

A YANG Data Model for Network Inventory

draft-ietf-ivy-network-inventory-yang-05

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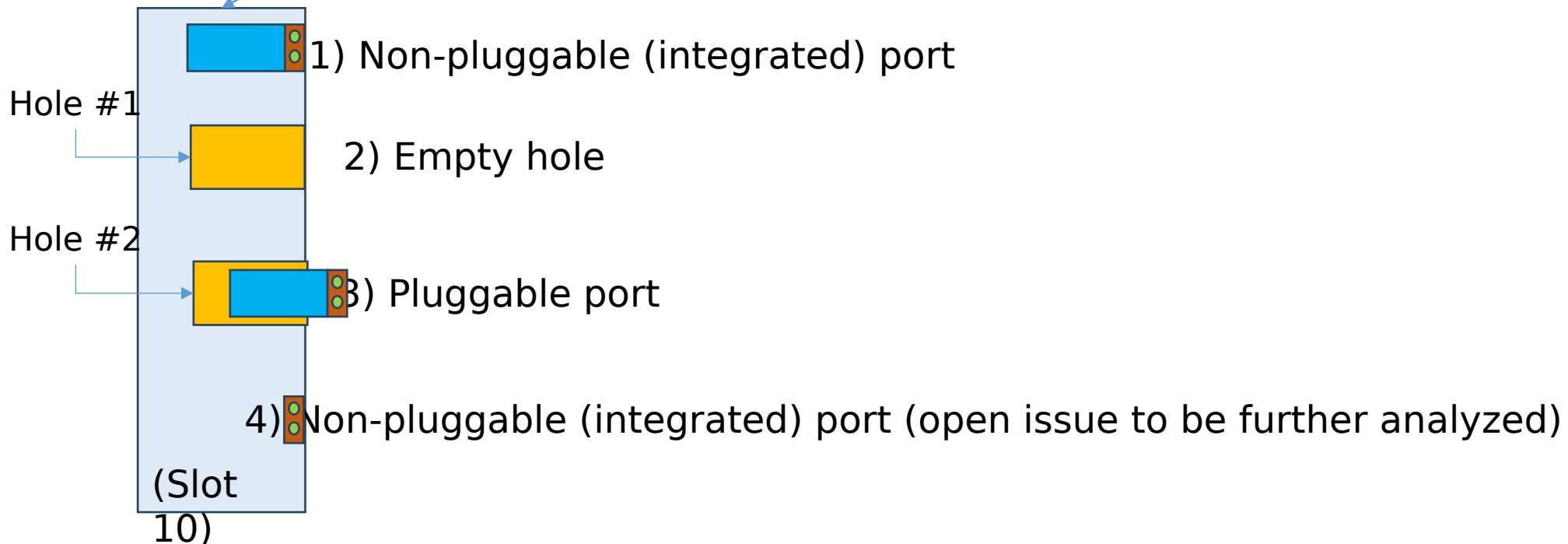
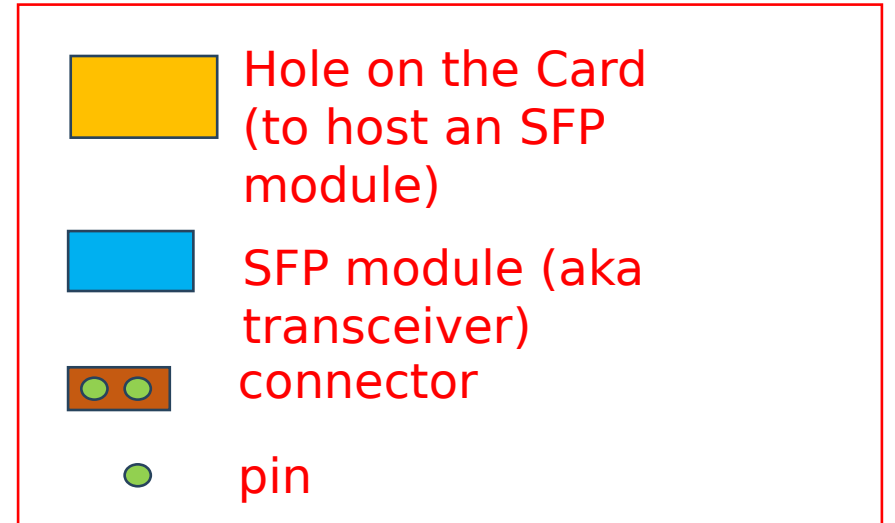
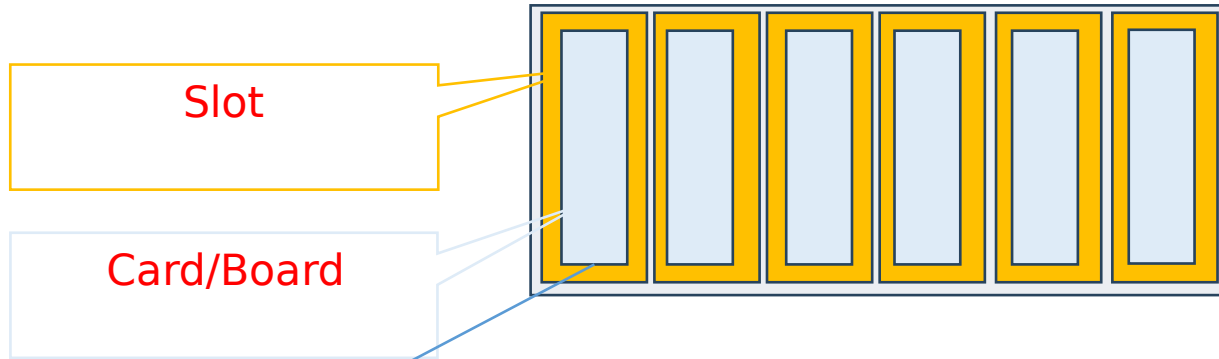
Updates Since IETF 121

