# CNTT Technical F2F Work Shop, Châtillon, France, July 23-25, 2019

July 23-25 Châtillon, France


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# General information

## When

**July 23rd - July 25th 0900 - 1800 CEST**

## Where

**Orange Gardens**

44 avenue de la République

Châtillon (South Paris)

Public transport info

On site parking requires pre-approval

## Upon Arrival

A person will be available for your registration on-site. You need to be pre-registered.

Event registration can be found at this link: https://www.linuxfoundation.org/calendar/cntt-f2f-meeting/

The person will then guide you towards the meeting room: 3B Building on the 2$^{nd}$ floor. Follow the signs.

All sessions will be in the main room : November (ex Giant100) (unless otherwise specified) - Other breakout rooms: December and February

## Remote Attendees

Please join the meeting on the zoom bridge: https://zoom.us/j/999652583

You will be muted on join. If you join by telephone use *6 to unmute. Joining by computer audio select the unmute option.

Remote presenters should use a headset when presenting as the built-in speaker/microphone on your laptop have horrible acoustics and are really hard to understand after going through the conference room PA system

# Overview

This three day face-to-face will be a working session to bring the CNTT work announced at ONS North America to the broader technical community. It is meant to be a collaborative technical working session with the aim of progressing Release 1 of the CNTT Reference Model and Reference Architecture. Please come prepared to roll up your sleeves and dive into hands-on work. Attendees should register to make sure we have capacity correct for all the resources.

In preparation for the meeting, please see the following GitHub repositories for the current working drafts. Please note that these are working drafts. Please also hold off on submitting Pull Requests on these documents until we've all had a chance to level-set and discuss at this F2F meeting.

**UPDATED: The CNTT working draft links below have been updated to represent the working draft version to be used during the meeting. Please review the updated drafts before the meeting.**

Current CNTT Reference Model Working Draft: https://github.com/cntt-n/CNTT/

Rendered (i.e. formatted, more readable) version of the current CNTT Reference Model Working Draft: https://cntt-n.github.io/CNTT/

Working Draft Process Information: https://cntt-n.github.io/CNTT/logistics/#approval_process

Each of the sessions are assigned an etherpad that can be used by all attendees to take notes and collaborate on next steps. Link to the master Etherpad with links to the complete session set: https://etherpad.opnfv.org/p/CNTT_F2F_Meeting_Notes_July2019

# Agendas

## Agenda Day 1 - 23 Jul 2019

| | notes | Day 1 | Slides | Recordings |
|---|---|---|---|---|
| **(09:00)**<br>**15 min**<br>**Tue** | **Day 1 notes** | ***Welcome Message***<br>Orange<br>***Housekeeping***<br>Orange<br>*Conference Bridge, WiFi, Breaks and Lunch, Room Access* | | welcome.mp4<br>poor audio quality |
| **(09:15)**<br>**10 min**<br>**Tue** | **Day 1 notes** | ***Agenda Review***<br>Jonathan Beltran, AT&T<br>*Brief overview of agenda and how organized* | CNTT_Par...iew.pptx | agenda.mp4<br>poor audio quality |

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| **(09:25)**<br><br>**35 min**<br><br>**Tue** | **Day 1 notes** | ***Opening Remarks***<br><br>David Hutton, GSMA, Heather Kirksey, Linux Foundation<br><br>*Opening round table remarks to outline long-term expectations, perspectives* | | <br>poor audio quality |
| | | **Current Status And Vision** | | |
| **(10:00)**<br><br>**30 min**<br><br>**Tue** | **Day 1 notes** | **Overview & Level Setting**<br><br>Mark Cottrell, AT&T, Rabi Abdel, Vodafone<br><br>*Review and expand on global framework one pager, provide insight into longer term vision working with GSMA and LF, provide guidance on future release scope backlog.* | <br> | <br>Poor audio quality |
| **(10:30)**<br><br>**30 min**<br><br>**Tue** | | Break | | |

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| **(11:00)**<br><br>**30 min**<br><br>**Tue** | **Day 1 notes** | **Community Technology Update**<br><br>**Facilitator:** Rabi Abdel, Vodafone<br><br>*Reference Model vs Reference Architecture vs Reference Implementation. MVP Concept.* | | <br><br>Poor audio quality |

