

***3GPP Overview
and
Release 19 contribution timelines***

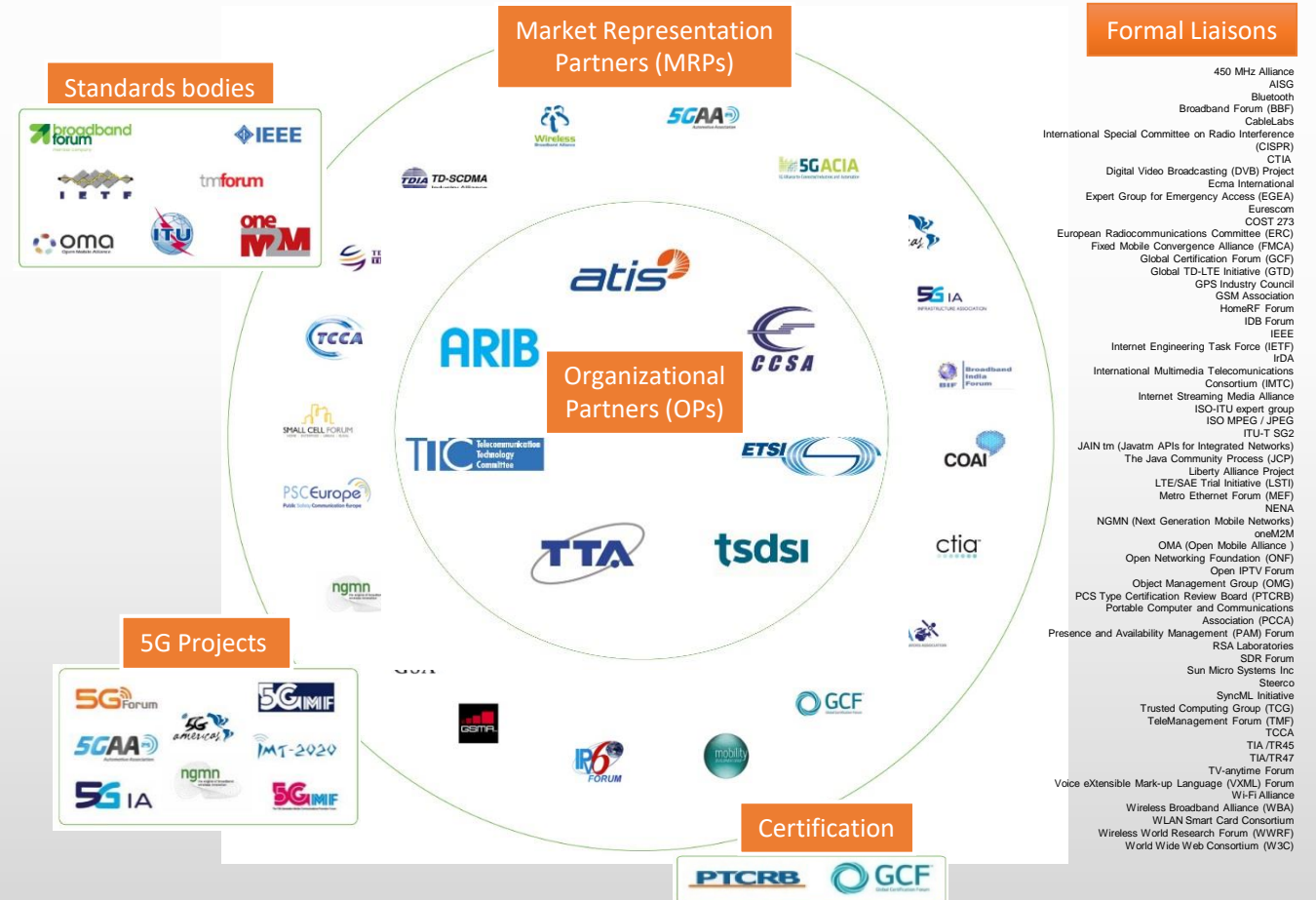
3GPP Ecosystem

The 3GPP Organizational Partners (OP) are the seven Standards Developing Organizations (SDOs) - from China, Europe, India, Japan, Korea and the United States.

Participation in 3GPP is made possible by companies and organizations becoming Individual Members (IM) of one of the OPs.

Specific inputs, in the form of market requirements may also come in to the Project via any of the twenty Market Representation Partners (MRP) in 3GPP. These organizations have all signed up to the 3GPP Project scope and objectives.

Lots of external cooperation with other standards bodies and a broad variety of other groups, by way of formal Liaisons.



