



Li-Ying Chen

OAI

OAI (r14) installation

- https://hackmd.io/1Jlr1LwlRFuz7Z5X_rxG9A

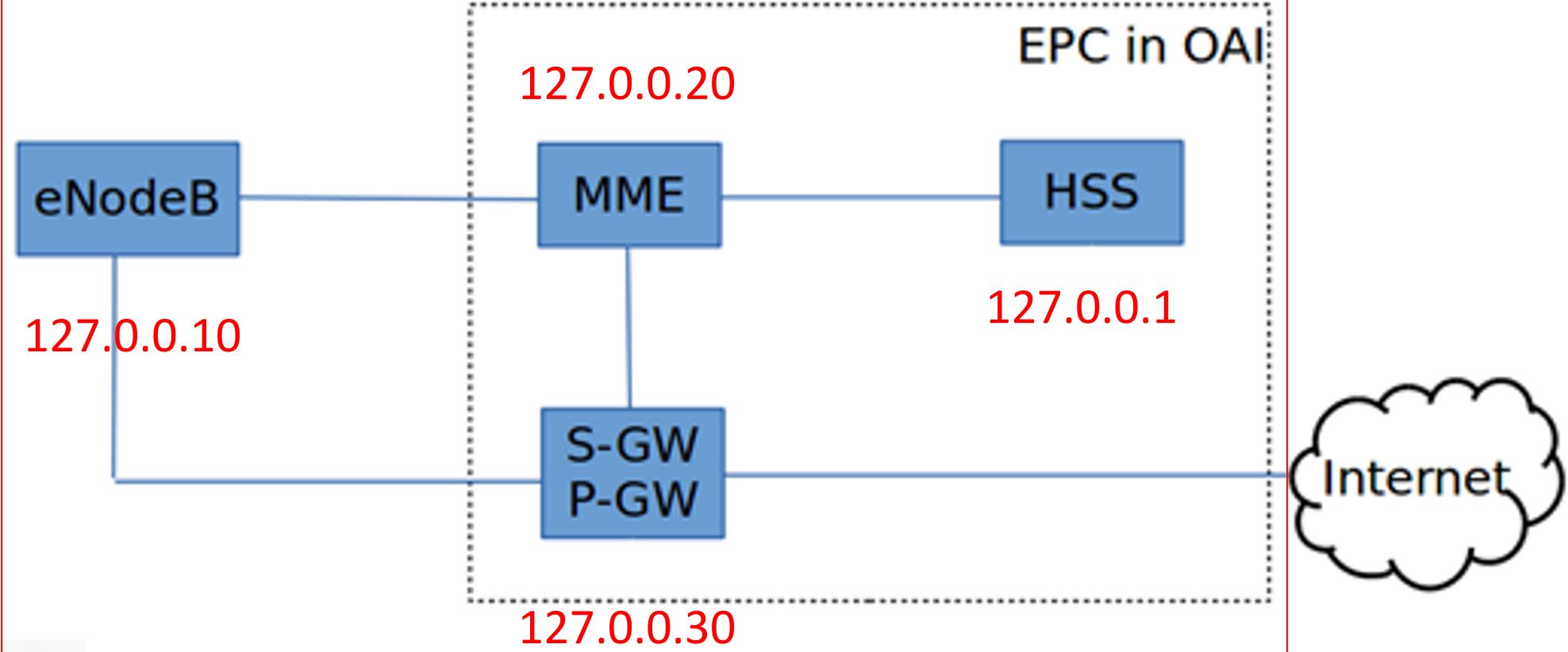
OAI docker edition

- <https://hackmd.io/SoYgmw6nQgmKLIRRkeDeOw>
- https://hackmd.io/WrqFv_q1RziHLGcIC9kDwQ

4G (LTE) Wireless Network architecture is comprised of the following three main components:

- UE (User Equipment) / Mobile
- E-UTRAN (e-NodeB)
- EPC (Evolved Packet Core)

