

VIRTUALISED NETWORK FUNCTIONS

SI & VALIDATION PROGRAM AACHEN



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SOLUTION ARCHITECT

VNF VALIDATION @ EDD

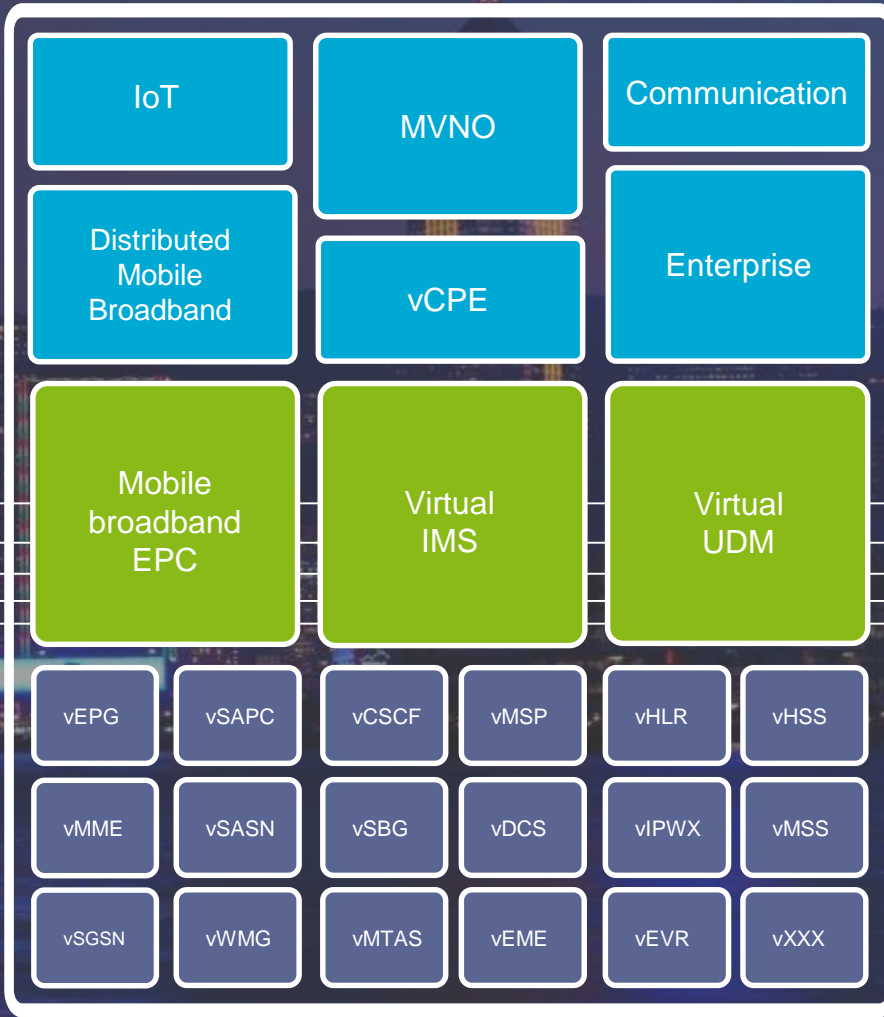


- › Why?
 - Motivation & Drivers
 - Certification vs. Validation
- › What?
 - Coverage & Scoping
 - Vertical vs. Horizontal
- › How?
 - From VNF to E2E
- › Outcome
- › Standardization ???

