

CCAMP: Transport NBI Design Team

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Scope of the Transport NBI Design Team

- A CCAMP Working Group Design Team was created to discuss the use cases and applicability of CCAMP, and related YANG models for the Northbound Interface used to communicate with Transport Network resources
- The Design Team will provide guidelines regarding how all the relevant models can solve agreed and well-identified transport network use cases
- It was agreed that the Design Team members and interested participants should use a non-WG mailing list
 - <https://mailarchive.ietf.org/arch/browse/transport-nbi-dt/>
- The Design Team will publish via the CCAMP GitHub and Wiki
 - <https://github.com/ietf-ccamp-wg/transport-nbi>
 - List is open access; anyone may join and attend
- JSON Examples will be agnostic to deployment architectures

What is the Transport NBI?

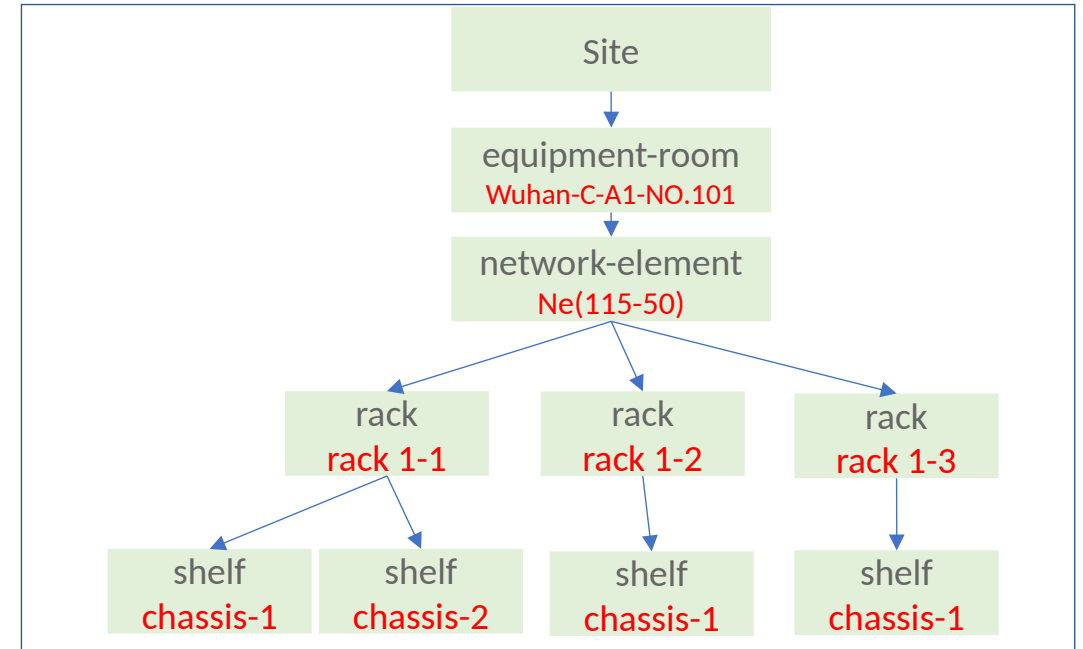
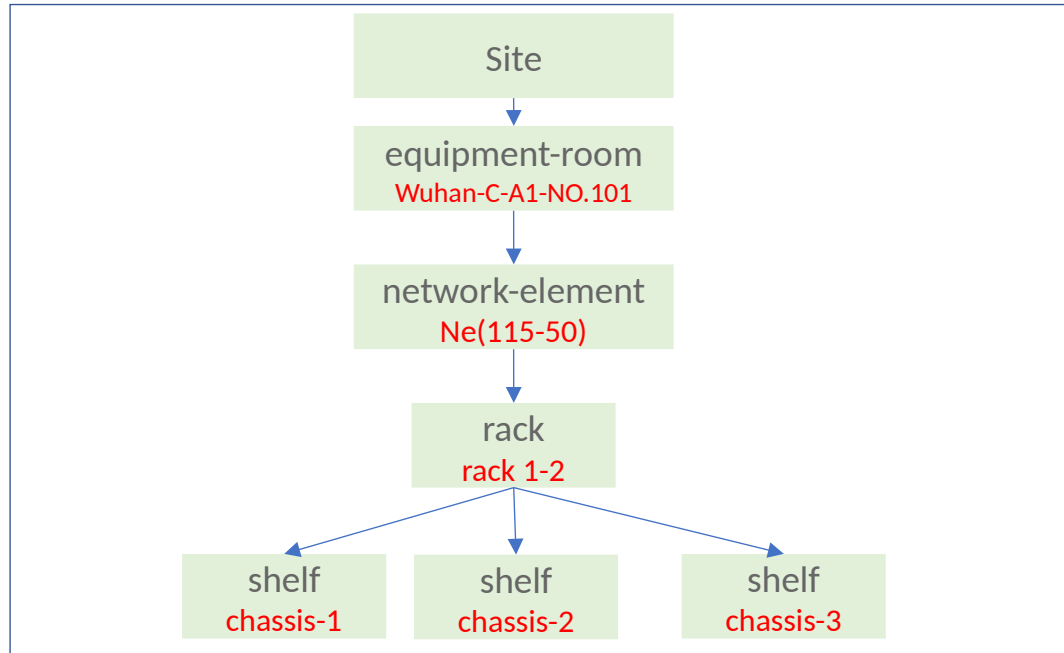
- An additional, an early, goal of the TNBI discussion is to clarify the term “Transport NBI”
- Early text being discussed:
 - *“The optical transport domain is designed to support various connectivity services, such as Wave Division Multiplexing (WDM) and the Optical Transport Network (OTN). A primary objective for network operators is to automate the establishment of these services in single-layer and complex hierarchical, multi-domain optical transport networks. Exposing capability and infrastructure assets are crucial to providing access to network resources and offering advanced control and manageability features. Optical transport Application Programming Interface (API) becomes essential to achieve this.*
 - *The "Transport Northbound Interface" (T-NBI) API are well-defined, open interfaces vital for network operators. They provide the capability to view optical transport resources and effectively operate multi-vendor and multi-domain networks. Furthermore, the T-NBI API is instrumental in facilitating the coordination and automation of service provisioning, thereby enhancing efficiency and operational flexibility when managing optical network resources.”*
 - Not final, updates are encouraged and expected
 - <https://github.com/ietf-ccamp-wg/transport-nbi/issues/115>
- It should be noted that "well-defined", also includes procedure and usage, and we will need to include that YANG is used to model capability.
- We are also synching IETF industry terms (ACTN, OTS, OMS, OTSI, OTU, service models, et al.) ideally providing a mapping between other SDOs and initiatives (such as ONF TAPI, and OIF work)