Loopback interface



local host(PC):
140.113.179.231

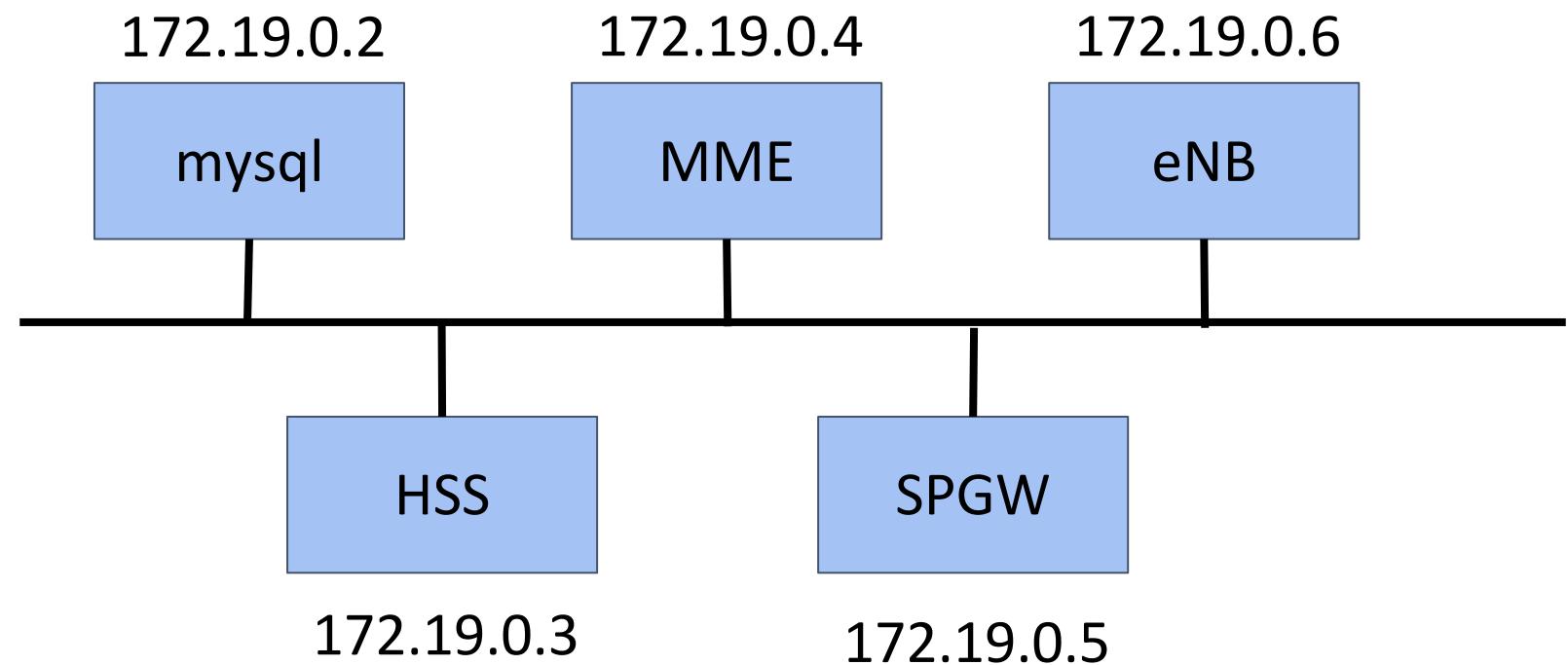


