Agenda

- Part 1: 3GPP General Introduction
  - Relation between UN, ITU, IMT, and 3GPP
  - ITU's structure and its collaboration with 3GPP
  - 3GPP: Organization Partner, Market Representative Partner, TSG
  - What is the role of a 3GPP delegate
- Part 2: 3GPP working Procedure
  - 3GPP terminologies
  - Deep dive in into 3GPP portal
  - Change requests
- Part 3: Hands-On Technical Specification Exercise Session

Part 1

3GPP General Introduction

What we will learn

- What is: ITU, IMT, 3GPP?
- We focus on 3GPP, why was formed?
- What is an Organization Partner?
- What is a Project Coordinator Group?
- What is an Individual Member in 3GPP?
- What is a 3GPP delegate?

Principal organs of the United Nations[100]

V · T · E

UN General Assembly

— Deliberative assembly of all UN member states —

- May resolve non-compulsory recommendations to states or suggestions to the Security Council (UNSC);
- Decides on the admission of new members, following proposal by the UNSC;
- Adopts the budget;
- Elects the non-permanent members of the UNSC; all members of the Economic and Social Council; the UN Secretary-General (following their proposal by the UNSC); and the fifteen judges of the International Court of Justice (ICJ). Each country has one vote.

UN Secretariat

— Administrative organ of the UN —

- Supports the other UN bodies administratively (for example, in the organization of conferences, the writing of reports and studies and the preparation of the budget);
- Its chairperson—the UN Secretary-General—is elected by the General Assembly for a five-year mandate and is the UN's foremost representative.

International Court of Justice

— Universal court for international law —

- Decides disputes between states that recognize its jurisdiction;
- Issues legal opinions;
- Renders judgment by relative majority. Its fifteen judges are elected by the UN General Assembly for nine-year terms.

UN Security Council

— For international security issues —

- Responsible for the maintenance of international peace and security;
- May adopt compulsory resolutions;
- Has fifteen members: five permanent members with veto power and ten elected members.

UN Economic and Social Council

— For global economic and social affairs —

- Responsible for co-operation between states as regards economic and social matters;
- Co-ordinates co-operation between the UN's numerous specialized agencies;
- Has 54 members, elected by the General Assembly to serve staggered three-year mandates.

UN Trusteeship Council

— For administering trust territories (*currently inactive*) —

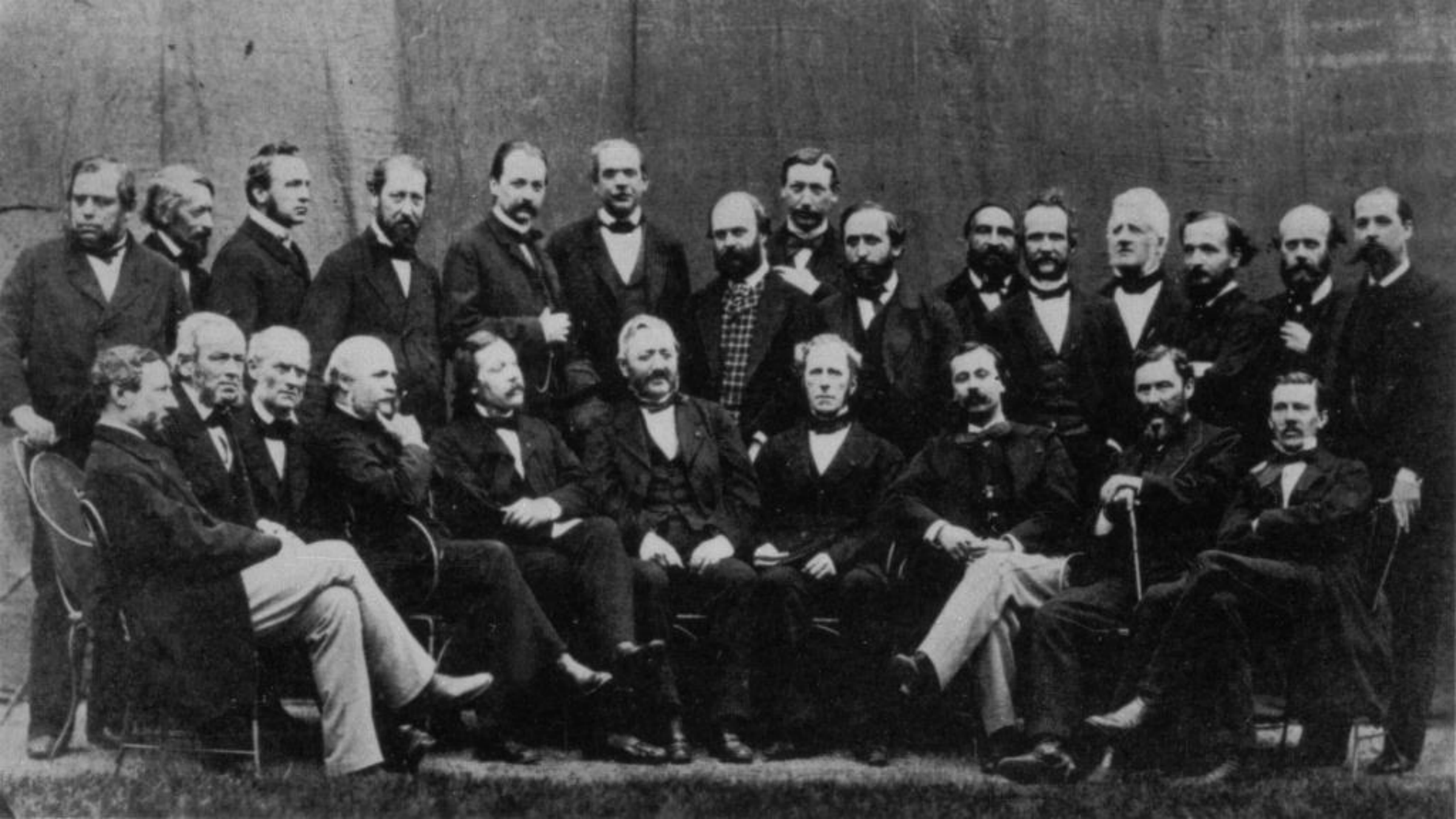
- Was originally designed to manage colonial possessions that were former League of Nations mandates;
- Has been inactive since 1994, when Palau, the last trust territory, attained independence.

Specialized agencies of the United Nations

No.	Acronym	Agency	Headquarters	Head	Established in
1	FAO	Food and Agriculture Organization	Rome, Italy	Qu Dongyu	1945
2	ICAO	International Civil Aviation Organization	Montreal, Quebec, Canada	Juan Carlos Salazar	1947
3	IFAD	International Fund for Agricultural Development	Rome, Italy	Alvaro Lario [de]	1977
4	ILO	International Labour Organization	Geneva, Switzerland	Gilbert Houngbo	1946 (1919)
5	IMO	International Maritime Organization	London, United Kingdom	Kitack Lim	1948
6	IMF	International Monetary Fund	Washington, D.C., United States	Kristalina Georgieva	1945 (1944)
7	ITU	International Telecommunication Union	Geneva, Switzerland	Doreen Bogdan-Martin	1947 (1865)
8	UNESCO	United Nations Educational, Scientific and Cultural Organization	Paris, France	Audrey Azoulay	1945
9	UNIDO	United Nations Industrial Development Organization	Vienna, Austria	Gerd Müller	1967
10	UNWTO	World Tourism Organization	Madrid, Spain	Zurab Pololikashvili	1974
11	UPU	Universal Postal Union	Bern, Switzerland	Masahiko Metoki	1947 (1874)
12	WBG	World Bank Group	Washington, D.C., United States	Ajay Banga (president)	1945 (1944)
13	WHO	World Health Organization	Geneva, Switzerland	Tedros Adhanom	1948
14	WIPO	World Intellectual Property Organization	Geneva, Switzerland	Daren Tang	1974
15	WMO	World Meteorological Organization	Geneva, Switzerland	Petteri Taalas (secretary-general) Gerhard Adrian [de; fr] (president)	1950 (1873)

International Telecommunication Union (ITU)

- What you should know:
  - The United Nations Specialized Agency for Information and Communication Technologies (ICTs).
  - Founded in Paris in 1865 as the International Telegraph Union.
  - It took its present name in 1932.
  - Became a Specialized agency of the UN in 1947.
  - 2024 marks 159 years of experience and innovation.