Transport NBI Design Team Early Meetings

- The DT will help people utilise CCAMP models and IETF protocols.
- Publish best practice and examples via Wiki, GitHub, or a combination.
- DT Discussions are based on Use Cases and Scenarios
 - Use Case: A use case is a broader concept that describes a set of components, actions/steps, and may define the interactions between functional components to achieve requested objective(s).
 - Scenario: A scenario may refer to a specific narrative, technology and set of steps or events.
- Started meeting formally after IETF 118, a key discussion was which "use case(s)" should we focus on first?
 - We agreed to work on, initially
 - 1. Inventory Management
 - 2. Multi-layer Topology Management
- We also agreed that we can potentially reuse the existing work, scenarios and examples from our earlier work:
 - <https://datatracker.ietf.org/doc/html/draft-ietf-ccamp-transport-nbi-app-statement-17#name-json-code>

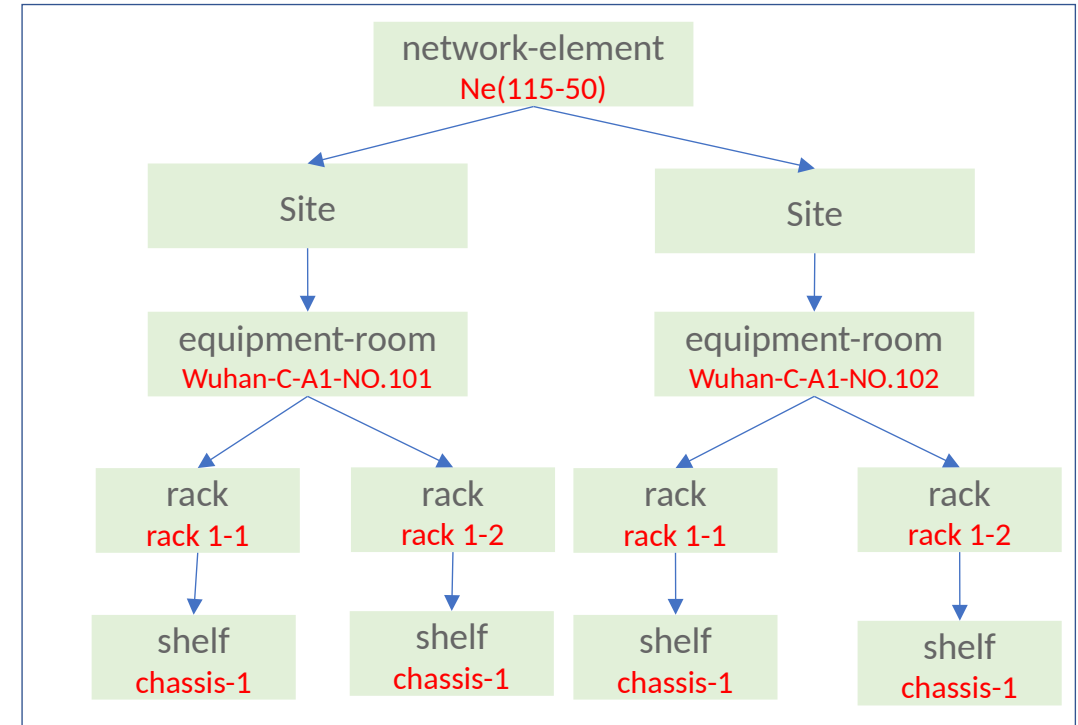
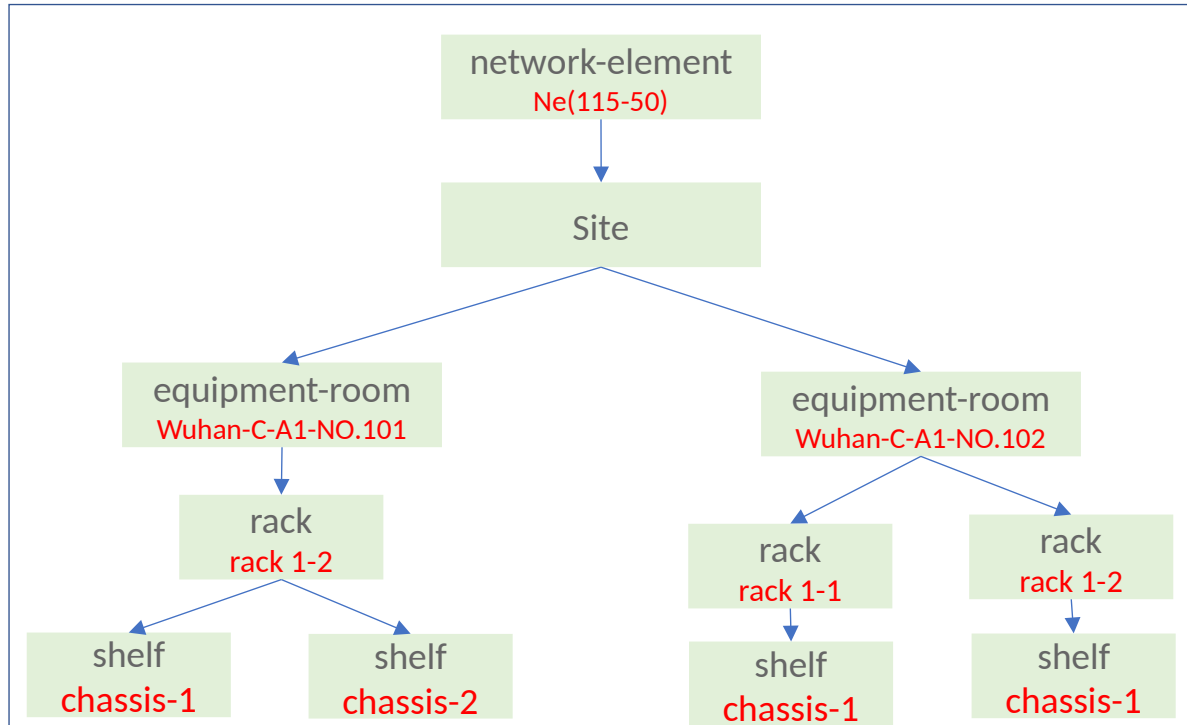
Defining Inventory and Use Case for the TNBI (Italo)

Inventory 1- Examples of NE configurations



- Rack belongs to NE
 - We don't consider that rack belongs to NE. Because there could be a scenario that multiple NEs are installed on one rack.
 - We have not fully understood the definition of site. We think site is not mandatory ☐ so is equipment room.