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| **(11:30)**<br><br>**30 min**<br><br>**Tue** | **Day 1 notes** | **Panel Discussion: Reference Model: Overall Concepts**<br><br>**Facilitator:** Beth Cohen, Verizon<br><br>ETSI NFV ISG - Presented by Jorg Aelken, Ericsson<br><br>Pankaj Goyal, AT&T<br><br>Rabi Abdel, Vodafone<br><br>Mehmet Toy, Verizon<br><br>**Community Input**<br><br>*Related concepts, i.e. ETSI. How does a Reference Model help achieve the community's objectives?, Agreeing on the CNTT concept. Feedback on CNTT concept.* | | <br><br>First part of recording has bad audio |

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| **(12:00)**<br><br>**30 Min**<br><br>**Tue** | **Chap1 notes** | **Reference Model Chapter 1 Introduction (R1) – Status Review, Q&A**<br><br>Chapter Description: Overview, problem statement, scope, bogo-meter, & roadmap<br><br>**Intro:** Jonathan Beltran, AT&T<br><br>**Facilitators:** Beth Cohen, Verizon<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | | |
| **(12:30)**<br><br>**60 min**<br><br>**Tue** | | Lunch | | |

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| **(13:30)**<br><br>**30 Min**<br><br>**Tue** | **Chap2 notes** | **Reference Model Chapter 2 VNF Requirements and Analysis (R1) – Status Review, Q&A**<br><br>Chapter Description: Analysis of requirements & NFVi profiles<br><br>**Facilitator:** Tom Kivlin, Vodafone Group<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | | <br><br>Recording truncated - equipment failure |

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| **(14:00)**<br><br>**60 Min**<br><br>**Tue** | **Chap3 notes** | **Reference Model Chapter 3 Infrastructure Abstraction – Status Review, Q&A**<br><br>Chapter Description: Model, exposed vs. internal, exposed & internal NFVi capabilities, metrics, & constraints<br><br>**Facilitators:** Sabine Demel, DT; Mark Shostak, AT&T<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | <br> | |
| **(15:00)**<br><br>**15 min**<br><br>**Tue** | | Break | | |

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| **(15:15)**<br><br>**30 Min**<br><br>**Tue** | **Chap4 notes** | **Reference Model Chapter 4 Catalog (R1) – Status Review, Q&A**<br><br>Chapter Description: Compute flavors, instance types, naming conventions<br><br>**Facilitator:** Tom Kivlin, Vodafone Group<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | | |

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| **(15:45)**<br><br>**30 Min**<br><br>**Tue** | **Chap5 notes** | **Reference Model Chapter 5 Reference NFVI SW Profiles and Configurations (R1) – Status Review, Q&A**<br><br>Chapter Description: Basic, Network, & Compute NFVi reference software profiles configuration, & security<br><br>**Facilitator:** Karine Sevilla, Orange<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | | |

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| **(16:15)**<br><br>**30 Min**<br><br>**Tue** | **Chap6 notes** | **Reference Model Chapter 6 Reference NFVI HW Profiles and Configurations (R1) – Status Review, Q&A**<br><br>Chapter Description: Compute, Network, Storage, & Security configurations<br><br>**Facilitator:** Pankaj Goyal, AT&T<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | | |

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| **(16:45)**<br><br>**30 Min**<br><br>**Tue** | **Chap7 notes** | **Reference Model Chapter 7 APIs and Interfaces (R1 – NFVI APIs) – Status Review, Q&A**<br><br>Chapter Description: NFVi APIs, supporting service APIs, acceleration interfaces & APIs, tool functionalities needed<br><br>**Facilitator:** Pankaj Goyal, AT&T, Mark Shostak, AT&T<br><br>*Review: Synopsis + Purpose + Goals + Maturity Status + Gaps + Feedback from Community* | ? Unknown Attachment | <br>day1_chap7.mp4 |

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| **(17:30)**<br><br>**30 Min**<br><br>**Tue** | **Day 1 notes** | **Day 1 – Wrap Up**<br><br>**Facilitator:** Jonathan Beltran, AT&T<br><br>Accomplishments<br><br>*What did we get done?*<br><br>*What did we gain alignment /agreement on?*<br><br>*What did we hear and do we need to adjust?*<br><br>*What do we need to collaborate further on?*<br><br>*Next steps* | | |

