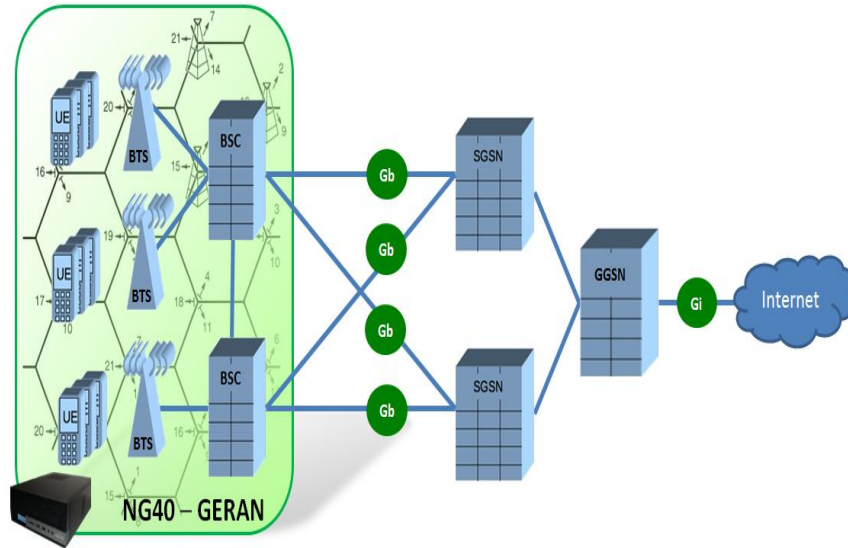


NG40-RAN-Gb-ETH-DT



SW-Bundle: GERAN side DEMONSTRATION TEST System - Radio Access Network (RAN) emulator for multiple BSS with Control Plane and User Plane functionality over Ethernet

*** FEATURES ***

- Physical Interface: GbE
- UE/BTS functionality included
- NS/BSSGP/LLC/SNDCP Release 6+7+8
- NAS Release 8+9+10
- Unlimited number of cells//NSVC's/BVC's
- Unack/Ack mode for LLC Sessions

*** SESSIONS ***

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

*** EXTENSIONS ***

- Gb over Frame Relay / IuPS (SGSN 3G) / S1 (MME)

*** SECURITY ***

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- GEA-1 / GEA-2 / GEA-3 Ciphering

*** MOBILITY ***

- Attach, Detach, Routing Area Update
- 2G/3G/4G Mobility (3G and 4G Mobility optional)
- Idle Mode Paging for Downlink Data

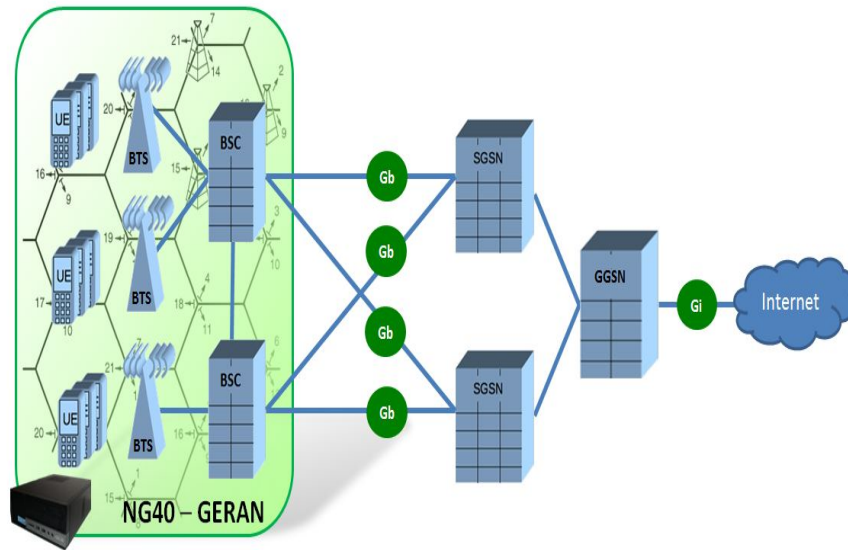
*** SERVICES ***

- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active Gb- and Gi-Interface)

*** DEMONSTRATION TEST KPI's ***

- 10 procedures/sec
- 10 Mbps rx and Mbps tx

NG40-RAN-Gb-ETH-FT



SW-Bundle: GERAN side FUNCTIONAL TEST System - Radio Access Network (RAN) emulator for multiple BSS with Control Plane and User Plane functionality over Ethernet

