



ONAP

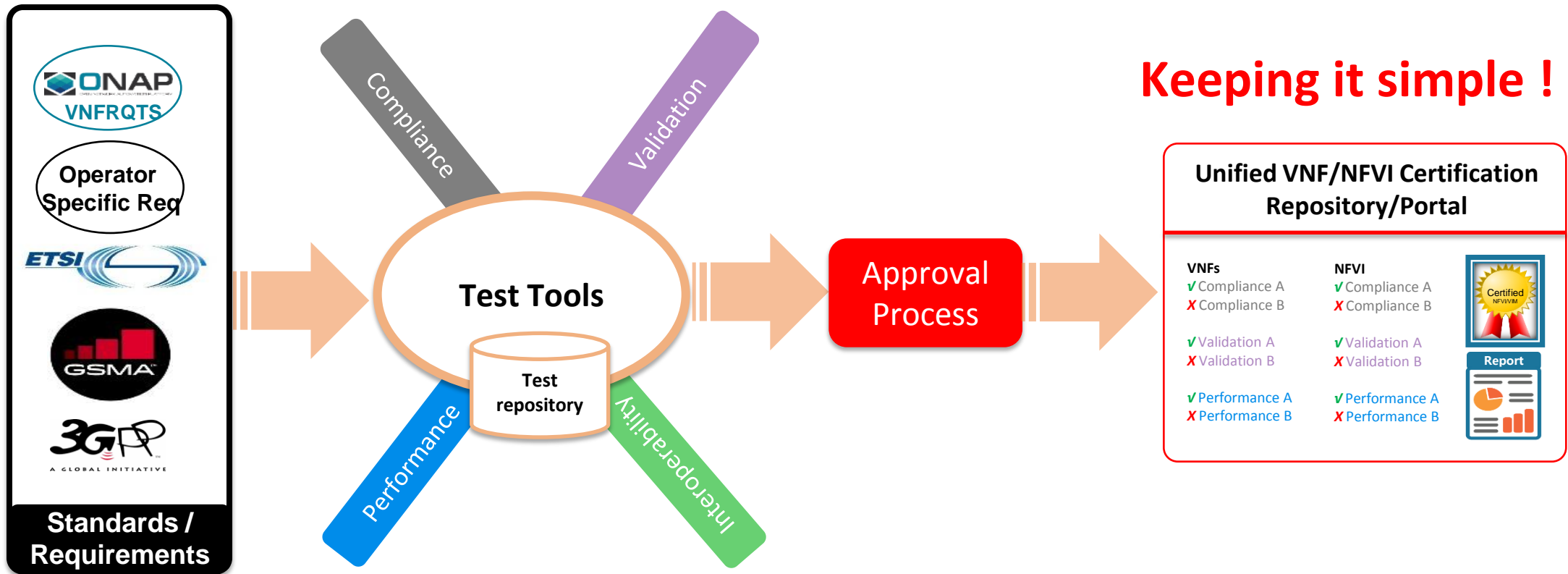
OPEN NETWORK AUTOMATION PLATFORM

OVP TOSCA VNF Validation Testing on ONAP

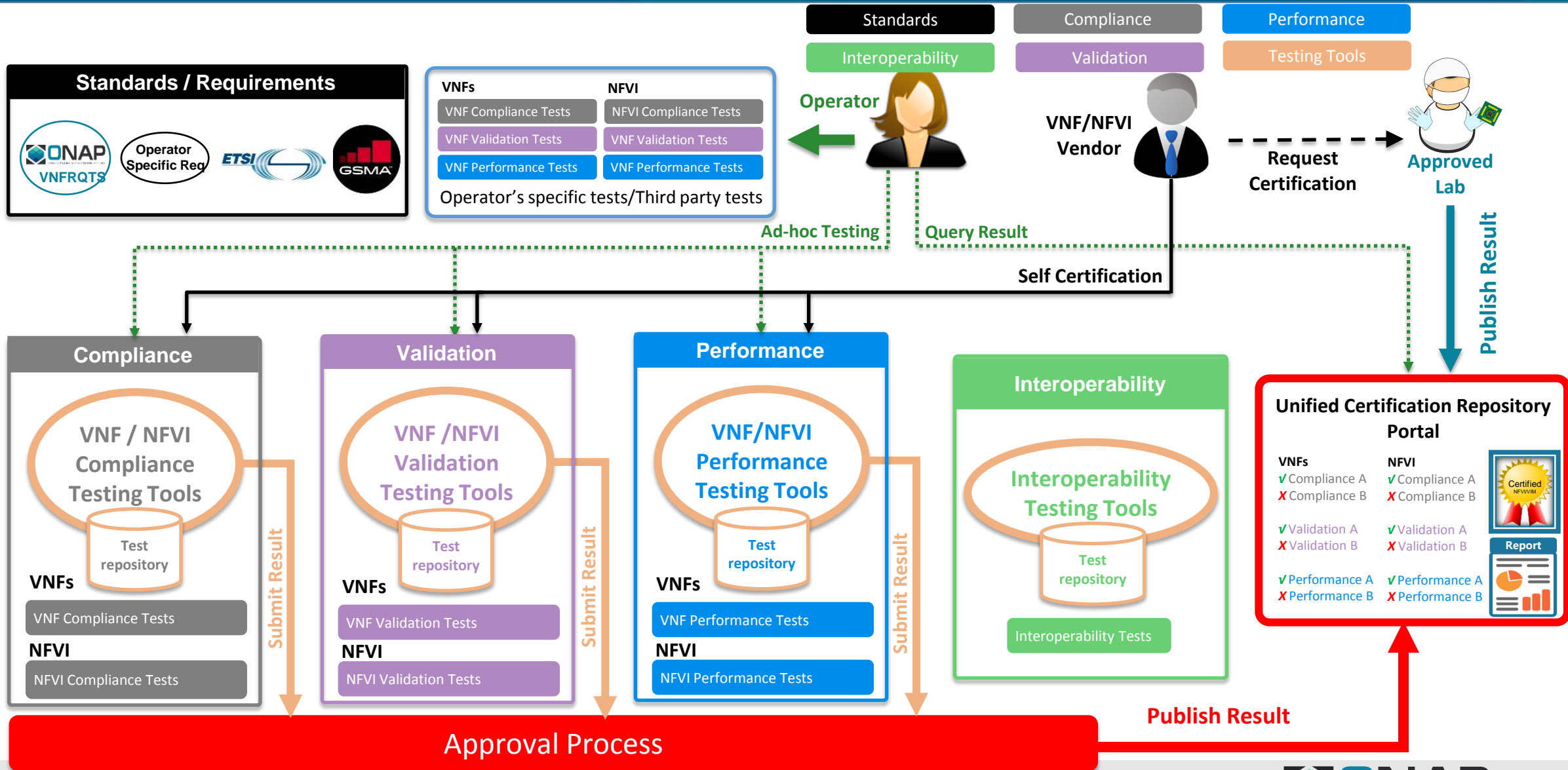
Yan Yang(China Mobile)

