3GPP TSG RAN Meeting #101
Bangalore India, 8-16 Sept. 2023

RP-231972

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On Rel-19 Package

Agenda Item: 8A.1
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Introduction

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It is evident that the scope topics which were submitted at the Rel-19 WS is too broad for RAN to address in the Rel-19 endorsed schedule. Thus, as we discuss the set of items to include in a Rel-19 package, we must consider the selection of a set that is realistic in terms of balancing broadband evolution vs. new verticals vs. device evolution . It is therefore important that the Rel-19 package discussion identify a suitable scope of work across the categories of New Topics for Rel-19, Work Items based on Rel-18 studies, Further Enchantments to Rel-18 features, and Further Study of Rel-18 studies.

These slides show our current view on possible RAN Rel-19 work package items considering

- Rel-19 WS discussions held in June
- Priorities from Sharp's POV
- Priorities from industry
- Workload and the Rel-19 schedule endorsed in RP-230050
- We do not consider RAN4 centric items – as these are to be discussed separately

New Topics

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Topic	WI/SI	Objectives
Ambient IoT	Study	• Energy harvesting issues : Backscatter, waveform, beamforming [RAN1 & RAN4] • Frame structure [RAN1] • Coding and Modulation [RAN1] • Coexistence with legacy 3GPP device [RAN1 & RAN4] • Initial access [RAN2] • Mobility Management [RAN2] • Access control [RAN2]

Work Items base on Rel-18 studies

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Topic	WI/SI	Objectives
Duplex	WID	• SBFD sub-band time and frequency configuration [RAN1] • SBFD signaling and UE procedures [RAN1] • Cross link interference mitigation and reporting [RAN1 & RAN2 & RAN4] • SBFD operation for initial access [RAN2]

Further enhancements from Rel-18

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Topic	WI/SI	Objectives

SL Evolution	WID	• FR2 operation [RAN1 & RAN2 & RAN4]
		  • SL BM for unicast (Rel-18 SL study based), beam-based RA sensing/selection, SL BM for broadcast/groupcast, FR2-2 unlicensed spectrum
		• Further CA enhancements [RAN1 & RAN2 & RAN4]
		  • RA Mode 1 operation, inter-band CA in licensed and/or unlicensed spectrum, cross-carrier scheduling, different SCSs for inter-band CA

SL Relay	WID	• Multi-path relay for inter-gNB scenario [RAN2] • Multi-hop U2U/U2N relay [RAN2] • Mobility enhancement: group handover and conditional path switching [RAN2]
SL Positioning	WID	• SL-PRS in FR2 spectrum [RAN1 & RAN2] • Study SL positioning using unlicensed spectrum [RAN1 & RAN2]

Further enhancements from Rel-18

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Topic	WI/SI	Objectives
NTN Enh	WID	• DL enhancements (starting with study phase) [RAN1] • Regenerative payload [RAN3] • Dedicated Notification/Alert [RAN2 & RAN1]
Mobility Enhancements	WID	• Inter-CU LTM procedures [RAN2 & RAN3] • RRM Measurement improvements [RAN2 & RAN4] • Conditional LTM [RAN2]
SON/MDT	WID	• Data collection for Release-18 features (LTM, NES, etc) [RAN2]

Further enhancements from Rel-18

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Topic	WI/SI	Objectives
NR MIMO Evolution	WID	• Enhancement on UE assisted beam management and CSI update [RAN1] • Multi-TRP deployment with up to 4 TRPs [RAN1]
AI/ML Air Interface	WID	• CSI prediction [RAN1] • CSI compression (FFS if Study needed first) [RAN1] • Beam management prediction [RAN2 & RAN4] • Positioning enhancement [RAN1 & RAN2] • Model LCM procedures including model transfer/delivery [RAN1]
Network Energy Saving	WID	• SSB/SIB1(/Paging) enhancements [RAN1 & RAN2] • Dynamic adaptation of spatial elements [RAN1]

Further study over Rel-18 study

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Topic	WI/SI	Objectives
AI/ML for NG-RAN	Study	• AI/ML based mobility optimization [RAN2] • Study and identify potential new use cases for AI/ML application
Channel Modeling	Study	• 7-24 GHz [RAN1] • Co-existence of TN and NTN • Sensing

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