ETSI Alignment Support

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  - Intel: under discussion
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  - Ericsson: primary contact Byung-Woo Jun
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  - Samsung: primary contact Pawel Slowikowski
- TSC Contact:
  - Ericsson: primary contact Stephen Terrill
- Participating ONAP Projects:
  - SDC: Ericsson and others
  - SO: Ericsson and others
  - SOL003 Adapter: Ericsson and others
  - SOL005 Adapter: Verizon
  - SOL002 Adapter: Samsung
  - ETSI Catalog Manager: CMCC
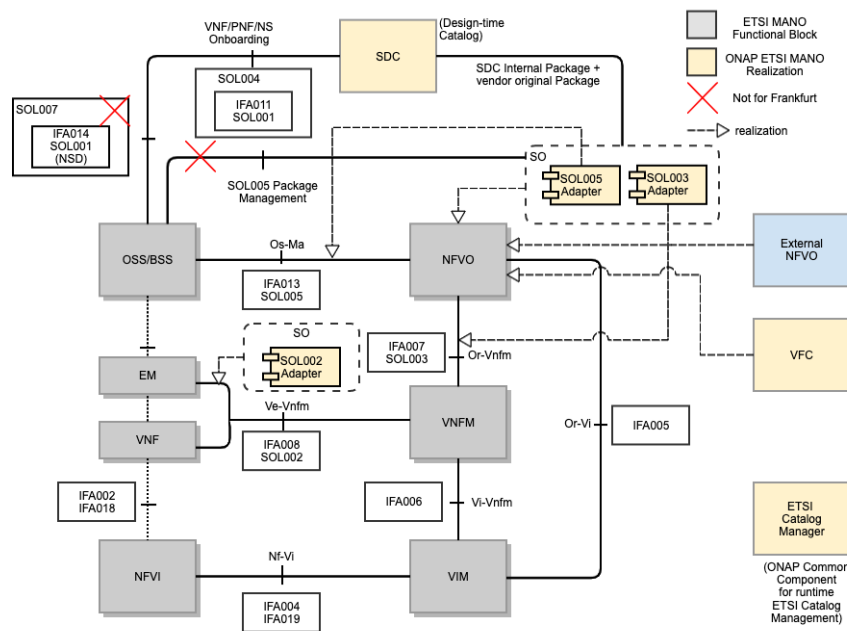 - AAI (as needed)

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ETSI MANO and ONAP ETSI Alignment Landscape

As part of aligning ONAP to ETSI MANO, ONAP supports ETSI standards for packaging, operations and monitoring for managing VNF, PNF and NS.

- For packaging, the SOL004 standard is used for VNF and PNF, the SOL007 standard is used for NS
- Use of the SO007 standard for NS packages is under discussion.
- VNF, PNF and NS will be described by SOL001 standard.
- For VNF LCM, Package Management, LCM operations and Monitoring, SOL003 standard is used.
- For NS LCM and Package Management, LCM operations and Monitoring, SOL005 standard is used.
- For EM triggered scenarios (LCM, Fault, Performance, Configuration), SOL002 standard is used.

The following diagram depicts the relationship between ETSI MANO and ONAP ETSI Alignment.

VNF/PNF/NS Onboarding

SDC — (Design-time Catalog)

SOL004
IFA011
SOL001

SDC Internal Package + vendor original Package

ETSI MANO Functional Block

ONAP ETSI MANO Realization

Not for Frankfurt

SOL007
IFA014
SOL001
(NSD)

SOL005 Package Management

SO
SOL005 Adapter   SOL003 Adapter

- - - - ▷ realization

OSS/BSS — Os-Ma — NFVO — External NFVO

IFA013
SOL005

SO
SOL002 Adapter

IFA007
SOL003

Or-Vnfm

VFC

EM

Ve-Vnfm

VNF

VNFM

Or-Vi   IFA005

IFA008
SOL002

IFA002
IFA018

IFA006   Vi-Vnfm

ETSI Catalog Manager

(ONAP Common Component for runtime ETSI Catalog Management)

NFVI — Nf-Vi — VIM

IFA004
IFA019

Requirements

For ONAP ETSI MANO alignment, the following scenarios need to be fulfilled.