Kanagaraj Manickam (Huawei)

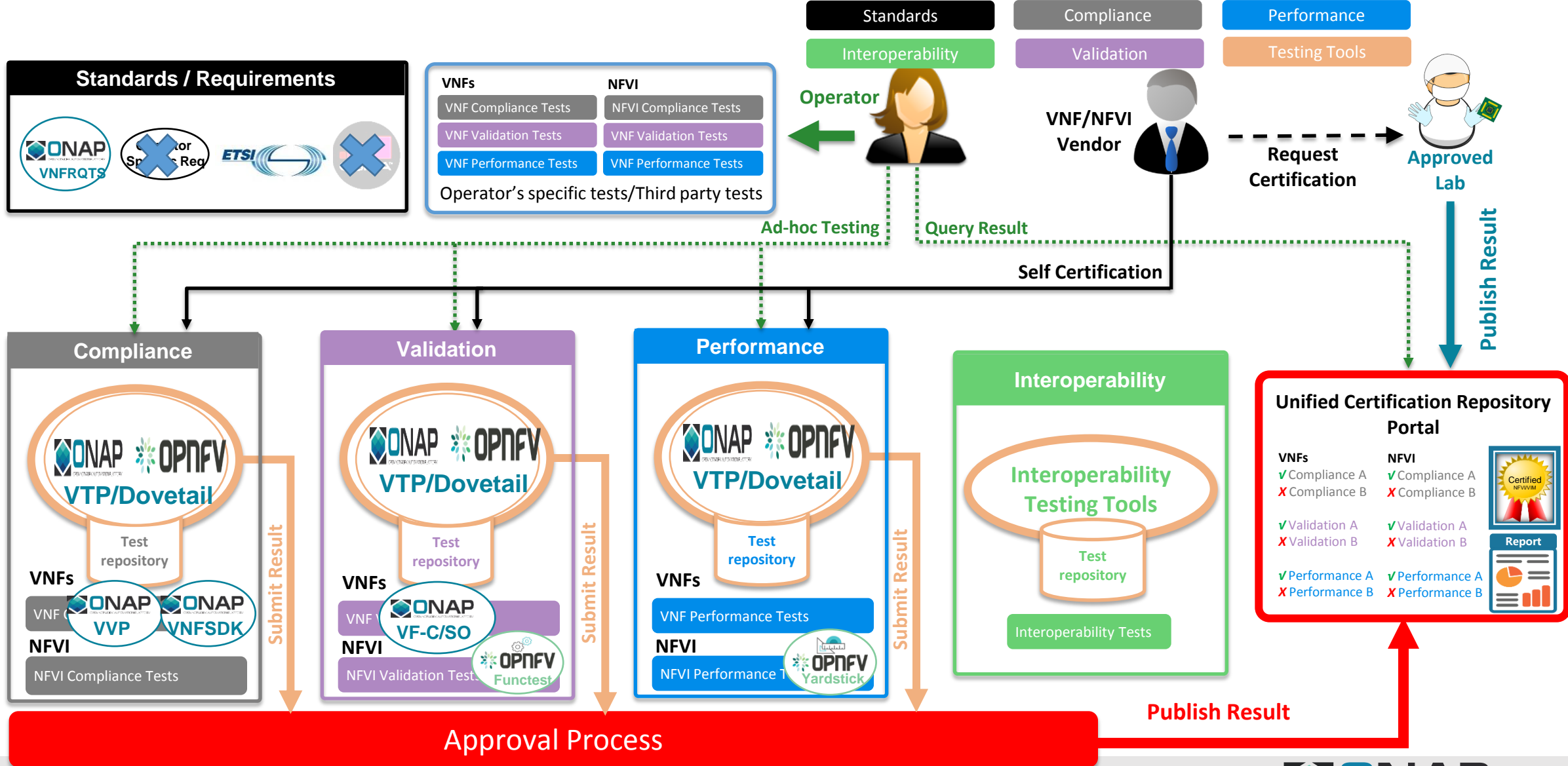
CVC (Compliance and Verification Committee) Objective



CVC E2E Vision



CVC Current Status



OVP (OPNFV Verification Program)

In April 2019, the Linux Network Foundation released the OVP-VNF work plan to achieve compliance, validation and performance testing requirements, officially launched ONAP-based VNF certification testing work.

In September 2019, the OVP-VNF test version 1.0 will be officially released.


OVP for VNF

VNF Requirements.

- 789 numbered requirement in Casablanca
- Of which 634 are MUST/MUST NOT.