The Organizational Partners (OPs)

ARIB

www.arib.or.jp

The Association of Radio Industries and Businesses,
Japan

ATIS

www.atis.org

The Alliance for Telecommunications Industry Solutions,
USA

CCSA

www.ccsa.org.cn

China Communications Standards Association

ETSI

www.etsi.org

The European Telecommunications Standards Institute

TSDSI

<http://tsdsi.org/>

Telecommunications Standards Development Society,
India



TTA

www.tta.or.kr

Telecommunications Technology Association, Korea

TTC

www.ttc.or.jp

Telecommunication Technology Committee, Japan

3GPP at a Glance

23+

Years driving 2G, 3G, 4G and 5G standards

2000+

Man-years in cumulative meeting time

>10K

Active technical specifications of all Releases



750+

Individual member companies

100,000s

Member-driven technical contributions

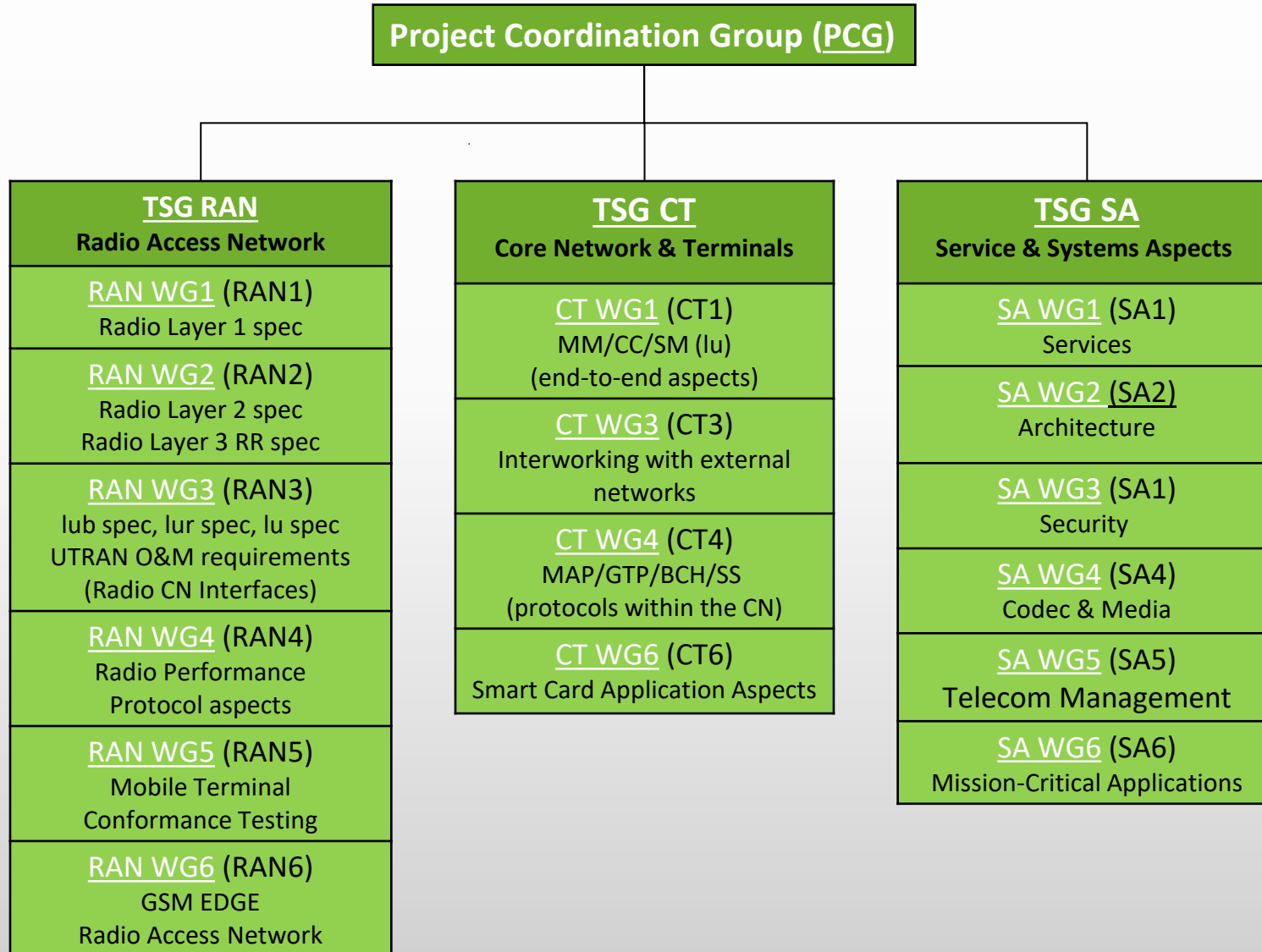
16

Specialized technical working groups

Individual Members (IMs)

- Membership in an Organizational Partner is a pre-requisite for Individual Membership of 3GPP.
- All entities registered as members of an Organizational Partner and eligible for participation in the technical work of that Organizational Partner, can become Individual Members of 3GPP on payment of requisite annual fee if they are committed to support 3GPP and
 - To contribute technically or otherwise to one or more of the Technical Specification Groups within the 3GPP scope
 - To use the 3GPP results to the extent feasible
 - An Individual Member has the right to participate in the work of 3GPP by attending meetings of the technical Specification Groups and subtending groups.

