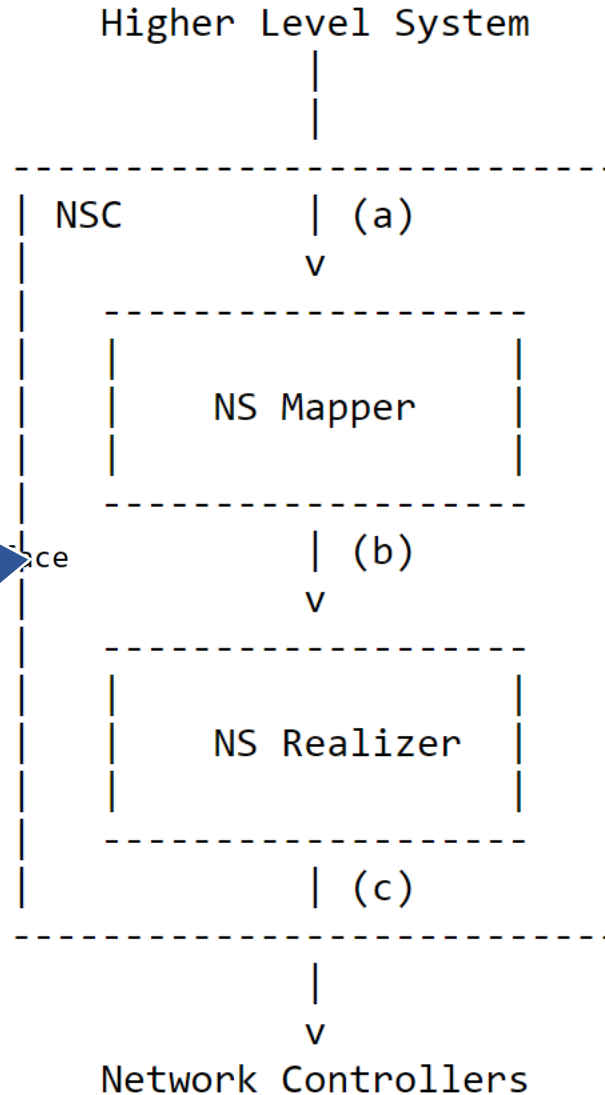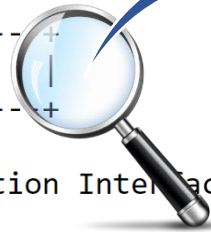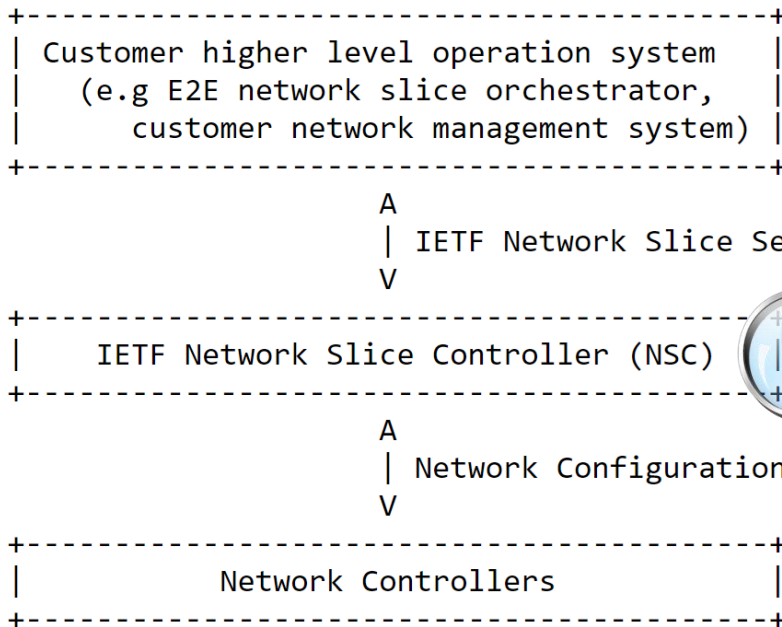# IETF Network Slice Controller and its associated data models

draft-contreras-teas-slice-controller-models-04

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Proposal

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

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

```
+-----------------------------------------+
| Customer higher level operation system  |
|    (e.g E2E network slice orchestrator, |
|     customer network management system) |
+-----------------------------------------+
                  A
                  | IETF Network Slice Service Interface
                  V
+-----------------------------------------+
|  IETF Network Slice Controller (NSC)    |
+-----------------------------------------+
                  A
                  | Network Configuration Interface
                  V
+-----------------------------------------+
|         Network Controllers             |
+-----------------------------------------+
```

```
            Higher Level System
                   |
                   |
                   |
  -----------------------------------------
 | NSC              | (a)                  |
 |                  V                       |
 |   ------------------------------         |
 |  |                            |          |
 |  |        NS Mapper           |          |
 |  |                            |          |
 |   ------------------------------         |
 |                  | (b)                    |
 |                  V                       |
 |   ------------------------------         |
 |  |                            |          |
 |  |       NS Realizer          |          |
 |  |                            |          |
 |   ------------------------------         |
 |                  | (c)                    |
 |                                          |
  -----------------------------------------
                   |
                   V
            Network Controllers
```

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]

- **(c)** -> models per network controller, out of scope. An example of applicability of existing models is in [I-D.barguil-teas-network-slices-instantiation]

IETF#115, London, November 2022

Updates from -01

- **-02 (March 2022)**
  - Reference to additional models (e.g., OTN slicing)

- **-03 (July 2022)**
  - More functional details added on Mapper and Realizer descriptions
    - Mapper: generation of NRPs, mapping of slices to NRPs, aggregation of performance information from the distinct NRPs
    - Realizer: generation of filtered topologies, exposition of telemetry information from the filtered topologies
  - Reference to additional models (e.g., IETF Network Slice Instantiation)
  - Security considerations

- **-04 (October 2022)**
  - General alignment with terminology in framework document, and text refinement

Next steps

- Collect feedback / comments from the WG

- Use as reference structure for potential NSC architectures (e.g., ACTN as in draft-ietf-teas-applicability-actn-slicing)

- Request call for adoption and prepare a new version for IETF#115