✓ Included in last OVP release

VNF Compliance




VNF Compliance Tests

Testing Tools

VNF Test Platform (VTP)

+

VNF Validation



VNF Validation Tests

Testing Tools

VNF Test Platform (VTP)

⌚ Planned for next OVP release

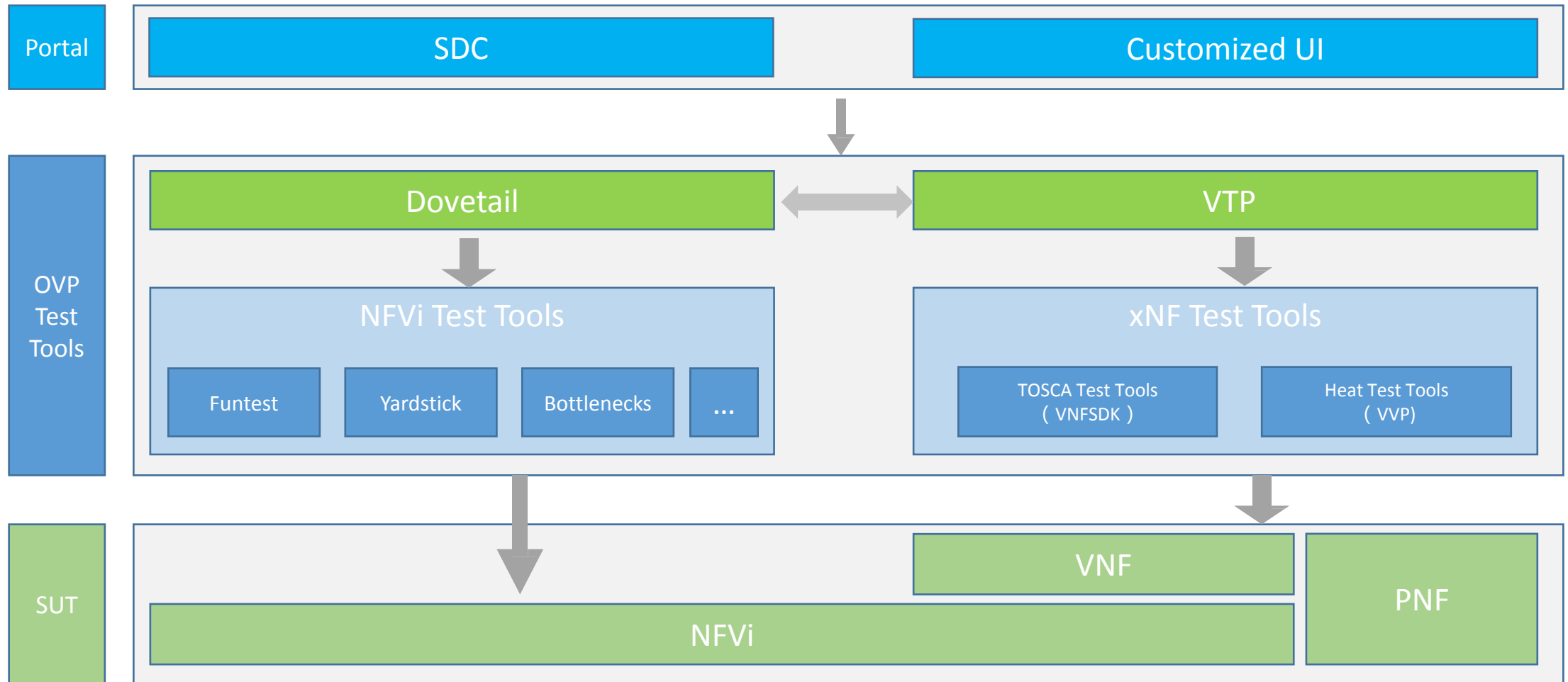
Tosca Compliance & Validation Test - VNFSDK