3GPP Organisation



3GPP – The 3rd Generation Partnership Project (“the project”)

PCG – Coordination of 3GPP by the Organizational Partners (OPs)

Technical Specification Groups (TSGs) covering different aspects of 3GPP system & process

TSGs are organized into Working Groups (WGs)

TSGs meet 4 times a year in the so-called “Plenary meetings” (co-located)

WGs meet once or more per plenary cycle (mostly not co-located)

Each TSG and each WG elects its own leadership (2 year terms / 2 terms)

Technical work is mostly done in WGs

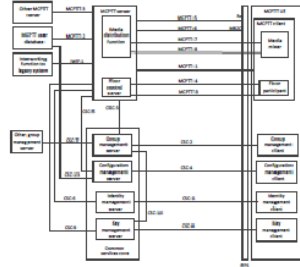
Overall planning and coordination in TSGs

3GPP Process - Different Stages

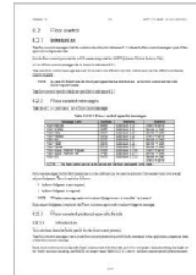
Stage 1: Requirements



Stage 2: Architecture



Stage 3: Protocols



Stage 4:

- It follows stage 3, test specifications are defined
- RAN WG4 defines BS conformance test procedures
- **RAN WG5 defines Mobile conformance test procedure.**

Working groups involved in Mission Critical standardisation:

SA1

- Requirements normally come from operators (MNOs)
- High public safety presence from Europe and USA for Mission Critical applications

SA6

- Mission Critical application architecture

SA3

- Security architecture and protocols

SA2

- Overall LTE (2G, 3G etc) system architecture

CT1

- Core protocols

CT4

- Database aspects

SA3

- Security protocols

SA4

- Codec and multicast aspects

+ **RAN** groups for radio specifications

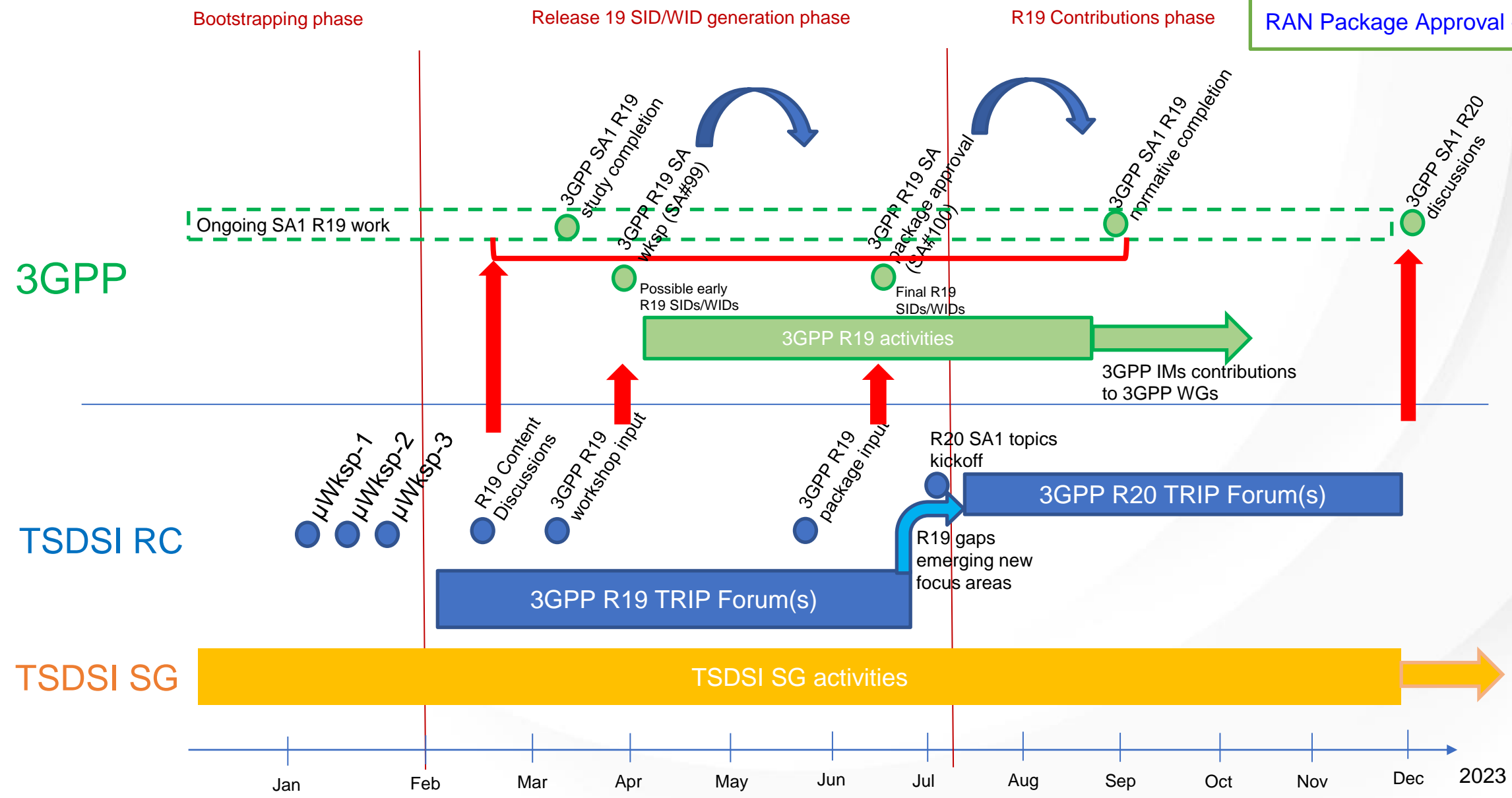
📶 Work is completed in Releases of typically 15 – 18 months

