

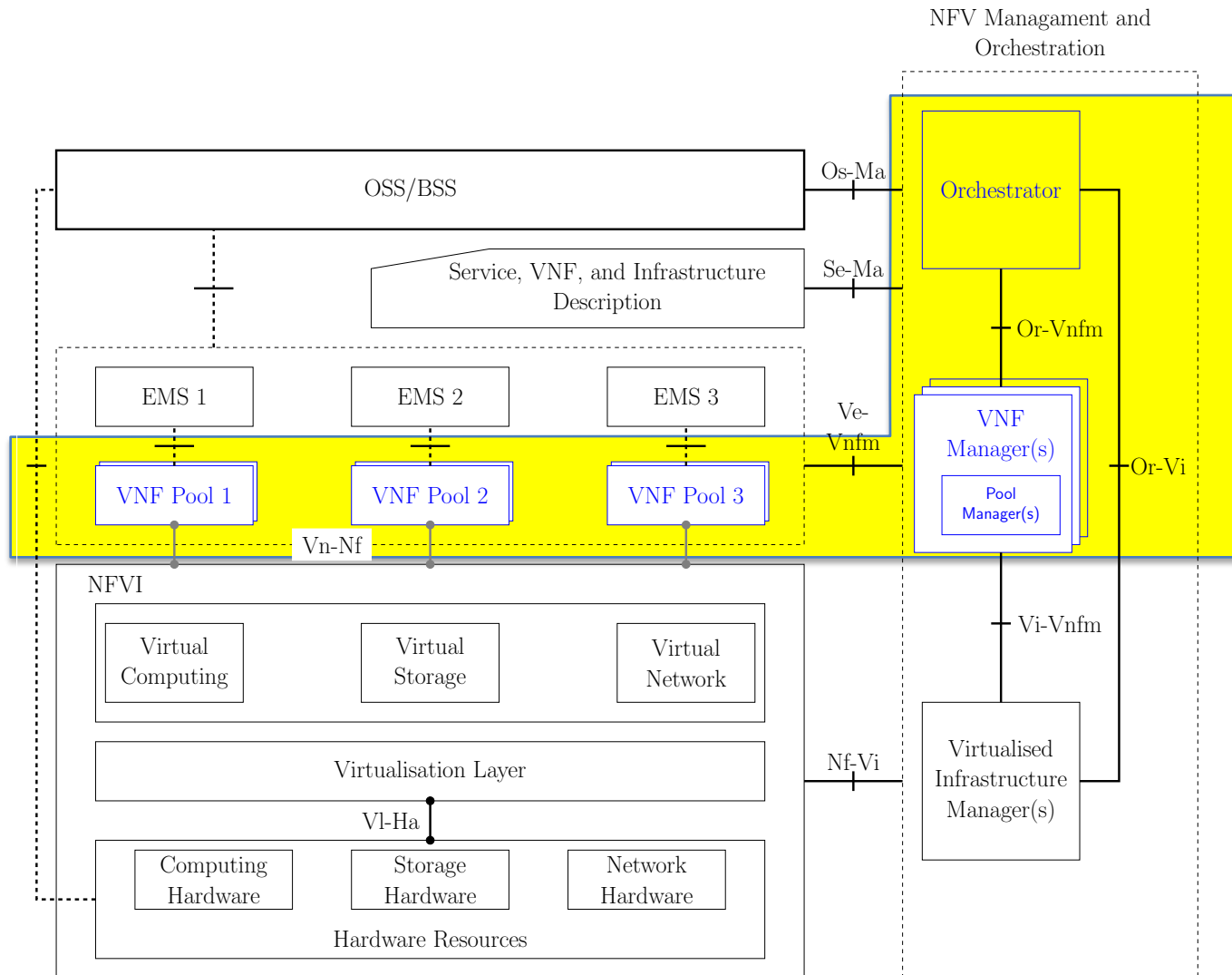
VNF orchestration and automated resiliency with VNFPOOL in service chains