Cover 11 requirements
6 Tests in Casablanca ,26 Tests in Dublin

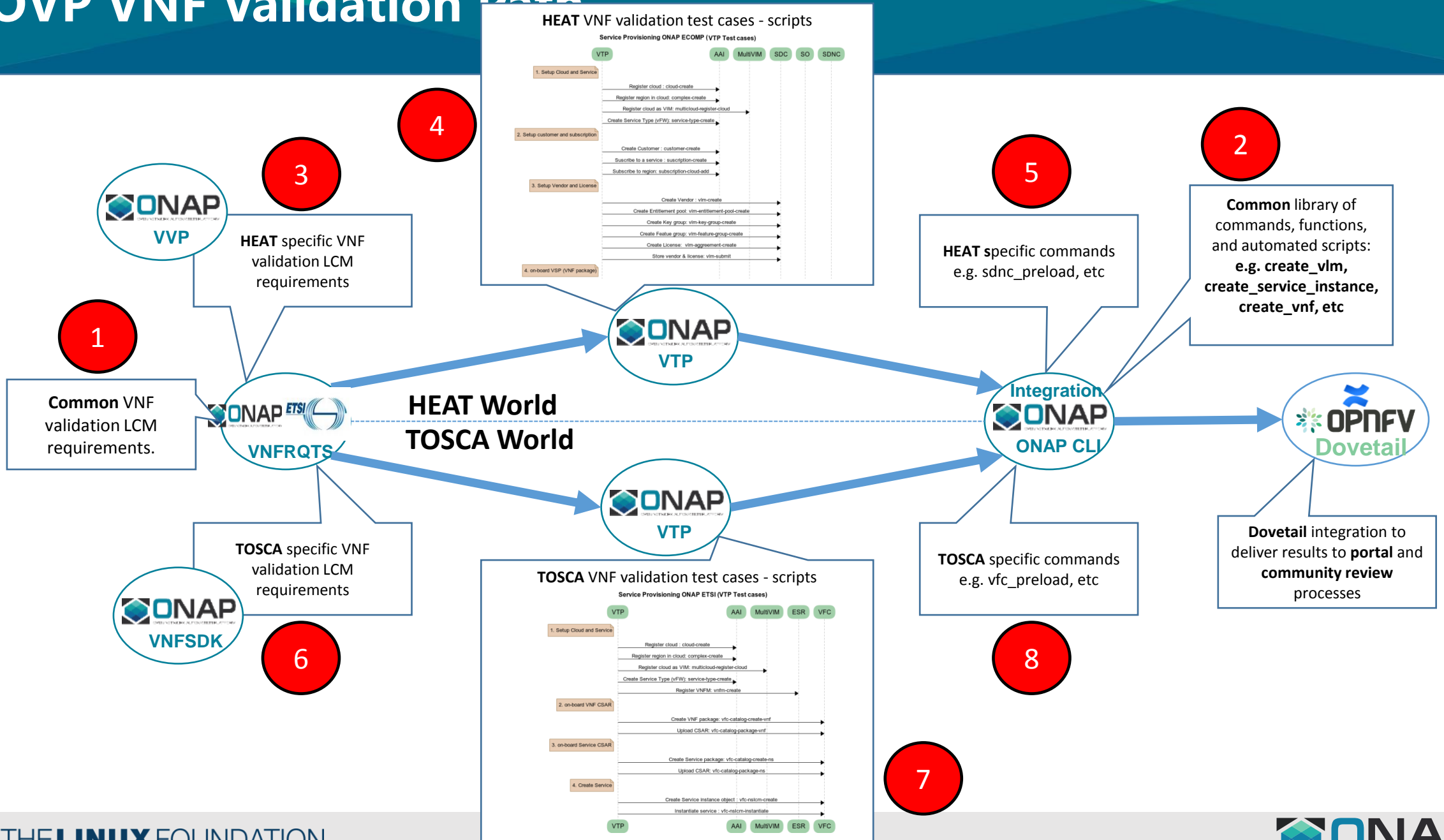
Heat Compliance & validation Test - VVP

Cover 298 Requirements
180 Tests

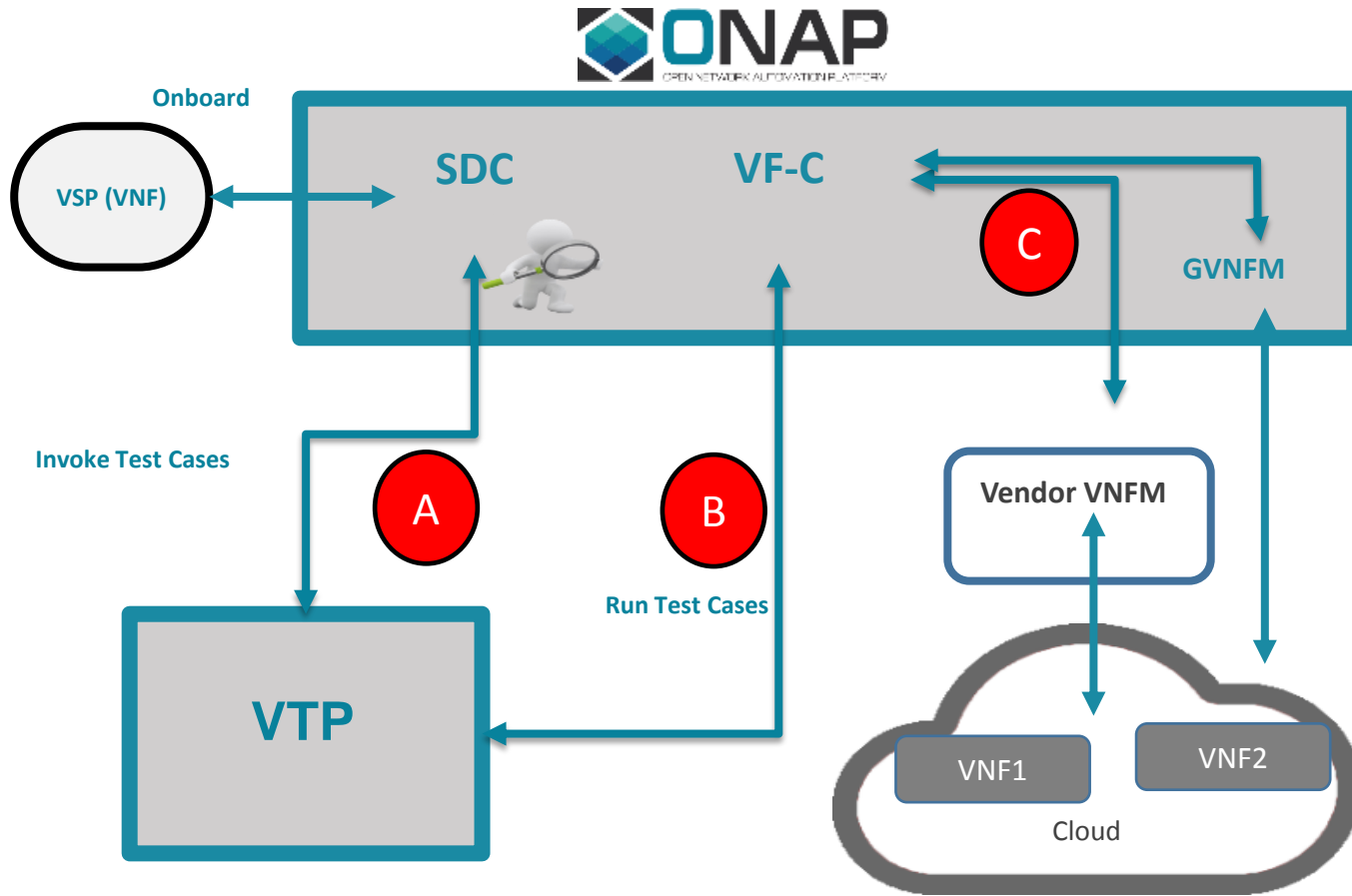
OVP Test Platform



OVP VNF Validation Path

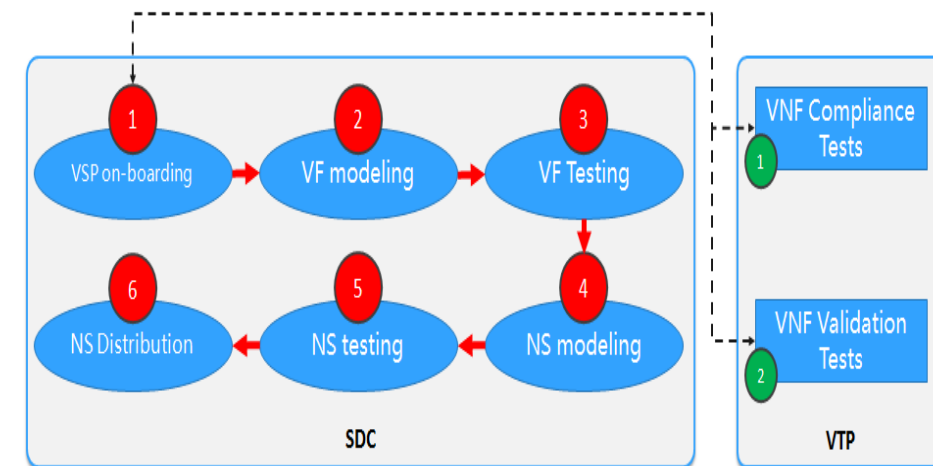


Tosca VNF Validation on ONAP



ONAP Project involved in VNF Validation

- SDC - Invoke the test case
- VNFSDK+CLI - Execute the test case
- VF-C – Execute NS/VNFLCM



VTP VNF Testing Platform

VNF Test Platform (VTP)

PERSONAS

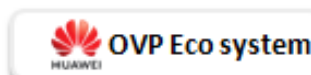
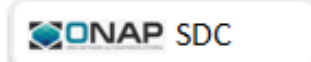


Operator



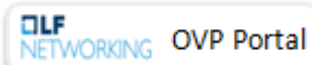
Vendor

PARTNERS / LABs



TMF Test API

VNF Test Platform (VTP)



Publish Results

Artifacts, Test case, profiles, results

