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# Common NFVI Telco Taskforce

Governance Working Group – Weekly Call

September 19<sup>th</sup>, 2019

 THE **LINUX** FOUNDATION



# CNTT | Agenda

- **Agenda Bashing**
- **GSMA & LFN**
- **Technology Update**
- **Reference Implementation**
- **Test & Certification**
- **General Organization**
  - **Antwerp Planning**
- **Keys To Success & Engagement**
  - **Adoption** (Updates in future session)
  - **Recruiting & Marketing** (Updates in future session)
  - **Community Engagement** (Updates in future session)
  - **Engagement and Lifecycle Management** (Updates in future session)

## No Updates This Week

- **Housekeeping**
- **General Organization – Communications**
- **General Organization – Release Planning**

# CNTT | GSMA & LFN | Updates

**GSMA**

**LFN**

# CNTT | Technology Update as of 18<sup>th</sup> 2019

Leader(s): Rabi Abdel (Vodafone), Walter Kozlowski (Telstra)

Contributor(s): Chapter Leads and Community Members

Reference Model  
**RM**

*GAPS: None*

Reference Architecture  
**RA**

*GAPS: None*

Chapter	Botrange features	workload	Progress
1-Intro	Roadmap, CNF Support, Cleanup and General	10 issues	
2-Requirement	Requirement vs	2 issue	
3- Mode	CNF Support, Cleanup	5 issues	
4 - Abstraction	vCPU, Network, container support,	8 issues	
5- NFVI SW/HW Features	VIM features, security, hw configs	7 issues	
6- Interfaces	Cleanup	1 issue	
7- Security	Scope, more	3 issues	
8 - Compliance	Scope, definitions, and lifecycle, test criteria	9 issues	
9 - Operation	Availability	1 issue	
10 - Process &	Process gaps, relation communities	2 issues	

Chapter	Botrange features	workload	Status
1-Intro	Roadmap, Priorities	1	
2-Requirement	Requirement & Cleanup	2	
3- High Level	Outline, Initial	2	
4 - Component	Outline, Initial	2	

## Special thanks to:



❖ Ahmed (STC), Bernard (DT), Beth (VZ), Cedric (Orange), Damian (Telstra), Fu Qiao (CMCC), Gergely (Nokia), Herbert (DT), Ian G (VF), Jonathan (AT&T), Karine (Orange), Kelvin (Nokia), Kodi (VF), Kyle (VZ), Mark S (AT&T), Mehmet (VZ), Mike B (AT&T), Mike F (AT&T), Murtaza (AT&T), Pankaj (AT&T), Samuel (Orange), Tom (VF), Trevor (Intel), Walter (Telstra), Xavier (Orange).

# CNTT | Repository Visitors between 5<sup>th</sup> – 18<sup>th</sup> September



# CNTT | Testing & Certification

Leader(s): Fu Qiao (China Mobile), Mike Fix (AT&T)

Contributor(s): Cédric Ollivier (Orange), Kyle A Greenwell (Verizon), Li Ying (China Mobile), Murtuza Khan (AT&T), Mark Shostak (AT&T), Trevor Cooper (Intel), Rabi Abdel (Vodafone), William Bonnett (Verizon), Zhang Hongli (China Mobile), Zhao Qihui (China Mobile)



## TC Gap Assessment

- ✓ Deep-dive of OPNFV, CVC, and OVP Process
- ✓ Initial pass assessing Key Active OPNFV Projects for CNTT alignment
- ✓ Normalize TC Review results format
- ⊖ PTLs provide Test Suite data
- ✓ [Initial Test Category/Case Review](#)



## Partnerships & Communications

- ✓ Stakeholder Verizon as co-author of Verification Process
- ✓ Launch PR Campaign with the OPNFV TSC and CVC
- ⊖ Continued CNTT>OPNFV>CVC alignment discussions
- ✓ [OPNFV Proposal Review 9/9-9/16](#)
- ✓ [OPNFV TSC Project Vote 9/17](#)



