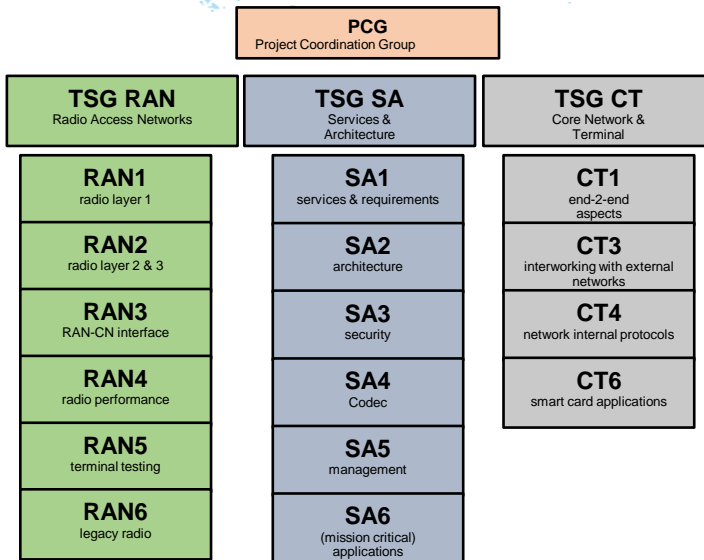


3GPP SA Rel-18 Status

Georg Mayer, 3GPP SA Chair



3GPP



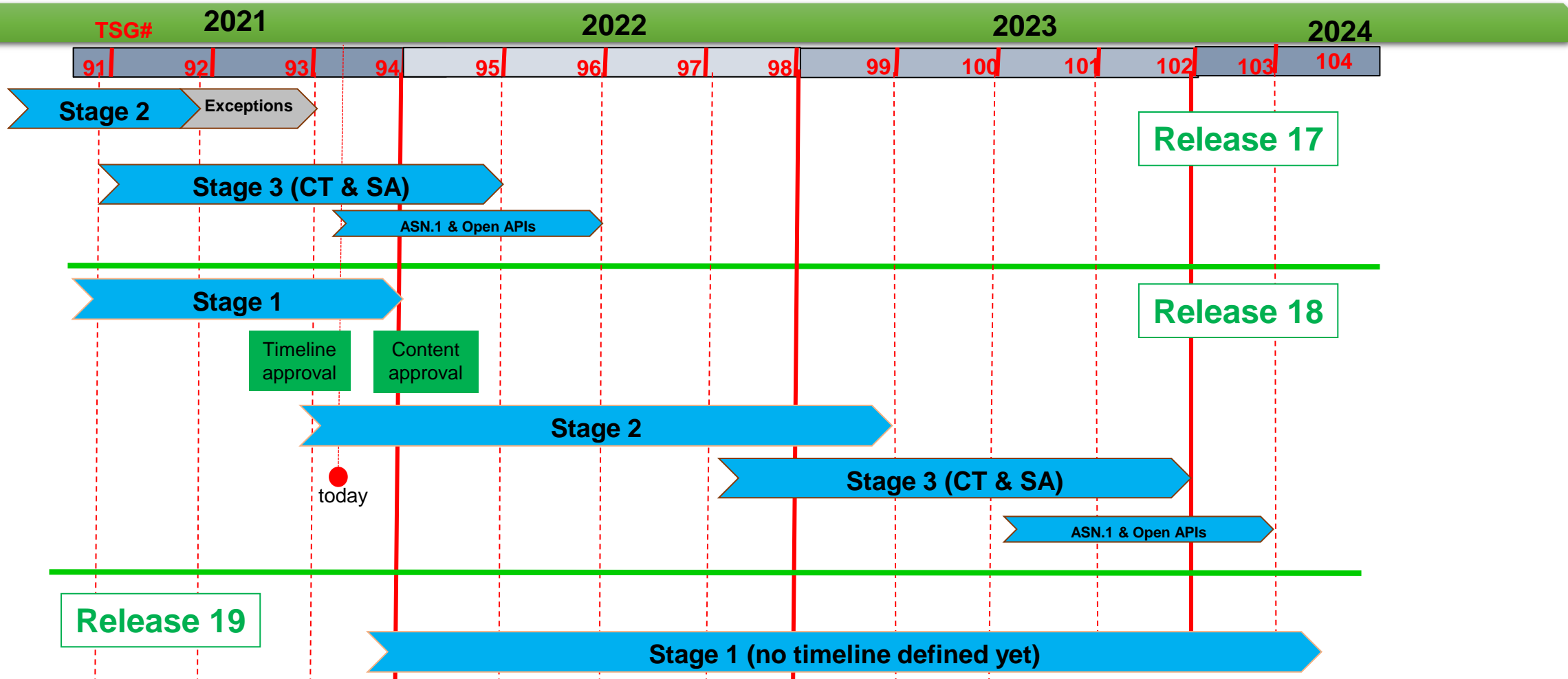
- Global standards organization for mobile communication
- 750+ Companies from all over the world actively participating
- A new Release every 15 to 24 months
- A new Generation every 10 years – 3G/UMTS, 4G/LTE, 5G
- Standards for all sectors of mobile communication – VoLTE, NB-IoT
- ~20 Working Groups & TSGs, each meeting 4 to 8 times a year
- Contribution driven
- Consensus based