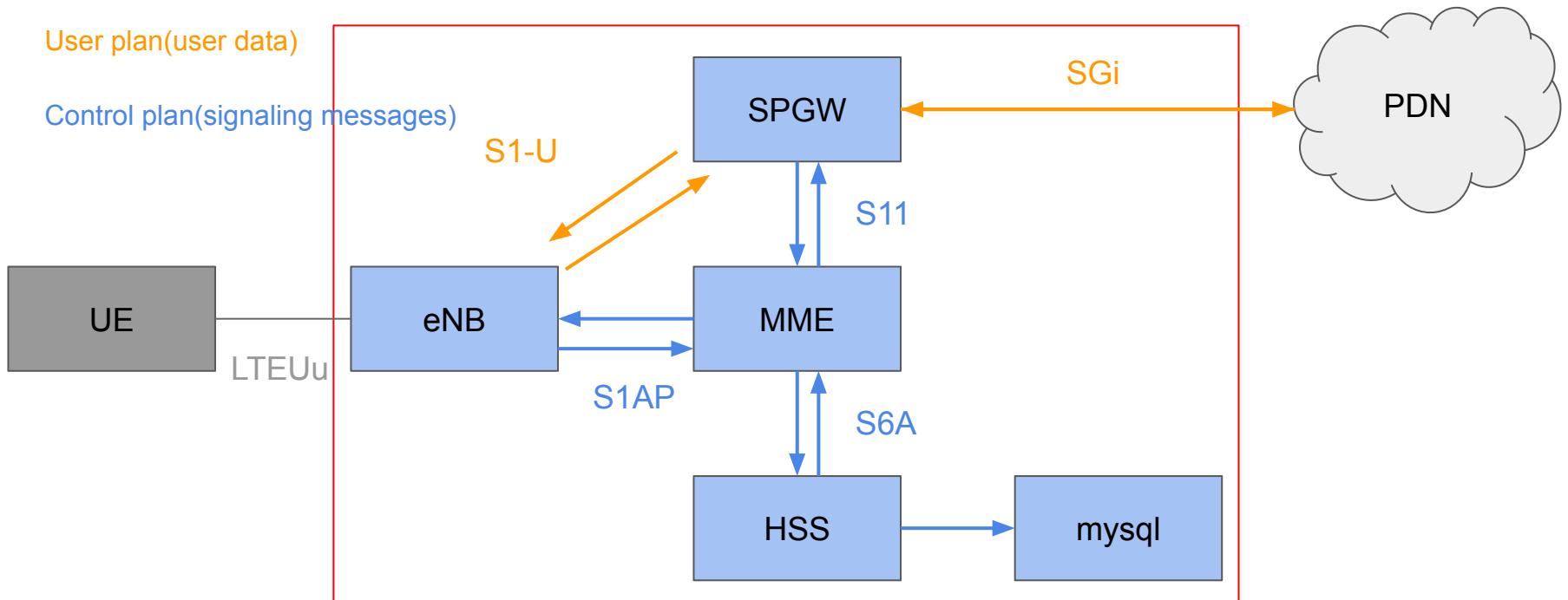
OAI with Docker Container v2

Docker bridge (my-network)

