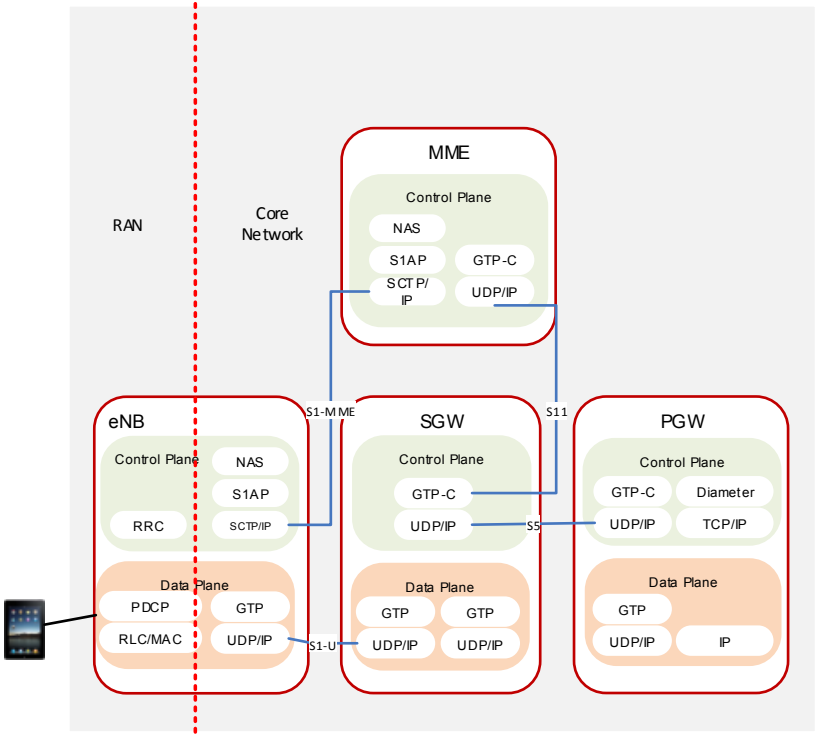
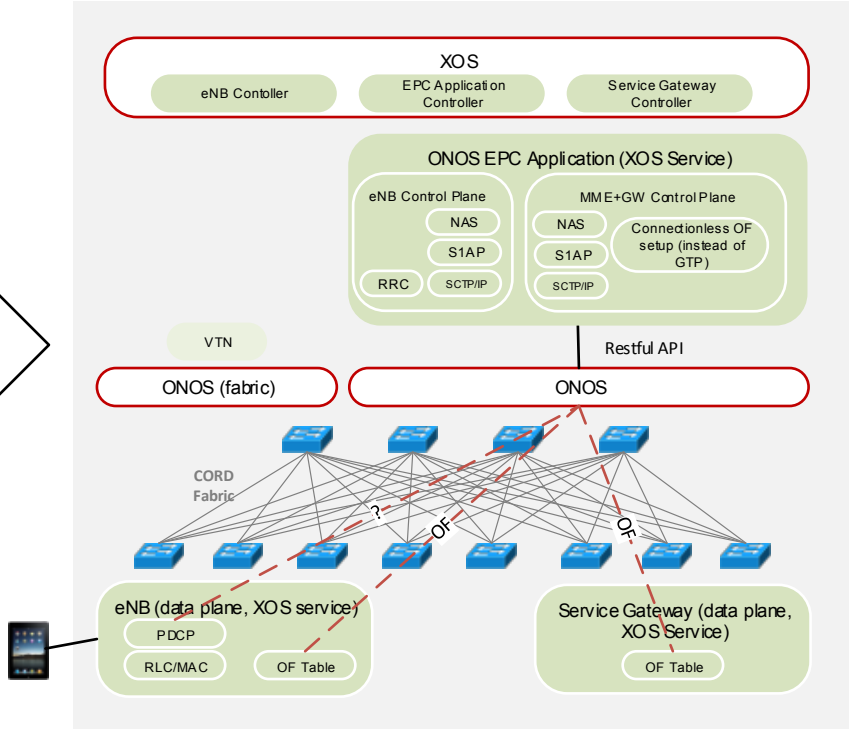
Connectionless LTE Rack 2 Plan for M-CORD