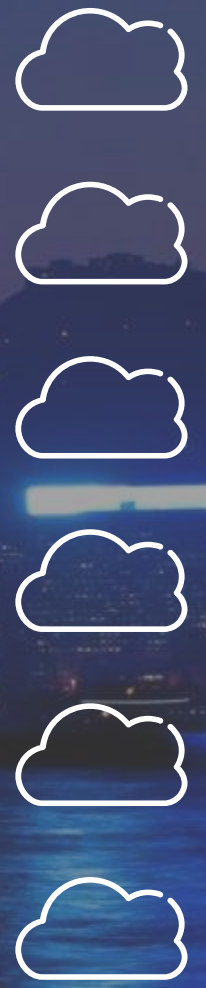
EXTENSIVE PORTFOLIO OF VIRTUAL NETWORK FUNCTIONS



Virtual network services



Virtual network functions



CERTIFICATION VS. VALIDATION

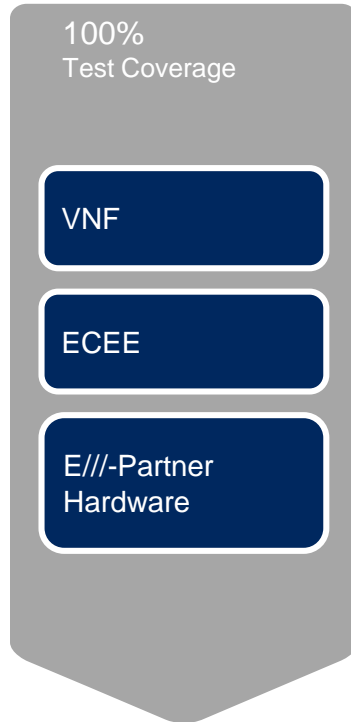


Native solution



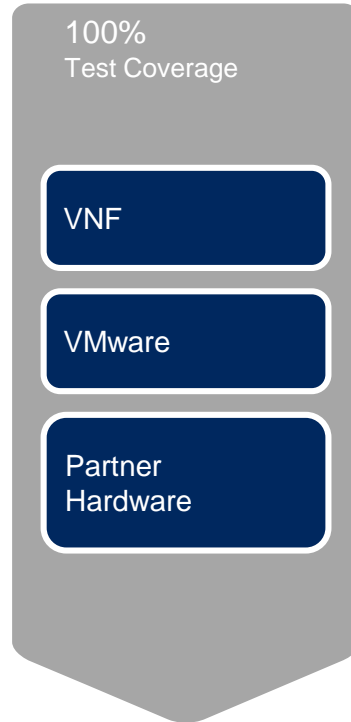
100% Guaranteed and repeatable

Certification incl. Assurance (Vertical)



