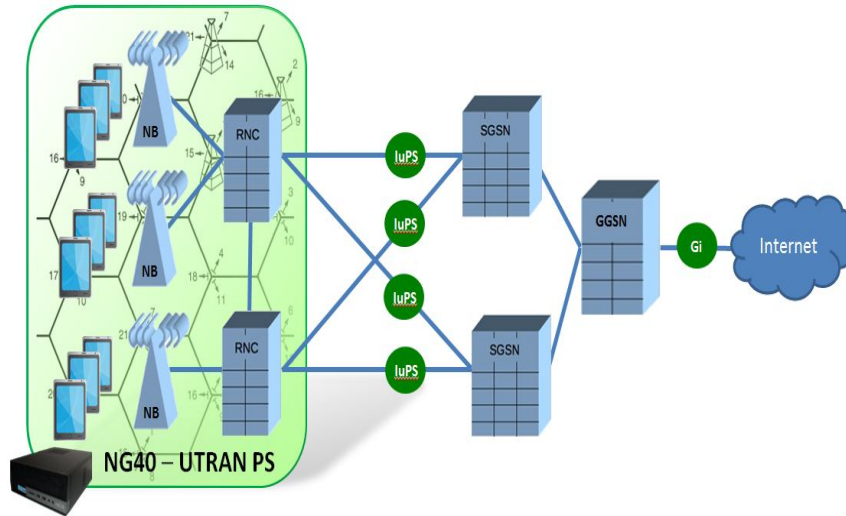


## NG40-RAN-IuPS-Eth-DT



UTRAN side DEMONSTRATION TEST system - Radio Access Network (RAN) emulator for multiple RNCs with Control Plane and User Plane functionality over Ethernet

\*\*\* FEATURES \*\*\*

- RANAP/NAS Release 8+9+10
- Integrated UE/NodeB functionality
- Connectivity multiple SGSNs/CORE Networks
- Multiple User Support: standard 2 users, extendable

\*\*\* SESSIONS \*\*\*

- IPv4/IPv6 Transport-IP and Application-IP
- PDP-Context creation/modification/deletion (UE/Network initiated)
- 11 simultaneous PDP-Context per UE (primary, secondary)

\*\*\* SECURITY \*\*\*

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- Ciphering, Integrity Protection

\*\*\* EXTENSIONS \*\*\*

- LTE EPC / 4G Handover / IuCS Mobility

\*\*\* MOBILITY \*\*\*

- Attach, Detach, Routing Area Update, Service Request, Relocation-PS
- 2G/3G/4G Mobility and Handover (4G Mobility optional)
- Idle Mode Paging for Downlink Data
- IuFlex NRI-based including NULL-NRI and MOCN

\*\*\* SERVICES \*\*\*

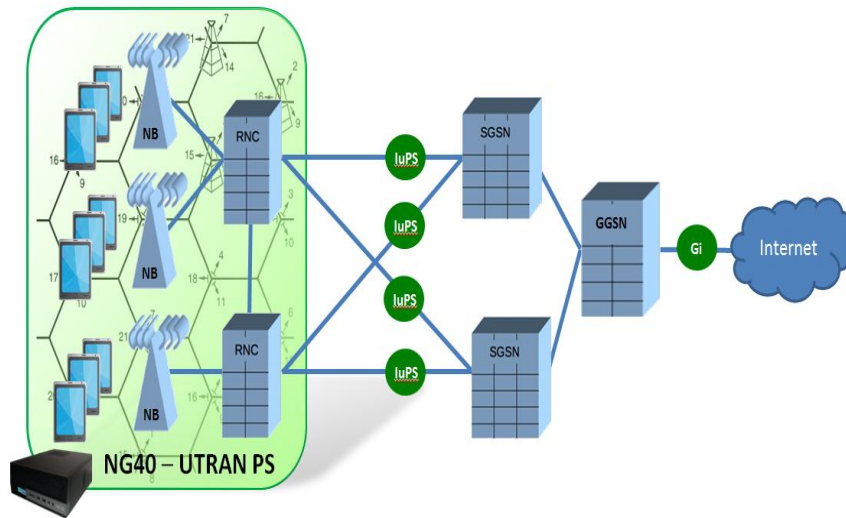
- HSDPA/HSUPA-support
- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated IuPS/Gi-Interface User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active IuPS- and Gi-Interface)
- PS/EPS-correlation

\*\*\* FUNCTIONAL TEST KPI's \*\*\*

Message modification, deletion and insertion with commreplace emulation and Python scripts

- 10 procedures/sec
- 10 concurrent PS calls
- Up to 200 UE's
- Up to 4 RNC's

## NG40-RAN-IuPS-Eth-FT



UTRAN side FUNCTIONAL TEST system - Radio Access Network (RAN) emulator for multiple RNCs with Control Plane and User Plane functionality over Ethernet