SCENARIOS

SDO Test case ✓
(ETSI, GSMA, VNFREQS)

Operator Test case ✓

Vendor Test case ✓

Functional Test case

Lifecycle Test case ✓

Compliance Test case ✓

Performance Test case

Script Test case ✓

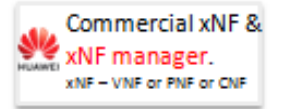
Java Test case ✓

Python Test case ✓

3rd-party registry / test-provider ✓

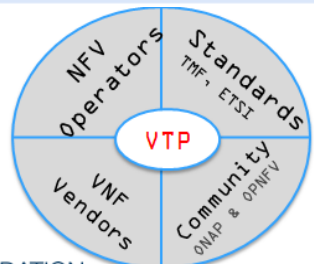
ENVIRONMENT

Standards, MANO, VIM, VNF



A **Test orchestration agile platform** to manage and automate different kinds of VNF testing and across different SUT environment like MANO, cloud, VNF, SDNCtrl, etc under one umbrella (OVP) and produce result analytics for VNFs

Built on **Open Command Platform (OCOMP)** – an ONAP CLI project



AGILE

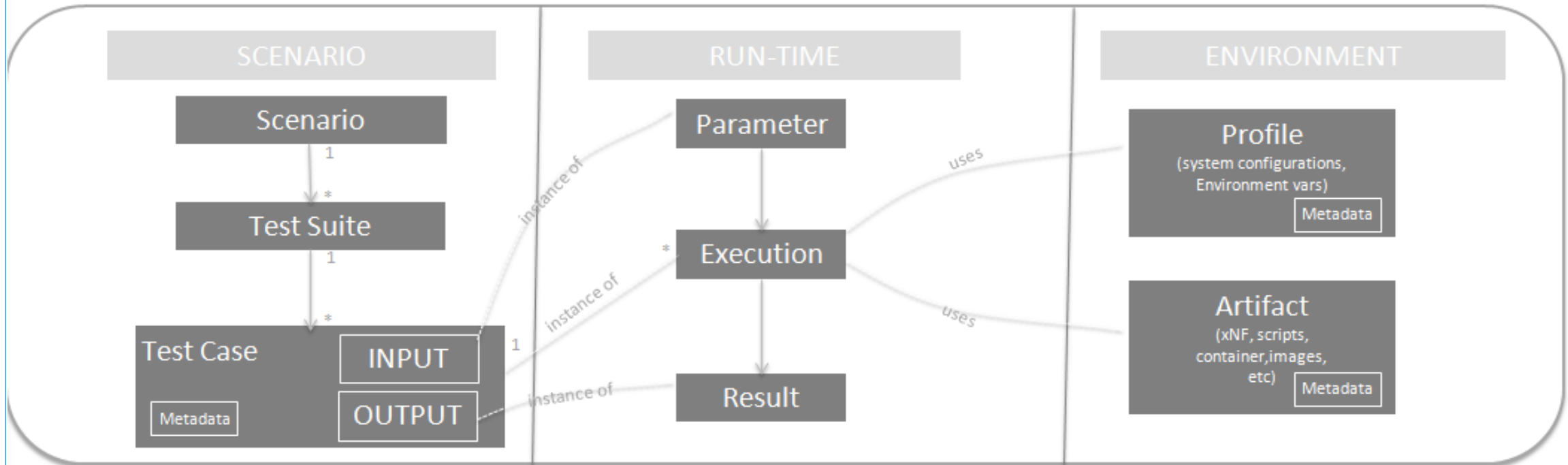
Test case **Modeling** & versioning (**standardization**)