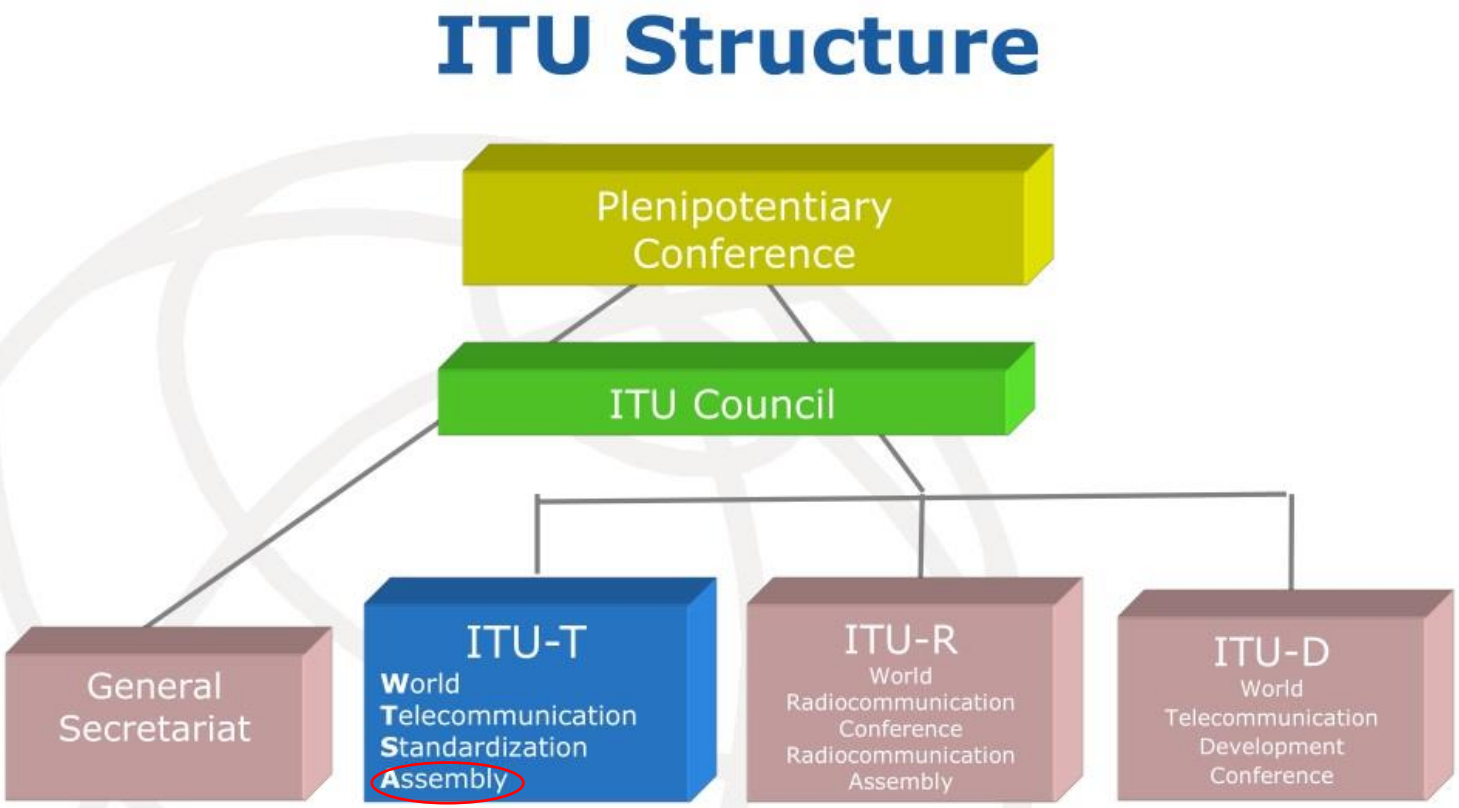
International Telegraph Conference (1865)

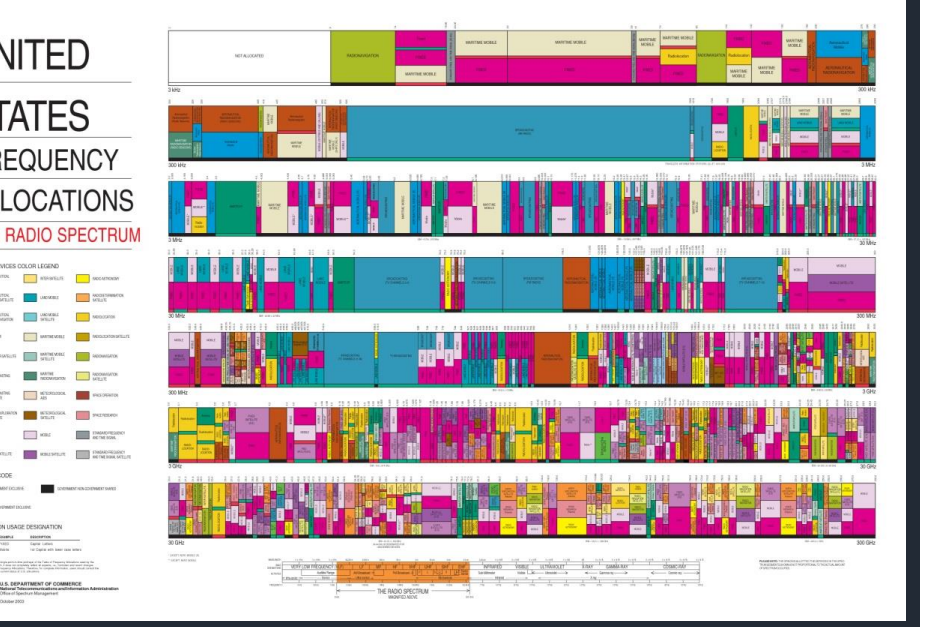
- The development of telegraphy in the early 19th century brought about the need for standardization and cooperation across national borders. As soon as telegrams began to be exchanged between countries, agreements were needed to define **the types of equipment and coding that should be used as well as the rates (tariffs) that should be charged**. Between 1849 and 1865, a series of bilateral and regional agreements were established between and among the states of Western Europe.
- By 1865, the French government invited the European states to an International Telegraph Conference in Paris. The conference established the International Telegraph Union and drew up the International Telegraph Convention.
- Among the basic norms that were adopted were the use of the Morse code as the international telegraph alphabet, the protection of the secrecy of correspondence, and the right of everybody to use the international telegraphy. The contracting parties also reserved the right to stop any transmission that they considered dangerous for state security, or in violation of national laws, public order or morals.

ITU’ Roles

- Allocating global radio spectrum and satellite orbits to ensure efficient and equitable use of frequency spectrum and orbital resources.
- Developing technical standards that enable interoperability and seamless connectivity among different communication networks and technologies.
- Working to improve access to digital technologies, particularly in underserved and remote communities worldwide.
- Providing a trusted, multilateral platform to facilitate international agreements and cooperation in the field of telecommunications and information and communication technologies (ICTs).
- Sharing knowledge and best practices to support capacity building and skills development in the global ICT community.
- Collaborating with its members, partners, and stakeholders to promote universal access to technology and bridge the digital divide.

ITU's Structure





ITU-R: Radiocommunication Sector

Role

- Develop global regulations for spectrum and satellite orbit resources
- Assist membership develop advanced radio-com systems

Themes

- spectrum management,
- radiowave propagation,
- satellite services,
- terrestial services,
- broadcasting,
- science services (systems for space operation, space research, Earth exploration and meteorology).

