

# VOLTE test case input collection for tracking

Volte VNF:

VNFs	Intended VNF Provider	VNF provided	SDC onboarding and certification state	Tosca Parser Validated	Notes	Finalized
vCSCF Example	-----	-----	Provided as an example of passing and valid VNF	Yes 2.11.17		
CSCF_SI	Nokia	Yes	Yes	Yes 12.11.17		
vCSCF	Nokia	Yes	Yes	Yes 12.11.17		
vMME	ZTE	Yes	Yes	Yes 2.11.17		
vMME	Huawei	Yes	Yes	Yes 2.11.17		
vSPGW	ZTE	Yes	Yes	Yes 2.11.17		
vSPGW	Huawei	Yes	No	Yes 12.11.17		
vHSS	Huawei	Yes	Yes	Yes 2.11.17		
vSBC & vPCSCF	Huawei	Yes	Yes	Yes 2.11.17		
vPCRF	Huawei	Yes	Yes	Yes 2.11.17		
vTAS	Nokia	Yes	No			

link to the SDC normative types supported for R1

<https://gerrit.onap.org/r/gitweb?p=sdcc.git;a=tree;f=catalog-be/src/main/resources/import/tosca;h=b62ee0c033acbb522d6e0f77b10f91169632e59c;hb=refs/heads/release-1.1.0>

## To add artifacts to the CSAR:

Create following folders hierarchy in the csar:

/Artifacts/<Deployment or Informational>/<ArtifactType>/<ArtifactFile>

Example

[resource-ZteEpcMmeVf-csar\\_fix.zip](#)

[vCSCF Example](#) | [CSCF\\_SI & vCSCF](#) | [vMME ZTE & Huawei](#) | [vSPGW ZTE & Huawei](#) | | [vHSS](#) | [vSBC & vPCSCF](#) | [vPCRF](#) | [vTAS](#)

## vCSCF Example

[vCSCF\\_aligned.csar](#)

this CSAR successfully passed onboarding and certification.

in order for the csars to work, we had to fix a lot of errors in the original CSAR.

original version:

[vCSCF.csar](#)

main service template fixes:

### Fixes

```
imports:
- openovnf__tosca.nodes.nfv.VNF.vPCRF.yaml
- openonfv__tosca.capabilities.Scalable.yaml
- openonfv__tosca.capabilities.nfv.Metric.yaml
- openonfv__tosca.nodes.nfv.VnfVirtualLinkDesc.yaml
- openonfv__tosca.capabilities.network.Bindable.yaml
- openonfv__tosca.capabilities.Attachment.yaml
```

```

- openonfv__tosca.capabilities.nfv.VirtualBindable.yaml
- openonfv__tosca.capabilities.nfv.VirtualLinkable.yaml
- openonfv__tosca.requirements.nfv.VirtualStorage.yaml
- openonfv__tosca.nodes.nfv.VDU.VirtualStorage.yaml
- openonfv__tosca.relationships.nfv.VirtualBindsTo.yaml
- openonfv__tosca.nodes.nfv.VDU.Compute.yaml
- openonfv__tosca.relationships.nfv.VirtualLinksTo.yaml
- openonfv__tosca.capabilities.nfv.VirtualCompute.yaml
- openonfv__tosca.capabilities.Container.yaml
- openonfv__tosca.capabilities.nfv.VirtualStorage.yaml
- openonfv__tosca.requirements.nfv.VirtualBinding.yaml
- openonfv__tosca.capabilities.Endpoint.Admin.yaml
- openonfv__tosca.capabilities.OperatingSystem.yaml
- openonfv__tosca.nodes.nfv.VduCpd.yaml
- openonfv__tosca.relationships.nfv.VDU.AttachedTo.yaml

metadata:
  vendor: Huawei
  csarVersion: v1.0
  csarProvider: Huawei
  id: vPCRF_NF_HW
  version: v1.0
  csarType: NFAR
  name: vPCRF
  vnfdVersion: v1.0
  vnfType: hwnfm

topology_template:
  node_templates:
    PUPDU_Storage:
      attributes:
        tosca_name: PUPDU_Storage
      properties:
        id: PUPDU_Storage
        size_of_storage: 200G
        type_of_storage: volume
        type: tosca.nodes.nfv.VDU.VirtualStorage
    USRSU:
      attributes:
        tosca_name: USRSU
      capabilities:
        virtual_compute:
          properties:
            virtual_memory:
              virtual_mem_size: 24G
            requested_additional_capabilities: {}
            virtual_cpu:
              num_virtual_cpu: 4
      properties:
        configurable_properties:
          test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: USRSU
        description: the virtual machine of USRSU
      requirements:
        - virtual_storage:
            capability: tosca.capabilities.nfv.VirtualStorage
            node: USRSU_Storage
# commented out because node needs to be an instance name inside the template
#   - local_storage:
#       node: tosca.nodes.Root
#       type: tosca.nodes.nfv.VDU.Compute
    USPID3_VduCpd_Fabric:
      attributes:
        tosca_name: USPID3_VduCpd_Fabric
      properties:
        role: root
        layer_protocol: ipv4
      requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: USPID3

```

```

- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Fabric
type: tosca.nodes.nfv.VduCpd
PUPDU_VduCpd_Base:
  attributes:
    tosca_name: PUPDU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: PUPDU
- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Base
type: tosca.nodes.nfv.VduCpd
OMU_VduCpd_Fabric:
  attributes:
    tosca_name: OMU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: OMU
- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Fabric
type: tosca.nodes.nfv.VduCpd
USPID3:
  attributes:
    tosca_name: USPID3
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 24G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: USPID3
    description: the virtual machine of USPID3
  requirements:
- virtual_storage:
  capability: tosca.capabilities.nfv.VirtualStorage
  node: USPID3_Storage
# commented out because node needs to be an instance name inside the template
#   - local_storage:
#     node: tosca.nodes.Root
type: tosca.nodes.nfv.VDU.Compute
UPIRU_VduCpd_Base:
  attributes:
    tosca_name: UPIRU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
# commented out because no instance exists in the template named UPIRU
#   - virtual_binding:
#     capability: tosca.capabilities.nfv.VirtualBindable
#     node: UPIRU
- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Base
type: tosca.nodes.nfv.VduCpd

