

3GPP Introduction and 6G Work Status

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3GPP SA1 chairman

Webinar on 3GPP standards and SNS-JU impact Webinar, 27th March 2025



Agenda



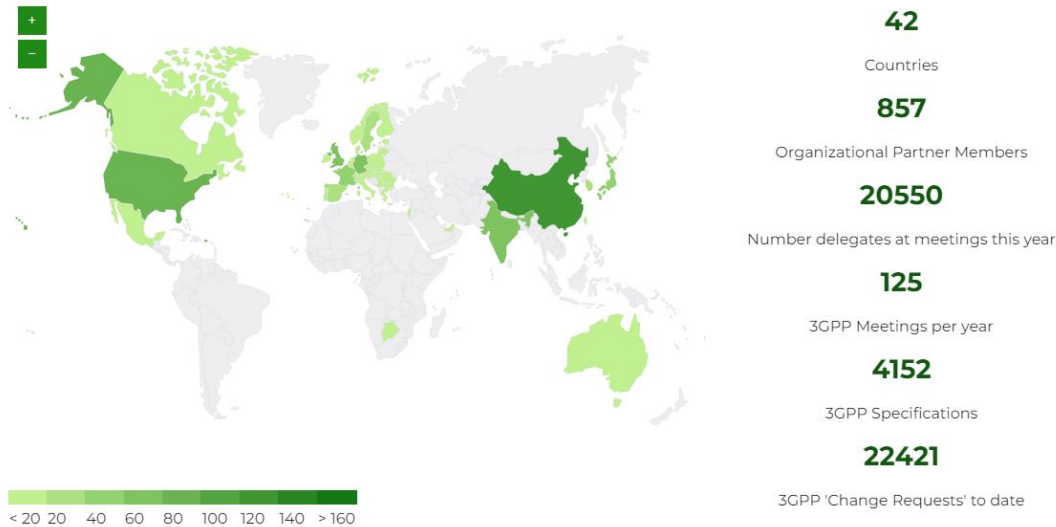
1. 3GPP Introduction
 - a. 3GPP
 - b. 3 “Fundamental” 3GPP Principles
2. 3GPP 6G Work Status (Snapshot as of March 2025)
3. Appendix: First steps in 3GPP

3GPP Introduction

- A brief story-

3GPP (1/2)

3GPP Global Membership



ARIB

atis

CCSA

TTC
Telecommunication
Technology
Committee

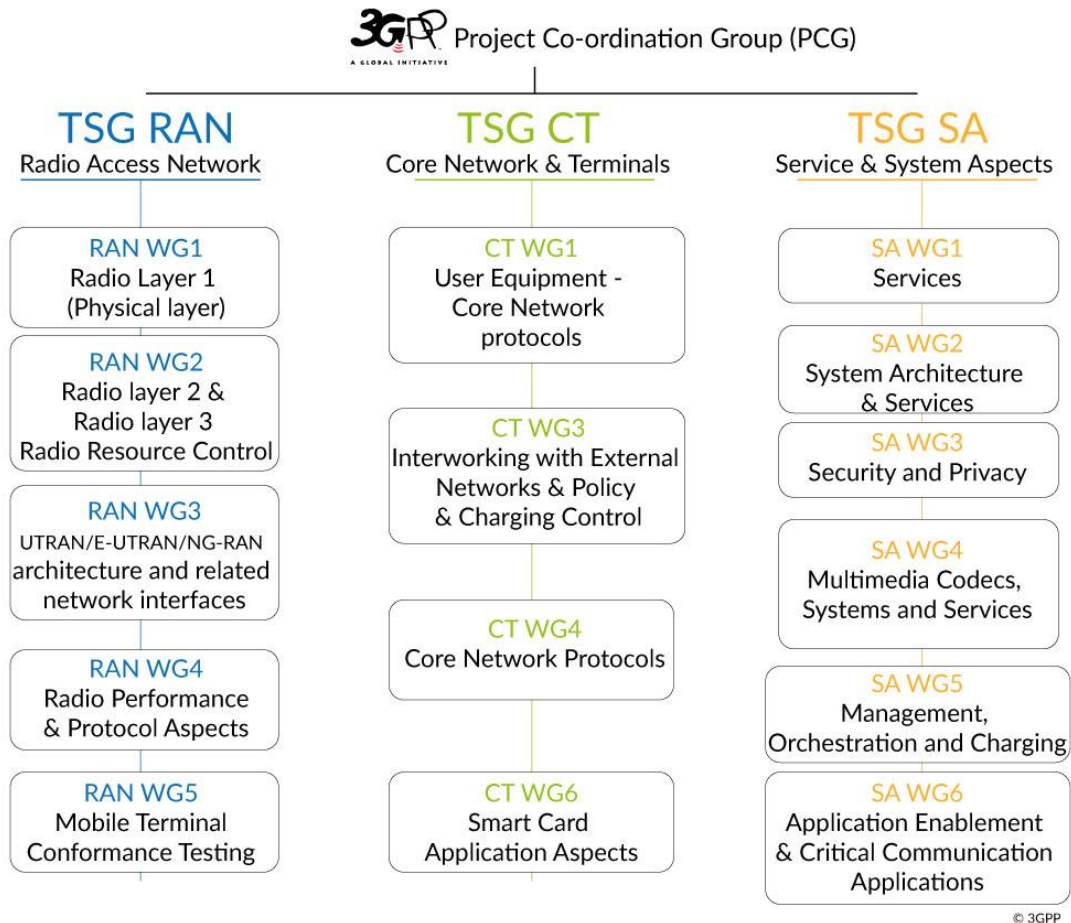
ETSI

tsdsi
India's Telecom SDO

TTA

- The 3rd Generation Partnership Project (3GPP) unites [Seven] telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “**Organizational Partners**” and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies.
- The **project covers** cellular telecommunications technologies, including **radio access, core network and service capabilities**, which provide a complete system description for mobile telecommunications.
- **3GPP develops technical specifications, not standards.** These technical specifications are then transposed into standards by the seven regional Standards Setting Organizations (SSOs) that form the 3GPP partnership.

3GPP (2/2)



❑ 3GPP is organized in three main Technical Specification Groups (TSG) in 3GPP are:

- ❑ Radio Access Networks (RAN),
- ❑ Services & Systems Aspects (SA),
- ❑ Core Network & Terminals (CT).

❑ ~20 Working Groups & TSGs, each meeting 4 to 6 times a year. Biggest group is ~400 delegates.