ITU-T: Telecommunication Standardization Sector

Role

- Develop interoperable international standards (ITU-T Recommendations)
- Bridge standardization gap
- Cooperation among standardization bodies

Themes

- Multimedia
- Security
- Broadband access
- Quality of service and experience
- Next generation networks Intelligent transport systems…

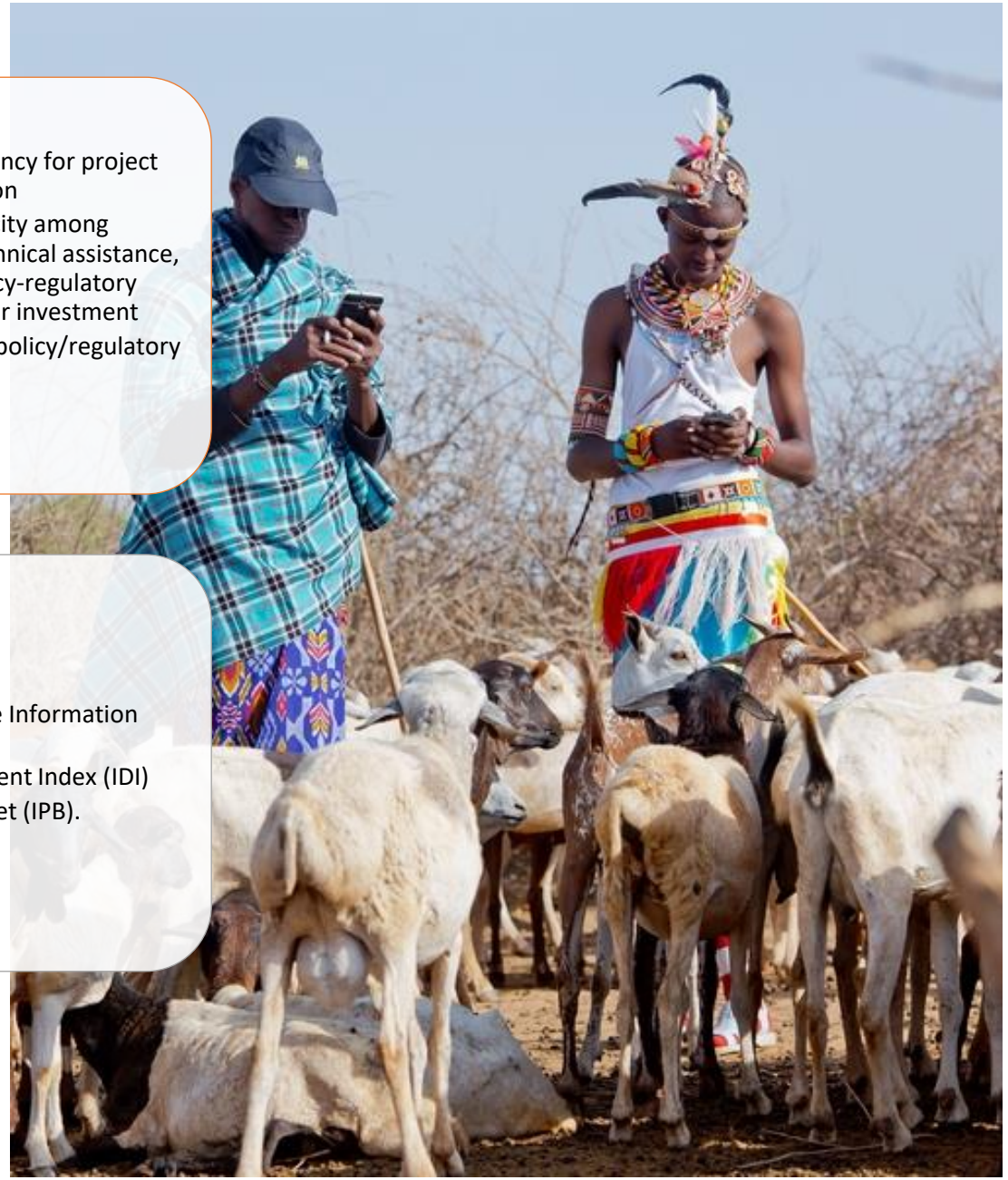
ITU-D: Telecommunication Development Sector

Role

- Executing agency for project implementation
- Building capacity among members: technical assistance, advice on policy-regulatory frameworks for investment
- Statistics and policy/regulatory trends

Themes

- Measuring the Information Society
- ICT Development Index (IDI)
- ICT Price Basket (IPB).



ITU and IMT

- ITU's Role:
  - Global Standards Body: The ITU is a specialized agency of the United Nations responsible for coordinating the global use of the radio spectrum and developing technical **standards for telecommunications.**
  - Spectrum Management: ITU allocates and manages the global radio-frequency spectrum, ensuring that different services (including mobile communications) can operate without interference.
- IMT (International Mobile Telecommunications):
  - Standards for Mobile Communications: IMT refers to the global **standards for mobile communications** developed under the auspices of the ITU. These standards include IMT-2000 (3G), IMT-Advanced (4G), IMT-2020 (5G), and IMT-2030 (6G).
  - Harmonization and Efficiency: IMT standards ensure that mobile networks and devices are compatible worldwide, promoting seamless connectivity and efficient use of the radio spectrum.

3GPP IMT Generations

- 3G => IMT-2000 by the ITU
- 4G => IMT-Advanced by the ITU
- 5G=> IMT-2020 by the ITU
- 6G=> IMT-2030 by the ITU

The one confirming the name of a generation is the ITU:
https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/imt-2030/Pages/default.aspx

How ITU and IMT Work Together

1. Development of Standards:

- Defining Requirements: ITU, through its ITU-R, defines the technical requirements and performance criteria for IMT standards.
- Evaluation and Approval: Proposals for new IMT standards are evaluated against these requirements. ITU then approves the standards that meet the criteria, ensuring they are fit for global use.

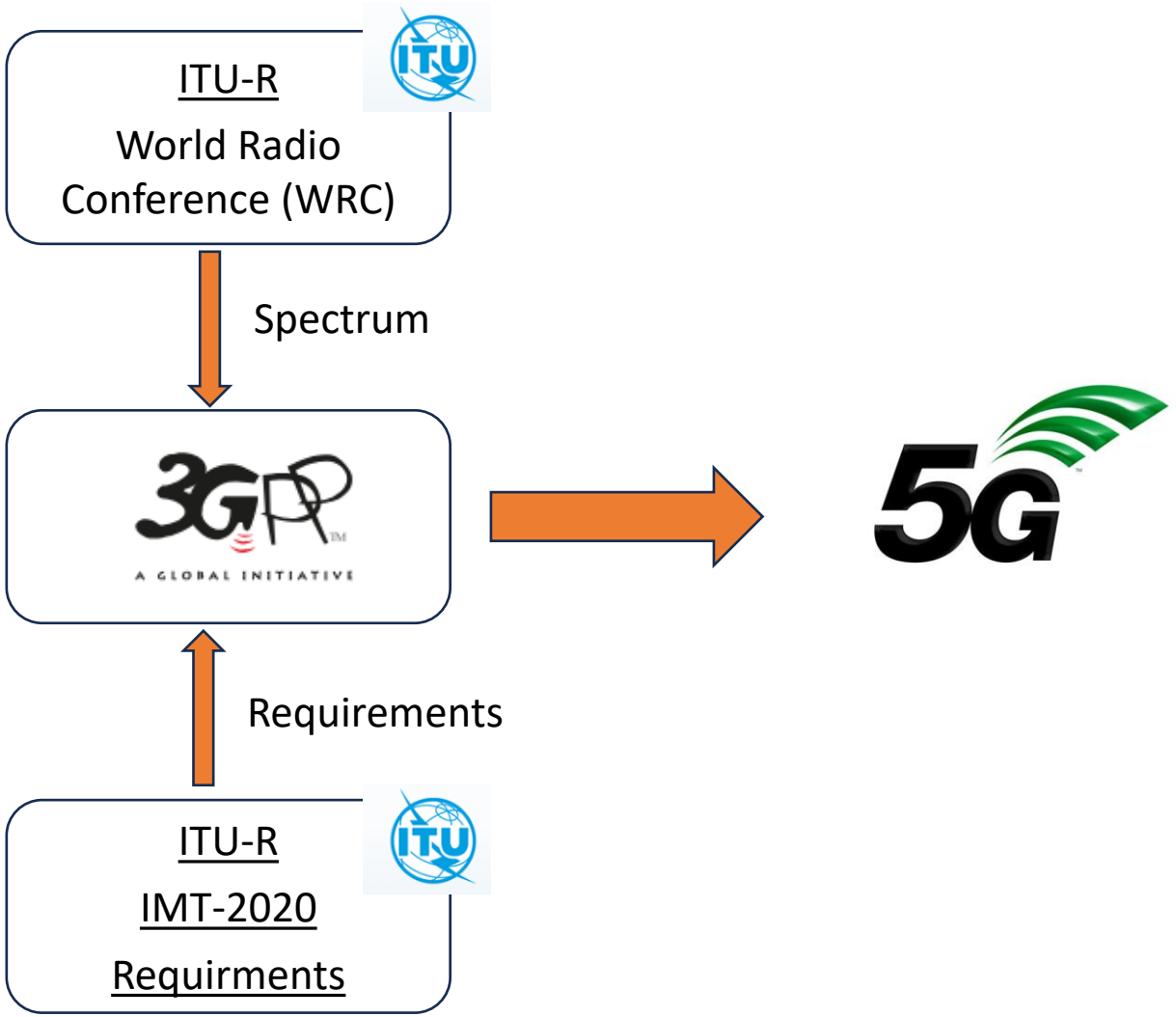
2. Spectrum Allocation:

- Global Conferences: The ITU organizes the World Radiocommunication Conferences (WRC), where member states agree on how to allocate and manage the global radio-frequency spectrum. This includes deciding the frequency bands to be used for IMT services.

