What do we mean by “UNI port”?

Where is UNI?

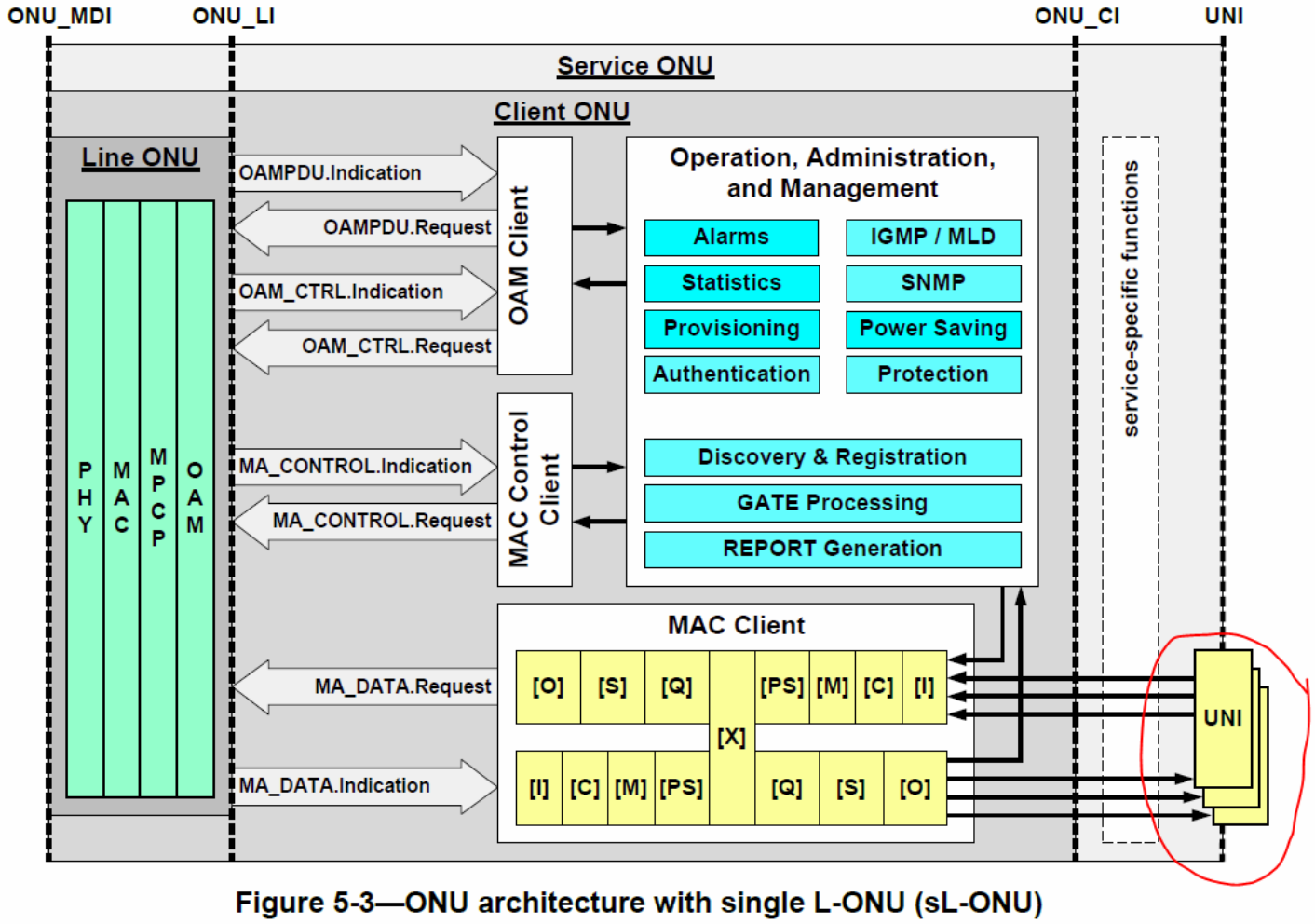


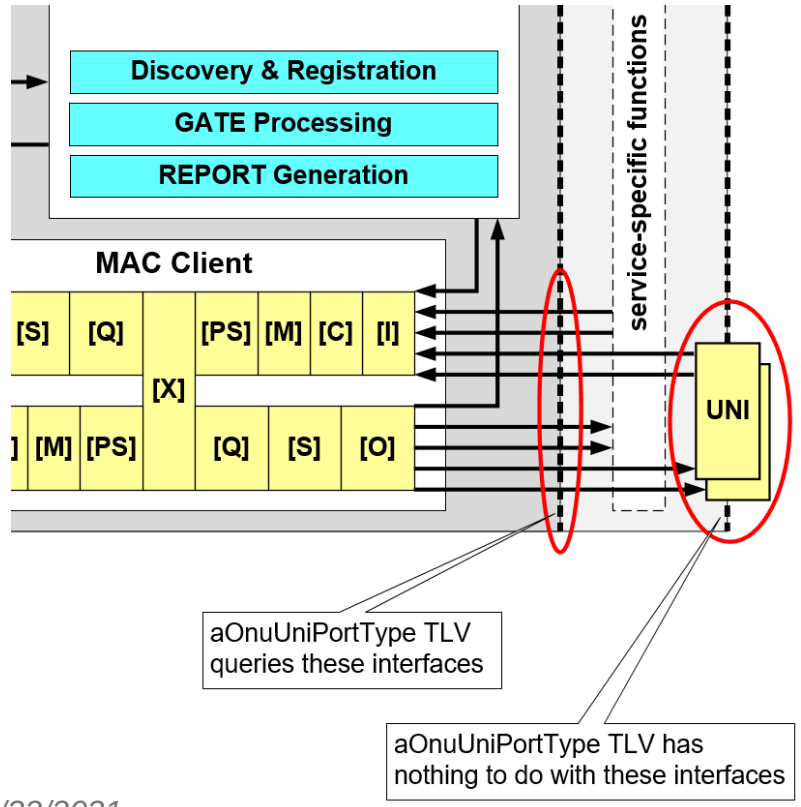
Figure 5-3—ONU architecture with single L-ONU (sL-ONU)

- **Problem statement:** In 1904.4, there is a number of attributes that refer to "UNI port" when they don't really mean UNI port
- Classical definition: User-Network Interface (UNI) is a physical demarcation point between operator's domain and user domain

← In the context of DPoE and SIEPON, UNI port always was a user-facing physical port on an ONU box

Example of mis-named attribute

- In D0.3 (as in 1904.1) we have several management attributes that refer to *UNI ports*, while they mean *internal ports*
- The picture below conflicts with the highlighted text



14.4.3.1.15 Attribute *aOnuUniPortType* (0xDB/0x00-10)

This attribute represents information about the type of individual UNI ports supported on the ONU and devices connected to individual UNI ports (if present), including embedded (eSAFE) and other known CPE devices.

Table 14-70—*ONU UNI Port Type* TLV (0xDB/0x00-10)

Size (octets)	Field (name)	Value	Notes
1	Branch	0xDB	Branch identifier
2	Leaf	0x00-10	Leaf identifier
1	Length	Varies	The size of TLV fields following the `Length` field, equal to value of *sPortCount* sub-attribute
1	PortType[0]	Varies	Value of *sPortType[0]* sub-attribute, defined as follows: `unspecified:` 0x00 `emta:` 0x01 `estb_ip:` 0x02 `estb_dsg:` 0x03 `etea:` 0x04 `esg:` 0x05 `erouter:` 0x06 `edva:` 0x07 `seb_estp_ip:` 0x08
…	…	…	..
1	PortType[N−1]	Varies	Value of *sPortType[N−1]* sub-attribute