1. db(mysql-server)
2. oai_hss
3. oai_mme
4. oai_spgw
5. oai_enb

my-
network



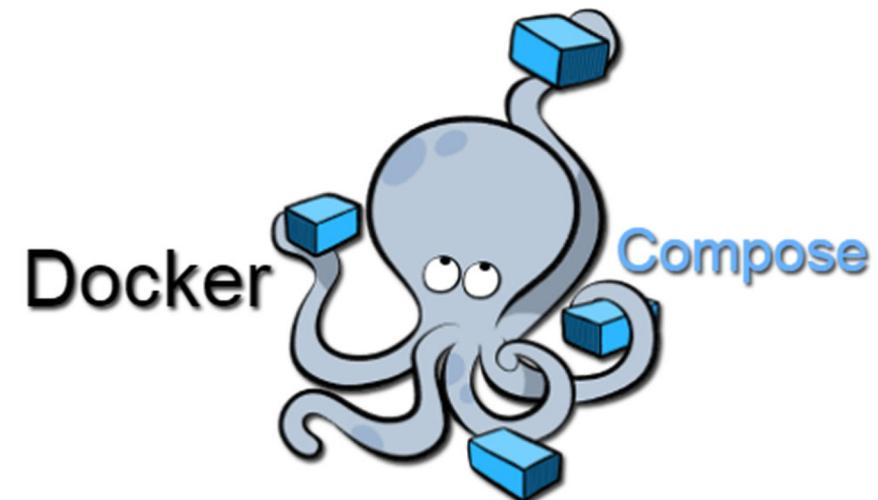


Stage of work

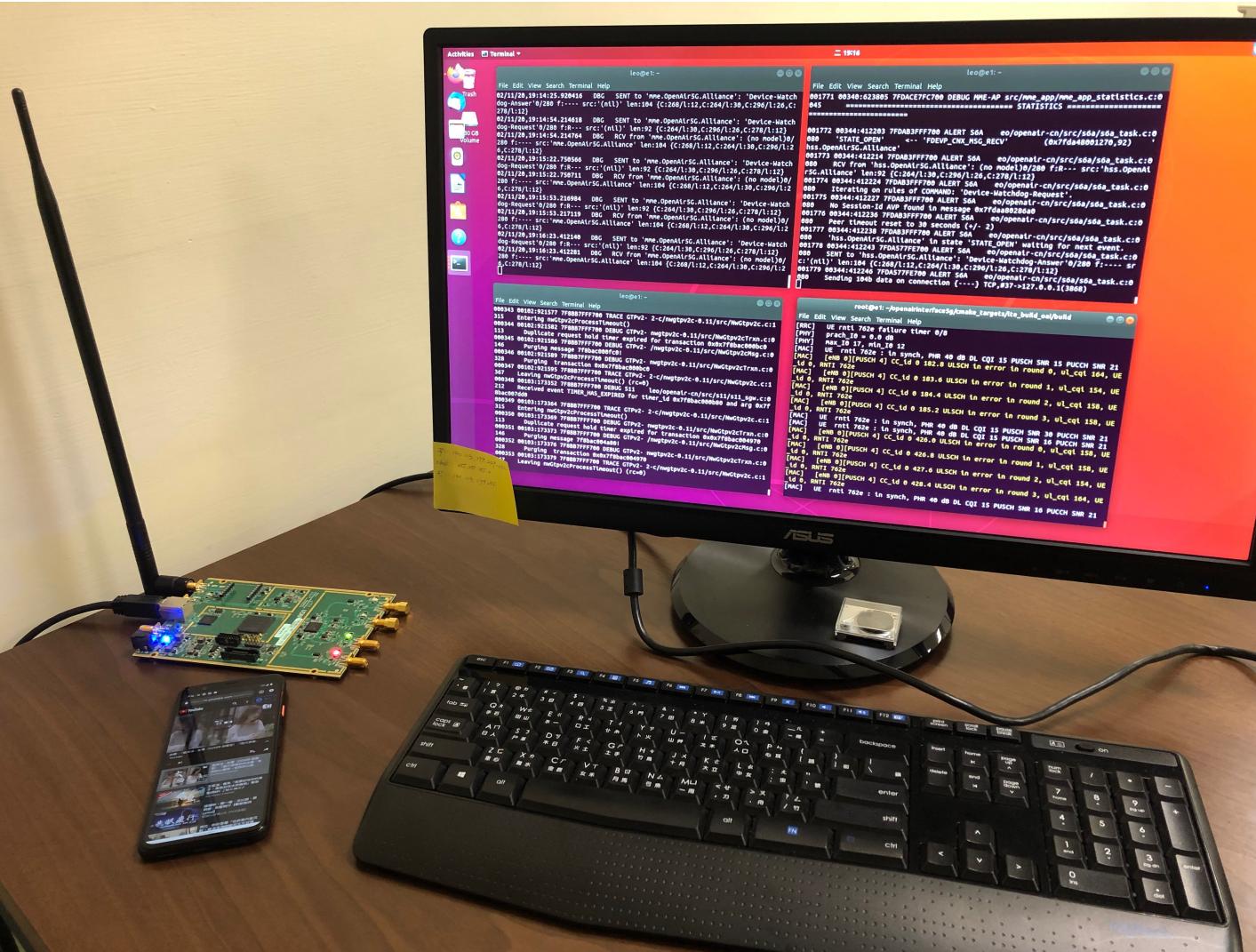
1. All in one at localhost(PC)...done!
2. Four component in different docker...done!
3. Docker with docker compose...done!
4. Using K8s to deploy...done!