3. Ongoing Collaboration:

- Updates and Revisions: The ITU continuously works with stakeholders to update and refine IMT standards.
- Workshops and Meetings: Regular workshops and meetings are held by ITU to discuss the implementation of IMT standards and address any emerging issues or innovations in mobile technology.

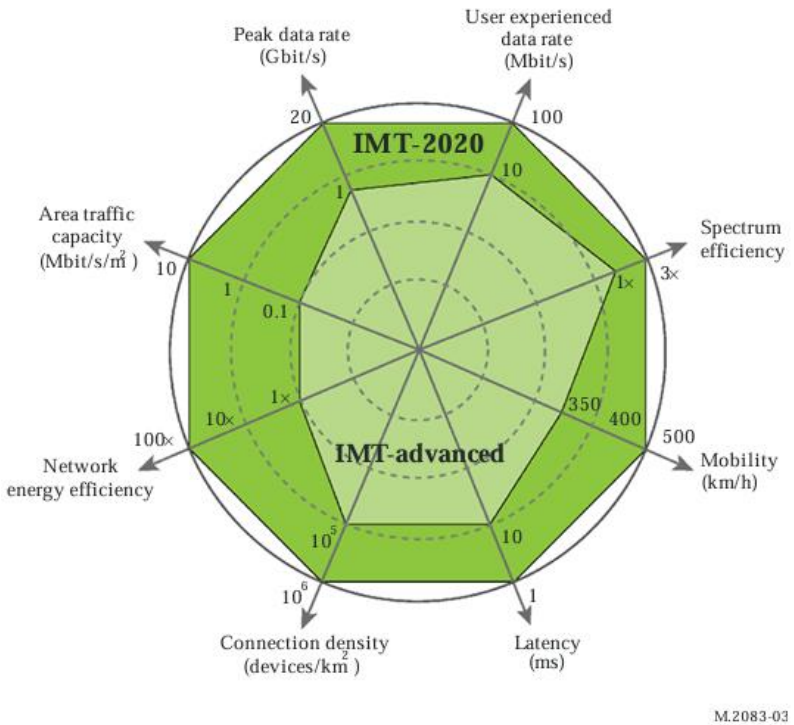
5G and IMT-2020



5G IMT-2020 Requirements

FIGURE 3

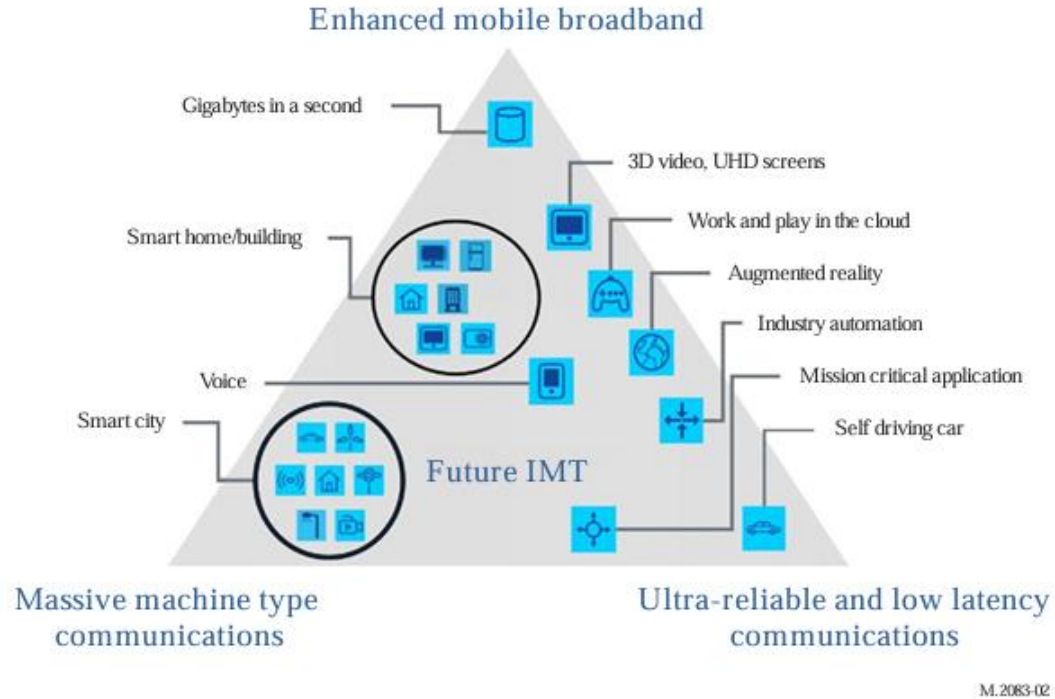
Enhancement of key capabilities from IMT-Advanced to IMT-2020



M.2083-03

FIGURE 2

Usage scenarios of IMT for 2020 and beyond



M.2083-02

6G IMT-2030

- Find the 6G IMT-2030 Capabilities, distinguish between enhanced and new capabilities
- Define 6G IMT-2030 usage scenarios.

Exercise

IMT towards 2030 and beyond

YOU ARE HERE ITU > HOME > ITU-R > STUDY GROUPS > SG 5 > WP 5D > IMT-2030

FIGURE 1

Usage scenarios and overarching aspects of IMT-2030

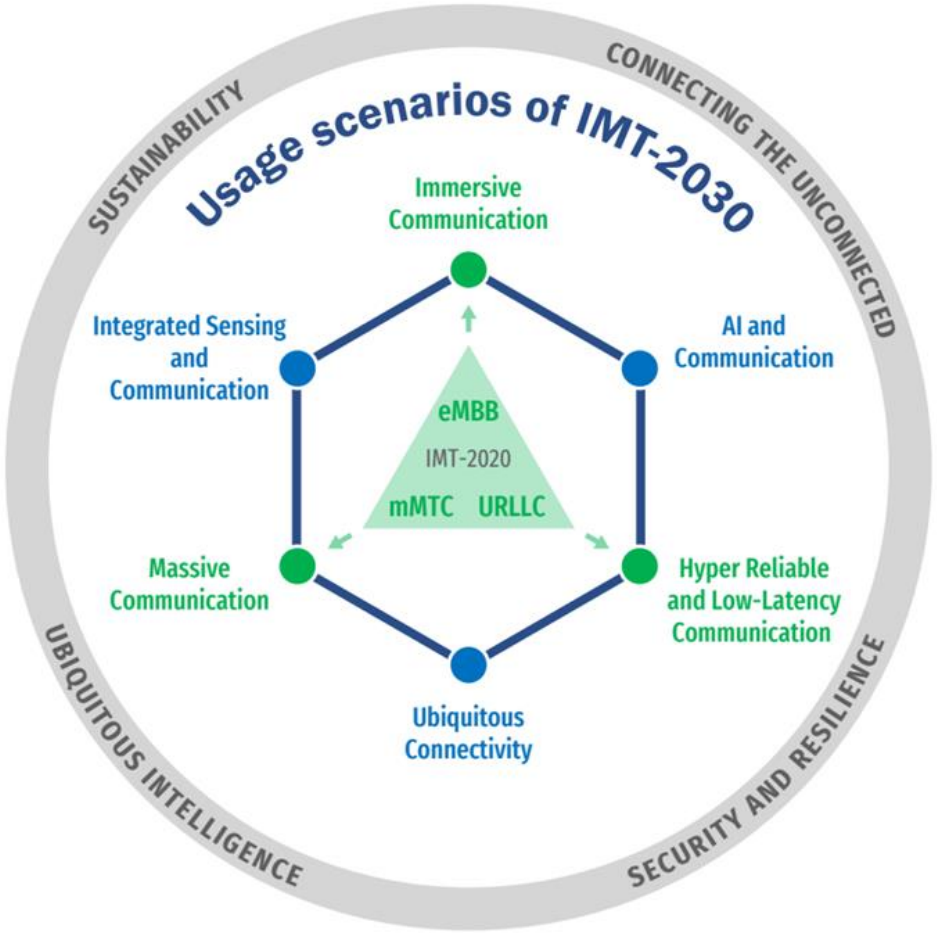
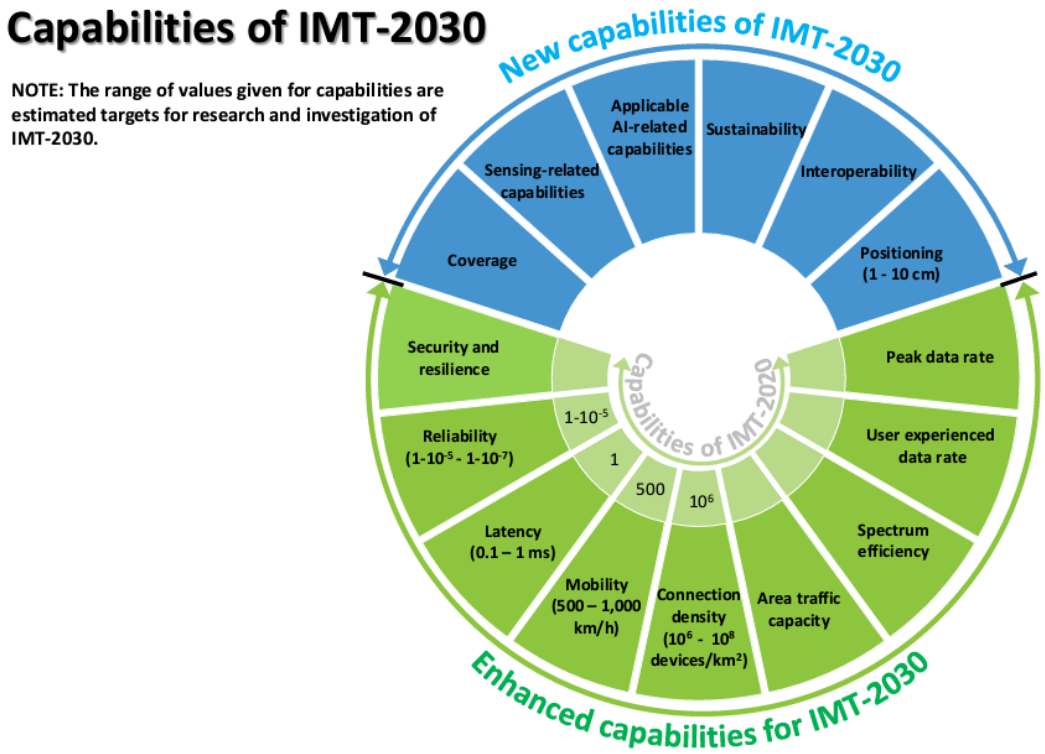