```

```

OMU2ManageNet:
  attributes:
    tosca_name: OMU2ManageNet
  properties:
    role: root
    layer_protocol: ipv4
# commented out because node needs to be an instance name inside the template
#   requirements:
#     - virtual_binding:
#         node: tosca.nodes.Root
#     - virtual_link:
#         node: tosca.nodes.Root
  type: tosca.nodes.nfv.VduCpd
OMU_Storage:
  attributes:
    tosca_name: OMU_Storage
  properties:
    id: OMU_Storage
    size_of_storage: 256G
    rdma_enabled: false
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
UPSPU:
  attributes:
    tosca_name: UPSPU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 24G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: UPSPU
    description: the virtual machine of UPSPU
  requirements:
    - virtual_storage:
        capability: tosca.capabilities.nfv.VirtualStorage
        node: UPSPU_Storage
# commented out because node needs to be an instance name inside the template
#   - local_storage:
#       node: tosca.nodes.Root
  type: tosca.nodes.nfv.VDU.Compute
PUPDU_VduCpd_Fabric:
  attributes:
    tosca_name: PUPDU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: PUPDU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Fabric
  type: tosca.nodes.nfv.VduCpd
USPID2BossNet:
  attributes:
    tosca_name: USPID2BossNet
  properties:
    role: root
    layer_protocol: ethernet
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: USPID3
# commented out because node needs to be an instance name inside the template

```

```

#     - virtual_link:
#         node: tosca.nodes.Root
type: tosca.nodes.nfv.VduCpd
OMU_VduCpd_Base:
  attributes:
    tosca_name: OMU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: OMU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Base
type: tosca.nodes.nfv.VduCpd
USPID3_Storage:
  attributes:
    tosca_name: USPID3_Storage
  properties:
    id: USPID3_Storage
    size_of_storage: 300G
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
UPIRU2DataNet2:
  attributes:
    tosca_name: UPIRU2DataNet2
  properties:
    role: root
    layer_protocol: ipv4
# commented out because node needs to be an instance name inside the template
# commented out because no instance exists in the template named UPIRU
#     requirements:
#     - virtual_binding:
#         capability: tosca.capabilities.nfv.VirtualBindable
#         node: UPIRU
#     - virtual_link:
#         node: tosca.nodes.Root
type: tosca.nodes.nfv.VduCpd
USPID2ManageNet:
  attributes:
    tosca_name: USPID2ManageNet
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: USPID3
# commented out because node needs to be an instance name inside the template
#     - virtual_link:
#         node: tosca.nodes.Root
type: tosca.nodes.nfv.VduCpd
UPIRU2DataNet3:
  attributes:
    tosca_name: UPIRU2DataNet3
  properties:
    role: root
    layer_protocol: ipv4
# commented out because node needs to be an instance name inside the template
# commented out because no instance exists in the template named UPIRU
#     requirements:
#     - virtual_binding:
#         capability: tosca.capabilities.nfv.VirtualBindable
#         node: UPIRU
#     - virtual_link:
#         node: tosca.nodes.Root
type: tosca.nodes.nfv.VduCpd
PUPDU2DataNet3:
  attributes:

```

```

        tosca_name: PUPDU2DataNet3
    properties:
        role: root
        layer_protocol: ethernet
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: PUPDU
# commented out because node needs to be an instance name inside the template
#     - virtual_link:
#         node: tosca.nodes.Root
#         type: tosca.nodes.nfv.VduCpd
USRSU2DataNet1:
    attributes:
        tosca_name: USRSU2DataNet1
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: USRSU
# commented out because node needs to be an instance name inside the template
#     - virtual_link:
#         node: tosca.nodes.Root
#         type: tosca.nodes.nfv.VduCpd
USRSU2DataNet2:
    attributes:
        tosca_name: USRSU2DataNet2
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: USRSU
# commented out because node needs to be an instance name inside the template
#     - virtual_link:
#         node: tosca.nodes.Root
#         type: tosca.nodes.nfv.VduCpd
UPIRU_Storage:
    attributes:
        tosca_name: UPIRU_Storage
    properties:
        id: UPIRU_Storage
        size_of_storage: 4G
        type_of_storage: volume
    type: tosca.nodes.nfv.VDU.VirtualStorage
PUPDU2SignalNet1:
    attributes:
        tosca_name: PUPDU2SignalNet1
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: PUPDU
# commented out because node needs to be an instance name inside the template
#     - virtual_link:
#         node: tosca.nodes.Root
#         type: tosca.nodes.nfv.VduCpd
UPIRU2DataNet1:
    attributes:
        tosca_name: UPIRU2DataNet1
    properties:
        role: root
        layer_protocol: ipv4
# commented out because node needs to be an instance name inside the template
# commented out because no instance exists in the template named UPIRU
#     requirements:

```

```

#     - virtual_binding:
#         capability: tosca.capabilities.nfv.VirtualBindable
#         node: UPIRU
#     - virtual_link:
#         node: tosca.nodes.Root
type: tosca.nodes.nfv.VduCpd
USPID3_VduCpd_Base:
  attributes:
    tosca_name: USPID3_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: USPID3
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Base
  type: tosca.nodes.nfv.VduCpd
Base:
  attributes:
    tosca_name: Base
  properties:
    vl_flavours:
      flavours:
        flavourId: test2
    connectivity_type:
      layer_protocol: ipv4
      flow_pattern:
  type: tosca.nodes.nfv.VnfVirtualLinkDesc
USRSU_Storage:
  attributes:
    tosca_name: USRSU_Storage
  properties:
    id: USRSU_Storage
    size_of_storage: 200G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
UPSPU_VduCpd_Base:
  attributes:
    tosca_name: UPSPU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: UPSPU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Base
  type: tosca.nodes.nfv.VduCpd
PUPDU:
  attributes:
    tosca_name: PUPDU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 24G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: PUPDU
    description: the virtual machine of PUPDU
  requirements:
    - virtual_storage:

