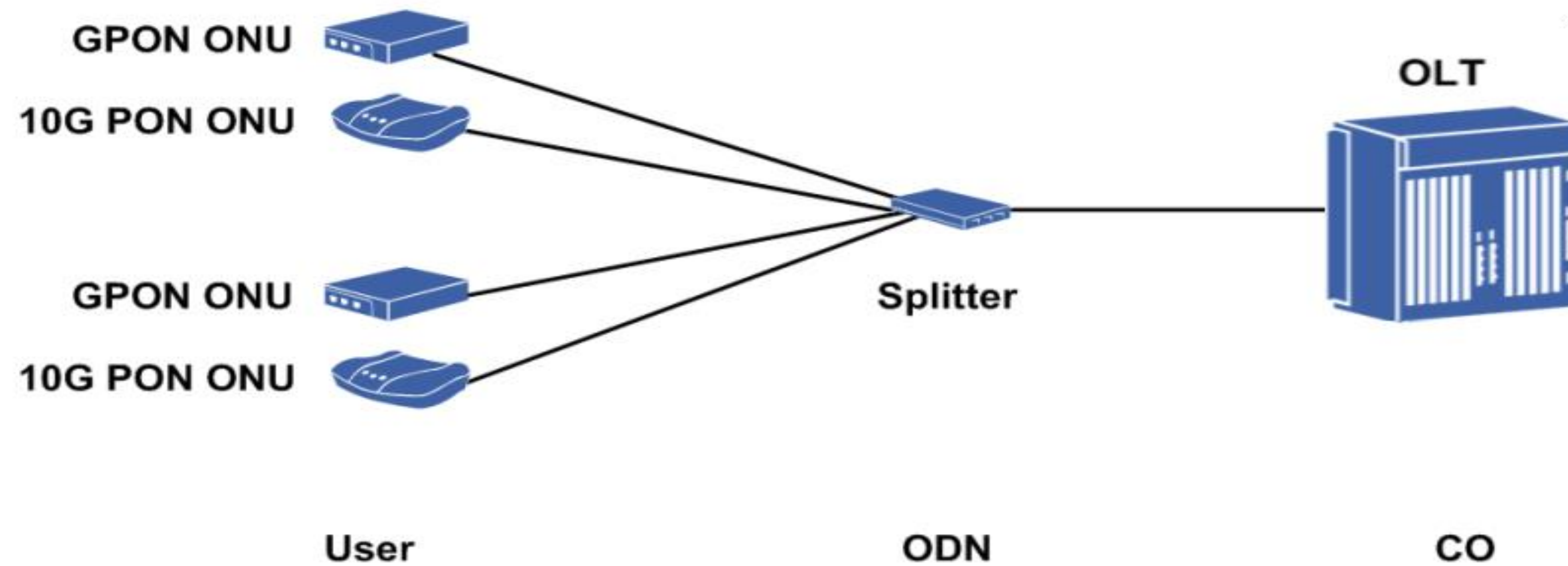# NETSIA

SEBA Combo PON Support

Serkant Uluderya VOLTHA TST Member

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- What is COMBO PON
- Key Design Decisions
- Integration with VOLTHA
- Combo PON Support in BBSIM

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Single physical PON Interface
Multiple Access Technologies

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Design Decisions

VOLTHA interfaces should be modified as little as possible.

NB interface should be independent of the PON technology.

Fasten the development cycle by little vendor support

Enhance Alarm & PM with extra information.

Prevent complexity by eliminating GPON/XGS distinction in technology profiles.