## Setup Lab

- ⊖ Finalize RM/RA/RI requirements
- ✓ [Identify initial lab hardware needs](#)
- ⊖ Configure SUT, & Execute Sanity
- ⊖ Identify and Close Gaps in TCs

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## Documentation

- ✓ Outline & Initial Merge Complete
- ⊖ [Working GitHub Issues](#)
- ⊖ Define & vet Verification Methodology
- ⊖ [Create Annex, Developing Content](#)
- ⊖ Finalize Ch 8 Content & Publish
- ⊖ Finalize RI Content





# CNTT | Organization | Antwerp Planning

## Updates and Open Logistical Items

### Updates

- DNS Unconferences - see next 3 slides.  
*Important to stay aligned with CNTT.*
  - [Link](#) to schedule.
  - [Link](#) to proposals/descriptions.
- Registrations = 52 - See table at right.
  - Potential reasons for lower count:
    - Losing some attendance due to co-located event?
    - Need to sign up separately is not clear?
  - Additional registration reminder sent 9/17 to all CNTT listservs and emails.

### Open Logistical Items

- 30 Minutes is still open / available @ 12:30pm to 1pm Fri. This is a breakout session window.
- Any other "Un", similar events, social events, etc., CNTT should be aware of for

**Leader(s):** Mark Cottrell (AT&T), Rabi, Abdel (Vodafone), Beth Cohen (Verizon),

**Contributor(s):** Jonathan Beltran (AT&T), Rick Tennant (AT&T), Jim Baker (LFN), Walter Kozlowski (Telstra)

As of 9/16

Company	Count
AT&T	8
Nokia	4
Intel	4
Orange	3
Red Hat	2
Linux Foundation Networking	2
Ericsson Software Technology	2
Deutsche Telekom	2
SUSE	2
Globe Telecom, Inc.	1
Huawei	1
OpenStack Foundation	1
Spirent Communications	1
Voereir AB	1
Ericsson	1
China Mobile	1
Telstra	1
GSMA	1
Verizon	1
Huawei Technologies Co., Ltd.	1
Vodafone	1
Swisscom	1
Intel Corporation	1
UNH-IOL	1
juniper networks	1
VMware	1
KDDI Corporation	1
Vodafone Group	1
Lenovo	1
Capgemini	1
ZTE CORPORATION	1
Linux Foundation	1
<b>Grand Total</b>	<b>52</b>

# CNTT | Organization | Antwerp Planning

## CNTT & VNF Related - Unconferences – Day 1

**Leader(s):** Mark Cottrell (AT&T), Rabi, Abdel (Vodafone), Beth Cohen (Verizon),

**Contributor(s):** Jonathan Beltran (AT&T), Rick Tennant (AT&T), Jim Baker (LFN), Walter Kozlowski (Telstra)

Day 1	Time	Room	Session	Topic Leader
Mon 23rd	9:00	Gorilla	CNTT reference implementation and verification in	<a href="#">Qiao Fu</a>
		Gorilla	Available	
	10:00	Gorilla		<a href="#">Shiby Parayil</a>
		Gorilla	ONAP and Cisco NSO Integration	<a href="#">Olivier Dugeon</a>
	11:00	Gorilla	A Look at OPX Architecture and Latest Release	<a href="#">Joe Ghalam</a>
		Gorilla	Blockchain based Telecom Solutions (Hyperledger	<a href="#">Vipin Rathi</a>
	15:30	Gorilla	ETSI ZSM + OSN Days Bonn Recap Discussion	Klaus Martiny
		Gorilla	VNF Testing standardization under TMF API	<a href="#">Kanagaraj Manickam</a>
	16:30	Gorilla	Discuss automation requirements for MEC during the MEC application	<a href="#">Xuan Jia</a>
		Gorilla	Discuss C-RAN/O-RAN requirement on cloud platform	<a href="#">weichen ni</a>