📶 New specifications issued at the completion of each release

📶 Change requests then make corrections as needed

TSDSI's 3GPP R19 and R20 Roadmap Activities

SA Package Approval – Sep 2023
 RAN Package Approval – Dec 2023



Next Step – Participation and Contributions

- At TSDSI and 3GPP
 - To Contribute to Release-19 - Join the TRIP forum
 - Does not require TSDSI membership !
 - Express your interest!! or email to Mr. Pritam Bishnoi (pritam.bishnoi@tsdsi.in)
 - For 3GPP
 - Join TSDSI to acquire 3GPP IM.
 - Create an EOL account and register for the meeting that you want to contribute.
 - Familiarize with the [working procedures of 3GPP](#)
 - Choose the topic of your interest, collaborate with supporters of proposal and submit in template
 - Subscribe to the email list of that working group to receive emails for meeting documents etc.
 - The process for subscription to various mailing list is available at <https://www.3gpp.org/specifications-groups/e-mail-lists>

- ✓ Please answer to the Poll Questions !
- ✓ Fill out the Expression of Interest Form – to be shared at the end of this micro-workshop
- ✓ For any queries or information, please email to Mr. Pritam Bishnoi (pritam.bishnoi@tsdsi.in)

Important Links

About 3GPP	https://www.3gpp.org/about-3gpp/about-3gpp
3GPP User (3GU) Portal	http://portal.3gpp.org
3GPP FAQ	https://www.3gpp.org/about-3gpp/3gpp-faqs
3GPP News	http://www.3gpp.org/news-events
3GPP TSG SA – Home	http://www.3gpp.org/specifications-groups/sa-plenary/sa-plenary/home
3GPP TSG RAN-Home	https://www.3gpp.org/specifications-groups/ran-plenary/ran-plenary/home
3GPP TSG CT-Home	https://www.3gpp.org/specifications-groups/28-rubrique34
3GPP Working Procedures	http://www.3gpp.org/ftp/Information/Working_Procedures/3GPP_WP.pdf
Liaison Statements	https://www.3gpp.org/specifications-groups/liaison-statements
3GPP Awards	https://www.3gpp.org/about-3gpp/3gpp-award-roll-of-honour

Thank You!

