



IETF Network Slice Controller and its associated data models

draft-ietf-teas-ns-controller-models-02

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Context

[I-D. barguil-teas-network-slices-instantiation]

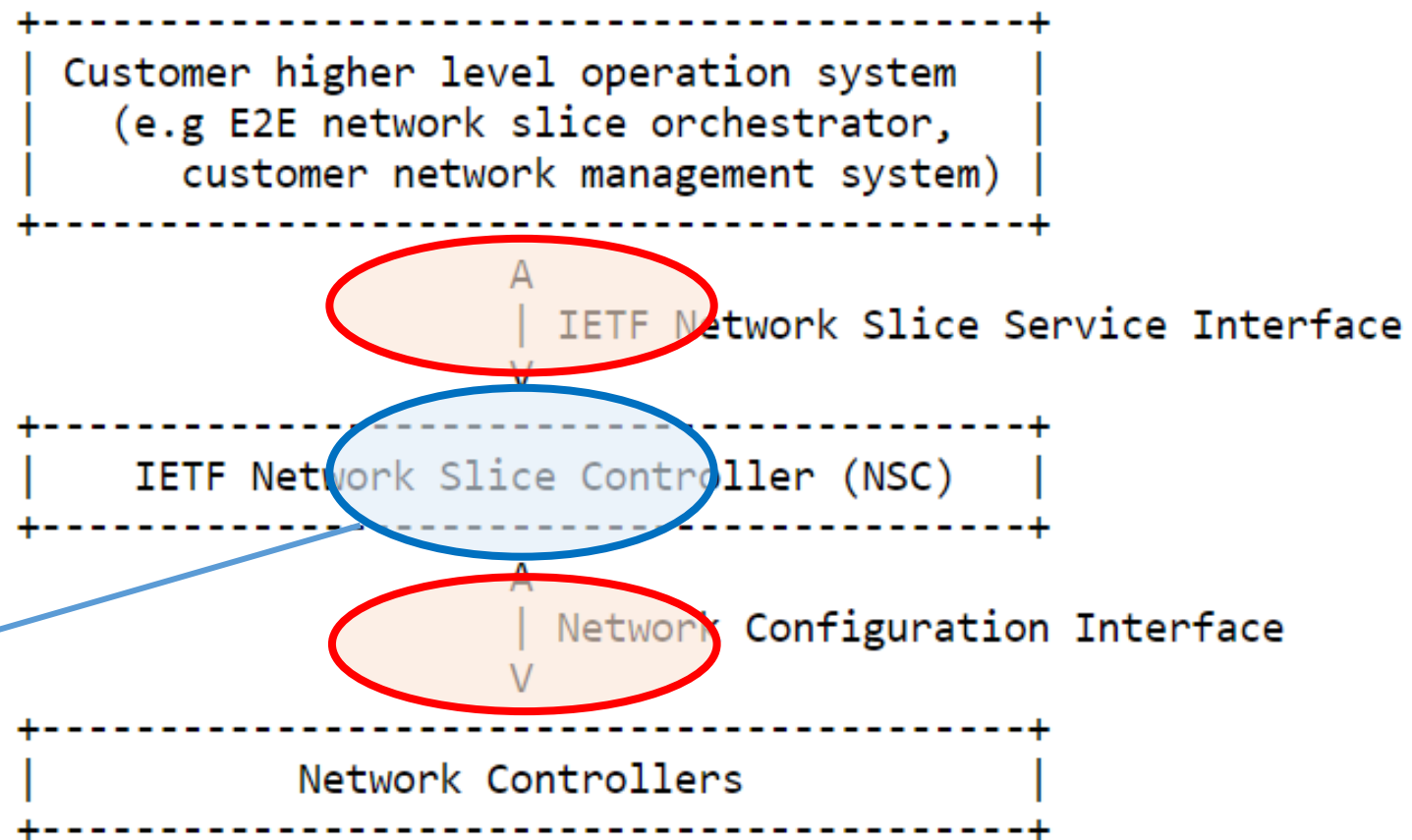
Scope:

- How NBI Slice YANG model relates to LxSM and LxNM models
- Presented later today

[I-D. ietf-teas-ns-controller-models]