# CNTT | Organization | Antwerp Planning

## CNTT & VNF Related - Unconferences – Day 2

**Leader(s):** Mark Cottrell (AT&T), Rabi, Abdel (Vodafone), Beth Cohen (Verizon),

**Contributor(s):** Jonathan Beltran (AT&T), Rick Tennant (AT&T), Jim Baker (LFN), Walter Kozlowski (Telstra)

Day 2	Time	Room	Session	Topic Leader
Tues 24th	11:00	Gorilla 4	Available	
		Gorilla 5	Test frameworks and tools for CNTT	<a href="#">Trevor Cooper</a>
	11:45	Gorilla 4	OPNFV Verification Program (OVP) Meeting	<a href="#">Brandon Wick</a>
		Gorilla 5	Integration of VSPERF and DANM	<a href="#">Sridhar Rao</a> , <a href="#">Kale Csatari</a> , <a href="#">Al Morton</a>
	13:50	Gorilla 4	ONAP El Alto Doc Hackathon	<a href="#">Sofia Wallin</a>
		Gorilla 5	CNI Round Table	<a href="#">Tomofumi Hayashi</a>
	14:35	Gorilla 4	ONAP El Alto Doc Hackathon (Continued)	<a href="#">Sofia Wallin</a>
		Gorilla 5	OPNFV Closed Loop Automation Working Group	<a href="#">sunku ranganath</a>
	15:20	Gorilla 4	CNTT and CNCF TUG Common API Framework	<a href="#">Sukhdev Kapur</a>
		Gorilla 5	SNAS: real-time network routing monitoring	Alistair King
	16:20	Gorilla 4	LFN MAC Meeting	<a href="#">Brandon Wick</a>
		Gorilla 5	Host maintenance with Fenix	<a href="#">Tomi Juvonen</a> , <a href="#">Gergely Csatari</a>
	17:05	Gorilla 4	LFN MAC Meeting	<a href="#">Brandon Wick</a>
		Gorilla 5	An introduction of open source network further discussion	<a href="#">Yin Ding</a> , Ying Xiong

# CNTT | Organization | Antwerp Planning

## CNTT & VNF Related - Unconferences – Day 3

**Leader(s):** Mark Cottrell (AT&T), Rabi, Abdel (Vodafone), Beth Cohen (Verizon),

**Contributor(s):** Jonathan Beltran (AT&T), Rick Tennant (AT&T), Jim Baker (LFN), Walter Kozlowski (Telstra)

Day 3	Time	Room	Session	Topic Leader
Wed 25th	11:15	Gorilla	Virtual Central Office Demo 3.0	<a href="#">Brandon Wick</a>
		Gorilla	Improving ONAP interoperability & Adoption	<a href="#">Davide Cherubini</a> , <a href="#">Manoj Nair</a>
	12:00	Gorilla	Virtual Central Office Demo 3.0	<a href="#">Brandon Wick</a>
		Gorilla	Available	
	13:50	Gorilla	ONAP as a unified MEC-in-NFV Orchestrator	<a href="#">Sriram Rupanagunta</a>
		Gorilla	<a href="#">EUAG - As Per Unconference Agenda</a>	<a href="#">Atul Purohit</a> <a href="#">Jim Baker</a>
	14:35	Gorilla	Available	
		Gorilla	<a href="#">EUAG - As Per Unconference Agenda</a>	<a href="#">Atul Purohit</a> <a href="#">Jim Baker</a>
	15:20	Gorilla	Available	
		Gorilla	Available	
	16:15	Gorilla	Technical Advisory Council (TAC)	<a href="#">Jason Hunt</a> <a href="#">Casey Cain</a>
		Gorilla	Available	
	17:00	Gorilla	Technical Advisory Council (TAC) (Continued)	<a href="#">Jason Hunt</a> <a href="#">Casey Cain</a>
		Gorilla	Available	

