1 YANGsters

The YANGsters Chair, Scott Mannsfield, presided and the Secretary, Stephan Kehrer, wrote the minutes.
<mark>*Attendance will be provide through IMAT records.*</mark>

Tuesday 21 January 2020

6:05 PM call to order by the YANGsters Chair

The YANGsters Chair presented the IEEE-SA Copyright Policy slides
https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/copyright-policy-WG-meetings.potx, the IEEE-SA PatCom Patent Slides for Standards Development Meetings
https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf, the IEEE 802 Participation slide https://mentor.ieee.org/802-ec/dcn/17/ec-17-0093-05-0PNP-ieee-802-participation-slide-ppt.ppt, and made the "Call for Potentially Essential Patents".

Disposition: There were no responses to the call for patents prior to the end of the week's meeting.

The YANGsters Chair presented the agenda in
http://www.ieee802.org/1/files/public/docs2020/yangsters-smansfield-meeting-agenda-w4-0120-v01.pdf.

- Three items on YANG structure have been raised before the meeting and will be discussed during the IEEE YANG structure topic

Disposition: The agenda was reviewed, discussed and approved.

The YANGsters Chair led a discussion on the currently open *Maintenance Discussion*. YANG doctors have been contacted (yang-doctors@ietf.org) regarding the maintenance issue of providing a list size variable for certain items in IEEE Std 802.1Qcp. Four options where provided to the YANG doctors. The reply YANGsters received was that there is no real way to keep the size of a list in synchronization with a corresponding integer object because of the way datastores work. The suggestion provided was to just put the constraint verbally in the YANG Description by stating that the value needs to be kept in sync. The YANG Doctors also stated that a size operation might be something of interest for YANG/NETCONF in a future revision.

Disposition: YANGsters will create a website providing a YANG FAQ on different topics around the usage of YANG. The FAQ will provide brief answers to questions that come up around YANG and then point to more details for people interested in the "why" behind the answer.

The YANGsters Chair presented suggested *Boilerplate text for draft YANG* modules. The intention of the text is to point out explicitly if a YANG module is still in a draft state.
The suggested text for YANG modules in the draft folder is as follows:
"This YANG module is part of an ongoing standardization project, and does not represent a formally sanctioned YANG module of IEEE. Therefore, this YANG module will most likely change in incompatible ways from its current revision to the formally published YANG module for *<<Insert module here>>*."

Disposition: The suggested text is to be used in draft YANG modules for IEEE 802.1 standardization projects. This will be put down as a point of information in the YANG FAQ.

The YANGsters Chair provided *Information about the Joint 802 and ITU-T Study Group 15 Workshop on 25 Jan.* There was a brief discussion on the agenda and setup of the joint

workshop.
Disposition: none

The YANGsters Chair presented the topic of *IEEE YANG Structure*. The following topics where discussed:

1. NMDA compliance and the YANG version to be used in IEEE 802.1 YANG modules. The decision by YANGsters in the past was to use YANG 1.1 and make modules NMDA compliant. This was confirmed during the discussion. This also means that some currently published YANG modules will require maintenance items to add the yang-version indicating that they are YANG 1.1. YANGsters discussed whether a "proof of concept" can be provided to show that it is possible to automatically convert IEEE YANG modules that are NMDA compliant to YANG 1.0 version YANG modules using the duplicate data tree structures instead of NMDA.