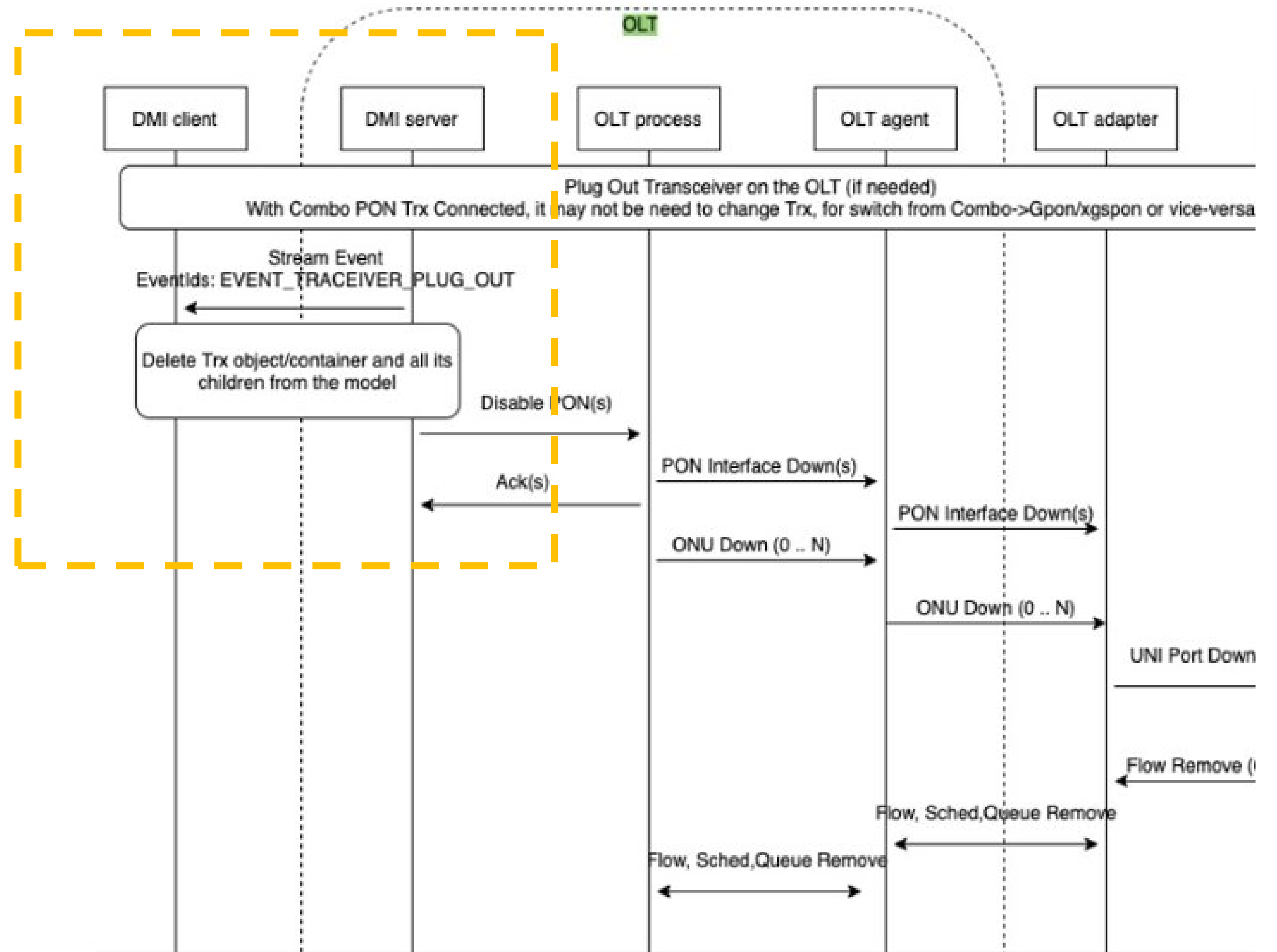**Preserve** configuration changes in OLT

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ONU Model concept
- TECHNOLOGY MISMATCH alarm if inappropriate ONU device is provisioned

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Requires **vendor** intervention

Developed an easy to use script for operation.

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OLT packaged with initial configuration
Technology is always ANY PON
Further changes should be made per SFP

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Logical PON IDs

PHYSICAL PON PORT MAPPING

```
=================================================
|  PHY 1   |   PHY 2 | PHY 3 | PHY 4 | PHY 5|
-------------------------------------------------
| XGS      |   GPON  | COMBO | COMBO | GPON |
-------------------------------------------------
|    0     |    2    |  4-5  |  6-7  |   8  |
=================================================
```