```

```

        capability: tosca.capabilities.nfv.VirtualStorage
        node: PUPDU_Storage
# commented out because node needs to be an instance name inside the template
#   - local_storage:
#       node: tosca.nodes.Root
    type: tosca.nodes.nfv.VDU.Compute
USRSU_VduCpd_Base:
  attributes:
    tosca_name: USRSU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: USRSU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Base
  type: tosca.nodes.nfv.VduCpd
OMU:
  attributes:
    tosca_name: OMU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 16G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: OMU
    description: the virtual machine of OMU
  requirements:
    - virtual_storage:
        capability: tosca.capabilities.nfv.VirtualStorage
        node: OMU_Storage
# commented out because node needs to be an instance name inside the template
#   - local_storage:
#       node: tosca.nodes.Root
    type: tosca.nodes.nfv.VDU.Compute
UPIRU_VduCpd_Fabric:
  attributes:
    tosca_name: UPIRU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
# commented out because no instance exists in the template named UPIRU
#   - virtual_binding:
#       capability: tosca.capabilities.nfv.VirtualBindable
#       node: UPIRU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Fabric
  type: tosca.nodes.nfv.VduCpd
UPSPU_Storage:
  attributes:
    tosca_name: UPSPU_Storage
  properties:
    id: UPSPU_Storage
    size_of_storage: 4G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
PUPDU2ManageNet:
  attributes:
    tosca_name: PUPDU2ManageNet
  properties:

```



```

    role: root
    layer_protocol: ethernet
  requirements:
  - virtual_binding:
      capability: tosca.capabilities.nfv.VirtualBindable
      node: PUPDU
# commented out because node needs to be an instance name inside the template
#   - virtual_link:
#       node: tosca.nodes.Root
#       type: tosca.nodes.nfv.VduCpd
USRSU_VduCpd_Fabric:
  attributes:
    tosca_name: USRSU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: tosca.capabilities.nfv.VirtualBindable
      node: USRSU
  - virtual_link:
      capability: tosca.capabilities.nfv.VirtualLinkable
      node: Fabric
    type: tosca.nodes.nfv.VduCpd
UPIRU2SignalNet1:
  attributes:
    tosca_name: UPIRU2SignalNet1
  properties:
    role: root
    layer_protocol: ipv4
#  requirements:
#  - virtual_binding:
#      capability: tosca.capabilities.nfv.VirtualBindable
#      node: UPIRU
#  - virtual_link:
#      node: tosca.nodes.Root
#      type: tosca.nodes.nfv.VduCpd
Fabric:
  attributes:
    tosca_name: Fabric
  properties:
#original property was not a map as defined in the data type
#original property: vl_flavours:
#
#                                flavours: test2
#
    vl_flavours:
      flavours:
        flavourId: test1
      connectivity_type:
        layer_protocol: ipv4
        flow_pattern:
      type: tosca.nodes.nfv.VnfVirtualLinkDesc
UPSPU_VduCpd_Fabric:
  attributes:
    tosca_name: UPSPU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: tosca.capabilities.nfv.VirtualBindable
      node: UPSPU
  - virtual_link:
      capability: tosca.capabilities.nfv.VirtualLinkable
      node: Fabric
    type: tosca.nodes.nfv.VduCpd

  substitution_mappings:
    node_type: tosca.nodes.nfv.VNF.vPCRF
tosca_definitions_version: tosca_simple_yaml_1_0

```

## CSCF\_SI & vCSCF

cscf\_is from Nokia: [cscf\\_si.csar](#)

The latest fixes in cscf CSAR, still working on the VDU normative:

[cscf\\_si\\_fixed.csar](#)

The main service template commented out all node\_types (please see the comments inside the CSAR).

These are the current issues:

### CSCF\_SI Issues

```
# Properties defined here not found in any type in the inheritance chain
# node_templates:
#   lb:
#     type: tosca.nodes.nfv.VDU
#     properties:
#       description: ..
#     requirements:
#       - virtual_compute: lbCompute
#       - sw_image: cscfImage
#       - virtual_storage: lbDataVolume

#Node type that not found in any spec - changed to tosca.nodes.nfv.VDU.VirtualStorage
lbDataVolume:
  type: tosca.nodes.nfv.VDU.VirtualStorage
#   type: tosca.nodes.nfv.VirtualStorage
  properties:
    type_of_storage: volume
    size_of_storage: 300 GB

#Node type that not found in any spec
# lbCompute:
#   type: tosca.nodes.nfv.VirtualCompute
#   properties:
#     virtual_memory:
#       virtual_mem_size: 32768 MB
#     virtual_cpu:
#       cpu_architecture: x86
#       num_virtual_cpu: 12
#       virtual_cpu_clock: 2100 MHz

#   cscfImage:
#Changed from tosca.nodes.nfv.SwImage
#   type: tosca.nodes.nfv.VduCpd
#   properties:
#     name: CSCF Image
#     version: 1.0
#     container_format: qcow2
#     checksum: 835fd4c0c5f8abadc1593ba185ca18cb
#     min_disk: 38 GB
#     min_ram: 16384 MB
#     size: 3 GB
#     disk_format: bare
#     sw_image: cscf.qcow2
#     operating_system: Linux
#     supported_virtualisation_environments:
#       - KVM

#   cscfCpdeth0:
##Changed from tosca.nodes.nfv.ICP
#   type: tosca.nodes.nfv.VduCpd
```

```

#       properties:
#         layer_protocol: ipv4
#         role: leaf
#         description: connection point
#       requirements:
#         - virtual_binding: cscf
#         - virtual_link: internalNetworkV1

#tosca.nodes.nfv.ECP
#[AK] an external port. In the NFV specs, there is no such type. The specs mentions an "external CP" type
VnfExtCpd, but does not define it !!!!
# oamCpdeth1:
# type: tosca.nodes.nfv.ECP
# properties:
#   layer_protocol: ipv4
#   role: leaf
#   description: External connection point
# requirements:
#   - internal_connection_point: oamICpdeth1

#The groups section not supported:

# groups:
#   cscfScalingGroup:
#     type: tosca.groups.nfv.ElementGroup
#     description: ..
#     members: [ cscf ]

# policies:
#This section not supported

```



Nokia CSCF is updated on 2017-10-25

IS-CSCF from Nokia: [cscf\\_si\\_fixed.csar](#)

updated after [SDC-533](#) - Getting issue details...