Inventory 2 - Examples of NE configurations

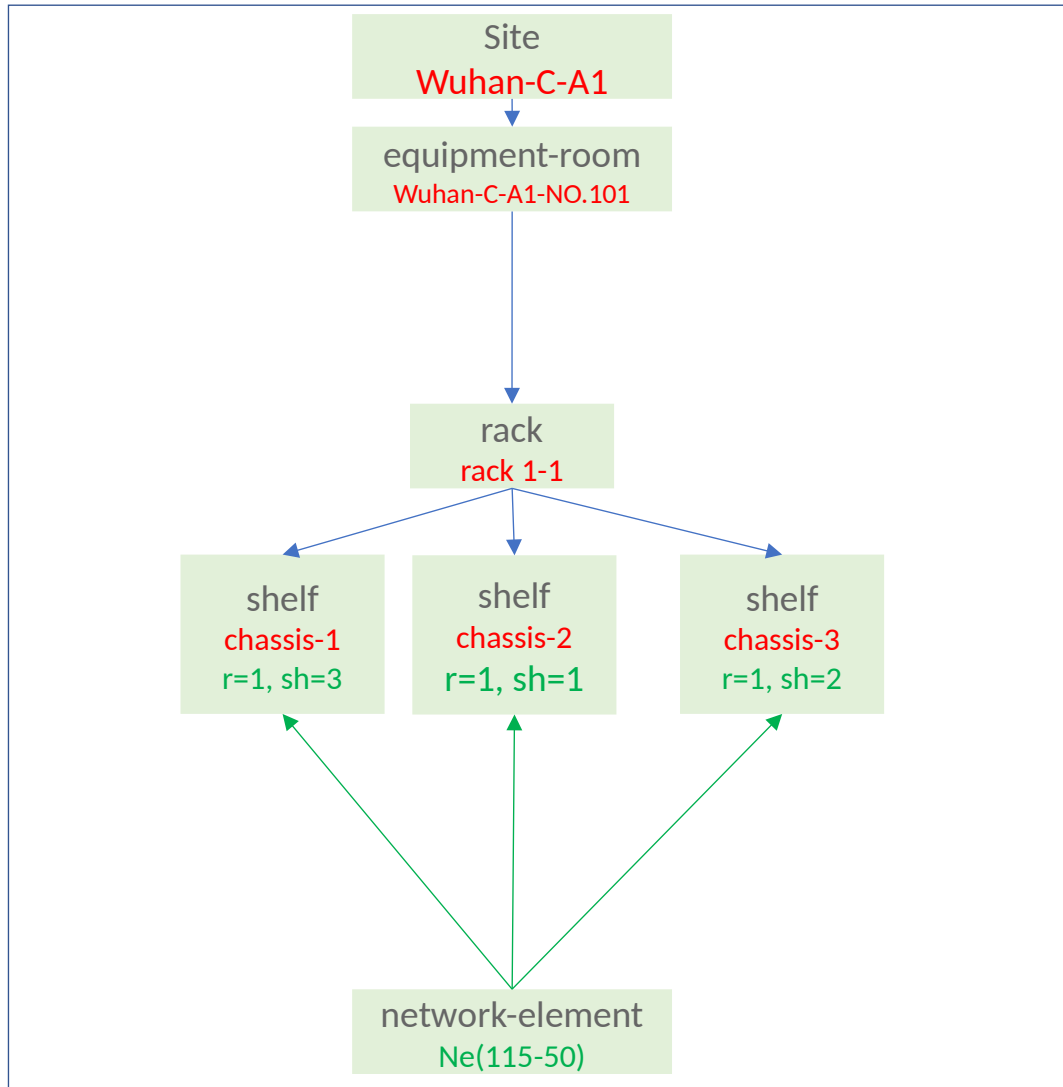


- A NE can be split into two equipment rooms in the same site

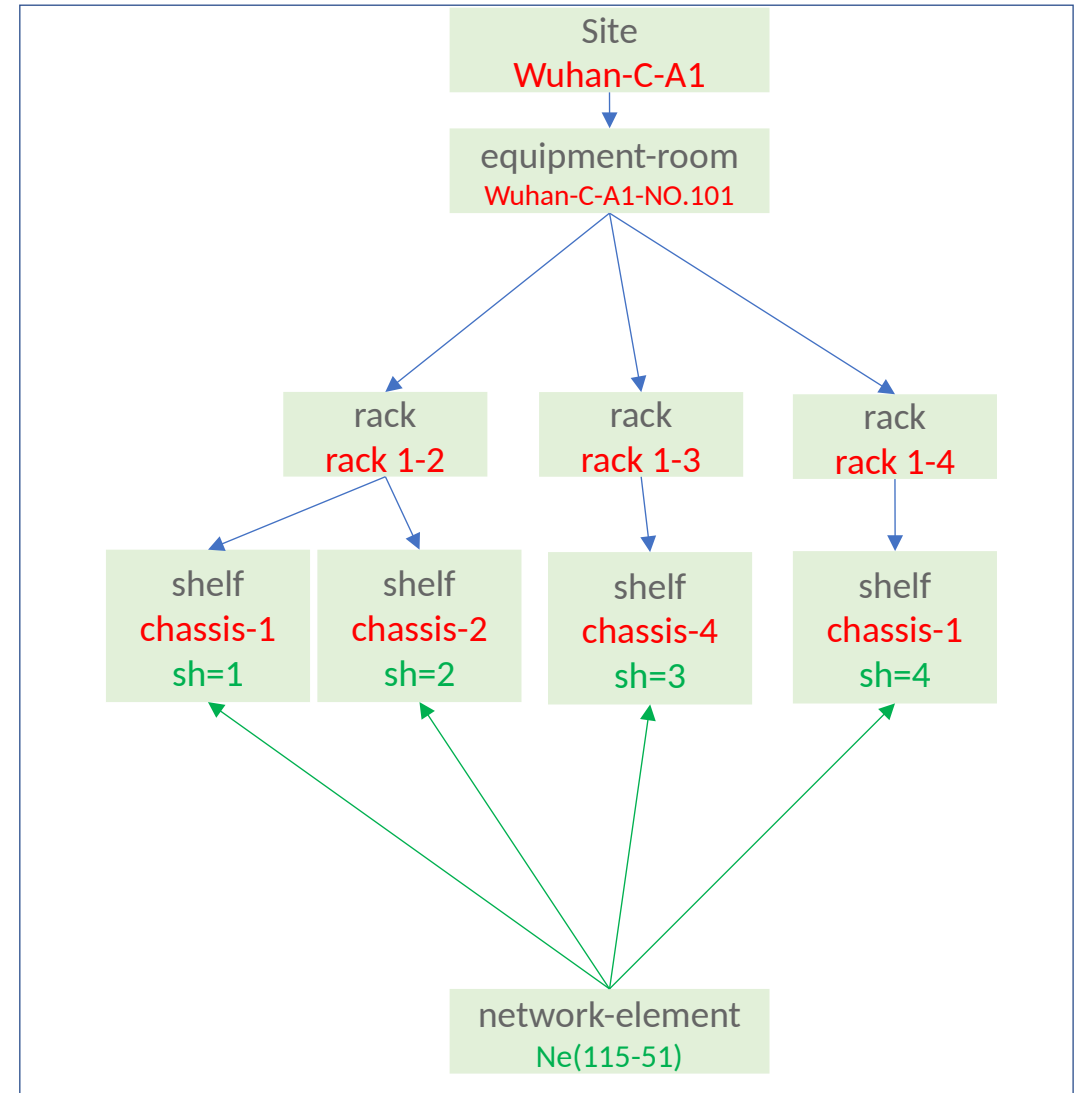
- A NE could be split into two different sites...

For the model we propose, we think it can describe this relationship mostly. The location of NE should be modified to a list to represent this one NE split into two or more equipment rooms scenario.

