

draft-bernini-nfvrg-vnf- orchestration

VNF Pool Orchestration For
Automated Resiliency in Service
Chains

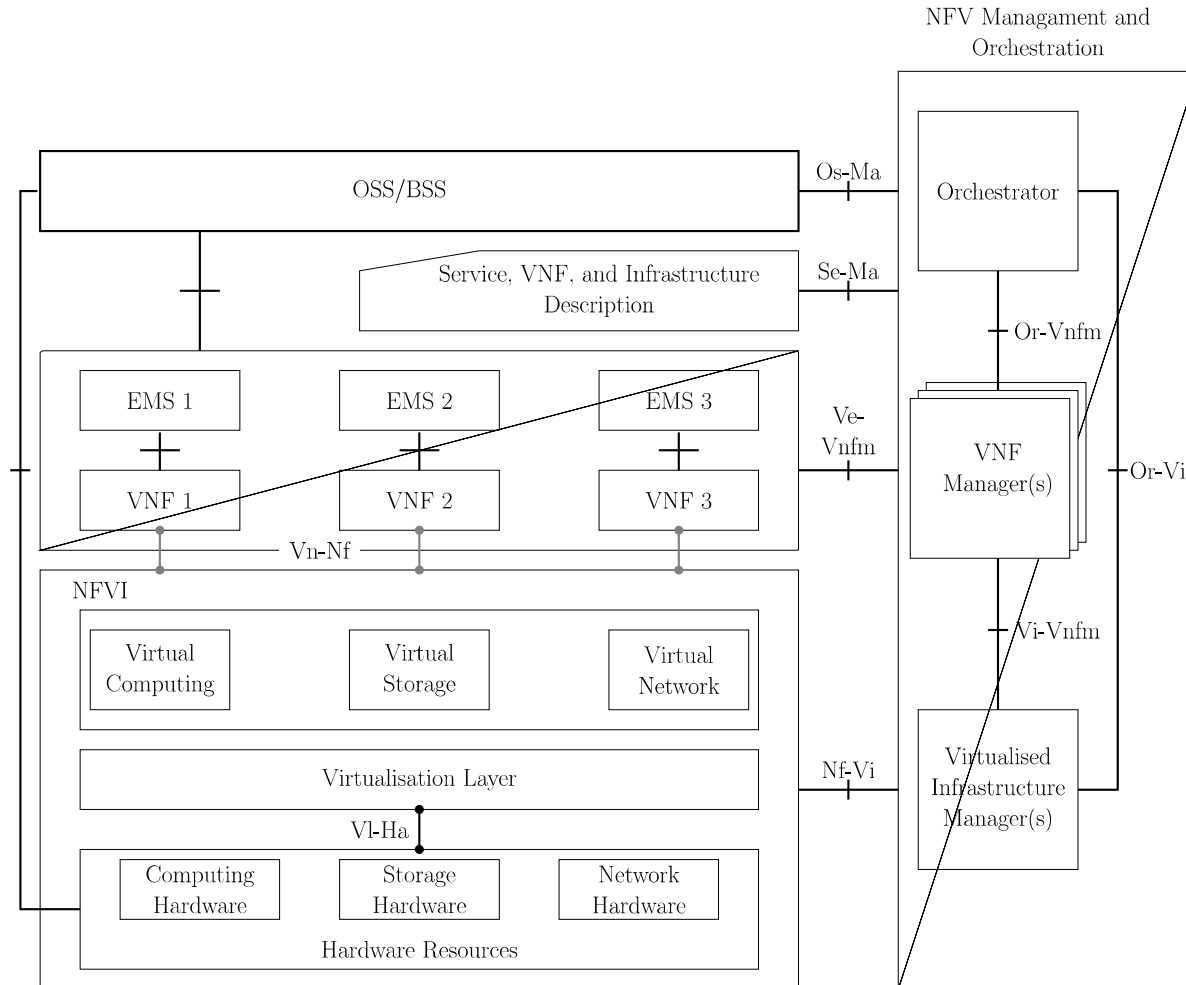
Problem statement

- Automated, flexible and elastic provisioning of service chains
- Implement control mechanisms and procedures to steer the traffic through the different VNFs
- Address new challenges concerning the reliability of the provided virtualised services