## Agenda Day 2 - 24 Jul 2019

| | notes | Day 2 | Slides | Recordings |
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| | | **Technology (Reference Model)** | | |
| **(09:00)**<br><br>**15 Mins**<br><br>**Wed** | | **Opening – Recap and Day Ahead**<br><br>**Facilitator:** Jonathan Beltran, AT&T | | |

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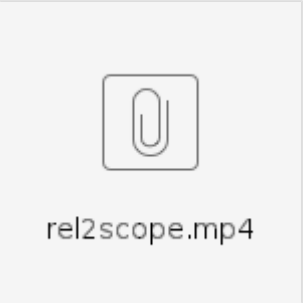
| **(09:15)**<br><br>**90 Mins**<br><br>**Wed** | **Backlog**<br><br>**Day 2 notes**<br><br>**Security notes**<br><br>**Operations notes** | **Reference Model: Release 2 Scope**<br><br>**Facilitator:** Walter Kozlowski, Telstra, Rabi Abdel, Vodafone, Mark Shostak, AT&T<br><br>*Reference Model Updates:*<br><br>*Refine 1-7 based on 'maturity level' (Incl. backlog from Day 1)*<br><br>*Finalize 8-11 Scope*<br><br>*Meaningful targets – how to manage from R1, what is backlog from R3, R4?*<br><br>*Detailed Release Timeline – Feedback / Doability / Issues / Concerns / Gaps* | |  <br> <br> <br> |
| **(10:45)**<br><br>**15 min**<br><br>**Tue** | | Break | | |

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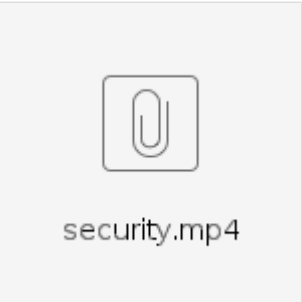
| **(11:00)**<br>**90 Mins**<br>**Wed** | **Day 2 notes** | **Technology WG overview**<br><br>**Facilitator:** Rabi Abdel, Vodafone<br><br>*Document Structure, Current Contributions framework, How to get involved* | | |
| **(12:30)**<br>**60 Mins**<br>**Wed** | | Lunch | | |
| **(13:30)**<br>**30 Mins**<br>**Wed** | **Chap8 notes** | **Chapter 8 (R1) – NFVI Security**<br><br>**Facilitator:** Beth Cohen, Verizon<br><br>This section needs to be expanded in Release 2. How much is this specific to NFVI? How much can we base this on existing security standards and best practices? Which standards apply? | |  |

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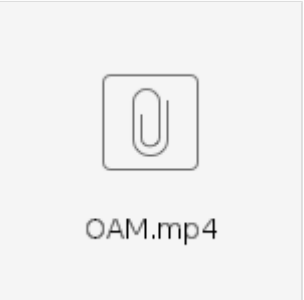
| | | • 8.1 Common standards.<br>  ◦ 8.1.1 Potential attack vectors<br>  ◦ 8.1.2 Testing demarcation points.<br>• 8.2 Operator responsibility.<br>• 8.3 VNF Vendors responsibility.<br>• 8.4 NFVI Vendors responsibility. | | |
| **(14:00)**<br><br>**60 Mins**<br><br>**Wed** | **Chap9 notes** | **Chapter 9 (R1) - Reference Model Development**<br><br>**Facilitator:** Mark Shostak, AT&T<br><br>*Infra OA&M* | |  |

