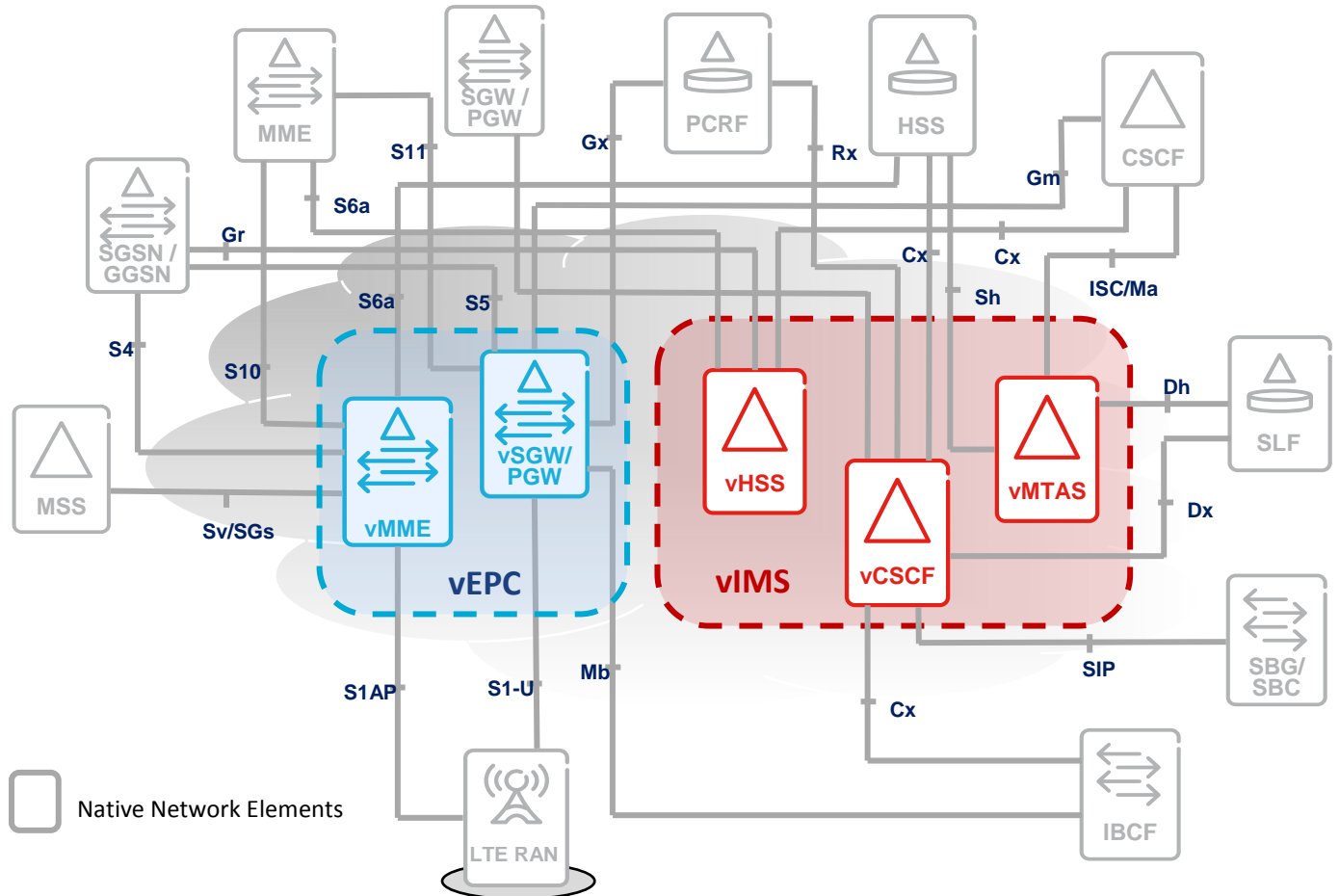


Example of VoLTE use case:

In this use case, it is assumed that IMS is composed of virtualized and non-virtualized appliances. For the sake of simplicity many interfaces have not been listed in the figure below.



The aim of Transformer will be to define a set of test cases under the VoLTE use case for example. Those test cases will be used to verify the horizontal inter-operability between the native network elements and the virtualized ones. SRVCC is a good test case candidate that involves all nodes. The proposed approach would be to produce test cases, TC, for each virtualized application, for example SRVCC TC when testing a virtualized HSS, vHSS, would look like the following:

Description: This Case is to describe SRVCC Handover Procedure when UE moves from LTE PS Access to WCDMA.

Tested VNF: vHSS

Tested interfaces: Cx/Dx

References: 3GPP TS 23.216, 3GPP TS 29.229

Precondition: SRVCC UE is attached to LTE Network successfully. MME has STN-SR (ATCF) and C-MSISDN received from vHSS during registration. ATCF has ATU-STI and C-MSISDN received from SCC-AS during registration.

Action: UE-A is making a VoLTE call to UE-B

Result: VoLTE call established successfully.

Action: Move either UE-A or UE-B from LTE access to CS access.

Result: Following sequences shall be observed:

1. The INVITE is sent from MSC towards I-CSCF with R-URI=STN-SR, PAI=C-MSISDN.
2. I-CSCF sends LIR to vHSS (Via SLF), with STN-SR as Public-Identity, in order to query FQDN of target ATCF.
3. vHSS replies LIA to I-CSCF (Via SLF) with DIAMETER_SUCCESS and with ATCF's FQDN as Server-Name.
4. ATCF later sends INVITE with R-URI=ATU-STI and PAI=C-MSISDN to I-CSCF. I-CSCF sends LIR to vHSS (Via SLF), with ATU-STI as Public-Identity, in order to query FQDN of target SCC-AS.
5. vHSS replies LIA (Via SLF) to I-CSCF with DIAMETER_SUCCESS and with SCC-AS' FQDN as Server-Name.

Please note that the test case description listed above is not exhaustive and is meant to give more clarification for Transformer scope in the horizontal verification.

Using the same approach, a SRVCC TC, will be defined for each virtualized application in the IMS Core in order to provide the community with an extensive list of use cases and test cases to perform NFV's horizontal verification in respect to the agreed industry standards.