STATUS

[cscf\\_si\\_fixed - passed.csar](#)

```

#add property requested_additional_capabilities with empty value
oam:
  type: tosca.nodes.nfv.VDU.Compute
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 32G
        requested_additional_capabilities: {}
    virtual_cpu:
      num_virtual_cpu: 4

```

IS-CSCF v3 from Nokia: [vCSCF\\_v3.0.csar](#)

updated after [SDC-533](#) - Getting issue details...

STATUS

[vCSCF\\_v3.0 - passed.csar](#)

```
#add property requested_additional_capabilities with empty value
oam:
  type: toska.nodes.nfv.VDU.Compute
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 32G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
```

## vMME ZTE & Huawei



ZTE MME is updated on 24/10/2017

version 0 mme from ZTE: [resource-ZteEpcMmeVf-csar.csar](#) - original VNF

version 1 mme from ZTE: [ZteEpcMmeVf-csar.csar](#)

[resource-ZteEpcMmeVf-csar\\_fix.csar](#) - Latest fixed

## Fixes

#Next section moved from GlobalSubstitutionTypesServiceTemplate to the MainServiceTemplate  
node\_types:

```
org.openecomp.resource.vfc.VNF.vMME:
  derived_from: tosa.nodes.Root
  description: MME_VFC
  properties:
    vendor:
      type: string
      default: ERICSSON
    csarVersion:
      type: string
      default: v1.0
    csarProvider:
      type: string
      default: ERICSSON
    id:
      type: string
      default: vMME
    version:
      type: string
      default: v1.0
    csarType:
      type: string
      default: NFAR
  requirements:
    - virtualLink:
        occurrences:
          - 0
          - UNBOUNDED
        capability: tosa.capabilities.network.Linkable
```

SDC-474 - Getting issue details...

STATUS

Passed after SDC-474 closed:

[resource-ZteEpcMmeVf-csar\\_fix.csar](#)



Huawei vMME is updated on 25/10/2017

Huawei vMME: [Huawei vMME.csar](#)

## vSPGW ZTE & Huawei



Huawei SPGW Package is updated on 26/10/2017, self-test on latest SDC env successfully.

~~Latest CSAR that fails cause all node templates are commented out.TOSCA yaml file Definitions/MainServiceTemplate.yaml cannot be modeled to VF as it does not contain 'topology\_template'.~~

[Huawei\\_vSPGW.csar](#)

## Huawei\_vSPGW

```
# Property list of fetched capability virtual_compute is empty.
#   SDU:
#     type: tosca.nodes.nfv.VDU.Compute
#     attributes:
#       tosca_name: SDU
#     capabilities:
#       virtual_compute:
#         properties:
#           virtual_memory:
#             virtual_mem_size: 24G
#             requested_additional_capabilities: {}
#           virtual_cpu:
#             num_virtual_cpu: 4
#     properties:
#       configurable_properties:
#         test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
##This section replaced by list
##       additional_vnfc_configurable_properties:
##         aaa: '1'
#     name: SDU
#     description: the virtual machine of SDU
#     requirements:
#       - virtual_storage:
#         capability: virtual_storage
#         node: SDU_Storage
##       - local_storage:
##         node: tosca.nodes.Root

Base:
  attributes:
    tosca_name: Base
  properties:
    vl_flavours:
# The value "test2" of type tosca.datatypes.nfv.VlFlavour should be json object
#Cannot parse value "test2" from type tosca.datatypes.nfv.VlFlavour of key flavours
#     flavours: test2
#     flavours:
#       flavourId: test2
#     connectivity_type:
#       layer_protocol: ipv4
#       flow_pattern:
#     type: tosca.nodes.nfv.VnfVirtualLinkDesc
```

fixed vSPGW from Huawei: [Huawei\\_vSPGW\\_fixed.csar](#)

updated after

[SDC-533](#) - Getting issue details...

STATUS

[Huawei\\_vSPGW\\_fixed - passed.csar](#)

```
#add property requested_additional_capabilities with empty value
oam:
  type: tosca.nodes.nfv.VDU.Compute
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 32G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
```



ZTE SPGW last updated 24/10/2017

version 0 spgw from ZTE: [resource-ZteEpcSpgwVf-csar.csar](#). comment from SDC team: ZteEpcSpgwVf - Fails to onboard

version 1 spgw from ZTE: [ZteEpcSpgwVf-csar.csar](#)

## vHSS



Huawei HSS Package is updated on 20/10/2017

HSS from Huawei: [Huawei\\_vHSS.csar](#)

no issue found there was a mistake in the VDUCPD definition updated, please delete the SDC data and pull latest Docker 22.10

## vSBC & vPCSCF

Huawei PCSCF is integrated with SBC.

