

Common NFVI Telco Taskforce

*Reference Model Chapter 3:  
Infrastructure Abstraction and  
Modeling*

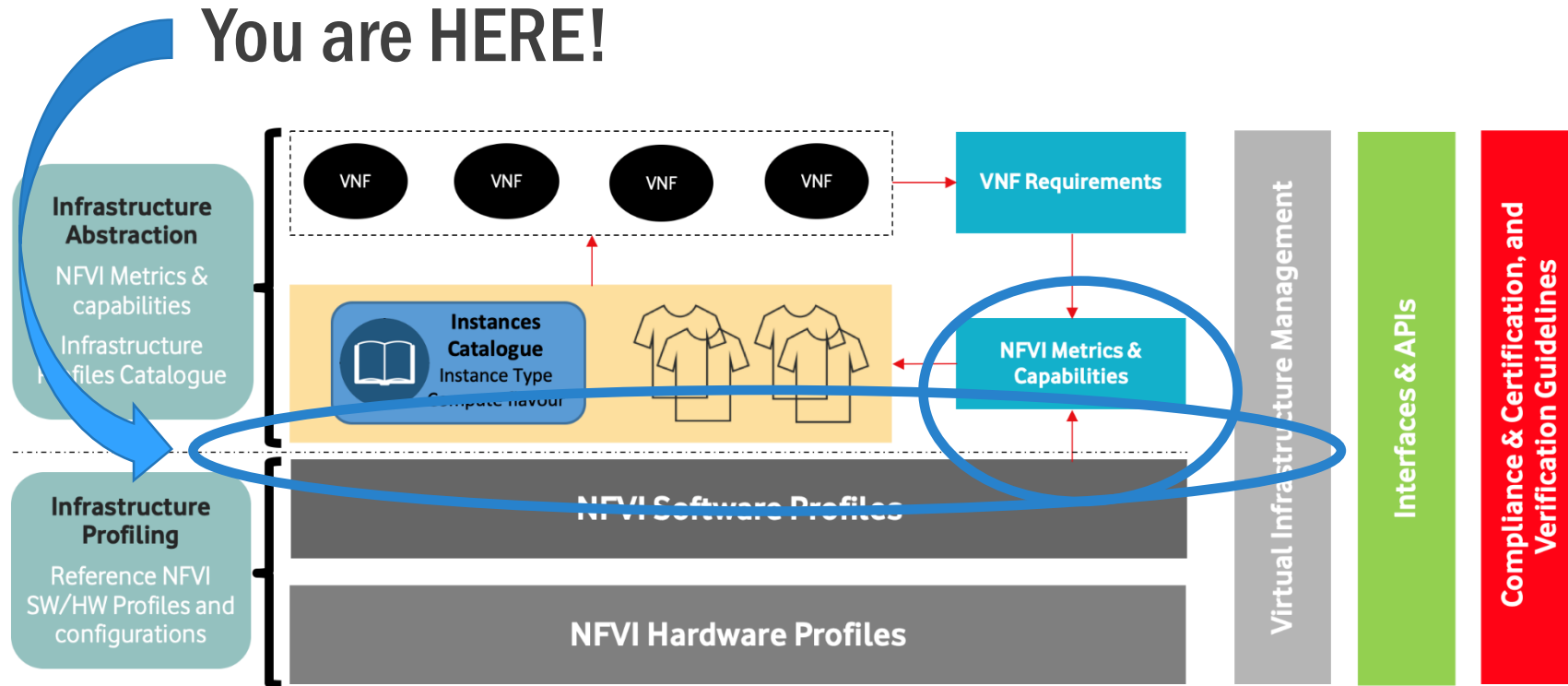
Sabine Demel, Deutsche Telekom  
Mark Shostak, AT&T

