IETF 103 NETMOD
BBF YANG Update
Outline

- Scope, and how we work
- Active projects, and how they’re published
- External dependencies
- Best practices
- NMDA
Scope

- Emphasis on addressing BBF requirements rather than on general solutions
  - Contrast with “core” SDOs such as IETF, ITU-T and IEEE
  - Current BBF YANG emphasis is on Broadband Access Nodes, e.g. requirements from
    - TR-101 Issue 2: Migration to Ethernet-Based Broadband Aggregation
    - TR-301 Issue 2: Architecture and Requirements for Fiber to the Distribution Point
  - The TR-384 Broadband Access Abstraction (BAA) layer will generate additional YANG modeling requirements
    - TR-384: Cloud Central Office (CloudCO) Reference Architectural Framework

- What we will define in BBF
  - YANG for BBF-defined protocols, protocol extensions or interfaces
    - Example: DHCP option 82 usage and additional sub-options
  - YANG for non-BBF protocols or interfaces if the owner organization is not interested in defining the models
    - Example: ITU-T Gfast and VDSL interfaces
How We Work

- We like to import and augment other organizations’ YANG
  - Examples: ietf-interfaces, ietf-hardware

- Sometimes we can’t do this
  - There’s no standard YANG model
  - Inadequate segmentation of optional features
  - Mandatory nodes which should not be mandatory for all applications

- If so, **our members** might work directly in “owner” organizations
  - Contributing to existing work
    - Example: ietf-alarms (**CCAMP**)”
  - Proposing and leading new work
    - Example: ietf-ipfix, ietf-psamp, ietf-bulk-data-export (**individual submission**)

- Or, as a last resort, we might address our requirements internally
  - This could be for technical or for timing reasons
<table>
<thead>
<tr>
<th>Area</th>
<th>Project</th>
<th>Name</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Common YANG</td>
<td>WT-383</td>
<td>Common YANG Modules for Access Networks</td>
<td>Published TR-383 and a1; a2 due in Q4 2018</td>
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<tr>
<td>FTTdp Management</td>
<td>WT-355</td>
<td>YANG Modules for FTTdp Management</td>
<td>Published TR-355, c1, c2 and a1</td>
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<td>PMAAA Management Model</td>
<td>In progress</td>
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<td>PON Management</td>
<td>WT-385</td>
<td>YANG model for management of ITU-T PON</td>
<td>Published WT-385_draft1; TR-385 due in early Q1 2019</td>
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<td>WT-431</td>
<td>YANG Modules to Support EPON in BBF Service Models</td>
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<td>NETCONF requirements for Access Nodes and BAA</td>
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<td>TR-374: Adds G.hn to the supported interface technologies</td>
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<td>TR-393: Will use schema mount to aggregate multiple FTTdp access nodes</td>
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The BBF Software Release Registry lists all published BBF software
- This includes both draft and standard YANG

BBF YANG is published to a public GitHub repository
- https://github.com/BroadbandForum/yang

It’s also in the YangModels/yang repository
- https://github.com/YangModels/yang/standard “bbf” git submodule references the latest
  https://github.com/BroadbandForum/yang release

It’s also in the YANG catalog
- https://github.com/BroadbandForum/yang YANG is in the catalog
External Dependencies

- **Policy**
  - BBF YANG modules MUST use standard IANA/IETF YANG modules whenever possible
  - In this context, “use” implies adherence to the letter and spirit of such modules and of their defining RFCs

- **Published YANG already depends directly on**
  - ietf-inet-types, ietf-yang-types
  - iana-if-type, ietf-interfaces
  - iana-hardware, ietf-hardware, ietf-hardware-state
  - ietf-yang-schema-mount (*IESG Evaluation::AD Followup*)
  - ietf-system

- **In-progress YANG additionally depends on**
  - ietf-alarms (*editors have proposed WGLC*)
Best Practices

- BBF has an OD-360: BBF YANG Best Current Practices document
  - Based on and adhere to RFC 8407 as much as possible
  - Will incorporate aspects of other SDOs (e.g. ETSI, ONF, ITU, MEF, IEEE) as they adopt YANG BCPs

- Guideline categories
  - Qualifications to and extensions of RFC 8407 guidelines
  - Additional BBF-specific guidelines

- BBF intends to make these guidelines public
  - Will do this via GitHub pages at https://yang.broadband-forum.org
NMDA

▪ We’re still discussing how best to address NMDA
  - Many of our models were defined and published before NMDA came along
  - Implementers will switch to NMDA on their own timescales
  - Need to continue to support both NMDA and non-NMDA servers

▪ Non-binding sneak preview of some of our thinking
  - Stick with non-NMDA ietf-interfaces@2014-05-08 (RFC 7223) for now
    • Applies to existing and (for now) new ietf-interfaces-dependent modules
  - Use NMDA ietf-hardware@2018-03-13 (RFC 8348)
    • There’s no alternative; we certainly don’t want to reference the non-NMDA draft
  - Follow NMDA transition guidelines (RFC 8407) if/when ietf-interfaces-dependent modules are updated, and for new “standalone” modules
    • For non-NMDA versions, define -state modules
    • Currently considering whether to
      ▪ Define deprecated -state trees as IETF is doing, or
      ▪ Add any necessary operational data leaves directly