5G Advanced



- Rel-18 is the Start of 5G Advanced
- During Rel-15 to Rel-17, 3GPP has developed 5G from a collection of visions and buzzwords into a powerful new mobile communication environment which is rolled-out all over the world.
- 5G, besides many other things, enables mobile communication for industrial applications and enable so-called vertical services.
- 5G Advanced will develop 5G into the future, taking new technological and societal developments into account, e.g. environmental requirements, artificial intelligence, virtual/extended reality – to name a few.

Timeline & Releases (SA View)



Rel-18 Status in 3GPP SA (October 2021)



SA1 / Requirements

- over 80% of Rel-18 work completed
- Requirements are complete and serve as a base for further work in SA, RAN, CT
- Examples:
 - personal IoT NWS
 - smart energy services
 - satellite backhaul

SA2 / Architecture

- More than 40 proposals for Rel-18 items – prioritization process started on SA level
- Examples:
 - next generation real time communication
 - vehicle mounted relays
 - tactile & media services
 - enhancements to e.g. slicing, edge computing, non-public networks, ntn, proximity based services, multicast/broadcast, ...

SA3 / Security

- Rel-18 work will start in 2022, as security issues are related to initial decisions in RAN and SA (SA2, SA6)

SA5 / OAM & Charging

- Initial discussions on R18 started
- Examples:
 - AI/ML management
 - digital twins
 - self organizing networks

SA4 / Media & Codecs

- Work on Rel-18 is starting
- Examples:
 - XR Services (artificial/virtual reality)
 - immersive media
 - broadcast media delivery

SA6 / MCC & Applications

- Initial work on some Rel-18 items started
- Examples:
 - integration/migration of railway networks
 - data delivery enabler for vertical applications
 - smart grid

Prioritization and Content Approval



- Rel-18 content will be approved by 3GPP SA, RAN and CT during the December 2021 plenary meetings
- Due to the large amount of SA2 Study / Work Item proposals, 3GPP SA will conduct a prioritization process, which will be finalized during the December 2021 plenary meetings. A special prioritization workshop will be held before the plenary.
- It is likely, that not all SA2 Study / Work Items will be part of the final Rel-18 content.
- People who are interested in these discussions have to participate in the upcoming SA2 and SA meetings.

3GPP Release 19



- As Rel-18 content is close to finalization, new requirements cannot be taken on board for Rel-18.
- Whilst the detailed technical work on Rel-18 is progressing in the different 3GPP WGs, SA1 is already starting to collect and discuss requirements for 3GPP Release 19.
- These activities are in their very initial phase and currently it is not possible to predict any items which will be part of Rel-19.
- Companies with new ideas for e.g. vertical services, which make use of 5G Advanced, are invited to bring their proposals to 3GPP SA1.