Test case management

Test **orchestration**

Environment management

VTP Domain Model



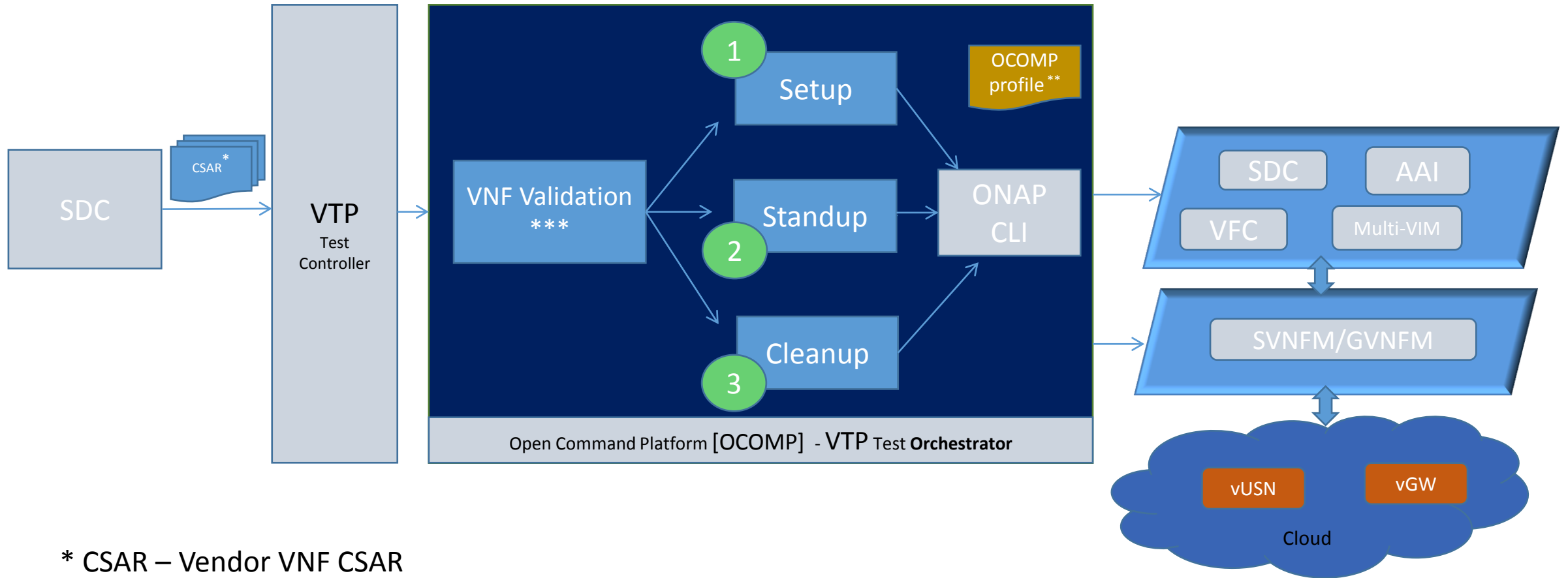
- ✓ **Scenario** is a logical entity to model any given situations for which test cases are made, ex: LFN OVP, vendor specific, functionality specific.
- ✓ **Test suites** is a logical entity that helps to group the tests into hierarchy with the notation x.y.z.
- ✓ **Test case** models the given real test case with required Inputs and Outputs.

- ✓ **Execution** models every execution of a given test case with a unique identifier.
- ✓ **Parameter** is an instance of Test case inputs, given by user while executing the test case.
- ✓ **Result** is an instance of Test case output, produced by VTP as part of Execution.
- ✓ While execution, user could use Profile and Artifacts.

- ✓ **Profile** models the System configurations and Pre-defined test case parameters. Ex: GSMA profile, OpenStack environment details, etc.
- ✓ **Artifact** models the given binaries of any nature like VNF, Scripts, configuration files, certificates, etc.
- ✓ **Metadata** models tagging to support searching and intent-based testing.

- ✓ Test case **results** are **searchable** based on artifact, profile, scenario, test-case, metadata as VTP captures every test case execution with parameters and results.
- ✓ Follows **Open Command Specification (OCS) 1.0**