\*\*\* FEATURES \*\*\*

- RANAP/NAS Release 8+9+10
- Integrated UE/NodeB functionality
- Connectivity multiple SGSNs/CORE Networks
- Multiple User Support: standard 2 users, extendable

\*\*\* SESSIONS \*\*\*

- IPv4/IPv6 Transport-IP and Application-IP
- PDP-Context creation/modification/deletion (UE/Network initiated)
- 11 simultaneous PDP-Context per UE (primary, secondary)

\*\*\* SECURITY \*\*\*

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- Ciphering, Integrity Protection

\*\*\* EXTENSIONS \*\*\*

- LTE EPC / 4G Handover / IuCS Mobility

\*\*\* MOBILITY \*\*\*

- Attach, Detach, Routing Area Update, Service Request, Relocation-PS
- 2G/3G/4G Mobility and Handover (4G Mobility optional)
- Idle Mode Paging for Downlink Data
- IuFlex NRI-based including NULL-NRI and MOCN

\*\*\* SERVICES \*\*\*

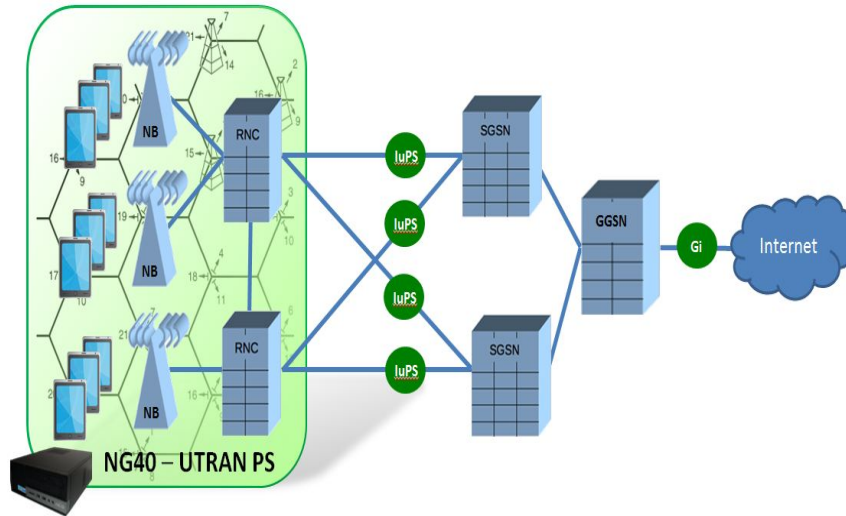
- HSDPA/HSUPA-support
- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated IuPS/Gi-Interface User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active IuPS- and Gi-Interface)
- PS/EPS-correlation

\*\*\* FUNCTIONAL TEST KPI's \*\*\*

Message modification, deletion and insertion with commreplace emulation and Python scripts

- 100 procedures/sec
- 100 concurrent PS calls
- Up to 20.000 UE's
- Up to 40 RNC's

## NG40-RAN-luPS-Eth-LT



UTRAN side LOAD TEST - Radio Access Network (RAN) emulator for multiple RNCs with Control Plane and User Plane functionality over Ethernet

\*\*\* FEATURES \*\*\*

- RANAP/NAS Release 8+9+10
- Integrated UE/NodeB functionality
- Multiple User Support: standard 2 users, extendable

\*\*\* SESSIONS \*\*\*

- IPv4/IPv6 Transport-IP and Application-IP
- PDP-Context creation/modification/deletion (UE/Network initiated)
- 11 simultaneous PDP-Context per UE (primary, secondary)

\*\*\* SECURITY \*\*\*

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- Ciphering, Integrity Protection

\*\*\* EXTENSIONS \*\*\*

- LTE EPC / 4G Handover / IuCS Mobility

\*\*\* MOBILITY \*\*\*

- Attach, Detach, Routing Area Update, Service Request, Relocation-PS
- 2G/3G/4G Mobility and Handover (4G Mobility optional)
- Idle Mode Paging for Downlink Data
- IuFlex NRI-based including NULL-NRI and MOCN

\*\*\* SERVICES \*\*\*

- HSDPA/HSUPA-support
- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated IuPS/Gi-Interface User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active IuPS- and Gi-Interface)
- PS/EPS-correlation

\*\*\* LOAD TEST KPI's \*\*\*

Tested on 12 Core Intel dual Xeon Server with 2 Scenarios and can be extended with licenses for additional scenarios:

- 50,000 RANAP Messages/sec
- 4,000,000 UEs (with IuFlex and max NRI field length: 2,000,000)
- 8,000,000 EPS-Bearer (PDPCs)
- 800 RNCs
- 80 SGSNs