# CNTT | Antwerp | Planning

## Face To Face

### EVENT MGMT. & COMMUNICATIONS

- ✓ Announcement
- ✓ Registration
- 🔄 Legal | Contractual
- ✓ Event Detail | WIKI

### EVENT PLANNING

- ✓ Event Topics & Durations
  - 🔄 Presentations
  - 🔄 Discussion Panels
- ✓ Speaker(s)
- ✓ Build & Maintain Agenda

### LOGISTICS

- ✓ Reserve Room(s)
- ✓ Room Layout
- ✓ Podium
- ✓ A/V (including mics)
- 🔄 Zoom, Etherpad Setup
- ✓ Coffee Service
- ⚠️ Power to seating areas
- ✓ Room convert at lunchtime

**Leader(s):** Mark Cottrell (AT&T), Rabi, Abdel (Vodafone), Beth Cohen (Verizon),

**Contributor(s):** Jonathan Beltran (AT&T), Rick Tennant (AT&T), Jim Baker (LFN), Walter Kozlowski (Telstra)

### PRE-EVENT

- 🔄 Presentations Submitted | Posted to Wiki
- A/V Certification
- Dry Run

### EVENT FACILITATION

Host(s) - Heather, Michele  
Facilitator(s) – **Presenters, Jonathan, Rick**  
Event Management – Jim Baker  
Note Takers – **Need all available**  
Mic Runners – **Need all available**

### ⚠️ POST EVENT

Collect Etherpad Notes  
Organize for Follow-up

# CNTT | Organization | Antwerp Planning

## CNTT | ONS: FAQ

**Q: When are your next release(s)? A: Release Cadence for RM, RA, RI**

**A:** [Rabi] we are trying to get a release cadence of 3 months in order to keep the momentum going and to allow for a dynamic way to get feedback and input from various communities without having to wait for long before seeing the result. we expect the cadence to slow down when things become more mature and stable.

**Q: What is the scope of each release? A: R2 Scope | Post Botrange | Beyond...**

**A:** [Rabi] **The current Release (Botrange)** is focusing on:

- Getting the Reference Model to a mature state.
- Get the initial release of OpenStack based Reference Architecture.

**Post Botrange** we expect the focus to be:

- Continue to Mature Reference Model (the expectation to have a stable one for next release)
- Continue to Mature The OpenStack Reference Architecture.
- Get the first initial open Stack reference implementation.
- Starting a container based reference Architecture.

**Beyond:**

- Getting Common NFVI to be used for NFVI Compliance and Verification as well as VNF Compliance & Verification.
- We expect NFVI Certification to start using Common NFVI around April next year.

# CNTT | Organization | Antwerp Planning

## CNTT | ONS: FAQ

**Q: What's the difference been CNTTs NFVI testing vs. ONAP testing & certification? Testing & Certification Expectations / Value ONAP vs. NFVI...**

**A:** [Vincent] CNTT focusses on the NFVI while ONAP focusses on the VNF on-boarding and LCM. The CNTT NFVI testing will leverage the OPNFV tests. Ultimately, testing will be leveraged to build certifications. This will be under the OVP programme, which will cover both the NFVI certification, and the VNF certification.

**Q: Who owns the specifications (RM, RA) & reference implementations - where do I go to begin verification? Artifact hosting & maintenance – GSMA, LFN/OPNFV, etc.**

**A:** [Rabi] For the short term, all CNTT artefacts are located in a single repository hosted by CNTT itself to make sure we stay focused and aligned and minimize fragmentation. In the long term, we expect GSMA to maintain the Reference Model, OPNFV to maintain Reference Implementations.

In terms of when to begin verifying, both NFVI Certification programme and VNF Certification programmes are already launched by LFN through their OVP programme and vendors can start certifying their NFVI and VNFs today via this programme today. There will also be a hack fest early next year for a more hands on work to go through the tooling's, tests used and the process needed to get through the certification programme. The program currently doesn't use CNTT artefacts, but we expect this to be the case as early as April next year. so we encourage all vendors to get familiar with the tooling's and the process from today.