2- Examples of NE configurations - Reviewed

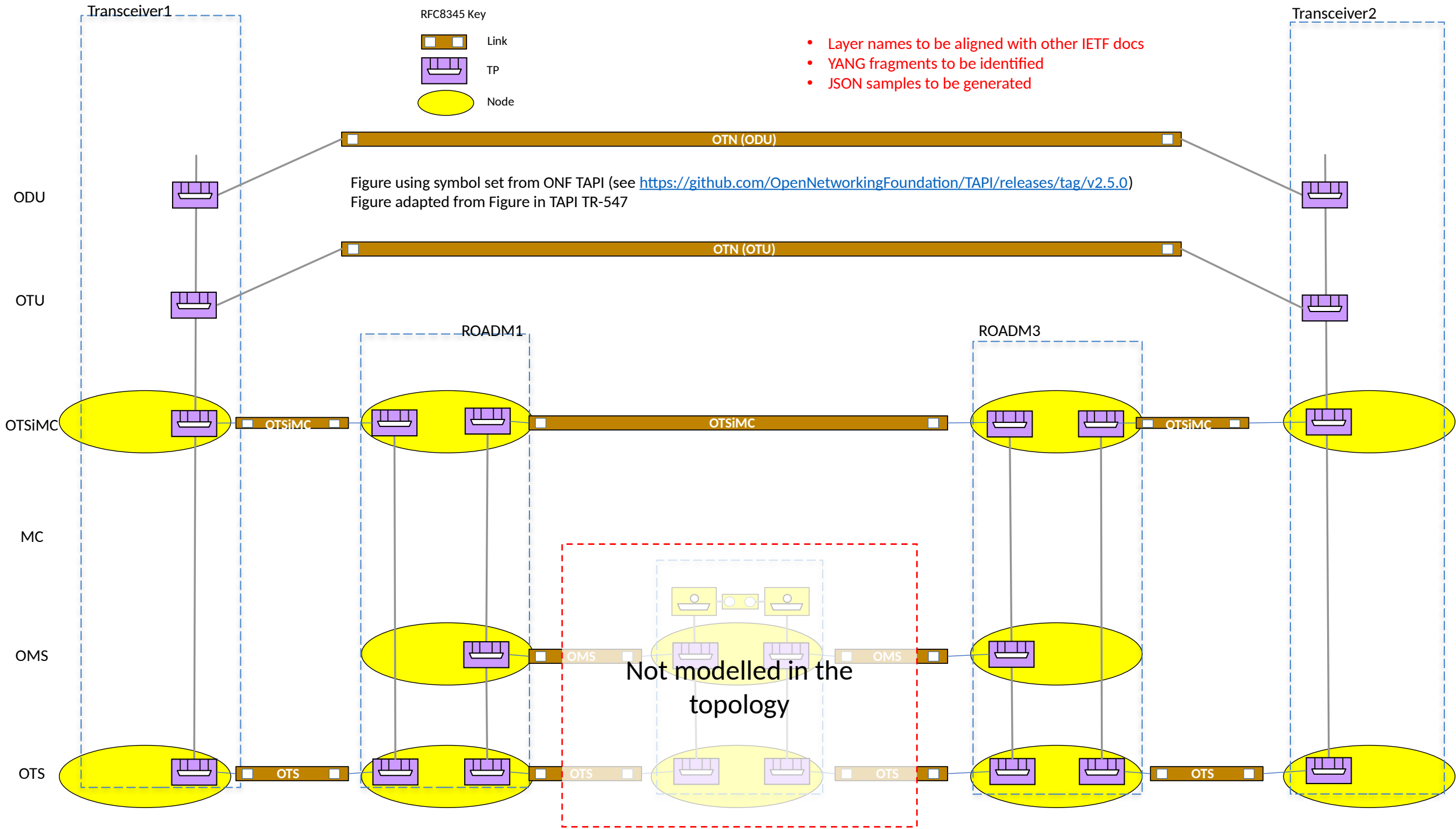


NE occupies a full rack



NEs can share the same rack

Defining Network Layering and Use Case for the TNBI (Nigel)



Next Steps for TNBI Meetings

- See our GitHub for activity
 - <https://github.com/ietf-ccamp-wg/transport-nbi/issues>
- Agree inventory models (with JSON examples)
- Agree layering model (with terminology)
 - Need to synchronise TAPI terms with IETF, including topology and service models.
 - RFC8345 (Network Topology)
 - <https://datatracker.ietf.org/doc/draft-ietf-ccamp-l1csm-yang/>
 - <https://datatracker.ietf.org/doc/draft-ietf-ccamp-layer1-types/>
 - <https://datatracker.ietf.org/doc/draft-ietf-ccamp-optical-impairment-topology-yang/>
 - Map between TAPI/OIF Terminology like: OTS, OMS, OTSI, OTU, to IETF terminology
- Agree tooling is still an ongoing discussion of how we can reuse code easily and generate JSON automatically
- Start to publish the IETF models used, process and provide JSON examples

But Wait, There is More...