- Clarified terminology and scope, and in particular:
 - ✓ the model applicability includes but it is not limited to ACTN
 - ✓ the model is technology- and application-agnostic
 - ✓ this version covers only actual inventory and not intended/planned inventory
- Updated YANG model to support:
 - ✓ navigation from child component to parent component
 - ✓ modelling ports, transceivers and breakouts
 - ✓ reusable groupings to reference network-elements, port components or breakout channels
- Added an initial version of appendixes providing some examples of ports, transceivers and breakouts configurations (to be further improved)
 - ✓ JSON instance examples are also provided
- Editorial improvements and fixed nits

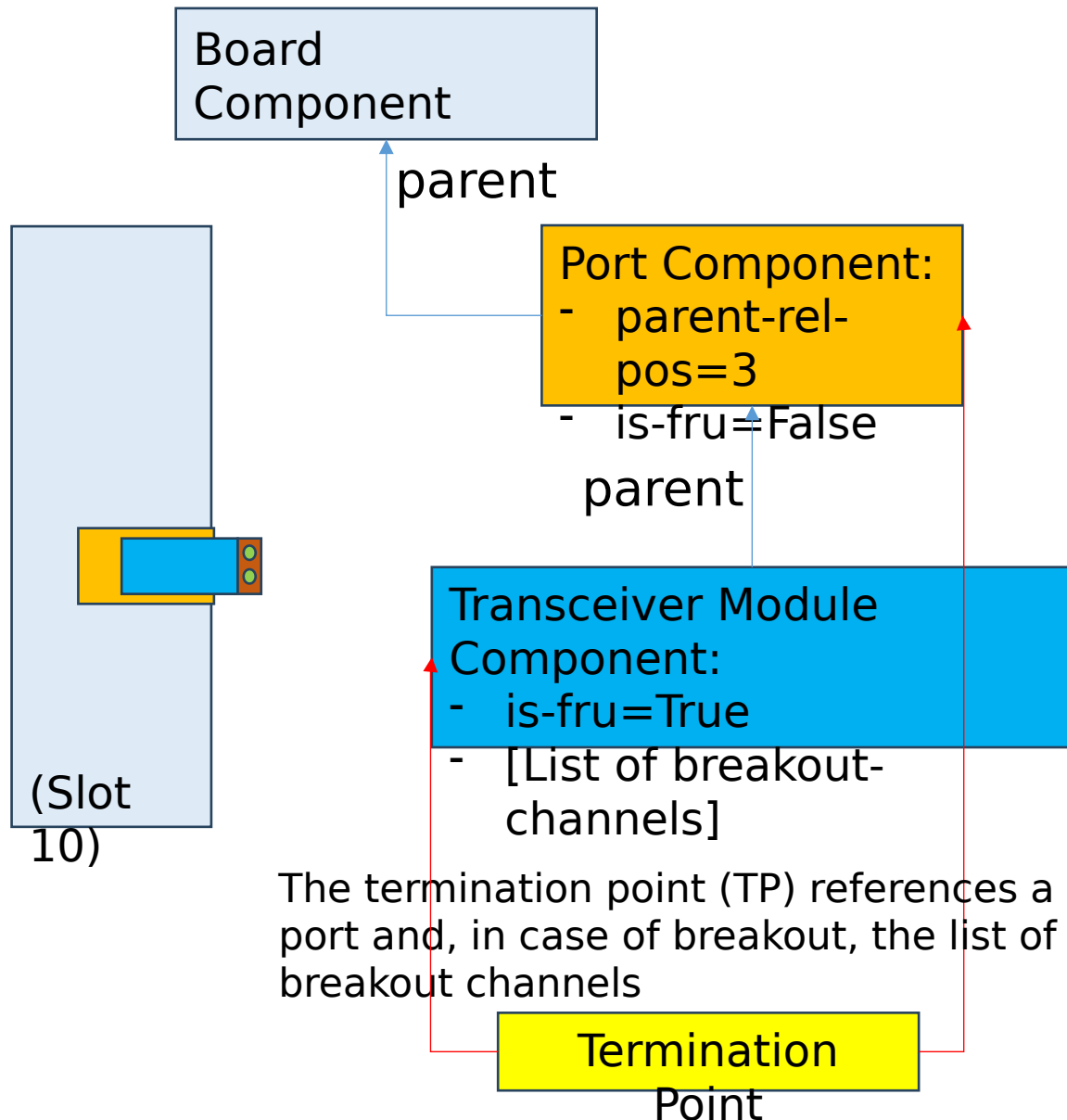
Summary of the Open Issues (Priority 1)

