

Architecture of Network Slicing Management

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Concepts

- **Network Slice** - A set of infrastructure resources and service functions that has attributes specifically designed to meet the needs of an industry vertical or a service.
- **Network Slicing** - A management mechanism that Network Slice Provider can use to allocate dedicated infrastructure resources and service functions to Network Slice Tenant.
- **Network Slice Provider** - A network slice provider (NSP), typically a telecommunication service provider, is the owner or tenant of the infrastructures from which network slices can be created..
- **Network Slice Tenant** - A network slice tenant (NST) is the user of specific network slice, in which customized services are hosted. Network slice tenants can make requests of the creation of new network slice through a COMS service model.

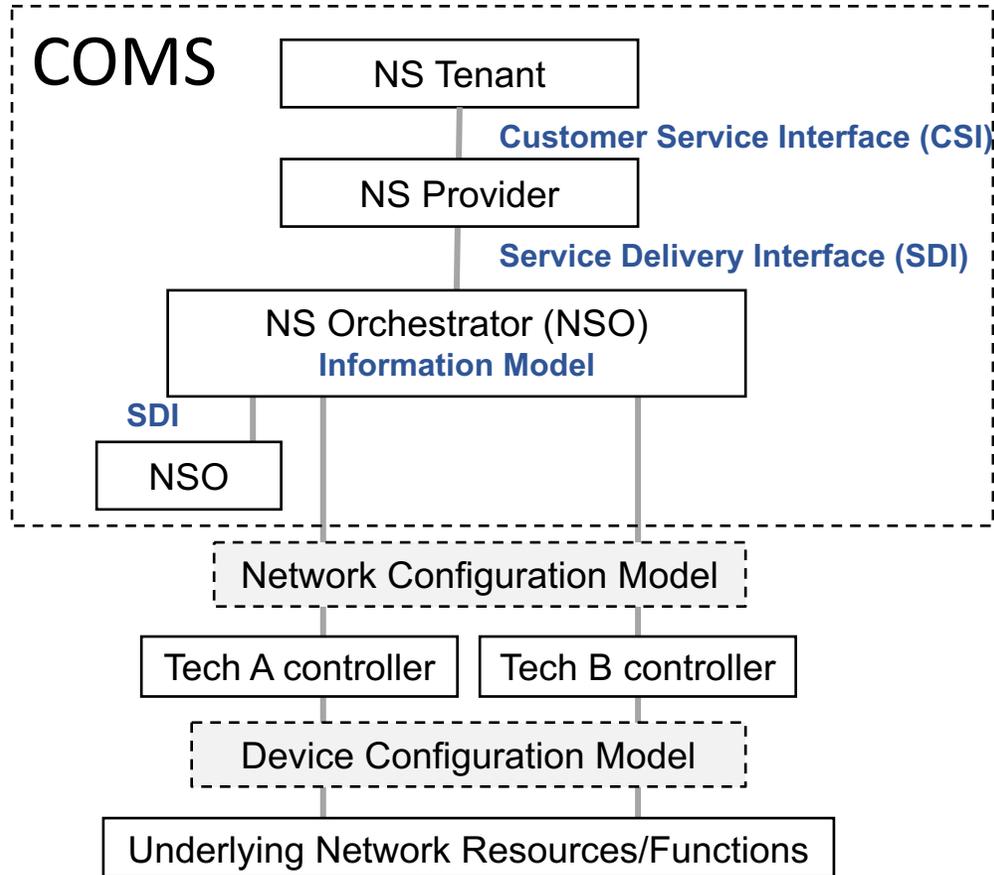
Management is the key for network slicing

- A management mechanism where an NSP can use to allocate dedicated network infrastructures and service functions to an NST

Well, what exactly?

