

China Telecom views on Rel-19

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Outline

China Telecom's prioritized list for Rel-19 topics (not in specific priority order) :

New Features/ Capabilities

- Dual 3GPP ATSSS
- Network Sharing
- Integrated Sensing and Communication

Enhancement

- Proximity Services – ph3
- 5G Satellite – ph3
- AI related

Network Resilience

- Network Failure Tolerance



Overall View – New Feature/Capabilities (1/3)

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
1	Study on Dual 3GPP access traffic steering, switching and splitting (See S2-2306352, SWS-230049 for more details)	<p>In some scenarios, it is desired to provide flexible user plane traffic aggregation, steering and switching, which are known to improve access and network resources utilization, capacity, coverage, reliability and QoE across two 3GPP access paths (NR+NR, NR+E-UTRAN, where NR includes terrestrial NR or satellite NR).</p> <p>Key Work Tasks includes defining</p> <p>To study how the 5G Core network and the 5G UE can support traffic steering/switching/split over two 3GPP accesses (NR+NR, NR+E-UTRAN, where NR includes terrestrial NR or satellite NR) of one PLMN or two PLMNs of one subscription in the 5G system considering:</p> <ol style="list-style-type: none"> 1. the enhancement in registration and mobility management, as well as second PLMN network selection in case of two PLMNs 2. the enhancement in session management to support MA PDU session of two 3GPP access 3. the enhancement in policy and charging control 	Yes, TR 22.841	SA2	Don't know	SA5 for charging



Overall View – New Feature/Capabilities (2/3)

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
2	Study on Network Sharing	<p>Network Sharing mechanism enables the operators to maximize rollout and improve overall network quality.</p> <p>Key Work Tasks includes defining</p> <ol style="list-style-type: none"> 1. Investigate the potential enhancements to enable authorized UEs to access the subscribed PLMN in 5G Indirect Network Sharing scenario, e.g. enhanced network selection, identification of network sharing type, etc. 2. The roaming architecture enhancement of network sharing with indirect connection between the shared access network and a participating operator's core network, with transit SMF/NRF. 3. Investigate the potential enhancements for supporting roaming UE to access the subscribed data network in 5G Indirect Network Sharing scenario, whereas the subscribed operator has no roaming agreement with the hosting operator. 4. Investigate the potential enhancements of NF selection mechanism for selecting the optimal NFs accurately in 5G Indirect Network Sharing scenario. 5. Investigate the potential enhancements to guarantee service continuity and/or minimize the impact to the user experience for UEs that are moving between two different PLMNs in 5G Indirect Network Sharing scenario (e.g. between a shared NG-RAN and a non-shared NG-RAN, or two shared NG-RANs belong to two different hosting operators respectively). 	Yes, TR22.851	SA2	Don't know	SA5 for charging



Overall View – New Feature/Capabilities (3/3)

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
3	Study on Integrated Sensing and Communication	<p>5G advanced mobile system is best suited for integrating sensing and communications to bring in new revenue opportunity for mobile operators and its vertical service providers. It is necessary that SA2 leads the E2E architecture design for sensing in Rel-19.</p> <p>Key Work Tasks includes defining</p> <ol style="list-style-type: none"> 1. Overall architecture enhancements to support sensing services: Whether introducing new NF and new interface or reusing the existing architecture 2. Basic functionalities and procedures to support sensing service: Sensing service authorization, Sensing entities registration/discovery, Sensing control parameter generation and provisioning, 3GPP sensing data and/or non 3GPP sensing data usage, sensing result exposure 3. QoS handling and policy enhancements to support diverse sensing services 4. Sensing service continuity 5. Charging and security 	Yes, TR22.837	SA2	Yes	SA3 for security, SA5 for charging



Overall View – Enhancement (1/2)

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
4	Study on Prose_ph3 (See S2-2306999 for more details)	<p>Enhancement on Proximity Service, further study multi-hop and multi-path based on prose_ph2 to expand coverage and improve reliability, and IMS service, VN service need to be supported in layer3 N3IWF scenario, besides, management of access type of remote UE (over PC5) and relay UE (via non-3GPP access) is worthy to be studied.</p> <p>Key Work Tasks includes defining</p> <ol style="list-style-type: none"> 1. Enhancement of UE-to-Network Relay for support of multiple NR PC5 hops. 2. Whether and how to support of non-3GPP RAT (e.g. Wi-Fi or Bluetooth) over PC5 reference point for Layer-3 UE-to-Network Relay. 3. Support of multi-path transmission using different UE-to-Network Relay. 4. Support of Layer-3 UE-to-Network Relay over non-3GPP access. 5. Support of IMS service for Remote UEs via UE-to-Network Relay. 6. Support of VN service for Remote UEs via UE-to-Network Relay. 7. Support of identifying the access via Layer-3 ProSe UE-to-Network Relay with N3IWF. 8. Whether and how the Proximity Services can benefit from NWDAF reporting. 	Yes, TS22.261 (MultiRelay)	SA2	No	SA3 for security, SA5 for charging



Overall View – Enhancement (2/2)