3 “Fundamental” 3GPP Principles

- ❑ Member-driven & Consensus-driven
- ❑ 3GPP Releases
- ❑ Stages

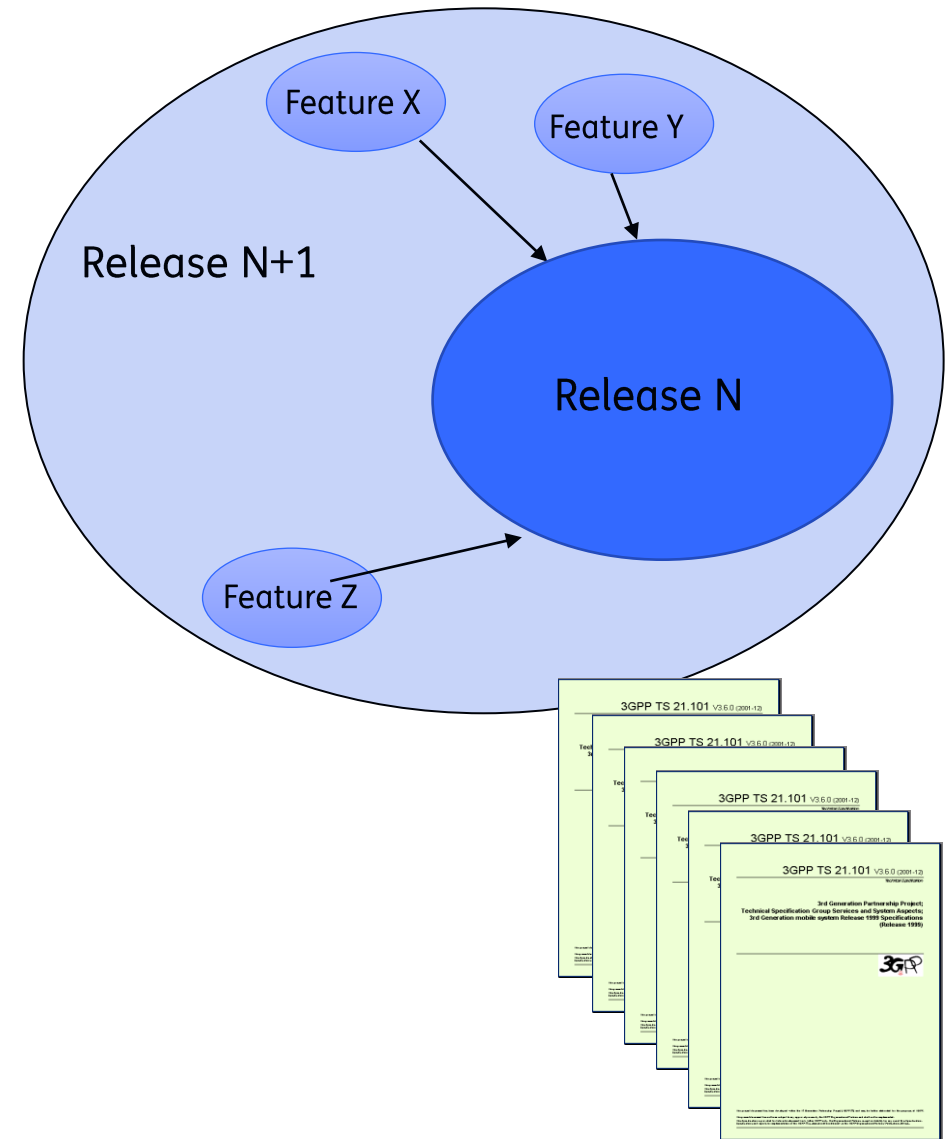
Member-driven & Consensus-driven

- ❑ 3GPP is a **member-driven** organization:
 - ❑ 3GPP specifications and studies are contribution-driven, by member companies, in Working Groups and at the Technical Specification Group level.
 - ❑ In fact, even the chairs and vice-chairs of the different 3GPP groups are elected from the member companies and must act impartially on behalf of 3GPP.
- ❑ 3GPP is **consensus-driven**:
 - ❑ Consensus is defined in our procedures as “*absence of sustained opposition to substantial issues*”.
 - ❑ Note: consensus need not imply unanimity.



3GPP Releases (1/2)

- ❑ 3GPP technical specifications are organized in Releases
- ❑ A release consists of many individual specifications that work consistently together.
- ❑ Each Release consists in the previous one plus a given number of new functions/improvements, called “**Feature**”.
- ❑ Some Features are defined but never deployed.
- ❑ A new Release every **15 to 24 months**



3GPP Releases (2/2)

Generation:

UMTS
a.k.a. 3G

Lte
a.k.a. 4G

5G

6G

Release:

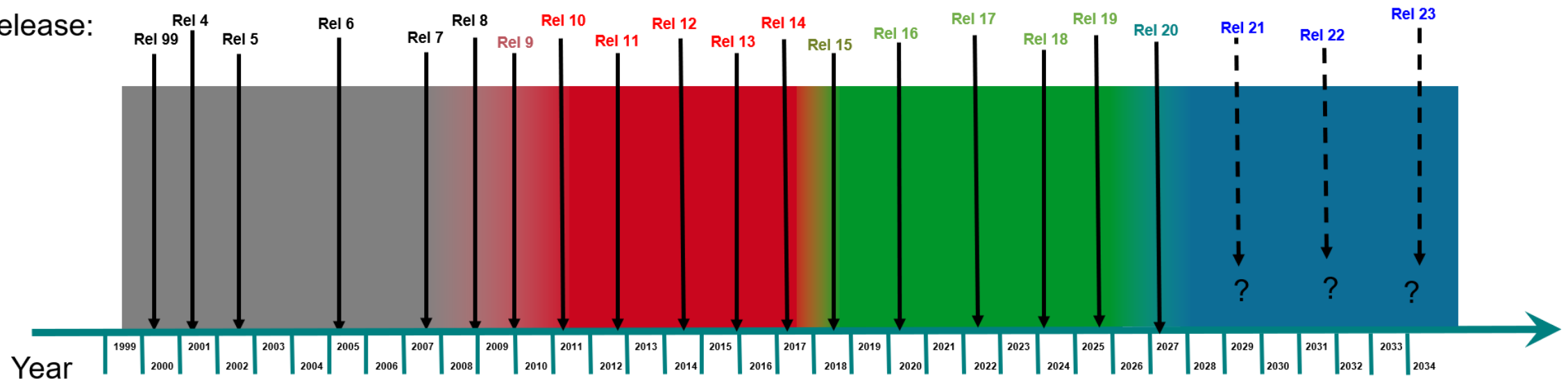


Image from [SP-241883](#) / [RP-243207](#) / [CP-243302](#)

3GPP Stages

Stage 1

Requirements:

Overall service description from the user's standpoint.