Organizational Partnership

Organizational Partnership is open to any Standards Organization, irrespective of its geographical location, which has:

- A national, regional or other officially recognized status and the capability and authority to define, publish and set standards within the 3GPP scope, in that nation or region
- An Intellectual Property Rights (IPR) Policy which is compatible with those of the Organizational Partners
- Committed itself to all or part of the 3GPP scope
- Signed the Partnership Project Agreement

Standards Organizations may apply to become an Organizational Partner by writing to any of the existing Organizational Partners.`

Market Representation Partnership

The Organizational Partners may invite Market Representation Partners to take part in 3GPP. An invitation for Market Representation Partnership is open to any organization, irrespective of its geographical location, which:

- Has the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g., services, features and functionality) falling within the 3GPP scope
- Does not have the capability and authority to define, publish and set standards within the 3GPP scope, nationally or regionally
- Has committed itself to all or part of the 3GPP scope
- Has signed the Partnership Project Agreement

Observers and Guests

- The status of Observer may be granted by the Organizational Partners to an entity which has the qualifications to become a future Partner
- An Observer may send a single representative to an Organizational Partners or PCG meeting. An Observer may also have representatives at TSG meetings. Observers shall not take part in decision making or hold any leadership positions
- Additional participation rights of an Observer shall be decided by the Organizational Partners on a case-by- case basis
- The status of Guest may be granted for a limited period, by the Organizational Partners to an entity which has the qualifications to become a future Individual Member. The limited period shall be decided by the Organizational Partners on a case-by-case basis

Project Co-ordination Group

- The Project Co-ordination Group (PCG) meets twice a year
- Highest Decision-making body
- Discussion takes place electronically between meetings
- Final Adoption of TSG work items
- Determines overall time frame and manages work progress in TSG
- Handles appeal from individual members on procedural or technical matters referred to them



Technical Specification Groups- Terms of Reference

The Terms of Reference of the Technical Specification Groups are given below:



RAN ToR



SA ToR



CT ToR

Contribution in 3GPP meetings (4/5)

Templates

- 3GPP Work Item Description Template



WID Template

- 3GPP Temporary Document Template



TDoc Template

Article 55 of Working Procedures: Intellectual Property Rights (IPR) Policy

- Individual Members shall be bound by the IPR Policy of their respective Organizational Partner
- Individual Members should declare at the earliest opportunity, any IPRs which they believe to be essential, or potentially essential, to any work ongoing within 3GPP. Declarations should be made by Individual Members to their respective Organizational Partners
- Organizational Partners should encourage their respective members to grant licences on fair, reasonable terms and conditions and on a non-discriminatory basis

Technical Specification Groups

- The Technical Specification Groups meet in series/parallel (TSGs CN, RAN, CT in parallel followed by TSG SA). They meet four times per year: in March, June, September and December
- The TSGs have the authority to approve their own specifications
- TSG SA undertakes a co-ordination role across all TSGs
- WGs meet 1 or 2 times between TSG meetings
- WGs have up to about 350 participants and handle up to about 1300 technical documents per week
- Preparation of detailed time frame and management of detailed work progress
- Proposal and approval of work items within the agreed scope and terms of reference of the TSG
- Handling of appeals from individual members on technical matters

Snapshot of TSG RAN WGs

WG1 (RAN1)

- Specification of physical channel structures
- Specification of the mapping of the transport channels onto physical channels
- Specification of the physical layer multiplexing, and channel coding and error detection

WG3 (RAN3)

- Overall UTRAN and E-UTRAN architecture
- Synchronisation in UTRAN and E-UTRAN
- Iu interface protocol specifications, i.e. access stratum protocols over the Iu reference point
- Iur and Iub interface protocol specifications
- S1,X2 interfaces

WG2 (RAN2)

- Specification of the radio interface architecture and protocol termination
- Specification of radio interface protocols between UE and RAN as well as between relay node and eNodeB
- Specification of radio interface protocols common to RAN and GERAN

WG4 (RAN4)

- Base Station and evolved Base Station, Repeater and Evolved Repeater EMC specification
- Terminal and evolved terminal EMC specification
- Radio Link requirement specification
- Cell selection/reselection performance requirement specifications
- Performance requirements in support of Radio Resource Management

Snapshot of TSG RAN WGs

WG5 (RAN5)

- RF conformance tests in coordination with the other relevant RAN working groups
- RRM conformance tests in coordination with the other relevant RAN working groups
- GERAN, UTRA, evolved UTRA and beyond, IMS and NAS Protocol tests in coordination with the other relevant RAN and CT working groups respectively
- Tests to cover Inter RAT procedures

WG6 (RAN6)

- RF aspects of GERAN
- GERAN Radio Layer 1 specification
- GERAN Radio Layer 2 specification
- GERAN Radio Layer 3 RR specification
- A interface specification, Gb interface specification

Snapshot of TSG SA WGs

WG1 (SA1)

Service and feature requirements applicable to mobile and fixed communications technology for:

- 2G, 3G and future communication technologies independent of access technologies based on an evolved GSM/GPRS core network , including the Evolved 3GPP Core Network
- an evolved industry-wide IP Multimedia Subsystem (IMS) developed in an access independent manner

WG3 (SA3)