- Complete examples of breakout configurations
- Definitions of slot/sub-slot and shelf/sub-shelf (chassis/sub-chassis)
 - ✓ Examples of multi-shelf (multi-chassis) NEs
- Guidelines for future augmentations
- Few additional attributes
 - ✓ Child/parent reverse navigation
 - ✓ System (software) name at NE (device) level
 - ✓ Attributes from RFC7317
- Security Considerations
- Editorial clean-up

Reference Scenarios of Port Modelling



Modelling of a pluggable port



The port can be associated with:

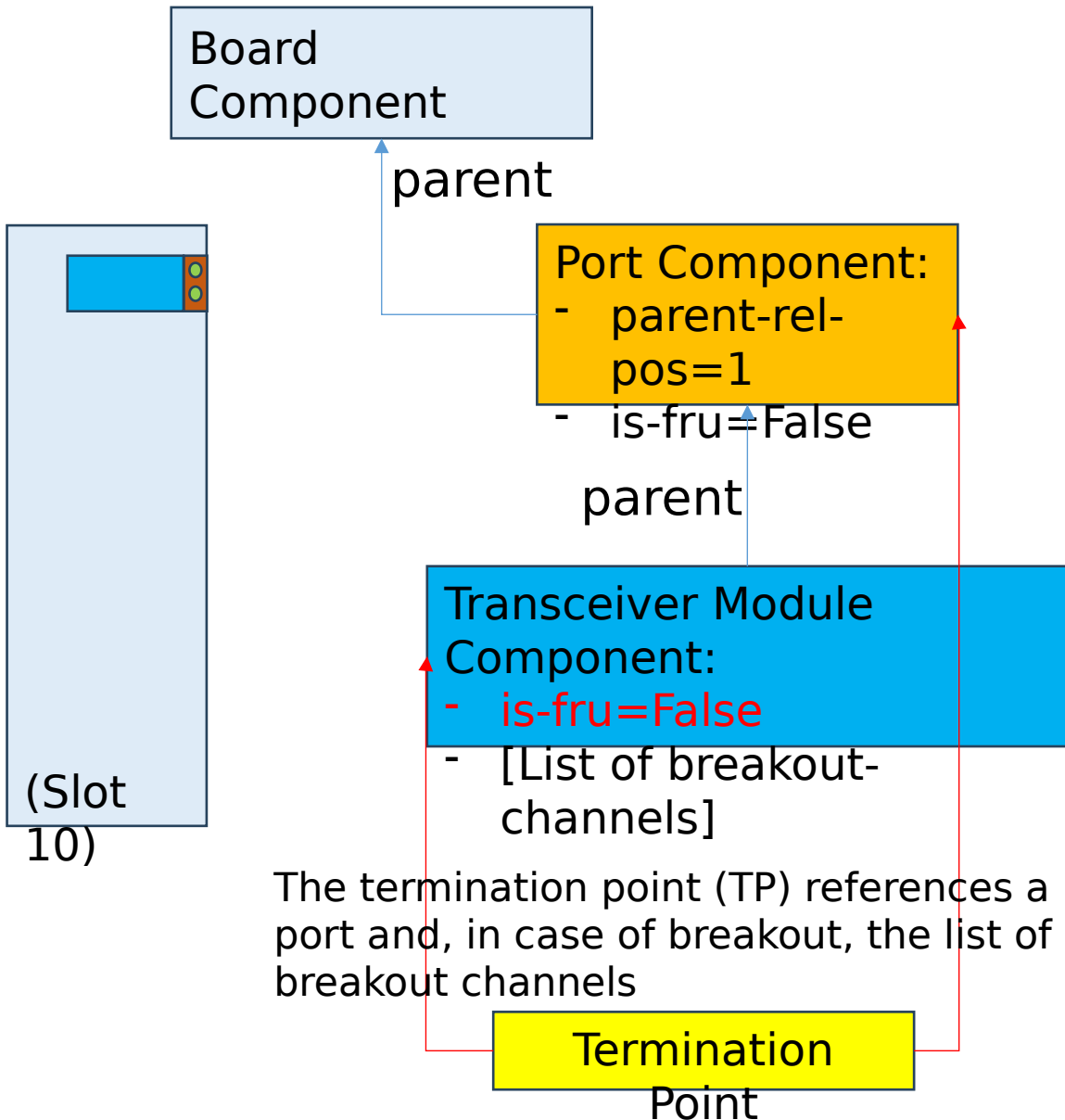
- Electrical port
- Single-channel optical port
- Multi-channel WDM port (with or without breakout)
- Multi-channel MPO port (with or without breakout)

location=/ne=ne-name/sl=10/p=3

The breakout-channel list is present if and only if the transceiver module supports port breakout

The definition of the references from a termination point to a port and, in case of port breakout configuration, to a list of breakout channels is outside the scope of the base inventory model (to be defined in