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
5	Study on 5GC enhancement for satellite access Phase 3 (See S2-2306358, S2-2306359 for more details)	5G system enhancement to support new features introduced by R19 SA1 related to satellite access. Key Work Tasks includes defining <ol style="list-style-type: none"> 1. Enhancement on Authorization, Discovery, QoS and Mobility management, to support U2N relay via satellite access 2. Position and corresponding services determination&provision for UE without GNSS 3. Further enhancement on Registration, mobility and connection management for discontinuous satellite coverage based on R18 4. Enhancement on 5GC and IMS to support Low latency call between UEs via satellite backhaul using onboarding UPF. 5. 5GC architecture enhancement to support S&F(Store and Forward) operations for communication service using satellite access with discontinuous feeder link. 6. 5GC architecture enhancement and optimiaztion to support Regenerative mode including RAN and NFs mobility, QoS issue. 	Yes, TR 22.865, TS 22.261	SA2	Yes, Partial Work Tasks (WT 5,6) have major dependancies on RAN.	SA3 for security, SA5 for charging
6	Study on AI related	Study on leftover from eNA_ph3 and AIML_sys, and new use cases of 5GS service. Key Work Tasks includes defining <ol style="list-style-type: none"> 1. Support of vertical Federal Learning; 2. 5GC data exposure to UE; 3. UE data collection framework enhancement to support AI/ML use cases; 4. NWDAF assisted Proximity Service. 	Yes, TR 22.840	SA2	Yes	SA3 for Security and privacy, SA5 for charging



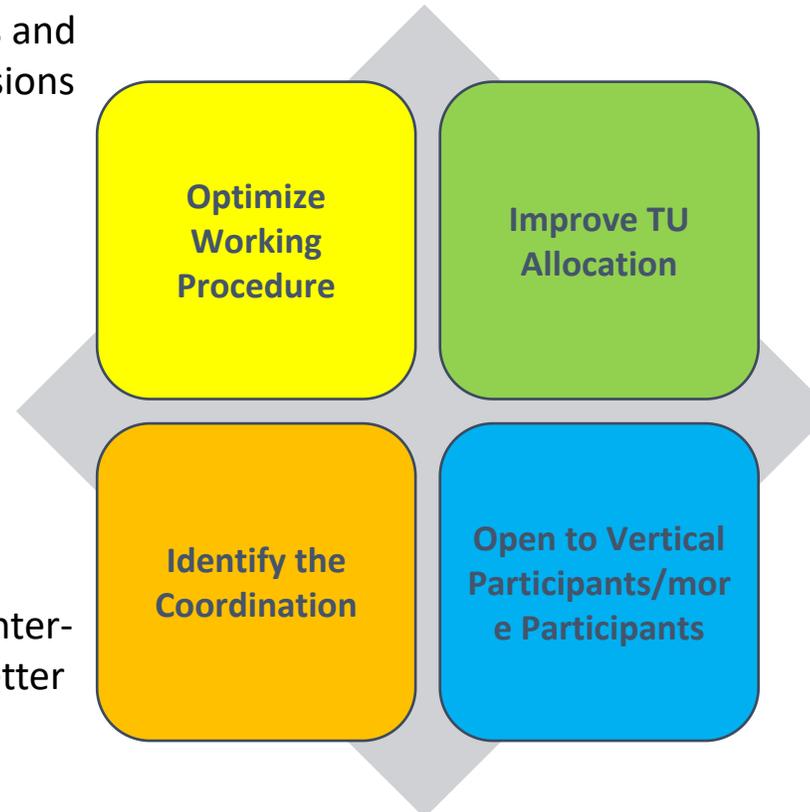
Overall View – Network Resilience

S.NO.	Title	Brief Description and Key Objectives	Related Stage-1 Study/Work Item	Lead Stage-2 WG	RAN dependencies	Other WG dependencies
7	Study on Enhancing Network Failure Tolerance (See S2-2306751 for more details)	<p>R17 MINT does not consider core network failure and it is only supported in 5GS. Based on SA1 requirements introduced in R19 MINT_Ph2, the application of MINT shall only exclude any core network failure that renders the network subject to a disaster unable to authenticate its subscribers. In addition, the 4G system shall be able to provide Disaster Roaming service. In the case of UDM/AUSF failure excluded from MINT, UE authentication may be skipped to minimize service interruption.</p> <p>Key Work Tasks includes defining</p> <ol style="list-style-type: none"> 1. Support of providing Disaster Roaming service in EPS 2. Enhancing Disaster Condition notification and determination procedures in the case of core network failure 3. Resolving UDM/AUSF failure scenario excluded from MINT 	Yes, TS22.261 (MINT_Ph 2)	SA2/CT1	Yes, RAN2	SA3 for security

Summary

Suggestions to Rel-19 Items Selection

- Focus on the technical directions and objectives first. Rapporteur decisions could be saved to the end.
- Each company has a chance to moderate one of the Rel-19 items/topics discussion and one company can only moderate discussion in one item at most.
- The sooner identify the need of inter-WG/RAN/CT coordination, the better for plan and progress. And set up checkpoints.



- The number of work tasks of each SID should be limited to avoid the GIANT ones eating the TU from the small ones but end up with no conclusion.
- New Feature/Capabilities should acquire more TUs and the enhancement items should acquire less TUs.
- For the sustainability of 3GPP ecosystem development.



Thank You !