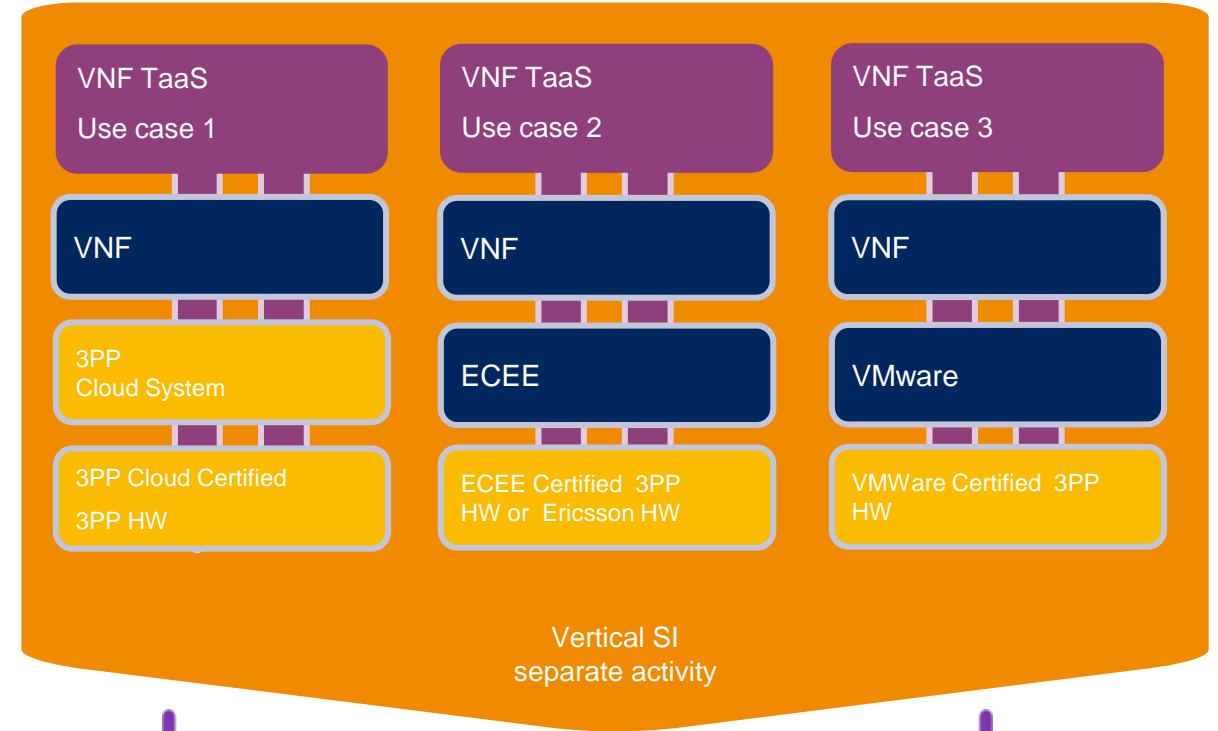
100% Guaranteed and repeatable

Validation incl. Assurance (Vertical)