- Defining the requirements and specifying the architectures and protocols for security and privacy in 3GPP systems
- Ensures the availability of cryptographic algorithms which need to be part of the specifications
- Security requirements and test cases for network equipment implementing any of the new 5G Network Functions

WG2 (SA2)

- in charge of developing the Stage 2 of the 3GPP network. Based on the services requirements elaborated by SA WG1
- The group has a system-wide view, and decides on how new functions integrate with the existing network entities

WG4 (SA4)

- Development and maintenance of specifications of codecs for speech, audio, video, graphics
- Definition of unicast and multicast/broadcast streaming and real-time communication media services and architectures
- Speech, audio, video, and multimedia quality evaluation including new evaluation methods

Snapshot of TSG SA WGs

WG5 (SA5)

- Management and Orchestration which covers aspects such as operation, assurance, fulfilment and automation
- Charging which covers aspects such as Quota Management and Charging Data Records (CDRs) generation, related to end-user and service-provider

WG6 (SA6)

- Interfaces supporting critical communications and other applications service requirements from SA1
- Applications related to critical communications (e.g. mission critical applications) and related verticals (e.g. railways)
- Other applications to support industry verticals
- Northbound and device Application Programming Interfaces (APIs) for the above applications

Snapshot of TSG CT WGs

WG1 (CT1)

Enhancement and the maintenance of specifications for UE to Core Network interfaces and interfaces within the Core Network for:

- 5G Core Network (5GCN)
- Evolved Packet Core (EPC)
- 2nd and 3rd generation Core Network (2G CN / 3G CN) for Circuit Switched (CS) and Packet Switched (PS/GPRS)

WG4 (CT4)

- Numbering, Addressing and Identification
- Access and mobility management
- Session management
- Subscription data management
- Subscriber authentication
- SMS services
- Location services

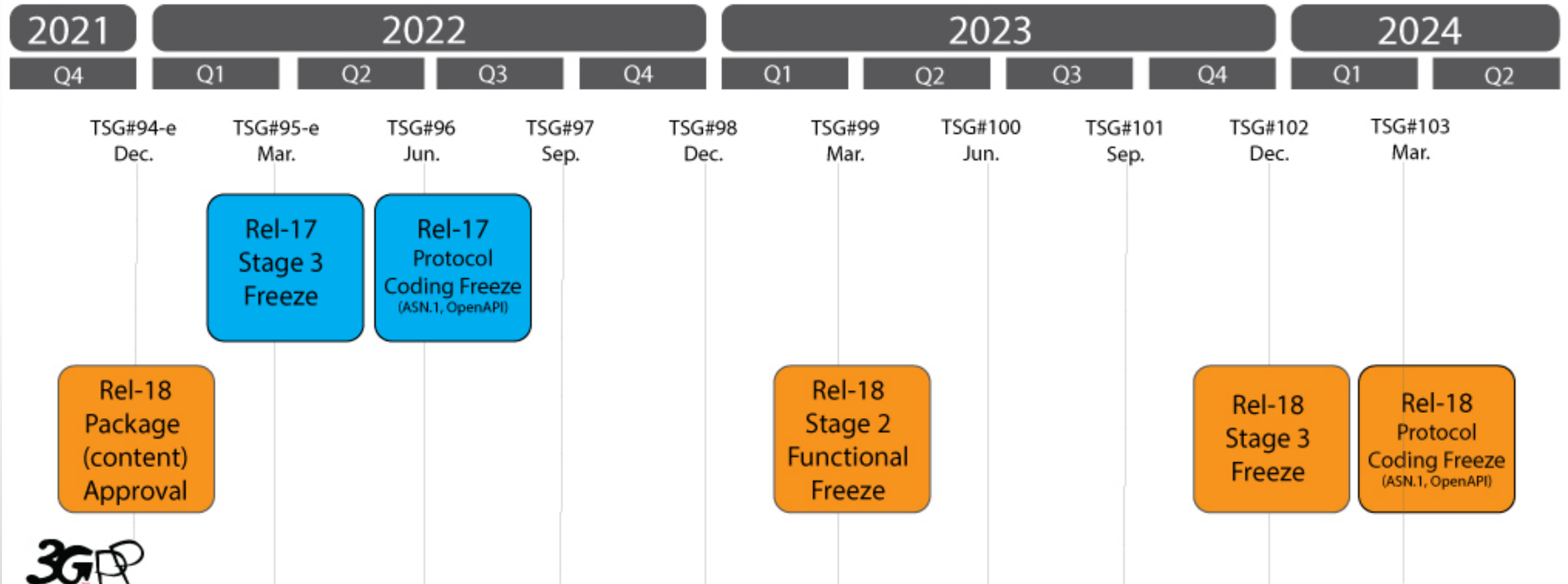
WG3 (CT3)