*** FEATURES ***

- Physical Interface: GbE
- UE/BTS functionality included
- NS/BSSGP/LLC/SNDCP Release 6+7+8
- NAS Release 8+9+10
- Unlimited number of cells//NSVC's/BVC's
- Unack/Ack mode for LLC Sessions

*** SESSIONS ***

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

*** EXTENSIONS ***

- Gb over Frame Relay / luPS (SGSN 3G) / S1 (MME)

*** SECURITY ***

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- GEA-1 / GEA-2 / GEA-3 Ciphering

*** MOBILITY ***

- Attach, Detach, Routing Area Update
- 2G/3G/4G Mobility (3G and 4G Mobility optional)
- Idle Mode Paging for Downlink Data

*** SERVICES ***

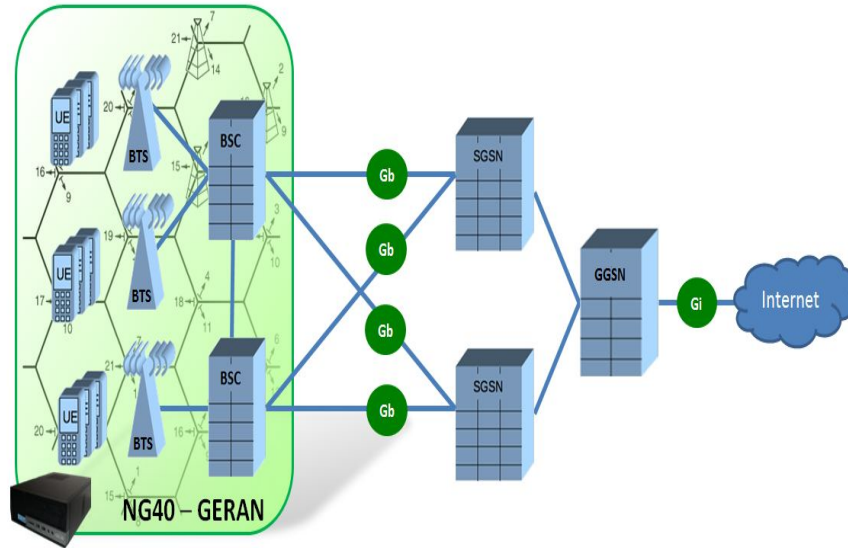
- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active Gb- and Gi-Interface)

*** FUNCTIONAL TEST KPI's ***

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

- 100 procedures/sec
- 100 Mbps rx and Mbps tx

NG40-RAN-Gb-ETH-LT



SW-Bundle: GERAN side LOAD TEST System - Radio Access Network (RAN) emulator for multiple BSS with Control Plane and User Plane functionality over Ethernet

*** FEATURES ***

- Physical Interface: GbE
- UE/BTS functionality included
- NS/BSSGP/LLC/SNDCP Release 6+7+8
- NAS Release 8+9+10
- Unlimited number of cells//NSVC's/BVC's
- Unack/Ack mode for LLC Sessions

*** SESSIONS ***

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

*** EXTENSIONS ***

- Gb over Frame Relay / IuPS (SGSN 3G) / S1 (MME)

*** SECURITY ***

- Authentication (XOR/Milenage for 3G USIM's, A3/A8 for 2G SIM's)
- GEA-1 / GEA-2 / GEA-3 Ciphering

*** MOBILITY ***

- Attach, Detach, Routing Area Update
- 2G/3G/4G Mobility (3G and 4G Mobility optional)
- Idle Mode Paging for Downlink Data

*** SERVICES ***

- IP-Bridge to external clients via LAN (UE simulation via external application)
- Integrated User Plane packet generator
- SMS-Generator including concatenated (long) SMS
- End-to-End Test (active Gb- and Gi-Interface)

*** LOAD TEST KPI's ***

Typical signaling performance with high end server:

- Up to 3 * 20.000 GMM/SM msg/s

Typical user plane perform. over 20 * 1 GbEth interf.:

- With small packages (128 Byte payload): static total: 6 Gbps, dynamic total: 4.5 Gbps
- With 1500 Byte packages: up to 19 Gbps (max. 20 * 1 GbEth per server and 1 card used for signaling)
- Default number of SGSNs: 40
- Default number of BSSs: 400
- Subscribers/bearers/sessions: 2.000.000