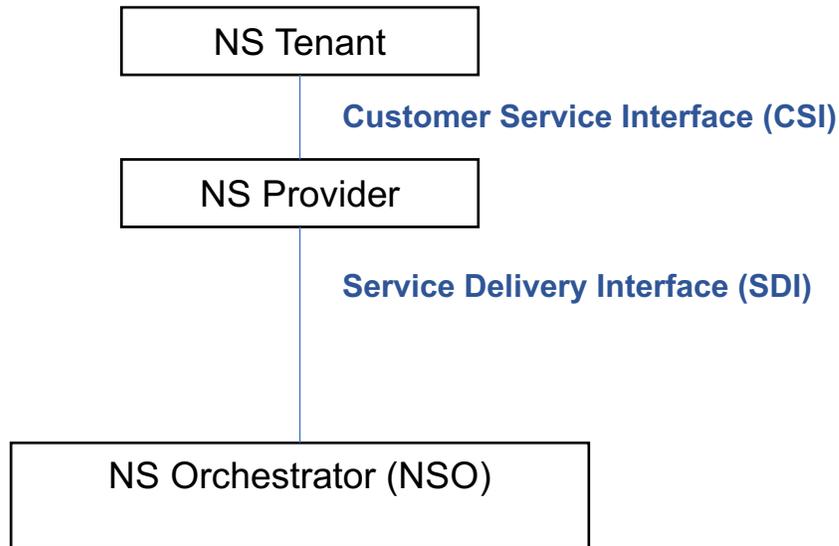
- Technology-independent and resource-centric
- Integrated management of resources for NSaaS
- Well-defined network slice profile
- Specify NSP operational guidance
- Provide management capability exposure to NST

Architecture-overview

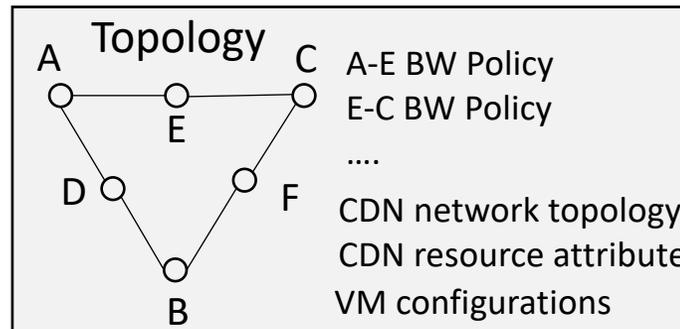
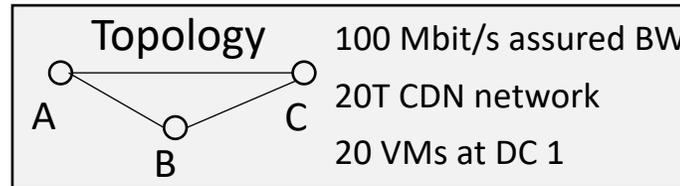


- **Service Delivery Interface (SDI)**
 - SDI explicitly describe a NSaaS in network language. SDI can also be used between network slice orchestrators, enabling hierarchical management through the notion of network slice subnets
- **Customer Service Interface (CSI)**
 - CSI is exposed by the network slice orchestrator to run management tasks within their slice instance under certain policies.
- **COMS Information Model**
 - Information model explicitly describes network slice entities in terms of resource components and characteristic attributes.

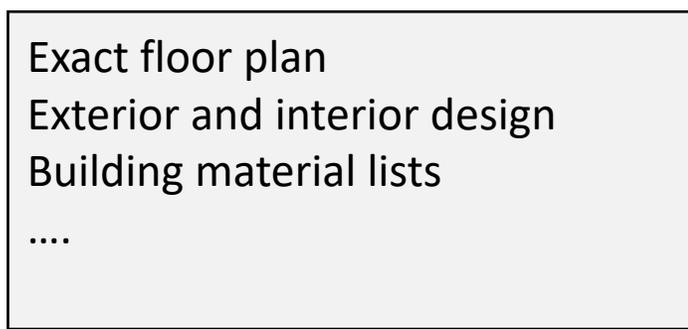
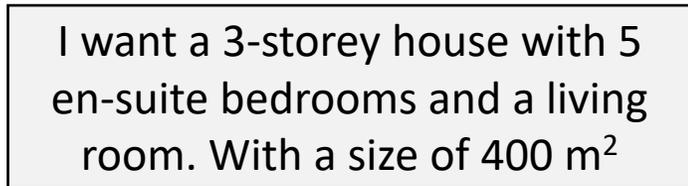
Architecture - Top-Down Example



A NST is requesting a NSaaS



Someone is building a house



Architecture - Resources

- A precise description of the resources COMS is supervising

Connectivity

- Node
- Link
- Topology
- Bandwidth
- ...