- Interworking between a 3GPP Core Network and external Networks, interworking between PLMNs as well as interworking between PLMN domains
- Interworking between IP Multimedia Core Network subsystem and IP Multimedia Core Network subsystems / Circuit Switch networks / external IP networks.
- Policy and charging control

WG6 (CT6)

- Subscriber Identity Module (SIM), used by 2G
- Universal Subscriber Identity Module (USIM) application
- IP Multimedia Services Identity Module (ISIM) application with the exception of the security algorithms (developed by SA WG3)
- Hosting Party Subscription Identity Module (HPSIM) application

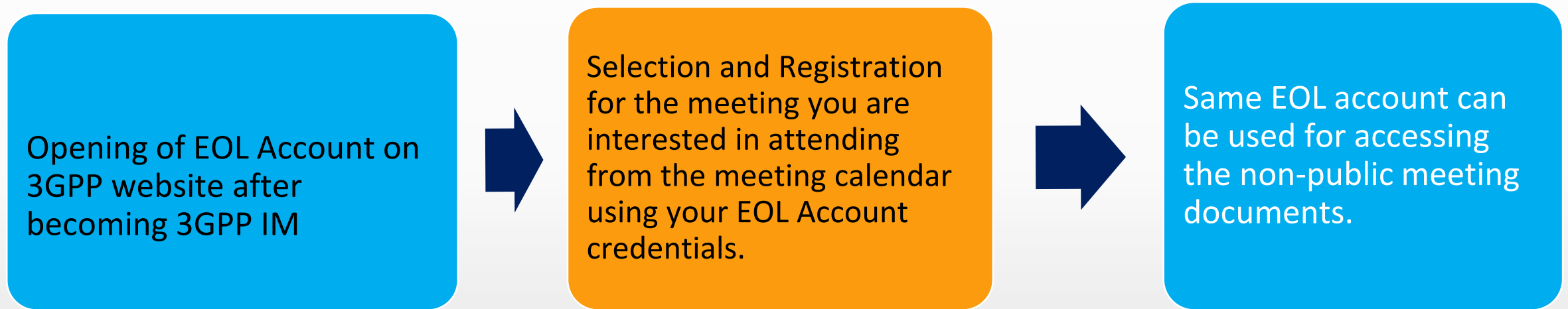
3GPP Release 17 and 18 Status Update



Contribution in 3GPP meetings (1/5)

EOL account

- Opening of EOL account is a pre-requisite for participation in the 3GPP TSG or working groups



Refer to the attached document for 3GPP EOL account creation process



Process for
Creating 3GPP EOL Acc

Contribution in 3GPP meetings (2/5)

- Important to be familiar with the working procedures of 3GPP
- Important to be aware of the ongoing work in general but very carefully in WG/WGs of interest
- Important to note that:
 - Topics of work in WGs are frozen as a part of the Release content at TSG level
 - Proposals for normative work and study work against the topics can be approved at the time of release freeze or later and will also be limited by available time and priority of work
- Choose the topic of your interest, collaborate with supporters of proposal and submit in template. For a new proposal minimum 4 supporters are required

Contribution in 3GPP meetings (3/5)

- Check the Calendar of meetings of the Working Groups of your interest
<https://www.3gpp.org/3gpp-calendar/3gpp-calendar>
- Choose the topic of your interest, collaborate with supporters of proposal and submit in template
- Subscribe to the email list of that working group to receive emails for meeting documents etc.
- The process for subscription to various mailing list is available at
<https://www.3gpp.org/specifications-groups/e-mail-lists>

Contribution in 3GPP meetings (5/5)

Log in to 3GPP portal <https://portal.3gpp.org/#/>

Go to the meeting you have registered and click on the 3 dots in the end.

Click on "contribute to meeting"

Fill in the details asked for and obtain the generated TDoc number.