100% Functionalities guaranteed

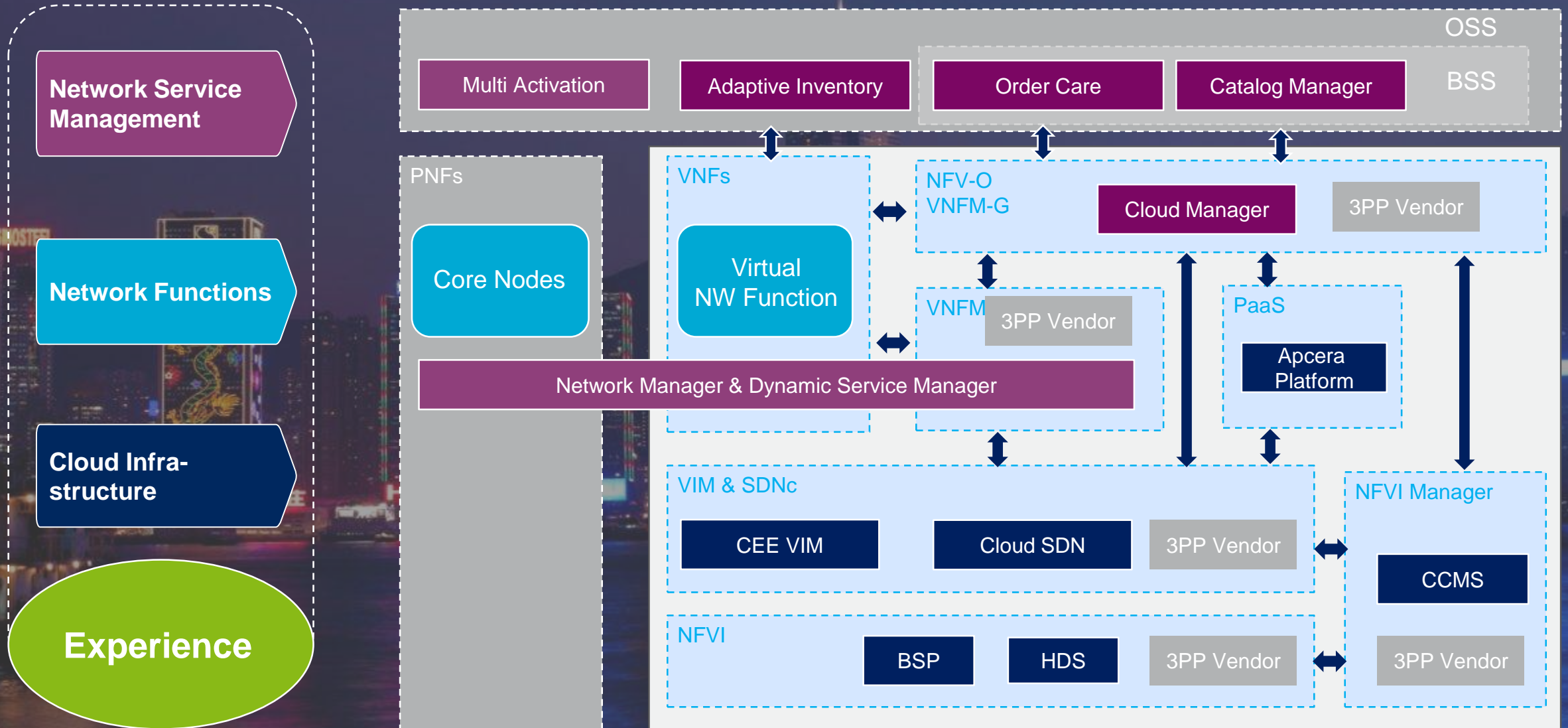
VNF TaaS



100% Functionalities guaranteed

Scenarios not addressed in product roadmap

COMPLETE NFV PORTFOLIO



TAAAS SERVICE PACKAGES



Testing and fixing issues in (2-) 3 SW drops
Process in place today in Aachen.

Testing and no commitment to fix issues.
(only if the issue is replicable in the
certified solution – SW fault)

Fundamental VNF SI & Validation Service Package

Categories

- › Instantiation
- › IP & Networking
- › Functional
- › Recovery
- › Basic Security (login and OS Hardening)

O&M Service Package (optional)

Categories

- › Operational & Maintenance (Configuration-, Fault and Performance Management, Health Checks)
- › Maintainability (Backup & Restore, Cloud Resource audit)

Performance Assessment Service Package (optional)

Categories:

- › Characteristics (capacity and KPIs)
- › Redundancy (interface redundancy and system functions)
- › Robustness (interface robustness and platform robustness)