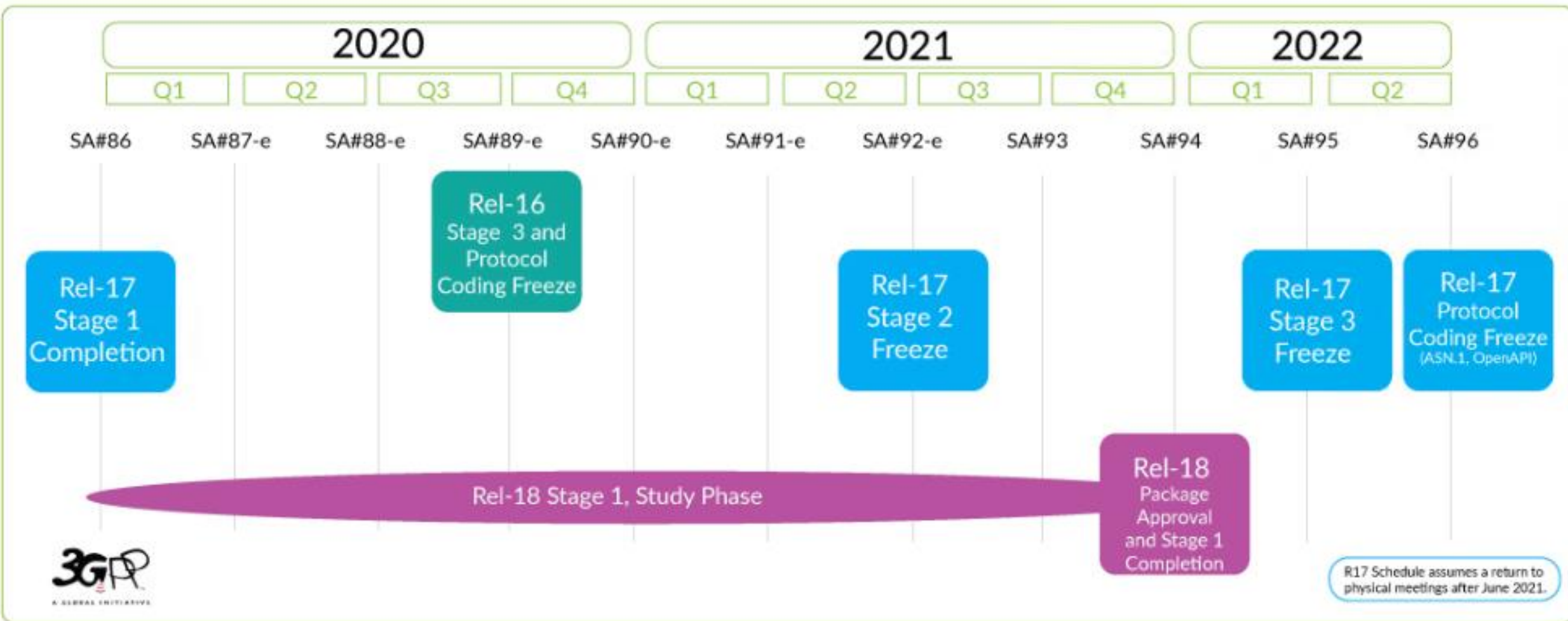


3GPP SA Rel-17

Satoshi Nagata

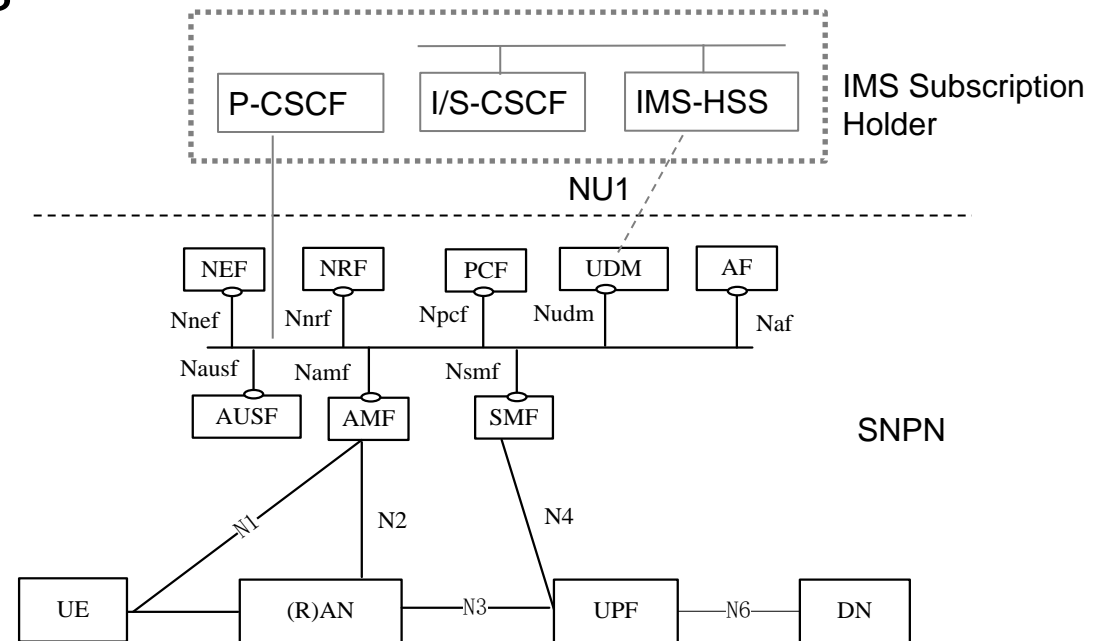
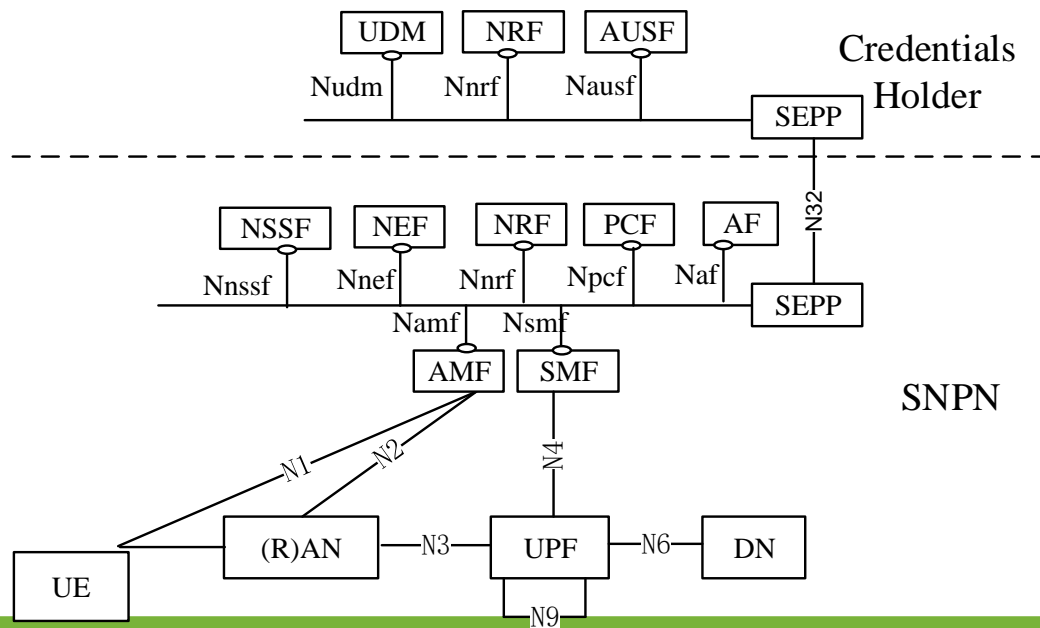
Vice Chair, 3GPP TSG-SA
(NTT DOCOMO, INC.)

3GPP schedule



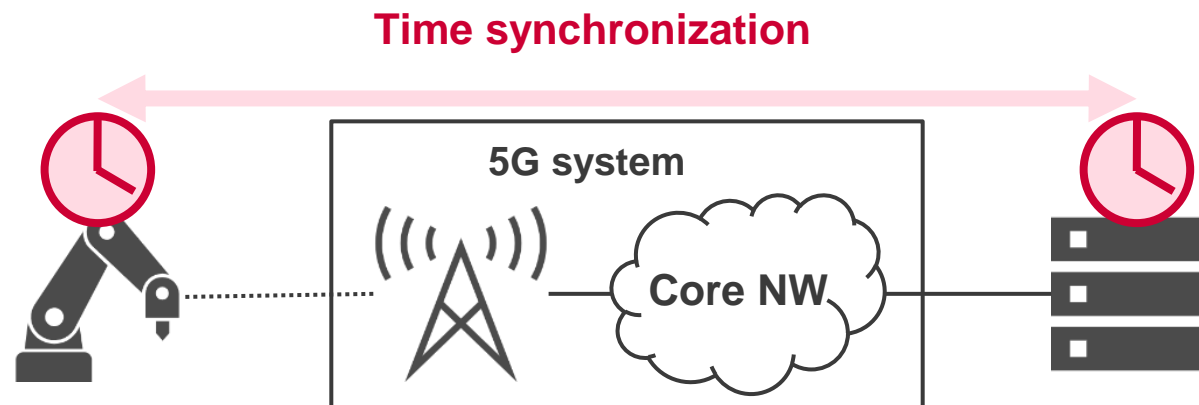
Enhanced Support of Non-Public Networks

- To enable support for Standalone Non-Public Network (SNPN) along with subscription/credentials owned by an entity separate from the SNPN, support for Video, Imaging and Audio for Professional Applications, Support of IMS voice and emergency services for SNPN, and support for UE Onboarding and remote provisioning.