Stage 2

Architecture: Overall description of the organization of the network functions to map service requirements into network capabilities.

Stage 3

Protocols: The definition of switching and signalling capabilities needed to support services defined in Stage 1.

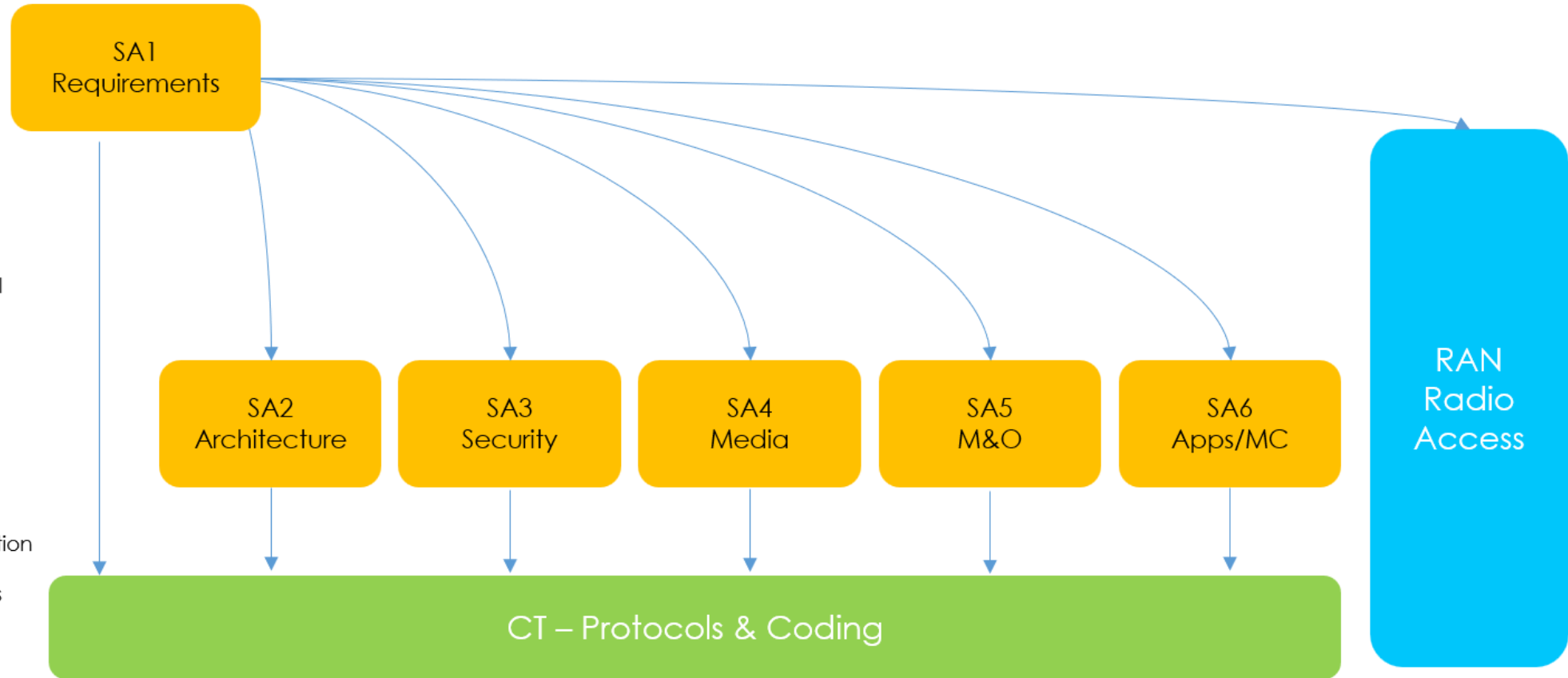


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3GPP 6G Work Status

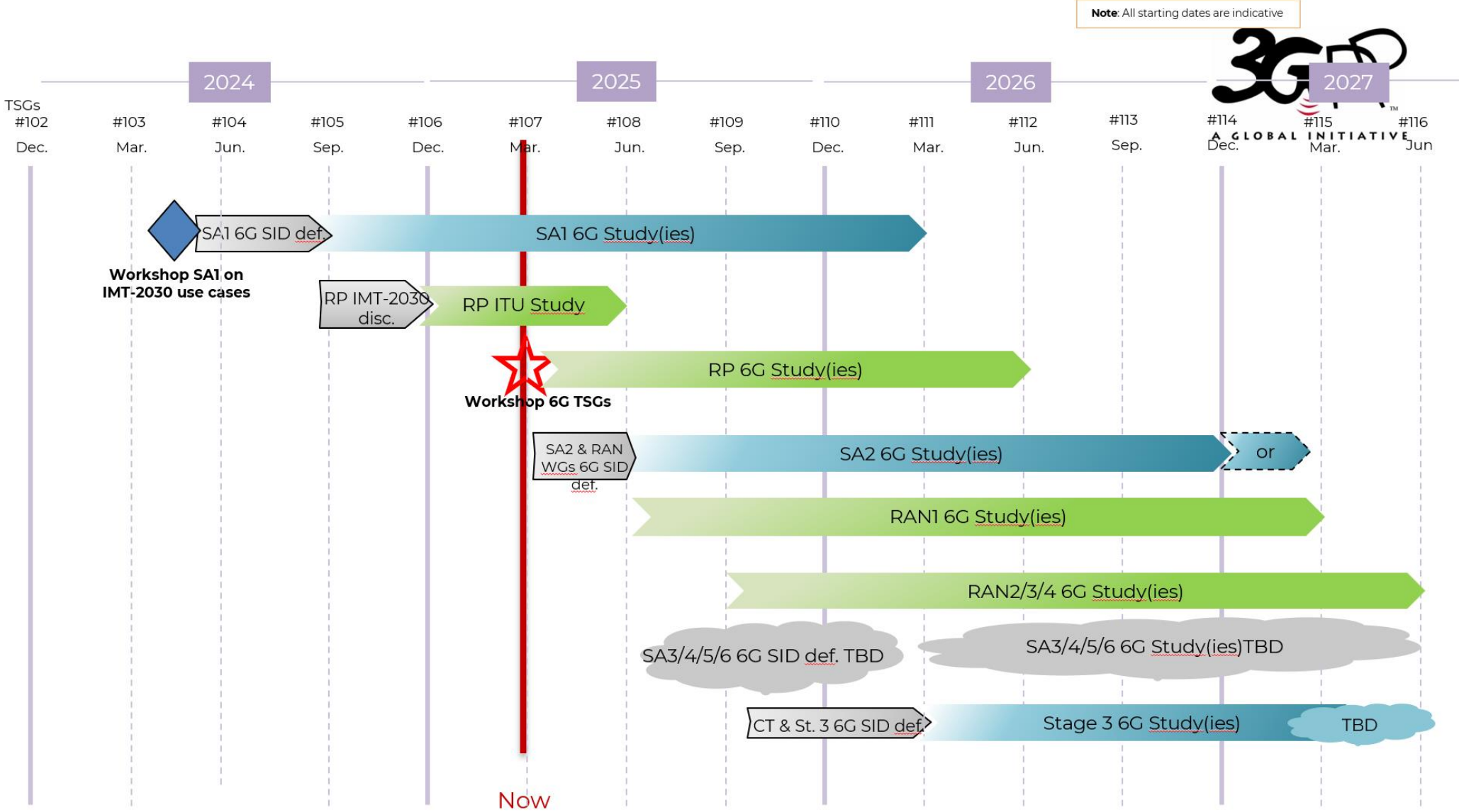
- Snapshot as of March 2025 -

6G planning: 3GPP initial considerations

- ❑ Divide the work in 2 Releases:
 - Rel-20 for 6G studies
 - Rel-21 for 6G normative work
- ❑ Studies for 6G in 3GPP are expected to start from Release 20
 - Requirements studies:
 - SA1 SID is expected to be approved in **Sept'2024**.
 - RAN plenary SID (e.g., radio requirements and KPIs) is expected to be approved in **Dec'2025**
 - Technology studies:
 - SA2 SID is expected to be approved in **June'2025**. Other SA-WG SIDs (e.g., Security, etc.) are expected to be approved TBD
 - RAN-WG SIDs are expected to be approved in **June'2025**
 - CT-WG SIDs are expected to be approved TBD