draft-bernini-nfvrg-vnf-orchestration

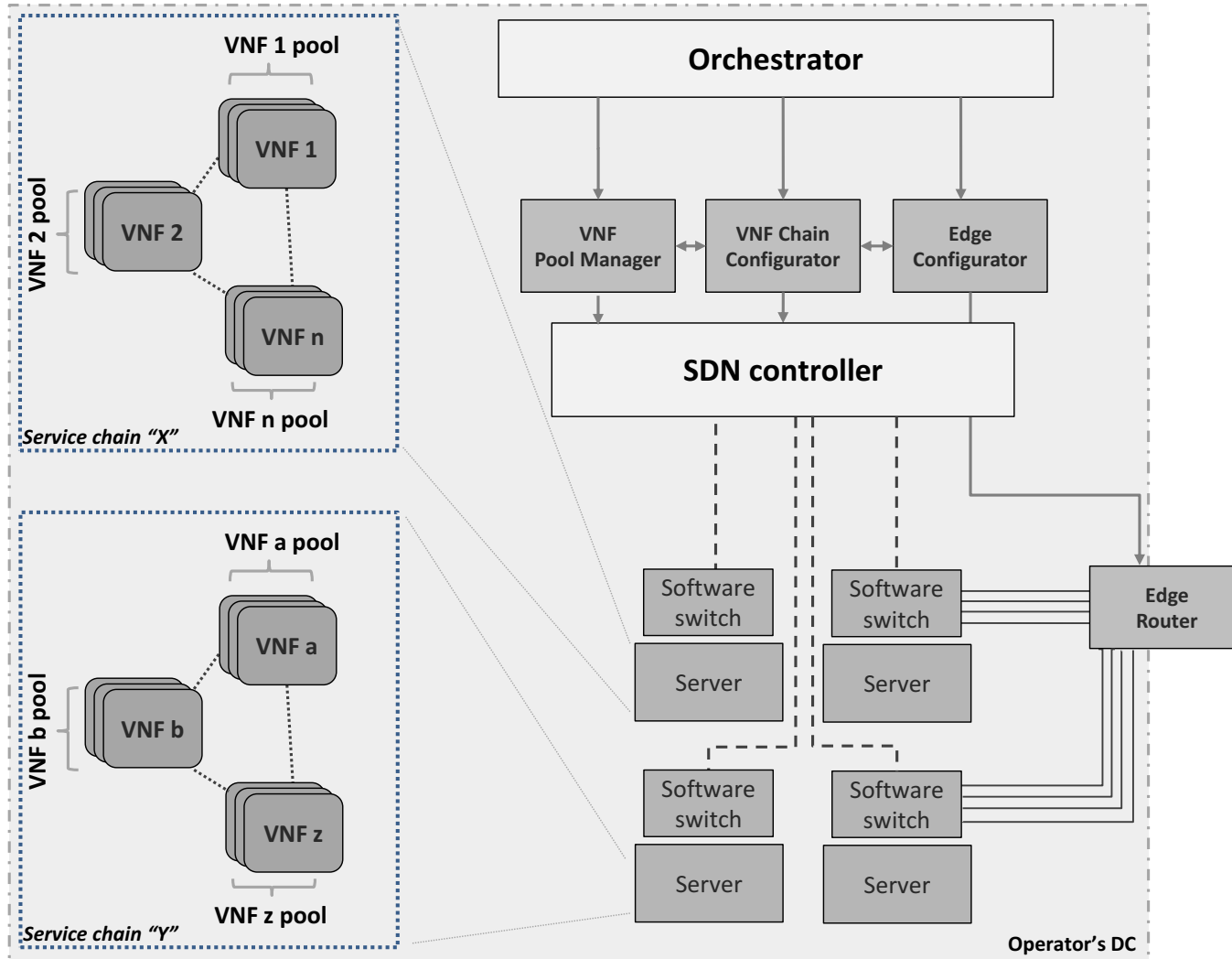
VNF Pool orchestration

- draft-bernini-nfvrg-vnf-orchestration-01
 - First presented at IEFT93 (July-15)
- Main goal
 - combine an architecture (ETSI NFV) and a concept (VNFPOOL)
- I-D contents
 - orchestration and control functions for service chains
 - deployment, provisioning and composition of VNF pools within operators' DCs
 - reliability of VNFs and service chains with VNFPOOL