kubernetes



Experiment environment



關於手機

裝置名稱
Pixel 4

電話號碼
不明

緊急資訊
擁有者的相關資訊和聯絡資料

法律資訊

法規標籤

安全性和法規手冊

SIM 卡狀態
free5GC

型號與硬體
型號：Pixel 4

IMEI
352931103171567

Android 版本
10

IP 位址
192.168.0.2



<https://www.whatismyip.com.tw>

<https://fast.com/#>



English (US) ▾

IP位址

140.113.179.232 TW



Your Internet speed is

4.3 Mbps



Latency

Unloaded

56 ms

Loaded

124 ms

Upload

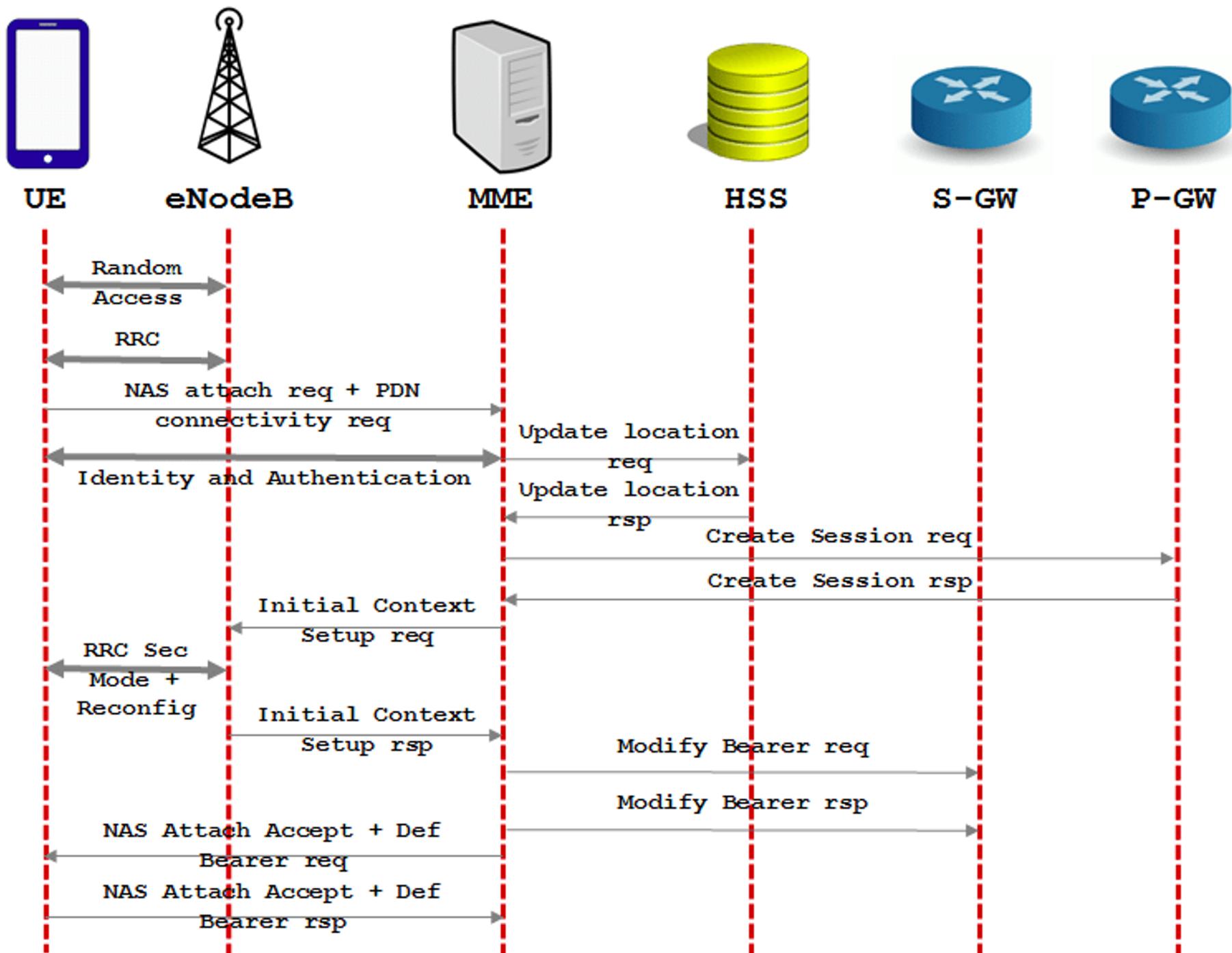
Speed

30 Mbps

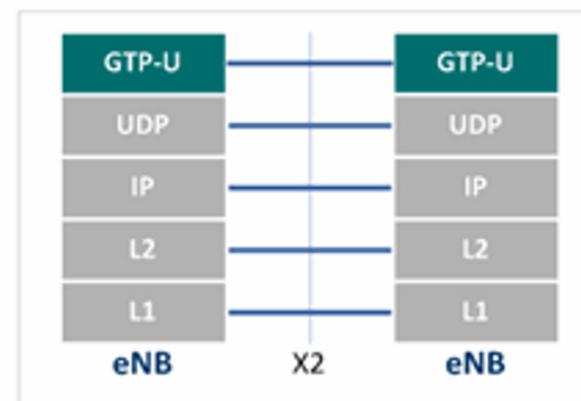
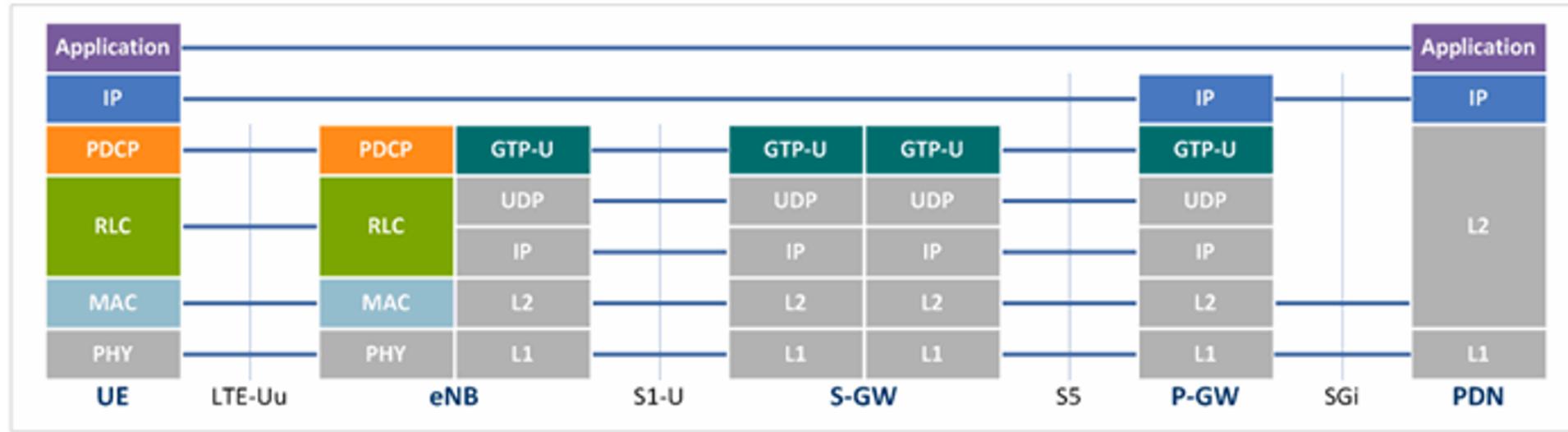