COMBO SFP
- $2n - 2$ -> XGS
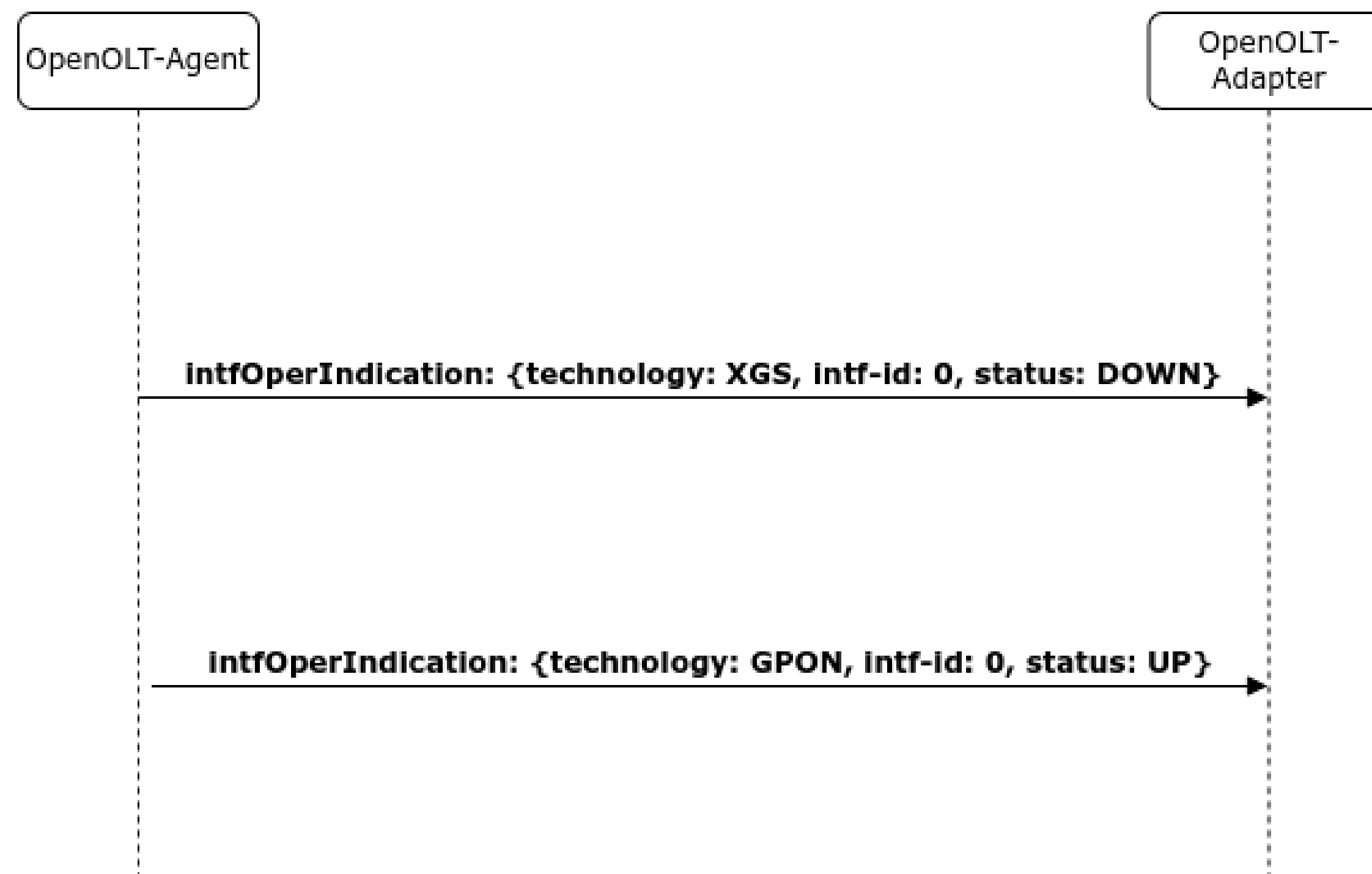- $2n - 1$ -> GPON

ONLY SFP
- $2n - 2$ -> XGS/GPON

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Affected Components

- RW-CORE
  - Logical/Physical ID Abstraction
- OPENOLT-ADAPTER
  - PON Manipulation based on intfOperIndication

SFP Switch Operation
1. Physical operation
2. Run the script (No need to OLT Reboot)

SFP Switch Operation from XGS to GPON on 1st Physical Pon Port

OpenOLT-Agent → OpenOLT-Adapter

intfOperIndication: {technology: XGS, intf-id: 0, status: DOWN}

intfOperIndication: {technology: GPON, intf-id: 0, status: UP}

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Supports different SFP technologies
- ./bbsim -pon 10 -xgs 4 -gpon 3 -combo 3 -any true

Supports SFP switching between differents technologies
- ./bbsimctl pon changeSFP 1 GPON

Supports hardcoded GPON ONU model for BBSIM

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Thank you!
Questions?