

RP-170375



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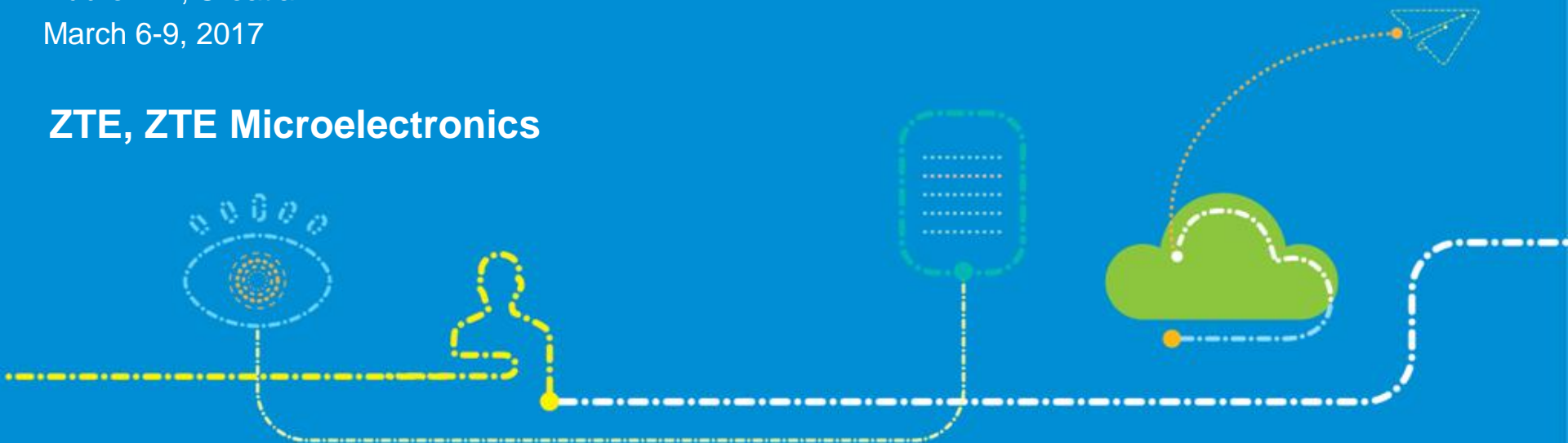
Motivation for WI on LTE connectivity to NGC and interworking with NR

3GPP TSG RAN #75

Dubrovnik, Croatia

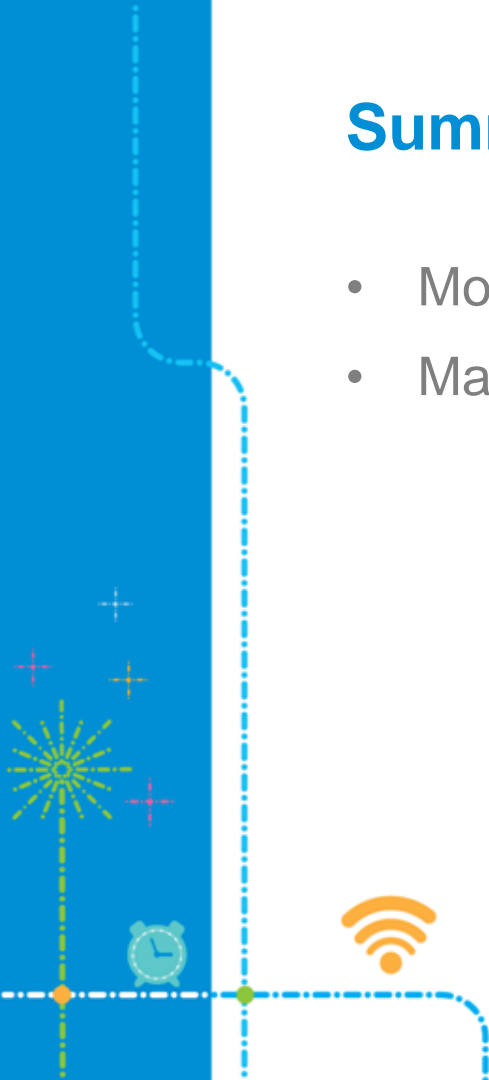
March 6-9, 2017

ZTE, ZTE Microelectronics



Summary

- Motivation
- Main objectives



- As part of the study item on New Radio and NextGen Core (NGC) it has been agreed that the services provided by NGC (including e.g. the new QoS framework and the network slicing support) will be provided also over E-UTRA access.
 - NG_C and NG_U interfaces are expected to be reused with very minor modifications to support E-UTRA connected to NextGen Core
 - RAN2 already agreed that LTE RRC would be the baseline for the control plane over Uu, with some additional enhancements, related to e.g. the new QoS framework and the network slicing support
 - RAN2 already agreed that LTE UP would be the baseline for the user plane over Uu, with some additional enhancements, related to e.g. the new QoS related UP operation

- To support optimized mobility between LTE and NR, it is essential that eNBs are allowed to be connected to the NGC, to avoid the need for interworking between different Core Networks in case of mobility between LTE and NR cells.
- Mobility between LTE cells connected to the EPC and LTE cells connected to the NGC should also be supported.

- Another key reason for connecting eNBs to the NGC is to enable tight interworking between LTE and NR, e.g. for dual connectivity architectures where the core is the NGC, the anchor cell is a LTE cell and a secondary cell provides NR access.
- Considering that the procedures for LTE/NR tight interworking when the core is the NGC are expected to be very similar in case LTE or NR are the anchor (as in any case it will be a Xn based tight interworking) it is possible to address all the LTE/NR tight interworking options when the core is the NGC in the same WID.
 - This would help reduce the working scope of the NR WI
 - The work on options 3/3a/3x (performed in the NR WI) can be inherited by the WI on E-UTRA with NGC with minor modifications

1. Connect eNBs (providing E-UTRA access) to the NGC [RAN2, RAN3]:
 - a) introduce the new QOS related configuration aspects in the LTE RRC protocol.
 - b) introduce support for network slicing, including:
 - provision of UE assistance information for network slice selection.
 - potential support for different PRACH configuration, access barring and congestion control information for different slices.
 - c) allow simultaneous support of UEs connected to EPC and UEs connected to NGC in the same LTE cell.

2. Enable tight interworking between LTE and NR, where the core is the NGC [RAN2, RAN3]:

- Both cases when the anchor cell is a LTE cell (and a secondary cell provides NR access) and when the anchor cell is a NR cell (and a secondary cell provides LTE access) shall be covered, i.e. Options 4/4A and 7/7a/7x in TR 38.801 section 7.1.

NOTE: Commonalities between LTE/NR tight interworking when the core is the EPC (i.e. option 3, addressed in the Rel-15 NR Work Item) and LTE/NR tight interworking when the core is the NGC (addressed in this Work Item on E-UTRA with NextGen Core) should be maximised (as a consequence, this part could be started a bit later, until progress is reached on option 3 in the NR WI).

Objectives

(3/3)

3. Support optimized inter-RAT mobility between LTE and NR cells connected to NGC [RAN2, RAN3].
4. Support mobility between LTE cells connected to the EPC and LTE cells connected to the NGC [RAN2, RAN3].

Thank you



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