SBC/PCSCF from Huawei: [vSBC\\_huawei.csar](#)

alignment:

1. the package has to end with .csar
2. remove all unneeded sources from MainServiceTemplate.mf
3. remove unused imports from MainServiceTemplate.yaml
4. in MainServiceTemplate.yaml you cannot create a relationship using node: tosca.nodes.Root it needs to be a name of an instance in the template you want to connect to. commented out for now.
5. removed from GlobalSubstitutionService template.yaml all types defined in SDC normatives.
6. MainServiceTemplate.yaml commented out substitution mapping the type there is not defined in csar.
7. removed GlobalSubstitutionServiceTemplate.yaml not used in csar.
8. TOSCA.meta removed unneeded source entries updated the entry point to point to MainServiceTemplate.yaml
9. property vl\_flavours no defined according to data type

fixed:

[vSBC\\_aligned.csar](#)

fixed main service template:

```
metadata:
  vendor: Huawei
  csarVersion: v1.0
  csarProvider: Huawei
  id: vSBC_vP-CSCF
  version: v1.0
  csarType: NFAR
  vnfdVersion: v1.0
  vnfType: hwnfm
topology_template:
  node_templates:
    SCU:
      attributes:
        tosca_name: SCU
      capabilities:
        virtual_compute:
          properties:
            virtual_memory:
```

```

        virtual_mem_size: 24G
        requested_additional_capabilities: {}
        virtual_cpu:
            num_virtual_cpu: 2
    properties:
        configurable_properties:
            test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: SCU
        description: the virtual machine of SCU
    requirements:
        - virtual_storage:
            capability: virtual_storage
            node: SCU_Storage
#
#         - local_storage:
#             node: tosca.nodes.Root
        type: tosca.nodes.nfv.VDU.Compute
LBU2SignalNet1:
    attributes:
        tosca_name: LBU2SignalNet1
    properties:
        role: root
        layer_protocol: ethernet
    requirements:
        - virtual_binding:
            capability: virtual_binding
            node: LBU
#
#         - virtual_link:
#             node: tosca.nodes.Root
        type: tosca.nodes.nfv.VduCpd
CCU_VduCpd_Intra1:
    attributes:
        tosca_name: CCU_VduCpd_Intra1
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: virtual_binding
            node: CCU
        - virtual_link:
            capability: virtual_linkable
            node: Intranet1
        type: tosca.nodes.nfv.VduCpd
LBU_VduCpd_Intra1:
    attributes:
        tosca_name: LBU_VduCpd_Intra1
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: virtual_binding
            node: LBU
        - virtual_link:
            capability: virtual_linkable
            node: Intranet1
        type: tosca.nodes.nfv.VduCpd
OMU2ManageNet:
    attributes:
        tosca_name: OMU2ManageNet
    properties:
        role: root
        layer_protocol: ipv4
#
#     requirements:
#
#         - virtual_binding:
#             node: tosca.nodes.Root
#
#         - virtual_link:
#             node: tosca.nodes.Root
#
        type: tosca.nodes.nfv.VduCpd
LBU_VduCpd_Intra2:
    attributes:

```



```

    tosca_name: LBU_VduCpd_Intra2
properties:
  role: root
  layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: virtual_binding
    node: LBU
- virtual_link:
    capability: virtual_linkable
    node: Intranet2
type: tosca.nodes.nfv.VduCpd
OMU_Storage:
  attributes:
    tosca_name: OMU_Storage
  properties:
    id: OMU_Storage
    size_of_storage: 256G
    rdma_enabled: false
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
HRU:
  attributes:
    tosca_name: HRU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 12G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 3
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: HRU
    description: the virtual machine of HRU
  requirements:
- virtual_storage:
    capability: virtual_storage
    node: HRU_Storage
# - local_storage:
#     node: tosca.nodes.Root
type: tosca.nodes.nfv.VDU.Compute
VPU_Storage:
  attributes:
    tosca_name: VPU_Storage
  properties:
    id: VPU_Storage
    size_of_storage: 4G
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
SCU_VduCpd_Intra1:
  attributes:
    tosca_name: SCU_VduCpd_Intra1
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
    capability: virtual_binding
    node: SCU
- virtual_link:
    capability: virtual_linkable
    node: Intranet1
type: tosca.nodes.nfv.VduCpd
HRU_VduCpd_Intra2:
  attributes:
    tosca_name: HRU_VduCpd_Intra2
  properties:
    role: root

```

```

    layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: virtual_binding
    node: HRU
- virtual_link:
    capability: virtual_linkable
    node: Intranet2
type: tosca.nodes.nfv.VduCpd
HRU_VduCpd_Intral:
attributes:
    tosca_name: HRU_VduCpd_Intral
properties:
    role: root
    layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: virtual_binding
    node: HRU
- virtual_link:
    capability: virtual_linkable
    node: Intranet1
type: tosca.nodes.nfv.VduCpd
CCU_Storage:
attributes:
    tosca_name: CCU_Storage
properties:
    id: CCU_Storage
    size_of_storage: 4G
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
BSU_VduCpd_Intral:
attributes:
    tosca_name: BSU_VduCpd_Intral
properties:
    role: root
    layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: virtual_binding
    node: BSU
- virtual_link:
    capability: virtual_linkable
    node: Intranet1
type: tosca.nodes.nfv.VduCpd
Intranet1:
attributes:
    tosca_name: Intranet1
properties:
    vl_flavours:
        flavours:
            flavourId: test1
    connectivity_type:
        layer_protocol: ipv4
        flow_pattern:
type: tosca.nodes.nfv.VnfVirtualLinkDesc
Intranet2:
attributes:
    tosca_name: Intranet2
properties:
    vl_flavours:
        flavours:
            flavourId: test2
    connectivity_type:
        layer_protocol: ipv4
        flow_pattern:
type: tosca.nodes.nfv.VnfVirtualLinkDesc
VPU:
attributes:
    tosca_name: VPU
capabilities:

```

```

    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 8G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 5
      properties:
        configurable_properties:
          test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: VPU
        description: the virtual machine of VPU
      requirements:
      - virtual_storage:
          capability: virtual_storage
          node: VPU_Storage
#     - local_storage:
#         node: tosca.nodes.Root
      type: tosca.nodes.nfv.VDU.Compute
LBU2SignalNet2:
  attributes:
    tosca_name: LBU2SignalNet2
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: virtual_binding
      node: LBU
#   - virtual_link:
#       node: tosca.nodes.Root
  type: tosca.nodes.nfv.VduCpd
OMU_VduCpd_Intral:
  attributes:
    tosca_name: OMU_VduCpd_Intral
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: virtual_binding
      node: OMU
  - virtual_link:
      capability: virtual_linkable
      node: Intranet1
  type: tosca.nodes.nfv.VduCpd
LBU:
  attributes:
    tosca_name: LBU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 24G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: LBU
    description: the virtual machine of LBU
  requirements:
  - virtual_storage:
      capability: virtual_storage
      node: LBU_Storage
#   - local_storage:
#       node: tosca.nodes.Root
  type: tosca.nodes.nfv.VDU.Compute
CMU_VduCpd_Intral:
  attributes:

```

```

    tosca_name: CMU_VduCpd_Intra1
properties:
  role: root
  layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: virtual_binding
    node: CMU
- virtual_link:
    capability: virtual_linkable
    node: Intranet1
type: tosca.nodes.nfv.VduCpd
CMU_Storage:
  attributes:
    tosca_name: CMU_Storage
  properties:
    id: CMU_Storage
    size_of_storage: 4G
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
BSU:
  attributes:
    tosca_name: BSU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 8G
        requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 1
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: BSU
    description: the virtual machine of BSU
  requirements:
- virtual_storage:
    capability: virtual_storage
    node: BSU_Storage
# - local_storage:
#   node: tosca.nodes.Root
type: tosca.nodes.nfv.VDU.Compute
CMU:
  attributes:
    tosca_name: CMU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 8G
        requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 1
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: CMU
    description: the virtual machine of CMU
  requirements:
- virtual_storage:
    capability: virtual_storage
    node: CMU_Storage
# - local_storage:
#   node: tosca.nodes.Root
type: tosca.nodes.nfv.VDU.Compute
SCU_Storage:
  attributes:
    tosca_name: SCU_Storage
  properties:
    id: SCU_Storage

```

```

        size_of_storage: 4G
        type_of_storage: volume
    type: toska.nodes.nfv.VDU.VirtualStorage
HRU_Storage:
    attributes:
        toska_name: HRU_Storage
    properties:
        id: HRU_Storage
        size_of_storage: 4G
        type_of_storage: volume
    type: toska.nodes.nfv.VDU.VirtualStorage
CCU:
    attributes:
        toska_name: CCU
    capabilities:
        virtual_compute:
            properties:
                virtual_memory:
                    virtual_mem_size: 16G
                requested_additional_capabilities: {}
            virtual_cpu:
                num_virtual_cpu: 2
    properties:
        configurable_properties:
            test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: CCU
        description: the virtual machine of CCU
    requirements:
        - virtual_storage:
            capability: virtual_storage
            node: CCU_Storage
#
#         local_storage:
#             node: toska.nodes.Root
    type: toska.nodes.nfv.VDU.Compute
OMU:
    attributes:
        toska_name: OMU
    capabilities:
        virtual_compute:
            properties:
                virtual_memory:
                    virtual_mem_size: 16G
                requested_additional_capabilities: {}
            virtual_cpu:
                num_virtual_cpu: 4
    properties:
        configurable_properties:
            test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: OMU
        description: the virtual machine of OMU
    requirements:
        - virtual_storage:
            capability: virtual_storage
            node: OMU_Storage
#
#         local_storage:
#             node: toska.nodes.Root
    type: toska.nodes.nfv.VDU.Compute
BSU_Storage:
    attributes:
        toska_name: BSU_Storage
    properties:
        id: BSU_Storage
        size_of_storage: 4G
        type_of_storage: volume
    type: toska.nodes.nfv.VDU.VirtualStorage
UPIRU_VduCpd_Intral:
    attributes:
        toska_name: UPIRU_VduCpd_Intral
    properties:
        role: root
        layer_protocol: ipv4

```

```

requirements:
- virtual_binding:
  capability: virtual_binding
  node: VPU
- virtual_link:
  capability: virtual_linkable
  node: Intranet1
type: toska.nodes.nfv.VduCpd
UPIRU_VduCpd_Intra2:
attributes:
  toska_name: UPIRU_VduCpd_Intra2
properties:
  role: root
  layer_protocol: ipv4
requirements:
- virtual_binding:
  capability: virtual_binding
  node: VPU
- virtual_link:
  capability: virtual_linkable
  node: Intranet2
type: toska.nodes.nfv.VduCpd
HRU2MediaNet1:
attributes:
  toska_name: HRU2MediaNet1
properties:
  role: root
  layer_protocol: ethernet
requirements:
- virtual_binding:
  capability: virtual_binding
  node: HRU
# - virtual_link:
#   node: toska.nodes.Root
type: toska.nodes.nfv.VduCpd
LBU_Storage:
attributes:
  toska_name: LBU_Storage
properties:
  id: LBU_Storage
  size_of_storage: 4G
  type_of_storage: volume
type: toska.nodes.nfv.VDU.VirtualStorage
HRU2MediaNet2:
attributes:
  toska_name: HRU2MediaNet2
properties:
  role: root
  layer_protocol: ipv4
requirements:
- virtual_binding:
  capability: virtual_binding
  node: HRU
# - virtual_link:
#   node: toska.nodes.Root
type: toska.nodes.nfv.VduCpd
# substitution_mappings:
#   node_type: toska.nodes.nfv.VNF.vSBC
tosca_definitions_version: toska_simple_yaml_1_0

```

## vPCRF

PCRF from Huawei: [vPCRF\\_Huawei.csar](#)

alignment:

1. remove all unneeded sources from MainServiceTemplate.mf

2. remove unused imports from MainServiceTemplate.yaml
3. this is the example we provide we can see the commented out sections in the yaml removing them.
4. removed from GlobalSubstitutionService template.yaml all types defined in SDC normatives.
5. TOSCA.meta removed unneeded source entries updated the entry point to point to MainServiceTemplate.yaml
6. MainServiceTemplate.yaml commented out substitution mapping the type there is not defined in csar.
7. removed GlobalSubstitutionServiceTemplate.yaml not used in csar.

fixed:



Huawei\_vPCRF\_aligned\_fixed.csar

fixed main service template:

```
metadata:
  vendor: Huawei
  csarVersion: v1.0
  csarProvider: Huawei
  id: vPCRF_NF_HW
  version: v1.0
  csarType: NFAR
  name: vPCRF
  vnfdVersion: v1.0
  vnfmType: hwnfm

topology_template:
  node_templates:
    PUPDU_Storage:
      attributes:
        tosca_name: PUPDU_Storage
      properties:
        id: PUPDU_Storage
        size_of_storage: 200G
        type_of_storage: volume
      type: tosca.nodes.nfv.VDU.VirtualStorage
    USRSU:
      attributes:
        tosca_name: USRSU
      capabilities:
        virtual_compute:
          properties:
            virtual_memory:
              virtual_mem_size: 24G
            requested_additional_capabilities: {}
            virtual_cpu:
              num_virtual_cpu: 4
      properties:
        configurable_properties:
          test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
        name: USRSU
        description: the virtual machine of USRSU
      requirements:
        - virtual_storage:
```

```

        capability: tosca.capabilities.nfv.VirtualStorage
        node: USRSU_Storage
    type: tosca.nodes.nfv.VDU.Compute
USPID3_VduCpd_Fabric:
    attributes:
        tosca_name: USPID3_VduCpd_Fabric
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: USPID3
        - virtual_link:
            capability: tosca.capabilities.nfv.VirtualLinkable
            node: Fabric
    type: tosca.nodes.nfv.VduCpd
PUPDU_VduCpd_Base:
    attributes:
        tosca_name: PUPDU_VduCpd_Base
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: PUPDU
        - virtual_link:
            capability: tosca.capabilities.nfv.VirtualLinkable
            node: Base
    type: tosca.nodes.nfv.VduCpd
OMU_VduCpd_Fabric:
    attributes:
        tosca_name: OMU_VduCpd_Fabric
    properties:
        role: root
        layer_protocol: ipv4
    requirements:
        - virtual_binding:
            capability: tosca.capabilities.nfv.VirtualBindable
            node: OMU
        - virtual_link:
            capability: tosca.capabilities.nfv.VirtualLinkable
            node: Fabric
    type: tosca.nodes.nfv.VduCpd
USPID3:
    attributes:
        tosca_name: USPID3
    capabilities:
        virtual_compute:
            properties:
                virtual_memory:
                    virtual_mem_size: 24G
                requested_additional_capabilities: {}
                virtual_cpu:
                    num_virtual_cpu: 4
    properties:
        configurable_properties:
            test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
            name: USPID3
            description: the virtual machine of USPID3
    requirements:
        - virtual_storage:
            capability: tosca.capabilities.nfv.VirtualStorage
            node: USPID3_Storage
    type: tosca.nodes.nfv.VDU.Compute
UPIRU_VduCpd_Base:
    attributes:
        tosca_name: UPIRU_VduCpd_Base
    properties:
        role: root

```



```

    layer_protocol: ipv4
requirements:
- virtual_link:
    capability: tosca.capabilities.nfv.VirtualLinkable
    node: Base
type: tosca.nodes.nfv.VduCpd
OMU2ManageNet:
  attributes:
    tosca_name: OMU2ManageNet
  properties:
    role: root
    layer_protocol: ipv4
type: tosca.nodes.nfv.VduCpd
OMU_Storage:
  attributes:
    tosca_name: OMU_Storage
  properties:
    id: OMU_Storage
    size_of_storage: 256G
    rdma_enabled: false
    type_of_storage: volume
type: tosca.nodes.nfv.VDU.VirtualStorage
UPSPU:
  attributes:
    tosca_name: UPSPU
  capabilities:
    virtual_compute:
      properties:
        virtual_memory:
          virtual_mem_size: 24G
          requested_additional_capabilities: {}
        virtual_cpu:
          num_virtual_cpu: 4
  properties:
    configurable_properties:
      test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: UPSPU
    description: the virtual machine of UPSPU
  requirements:
- virtual_storage:
    capability: tosca.capabilities.nfv.VirtualStorage
    node: UPSPU_Storage
type: tosca.nodes.nfv.VDU.Compute
PUPDU_VduCpd_Fabric:
  attributes:
    tosca_name: PUPDU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
    capability: tosca.capabilities.nfv.VirtualBindable
    node: PUPDU
- virtual_link:
    capability: tosca.capabilities.nfv.VirtualLinkable
    node: Fabric
type: tosca.nodes.nfv.VduCpd
USPID2BossNet:
  attributes:
    tosca_name: USPID2BossNet
  properties:
    role: root
    layer_protocol: ethernet
  requirements:
- virtual_binding:
    capability: tosca.capabilities.nfv.VirtualBindable
    node: USPID3
type: tosca.nodes.nfv.VduCpd
OMU_VduCpd_Base:
  attributes:
    tosca_name: OMU_VduCpd_Base