# CNTT | Organization | Antwerp Planning

## CNTT | ONS: FAQ

**Q: What are CNTT's goals & value proposition? A: Overall goals & value of CNTT (Need Antwerp messaging on value). Future: fully quantify value via case study.**

**A:** [Mark] CNTT's goal is to set NFVI standards and define a limited set of Reference Architectures that can be verified and validated by OPNFV. By limiting variability in the VNF onboarding and testing overhead, costs are expected to be reduced while improving time to market.

**Q: Why do we need CNTT? A: Identify Defend Known Arguments to CNTT)**

**A:** [Mark] The industry was fragmented and slow to innovate effectively and efficiently in leveraging network virtualization technologies related to infrastructure required to run Telco operations. With 5G on the horizon, pressure is building for more agility in the design and deployment of VNFs to support the expected growth in network service driven business models. Developing a common NFVI addresses a portion of the business model.

**Q: What are CNTT's future plans? A: Duration of CNTT & Integration into GSMA & OPNFV long term**

**A:** [Mark] Once CNTT reaches a stable level of maturity, the process, artifacts, and management will be handed off to GSMA & LFN to continue enhancing and management of the NFVI framework established by CNTT. Target date for transition is still under discussion.



# CNTT | Organization | Antwerp Planning

## CNTT | ONS: FAQ

**Q: As a third-party / integrator. can I get a NFVI certification? A: Explain third-party vendor NFVI certification**

**A:** [Vincent] There is an existing NFVI certification, under the OPNFV Verified Programme. The current requirement level is very low at this stage. CNTT will contribute to an improved certification. This is in the CNTT backlog and discussion with OPNFV has started already.

**Q: What is your roadmap for VM's, for containerization, etc.? A: Containerized Cloud Plan, ONAP vs. OSM, etc.**

**A:** [Rabi] In terms of VMs vs Containers: The Reference Model is neutral and will not differentiate between them, now it gets to how quickly we can create reference architecture to support VMs or Containers. we have already launched the first release of OpenStack based Reference Architecture to support VMs, and it all goes down to how mature Containers technology it is for Telco workload. we will start looking at Container based reference architecture next, we are in close engagement with CNCF Telco user group to make sure we address any gaps currently exist.

In regards to ONAP vs OSM: CNTT is MANO agnostic and our artefacts are not couples or targeting a named MANO solution. CNTT is applicable to ONAP, OSM, or any other MANO solutions.

**Q: How do I find out more?**

**A:** Contact & Communication Links (See next slide)

# CNTT | Organization | Quick Reference Guide

## Tracks | Repositories | Mailing Lists | Meeting Schedules | Contacts

### Common NFVI Telco Taskforce (CNTT)

Home Page: [CNTT Home](#)

Common NFVI Meeting Schedules | Zoom Bridge | Minutes:  
[Common NFVI Meeting Information](#)

### Governance

*Communications, Budgets, Marketing, Recruiting, Adoption, and Release Planning*

Repository: [Governance](#)

Mailing List: [Join Governance Mailing List](#)

Contacts: [Mark Cottrell](#), [Jonathan Beltran](#), [Rick Tennant](#)

### Reference Model

*Framework to drive continuity of Reference Architectures for NFVI*

Repository: [Reference Model](#)

Mailing List: [Join Reference Model Mailing List](#)

Mailing List: [Join Technical Steering Committee Mailing List](#)

Contacts: [Rabi Abdel](#), [Walter Kozlowski](#)

### Reference Architecture

*Discrete NFVI specifications based on the Reference Model*

Repository: [Reference Architecture](#)

Mailing List: [Join Reference Architecture Mailing List](#)

Contacts: [Rabi Abdel](#), [Walter Kozlowski](#)