- ❑ Normative work for 6G in 3GPP and ITU-R IMT-2030 submission are expected to in **Release 21**.

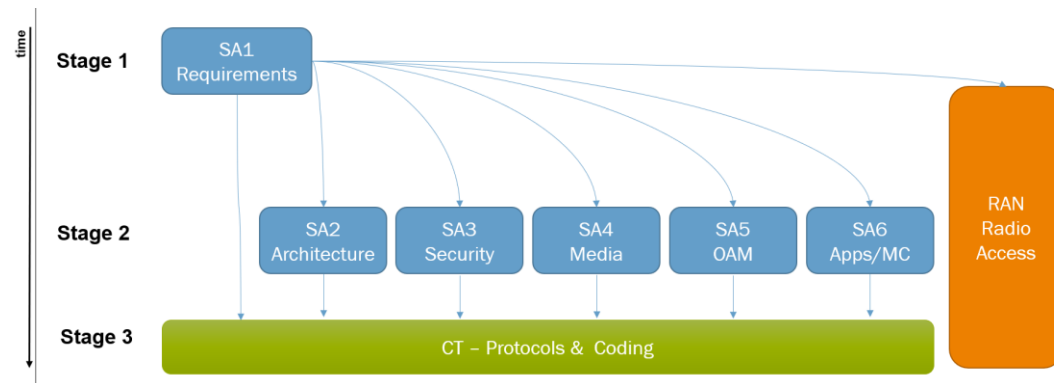


3GPP Rel-20 6G timeline



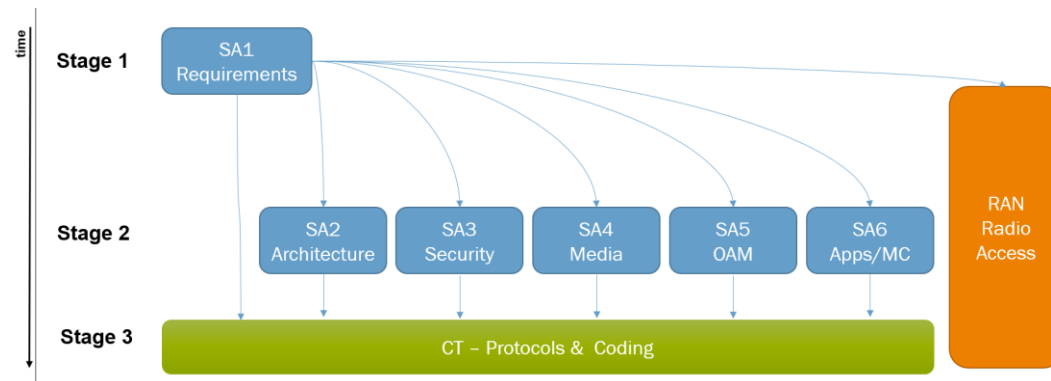
3GPP 6G First steps

- ❑ 3GPP has held two workshops:
 - ❑ Stage-1 Workshop on IMT2030 Use Cases
 - ❑ 3GPP TSGs Workshop on 6G
- ❑ Currently, there are two approved 6G studies in 3GPP:
 - ❑ TSG SA1 Study on 6G Use Cases and Service Requirements
 - ❑ TSG RAN Plenary Study on 6G Scenarios and Requirements



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Stage-1 Workshop on IMT2030 Use Cases



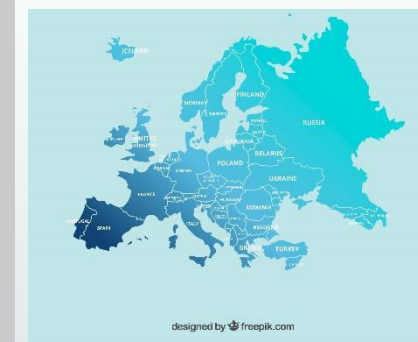
- ❑ For the first time, 3GPP organized a Stage-1 workshop, inviting external organizations to 3GPP.
<https://www.3gpp.org/technologies/stage1-imt2030-uc-ws>
- ❑ **Objective:** Bring 3GPP closer to the ongoing initiatives of various global/regional research organizations and 3GPP Market Representation Partners (GSMA, NGMN, 5GAA, 5GACIA, 5G MAG,...) related to 6G use cases.
- ❑ 245 delegates attended face-to-face, and another 383 attended as remote participants.