- › Stability (traffic and overload)

Life Cycle Management (optional)

Categories

- › VNF updates, Correction Packages, EPs
- › NVF-Infrastructure upgrades
- › VIM updates or even SWAPs
- › EM, VNF-M, NFV-O updates

Charging Service Package (optional)

Categories

- › Online charging
- › Offline charging

Security Audit Service Package (optional)

Categories:

- › NVFI Hardening
- › VIM Hardening
- › ...

TOL – TEST OBJECTIVE LIST



Contains following groups of test cases

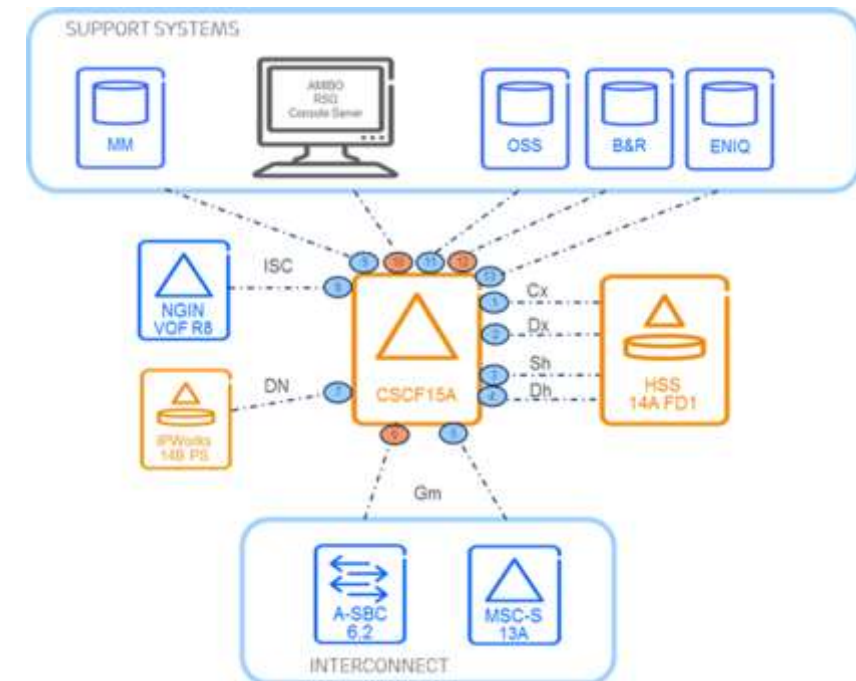
- 1.) Selected functional use cases that proof that all inter-VNF communication works as expected and according to ETSI & 3GPP standards (this includes indirectly inter VM communication of a VNF)
- 2.) Typical cloud use cases, as deployment, decommissioning, scaling, back-up, ... which includes also most of previously mentioned mandatory vSphere test cases
- 3.) Robustness and resilience use cases, e.g. link break, switch failure, etc.