DPoE terminology

- DPoE provides a more accurate taxonomy for various interfaces

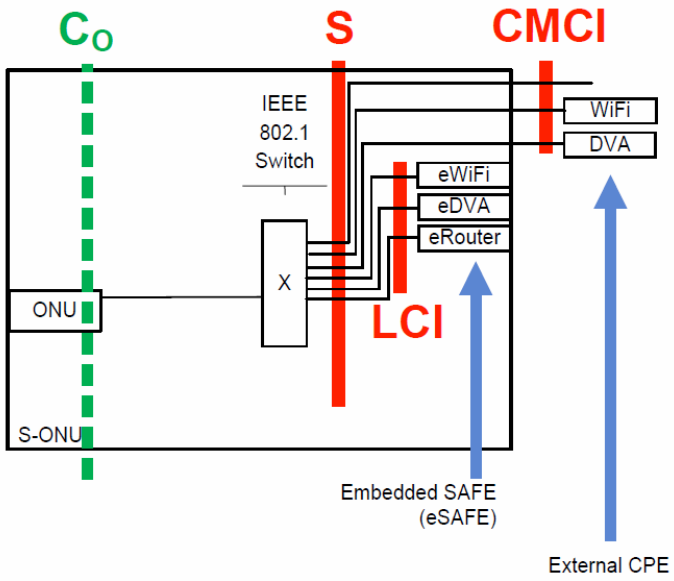
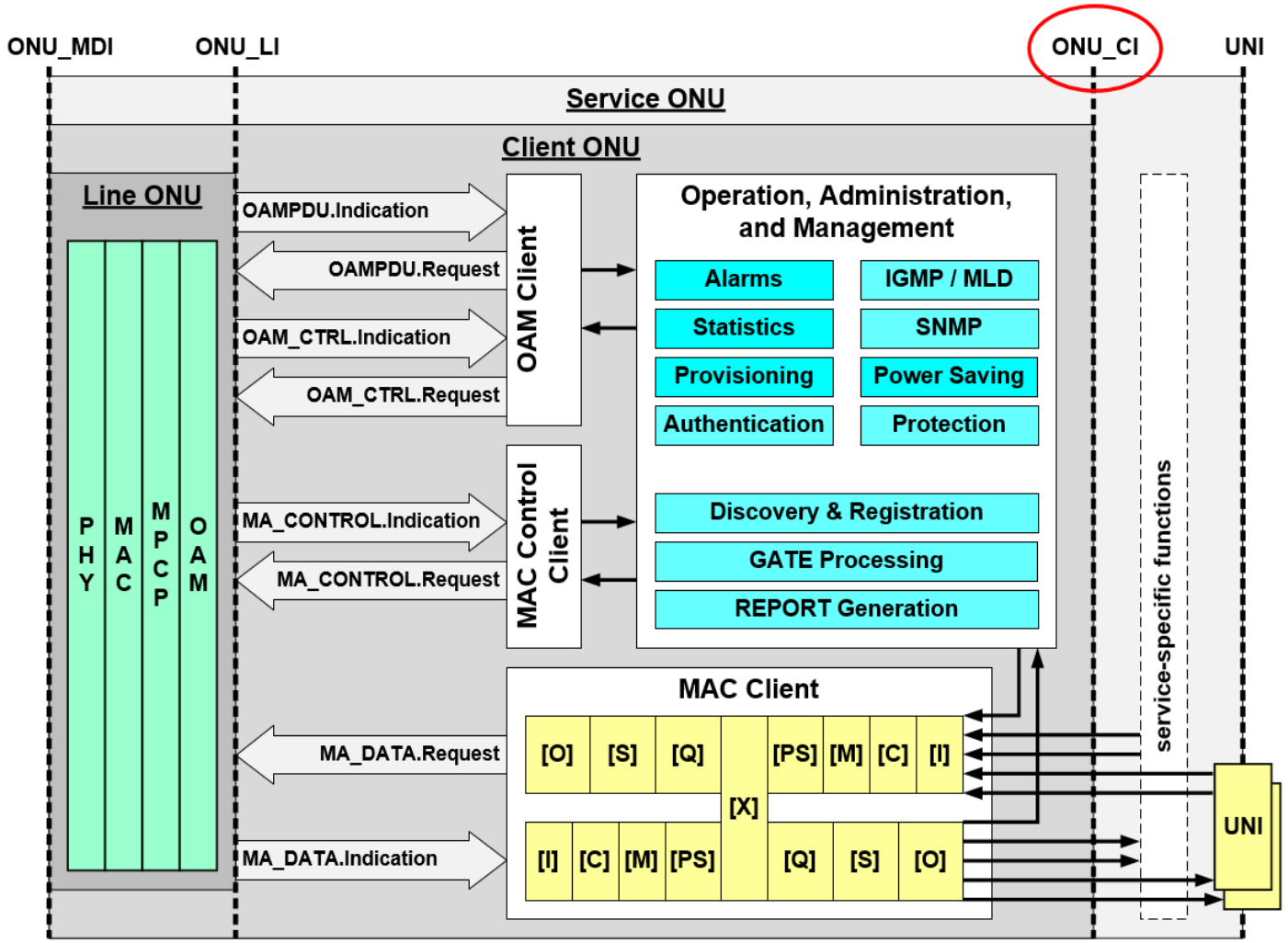


