3GPP TSG RAN#94-e
Electronic Meeting, December 6th – 17th, 2021

RP-213055

Source: NTT DOCOMO, INC.
Agenda item: 8A.5

Views on Rel-18 SI/WI package

NTT DOCOMO, INC.

General views on Rel-18 SI/WI package

- Potential package based on identified RAN1/2/3-led items can represent good balanced evolutions in terms of eMBB vs non-eMBB, short-term vs long-term and terminal-side vs network-side
- Number of potential RAN1/2/3-led items with potential additional items seems a bit too many, but may be manageable as long as focused scope is to be defined in each SID/WID
  - WI scope should be focused on real commercial need, and SI scope should also be focused targeting 1-2 TU

Potential RAN1-led items	Potential RAN2-led items	Potential RAN3-led items
WI: NR MIMO evolution for downlink and uplink	WI: Further NR mobility enhancements	WI: Mobile IAB (Integrated Access and Backhaul) for NR and ENDC
WI: NR uplink enhancements	SI: Study on XR Enhancements for NR	WI: Artificial Intelligence (AI)/Machine Learning (ML) for NG-RAN
SI: Study on NR Smart Repeaters	WI: Enhanced NR Sidelink Relay	WI: Further enhancement of data collection for SON (Self-Organising Networks)/MDT (Minimization of Drive Tests) in NR and EN-DC
WI: Further enhancements for NR sidelink	WI: NR NTN (Non-Terrestrial Networks) enhancements WI: IoT NTN (Non-Terrestrial Networks) enhancements	WI: Enhancement on NR QoE management and optimizations for diverse services
WI: Enhanced support of reduced capability NR devices SI: Study on further reduced RedCap UE complexity / cost for NR SI: Study on low-power wake-up signal / receiver for NR	WI: Enhancement of NR Multicast and Broadcast Services WI: Enhancements for LTE-based 5G terrestrial broadcast	SI: Study on enhancement for resiliency of gNB-CU
WI: Further NR positioning enhancements	WI: NR support for UAV (Uncrewed Aerial Vehicles)	
SI: Study on evolution of NR duplex operation	WI: Dual Tx/Rx Multi-SIM for NR	
SI: Study on Artificial Intelligence (AI)/Machine Learning (ML) for NR air interface	WI: In-Device Co-existence (IDC) enhancements for NR and MR-DC	
SI: Study on network energy savings for NR and EN-DC/NR-DC	SI: Study on UE aggregation for NR	
WI: NR support for dedicated spectrum less than 5MHz for FR1	SI: Study on High Speed Packetization for NR	
WI: Enhancement of NR Dynamic spectrum sharing (DSS)	WI: Mobile Terminated-Small Data Transmission (MT-SDT) for NR	
WI: Further Carrier Aggregation enhancements for NR		

"Potential items"

"Additional considerations"

as in Chair's summary

Views on scope of potential RAN1-led items

- **WI: MIMO Evolution for Downlink and Uplink**
  - Suggest down-scoping, such as
    - » Removing CSI acquisition enh. for coherent JT
    - » Specifying overhead and/or Latency reduction with UE-initiated beam management/beam acquisition procedures without study part
- **WI: NR uplink enhancements**
  - Suggest down-scoping, such as
    - » Removing PUCCH coverage enhancement
    - » Removing multi-layer DFTS-OFDM transmission
    - » Specifying dynamic switching between DFTS-OFDM and CP-OFDM without study part
- **SI: Study on further reduced RedCap UE complexity / cost for NR**
  - Generally supportive, but "compatibility with Rel-17" in draft SID should be removed
    - » It is enough to describe "Rel-15 SSB bandwidth is reused and L1 changes are minimized" as in Rel-17 RedCap WID
- **WI: Further enhancements for NR sidelink**
  - Suggest down-scoping, such as
    - » Removing unlicensed and/or FR2 as there are multiple candidate enhancements (CA/unlicensed/FR2) for the same purpose (data rate increase)
- **WI: Further NR positioning enhancements**
  - NTN positioning should be moved to this WI
  - Suggest down-scoping, such as
    - » Removing either PRS/SRS bandwidth aggregation or NR carrier phase measurements as they are for the same purpose (positioning accuracy improvement)
    - » Removing unlicensed to be aligned with FeSL WI
- **SI: Study on AI/ML for NR air interface**
  - Consider down-scoping, such as
    - » Removing (or deprioritizing) positioning from initial set of target use-case for Rel-18 since it would require different evaluation methodologies from other target use-cases and Rel-17 already has some enhancements that may be useful for AI/ML
- We are supportive of current draft SID/WID for following items
  - **SI: Study on NR Smart Repeaters**
  - **WI: Enhanced support of reduced capability NR devices**
  - **SI: Study on low-power wake-up signal / receiver for NR**
  - **SI: Study on evolution of NR duplex operation,**
  - **SI: Study on network energy savings for NR and EN-DC/NR-DC**
  - **WI: Further carrier aggregation enhancements for NR**

Views on scope of potential RAN2/3-led items

- **WI: SON/MDT Enhancements**
  - Generally supportive of the current draft WI scope
  - Better to clarify the details for RACH enhancement as below
    - » Support of SON/MDT enhancements for RACH enhancements (i.e. for RACH partitioning), NPN.

- **SI: Study on enhancement for resiliency of gNB-CU**
  - We support this item as it would enable solutions that requires coordination between nodes, and/or that are applicable to cross-vendor F1 interface
  - Description on architecture impact should not be too restrictive while ensuring there is no critical impact to the current architecture

- **WI: NR NTN (Non-Terrestrial Networks) enhancements**
  - Implicit support of HAPS and ATG should be maintained as Rel-17 NTN
  - No need to capture potential candidate set of the solutions for NTN coverage enhancement now
  - NTN positioning should be moved to the positioning WI

- **WI: IDC Enhancements**
  - Supportive of the current draft WID, enhanced FDD solution is more important for us

- We are supportive of current draft SID/WID for following items
  - **WI: NR further mobility enhancements**
  - **WI: UAV (Uncrewed Aerial Vehicle)**
  - **WI: AI/ML for NG-RAN**
  - **SI: Study on XR Enhancements for NR**
  - **WI: Additional topological improvements – IAB/VMR**
  - **WI: Enhancement of NR Multicast and Broadcast Services**

Views on scope of potential RAN4-led items

- Generally, the working areas listed in Pre-RAN#94e email discussion summary are fine
- We have preferences for some remaining discussion points based on the RAN chair guidance, i.e. “It is critical to make sure the projects are rooted to commercial interests”
  - Topic #10: RRM requirements enhancement
    - » Following 5 items are preferable as Rel-18 working area
      - – SCell activation enhancement in FR2
      - – RRM for different Rx beam sets in FR2
      - – FR2 delay reduction enhancements
      - – HO with PSCell for new scenarios
      - – TCI switching enhancement