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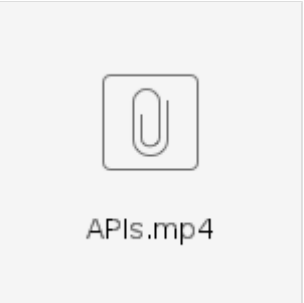
| **(15:00)**<br>**15 min**<br>**Wed** | | Break | | |
| **(15:15)**<br>**30 Mins**<br>**Wed** | **Chap7 notes** | **Chapter 7 (R1) – Reference Model Development**<br>**Facilitator:** Mark Shostak, AT&T<br>*API Interfaces* | |  |
| **(15:45)**<br>**45 Mins**<br>**Wed** | **Chap3 notes** | **Chapter 3 (R1) - Reference Model Development**<br>**Facilitator:** Sabine Demel, DT; Mark Shostak, AT&T<br>*(Description TBD)* | | |
| **(16:30)**<br>**30 Mins**<br>**Wed** | **Chap5 notes** | **Chapter 5 (R1) - Reference Model Development**<br>**Facilitator:** Karine Sevilla, Orange<br>(Description TBD) | | |
| **(17:00)**<br>**30 Mins**<br>**Wed** | **Chap6 notes** | **Chapter 6 (R1) - Reference Model Development**<br>**Facilitator:** Pankaj Goyal, AT&T<br>(Description TBD) | | |

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| **(17:30)**<br><br>**30 Mins**<br><br>**Wed** | **Chap1 notes**<br><br>**Chap2 notes**<br><br>**Chap4 notes** | **Chapter 1, 2, 4 (R1) – Reference Model Development**<br><br>**Facilitator:** Beth Cohen, Verizon, Tom Kivlin, Vodafone Group<br><br>A guided discussion of what needs to be in the introduction (Chapter 1), based on the content of the other chapters. C hapters 2 and 4 are both well along in the developmen t of the content, the objective in this discussion is to validate the approach that the initial team created. Do es this match with the underst anding of the requirement s by the vendor community? Are there missing pieces that need to be added? | | |
| **(18:00)**<br><br>**15 Mins**<br><br>**Wed** | **Day 2 notes** | **Day 2 – Wrap Up**<br><br>**Facilitator:** Jonathan Beltran, AT&T | | |

## Agenda Day 3 - 25 Jul 2019

| | notes | Day 3 | Slides | Recordings |
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| **(09:00)**<br>**15 Mins**<br>**Thu** | | **Opening – Recap and Day Ahead**<br>**Facilitator:** Jonathan Beltran, AT&T | | |
| | | **Technology (Reference Architecture)** | | |
| **(09:15)**<br>**90 Mins**<br>**Thu** | **Straw proposal** | **Panel Discussion: Reference Architecture: Principles**<br>**Facilitator:** Walter Kozlowski, Telstra<br>**Panel:** Karine Sevilla, Pankaj Goyal, Rabi Abdel<br>*How to Engage and Create*<br>*Role of Reverence Model and Reference Architectures*<br>*Reference Architectures Principles* | | |
| **(10:45)**<br>**15 min**<br>**Tue** | | Break | | |
| **(11:00)**<br>**90 Mins**<br>**Thu** | **Straw proposal** | **Reference Architecture #1: Straw-man Proposal**<br>**Facilitator:** Rabi Abdel, Vodafone; Mark Shostak, AT&T<br>*Create ToC for Reference Architecture R1*<br>*Setting meaningful targets, backlog*<br>*Detailed Release Timeline – Feedback / Doability / Issues / Concerns / Gap*<br>*Including adoption of OVP VNF Certification and NFVi verification*<br>*(align this with other open source bodies also)*<br>*How to cooperate on and create when we leave here.* | | |
| **(12:30)**<br>**60 Mins**<br>**Thu** | | Lunch | | |
| | | **Support and Sponsorship** | | |