New

- 4.) Merged with selected network setup test cases from vIMS
- 5.) Merged with selected network setup test cases from vEPC
- 6.) “Advanced” cloud test cases as e.g. additional mandatory + optional test cases from *VMware Ready for NFV certification*

What will be next?

- 7.) Alignment and addition of  **OPNFV** test cases started. Consolidation co-driven with INTEL of work done within Yardstick, FuncTest, Pharos, ... testing / certification projects

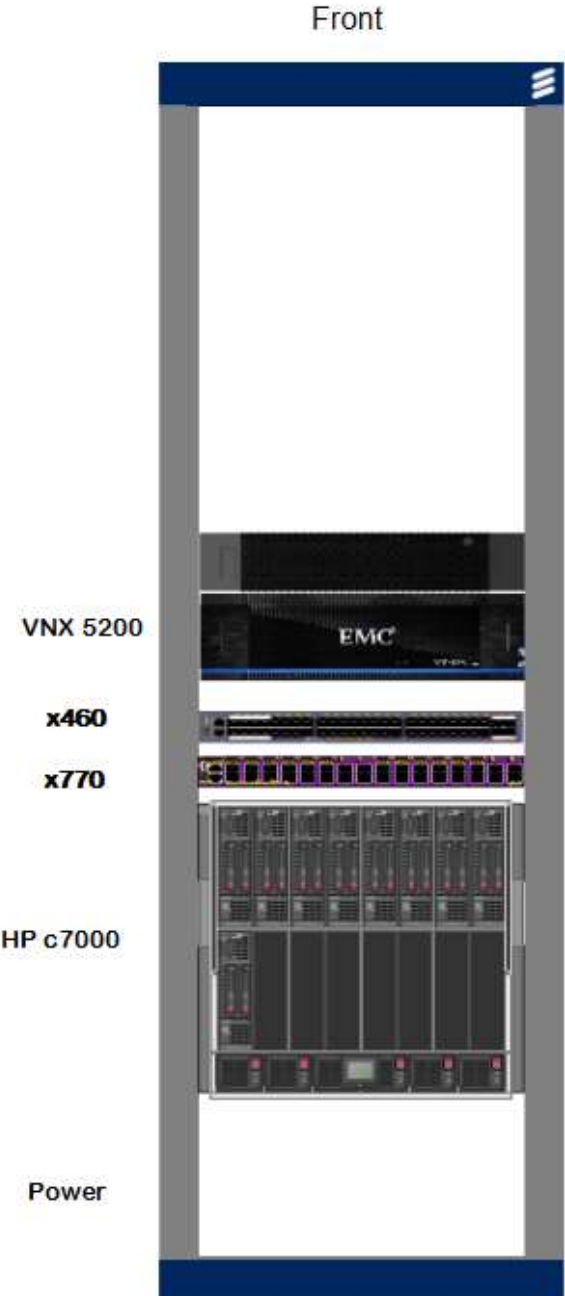
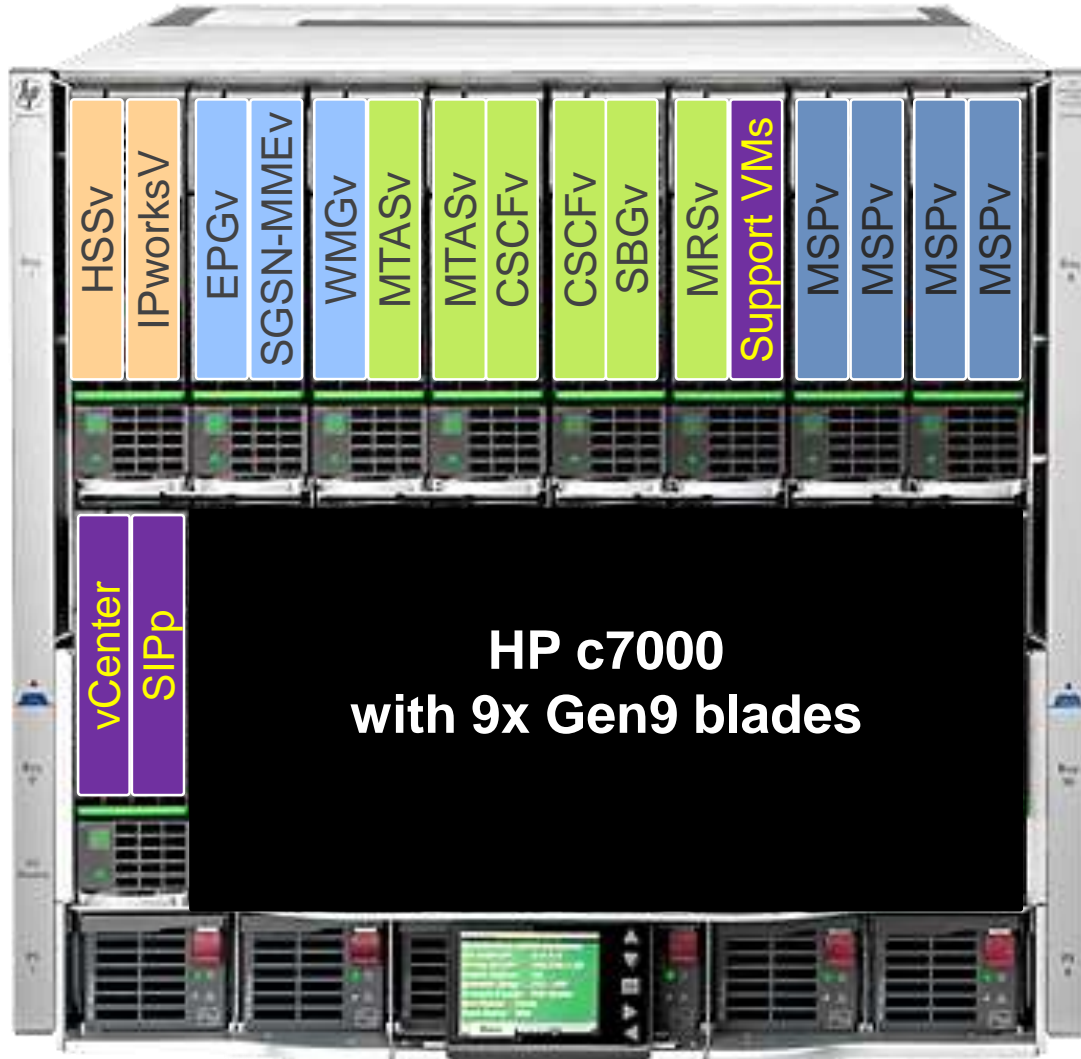


