3GPP TSG RAN Rel-18 workshop
Electronic Meeting, June 28 – July 2, 2021

RWS-210138

ReferenceTimeInfo enhancement in EN-DC

KDDI corporation

Motivation

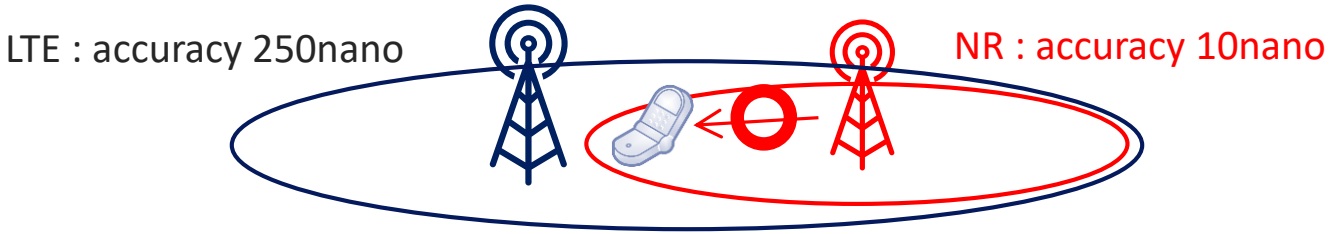
- NR “ReferenceTimeInfo” has higher accuracy than LTE’s one, but NR “ReferenceTimeInfo” is not accessible to UEs in EN-DC operation
  - LTE refQuarterMicroSeconds-r15 INTEGER (0..3999)
  - NR refTenNanoSeconds-r16 INTEGER (0..99999)
- UE in EN-DC operation cannot access higher accurate reference time even in the case where NR is available
- NR SA coverage is not so good so far, and EN-DC operation is a still major operation.
- So, it’s beneficial to develop a solution for those UEs in EN-DC operation to access NR “ReferenceTimeInfo”

	RRC_IDLE : accuracy	RRC_CONNECTED : accuracy
LTE	LTE SIB16 : 250nano(1/4micro)	LTE DLInformationTransfer : 250nano(1/4micro)
NR	NR SIB9: 10nano	LTE DLInformationTransfer : 10nano
EN-DC	LTE SIB16 : 250nano(1/4micro)	LTE DLInformationTransfer : 250nano(1/4micro)

Objectives

Develop solutions enable the UE in EN-DC to access NR “ReferenceTimeInfo”

- For CONNECTED, one candidate solution is to use NR DLInformationTransfer on SRB3 from en-gNB
- For IDLE, one candidate solution is NR SIB9 receiving while the UE camps on the LTE cell
- Delay compensation technique which is applicable to EN-DC operation can be explorer if needed
- LTE enhancement should be avoided, sine operators are reluctant to update their LTE base stations



Proposal

RAN to start the discussion for ReferenceTimeInfo enhancement considering the motivation and objectives mentioned in this contribution

Tomorrow, Together

KDDI