24 July 2019

 THE **LINUX** FOUNDATION



# Infra Abstraction and Modeling

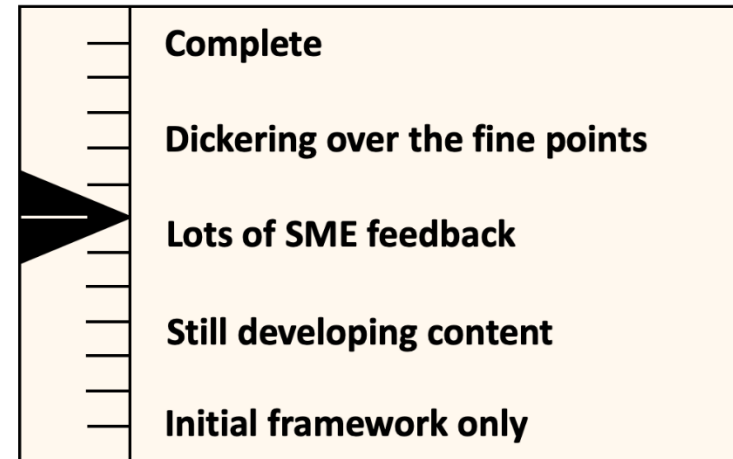


# Modeling: Outline and Maturity

## Table of Contents

- 3.1 Model.
- 3.2 Exposed vs Internal.
- 3.3 Exposed NFVI capabilities, metrics.
  - 3.3.1 Exposed NFVI capabilities.
  - 3.3.2 Exposed NFVI metrics.
- 3.4 Internal NFVI capabilities and metrics.
  - 3.4.1 Internal NFVI capabilities.
  - 3.4.2 Internal NFVI metrics.
- 3.5 VIM capabilities and metrics.
  - 3.5.1 VIM capabilities.
  - 3.5.2 VIM metrics.