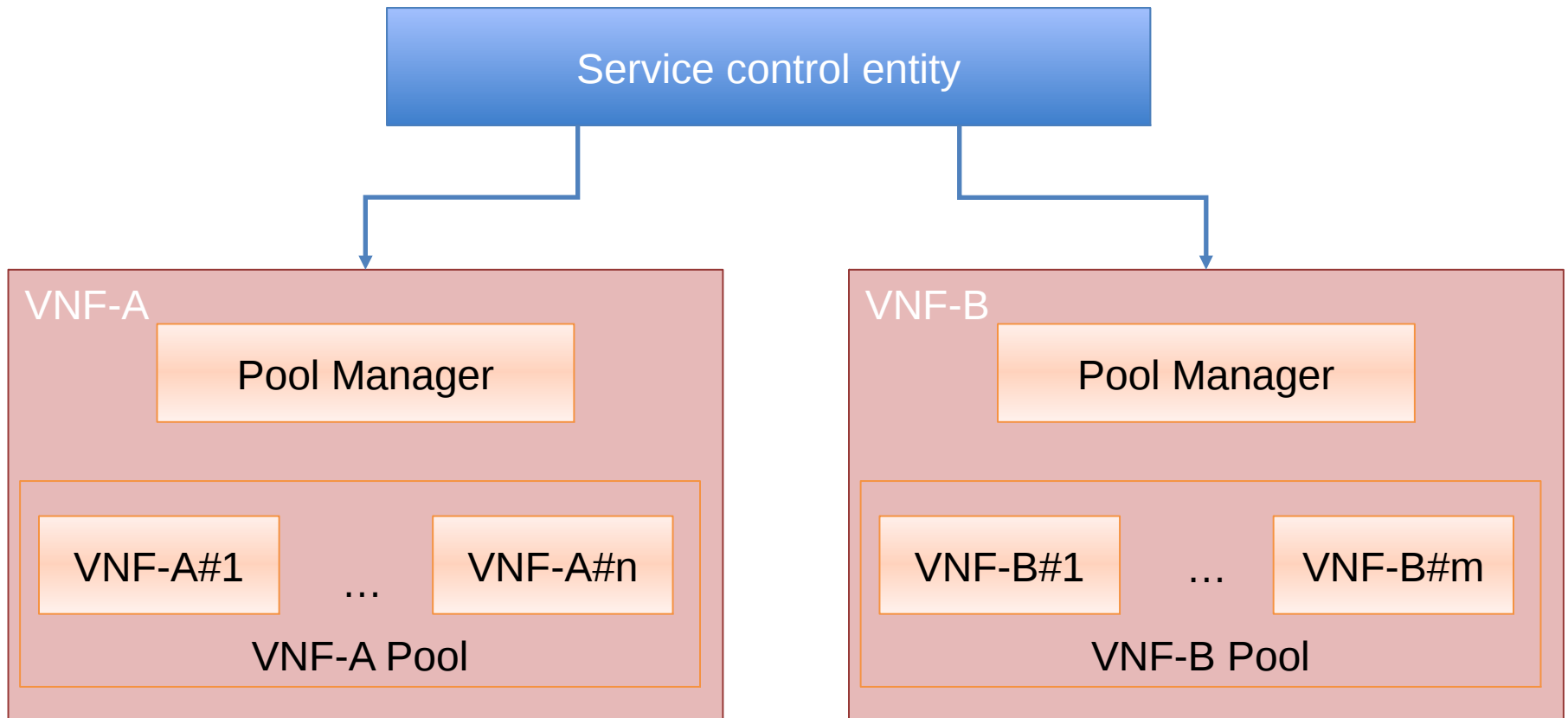
VNF Pool orchestration

- Top objectives are:
 - evolve operators' DCs towards very dynamic infrastructures to deploy VNFs and service chains with high elasticity
 - provide automated functions for deployment, provisioning and composition of resilient VNFs within operators' DCs
- Integration of SDN and NFV technologies is key
 - to provide benefits to operators in terms of robustness, ease of management, control and provisioning of their infrastructures and services
 - to enable virtualisation of network infrastructures, services and functions while supporting dynamic and flexible network traffic engineering
- In practice, VNF Pool orchestration combine and extend two existing proposals
 - ETSI NFV Architecture
 - VNFPOOL

