



Federating MEC and Telco Cloud environments for multi-domain slice provision

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EuCNC Workshop on Multi-provider, multi-vendor, multi-player orchestration: from distributed cloud to edge and fog environments in 5G

Ljubljana, Slovenia, June 18th, 2018



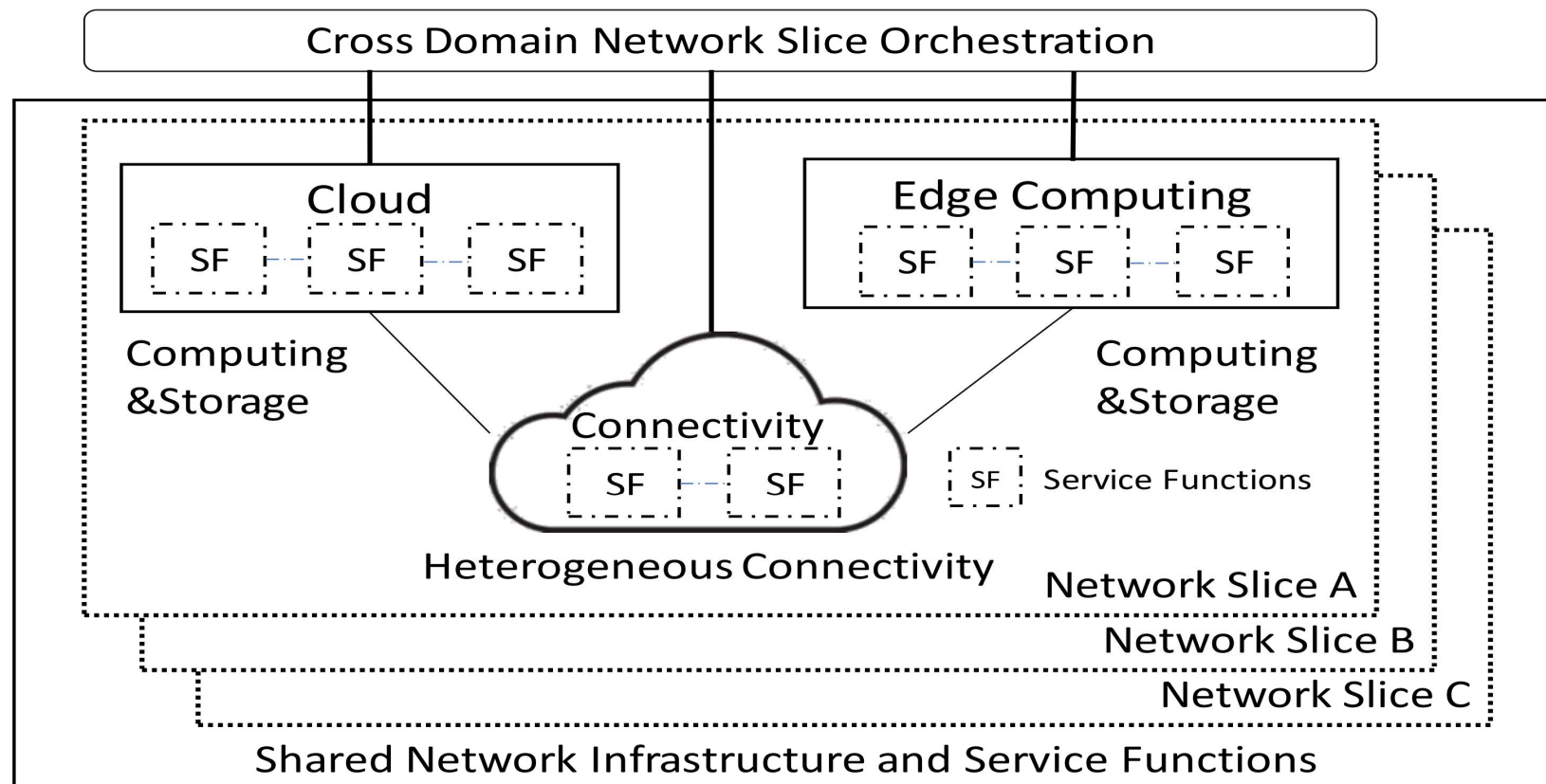
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NECOS scope