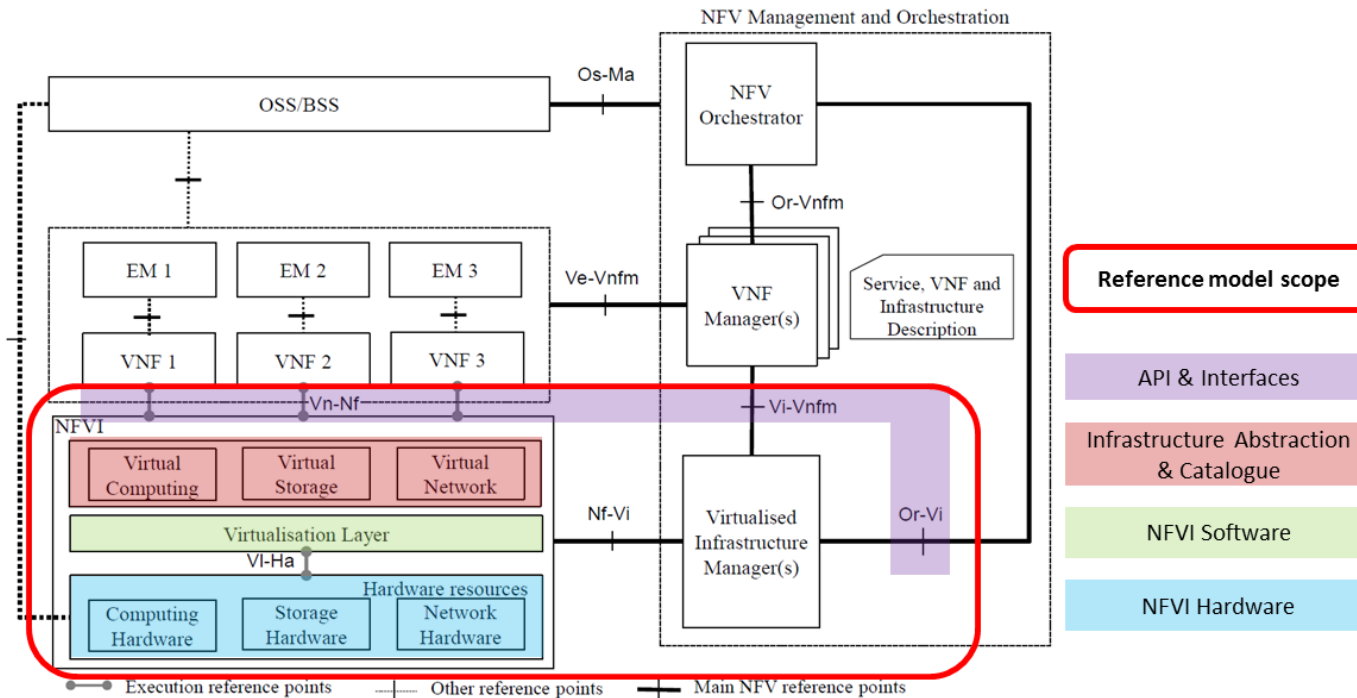
## Bogo-Meter rating



# Model's Scope (NFVI + VIM)

Scope of Capabilities and Metrics modeling includes ETSI NFVI plus VIM

CNTT | Mapping to ETSI NFV Architecture (NFV002-v1.2.1)



C2 General

# Modeling::Your Input (1 of 7)

1. VNF drivers and where they live. How to expose hardware? Lose benefits of SRIOV?

2. Defining acceleration interfaces. - do not define interfaces which are not already implemented

3. Exposition of acceleration technologies to VNFs?

4 - Acceleration embedded into VNFs or into NFVI?

5. Comment RH: VNFs suppliers will not support all the acceleration technos offered by NFVI, VNFS care about what NFVI is.

JB 1-5 are in a common group. Will look for solution that addresses these items.

JB Concern this is not a 'model'. Need clarity on naming of Ch.

6. Action - what is the acceptable packet loss in the model? ch03 to define, mapping in ch04

JB Clarify about KPIs, benchmarking, other parameters, options, extensions, methods in the KPI area in which chapters?

Metrics and Benchmarking: ETSI NFV TST009

# Modeling::Your Input (2 of 7)

7. Need to define the tenant, tenant on tenant definitions.

JB user vs. infrastructure level, impacts security models, need to clarify. Hierarchies and separation of access concerns.

8. What's the difference between a tenant and a slice?

JB covered in 1 and 3.

9. network

Need distinction between internal and external visibility. VNF itself vs. what the VNF designer needs to be able to see.

Model separation between control plane and data plane. -- put this in context of infrastructure not the workload.

JB logical network model vs. physical vs. tenant traffic vs. etc.

CH. 3/6/9

# Modeling::Your Input (3 of 7)

10. Need distinctions about what is a 'manager', what metrics need to be known on the higher layers.

JB expand in Ch. 3

11. Modeling Tenant: hierarchy

JB see # 8

12. Tenant separation. In network applications where the space is given to tenants -- need to cover not only tenant separation, but also the administrator role (i.e. an administrator that has no access to lower level tenants.)

JB see #8

13. Tenant/slice? < question being whether a network slice is a sort of tenant, a tenant of a tenant, or something else?

JB see #8

# Modeling::Your Input (4 of 7)

14. Tenant : do we need to add intra networks?

JB see #8, Ch. 3 Might need to have a separate section in the networking definition sections as well.

15. Network model: subnet, is it at model level?

JB Ch. 3

16. Exposed object definition is unclear. It is not defined if these are NFVI resources or metrics. It is not defined if these are read only or changeable.

JB Ch. 3

17. Table 3-8: should contain max allowed packet drop rate?

JB OK. See above.

18. Table 3-6: would it make sense to indicate whether HyperThreading has impact on performance (recommendation to enable or disable it)? -

JB clarifications are needed in profiles, etc. Ch. 3.



# Modeling: : Your Input (5 of 7)

19. Make the link with ONAP PTL on projects about metrics and certification

JB clarification to include certification as well as metrics. Ch. 10, include how to view conformance.

20. Clarify different consumers of exposed objects. workload vs. management systems (figure 3-3)

JB Ch. 3

21. VNF/CNF resources are not exclusively managed by the VNF/CNF. In the classic NFV MANO case a VNFM and a VIM are also involved. In case of Kubernetes, (operators?) the CNF's Kubernetes operator can access the VIM API to manage the resource of the CNF if the cloud admin provides RBAC access to the right API namespaces.