Modelling of a non-pluggable integrated port



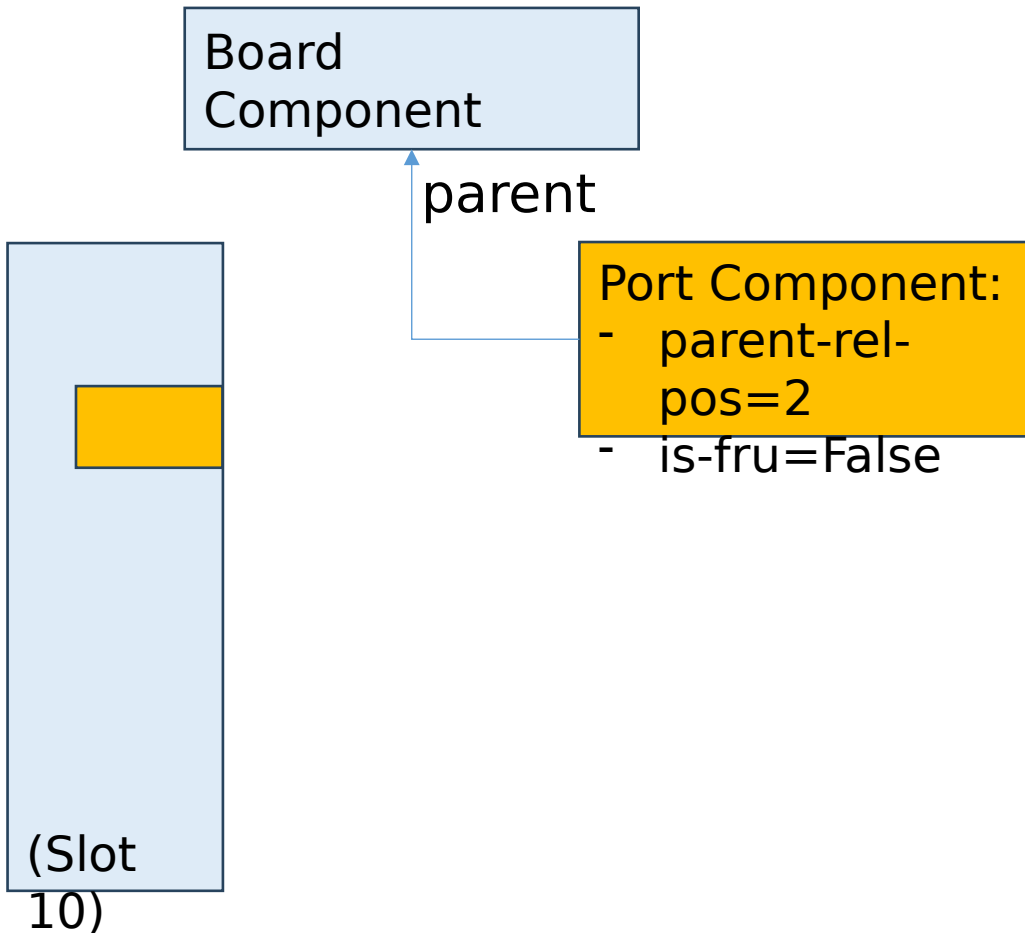
The port can be associated with:

- Electrical port
- Single-channel optical port
- Multi-channel WDM port (with or without breakout)
- Multi-channel MPO port (with or without breakout)

location=/ne=ne-name/sl=10/p=1

The only difference from a pluggable port is that the transceiver module is not field replaceable

Modelling of an empty hole



The port can be associated with:

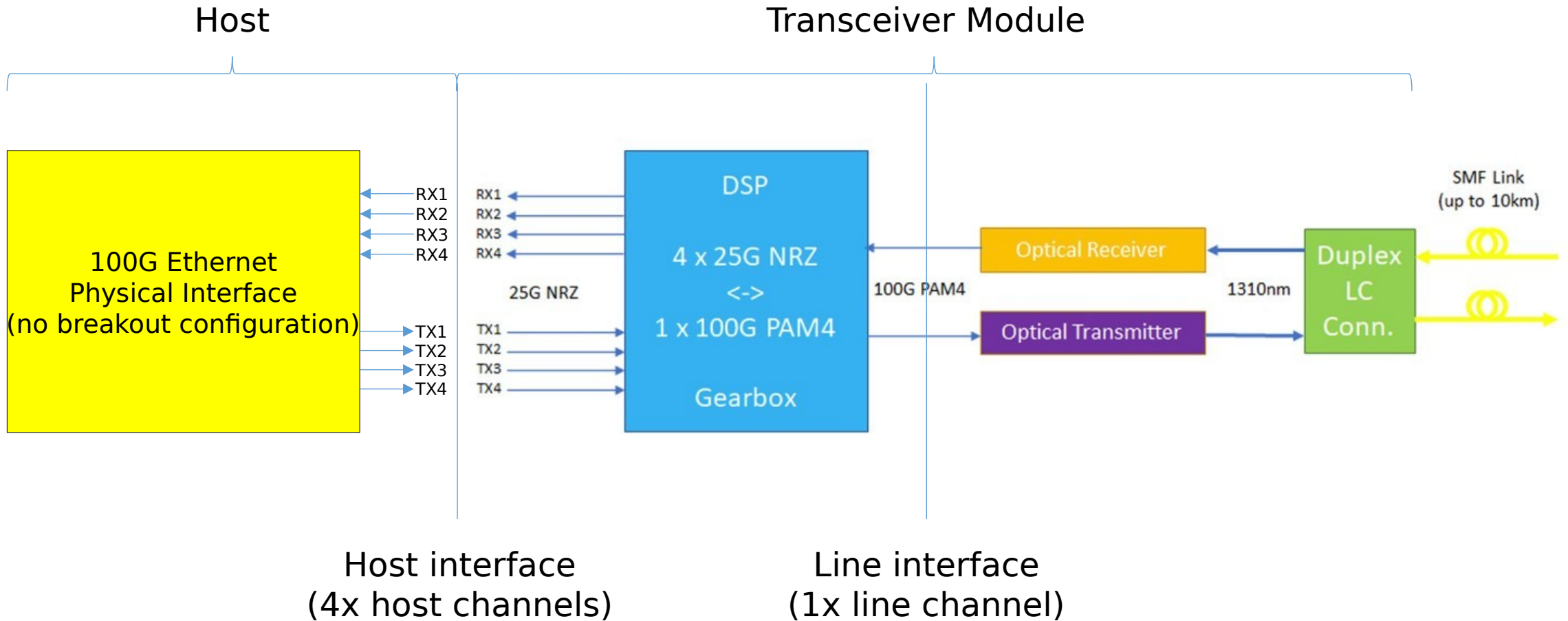
- Electrical port
- Single-channel optical port
- Multi-channel WDM port (with or without breakout)
- Multi-channel MPO port (with or without breakout)