FIGURE 2

Capabilities of IMT-2030



ITU

1. 1. The ITU is... 1 point

Mark only one oval.

- A specialized agency of the UN
- The ITU belongs to the UN General Assembly
- Took its present name in the 1865

2. 2. The International Telegraph Conference took place in 1 point

Mark only one oval.

- Geneva 1865
- Paris 1865
- Paris 1849

3. 3. Which organization is responsible for allocating global radio spectrum and satellite orbits 1 point

Mark only one oval.

- ITU-R
- ITU-T
- UNESCO

Quiz

What is 3GPP?

- 3GPP is the Third Generation Partnership Project
- 3GPP was developed based on ITU's IMT-2000
- 3GPP is an umbrella term for a number of standards organizations which develop protocols for mobile telecommunications. Its best known work is the development and maintenance of:
  - GSM and related 2G and 2.5G standards, including GPRS and EDGE
  - UMTS and related 3G standards, including HSPA and HSPA+
  - LTE and related 4G standards, including LTE Advanced and LTE Advanced Pro
  - 5G NR and related 5G standards, including 5G-Advanced
  - An evolved IP Multimedia Subsystem (IMS) developed in an access independent manner

3rd Generation Partnership Project

Abbreviation	3GPP
Formation	1998; 26 years ago
Type	Standards organization
Region served	Worldwide
Website	www.3gpp.org

3GPP consortium and its organizational structure

- 3GPP is funded by seven Organizational Partners, known as Standards Development Organizations (SDOs). Other associated groups also provide funding.

European Telecommunication Standards Institute (ETSI)

China Communications Standards Association

Association of Radio Industries and Businesses (Japan)

Telecommunication Technology Association (South Korea)

Alliance for Telecommunications Industry Solutions (USA)

Telecommunication Technology Committee (Japan)

Telecommunication Standards Development Society India

Our Partners		Country	Contact
ARIB	The Association of Radio Industries and Businesses (ARIB) www.arib.or.jp	Japan	Yasuhiro Kato T: +81 3 5510 8594 T: +81 3 3592 1103 E: y-kato@arib.or.jp
atis	The Alliance for Telecommunications Industry Solutions (ATIS) www.atis.org	USA	Rich Moran T: +1 202 434 8858 E: rmoran@atis.org
CCSA	China Communications Standards Association (CCSA) www.ccsa.org.cn	China	Shizhuo Zhao T: +86 10 8205 0013 E: zhaosz@ccsa.org.cn
ETSI	The European Telecommunications Standards Institute (ETSI) www.etsi.org	Europe	Issam Toufik T: +33 4 92 94 49 63 E: issam.toufik@etsi.org
tsdsi India's Telecom SDO	Telecommunications Standards Development Society, India (TSDSI) http://tsdsi.org	India	A.K. Mittal T: +91 11 26597254 E: akmittal@tsdsi.in
TTA	Telecommunications Technology Association (TTA) www.tta.or.kr	Korea	Kyoungseok Oh T: +82 31 780-9055 E: ksoh@tta.or.kr
TTC Telecommunication Technology Committee	Telecommunication Technology Committee (TTC) www.ttc.or.jp/e	Japan	Norio Nakamura T: +81 3 3432 1551 T: +81 3 3432 1553 E: nakamura@s.ttc.or.jp

Partners

3GPP produces Technical Specifications, to be transposed by seven Standardization Bodies (Organizational Partners) into their appropriate deliverables (e.g., standards).

The 3GPP Organizational Partners – from Asia, Europe and North America – determine the general policy and strategy of 3GPP and perform the following tasks:

- Approval and maintenance of the 3GPP scope
- Maintenance of the Partnership Project Description
- Taking decisions on the creation or cessation of Technical Specification Groups, and approving their scope and terms of reference
- Approval of Organizational Partner funding requirements
- Allocation of human and financial resources provided by the Organizational Partners to the Project Co-ordination Group
- Acting as a body of appeal on procedural matters referred to them

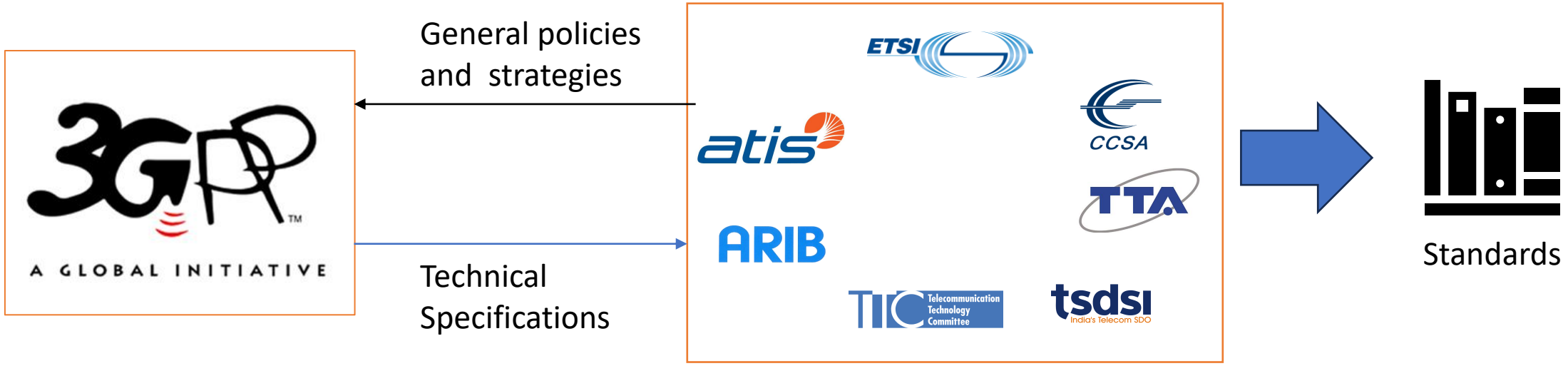
The Organizational Partners and Market Representation Partners (MRPs) jointly perform the following tasks:

- Maintenance of the Partnership Project Agreement;
- Approval of applications for 3GPP partnership;

Market Representation Partners

Important to remember

- 3GPP specifications are not standards, they have no legal standing. They become ***official*** standards once one or more OPs transpose them.