- Management of cross-domain network slices including network infrastructure and service functions

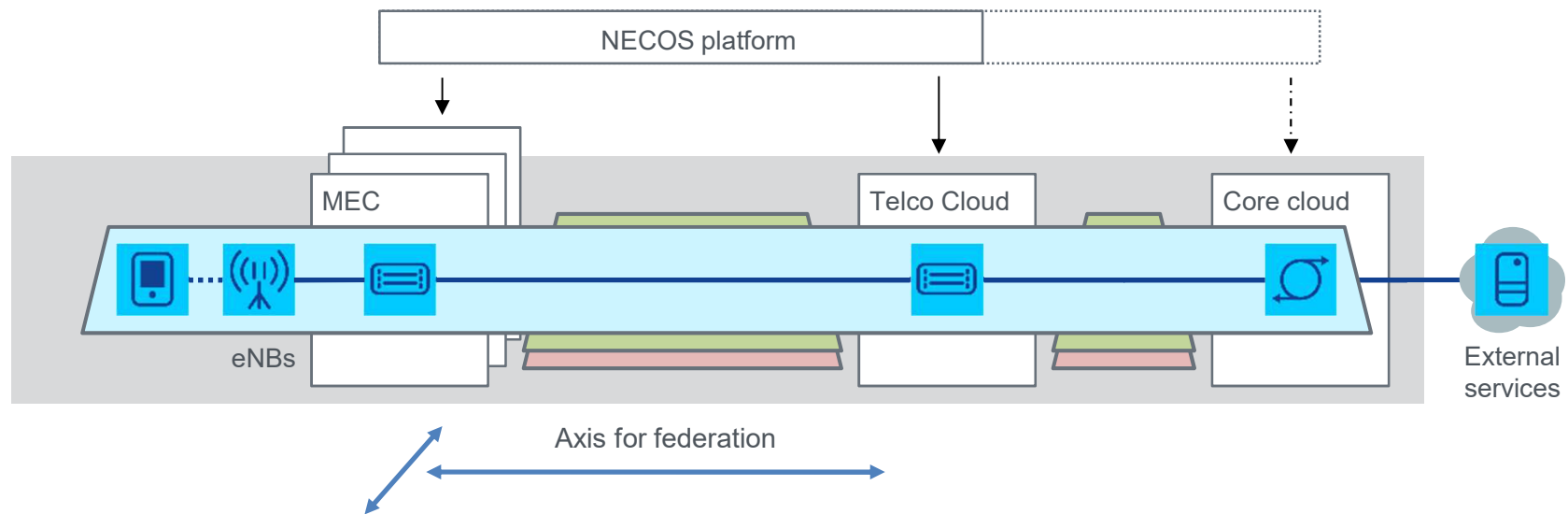


Lightweight Slice Defined Cloud (LSDC)



- **LSDC Key High Level Characteristics:**
 - Creation of **Cloud Slices across all of resources** in a set of **federated** data centers.
 - Provision of a **uniform management** of the currently separated computing, connectivity and storage resources.
- **LSDC Key Enablers:**
 - **Targeted service model: Slice as a Service** - dynamic mapping of service components to a slice.
 - **Easy reconfiguration and adaptation of logical resources** in a cloud networking infrastructure (i.e. accommodate the QoS demand of the Slice).
 - **Management of all aspect of the cloud environment via software** – from the networking between virtual machines to the SLAs of the hosted applications.
 - **Use of the Slice as a Service concept for federation:** ability for a specific cloud provider to federate its own infrastructure with other cloud providers
 - **Definition of APIs to form a federated virtual cloud** in order to participate in the mechanisms to provide the Slice as a Service.