### Reference Implementation

*Implement & deploy based on the design & configurations of each Reference Architecture*

Repository: [Reference Implementation](#)

Project Proposal: [CNTT RI OPNFV Project \(Approved\)](#)

Mailing List: [Join Reference Implementation Mailing List](#)

Contacts: [Fu Qiao](#), [Mike Fix](#), [Mark Shostak](#), [Kyle Greenwell](#)

### Verification & Validation

*Deliver compliant NFVI against a physical manifestation of Reference Architectures*

Strategy & Vision: Reference Model [Chapter 8](#) + [Chapter 8 Annex](#)

Mailing List: **FUTURE**

Contacts: [Mike Fix](#), [Fu Qiao](#), [Kyle Greenwell](#)

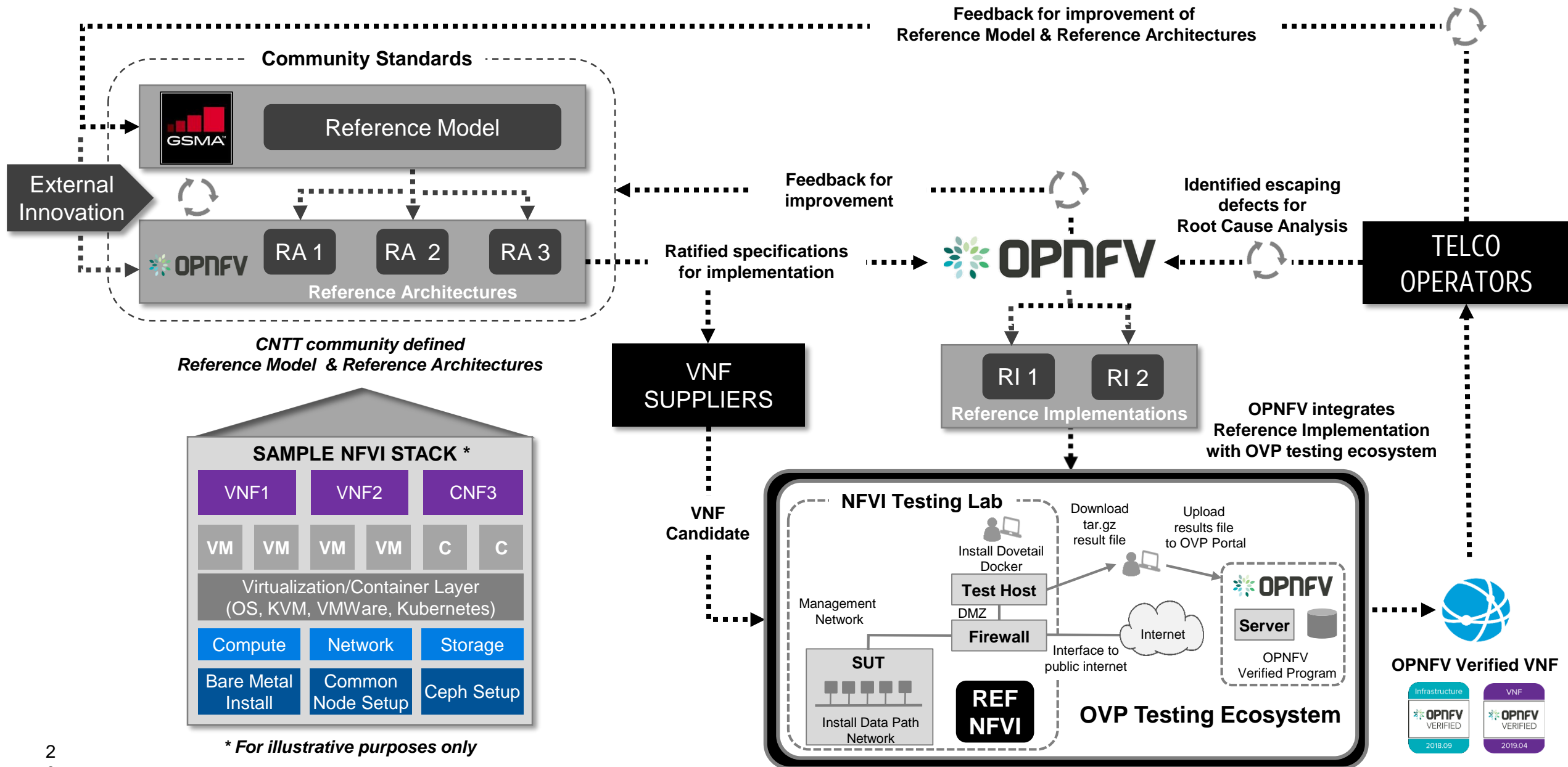
### Common NFVI Lifecycle

*Establish an open-sourced end-to-end ecosystem to deliver, maintain & continually improve the infrastructure delivery lifecycle.*

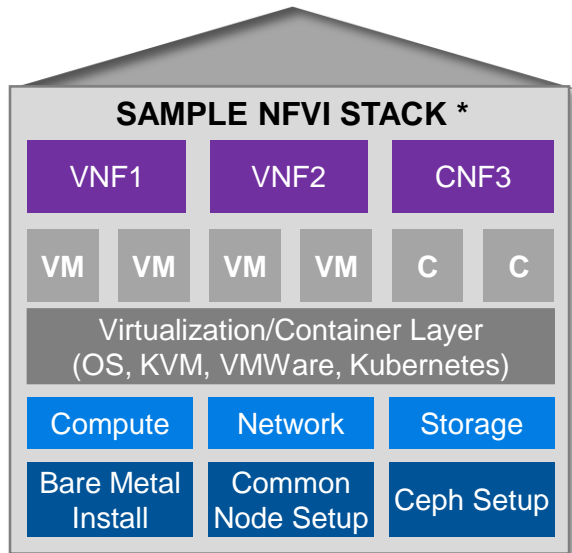
**FUTURE**

# Appendix

# COMMON NFVI LIFECYCLE FRAMEWORK



*CNTT community defined Reference Model & Reference Architectures*



\* For illustrative purposes only

# CNTT | Housekeeping | Call Logistics

Leader(s): Jim Baker, Jonathan Beltran, Rick Tennant

Contributor(s): XXX

## Weekly Calls and Meeting Minute Links

Date/Time	Working Group	Purpose	Target, Audience, Messages	Online Bridge	Meeting Minutes