TOL EXAMPLE

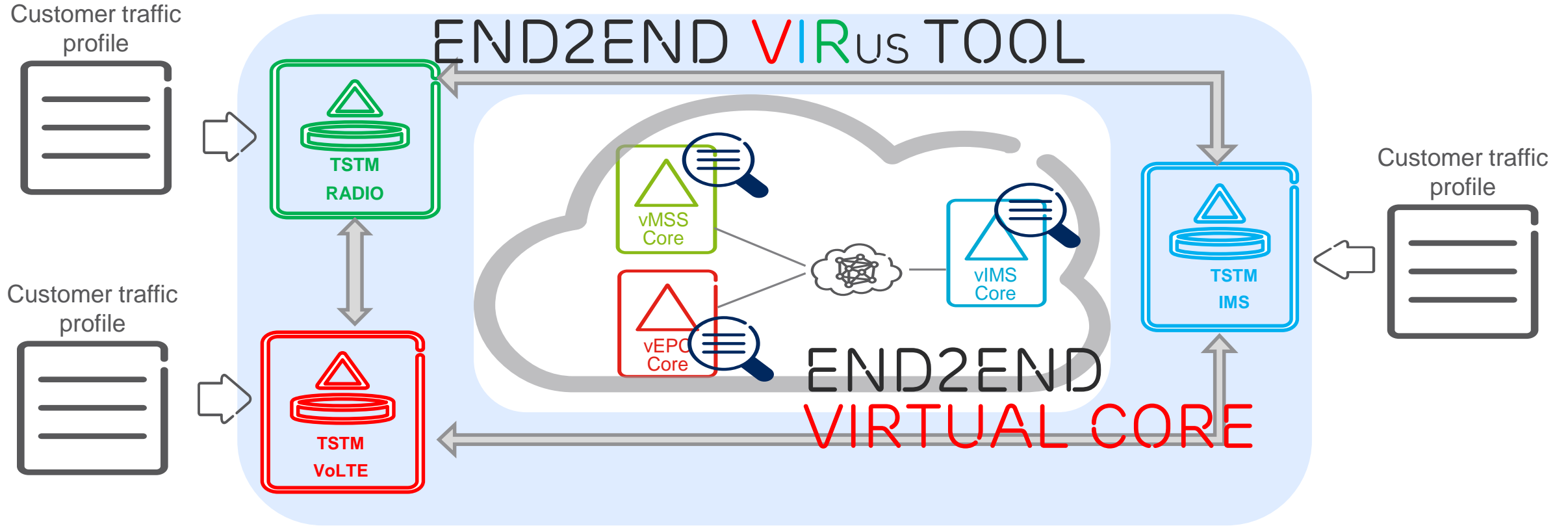


UC DESCRIPTIONS https://ericoll.internal.ericsson.com/sites/Voc				Passed/Failed	Tester	Date	w/Block / HP	Latest LSV te
Chapter #	Demo Cases	Description	Prio					
3	Feature / Interface verification							
3.1	Basic Scenarios							
3.1.1	Initial Registration	Register_ORIG_One_user	1	Passed	n.n.	30/11/2015	HP	
3.1.2	Chat 1-1 Non-store and forward - Orig	B1_Orig_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.3	Chat 1-1 Non-store and forward - Term	B1_Term_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.4	Chat 1-1 store and forward - Orig	B2_Orig_ONE_user	1	Run	n.n.	30/11/2015	HP	
3.1.5	Group Chat-OPF	Group_Chat_OPF_ORIG_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.6	Group Chat-CF	Group Chat 3 Sub	1	Passed	n.n.	30/11/2015	HP	
3.1.7	Group Chat-TPF	Group_Chat_TPF_TERM_ONE_user	1	Passed	n.n.	18/11/2015	HP	
3.1.8	File Transfer FThttp - Orig	B1_FThttp_ORIG_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.9	File Transfer FThttp - Term	B1_FThttp_TERM_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.10	File Transfer - Orig	File_Transfer_ORIG_ONE_user	1	Passed	n.n.	30/11/2015	HP	
3.1.11	File Transfer - Term	File_Transfer_TERM_ONE_user	1	Run	n.n.	30/11/2015	HP	
3.1.12	Verify IMAP access and stored messages (CMS)		2					
3.1.13	Check SIGTRAN sctp associations get established from ss7 blade (IPSMGW)		2					
3.2	Backup and Restore							
3.2.1	Create Backup - to be checked	Create backup of System data (Installed component / application software and associated configuration data)	4					
3.2.2	Restore Backup - to be checked	Restore a backup (Requires reboot of Cluster)	4					
3.2.3	Delete Backup - to be checked	Delete an existing Backup	4					
3.3	Operation and Maintenance							

VoLTE, WiFi-CALLING + MSP POC "CLOUD IN A BOX"



VIRTUALISED VOLTE E2E TESTING



Performance measurements
Dimensioning & collocation

WAY OF WORKING



- › Week 1: **High Level Design (HLD)**
 - Confirm VNFs in focus / to start with
 - Dimensioning of cloud infrastructure

- › Weeks 2-5: **Low Level Design (LLD)**
 - Ordering & build of E-Block hardware + site surveys
 - Start in parallel with Low Level Design (LLD)

- › Weeks 6-7: **Site Activities / OVF Preparation**
 - Delivery & integration E-Block into data center
 - Prepare customized VNFs according to LLD

- › Weeks 8-9: **Configuration & Integration**
 - Prepare virtualized networking & deploy VNFs
 - Integrate & configure VNFs in VoLTE network

Q&A





ERICSSON

ETSI NFV-MANO ARCHITECTURE