The port is empty because it has no child transceiver module component

location=/ne=ne-name/sl=10/p=2

Examples of ports: Optical, single-channel

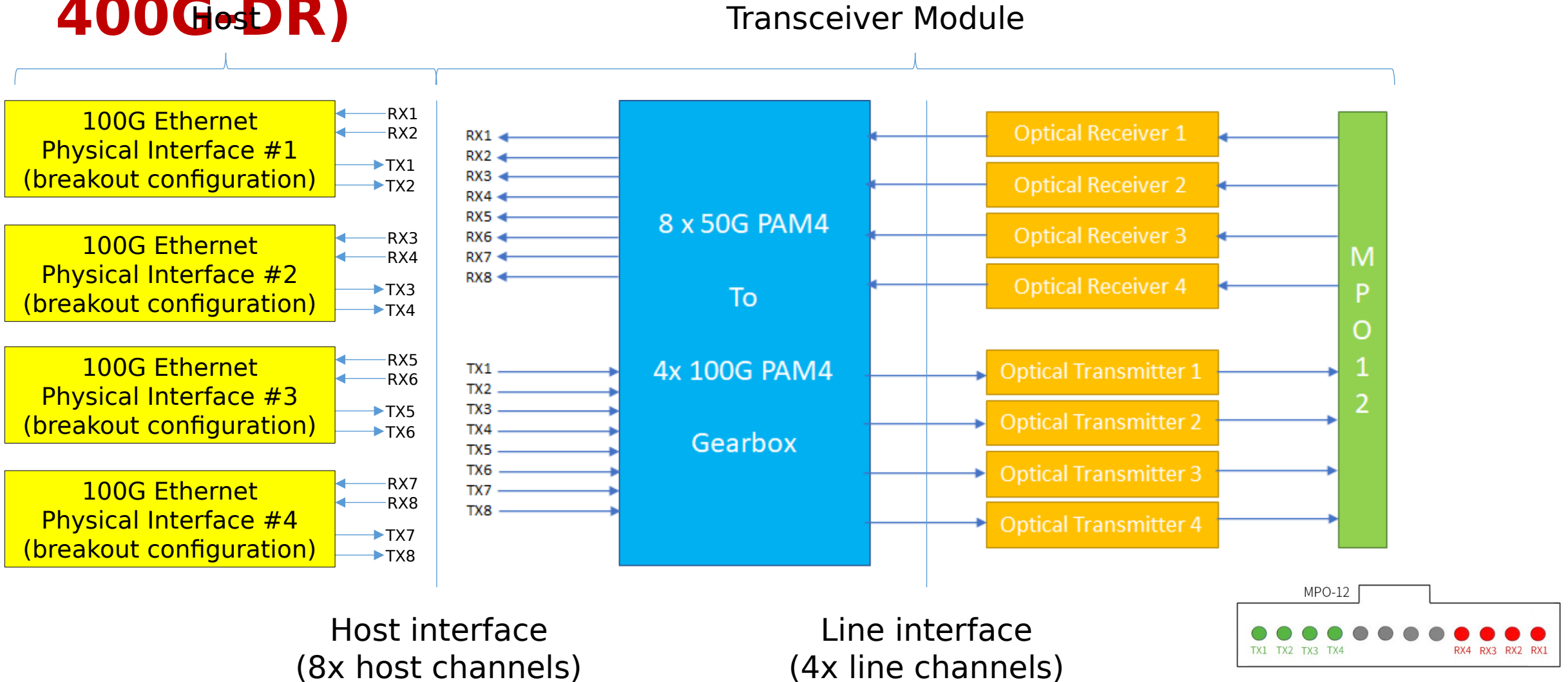
Clean-up drawing



Note: no breakout channels are reported (the port cannot support breakout)