Figure 8 - DPoE Specifications Support Both Embedded SAFEs and External CPE

- **S-Interface** is an IEEE 802 interface. The S interface may be an internal interface, (such as an GMII or XGMII interface implemented in the form of a SERDES) or an external interface exposed in a BB-ONU or S-ONU for connection to other devices.
- **LCI (Logical CPE interface)** connects 802 transport functions to embedded devices (eSAFE)
- **CMCI (Cable Modem CPE Interface)** connects 802 transport functions to external devices (CPE)

S interface in DPoE = ONU_CI in SIEPON



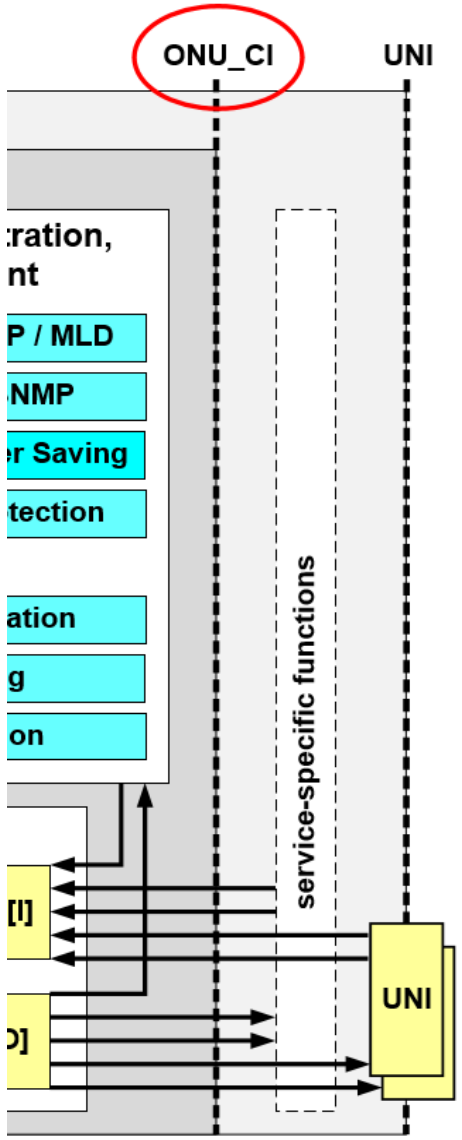
- **In SIEPON, ONU_CI was intended to be equivalent to S-Interface in DPoE.**
- **Definition from 1904.4:**

The ONU_CI represents the interface between the C-ONU and the S-ONU functionalities.

When no service-specific functions are implemented, the ONU_CI corresponds to the UNI.

When service-specific functions are present, the ONU_CI is an internal interface that does not correspond to any existing IEEE Std 802.3- or IEEE Std 802.1-compliant interface.

Issues with ONU_CI definition



The ONU_CI represents the interface between the C-ONU and the S-ONU functionalities.

When no service-specific functions are implemented, the ONU_CI corresponds to the UNI.

Not 100% accurate. ONU may have a combination of internal and external ports, not either or.

When service-specific functions are present, the ONU_CI is an internal interface that does not correspond to any existing IEEE Std 802.3- or IEEE Std 802.1-compliant interface.

Should not say that. As DPoE S-interface definition says, these internal ports may be just regular GMII/XGMII, i.e., 802.3-compliant.

Proposals

1. **Use the following definition for ONU_CI interface:**

   The ONU_CI represents the interface between the C-ONU and the S-ONU functionalities. The ONU_CI instantiates a number of *service ports*, which may be internal ports connected to embedded service/application functions (eSAFEs) or external ports (i.e., UNI ports) exposed in the S-ONU for connection to physical CPE devices. The ONU_CI corresponds to S-interface defined in DPoE2.0.