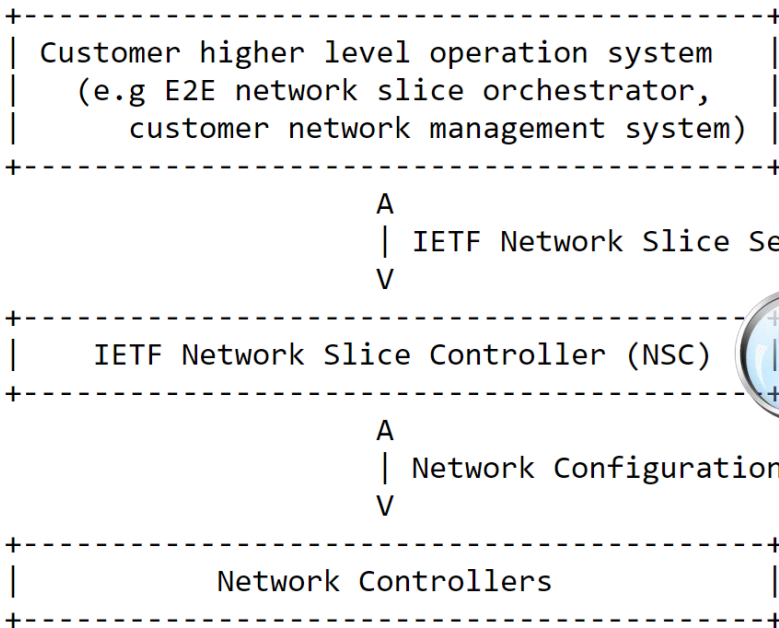
Scope:

- How the different slicing models relate each other



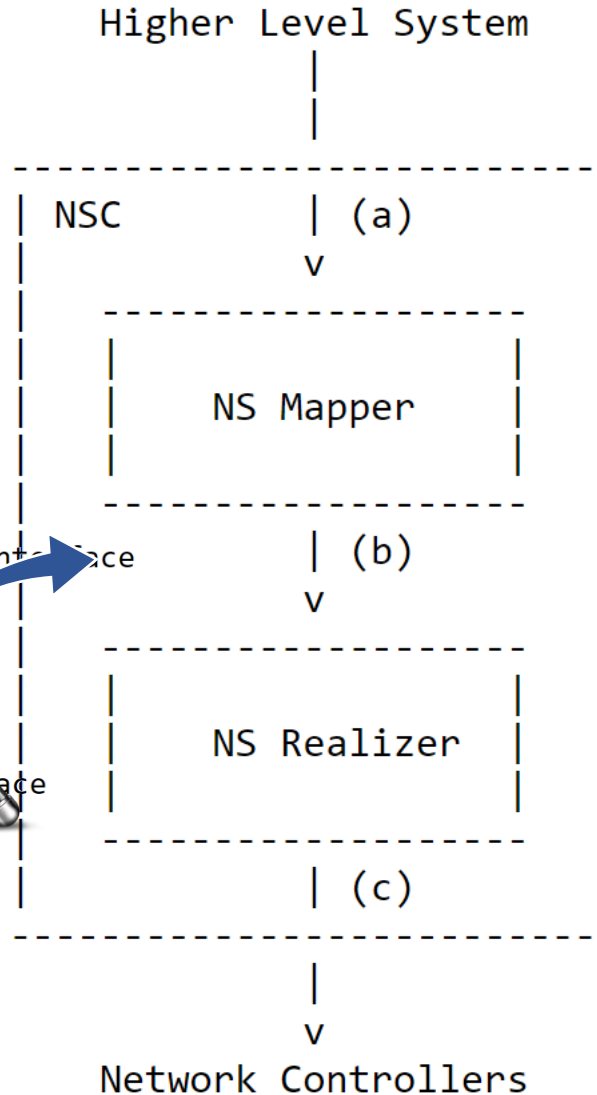
Refresh on the draft proposal

From [I-D.ietf-teas-ietf-network-slice-definition]



Goal: identify major NSC components and how associated data models that apply

It is not the purpose of this document to standardize or constrain the implementation of the IETF Network Slice Controller.



