

Common NFVI Telco Taskforce

Antwerp Workshop

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[RM Chapter 7 -Security]

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 THE **LINUX** FOUNDATION



Security Objectives

Secure by Design at delivery

Networking functions must be designed with common security principles and standards.

- Perform VNF security validation/certification using CNTT reference implementations
- Ensure the OPNFV Verification Program for NFVi and VNFs meet CNTT Security design principles and requirements

Security Areas

- Platform Security
- Workload Security
- VNF Security

Discussion Items

Core Infrastructure Initiative badging

Opportunities for collaboration and partnerships in Security Areas:

How security fits within OVP

Options for Code Quality Scanning

Where we are today?



The OPNFV Security has CII Best Practices badging

The program is following [Linux Foundation \(LF\) Core Infrastructure Initiative \(CII\)](#)

“Best Practices badge is a way for Free/Libre and Open Source Software (FLOSS) projects to show that they follow best practices. Projects can voluntarily self-certify, at no cost, by using this web application to explain how they follow each best practice. The CII Best Practices Badge is inspired by the many badges available to projects on GitHub. Consumers of the badge can quickly assess which FLOSS projects are following best practices and as a result are more likely to produce higher-quality secure software.”

This shows a level of trust between various Linux Foundation projects and our users, we use security-conscience development processes that produce high quality software

- <https://bestpractices.coreinfrastructure.org>
- <https://wiki.opnfv.org/display/security/Security+Home>

Who is using the Core Infrastructure initiative badging?

Sponsored by the Linux Foundation

Widespread adoption

Includes:

- OPNFV
- OpenStack
- ONAP
- Kubernetes



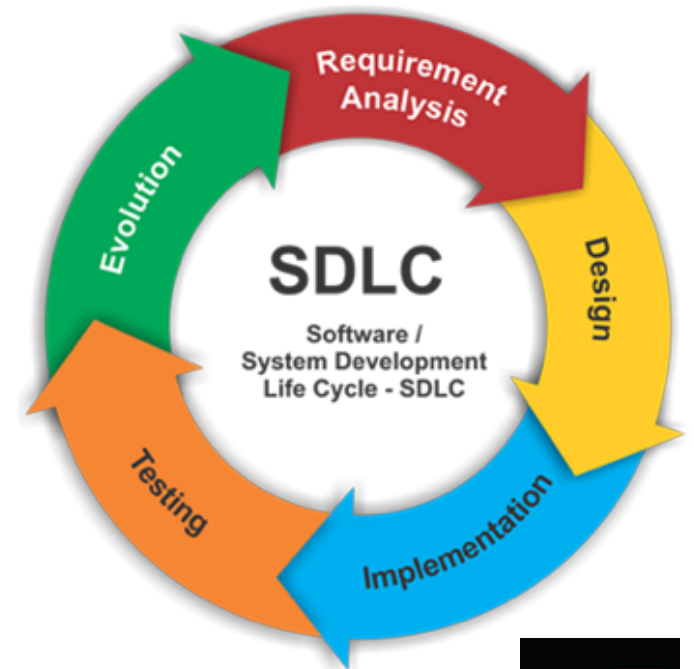
What are our opportunities in partnerships?

Develop a functional security test life cycle that can be used to ensure security compliance within the OVP process:

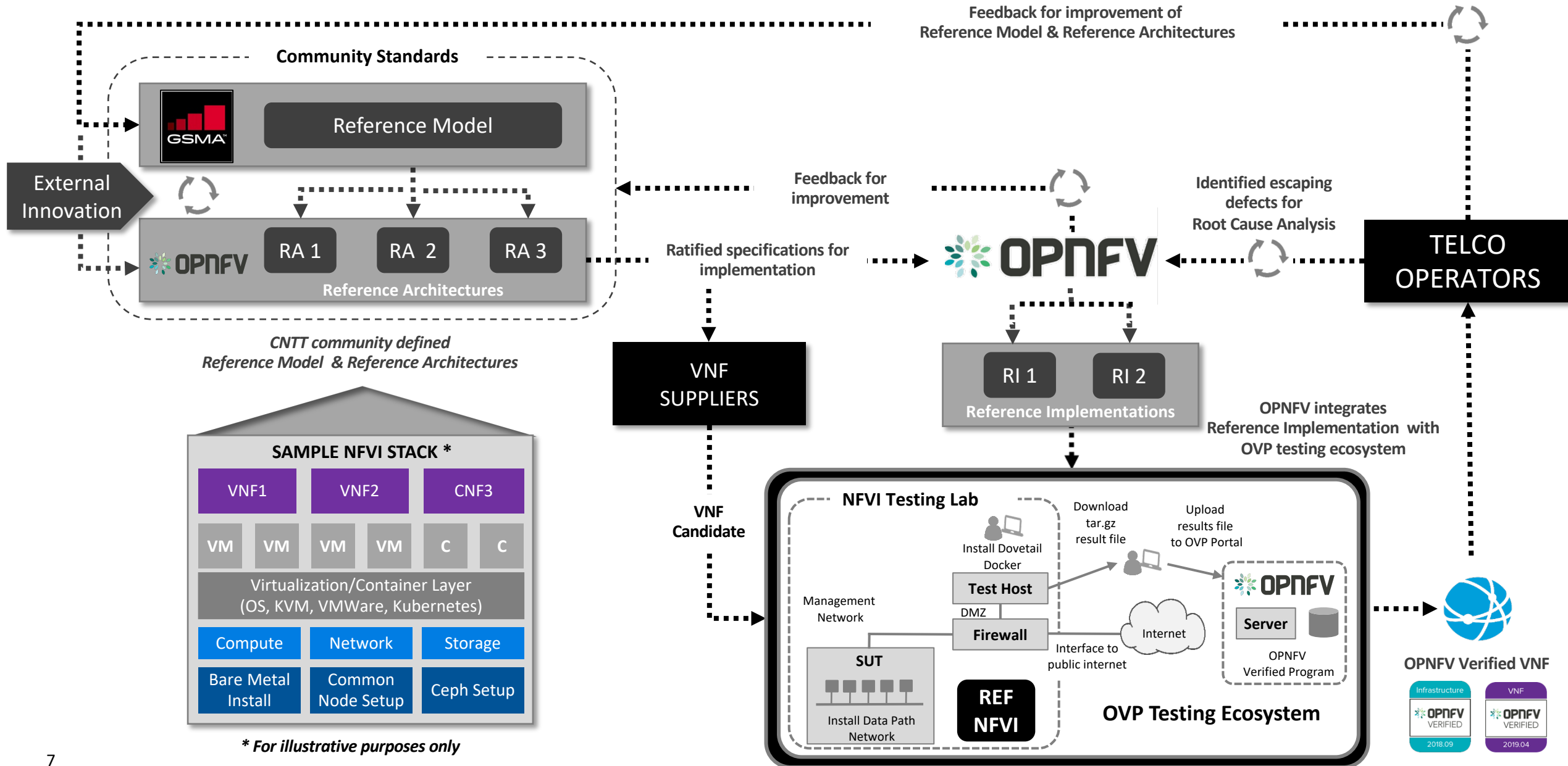
Become an active participant in the OPNFV Security Working Group, focus on functional test case creation

Create testing tickets & artifacts > slotting tests to releases > managing backlog

- Platform
 - For Reference Implementation 1, work with OpenStack
- Workload/Operator
 - CNTT member's best practices (Sweet Spot)
- VNF
 - Partner with ONAP and with VNF vendors on development practices
 - ONAP has a large head start in developing VNF security test cases



CNTT NFVI LIFECYCLE FRAMEWORK



Software Code Quality

Do we have anything to consider with centralized security scanning to increase VNF onboarding velocity? Can we do it with self-attestation from the VNF vendors?

For example, AT&T requires:

Vendors use industry recognized software testing suites and perform:

- Automated static code review with remediation of Medium/High/Critical security issues. The tool used for static code analysis and analysis of code being released must be shared.
- Dynamic security tests with remediation of Medium/High/Critical security issues. The tool used for Dynamic security analysis of code being released must be shared.
- Penetration tests (pen tests) with remediation of Medium/High/Critical security issues.
- Methodology for ensuring security is included in the Agile/DevOps delivery lifecycle for ongoing feature enhancement/maintenance.

Workload Security

Do we integrate with the OPNFV End User Advisory Group and/or Yardstick?

Ability to ensure that the configuration of the control plane and NFVI meet general security policies of the service provider.

The ability of VIMs to leverage and be protected by open source tools and best practices for security hardening, can be verified with functional testing such as:

- real-time vulnerability scanning
- network intrusion and host intrusion
- security audits
- open source scanning for licenses, vulnerabilities, and known defects
- compute host software configuration
- image software configuration
- real-time installation from a local, pre-scanned package/repo/image/container cache

- <https://wiki.opnfv.org/display/EUAG/Security+and+Policy>

Appendix