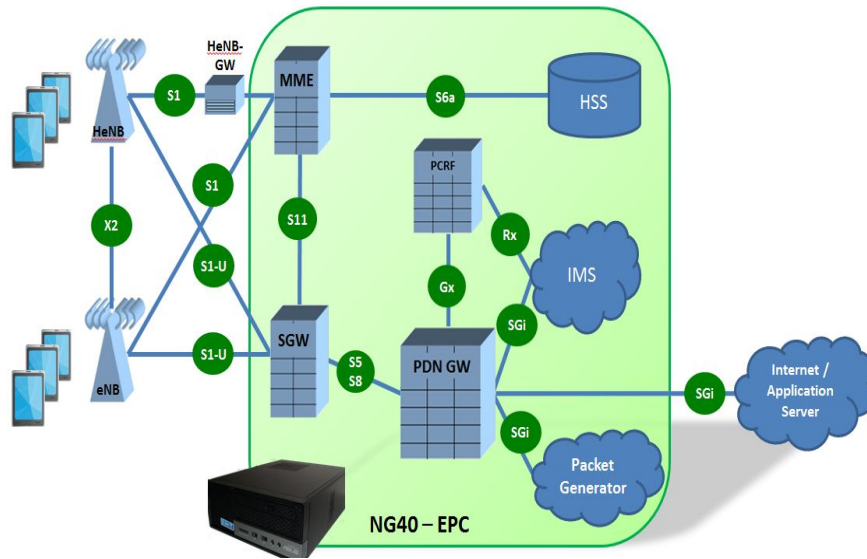


NG40-EPC-S1-DT



EPC side demonstration test emulator for multiple MMEs and SGWs with S1 and S1-U functionality. The HSS and PGW functionality as seen on S1 interface is included.

eNB and HeNB support

FDD and TDD support

Mobility

- S1Ap/NAS Release 8+9+10
- ATTACH/DETACH/TAU/ServiceRequest/S1-Release
- Pathswitch(x2), Handover - 4g (with and w/o MME/SGW Relocation)
- 11 simultaneous bearer/sessions
- NAS piggyback (DEF+DED bearer during ATTACH)

- Paging

Session

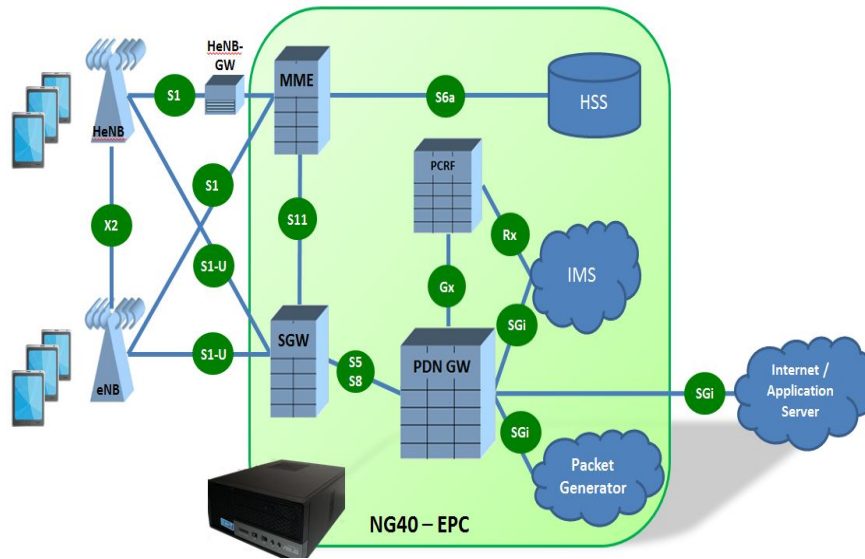
- Default bearer creation/modification/deletion (UE/Network initiated)
- Dedicated bearer creation/modification/deletion (UE/Network initiated)
- Session creation/deletion

Features/Services

- Authentication (XOR/Milenage)
- Integrity protection/Ciphering (snow-3g/LTE)
- CS-Fallback
- Handover (3g--4g)
- SMS
- UserPlane: S1U + SGi-interface
- Ipv4/Ipv6 Application + Transport
- Bridge to external servers (SGi interface)
- Integrated user plane packet generator
- Closed subscriber groups

Demonstration test performance limitation:

- 10 procedures/sec
- 15 Mbps rx and 15 Mbps tx
- 200 UEs
- 15 eNBs
- 5 ePCs

NG40-EPC-S1-FT

EPC side functional test emulator for multiple MMEs and SGWs with S1 and S1-U functionality. The HSS and PGW functionality as seen on S1 interface is included.

eNB and HeNB support

FDD and TDD support

Mobility

- S1Ap/NAS Release 8+9+10
- ATTACH/DETACH/TAU/ServiceRequest/S1-Release
- Pathswitch(x2), Handover - 4g (with and w/o MME/SGW Relocation)
- 11 simultaneous bearer/sessions
- NAS piggyback (DEF+DED bearer during ATTACH)

- Paging

Session

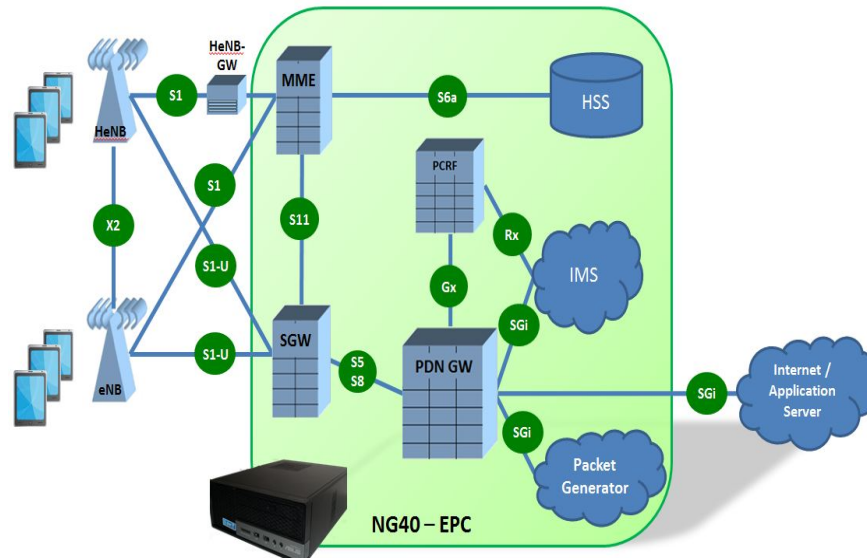
- Default bearer creation/modification/deletion (UE/Network initiated)
- Dedicated bearer creation/modification/deletion (UE/Network initiated)
- Session creation/deletion

Features/Services

- Authentication (XOR/Milenage)
- Integrity protection/Ciphering (snow-3g/LTE)
- CS-Fallback
- Handover (3g--4g)
- SMS
- UserPlane: S1U + SGi-interface
- Ipv4/Ipv6 Application + Transport
- Bridge to external servers (SGi interface)
- Integrated user plane packet generator including SGi allowing packet delay measurements
- Closed subscriber groups
- Message modification, deletion and insertion with commreplace emulation and Python scripts

Functional test performance limitation:

- 100 procedures/sec
- 150 Mbps rx and 150 Mbps tx
- 20000 UEs
- 150 eNBs
- 50 EPCs

NG40-EPC-S1-LT

EPC side load test emulator for multiple MMEs and SGWs with S1 and S1-U functionality.
The HSS and PGW functionality as seen on S1 interface is included.

eNB and HeNB support

FDD and TDD support

Mobility

- S1Ap/NAS Release 8+9+10
- ATTACH/DETACH/TAU/ServiceRequest/S1-Release
- Pathswitch(x2), Handover - 4g (with and w/o MME/SGW Relocation)
- 11 simultaneous bearer/sessions
- NAS piggyback (DEF+DED bearer during ATTACH)

- Paging

Session

- Default bearer creation/modification/deletion (UE/Network initiated)
- Dedicated bearer creation/modification/deletion (UE/Network initiated)
- Session creation/deletion

Features/Services

- Authentication (XOR/Milenage)
- Integrity protection/Ciphering (snow-3g/LTE)
- CS-Fallback
- Handover (3g--4g)
- SMS
- UserPlane: S1U + SGi-interface
- Ipv4/Ipv6 Application + Transport
- Bridge to external servers (SGi interface)
- Integrated user plane packet generator including SGi allowing packet delay measurements
- Closed subscriber groups

Load test performance:

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

- 20,000 Attaches/sec with real authentication and default bearer creation
- 200,000 S1-AP Messages/sec
- 4,000,000 UEs
- 8,000,000 EPS-Bearer (PDPCs)
- 4500 eNBs
- 500 EPCs