NECOS use cases and scenarios



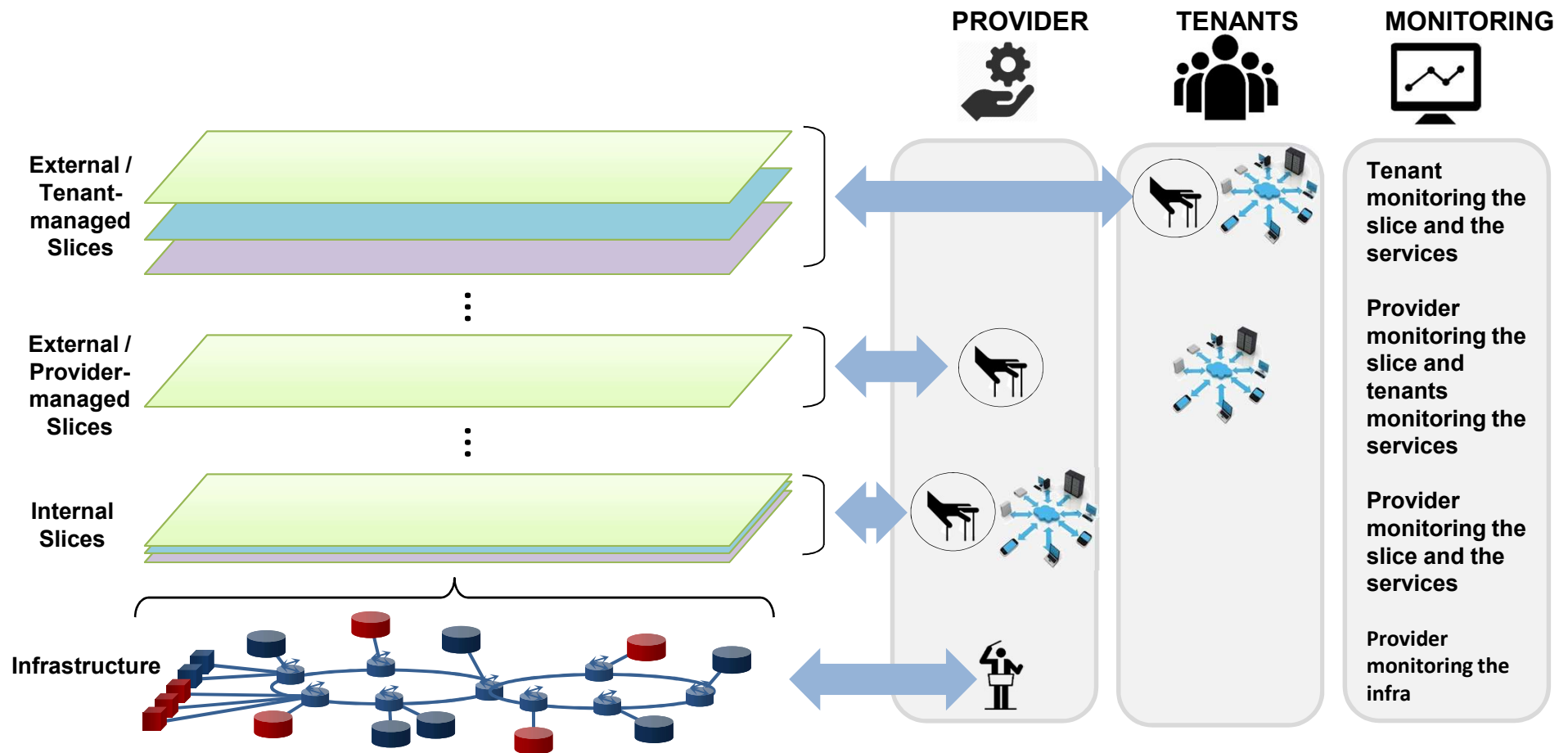
Provider oriented

- 5G Networks
- vCPE

End-user oriented

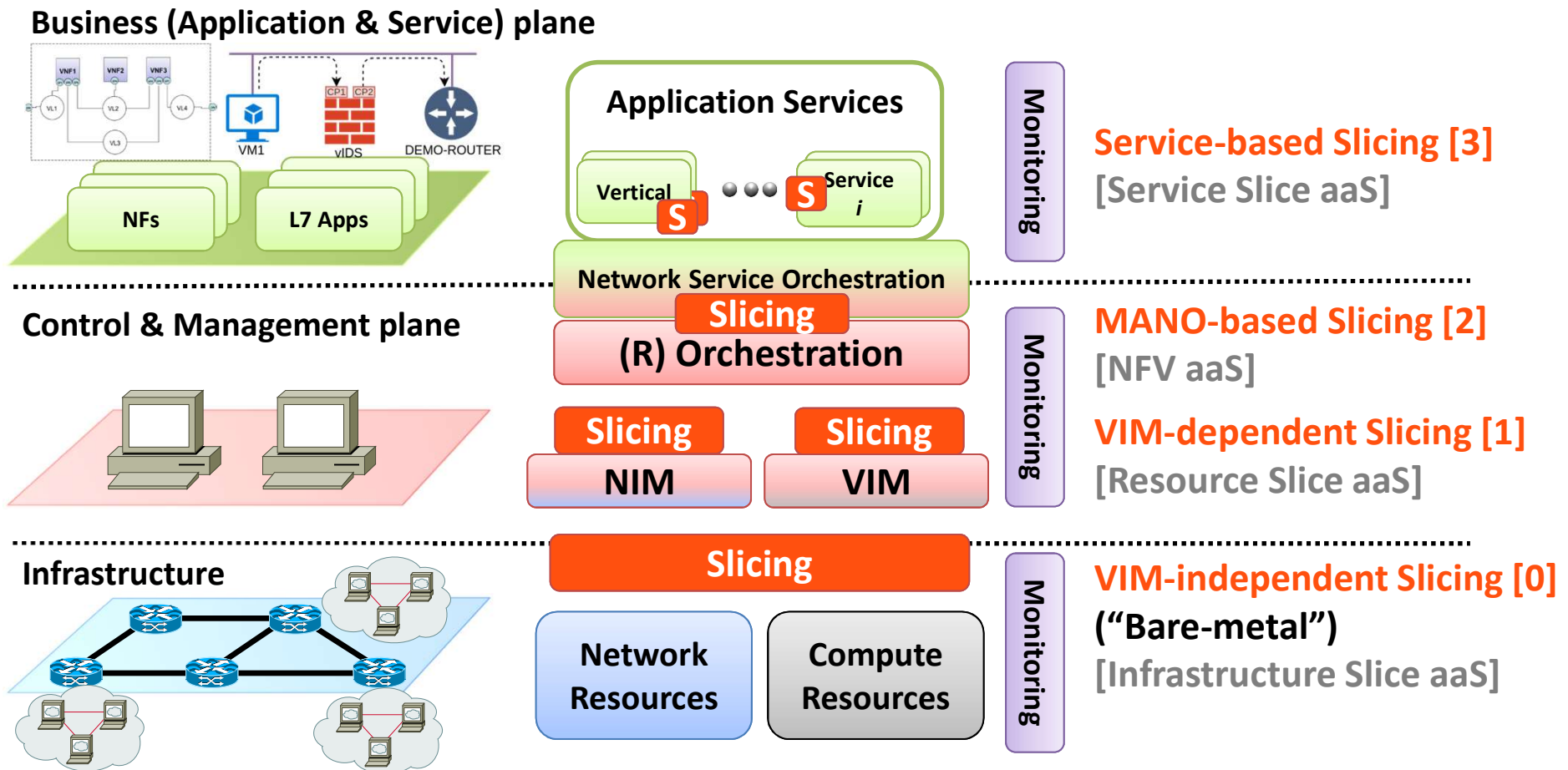
- Touristic services
- Emergency scenario

Types of slices and control responsibilities





Slicing Models & Approaches



Why federation is needed?



