

3GPP TSG RAN Meeting #79
Chennai, India, March 19 - 22, 2018
10.1.2, RP-180221



Even further mobility enhancement in E-UTRAN

China Telecom

Motivation - 1

- Mobility issue since Rel-8
 - Traditional handover mechanism causes robustness issue in case of bad link in source eNB
 - Serial handling during handover cause the interruption time
- Several mobility enhancements reduce some HO interrupt time but not enough
 - RACH-Less Handover: only applicable when TA can be reused in target cell, although several TA calculation solution were proposed during SI
 - Make-before-break: only applicable for UE with Dual Rx chains
- Although RAN2 have indentified certain cases where LTE could fulfill 0ms mobility interruption in RAN2#101, e.g. SCG change. But these cases are limited.
- LTE should be further enhanced to support the new services with 0ms interruption and reliability requirements for UE with single or dual Rx chain.

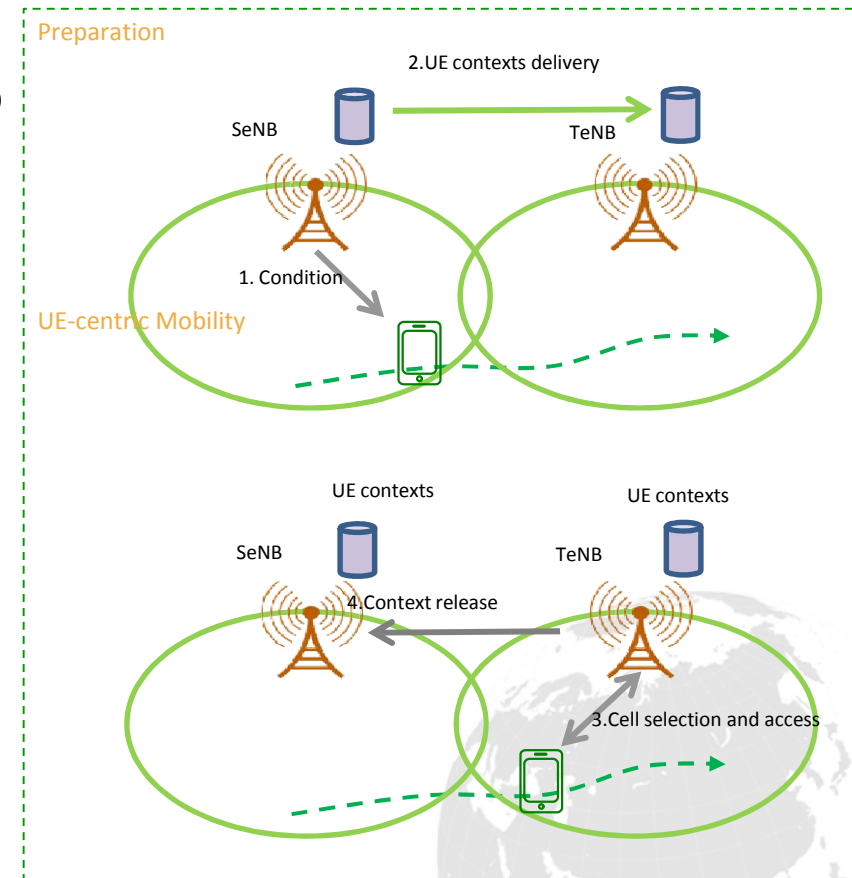
Motivation - 2

- LTE could not support NR specific service, e.g. URLLC and eMBB. UE could perform handover or cell reselection to move between different RATs, which is controlled by RAN based on signal quality. Currently there is no means to perform the mobility based on service granularity.
- Service based assistance information could be provided by UE to assist eNB for the decision of handover and load balancing, which can help improve usage efficiency of mobile network.
- Service could be considered during cell reselection to avoid unnecessary connection establishment.



Mobility enhancement for 0ms interruption

- UE centric mobility enhancement
 - ✓ Handover condition can be configured to UE before handover
 - ✓ UE performs network controlled forward handover based on the configured condition
- DC based handover
 - ✓ Parallel protocol stacks for each radio bearer: (PDCP/RLC/MAC/PHY)
- TA calculation for RACH-less handover



Service based mobility enhancement

- Service based cell reselection for IDLE UE

- ✓ IDLE UE could reselect to NR cells when becoming interested in NR service

- UE based solution: UE could prioritize the NR frequency when NR service occurs

- Network assisted solution: network could provide assistance information, e.g. mapping between NR frequency and corresponding service type.

- Service based assistance information reporting for CONNECTED UE

- ✓ Service based assistance information could assist eNB for the decision of handover or load balancing



Objective

- identified solutions for 0ms interruption mobility
 - DC based handover
 - Conditional handover
 - TA calculation for RACH-less handover
- Service based mobility enhancement
- Specify necessary core requirements for the identified solutions



Thank you !



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