2. There are currently technical issues with leafs that cannot be marked mandatory even though the standard says the object needs to be existing. Additionally if there are leafs in a container that is conditionally present these leafs cannot be mandatory even if the standards says they have to be.
    In the discussion it was pointed out that the way the "mandatory true" statement is described in RFC7950 can be read as stating that a "leaf MUST exist" if it is associated with a "mandatory true" statement. There was also some discussion on how this relates to the way 802.1 YANG modules are modelled.
    The following interpretation was given during the discussion by a member of YANGsters and provided for the meeting minutes via mail:
    o   The term Client and Server will be used as follows:
        ▪   **Client** is the application, typically run in a Management System, (e.g., NETCONF Client) to run the network configuration protocol that interacts with the network element (i.e., **Server**) that contains the YANG modules.
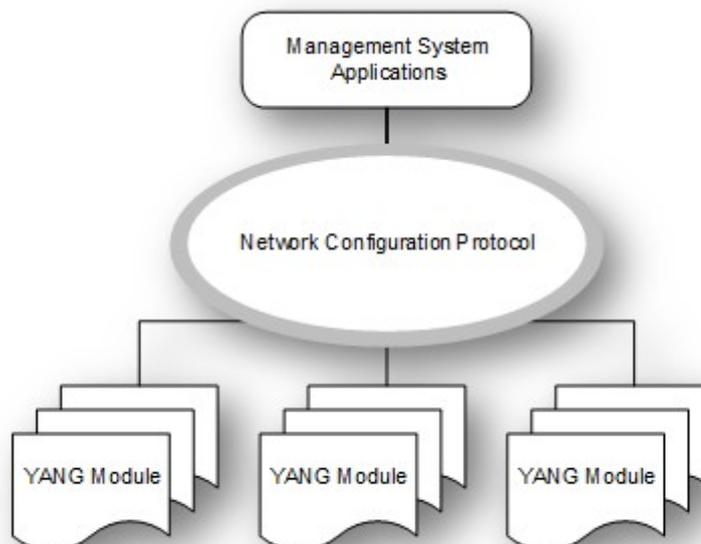
    o   Consider a case where there is a feature that MUST have managed objects A, B, and C. The consequence of this is that the YANG module for this feature should also include A, B, and C.
        ▪   This is illustrated below:

```
2   module example-feature {
3
4       container my-feature {
5           description
6               "My feature description.";
7           leaf A {
8               type boolean;
9               mandatory true;
10              description
11                  "Blah, blah, blah.";
12          }
13          leaf B {
14              type yang:timeticks {
15                  range "20..100";
16              }
17              default "40";
18              description
19                  "Blah, blah, blah.";
20          }
21          leaf C {
22              type yang:timeticks {
23                  range "10..100";
24              }
25              default "100";
26              description
27                  "Blah, blah, blah.";
28          }
29      }
30  }
```

- The implication of using the mandatory true statement in the YANG module is that the Client MUST include the leaf node in the network configuration protocol. So, it MUST include a configuration value for A. There is no need to provide a configuration value for B nor C, since they are optional.
  - For example, the XML representation of the NETCONF protocol in this case is shown below:

```
2   <rpc message-id="101">
3       <edit-config>
4           <target>
5               <running/>
6           </target>
7           <config>
8               <top xmlns="http://example.com/schema/1.2/config">
9                   <my-feature>
10                      <A>"true"</A>
11                  </my-feature>
12              </top>
13          </config>
14      </edit-config>
15  </rpc>
```

  - The Server will still use A, B, and C to configure the example feature. However, the values used for B and C are the defaults defined in the YANG module.
  - NOTE: It is perfectly acceptable for the Client to explicitly specify values for B and C as well. If this occurs, then it simply tells the Server to use these values instead of the defaults.

- o The end result is that the YANG module for the example feature implies that managed objects A, B, and C are needed to configure the feature. However the using the mandatory true statement in the YANG module implies that the Client MUST provide this value to the Server.

- o NOTE: The same logic applies to operational (i.e., read-only) data. It just means that all Servers that implement this YANG module MUST support that information for retrieval by the Client.
  - A classic example is stats. A YANG module may list a set of N (e.g., N=10) counters. However, if they are all optional, then not all Servers need actually implement the counters. However, if a subset of the N have the mandatory true statement associated with them, then all Servers that support this YANG module MUST support those counters.

3. YANG provides the possibility to not have a leaf present if it is not used. It was discussed by YANGsters how to implement managed objects stating that they return a specific value (e.g. 0) if they are not to be used.

Disposition:
1. YANG 1.1 is to be used for IEEE 802.1 YANG modules and they are to be NMDA compliant. The "yang-version 1.1" statement has therefore to be provided in the YANG modules (see RFC 7950, 7.1.2) and they need to state that they are NMDA compliant in the introductory section (see RFC 8407, 3.5).
2. YANGsters will contact the YANG doctors to clarify if the "mandatory" statement in YANG is intended to be used to model standards compliance or not.
3. How to handle managed objects that can return a value to indicate that it is not used needs to be discussed further and then decided on by YANGsters. In the case of comments to current drafts either approach is acceptable. In such a case a comment in the disposition should be provided to indicate that the topic is currently discussed in YANGsters and the YANG file might have to be revised after the decision of YANGsters.

The next YANGsters meeting will be a teleconference on 4 February 2020.

Any Other Business
No other business was discussed.

7:30 PM adjournment