- Vertical customers can request **services** that lay **outside the footprint** of their **primary provider**
- Interaction with other providers is needed but ...
 - How we can **charge** and bill for that service?
 - How we can **ensure SLAs** among providers?
 - How we can **know about the capabilities** of other providers for a comprehensive e2e service provision?
- The current interconnection models are **not aware of peer's** network or compute **resources** (i.e., load conditions, etc)
- All these **environments are static**, requiring long interactions for setting up any inter-provider connection
- **Automation** for both the **interconnection** sessions and the **service deployment** on top of that is needed to reach the goal of **flexibility and dynamicity**

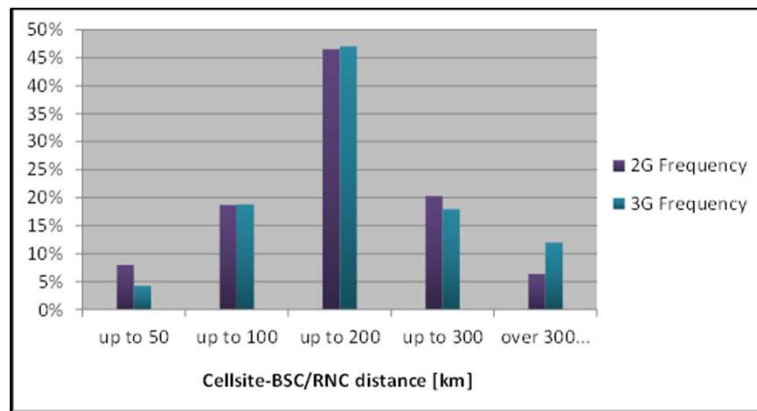
Size matters



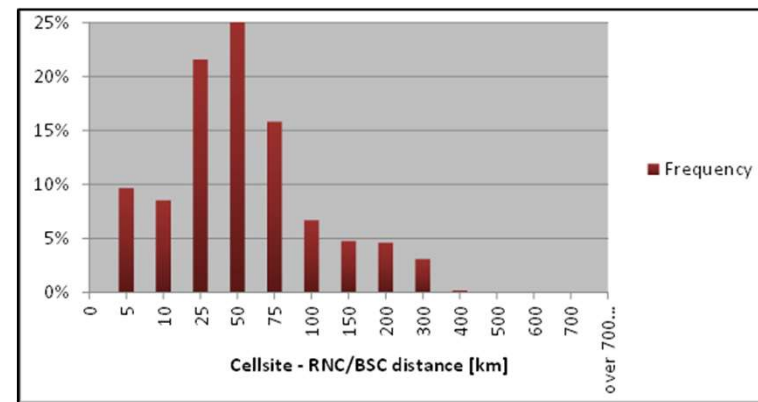
Providers' infrastructures are not ubiquitous



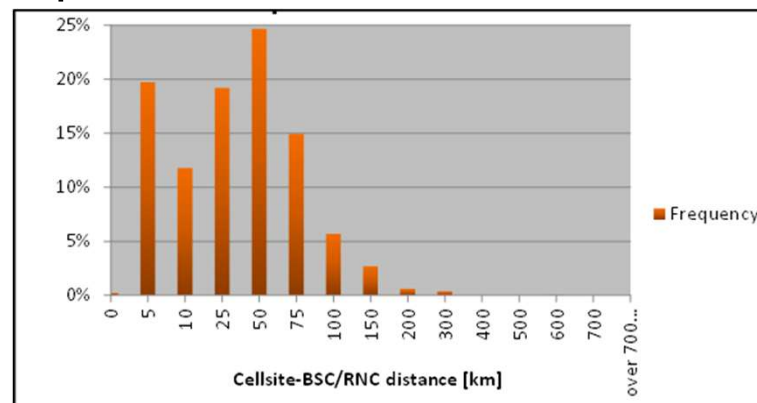
Operation 1



Operation 2



Operation 3



EU – 80% of the nodes < 75 km
Latam – 75% of the nodes > 200 km

Complementary cloud facilities are required to satisfy service needs

General Discussion, Q&A



<http://www.h2020-necos.eu/>

Preliminary architecture (work in progress)