Examples of ports: Optical, MPO breakout (e.g. 400G DR)

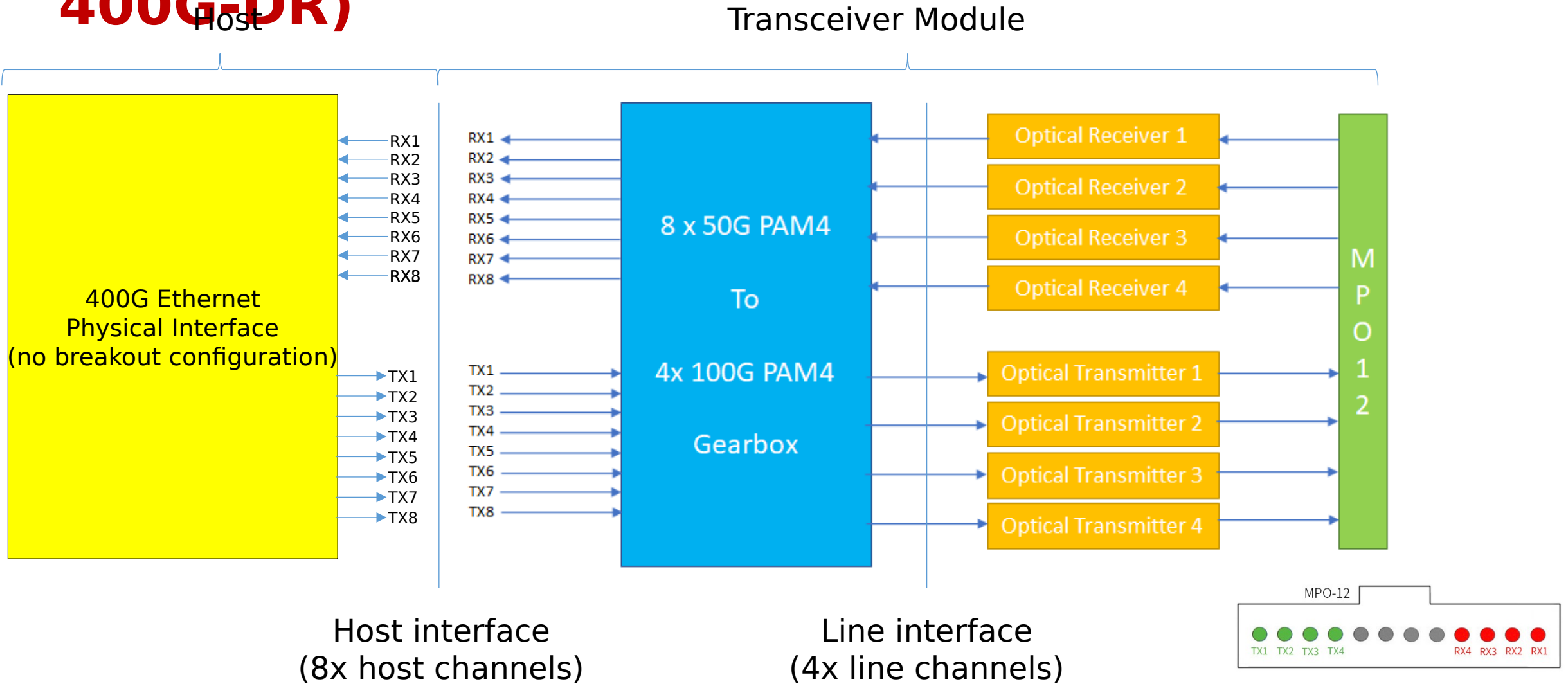
Clean-up drawing



Note: 4x breakout channels (one for each line channel) are reported (the port shall support breakout).

Examples of ports: Optical, MPO trunk (e.g. 400G-DR)