Client Hsinchu, TW 140.113.179.232
Server(s) Tsuen Wan, HK | Tokyo, JP

Settings 4.6MB ↓ 20MB ↑

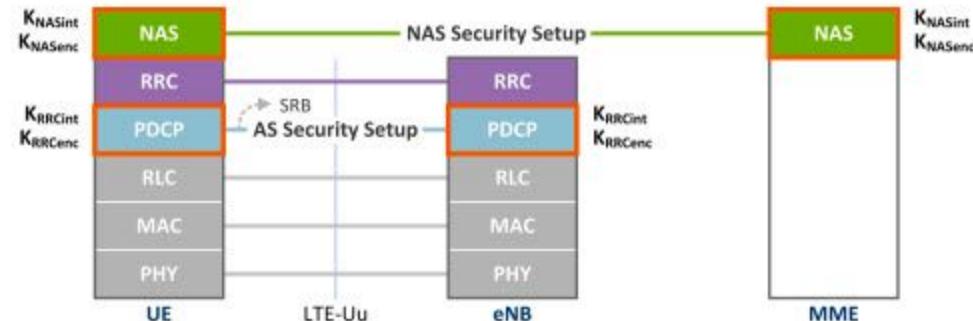




LTE Protocol Stacks



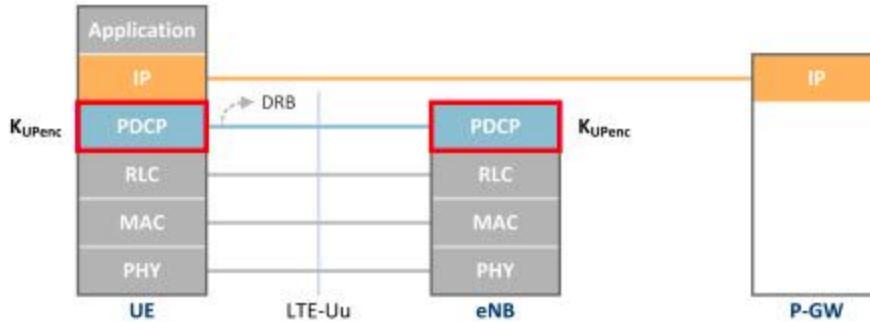
Control Plane



NAS Security Setup
for signaling (NAS signaling)

AS Security Setup
for signaling (RRC signaling)
and user IP packet

User Plane



Perform ciphering/deciphering
(encryption/decryption) and
integrity protection/verification

Perform ciphering/deciphering
(encryption/decryption)

