IEEE 802.1 YANG Progress

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802.1 YANG Projects

- Two active YANG projects in progress
  - 802.1Xck — Port-Based Network Access Control Amendment: YANG Data Model
  - 802.1Qcp — Bridges and Bridged Networks Amendment: YANG Data Model

802.1 YANG Project Progression

1. Scoping
2. Modeling using UML
3. YANG structure and relationship to existing YANG modules
4. YANG modeling
5. Utilization of GitHub as a YANG repository
6. Comment Resolution
7.

802.1 YANG Project Progression

1. Scoping
   - Subset of 802.1Q features scoped
     - Goal of the subset was to keep YANG content manageable (i.e., small), but still sufficiently large to provide a reliable framework for modeling future capabilities in YANG
       - Simple bridge (e.g., Two-Port MAC Relay), Customer VLAN Bridge, to a bit more complex Provider Bridge included in subset
     - Need to recognize that YANG is relatively new to members of the working group

802.1 YANG Project Progression

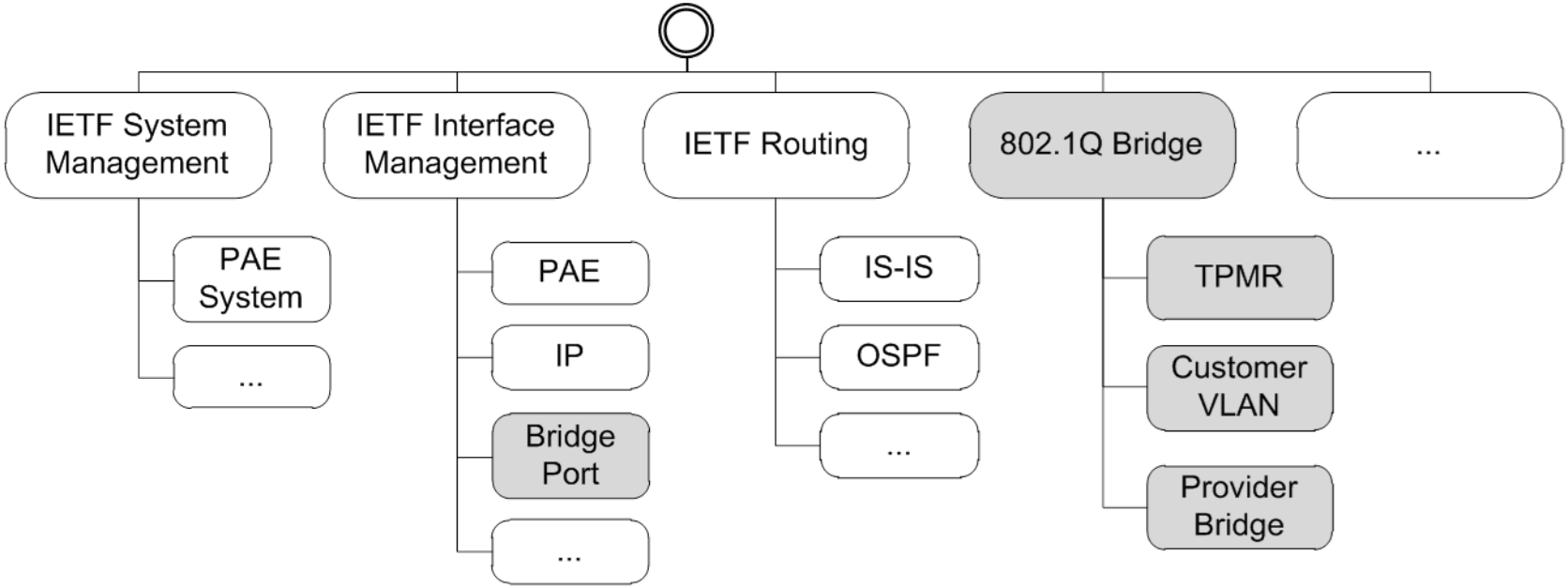
2. Modeling using UML

- Where UML representation was not available, took normative text (e.g., managed objects clause) and created UML representation
- UML representation has benefit of ease of communication to larger diverse group (that may or may not be YANG fluent)
- For 802.1Xck, there was a pre-existing UML representation. This was very useful, and this is what I used to derive the YANG model
- As an aside, there is also some work being done in ITU-T (Study Group 15, Question 10/14) where they are creating UML models for networking protocols and entities

802.1 YANG Project Progression

3. Defining YANG Structure and Relationships

- Understanding relationship of existing [foundational] YANG models (e.g., IETF Interface) to 802.1Q and 802.1X
- For example, the following hi-level YANG structure and relationships were defined



802.1 YANG Project Progression

4. YANG Modeling

- Spending a fair amount of time YANG modeling a seemly simple entity such as a Bridge Port
  - Analyzing the merits of augmenting an Interface versus referencing an Interface
  - We have many protocol entities (i.e., service shims) that can be stacked/inserted/etc that our IEEE 802.1 Bridge model supports. Our YANG model needs to gracefully accommodate this flexibility
  - Performing analysis of how YANG model can accommodate future [complex] features such as CFM, LAG, etc.

802.1 YANG Project Progression

4. GitHub as a Repository

- Utilized GitHub as a repository to store 802.1 YANG models
  - This allowed other interested members to view the IEEE 802.1 YANG models (which are draft at this time)
  - I've actually received useful feedback from folks that visit GitHub
  - I believe an additional benefit is that it garners additional mindshare amongst groups outside of IEEE that IEEE is creating YANG models in specified areas
- At the moment I am the "committer" (i.e., "the gate keeper" for any changes of files found within the IEEE directories of GitHub
  - I would recommend that a member of IEEE 802.3 becomes the "committer" for the IEEE 802.3 directory

GitHub Structure