Clean-up drawing



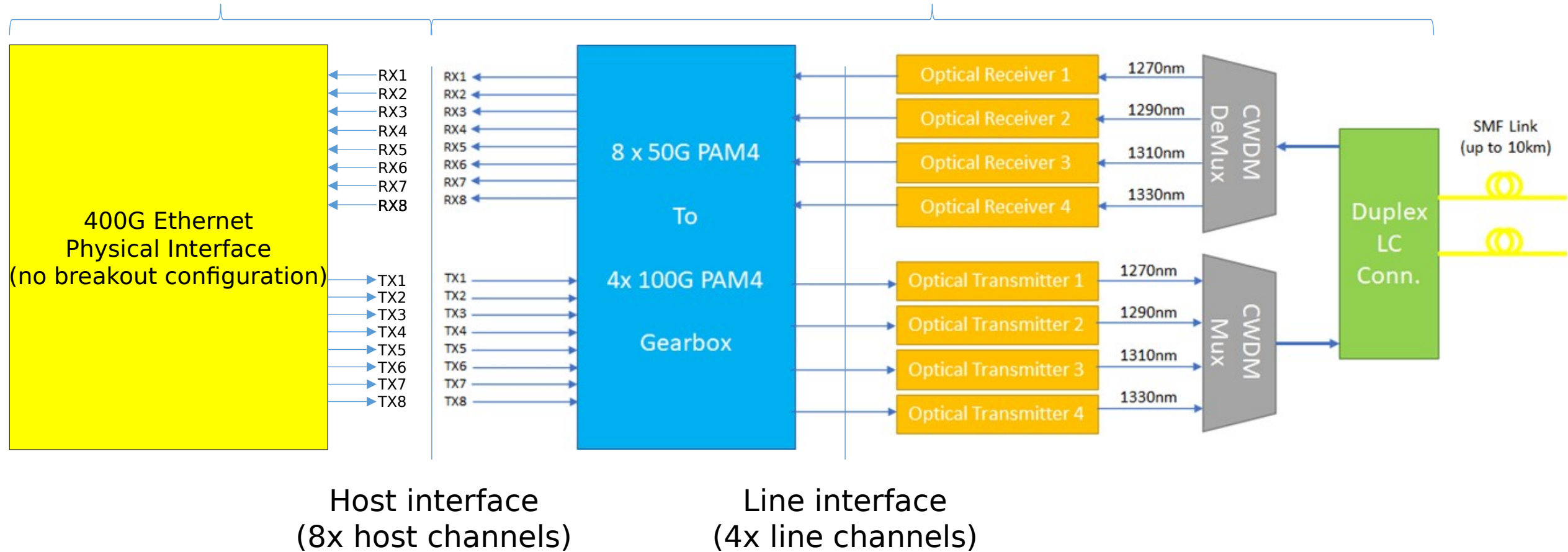
Note: even if the port breakout is not configured, 4x breakout channels (one for each line channel) are reported if the port can support breakouts. No breakout channel are reported if and

Examples of ports: Optical, WDM multi-channel (e.g., 400G-LR)

Clean-up drawing

Host

Transceiver Module



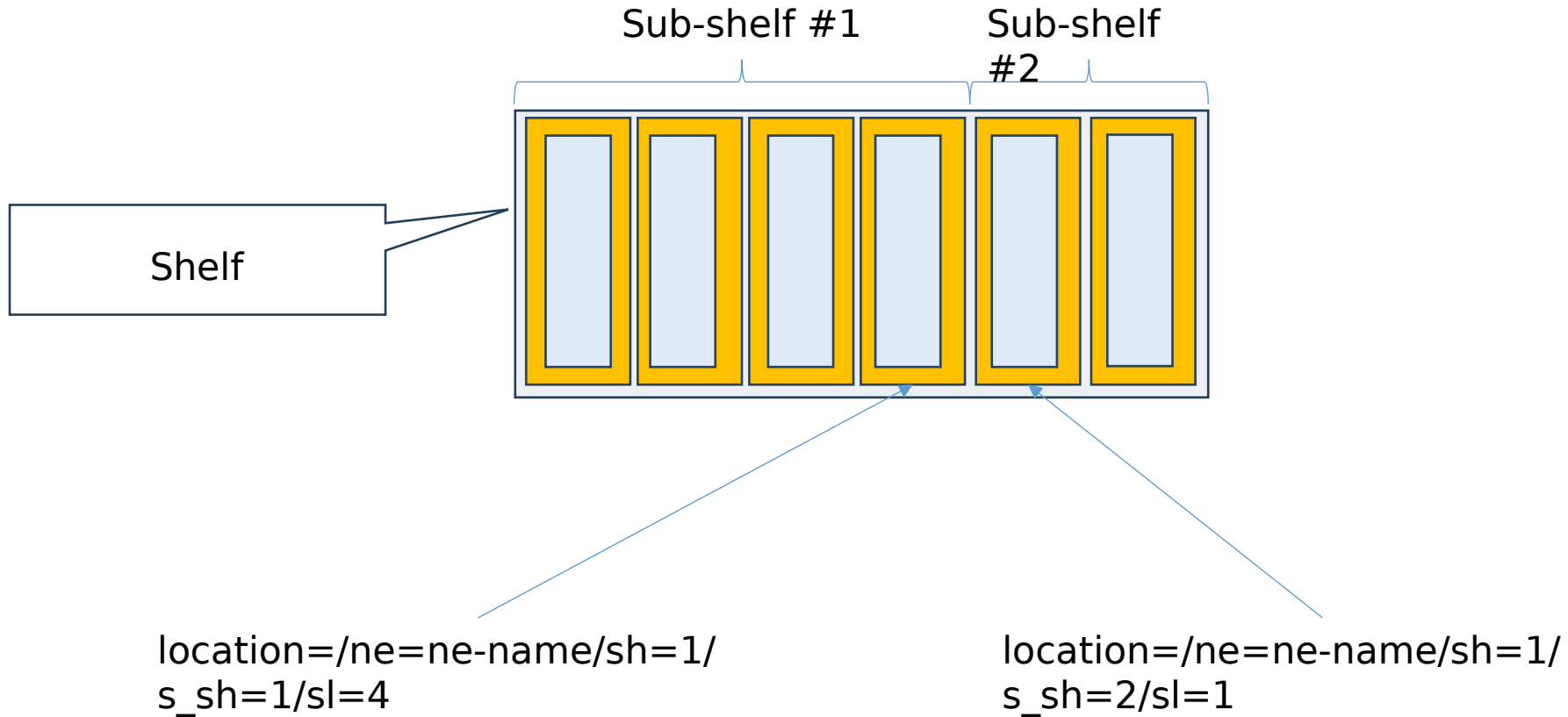
Note: even if the port breakout is not configured, 4x breakout channels (one for each line channel) are reported if the port can support breakouts. No breakout channel are reported if and only if the port cannot support breakouts.