Structure

- **Mapper** - processes the customer request, putting it into the context of the overall IETF Network Slices in the network
- **Realizer** - processes the complete view of all the slices in the network, decides the proper technologies for realizing the IETF Network Slice and triggers its realization

Models

- **(a)** -> customer's view, e.g. [I-D.ietf-teas-ietf-network-slice-nbi-yang]
- **(b)** -> provider's view, including more detailed but yet technology-agnostic resource view as e.g. [I-D.liu-teas-transport-network-slice-yang], and/or alternative technology-specific augmentations as e.g. [I-D.ietf-ccamp-yang-otn-slicing], or for IP/MPLS NRP [I-D.ietf-teas-nrp-yang]
- **(c)** -> models per network controller, out of scope. An example of applicability of existing models is in [I-D.barguil-teas-network-slices-instantation]

Updates

- The document was adopted before IETF 118
- A number of comments (10) were received during adoption process, documented in Section 8 of the draft (v -01) as “Open issues”
- In v -02 most of the comments are considered as solved
 - 2 remaining open issues pending, so far

Issues solved (1/2)

- Issue 2. Raised by Adrian Farrel. Mapper and Realizer seen as internal components, then considering not necessary to describe the interface among them. The comment was: "I don't think there is any intention that the Mapper and Realizer would be implemented by different vendors, so this is not an external interface that you are describing. While the text is at pains to say that no attempt is being made to standardise how the NSC is implemented, I don't understand why it is necessary to publish any description of any potential internal structure."
 - This issue was solved in the mailing list referring to the fact that NRP is being modeled, which is also applicable to the internals of the NSC. Furthermore there are situations where different vendors could implement separately Mapper and Realizer.
 - Answer in the mailing list here: <https://mailarchive.ietf.org/arch/msg/teas/pF7lzerKTWj-X2FpuowQFw2ewdQ/>
- Issue 3. Raised by Adrian Farrel. Update affiliation of Jeff Tantsura.
 - Solved. Updated to NVIDIA.
- Issue 5. Raised by Adrian Farrel. "Connectivity matrix" instead of "slice topology" in Section 2. The comment was: "Section 2 describes the customer view of the slice and says "It can include the slice topology". I think that "topology" is probably the wrong word because it implies a network and transit nodes etc. Maybe you should talk about a "connectivity matrix". "
 - The reference to topology is for the customer slice topology intent, as defined in [I-D.liu-teas-transport-network-slice-yang]
- Issue 6. Raised by Adrian Farrel. Figure 2 to show the "provider's view" (b) exposed horizontally. The comment was: "I think it would be nice if Figure 2 showed the "provider's view" (b) exposed horizontally. That is, a human operator, wishing to see what slices are being provided by the network and how they are realized, would access that information using the models defined at that interface. In my opinion, this is a better use of those models than stating they are used between two hypothetical internal sub-components"
 - Solved. Horizontal view added.

Issues solved (2/2)

- Issue 7. Raised by Adrian Farrel. Review Security section in line with the dicussion of Issue 2. The comment was: "The Security Considerations section is a really odd place to introduce that you could consider the Mapper and Realizer as separate components contrary to what the rest of the document says. "
 - Solved. Text added in Section 2 for mentioning the possibility of Mapper and Realizer being separated components.
- Issue 8. Raised by Swamynathan B. Same as Issue 2.
 - Solved. Aswer in mailing list: <https://mailarchive.ietf.org/arch/msg/teas/u5atA07XdMV-a1xT4LZMz7LSIrQ/>
- Issue 9. Raised by Kiran Makhijani. Same as Issue 2.
 - Solved. Aswer in mailing list: <https://mailarchive.ietf.org/arch/msg/teas/nS7c8YeyX-G6gwjC2uu2f-P7MuA/>
- Issue 10. Raised by Kiran Makhijani. The technology-agnostic nature of NSC can be compromised by the inclusion of the Realizer component. The comment was:"At the same time - perhaps my information is outdated, I always thought that NSC should be technology agnostic and inclusion of realizer in NSC is not entirely clear (it could be anywhere – maybe with the network controller)."
 - Solved. Aswer in mailing list: <https://mailarchive.ietf.org/arch/msg/teas/nS7c8YeyX-G6gwjC2uu2f-P7MuA/>

Next steps

- Close open issues
 - Issue 1. Raised by Med Boucadair. Review provided in <https://github.com/boucadair/IETF-Drafts-Reviews/raw/master/draft-contreras-teas-slice-controller-models-05-rev%20Med.pdf>
 - Issue 4. Raised by Adrian Farrel. Indication of too many authors, then needing to reduce to five at most.
- Assess the proposed structure with the progress of aspects of slicing (e.g., NRP, customer topology intent, etc)
- Refine the structure based on initial slicing experiences (prototype implementations, PoCs, etc)
- Prepare new version for IETF 121