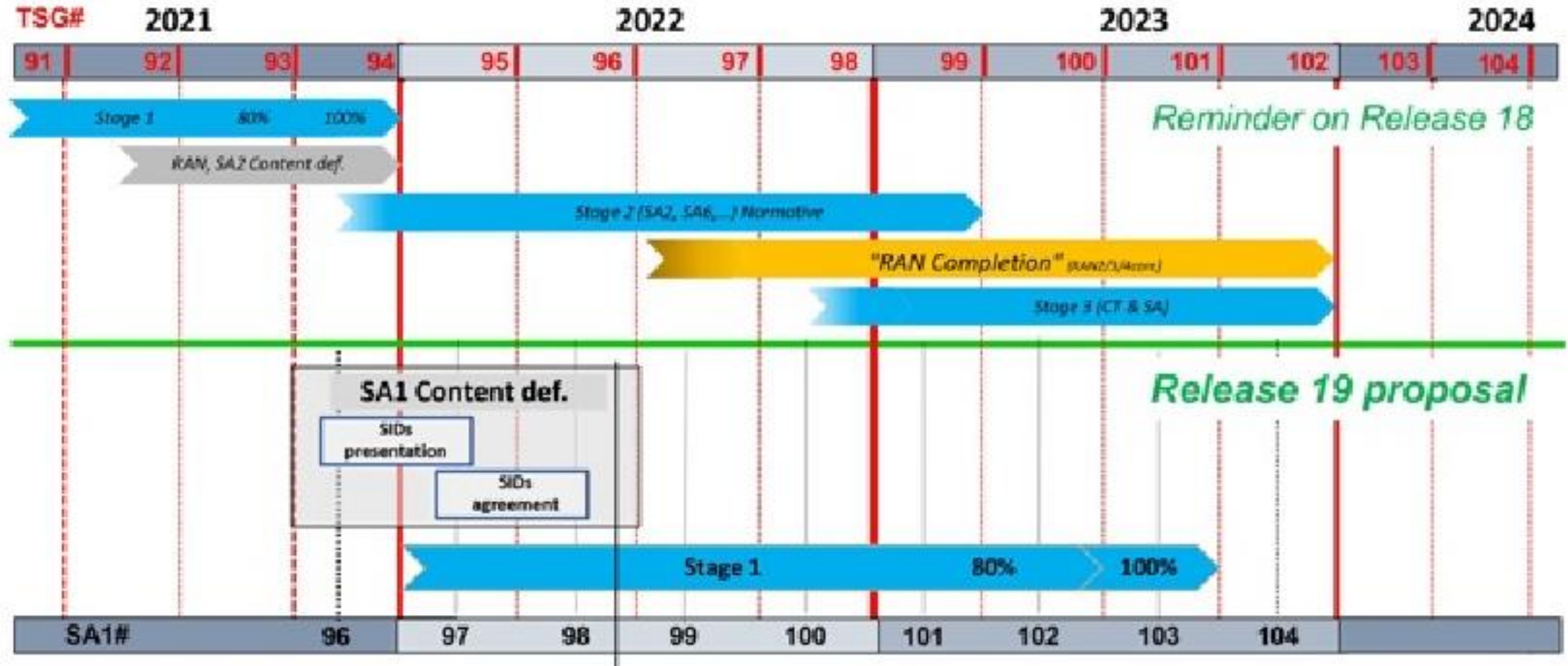
Add the TDoc number to your contribution.

3GPP Participation and Contribution Data

Calendar Year Data (January to December)						
Groups	No. of Meetings (2020)	No. of Meetings (2021)	No. of Participants (2020)	No. of Participants (2021)	No. of Contributions (2020)	No. of Contributions (2021)
RAN	42	35	428	439	121	106
SA	46	36	198	194	62	41
CT	25	22	91	105	13	49
Total	113	93	717	738	196	196

Year	Average Participants per meeting	Average Contribution per meeting
2020	6.3	1.7
2021	7.4	2.1
% increase from 20 to 21	17%	23%

3GPP R19 SA1 Timelines



3GPP Process (2/3)

Feature:

- New or substantially enhanced functionality which represents added value to the existing system
- Complex features may be broken down into building blocks
- Study Items (SI) and Work Items (WI) are created

SI:

- Feasibility study to analyze the market and potential technical difficulties of a given service or approach. The results may be made available in a TR (technical report).

WI:

- The actual specification development for a new feature and/or a building block. Produces TS (technical specification).
- WI may cover more than one specification within TSG and more than one TSG

Releases:

- Specifications grouped together

Current List of Work Items

The workplan for 3GPP Release 19 with the relevant WGs names is here:



Microsoft Excel
:ro-Enabled Worksl

3GPP Process (3/3)

CR (Change Request):

- Once a TS or TR has become sufficiently stable and has been approved by the TSG, a version x.0.0 is produced and put under change control
- A CR may be raised by any individual member and brought to the attention of the responsible Working Group
- The TSG Secretary shall collate all CRs approved by the WGs of that TSG and shall bring them to the TSG for approval
- Following approval at TSG level, the changes are incorporated, and new version of the specification shall then be made available

"Freezing" of specifications:

- A TSG may decide that a specification is sufficiently stable that it may be considered "frozen"
- A "frozen" Technical Specification is one which can have no further new or modified functionality Change Requests. However, detailed protocol specifications (stage 3) may not yet be complete.
- Only CRs for essential corrections of errors shall be considered