3GPP TS 38.331 V17.7.0 (2023-12)

Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Radio Access Network;
NR;
Radio Resource Control (RRC) protocol specification
(Release 17)

5G

3GPP
A GLOBAL INITIATIVE

ETSI TS 138 331 V17.7.0 (2024-02)

5G;
NR;
Radio Resource Control (RRC);
Protocol specification
(3GPP TS 38.331 version 17.7.0 Release 17)

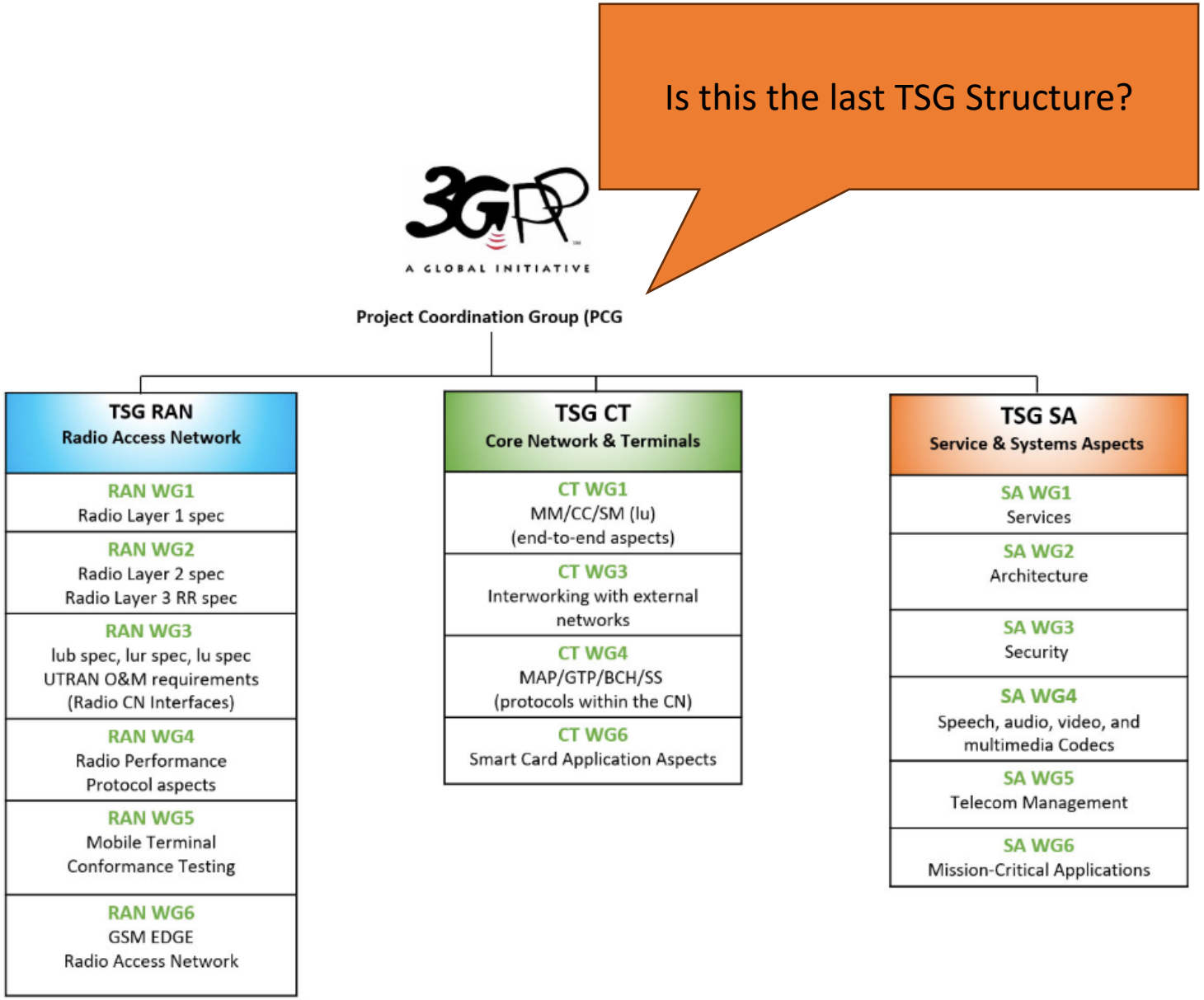
ARIB

ARIB STD-T120-38.331 V15.10.0

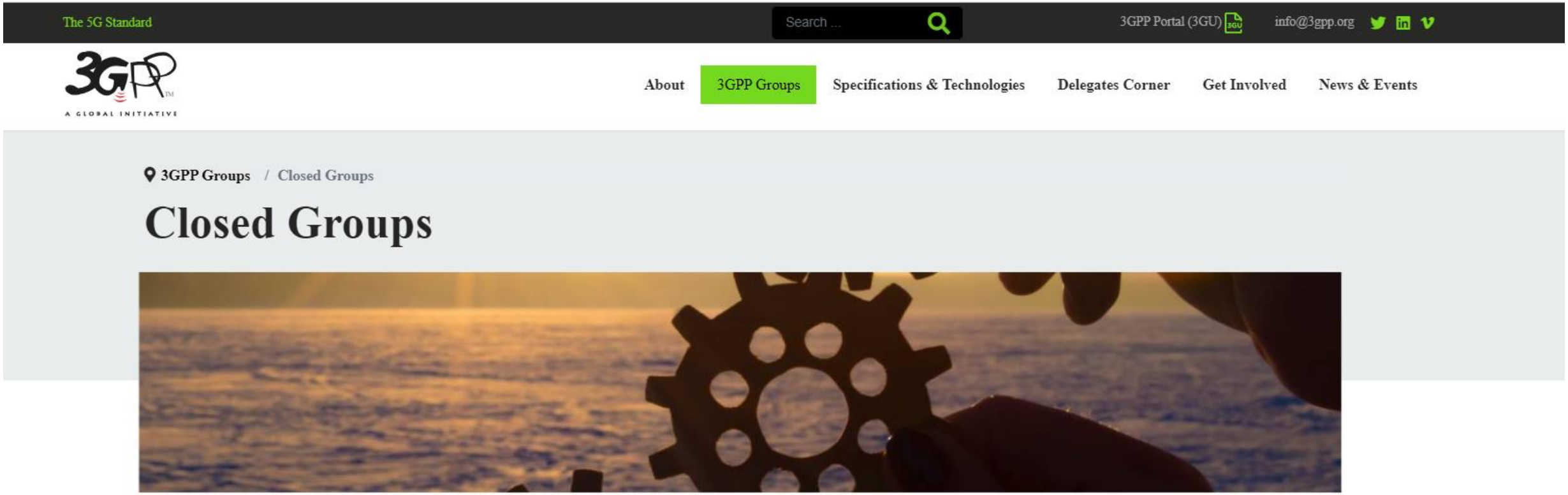
NR; Radio Resource Control
(RRC) protocol specification

(Release 15)

Technical Specification Group (TSG)



Exercise


The 5G Standard
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info@3gpp.org
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About
3GPP Groups
Specifications & Technologies
Delegates Corner
Get Involved
News & Events
3GPP Groups / Closed Groups
Closed Groups

Project Coordination Group (PCG)

- The PCG is the highest decision-making body in 3GPP, it meets formally every six months to carry out the final adoption of 3GPP Technical Specification Group work items, to ratify election results and the resources committed to 3GPP.

Position	Name	Organization	3GPP OP	Fixed phone	Mobile phone	(re-)elected / appointed	Remarks
Chair	MILLER, Susan	ATIS	ATIS	+1 202 434 8828		2024-01-01	Appointed at 3GPP/PCG#51(23)13
Vice Chair	KIM, Daejung	TTA	TTA	+82 31 724 0100		2024-02-02	Elected by correspondence in January 2024
Vice Chair	TAJIRI, Nobuyuki	TTC	TTC			2024-01-01	Appointed at 3GPP/PCG#51(23)13
Vice Chair	ROMERO, Luis Jorge	ETSI	ETSI	+33 4 92 94 42 12	+33 6 07 59 08 56	2024-01-01	Appointed at 3GPP/PCG#51(23)13

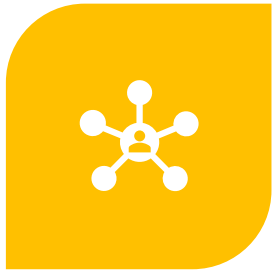
Project Coordination Group (PCG)

- Determination of overall time-frame and management of overall work progress.
- Final adoption of work items within the agreed 3GPP scope.
- Allocation of budgeted human and financial resources to each TSG as provided by Organisational Partners.
- Allocation of additional voluntary human and/or financial resources to each TSG as provided by Individual Members.
- Appointment of TSG Chairs
- Appointment of PCG Chair

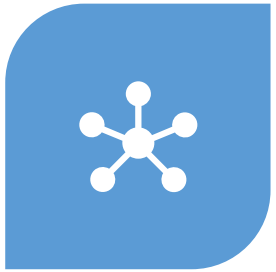
TSG CT

Terminal interfaces (logical and physical) and smart card application aspects;

User equipment to core network protocols;

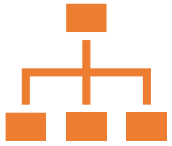


Interworking with external networks;



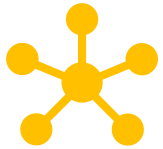
Core network protocols of 3GPP systems.