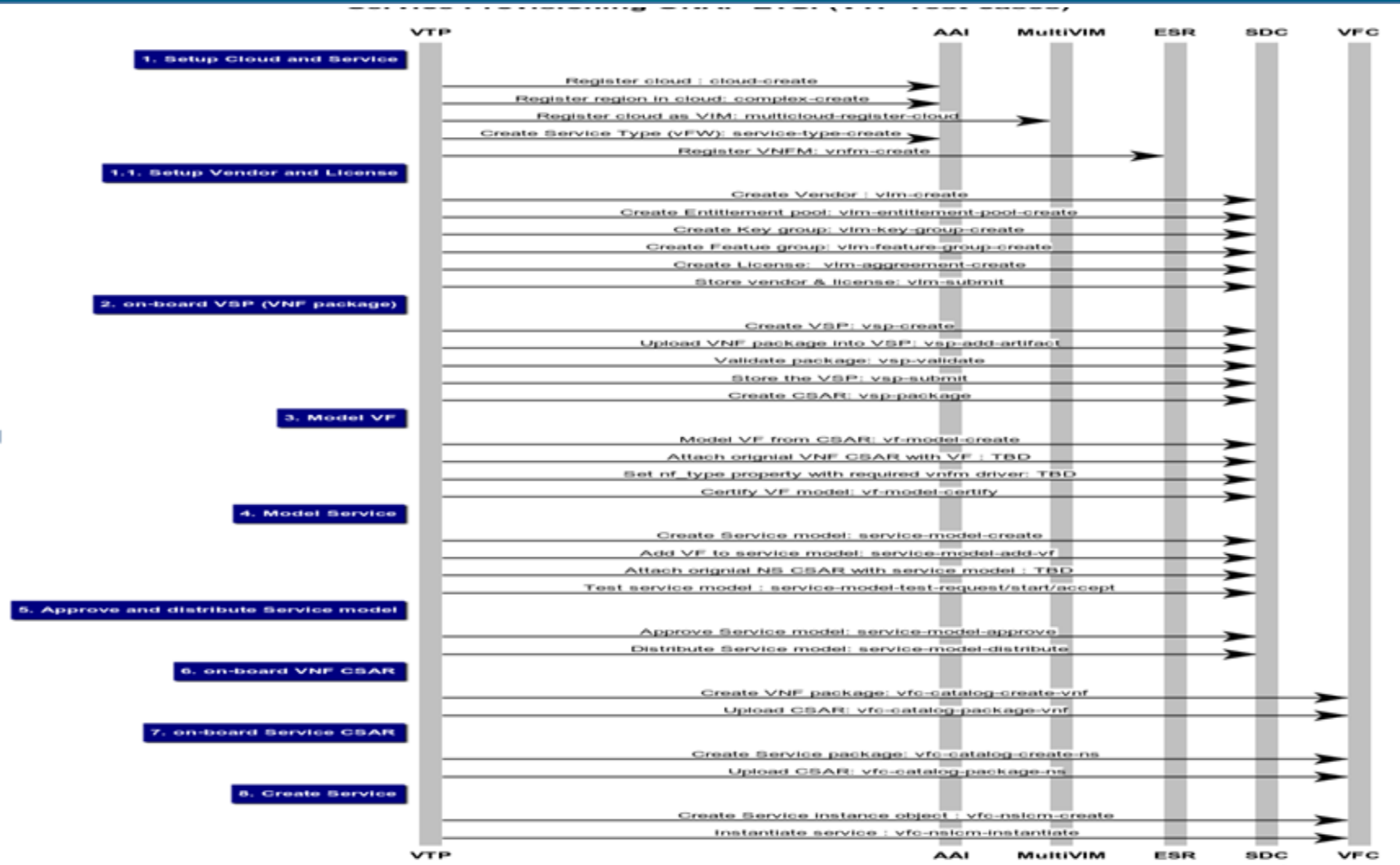
Tosca VNF Validation E2E Flow



* CSAR – Vendor VNF CSAR

** OCOMP profile – Stores ONAP services URL and credentials

Overall Work Flow for TOSCA VNF Validation



More Info : <https://wiki.linuxnetworking.org/display/LN/TOSCA+VNF+Validation+Planning>

vnf Validation | VNF validation as Test Orchestration

✓ OCOMP unifies the model and actions as ONAP managed object (using OCS YAML)

- same user experience across all ONAP services, Network services, VNF and use-cases.

✓ Develop once, share across roles Certification, testing, devops and production/automation.

- Saves everyone from duplicate effort spent on developing their own copy of same automation

✓ Every action available as its to different role

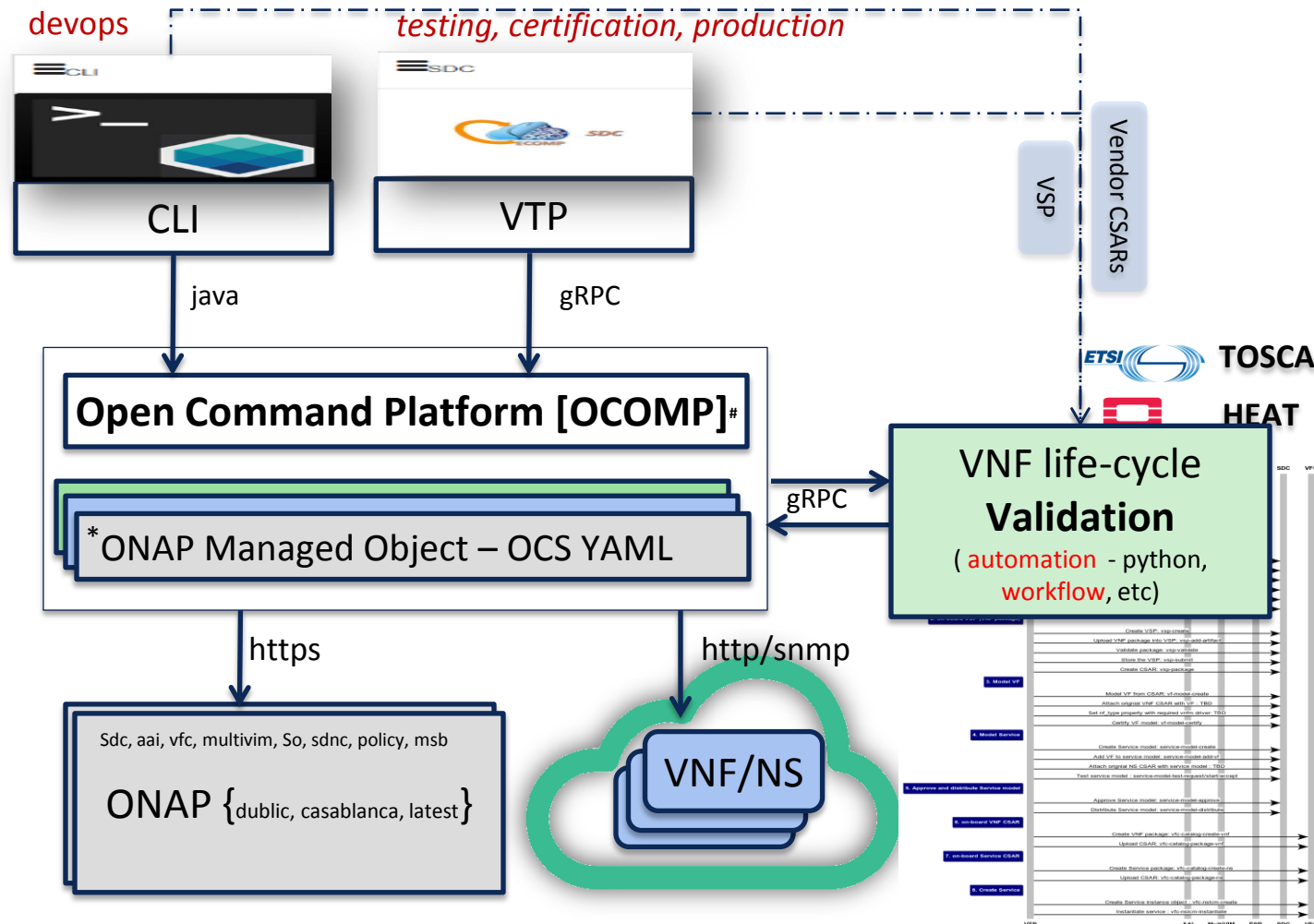
- as command from CLI console (devops)