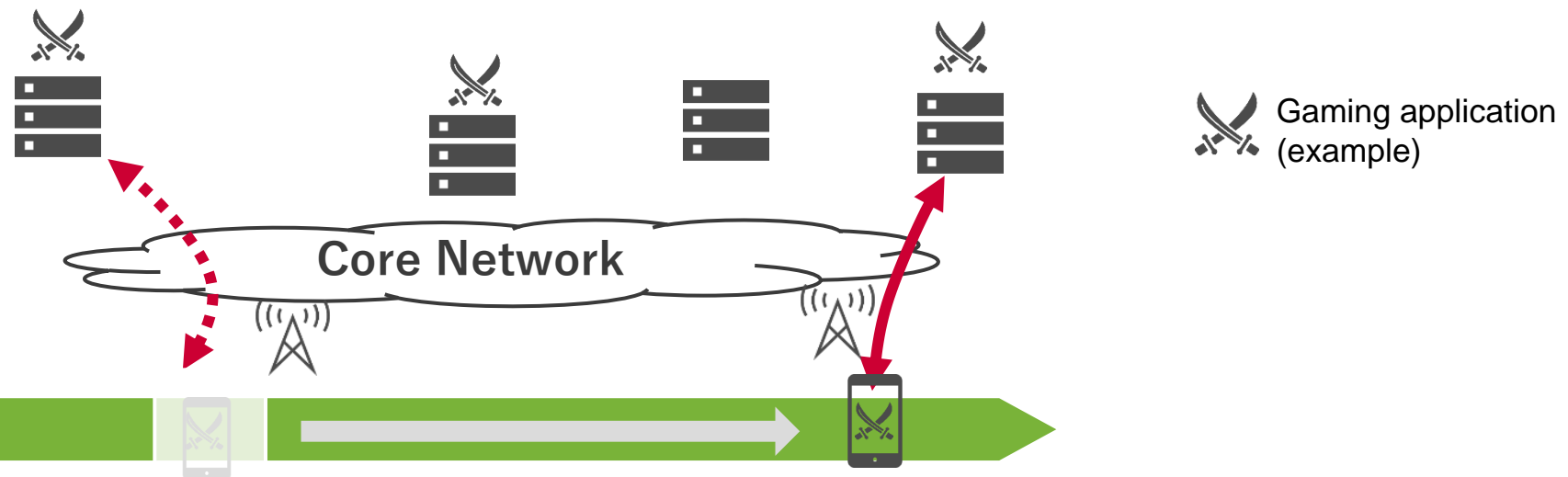
Enhanced support of Industrial Internet of Things

- To enhance support of Time Sensitive Communication (TSC), including enhancements for support of deterministic applications and enhancements to IEEE Time-Sensitive Networking (TSN). Key issues addressed in the study include Uplink Time Synchronization, UE-UE TSC communication, Exposure of QoS and related enhancements, Exposure of Time Synchronization services for activation/deactivation, support for PTP time sync and use of Survival Time for Deterministic Applications in 5GS.