- ONAP shall support ETSI standards for packaging, distribution, LCM operations, security and monitoring for managing VNF, PNF and NS.
  - ONAP shall support SOL004 and SOL007 package onboarding and distribution (VNFSDK, SDC, SO, VFC and others)
  - ONAP shall support ETSI Package security and validation (VNFSDK, SDC, SVNFM, VFC, External NFVO)
  - ONAP shall support ETSI package catalog in runtime (SO, ONAP-ETSI Catalog Manager)
- External VNFM scenarios :
  - ONAP shall ingest and save (without modification) a SOL004 CSAR package for later consumption by a SOL003 compliant VNFM /NFVO (VNFSDK, SDC, ONAP-ETSI Catalog Manager)
  - ONAP shall ingest and interpret a SOL001 compliant VNFD in order to design an ONAP Service (VNFSDK, SDC)
  - ONAP shall understand resource requirements in the VNFD for each deployment and scaling level (SO, SOL003 Adapter, A&AI, OOF)
  - ONAP shall support a SOL003 compliant SBI to plug in external VNFM (SO, SOL003 Adapter, VF-C)
  - ONAP shall have a mechanism for specifying that a VNF instance should be runtime managed by a particular VNFM type (design time) and instance (run time) (SO, SOL003 Adapter, OOF, A&AI)
  - ONAP shall have a way to inventory a VNF that was deployed using an external VNFM (SO, A&AI)
- External NFVO scenarios :
  - ONAP shall ingest and save (without modification) a SOL007 Network Service Package. (VNFSDK, SDC) for later consumption by a SOL005 compliant NFVO
  - ONAP shall ingest and interpret a SOL001 compliant NSD (SDC)
  - ONAP shall ingest and save (without modification) a SOL004 CSAR package for later consumption by a SOL003 compliant NFVO (VNFSDK, SDC, ONAP-ETSI Catalog Manager)
  - ONAP shall ingest and interpret a SOL001 compliant NSD/PNFD in order to design an ONAP Service (VNFSDK, SDC)
  - ONAP shall be able to convert an ONAP Service into a SOL001 compliant NSD (SOL005 Adapter)
  - ONAP shall have a SOL005 compliant SBI (SO, SOL005 Adapter, VF-C, External NFVO)
  - ONAP shall have a mechanism for specifying that a Service should be runtime managed SO, VF-C or external NFVO (SDC, SO)
  - ONAP shall have a way to inventory a Service that was deployed as a Network Service using an external NFVO (SO, A&AI)
  - ONAP shall be able to design a Service that includes some VNFs and some hierarchy (nested) of Services (NSs) (SDC)
  - ONAP shall have a way to Deploy and Life Cycle Manage a Service that includes some VNFs and some hierarchy of Services (NSs) (SO, A&AI, SND-C, SOL003 & SOL005 Adapters)
- ONAP shall support: 1) VNFM-triggered VNF Configuration, 2) EM-triggered VNF/VNFC LCM and 3) VNF Indicator Interface, based on SOL002 standard (SOL002 Adapter, APPC, DCAE, Policy)

Overall Use Cases

- ETSI Package Management Use Case
  - SOL004/SOL007 VNF/PNF/NS Package includes SOL001 VNFD/PNFD/NSD with the original vendor package
  - SOL004/SOL007 VNF/PNF/NS Package Security
- ONAP-ETSI Catalog Management Use Case
  - ONAP-ETSI Catalog API Management
  - ONAP-ETSI Catalog Database

- ○ SO ETSI Catalog DB enhancement, by leveraging ONAP-ETSI Catalog Management Microservices
- ETSI-Alignment SOL003 Adapter Use Case
  - ○ Package Management for SVNFM
  - ○ Granting Enhancement with HPA
  - ○ Query
  - ○ Modify (TBD)
  - ○ Policy-based Scaling (Stretch goal)
  - ○ Security between the Adapter and VNFMs
  - ○ Additional operations will be determined
- ETSI-Alignment SOL005 Adapter Use Case
  - ○ Package Management for External NFVO
  - ○ Security between the Adapters and External NFVOs
  - ○ Additional operations will be determined
- ETSI-Alignment SOL002 Adapter Use Case
  - ○ Security between the Adapters and VNFM
  - ○ SOL002 operations

- vCPE use cases plan to be used.

Detailed Use Case, Architecture and Design

The following sub-sections describe the detailed use case, architecture and design for ETSI Alignment.