Stage-1 Workshop on IMT2030 Use Cases

- ❑ For each of the 6 3GPP regions, one research alliance was asked to provide input on use cases:
 - B5GPC – Japan
 - 6G Forum – S. Korea
 - IMT-2030 (6G) – China
 - Bharat 6G Alliance – India
 - NGA – North America
 - 6GSNS – Europe
- ❑ They were invited to present their views regarding 6G priorities and use cases for 2030.
- ❑ Besides the technical innovations (e.g., sensing, immersive experience and digital twins), societal challenges like aging populations and healthcare were pointed out as priorities in their regions.
- ❑ Some organizations also highlighted sustainability as one of the key objectives of 6G.
- ❑ 6GSNS presentation available in [link](#).



- **3GPP SA1** invited **SNS** to participate in the workshop and present the envisioned 6G Use Cases based on the projects' work
- As SNS values collaboration with all EU stakeholders, it has invited EU National Initiatives to contribute to a coherent European view, formulated through SNS-ICE
- The following projects have contributed:



6G-NTN



6G-Shine



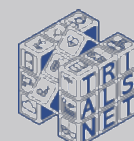
NANCY



FIDAL



SEASON



TrialsNet



(D)



(I)



(NL)

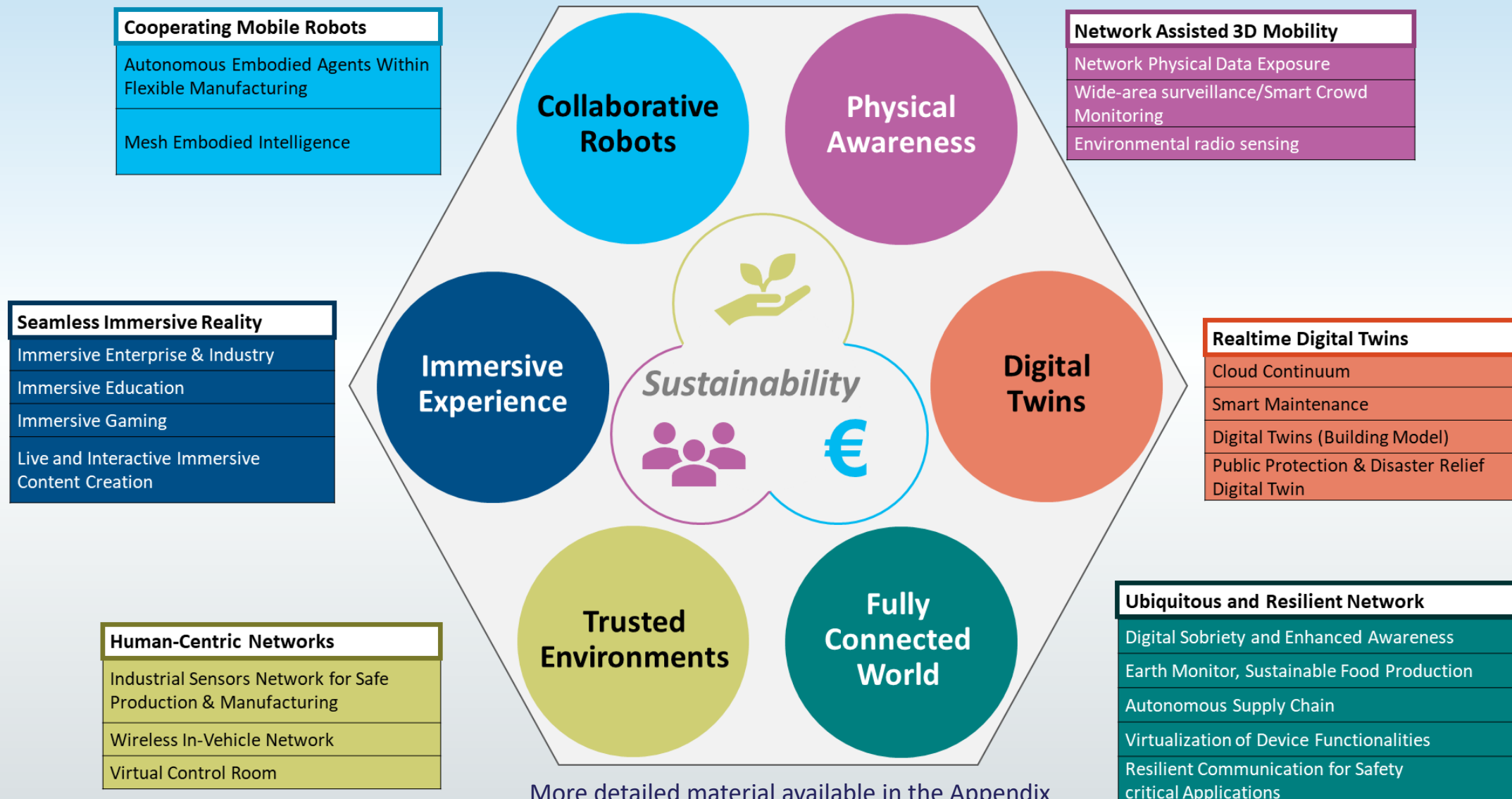


(F)