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| **(13:30)**<br><br>**60 Mins**<br><br>**Thu** | **OVP CVC** | **Enhancements to Test projects / OVP & CVC ecosystem**<br><br>**Facilitators:** Rabi Abdel, Vodafone, Heather Kirksey, Linux Foundation<br><br>*Vision:*<br><br>*Describe current OVP/CVC vision and relation to CNTT, impact on OPNFV, ONAP, etc.*<br><br>*Understanding the ecosystem (who, what, where, how?):*<br><br>*Existing Test project / OVP ecosystem. CI/CD processes and procedures, security, etc. What in-flight projects are impacted? Which does CNTT feed? Which feed CNTT? Which are obsoleted? Where are there opportunities for improvement? What else does CNTT need to consider?*<br><br>*Realization:*<br><br>*What are the real steps in the journey? How do we reveal the reference platform profiles and architectures into OPNFV code? How do we go from model to arch to implementation to various project code updation? How could/should it work from a practical perspective?*<br><br>*What will help us facilitate release management?*<br><br>OPNFV Project Plan:<br><br>*What shall be our approach? What are the key components?* | | |
| **(14:30)**<br><br>**60 Mins**<br><br>**Thu** | **OVP CVC** | **Reference Implementation / OVP & CVC ecosystem**<br><br>**Facilitator: Jim Baker - Linux Foundation, Bin Hu - AT&T, Fu Qiao - China Mobile**<br><br>*OVP Infrastructure:*<br><br>*What enables smooth transitions? Where and how do reference models, architectures, implementations get hosted? How to make seamless translations between GSMA OPNFV addressable works? Demarcations with other bodies?*<br><br>*Potential topic list:*<br><br>1. OPNFV plans (leveraging CVC, TAC and OPNFV TSC) to ingest CNTT deliverables in terms of **reference architecture implementations** from CNTT, **enhancements to certification entrance / exit criteria** from CNTT and/or **test case contributions** from CNTT as it relates to NFVI VNF certification.<br>2. OPNFV request of CNTT to support, aid, contribute, etc. to #1 above<br><br>*'Project Management':*<br><br>*What needs to be aligned to ensure all workloads come up and all work (so that VNF certification testing can begin?); Tasks? Deliverables? Processes? Release Timetables* | | |

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| **(15:30)**<br>**15 min**<br>**Tue** | | Break | | |
| | | **Where Do We Go From Here** | | |
| **(15:45)**<br>**90 Mins**<br>**Thu** | **Next Steps** | **Panel Discussion: Adoption Strategy / Membership**<br><br>**Facilitator:** Mark Cottrell, AT&T, Rabi Abdel, Vodafone, David Hutton, GSMA, Heather Kirksey, Linux Foundation, Jeff Collins, Ericsson, Jonne Soininen, Nokia<br><br>*Establish metric targets as part of value propositions:*<br><br>*VNF Operational efficiency & Innovation acceleration, Cut amount of internal testing to be done by SPs, Accelerate Time To Market, Improve Quality, Reduce Costs, Reduce Barriers To Entry*<br><br>*Examples:*<br><br>*Reduction in testing and integration costs, Reduction in certification time, Reduction in defects, Reduction in operational costs…*<br><br>*What is overall message:*<br><br>*"This is a GSMA OPNFV jointly supported activity...", Adoption of Ref Model and Architectures (as part of RFQ process), Collaborative Marketing*<br><br>*Leveraging Media Relationships:*<br><br>*Telecom TV. SM alliances. SDX Central articles. Talking to analysts. Meetup Groups.* | | |

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| **(17:15)**<br><br>**45 Mins**<br><br>**Thu** | **Next Steps** | **Closing Session & Next Steps**<br><br>**Facilitator:** Jonathan Beltran, AT&T<br><br>*Accomplishments:*<br><br>*What did we get done? What did we gain alignment/agreement on? What did we sign-off on?*<br><br>*What still needs work?*<br><br>*Follow ups:*<br><br>*What do we need follow up on? Who are they assigned to?*<br><br>*Next steps:*<br><br>*What are our next steps? With OPNFV / OVP / CVC? With GSMA? With Task Force? With other stakeholders?*<br><br>*Calendar and Schedule:*<br><br>*Review and confirm remote meetings. Review and confirm face-to-face meetings*<br><br>*Session Review:*<br><br>*Give everyone an opportunity to speak into all the topics of the day: What went well? What didn't go so well? What should we change?*<br><br>**Closing Round Table Remarks:** David Hutton, GSMA, Heather Kirksey, Linux Foundation | | |

# Contacts

## Agenda contacts

*Mark Cottrell (mark.cottrell@att.com)*

*Jonathan Beltran (jonathan.beltran@att.com).*

*Rabi Abdel (*abdel.rabi@vodafone.com*)*

*Jim Baker (jbaker@linuxfoundation.org)*

## Site Contacts

Vincent Danno (vincent.danno@orange.com)

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## A/V Contacts

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# Background Materials

# Additional Info

## Templates

CNTT_Par...1.1.pptx

## Evidence

## ToDo List

- Travel safely!
- Engage in active listening/note taking