Tue/12pm UTC	CNTT 'RA Master' Progress	CNTT Reference Architecture development	RA contributors, technology SMEs, define and refine architectures.	<a href="#">New Zoom link</a>	<a href="#">See New LFN CNTT RA Wiki</a>
Wed/11am UTC	CNTT Technical Steering Meeting	Steering of CNTT technology	Chapter Leads, decision making to ensure technology component delivery.	<a href="#">New Zoom link</a>	<a href="#">See New Technical Steering Wiki</a>
Thu/12pm UTC	CNTT Governance	Initiative strategic steering and governance.	CNTT Governance Leads, decision making to ensure non-technical component delivery.	<a href="#">New Zoom link</a>	<a href="#">See New LFN CNTT Gov Wiki</a>
Thu/11am UTC	CNTT Reference Model Progress	Focus on Taskforce initiatives: Reference Models & Architectures	RM contributors, technology SMEs, define and refine model	<a href="#">New Zoom link</a>	<a href="#">See New LFN CNTT RM Wiki</a>
Various	RM & RA Chapter Meetings	Develop chapters in RM & RA specifications	RA & RM Chapter leads, contributors, technology SMEs, deep dive define and refine specifications.	<a href="#">Github link</a>	Chapter Leads should request Zoom access from Jim Baker

# CNTT | Organization | Release Approach

Timeframes Not To Scale