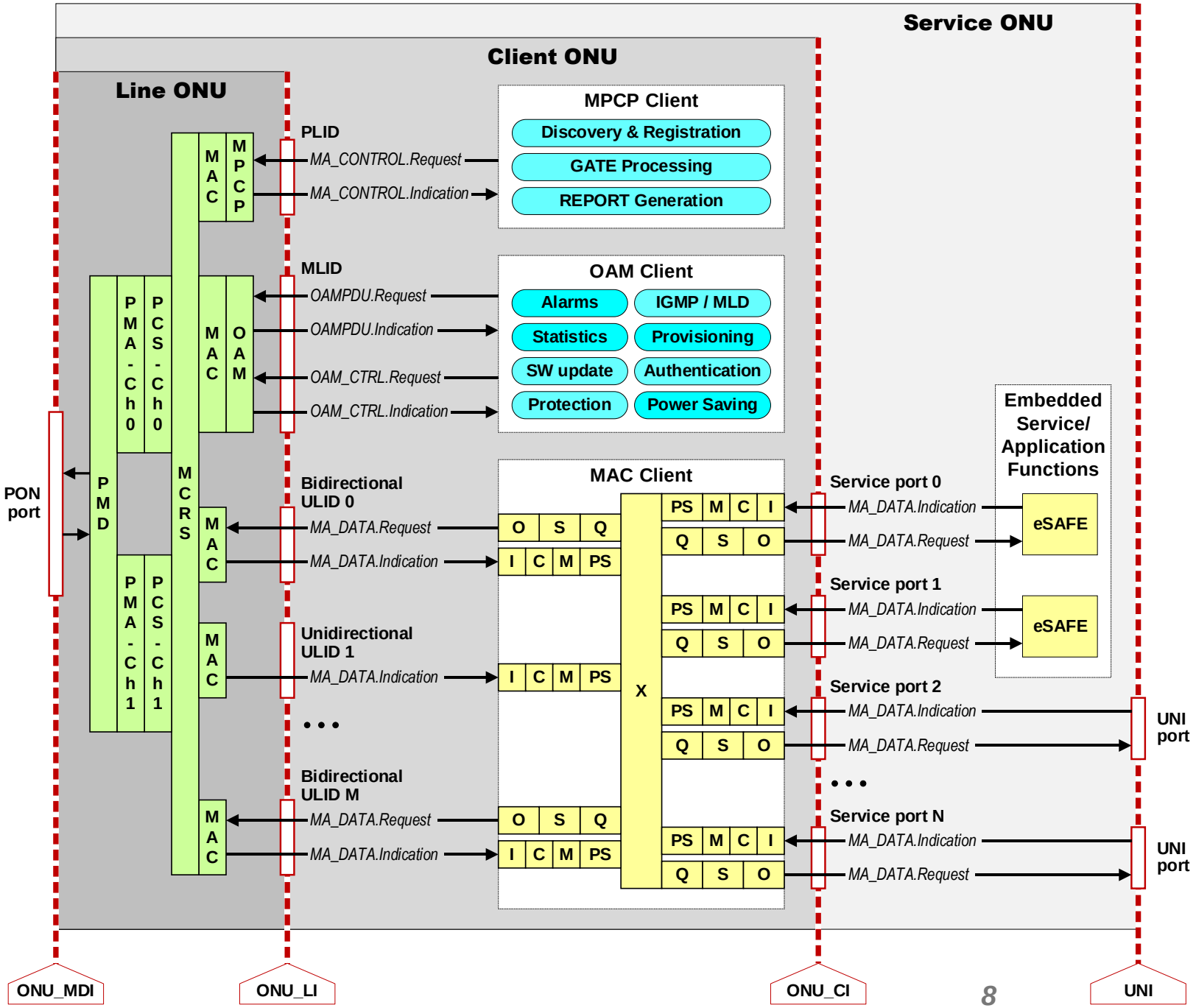
2. **Where attribute names use "UNI Port" to mean either an external or an internal port, use term *Service Port* (*SrvPort*).**
   - Example attribute/action names:

     ~~*aOnuUniPortType*~~ → *aOnuSrvPortType*

     ~~*acConfigUniPort*~~ → *acConfigSrvPort*

ONU architecture

- Updated ONU architecture figure 5-3 that is aligned with 802.3ca spec
  1) 2 channels + MCRS in L-ONU
  2) One PLID and one MLID
  3) On the user-side, align with DPoE and show eSAFE devices
  4) Clearer visual distinction between internal service ports and UNI ports
- No more S-ONUs with multiple L-ONUs (except for dual-homing)
  1) Figure 5-4 is not needed anymore.



Thank You

Discussion on the floor

- Service Port types should identify specific UNI port instance.

  For example,

  1. UNI ports always reported first (lowers indexes represent UNIs)
  2. Additional TLV to query UNI index for specific Service Port
  3. Reserve range of code-points for UNIs where code point value = UNI index.

Backup

DPoE Architecture