```

```
properties:
  role: root
  layer_protocol: ipv4
requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: OMU
- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Base
type: tosca.nodes.nfv.VduCpd
USPID3_Storage:
  attributes:
    tosca_name: USPID3_Storage
  properties:
    id: USPID3_Storage
    size_of_storage: 300G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
UPIRU2DataNet2:
  attributes:
    tosca_name: UPIRU2DataNet2
  properties:
    role: root
    layer_protocol: ipv4
  type: tosca.nodes.nfv.VduCpd
USPID2ManageNet:
  attributes:
    tosca_name: USPID2ManageNet
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: USPID3
  type: tosca.nodes.nfv.VduCpd
UPIRU2DataNet3:
  attributes:
    tosca_name: UPIRU2DataNet3
  properties:
    role: root
    layer_protocol: ipv4
  type: tosca.nodes.nfv.VduCpd
PUPDU2DataNet3:
  attributes:
    tosca_name: PUPDU2DataNet3
  properties:
    role: root
    layer_protocol: ethernet
  requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: PUPDU
  type: tosca.nodes.nfv.VduCpd
USRSU2DataNet1:
  attributes:
    tosca_name: USRSU2DataNet1
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
- virtual_binding:
  capability: tosca.capabilities.nfv.VirtualBindable
  node: USRSU
  type: tosca.nodes.nfv.VduCpd
USRSU2DataNet2:
  attributes:
    tosca_name: USRSU2DataNet2
  properties:
    role: root
```

```
    layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: tosca.capabilities.nfv.VirtualBindable
    node: USRSU
type: tosca.nodes.nfv.VduCpd
UPIRU_Storage:
  attributes:
    tosca_name: UPIRU_Storage
  properties:
    id: UPIRU_Storage
    size_of_storage: 4G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
PUPDU2SignalNet1:
  attributes:
    tosca_name: PUPDU2SignalNet1
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: tosca.capabilities.nfv.VirtualBindable
      node: PUPDU
  type: tosca.nodes.nfv.VduCpd
UPIRU2DataNet1:
  attributes:
    tosca_name: UPIRU2DataNet1
  properties:
    role: root
    layer_protocol: ipv4
  type: tosca.nodes.nfv.VduCpd
USPID3_VduCpd_Base:
  attributes:
    tosca_name: USPID3_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
  - virtual_binding:
      capability: tosca.capabilities.nfv.VirtualBindable
      node: USPID3
  - virtual_link:
      capability: tosca.capabilities.nfv.VirtualLinkable
      node: Base
  type: tosca.nodes.nfv.VduCpd
Base:
  attributes:
    tosca_name: Base
  properties:
    vl_flavours:
      flavours:
        flavourId: test2
    connectivity_type:
      layer_protocol: ipv4
      flow_pattern:
  type: tosca.nodes.nfv.VnfVirtualLinkDesc
USRSU_Storage:
  attributes:
    tosca_name: USRSU_Storage
  properties:
    id: USRSU_Storage
    size_of_storage: 200G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
UPSPU_VduCpd_Base:
  attributes:
    tosca_name: UPSPU_VduCpd_Base
  properties:
    role: root
    layer_protocol: ipv4
```

```

requirements:
- virtual_binding:
    capability: tosca.capabilities.nfv.VirtualBindable
    node: UPSPU
- virtual_link:
    capability: tosca.capabilities.nfv.VirtualLinkable
    node: Base
type: tosca.nodes.nfv.VduCpd
PUPDU:
attributes:
    tosca_name: PUPDU
capabilities:
    virtual_compute:
        properties:
            virtual_memory:
                virtual_mem_size: 24G
            requested_additional_capabilities: {}
            virtual_cpu:
                num_virtual_cpu: 4
properties:
    configurable_properties:
        test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: PUPDU
    description: the virtual machine of PUPDU
requirements:
- virtual_storage:
    capability: tosca.capabilities.nfv.VirtualStorage
    node: PUPDU_Storage
type: tosca.nodes.nfv.VDU.Compute
USRSU_VduCpd_Base:
attributes:
    tosca_name: USRSU_VduCpd_Base
properties:
    role: root
    layer_protocol: ipv4
requirements:
- virtual_binding:
    capability: tosca.capabilities.nfv.VirtualBindable
    node: USRSU
- virtual_link:
    capability: tosca.capabilities.nfv.VirtualLinkable
    node: Base
type: tosca.nodes.nfv.VduCpd
OMU:
attributes:
    tosca_name: OMU
capabilities:
    virtual_compute:
        properties:
            virtual_memory:
                virtual_mem_size: 16G
            requested_additional_capabilities: {}
            virtual_cpu:
                num_virtual_cpu: 4
properties:
    configurable_properties:
        test: {"additional_vnfc_configurable_properties":{"aaa":"1"}}
    name: OMU
    description: the virtual machine of OMU
requirements:
- virtual_storage:
    capability: tosca.capabilities.nfv.VirtualStorage
    node: OMU_Storage
type: tosca.nodes.nfv.VDU.Compute
UPIRU_VduCpd_Fabric:
attributes:
    tosca_name: UPIRU_VduCpd_Fabric
properties:
    role: root
    layer_protocol: ipv4
requirements:

```

```

- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  node: Fabric
type: tosca.nodes.nfv.VduCpd
UPSPU_Storage:
  attributes:
    tosca_name: UPSPU_Storage
  properties:
    id: UPSPU_Storage
    size_of_storage: 4G
    type_of_storage: volume
  type: tosca.nodes.nfv.VDU.VirtualStorage
PUPDU2ManageNet:
  attributes:
    tosca_name: PUPDU2ManageNet
  properties:
    role: root
    layer_protocol: ethernet
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: PUPDU
  type: tosca.nodes.nfv.VduCpd
USRSU_VduCpd_Fabric:
  attributes:
    tosca_name: USRSU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: USRSU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Fabric
  type: tosca.nodes.nfv.VduCpd
UPIRU2SignalNet1:
  attributes:
    tosca_name: UPIRU2SignalNet1
  properties:
    role: root
    layer_protocol: ipv4
  type: tosca.nodes.nfv.VduCpd
Fabric:
  attributes:
    tosca_name: Fabric
  properties:
    vl_flavours:
      flavours:
        flavourId: test1
    connectivity_type:
      layer_protocol: ipv4
      flow_pattern:
  type: tosca.nodes.nfv.VnfVirtualLinkDesc
UPSPU_VduCpd_Fabric:
  attributes:
    tosca_name: UPSPU_VduCpd_Fabric
  properties:
    role: root
    layer_protocol: ipv4
  requirements:
    - virtual_binding:
        capability: tosca.capabilities.nfv.VirtualBindable
        node: UPSPU
    - virtual_link:
        capability: tosca.capabilities.nfv.VirtualLinkable
        node: Fabric
  type: tosca.nodes.nfv.VduCpd

```

```
# substitution_mappings:
```

```
#    node_type: toska.nodes.nfv.VNF.vPCRF
tosca_definitions_version: toska_simple_yaml_1_0
```

## vTAS

TAS from Nokia: [ntas.csar](#)