all PTP Instances' Pdelay intervals
- Comment pending in 1588-rev Working Group ballot
- Proposal: Integrate 1588-rev data set into .1AS-rev
  - Augment as necessary
Diff: Name Changes

• Both use same specifications for a port's state (role)
  • 1588-2008 name is "portDS.portState"
  • .1AS-2011 name is "portDS.portRole"

• Data type is the same (Enumeration8 from 1588)
  • .1AS uses subset of values, which is conformant

• Even if "role" is a better term than "state", we must fix
  • Shared technology more important than personal preference
    • E.g. .1AS YANG augment uses 1588's portState as-is

• Proposal: Change .1AS-rev to "portDS.portState"
  • Add notes to allow for "portRole" in code, MIB, etc
Thank you