SNS projects

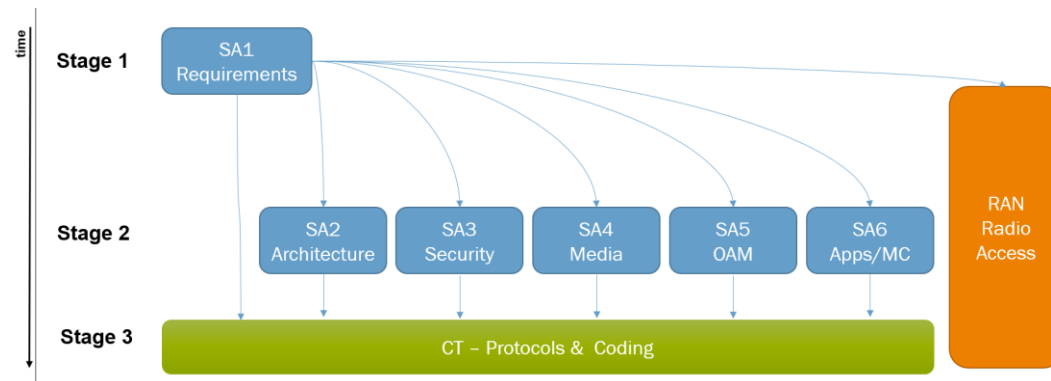
National initiatives

More detailed material available in the appendix



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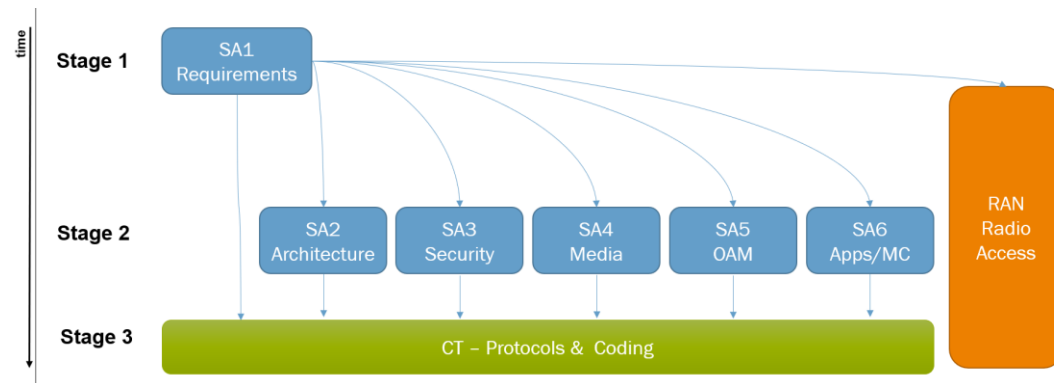
3GPP TSGs Workshop on 6G

- ❑ Incheon, South Korea (March 10 – 11, 2025)
- ❑ This was the “big” 3GPP workshop on 6G. More than 850 delegates face-to-face.
- ❑ 3GPP members had the opportunity to share their visions, discuss design principles (Radio & Core) and priorities on 6G.
- ❑ All documents can be found in this [link](#).
- ❑ Agenda:
 - ❑ Joint session 1: Overall vision & priorities for next generation
 - ❑ Parallel sessions: RAN & System Architecture Aspects
 - ❑ Joint session 2: Wrap-ups and Summary



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Study on 6G Use Cases and Service Requirements

3GPP TR 22.870 V0.2.0 (2025-02)

Technical Report

3rd Generation Partnership Project;
Technical Specification Group TSG SA;
Study on 6G Use Cases and Service Requirements;
Stage 1
(Release 20)

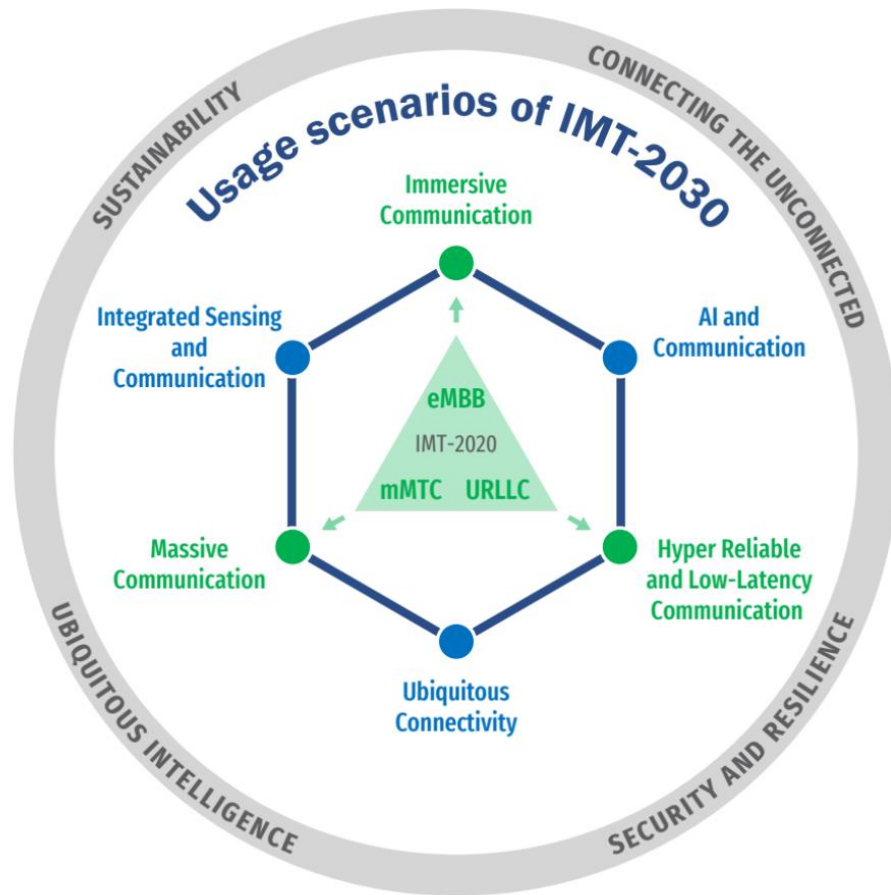


The present document has been developed within the 3rd Generation Partnership Project (3GPP™) and may be further elaborated for the purposes of 3GPP. The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification. Specifications and Reports for implementation of the 3GPP™ system should be obtained via the 3GPP Organizational Partners' Publications Offices.

- ❑ TSG SA1 study.
- ❑ Covered by [TR 22.870](#): “Study on 6G Use Cases and Service Requirements”
- ❑ **Rapporteurs:** Xiaonan Shi (China Mobile) & Jean Trakinat (T-Mobile USA)
- ❑ **Target completion date:** TSG#111 (Mar 2026)
- ❑ **SID:** [SP-241391](#)

Objective: This study aims to identify high level principles and use cases - to define potential requirements to enable the 3GPP system to support the needs of new and enhanced services and scenarios, based on, but not limited to, IMT-2030 usage scenarios.

IMT-2030 vs 3GPP Stage 1 Study

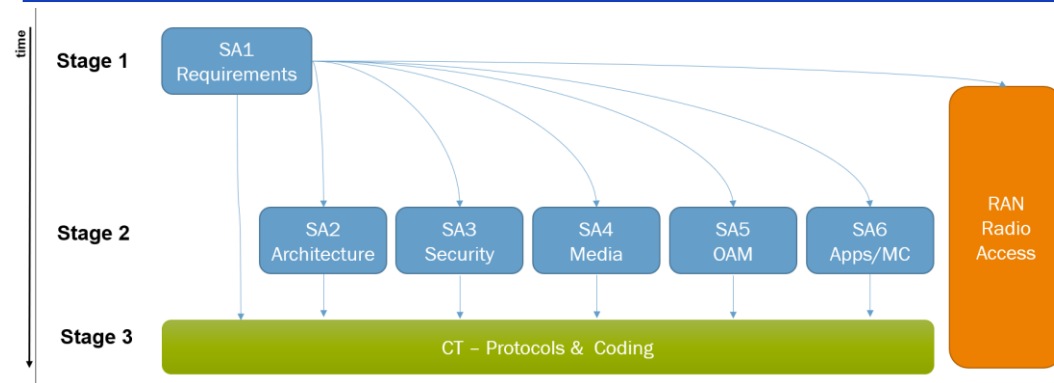


☐ SA1 6G [TR 22.870](#) Clauses:

- ☐ System and Operational Aspects
- ☐ Artificial Intelligence
- ☐ Integrated Sensing and Communication
- ☐ Ubiquitous Connectivity
- ☐ Immersive Communication
- ☐ Massive Communication
- ☐ Further Use cases on Industry and Verticals
- ☐ Others

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Study on 6G Scenarios and Requirements

- ❑ **TSG RAN Plenary Study.**
- ❑ Covered by **TR 38.9xx**: “Study on 6G Scenarios and Requirements”
- ❑ **Rapporteurs:**
 - Xiaoran Zhang (China Mobile)
 - Lei Song (Verizon)
 - Tianyang Min (NTT DOCOMO)
 - Axel Klatt (Deutsche Telekom)
- ❑ **Target completion date:** TSG#112 (June 2026)
- ❑ **SID:** [RP-250810](#)

Objectives:

- Investigate a candidate set of items for minimum TPRs based on the Recommendation ITU-R M.2160, and, where applicable, the associated target values and key assumptions for the identified minimum TPRs. [Process on-going [RP-250819](#)]
- Identify typical and practical deployment scenarios defined by attributes such as carrier frequency, inter-site distance, user density, maximum mobility speed, and other relevant factors.
- Develop 3GPP requirements for 6G Radio for improvement of existing services and for new services.
- Determine the applicability of legacy services to 6G Radio, and define radio requirements for these, as appropriate.
- Develop 3GPP requirements for 6G Radio for these practical deployment scenarios to ensure substantial gains in all relevant bands: overall performance, user experience, TCO reduction.

3GPP 6G Next steps

- ❑ 3GPP will complete the two current 6G studies:
 - ❑ TSG SA1 Study on 6G Use Cases and Service Requirements [Mar 2026]
 - ❑ TSG RAN Plenary Study on 6G Scenarios and Requirements [June 2026]
- ❑ Further 6G studies will start soon:
 - ❑ **RAN:** RAN working groups study - [approval in June 2025]
 - ❑ **System Aspects & Architecture:** SA2 study – [approval in June 2025]



A hand is shown reaching out from the left side of the frame towards a complex, futuristic digital interface on the right. The interface features a large circular gauge with multiple concentric rings, some of which are highlighted in bright blue. In the center of the gauge are three interlocking gears. Surrounding the gauge are various data visualizations, including bar charts, line graphs, and network diagrams. The entire scene is set against a dark blue background with a bokeh effect of light spots.

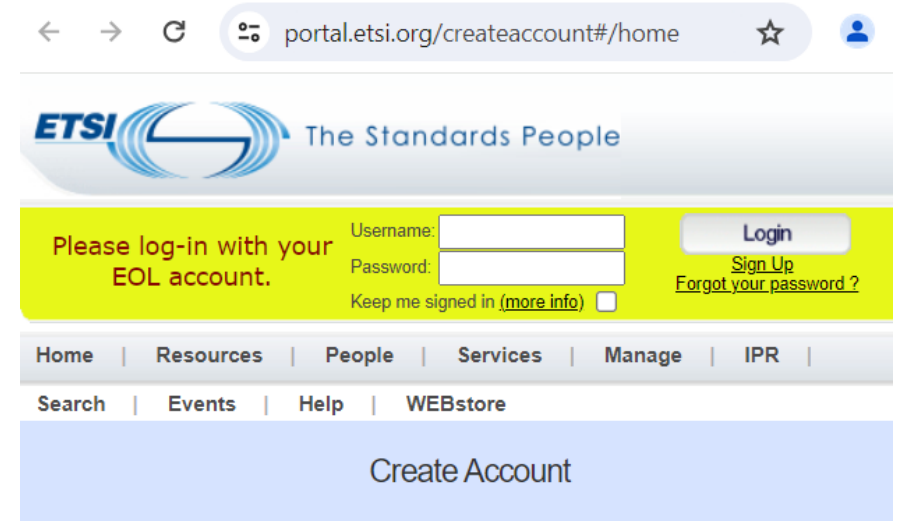
**Thank you for
your attention**

Appendix: First steps in 3GPP

Information extracted from: **3GPP Newcomers "quick-start" guide**
#Tdoc: [SP-241883](#) / [RP-243207](#) / [CP-243302](#)

First steps in 3GPP (1/3)

- ❑ You need to be an ETSI member.
- ❑ Get an EOL (ETSI OnLine) account
 - This is needed for most of these tools - See <https://portal.etsi.org/createaccount#/home>
- ❑ Check which group(s) you like to follow
 - E.g. as described on slide 4 or at either:
<https://www.3gpp.org/about-us/introducing-3gpp>
<https://www.3gpp.org/3gpp-groups>
- ❑ Register to the e-mail reflector of the group(s) you want to follow
 - E.g. to register to the SA1 list, send: *Subscribe 3GPP_TSG_SA_WG1@LIST.ETSI.ORG* To: listserv@list.etsi.org



