

3GPP TSG RAN Meeting #86
Sitges, Spain December 9th-12th, 2019
Source: ZTE, Sanechips
Agenda: 9.1.0



Views on Rel-17 package and timeline



Views on Rel-17 Package

RAN1	RAN2	RAN3
Coverage Enhancements	Small data	Data Collection
MIMO	RAN Slicing	Multicast
NTN	MR-DC	NPN
NR Light	Sidelink relay	
Power Saving	Multi-sim	
IIOT/URLLC	UDC	
XR	IAB	
Sidelink (General Enhancements)	UAV	
Positioning		
NB-IOT/eMTC		
>52.6GHz (waveform & 60GHz)		

RAN1-led items

Coverage SI+WI

- FR1: O2I & rural, FR2: indoor hotspot
- FR1: VoIP & eMBB, FR2: eMBB
- UL should be given as a higher priority
- PUSCH can be enhanced without evaluation

MIMO WI

- Enhancements on SRS and UL Tx schemes
- Multi-TRP for URLLC
- Enhancements for high speed train
- Enhancements on Multi-beam
- CSI enhancements

RAN2-led items

Small data in INACTIVE state (WI)

Clear use cases of small data (e.g. Device with variable data identified in TR 22.891 in SA2)

- UL small data transmissions for RACH-based schemes (i.e. 2-step and 4-step RACH)
- Transmission of subsequent data in UL and DL should be under network control
 - DL data initiated by RAN paging
- Transmission of assistance information and essential scheduling information
- Transmission of UL data on pre-configured PUSCH resources

RAN1-led items

NTN WI

- LEO/GEO with transparent payload
- Compatibility support on HAPS and ATG should be considered.
- Study on NTN based NB-IoT without normative work in Rel-17

NR Light SI/WI

- Focus on cost analysis and evaluation of complexity-performance trade-off
- Identify UE complexity reduction features
- Study UE types and the corresponding requirements for different use cases of NR Light
- Identify mandatory support of the existing features for coverage recovery and power saving.

RAN2-led items

RAN Slicing WI

- Support of slice specific RACH resource configuration
- Include the RAN enhancement (e.g. support of per slice AMBR) required from SA2 WI
- Have a study phase on the slice sensitive cell reselection, fast slice access, and service continuity during HO

MR-DC WI

- Leftover issues from Rel-16 eDCCA.
- Support of lossless handover between NR and LTE/EN-DC
- Support of MN change with SN unchanged procedure without RACH in SCG
- 0ms interruption time for SN involved mobility can be postponed

RAN1-led items

Power saving WI

- Enhancements for idle/inactive mode UE power saving including paging enhancement and additional RS
- Enhancements on CSI-RS/SRS outside DRX active time after WUS PDCCH monitoring
- PDCCH monitoring reduction

URLLC/IIoT WI

- UCI enhancements including intra-UE multiplexing, HARQ-ACK, CSI feedback
- Enhancements on inter-UE multiplexing
- Explicit ACK feedback
- PDSCH repetition

RAN2-led items

Sidelink relay WI

- L3 relay
- UE-to-Network relay
- UE-to-UE relay

Multi-Sim WI

- Common solution is preferred for both inter-MNO case and intra MNO case
- Common solution (e.g. IDC based solution) for combination of RAT
- Deprioritize the RAT combination require simultaneously connection

UDC WI

- Follow LTE solution

RAN1-led items

XR SI

- Performance evaluation on XR applications

Slidelink WI

- Sidelink mode 1 and mode 2 should be “equally” enhanced.
- Simultaneous configuration of Mode 1 and Mode 2
- Mode 2 enhanced resource selection for aperiodic traffic

Positioning WI

- Enhancements to positioning measurements and reporting
- PRS based TBS enhancements
- LMC, BDS B2a signal
- IIOT use case only

RAN2/RAN3-led items

IAB WI

- Duplexing enhancements – FDM/SDM, Case 7 timing, power control/sharing, simultaneous reception rules
- Topology adaptation enhancements for Mobile IAB - group mobility, SON, etc.

UAV WI

- Extended scope is preferred instead of simple copy and paste from LTE
- Broadcasting of regulatory information
- Beam management

QoE WI

- Can be considered as a separate item from RAN data collection
- Reuse QoE framework in LTE. Scenarios limited to which has been supported in SA4.

RAN1-led items

NB-IoT/eMTC WI

- Peak data rate/Bandwidth enhancement
- Careful planning together with other NB-IoT related items including NTN based NB-IoT. Down-selection may be needed.

Above 52.6GHz SI+WI

- Feasibility study of waveform
- Conclusion on waveform study for 71GHz can be extended to Rel-18
- Time overlapping between waveform study SI and 60GHz NR-U WI should be avoided/minimized.