TSG SA



Coordination: SA oversees collaboration between TSGs and WGs to ensure consistency and coherence in system architecture and service capabilities.

Specification Development: SA leads the development of service and feature requirements, defining the stage 1.



System Architecture: SA is responsible for designing the architecture of the 3GPP Core Network and the overall 3GPP system.

Security and Innovation: SA addresses security and privacy concerns within the 3GPP system

Exercise

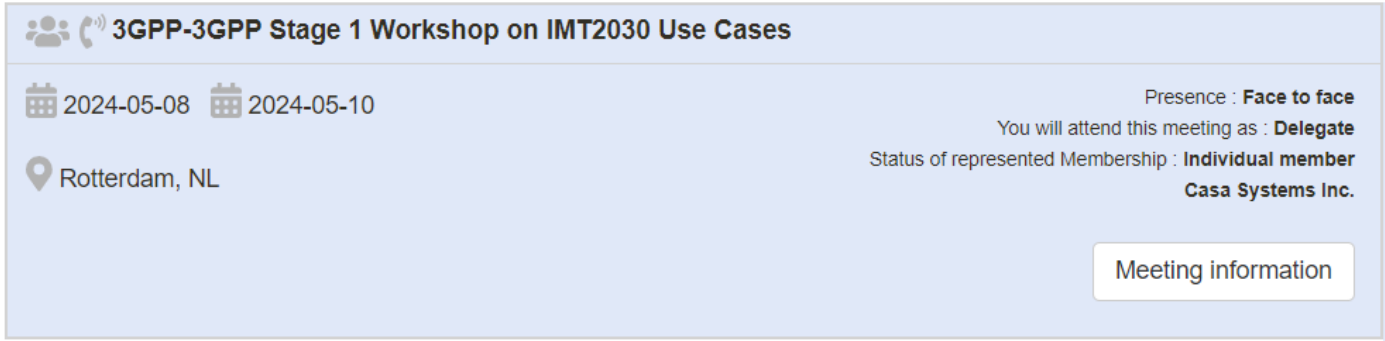
Find the 3GPP working group responsible on the collaboration with ITU-R.

TSG CT Core Network & Terminals	TSG RAN Radio Access Network	TSG SA Service & System Aspects
CT WG1 User Equipment to Core Network protocols	**RAN WG1** Radio Layer 1 (Physical layer)	**SA WG1** Services
CT WG3 Interworking with External Networks & Policy and Charging Control	**RAN WG2** Radio layer 2 and Radio layer 3 Radio Resource Control	**SA WG2** System Architecture and Services
CT WG4 Core Network Protocols	**RAN WG3** UTRAN/E-UTRAN/NG-RAN architecture and related network interfaces	**SA WG3** Security and Privacy
CT WG6 Smart Card Application Aspects	**RAN WG4** Radio Performance and Protocol Aspects	**SA WG4** Multimedia Codecs, Systems and Services
	RAN WG5 Mobile terminal conformance testing	**SA WG5** Management, Orchestration and Charging
	RAN AH1 ITU-R Ad Hoc	**SA WG6** Application Enablement and Critical Communication Applications

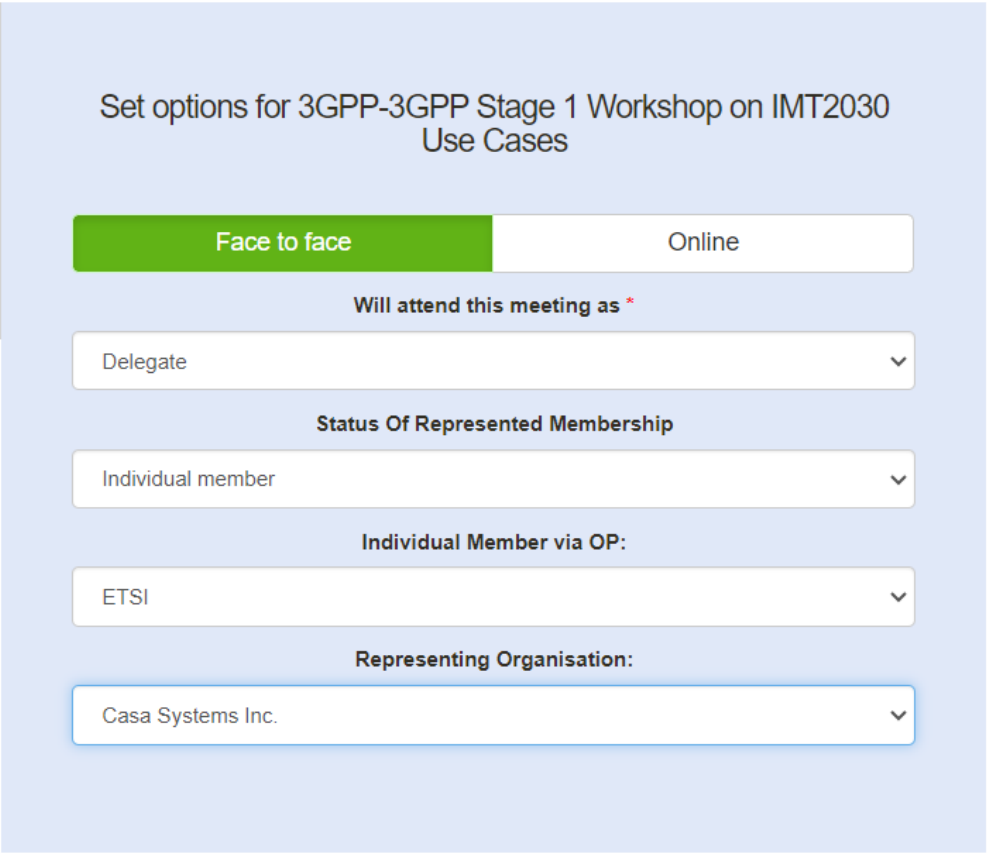
The task of the RAN AH1 group is to act as a focus to ensure a proper flow of information and contributions between 3GPP and ITU-R.

Membership of 3GPP

- There is no direct membership to 3GPP, which is a Partnership project. The delegates come to 3GPP via their organization's membership of one of the seven 3GPP Organizational Partners.
- Create Account (etsi.org)
- The organization that joins 3GPP becomes "Individual member ".