AT&T/Intel/Radysis M-CORD project team

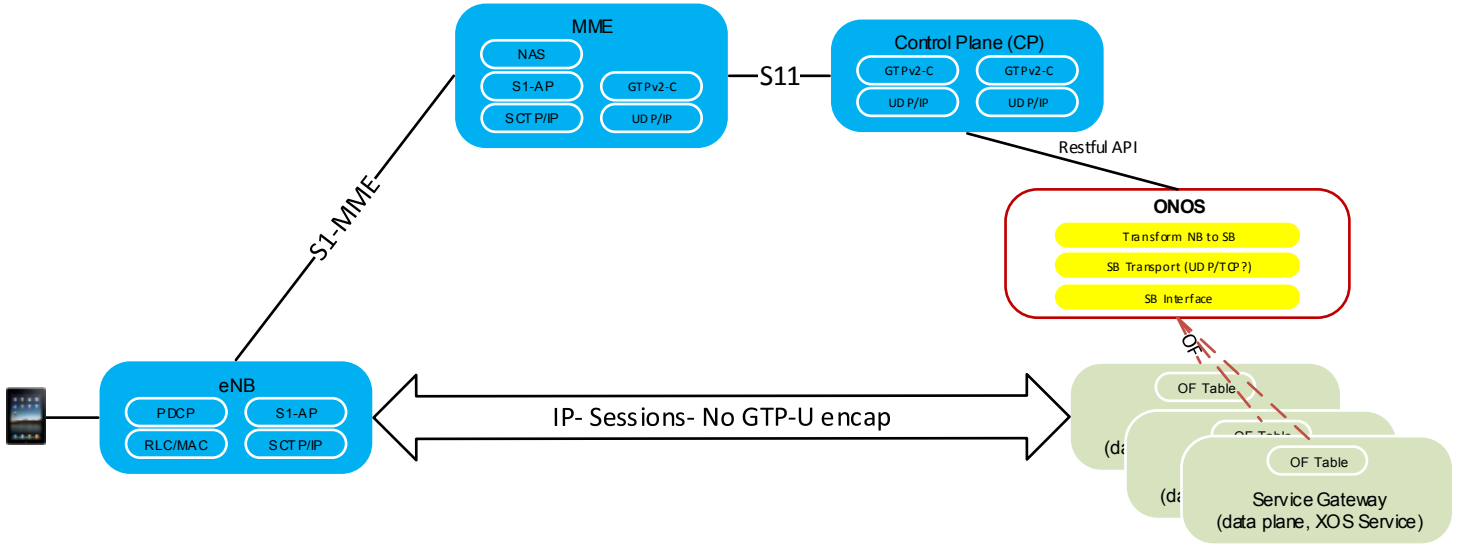
Connectionless LTE: Overview





We propose a staged process to achieve the final connectionless goal

Stage 1 proposal for connectionless LTE



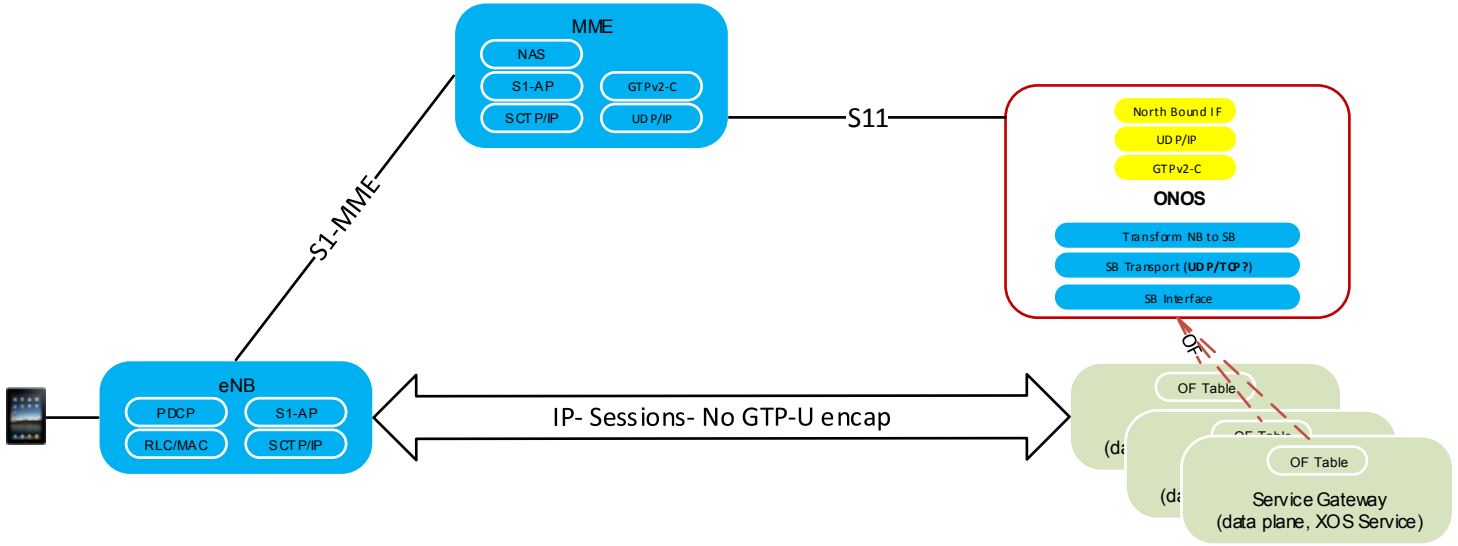
Key Functionality:

- 1 default bearer/session (no dedicate bearers)
- Rel. 11/12 compliant S1-MME, S11
- NB <> SB transformations
- SB transport to support tps requirements

Stage 1 focus on connectionless core network

- Stage 1 objectives:
  - Data plane of core network will be made connectionless (no GTP). In the signaling side, S11 (MME to S-PGW) will be extended to an SDN controller. However, the S1-MME (eNB to MME) will be largely intact. eNB will, however, be modified to make sure of following
    - Do not use GTP for data bearer. Essentially, ignore the GTP setup parameters on S1-MME interface.
    - Provide a provisioning aspect to use tagging/tunneling mechanism between eNB and SGW.
      - Note: This is to address the S1U F-TEID elimination
    - Connectionless RAT will be explored by Intel – optional for integration with connectionless core network
  - Stage 1 will also involve integration of vendor solution in CORD service framework. This includes
    - Use of ONOS as SDN controller.
    - Development of “SGW/PGW application” in ONOS. Role of this application will be to map restful API’s from MME+ application to OF rules towards Radisys SGW/PGW data plane component.
    - Development of XOS service model for eNB service, MME+ service and SGW/PGW data path service.

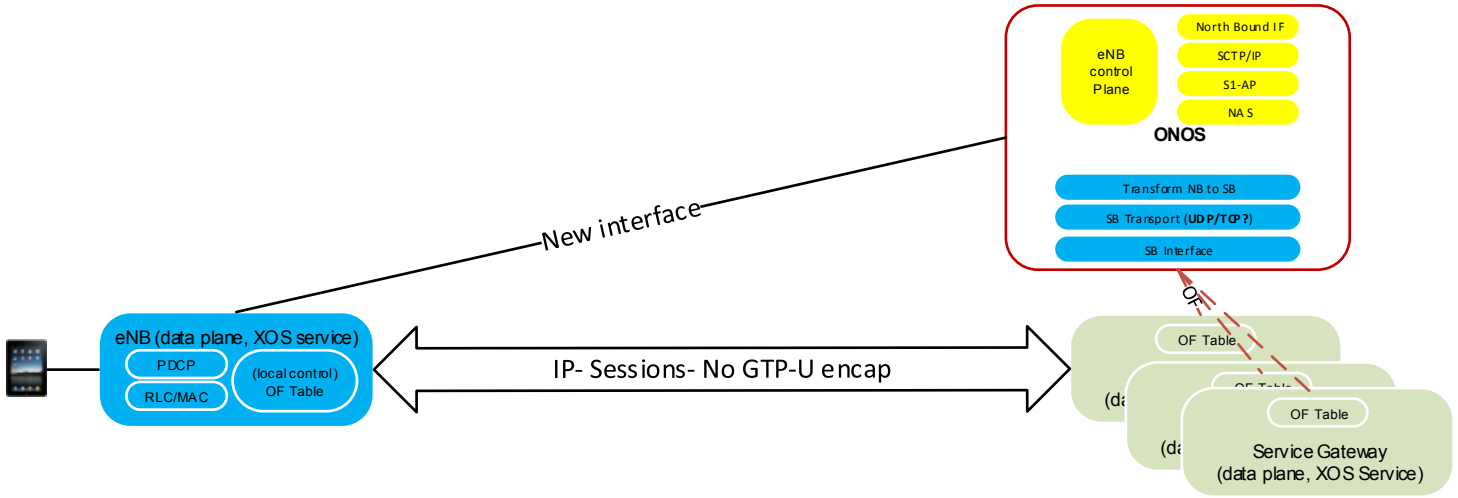
Stage 2 PoC Overview



Key Functionality:

- 1 default bearer/session (no dedicate bearers)
- Rel. 11/12 compliant S1-MME, S11
- NB interface, messaging and transport for S11
- NB <> SB transformations
- SB transport to support tps requirements

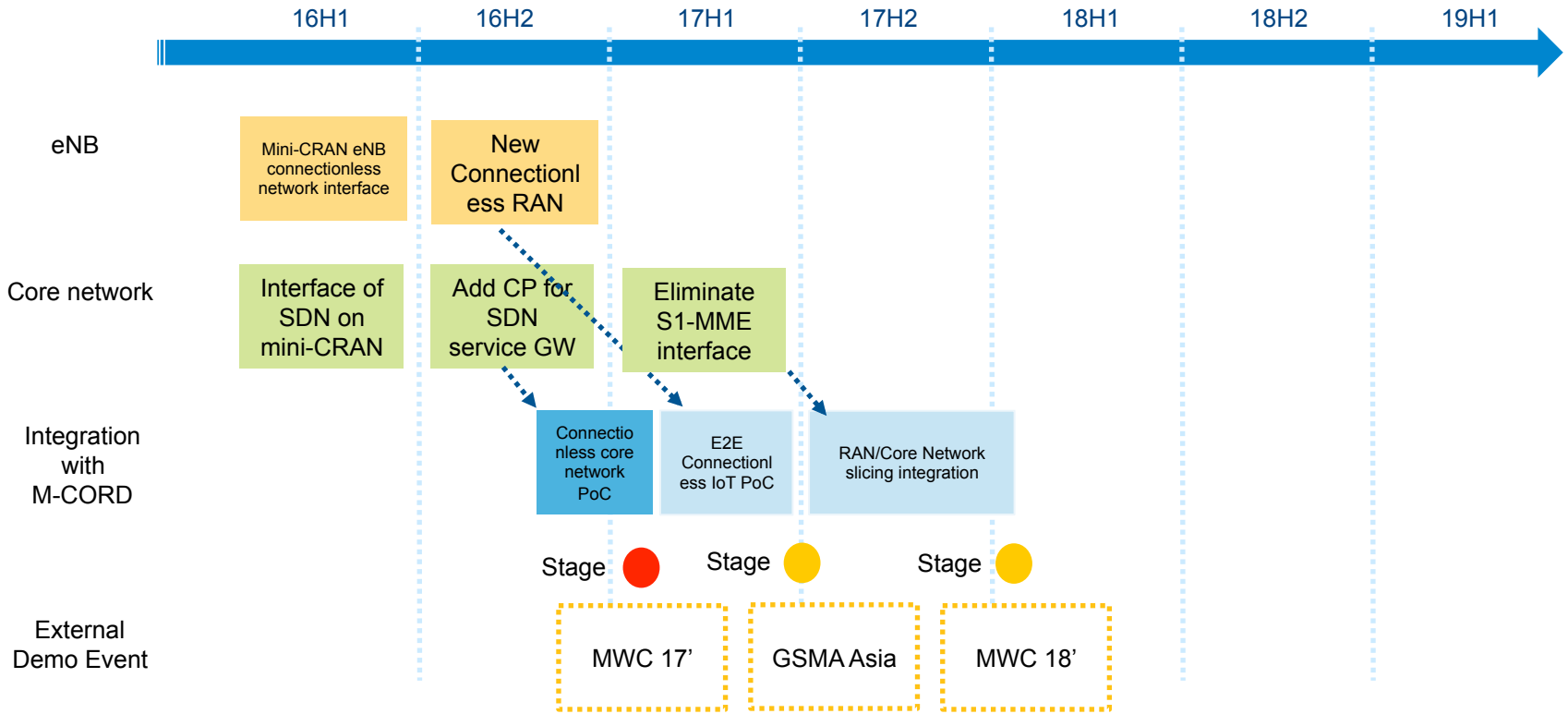
Stage 3 PoC Overview



Key Functionality:

- 1 default bearer/session (no dedicate bearers)
- S1-MME. S11 eliminated.
- New interface to enable separation of control/data plan of eNB
- NAS UE state-management- connected/idle, mobility state
- structures: connection end point scope/lifetime
- NB <> SB transformations
- SB transport to support tps requirements

Timeline for connectionless LTE PoC



*Tentative timeline for stage 2&3