Enhancement of support for Edge Computing in 5GC

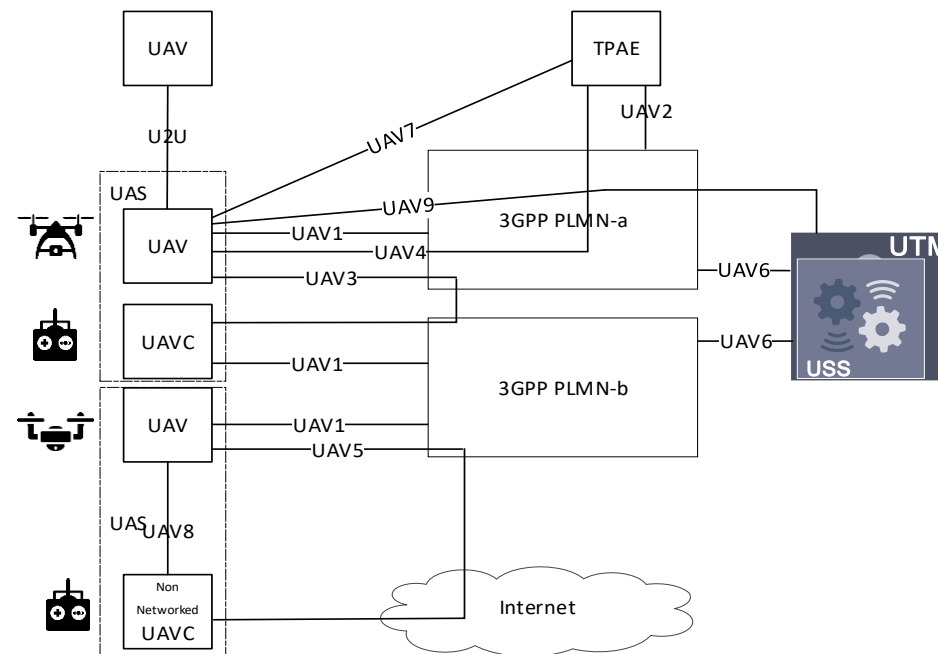
- To define solutions to enhance the forwarding of some UE application traffic to the applications/contents deployed in Edge Computing Environment, including the dynamic insertion of traffic offloading capabilities, seamless change of application server serving the UE, provide local applications with information on e.g. the expected QoS of the data path, supporting PSA change when the application does not support notifications of UE IP address change.



Supporting Unmanned Aerial Systems (UAS) Connectivity, Identification, and Tracking



- 📶 Vehicles (UAV) identification, UAV authorization by UAS Traffic Management, UAV authorization revocation and (re)authorization failures, UAV - UAV Controller association and tracking, and User Plane Connectivity for UAVs. It addresses both 5G Core and 4G EPC.



Uncrewed Aerial System (UAS)
Uncrewed Aerial Vehicle (UAV)
UAS Service Supplier (USS)
UAS Traffic Management (UTM)
UAV controller(UAVC)
Third Party Authorized Entity(TPAE)

Access traffic steering, switch and splitting support; Phase 2



- 📶 Aims to support additional traffic steering capabilities as well as supporting Multi access PDU Session using 3GPP LTE/EPC resources as a 3GPP access.

Enablers for Network Automation for 5G; Phase 2



- 📶 To address some leftover work from Rel-16, such as data collection from UE for analytics generation; how to ensure that slice SLA is guaranteed. Also new functionality will be supported which includes - Multiple NWDAF Instances in one PLMN including hierarchies, enabling real-time or near real-time NWDAF communication, NWDAF-Assisted UP Optimization, Interaction between NWDAF and AI Model & Training Service owned by the operator.

Enhancement of Network Slicing; Phase 2



- Identifying the gaps that need to be filled in providing support in the specifications owned by SA WG2 for the Generic Network Slice Template (GST) attributes defined by GSMA 5GJA and captured in document NG.116.

Architecture Enhancements for 3GPP Support of Advanced V2X Service; Phase 2



- 📶 This study aims to provide support of QoS aware NR PC5 power efficiency for pedestrian UEs.

Architecture Aspects for using Satellite Access in 5G



- Addresses following aspects related to integration of satellite access in the 5G system - Mobility Management with large coverage areas, Mobility Management with moving coverage areas, Delay in satellite, QoS with satellite access, QoS with satellite backhaul, RAN mobility with NGSO (Non-Geostationary Satellite Orbit) regenerative-based satellite access, Regulatory services with super-national satellite ground station.

5G System Enhancement for Advanced Interactive Services



- 📶 This Work Item is to define potential QoS parameters e.g. new standardized 5QI(s) corresponding to QoS requirements for interactive services like cloud gaming service.

Enhancement to the 5GC Location Services; Phase 2



- 📶 Aims to provide support for very low latency and very high accuracy positioning, including horizontal and vertical positioning service levels, 5G positioning service area. This work item will also enable MCX UE to use the 5G positioning services to determine its position.

Multimedia Priority Service (MPS); Phase 2



- Addresses the impacts to EPS and 5GS core network specifications for supporting MPS for MMTel voice teleconferencing, MPS Data Transport Service (DTS) communications and MPS for MMTel video, MMTel video teleconferencing and streaming video.