Integration of VNFPOOL into ETSI NFV



VNFpools in operators' DC



Proposed framework

- Orchestrator
 - management, coordination, and control of VNFs instantiation and configuration within the DC
- SDN controller
 - dynamic traffic steering for VNF chains, with enhanced control apps
- VNF Pool manager
 - coordinates reliability providing HA and resiliency functions for VNFs
 - addresses requirements set by VNFPOOL (see sec.3.3)
 - different types of reliability oriented functions

Our planned next steps

- Our target is RG adoption
 - VNFPOOL concepts may need to be covered by NFVRG Areas of Interest & official documents
- Two paths are possible
 1. Merge with other I-Ds (official or individual, see next slides)
 2. Collect community interest to evolve into an independent NFVRG I-D
- We are open for feedback from NFVRG community
 - & feedback on our draft via ML

I-D merging opportunity

- *draft-nfvrg-irtf-resource-management-service-chain*
 - Scope
 - Resource management problems in service chains
 - scheduling, performances, policies, dynamic adaptation
 - Relevant use cases for the resource management
 - traffic optimization, failover, load balancing, energy efficiency, path optimization
 - Design considerations and requirements for management of VNFs, VLs and NFPs
 - Functional decomposition of resource management framework
 - operations for service chains provisioning and adaptation
 - performance metrics for VNFs and VLs
 - this is still under study
 - Integration in SFC control plane architecture

Proposed approach

- Our 2 I-Ds show complementary approaches
 - We could work together towards a VNFPOOL enabled resource management in service chaining
 - Functional decomposition of the framework, covering intra & inter NFVI PoP resource management
 - Integration in the SFC control and management plane
- What to merge/scope in a unified RG I-D
 - *draft-nfvrg-irtf-resource-management-service-chain*
 - Keep focusing on service chaining and resource management challenges and use cases
 - Target resource management across multiple NFVI-PoPs
 - *draft-bernini-nfvrg-vnf-orchestration*
 - Focus on VNFPOOL aspects mostly for VNFs resiliency
 - Target orchestration and resource management within DCs/NFVI PoPs

**QUESTIONS?
THANK YOU !!**

Acknowledgement

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<FLASH UPDATE>

Network Function Virtualization: Orchestration Challenges

draft-caszpe-nfvrg-orchestration-challenges-00

Gino Carrozzo, Robert Szabo, and Kostas Pentikousis (Eds.)

Draft Background

- As discussed in Yokohama, we merged two I-Ds
 - [draft-unify-nfvrg-challenges-02](#)
 - [draft-felix-nfvrg-recursive-orchestration-00](#)
- New Datatracker reference:
 - <https://datatracker.ietf.org/doc/draft-caszpe-nfvrg-orchestration-challenges/>
- Rationale for merging
 - Maintain strong points from individual drafts
 - Focus on challenges posed by NFV orchestration
 - Review open orchestration frameworks
 - Aim for RG adoption
 - Open to the NFVRG community to further contribute

Draft Scope & Structure

- **SCOPE** – orchestration of heterogeneous virtual resources and functions which can
 - a) be programmed in a recursive manner
 - b) be shared based on policies
 - c) reside across different administrative domains
- **APPLICATION CONTEXTS** – examples
 - Virtual operators, leasing resources from VNFI providers
 - Large scale experimentation over software networks from different federated providers
- **I-D structure**
 - Motivations
 - Terminology
 - Examples ← **OPEN TO YOUR ADDITIONAL EXAMPLE HERE**
 - Review of Open Orchestration Frameworks ← **OPEN TO BE EXTENDED**
 - Challenges ← **YOUR ADDITIONAL CHALLENGES HERE**

Way Forward

- We would like to proceed with RG adoption
- We also call you all for
 - Comments/feedback on the mailing list
 - Contributions with your challenges