- ETSI Package Management
- ETSI Catalog Management
- SOL003 Adapter
- SOL005 Adapter
- SOL002 Adapter
- SOL001 Mapping to SDC AID DM
- Communication Security

Frankfurt Scope

Feature	Description
ETSI (SOL004/SOL007) Package Management	- SOL004/SOL007 Package onboarding and distribution thru SOL005/SOL003 Package Management APIs - SDC Onboarding - Direct SO Onboarding (SOL004) - SOL001 VNF/PNF/NS Handling - Package Security Handling
ONAP ETSI Catalog Management	- ONAP-ETSI Catalog Management - SO ETSI Catalog Management - SOL003/SOL005 Adapter ONAP-ETSI Catalog Access/Use
SOL003 Adapter	SOL003 operation support
SOL005 Adapter	SOL005 operation support
SOL002 Adapter	SOL002 operation support
SOL001 Mapping to SDC AID DM Mapping to SDC AID DM	- VNFD Mapping - PNFD Mapping - NSD Mapping
Communication Security	Security between ONAP and external SVNFM/NFVO

Overall ETSI-Alignment Architecture

The following diagram depicts the overall ETSI-Alignment architecture.
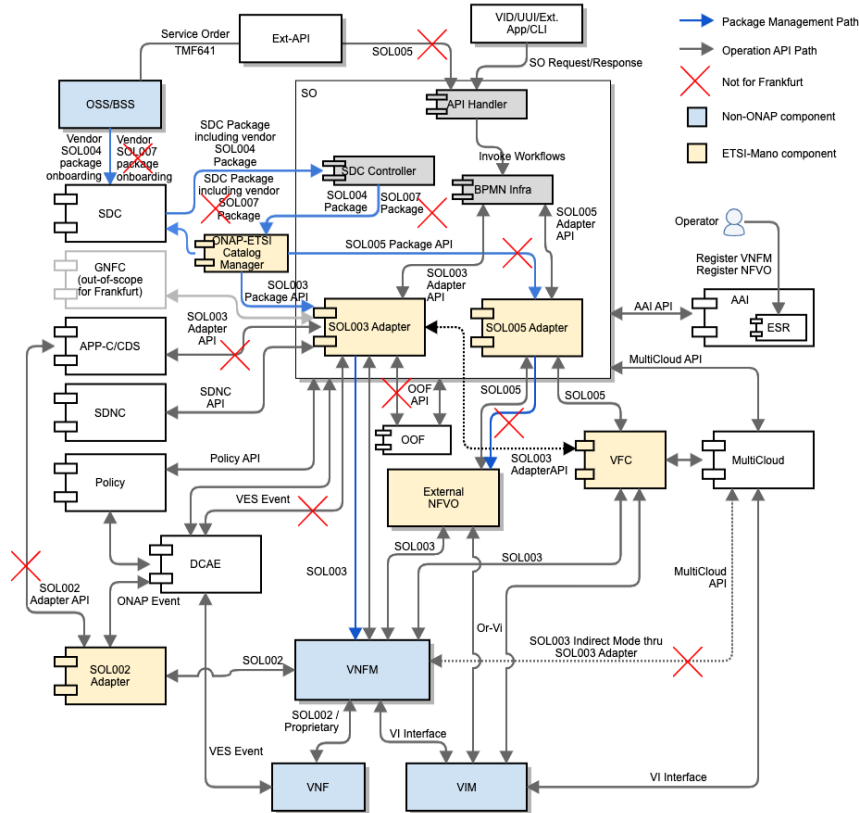
Common Function Use Case, Architecture, Design

<describe common functions>

Open Issues

- Mapping between SOL001 VNFD to SDC AID DM, including ScalingAspect+Delta and VF-Module - Not all VNFD needs to be transformed to the SDC AID DM
- How does ONAP support vendor-specific SVNFM security (authentication/authorization)?
- SOL007 (NS package) support is under discussion
- Certificate generation and distribution by AAF
- SOL005 Adapter requirements for the ONAP-ETSI Catalog Manager
- Where (SOL003 Adapter, or SO NFVO) do we support VNF software image transfer to VIM?
  - ONAP-ETSI Catalog Manager stores the software image and forwards it to VIM through the Adapter and VNFM.

Presentation Slide Deck

- The following deck presentation for the ETSI NFV workshop: https://nfvwiki.etsi.org/index.php?title=ONAP-ETSI_Alignment_Workshop_-_18_February_2020.

ETSI-Alignment ..._NFV-V_0_8.pptx

- The following deck will be presented to the ETSI SOL WG on Feb 18 (8am ET)

ETSI-Alignment A...SI_NFV-V_0_8.pdf

- The following slide deck is for the Antwerp event.

- The following slide deck was presented at the LFN+DDF event.

ONAP SOL003 Ada...-8 - Public.pdf