- What happened to the T-NBI 1.0 Output?
 - “Transport Northbound Interface Applicability Statement”
<https://datatracker.ietf.org/doc/draft-ietf-ccamp-transport-nbi-app-statement/>
 - The document is highly technology specific and provides several JSON code examples
- The document has been stuck trying to reduce the size and complexity, after numerous revisions and reviews it is now “Waiting for WG Chair Go-Ahead”
 - Current size of the document is 95 pages
- Given the concerns raised by reviewers, especially non-subject matter experts, we could look to break the document into smaller pieces and publish the work in the CCAMP TNBI Wiki (instead of an RFC)
 - Reusing some of the topology and use cases for TNBI 2.0 activity
 - WG and Chair thoughts?

- 1. [Introduction](#)
 - 1.1. [The Scope of this Document](#)
- 2. [Terminology](#)
- 3. [Conventions Used in this Document](#)
 - 3.1. [Topology and Traffic Flow Processing](#)
- 4. [Scenarios Description](#)
 - 4.1. [Reference Network](#)
 - 4.2. [Topology Abstractions](#)
 - 4.3. [Service Configuration](#)
 - 4.3.1. [ODU Transit](#)
 - 4.3.2. [Transparent Client Services](#)
 - 4.3.3. [EPL and EVPL over ODU](#)
 - 4.4. [Multi-Function Access Links](#)
 - 4.5. [Protection and Restoration Configuration](#)
 - 4.5.1. [Linear Protection \(End-to-End\)](#)
 - 4.5.2. [Segmented Protection](#)
 - 4.6. [Event Notifications and Alarms](#)
 - 4.7. [Path Computation with Constraints](#)
- 5. [YANG Model Analysis](#)
 - 5.1. [YANG Models for Topology Abstraction](#)
 - 5.1.1. [Domain 1 Black Topology Abstraction](#)
 - 5.1.2. [Domain 2 Black Topology Abstraction](#)
 - 5.1.3. [Domain 3 White Topology Abstraction](#)
 - 5.1.4. [Multi-domain Topology Merging](#)
 - 5.2. [YANG Models for Service Configuration](#)
 - 5.2.1. [ODU Transit Service](#)
 - 5.2.2. [EPL over ODU Service](#)
 - 5.2.3. [Other OTN Client Services](#)
 - 5.2.4. [EVPL over ODU Service](#)
 - 5.3. [YANG Models for Protection Configuration](#)
 - 5.3.1. [Linear Protection \(end-to-end\)](#)
 - 5.3.2. [Segmented Protection](#)
 - 5.4. [Notifications](#)
 - 5.5. [Path Computation with Constraints](#)
- 6. [Security Considerations](#)
 - 6.1. [OTN Security](#)
- 7. [IANA Considerations](#)
- 8. [References](#)
 - 8.1. [Normative References](#)
 - 8.2. [Informative References](#)
- [Appendix A. Validating a JSON fragment against a YANG Model](#)
 - A.1. [JSON CODE](#)
 - A.2. [Manipulation of JSON fragments](#)
 - A.3. [Comments in JSON fragments](#)
 - A.4. [Validation of JSON fragments: DSDL-based approach](#)
 - A.5. [Validation of JSON fragments: why not using an XSD-based approach](#)
- [Appendix B. Detailed JSON Examples](#)
 - B.1. [JSON Examples for Topology Abstractions](#)
 - B.1.1. [JSON Code: mpil-otn-topology.json](#)
 - B.1.2. [JSON Code: mpil-eth-topology.json](#)
 - B.2. [JSON Examples for Service Configuration](#)
 - B.2.1. [JSON Code: mpil-odu2-service-config.json](#)
 - B.2.2. [JSON Code: mpil-odu2-tunnel-config.json](#)
 - B.2.3. [JSON Code: mpil-epl-service-config.json](#)
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