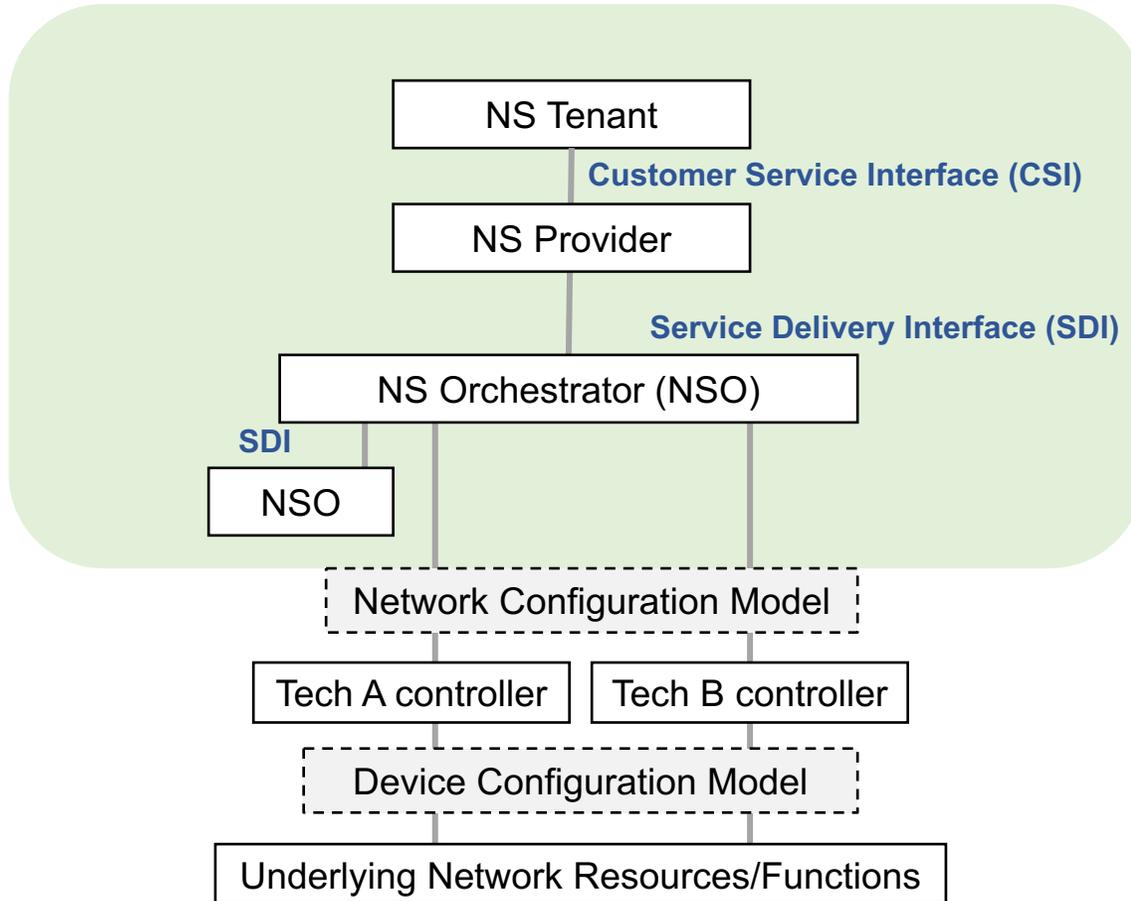
Computing/Storage

- Bare Metal
- VMs
- Storage
- Other forms of Computing infrastructure
- ...

Service Functions

- PNF/VNF including
 - NAT
 - DHCP
 - Firewall
 - CDNs
 - Customer SDN-Controllers/ slice manager

What is missing in IETF for network slicing



- Customer Service Interface (CSI)
 - Service Delivery Interface (SDI)
- Each may consist of several data models. Corresponding operation model and guidelines are also in scope
- COMS information model (in progress)
 - Other operation enablement (interconnection, gateway etc.)