JB Ch. 3, 7 and 8 Security.

# Modeling::Your Input (6 of 7)

This is a comment to [https://raw.githubusercontent.com/cntt-n/CNTT/master/doc/ref\\_model/figures/figure\\_3.1\\_NFVI-Model.png](https://raw.githubusercontent.com/cntt-n/CNTT/master/doc/ref_model/figures/figure_3.1_NFVI-Model.png)

22. A tenant could be a Kubernetes namespace also. +1  
JB Ch. 3

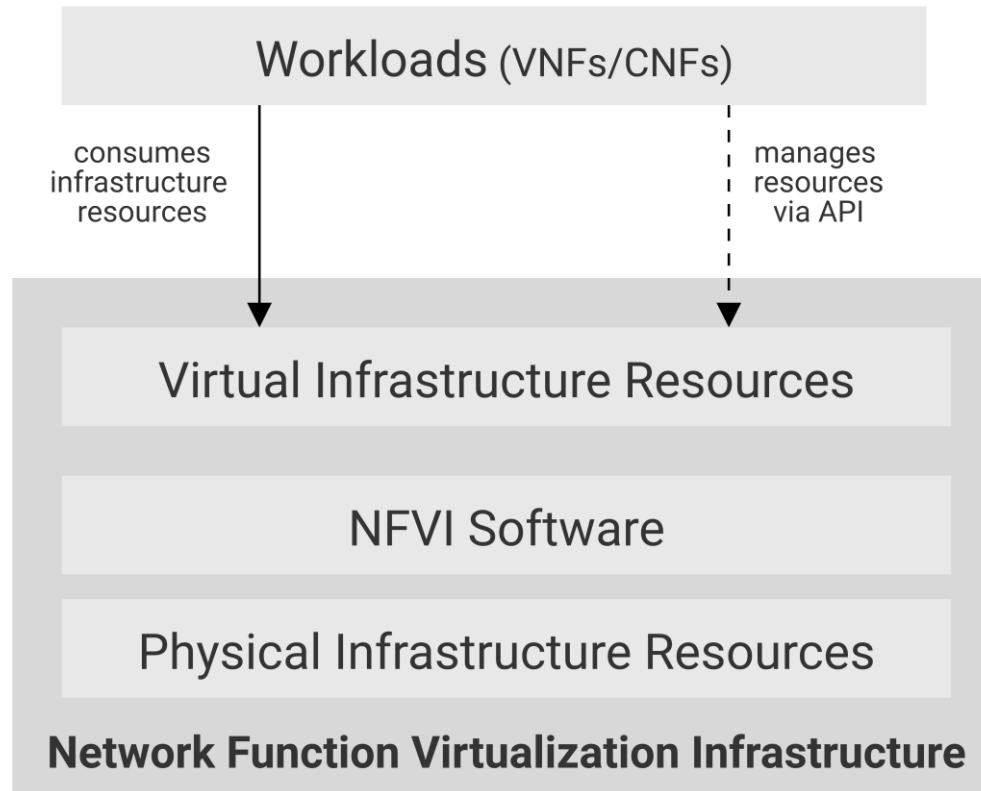
23. If Chapter 3 has two parts, does it make sense to split them into two chapters, descriptions and metrics.  
JB Ch. 3 discussion.

24. Service chain management needs to be covered.

# Modeling: : Your Input (6 of 7)

This is a comment to [https://raw.githubusercontent.com/cntt-n/CNTT/master/doc/ref\\_model/figures/figure\\_3.1\\_NFVI-Model.png](https://raw.githubusercontent.com/cntt-n/CNTT/master/doc/ref_model/figures/figure_3.1_NFVI-Model.png)

22. A tenant could be a Kubernetes namespace also. +1  
JB Ch. 3



# Modeling::Your Input (7 of 7)

23. If Chapter 3 has two parts, does it make sense to split them into two chapters, descriptions and metrics.

JB Ch. 3 discussion.

24. Service chain management needs to be covered.

# Modeling::More Input

Thank You!