RAN3-led items

Data Collection WI

- Leftovers from Rel-16: MRO (intra and inter-system), MLB (intra and inter-system), MDT, RACH optimization, energy saving (specify OAM requirements only) and PCI selection (lower priority).
- Inter-system MLB requires study and is low priority.
- AI based data collection (study only) – identify AI use cases including network energy saving

Multicast SI/WI

- Focus on impact on system architecture
- V2X and public safety use cases
- Multicast for UE in RRC_CONNECTED state
- Consider both SC-PTM and SFN

NPN WI

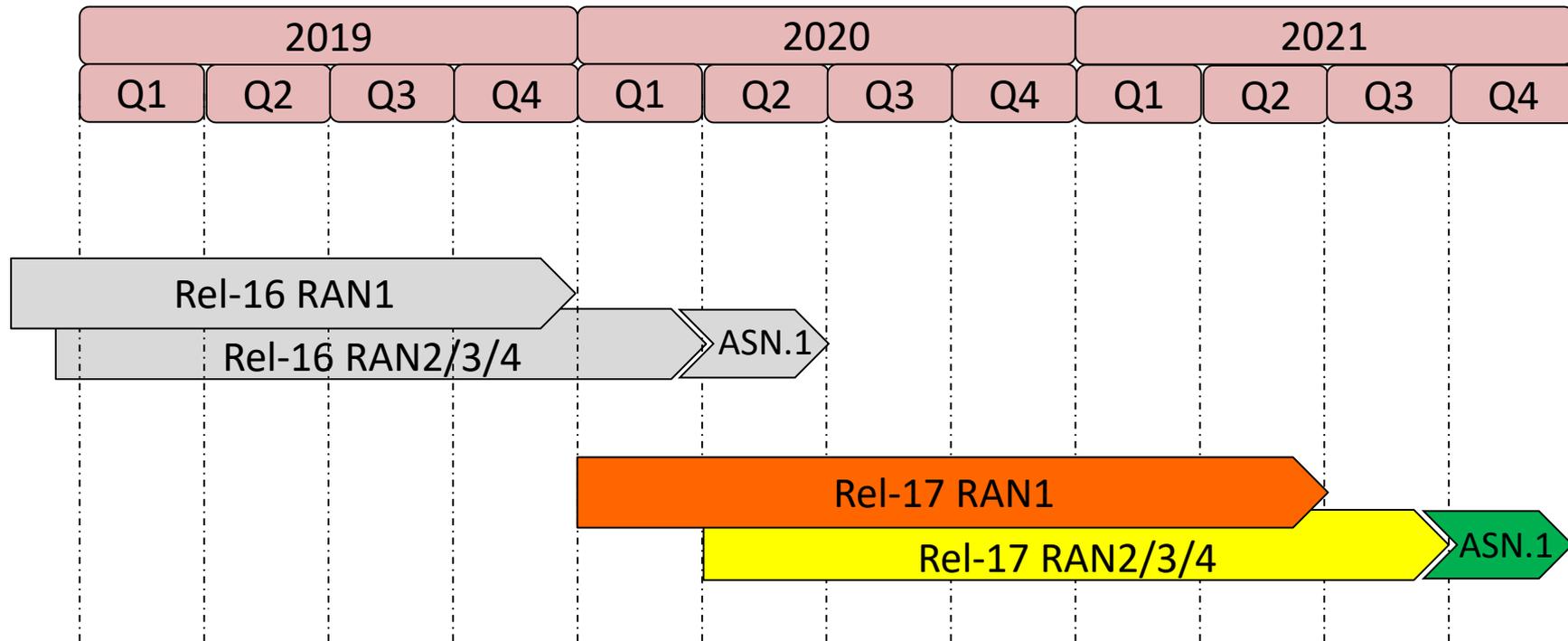
- Depend on inputs from SA2

Discussion on Rel-17 Timeline

- A good portion of work areas are intended to expand new use cases for verticals, which is important for 5G ecosystem.
 - Meanwhile, there is still continuous demand on eMBB enhancements. This includes demand on general enhancements and providing solutions to issues from initial 5G commercial deployments.
 - There is still considerable amount of Rel-16 leftovers due to overloading situation in Rel-16.
 - Rel-17 timeline also depends on consideration from SA
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- **We need good balance among the demand from verticals, the need of continuous enhancements and the need of solving issues observed from the field.**

 - It is very challenging to achieve this good balance within 15 months due to the following reasons:
 - Some of the new areas have strong demand to finish both study and normative work in Rel-17. It is hard to fit in both study and work items in Rel-17.
 - A shorter release will result in a larger ASN.1 review overhead in RAN2.
 - Issues from the field may come up and eat up some TUs intermittently. It is harder to spare TUs for these issues within a short timeframe.
 - It is hard to do project management if each work area can only have very limited amount of TUs.

Proposal on Rel-17 Timeline



Proposal: Adopt 18 months as the length of Rel-17

Thanks



Tomorrow never waits