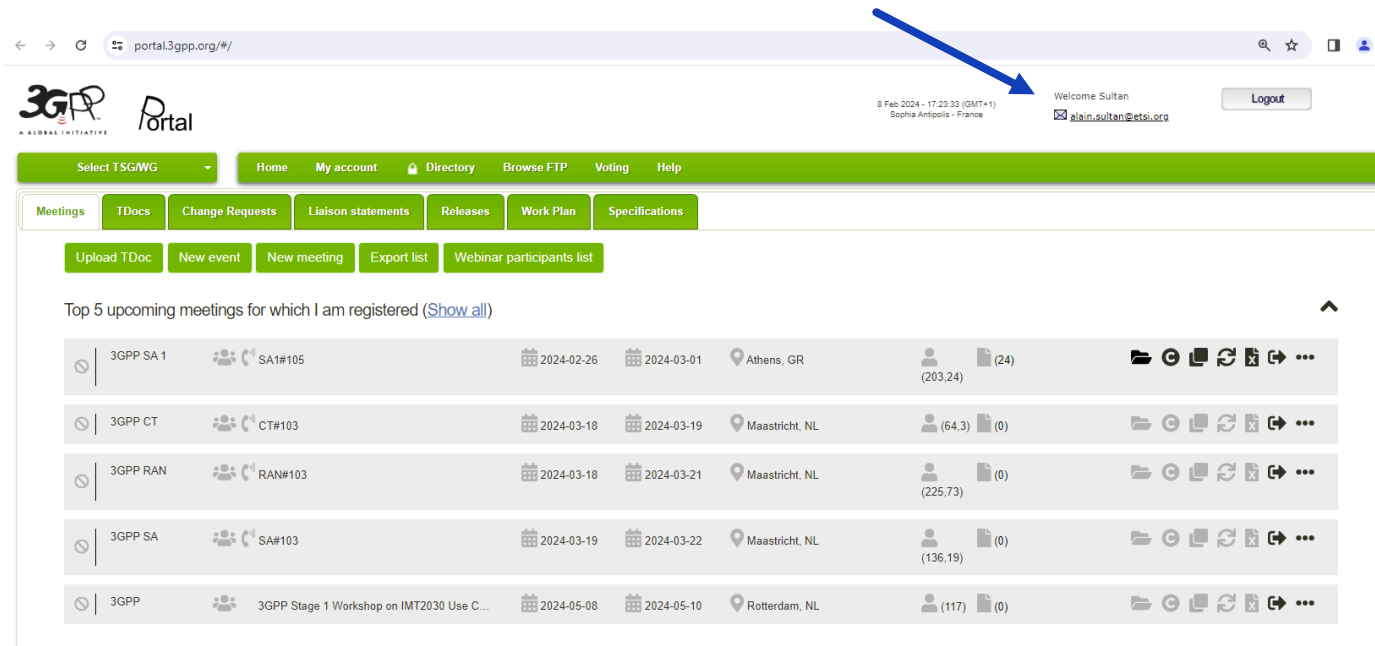
The screenshot shows the ETSI portal's 'createaccount#/home' page. At the top, the ETSI logo and 'The Standards People' tagline are visible. Below this is a yellow login section with the text 'Please log-in with your EOL account.' It includes input fields for 'Username:' and 'Password:', a 'Login' button, and links for 'Sign Up' and 'Forgot your password?'. A checkbox for 'Keep me signed in (more info)' is also present. A navigation bar below the login section contains links for 'Home', 'Resources', 'People', 'Services', 'Manage', and 'IPR', as well as 'Search', 'Events', 'Help', and 'WEBstore'. A large blue button labeled 'Create Account' is centered below the navigation bar.

An EOL account is required for:

- representatives of ETSI Full or Associate member organizations to obtain access to ETSI portal information that is not publicly available and to register for ETSI meetings;
- representatives of 3GPP Member organizations (whether or not ETSI Members) to allow easy registration for 3GPP meetings, access to some information on the 3GPP portal (<https://portal.3gpp.org>), and to allocate meeting contribution (TDoc) numbers;

First steps in 3GPP (2/3)

- ❑ Most 3GPP operations are made via <https://portal.3gpp.org/> .
- ❑ Including: registering/contributing to a meeting, getting the 3GPP Specifications, etc.
- ❑ To use the 3GPP portal, you must log in
- ❑ When logged in, your name will appear in the upper-right corner



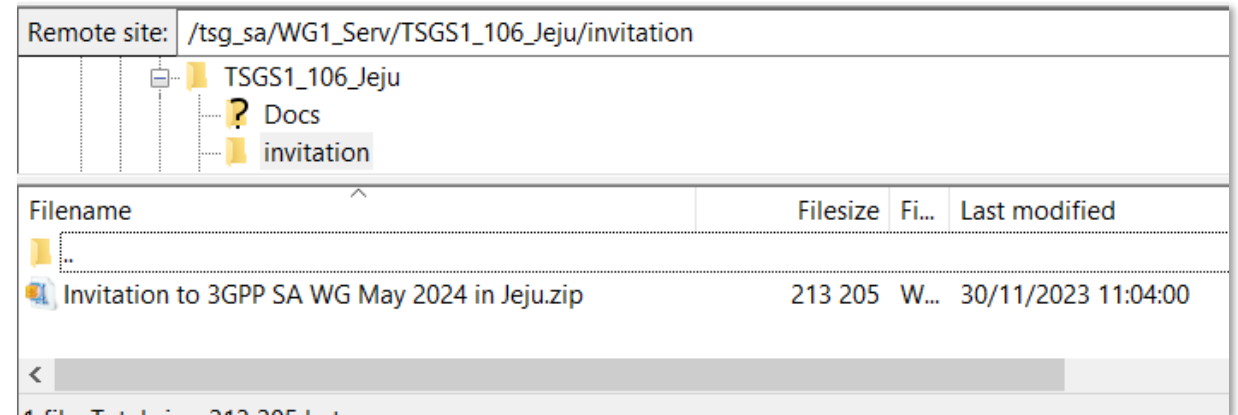
The screenshot shows the 3GPP Portal homepage. A blue arrow points to the user's name 'Sultan' in the upper-right corner of the page. The page includes a navigation bar with links like Home, My account, Directory, Browse FTP, Voting, and Help. Below the navigation bar, there are tabs for Meetings, TDocs, Change Requests, Liaison statements, Releases, Work Plan, and Specifications. The main content area displays a list of upcoming meetings for the user.

Meeting ID	Meeting Name	Start Date	End Date	Location	Participants	Documents
3GPP SA 1	SA1#105	2024-02-26	2024-03-01	Athens, GR	(203,24)	(24)
3GPP CT	CT#103	2024-03-18	2024-03-19	Maastricht, NL	(64,3)	(0)
3GPP RAN	RAN#103	2024-03-18	2024-03-21	Maastricht, NL	(225,73)	(0)
3GPP SA	SA#103	2024-03-19	2024-03-22	Maastricht, NL	(136,19)	(0)
3GPP	3GPP Stage 1 Workshop on IMT2030 Use C...	2024-05-08	2024-05-10	Rotterdam, NL	(117)	(0)

If you see only very limited functionality, you are most probably not logged in. When not logged in, the upper-right corner shows as:

First steps in 3GPP (3/3)

- ❑ An FTP repository: <https://ftp.3gpp.org>
 - ❑ It mostly provides: permanent information (e.g. all templates), all the 3GPP Specs, some dynamic information (e.g. the Work Plan) and a dedicated structure per group (WG and TSG).
 - ❑ In the group-dedicated structure, one folder is made per meeting, allowing to retrieve all info related to that meeting, mostly: the minutes, all tdocs, the invitation to a meeting.



- ❑ Specific tools, used in certain context and/or only by certain WGs (e.g. Forge, etc.).
 - ❑ Typically, the online conference calls tools (e.g. GoToMeetingTM, MS TeamsTM, etc.).
 - The officials will inform all delegates on the e-mail reflector about any online conference: tool, agenda, registration if needed, etc.
 - ❑ Be sure to follow the discussions on the reflector and/or contact the WG officials for these tools