

NetSIM Server Components and Compatibility

This document describes the functionality and compatibility of the NetSIM NS4 Server (for 4G-LTE).

NetSIM Solution - To understand the NetSIM solution it is important to understand the role of the NetSIM server and its functionality:

- The NetSIM Server does not test the RRU (Radio) or BBU (Baseband).
- The NetSIM Server produces the required S1 signalling to enable an LTE baseband to operate. It simulates the basic function of the EPC.
- The NetSIM Server is a static device, there are no settings, configuration, etc, required, power-on, it works and produces to S1 signalling.
- The four main OEMs (Ericsson, Huawei, Nokia and ZTE) all use S1 signalling for LTE RAN, but each OEM places unique additional signalling to prevent inter-operability.
- The NetSIM Server has four ports, A – Ericsson, B – Huawei, C – Nokia and D – other (ZTE).

NetSIM Server Compatibility - The NetSIM Server does not care what RRU or BBU is connected, it generates a constant S1 signalling data stream. Neither does it care if the radio is 2100MHz or 900MHz, FDD or TDD.

This data stream, using TCP/IP / Ethernet, connects to the OEM specific Baseband via the Transport Port (in the case of Ericsson TN-x).

Then using the BBU LMT (Local Management Terminal), the BBU can be configured to work with the required (for testing) RRU.

Compatibility between the BBU and the RRU is purely a result of the BBU hardware type, RRU hardware type and the software installed on one of both these units.

Practically each model of BBU and each model of RRU require a unique combination of “script” which is either loaded into the BBU or an extension of the LMT application. NetSIM do not create this, nor have any rights over such SW and scripts as these are exclusively created by the OEM based on the exact configuration. NetSIM can support by providing these scripts (in most cases) but do not provide any warranty for OEM SW or scripts.

BBU and RRU Functionality Testing - Basic functionality of the RRU is assured from the BBU but advanced features can only be enabled when installed in the client’s network where activation and feature licences are installed automatically according to the client’s agreement with the OEM.

Using the LMT, and activated due to the S1 signalling, the BBU can enable and disable certain functions in the RRU (example, TX CH4 Transmit).

Then, using either the built-in diagnostics and the UE (User Equipment, aka test phone), additional data can be obtained on TX and RX levels, throughput, etc.

Note: The BBU and RRU will do nothing without the NetSIM Server and its S1 signalling connected to the Transport port.