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Date: 11 March 2022

Subject: Use of the IEEE 802.1X YANG model in BBF-specified Access Nodes

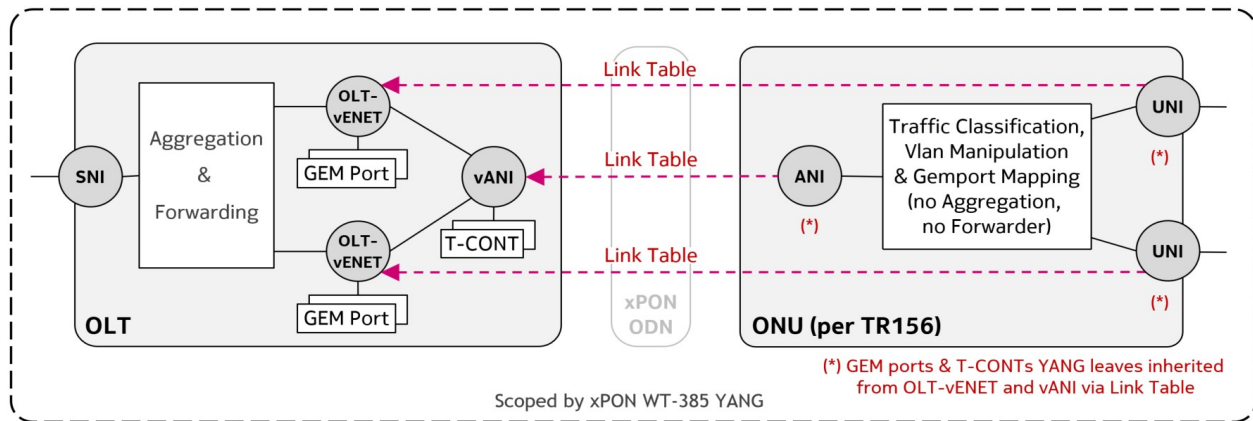
Dear colleagues,

IEEE defined within IEEE Std 8021X-2020 a protocol for port-based authentication, as well as a YANG model for managing this protocol. The scope of where this module can be used is inherently part of the YANG definition by using a 'when' statement.

```
augment "/if:interfaces/if:interface" {  
  when "if:type = 'ianaift:ethernetCsmacd' or  
        if:type = 'ianaift:ilan' or  
        if:type = 'ianaift:macSecControlledIF' or  
        if:type = 'ianaift:ptm' or  
        if:type = 'ianaift:bridge'" {
```

BBF would like to use the protocol, and the YANG model, in an environment not covered by this 'when' statement.

The environment in which BBF would like to use the protocol and the YANG model is as follows. We have an OLT that uses an ITU-T specified PON technology to connect multiple ONUs.



The ONU's 'UNI' at the right side of this picture can be an Ethernet interface. We want to make it possible that in some networks the connected equipment shall use the 802.1X protocol for port-based authentication. Then logically the ONU should support 802.1X on these Ethernet interfaces. However, most existing ONU do not support the 802.1X protocol.

As pictured, there is a 1:1 relationship between the 'UNI' and the 'OLT-vENET'. A solution is to be transparent within the ONU and to process the 802.1X messages in the OLT at the 1:1 related OLT-vENET interface. In order to reuse IEEE's defined YANG module the OLT-vENET interface should be added to the above when statement.

To avoid impact for doing this for other potential future interface types we propose the following approach:

- Within BBF we make the OLT-vENET interface type a specialization of the 'ethernetCsmacd' interface type.
- We ask IEEE to add at minimum a 'derived-from-or-self' statement for this interface type to the 802.1X module. We also ask IEEE to make the same change for the 'ptm' interface type, which is another interface type used in BBF-specified YANG modules. Note that this implies the 802.1X module shall become a "yang-version 1.1" module.

```
augment "/if:interfaces/if:interface" {
  when "derived-from-or-self(if:type, 'ianaift:ethernetCsmacd') or
  if:type = 'ianaift:ilan' or
  if:type = 'ianaift:macSecControlledIF' or
  derived-from-or-self (if:type, 'ianaift:ptm') or
  if:type = 'ianaift:bridge'" {
```

If in the future BBF wants 802.1X to be applicable for other interface types, then BBF can define its other interface types as additional specializations of one of these two interface types.

Does IEEE agree with this approach? Is IEEE willing to support it as described in the last bullet?

Note: this is the approach already taken in ieee802-ethernet-link-oam.yang. Similarly BBF proposes IEEE doing the same in ieee802-dot1x.yang, i.e., make a derived-from-or-self statement for each of the interface types.

Sincerely,

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Broadband Forum Reference: LIAISE-513

Date of Upcoming Broadband Forum Meetings: See https://www.broadband-forum.org/category_meetings_and_events/upcoming-meetings

Attachments: none