Guidelines for future augmentations

- Comments on the mailing list for providing guidelines for future augmentations
 - Authors believe that it will be hard to predict the need for augmentations – possible guidelines could be either too restrictive or too liberal
- Existing examples?

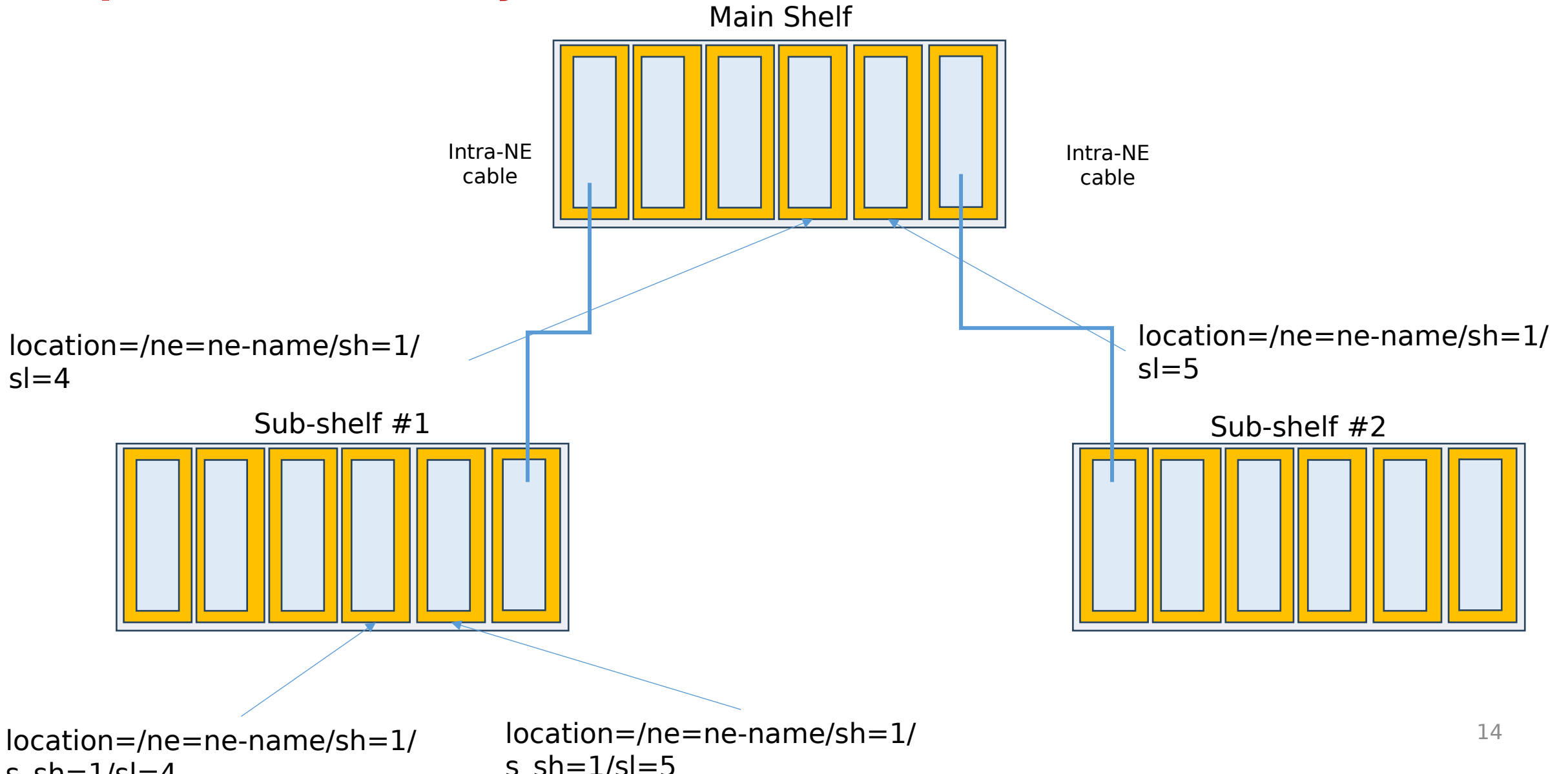
Sub-shelf definition

Option 1 (Logical partitioning of the slots within a shelf)



Sub-shelf definition

Option 2 (Hierarchy of shelves in a multi-shelf NE)



Next Step

- Resolve the priority 1 open issues
- Editorial clean-up
- The target is to have a draft ready for WG LC by IETF 123
 - Address some of the priority 2 open issue, time permitting
- Further review and comments from the WG is appreciated