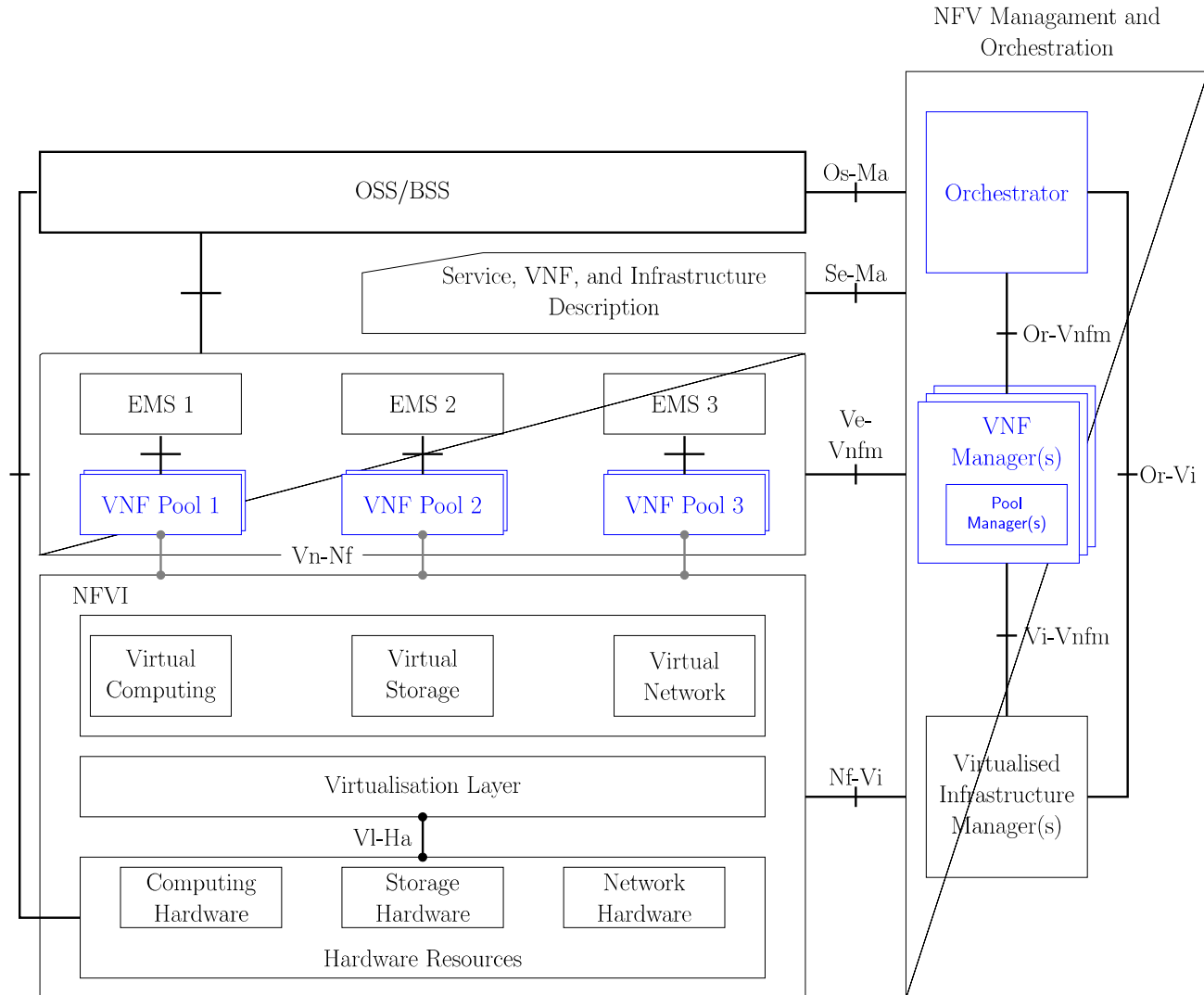
ETSI NFV Architecture



VNFPOOL



Integration of VNFPOOL into ETSI NFV



Real life implementation

Proposed framework

- Orchestrator
 - management, coordination, and control of VNFs instantiation and configuration
 - access point for the operator
- SDN controller
 - dynamic traffic steering for VNF chains
 - augmented by a set of enhanced network applications and management VNFs for operator's use
 - VNF chain configurator
 - Implementation of service composition and chain logic (e.g. path computation)
 - Coordination of both north-south and east-west VNF chains
 - Edge configurator
 - provisioning of the edge router for north-south VNF chains exiting the DC

Resiliency Functions for Chained VNFs

- VNF Pool manager coordinates VNFs reliability providing high availability and resiliency functions
 - covers both stand-alone and chained VNFs
 - addresses the requirements set by VNFPOOL architecture
 - service continuity, topological transparency, load balancing and scaling, auto scale of VNFs instances, multiple VNF resiliency classes
 - different types and degrees of reliability oriented functions
 - persistence of VNFs configuration
 - monitoring of operational status and performance of VNFs
 - autonomous replacement of master VNF with backups from the pool
 - coordination with the VNF chain configurator for service chain reconfiguration
 - cold recovery vs. hot recovery strategies

I-D merging opportunities

- Other I-Ds are tackling complementary service chaining aspects
 - e.g. draft-lee-nfvrg-resource-management-service-chain
- We see VNFPOOL as a key concept for orchestration and resource management in VNF chains
 - we are open for discussion on merging options ...
 - ... for us, complementarity is crucial for coherent merges

Questions, REACTIONS

Acknowledgement

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