- as test case from VTP (testing, certification, production)

✓ Tester fills the user role in the absence of user

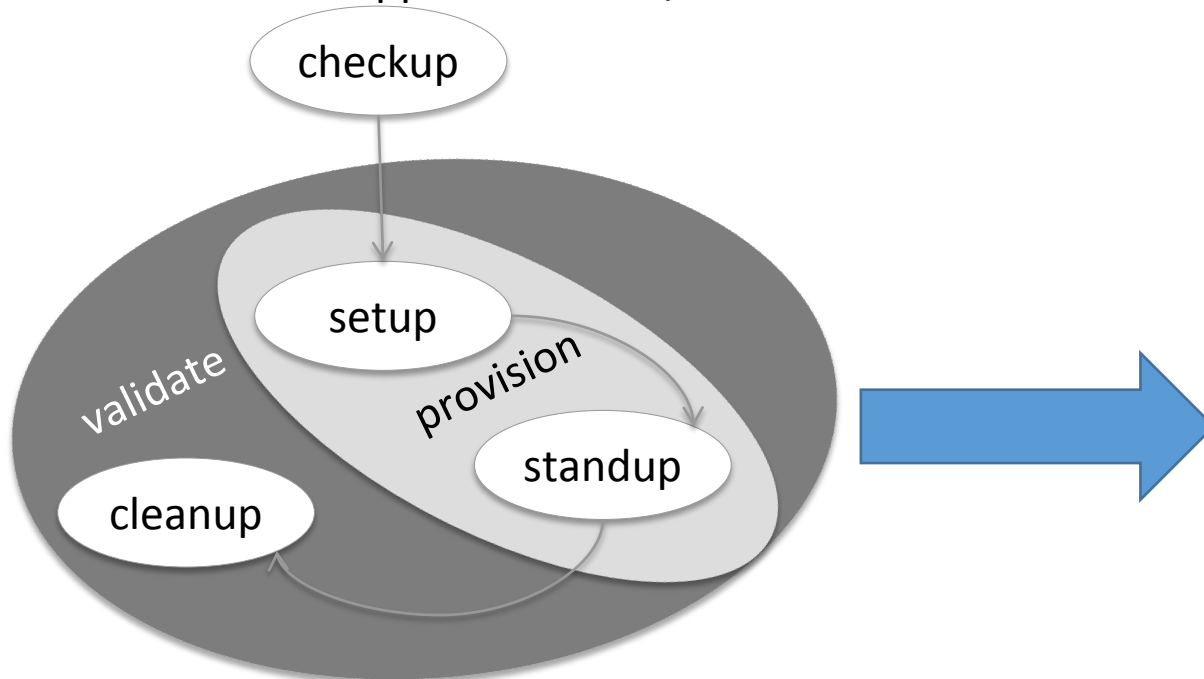
- All roles see same behavior for a given action

Role	Operator/ Vendor	OVP lab	CI/CD
As Command using CLI	X	X	X
As Test case using VTP	X	X	X



Tosca VNF Validation Modes and Operations

5 **modes** are supported in VTP/CLI



1. **setup**: Create requires Vendor, Service Subscription and VNF cloud in ONAP
2. **standup**: From the given VSP csar, VNF csar and NS csar, it creates VF Model, NS Model and NS service
3. **cleanup**: Remove those entries created during provision
4. **provision**: Run setup -> standup
5. **validate**: Run setup -> standup -> cleanup

VNF Instantiate & VNF Terminate Operation

Command	Modules	Comments
vnfm	AAI	Register vnfm driver to ONAP
vim	AAI	Register VIM under a given cloud region in ONAP
complex	AAI	Cloud complex in ONAP
customer	AAI	Customer in ONAP
service-type	AAI	Add service type in ONAP
onboard-vnf	VF-C	Onboard VNF to VF-C catalog
onboard-ns	VF-C	Onboard ns to VF-C catalog
create-ns	VF-C	Create ns based on onboarding ns CSAR file
instantiate-ns	VF-C	Instantiate NS
terminate-ns	VF-C	Terminate NS
delete -ns	VF-C	Delete NS

Welcome to Join the Live Demo

Demo: **Tosca VNF Validation on ONAP**

Time : **11:30 AM on Friday**

Location : **Esperanza 2**

Thank you !