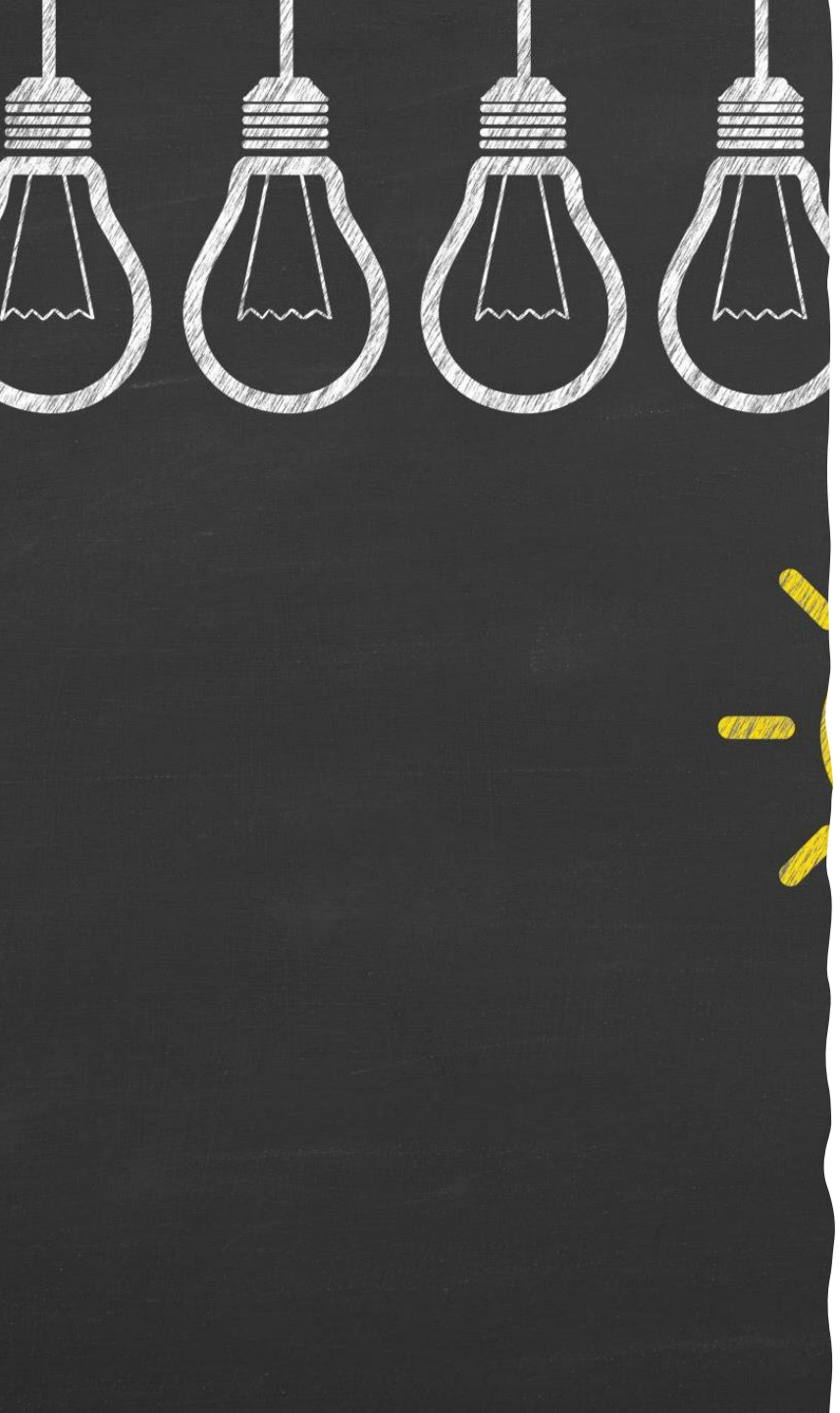

3GPP-3GPP Stage 1 Workshop on IMT2030 Use Cases
2024-05-08
2024-05-10
Rotterdam, NL
Presence : Face to face
You will attend this meeting as : Delegate
Status of represented Membership : Individual member
Casa Systems Inc.
Meeting information

Exercise


Set options for 3GPP-3GPP Stage 1 Workshop on IMT2030 Use Cases
Face to face
Online
Will attend this meeting as *
Delegate
Status Of Represented Membership
Individual member
Individual Member via OP:
ETSI
Representing Organisation:
Casa Systems Inc.
Submit

Summary

- 3GPP is an umbrella term for a number of standards organizations which develop protocols for mobile telecommunications.
- 3GPP was developed based on IMT-2000.
- 3GPP is funded by seven OPs, known as SDOs: ESTSI, ATIS, ARIB, TTA, TTC, CCSA, TSDSI.
- Market Representation Partner (MRP) has the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements: SCF, GSMA, 5GAA…
- PCG is the highest decision-making body in 3GPP:
  - Overall time frame
  - Final adoption of WI
  - Elections…
- There is three TSG: TSG RAN, TSG CT, TSG SA.
- An Individual Member is an organization that joins 3GPP via one of the OPs.
- A delegate is a representative of an Individual Member in 3GPP meetings and communicating with global telecom companies including operators, infrastructure/terminal/chipset vendors for the industry information and views sharing



For new delegates

- https://www.3gpp.org/delegates-corner/faqs
- https://www.3gpp.org/ftp/workshop/2009-06-16_3GPP_Methods_Seminar/

Job Description	3GPP Standards Delegate Responsibilities: Attending one of the 3GPP meetings including RAN, RAN1, RAN2, RAN4, RAN5, SA1 and SA2 as a regular delegate. Communicating with global telecom companies including operators, infrastructure/terminal/chipset vendors for the industry information and views sharing. Strategy development and planning for the standardization, and influencing the standardization strategy and timeline in 3GPP. Pushing the requirements from the produce line and the techniques output by the research team. Recognizing new opportunities, risks and potential topics to research team and product team. Understanding of the overall business picture in order to provide strategic advice to R&D and standardization teams. Working with multiple departments, coaching and mentoring other team members to a strong standard to consistently achieve best practices. Reporting directly to the Director (European Standardization & Industry Development) based in Leuven (Belgium), though with European oversight, including the UK. Travelling: International travel. Qualifications and Skills: Knowledge of wireless communication technologies and standard developed by 3GPP. Experience and expertise as a 3GPP delegate. Ability to understand business requirements and translate these into technical requirements. Well communication skills, especially intercultural communication.
Job Reference	19003TPN
Location	Belgium - Flemish Brabant
Categorisation	Embedded SW / HW Electronics: Standardization
Contact Details	T : +44 1628 206 221 E : tech@microTECH-global.com

Delegates Job Offers

Delegates Job Offers

3GPP RAN Standards Delegate

Apply

Montreal, CAD
Conshohocken, PA

Posted 6 Days Ago
REQ23-853

About InterDigital

InterDigital develops mobile and video technologies that are at the core of devices, networks, and services worldwide. We solve many of the industry's most critical and complex technical challenges, inventing solutions for more efficient broadband networks, better video delivery, and richer multimedia experiences years ahead of market deployment. InterDigital has licenses and strategic relationships with many of the world's leading technology companies. Founded in 1972, InterDigital is listed on Nasdaq.

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For more information, visit: www.interdigital.com.

Position Summary

The Wireless Standards team is looking for an experienced standardization delegate to contribute to research and standardization of advanced radio interfaces and protocols for future 3GPP wireless technologies, including evolution of 5G-Advanced New Radio (NR) and 6G.
The ideal candidate will have proven experience with 3GPP Radio Access Network (RAN) standardization and/or demonstrated skills for research in wireless communications.

Job Description

The candidate will join the Wireless Standards team and our 3GPP RAN project to actively contribute and participate to our standards-related activities. The candidate will also contribute to the development of innovative solutions addressing the challenges of future wireless systems focusing on the design of physical radio layer techniques (RAN1) and/or medium access and resource control functions (RAN2), targeting for example technologies related to applications of Machine Learning (ML) in the physical layer, joint communication and sensing, RAN-awareness for eXtended Reality (XR) applications, low-power devices and applications, and others.

The candidate will contribute to the 3GPP RAN team:

- By carrying out physical layer and/or system-level design for evolution of 5G-Advanced radio technologies, 6G features and beyond ;
- By conducting evaluation, analysis, and development of innovative solutions for control and transfer of user data at L1/PHY, L2/MAC, L3/RRC protocol layers and/or using AI/ML-based techniques ;
- By actively participating in the 3GPP standardization process through the preparation of contributions and through representing InterDigital in 3GPP RAN Working Group (WG) meetings.

Part 2

3GPP Working Procedure

What we will learn

- Important Terminologies : Feature, Building Block, Study Item , Work Item, Change Request…
- What is Stage 1, Stage 2, Stage 3 of a Release
- Change Request form and category
- The meaning of a spec under CR, major version…

Work Organization

- In 3GPP the work is organized in
  - Study Item (SI): study of a feature (**List of features per Release**), band combination, changes… The end result is a Technical Report (TR)
  - Work Item (WI): The same as SI but the end results will become part of TS.
  - Releases with fixed time-lines, which are particularly overlapping
  - Work Plan link to 3GPP work plan
  - 3 Stages overlapping:
    - Stage 1: Requirements
    - Stage 2: Architecture
    - Stage 3: Protocols

3GPP Terminology

- **Feature**: new or substantially enhanced functionality which represents added value to the existing system.
- **Building block:** sub-division of a feature, representing a coherent set of technical functionality which would generally be expected to reside in a single system element.
- **Work task**: sub-division of a building block, representing a self-contained, well-scoped and well-scheduled item of work.
- **Study Item (SI):** type of Work Item which will conduct feasibility studies and will result in a Technical Report
- **Work Item (WI):** description of an enhancement to a technical area, which may be categorized as Study Item, Feature, Building Block or Work Task.

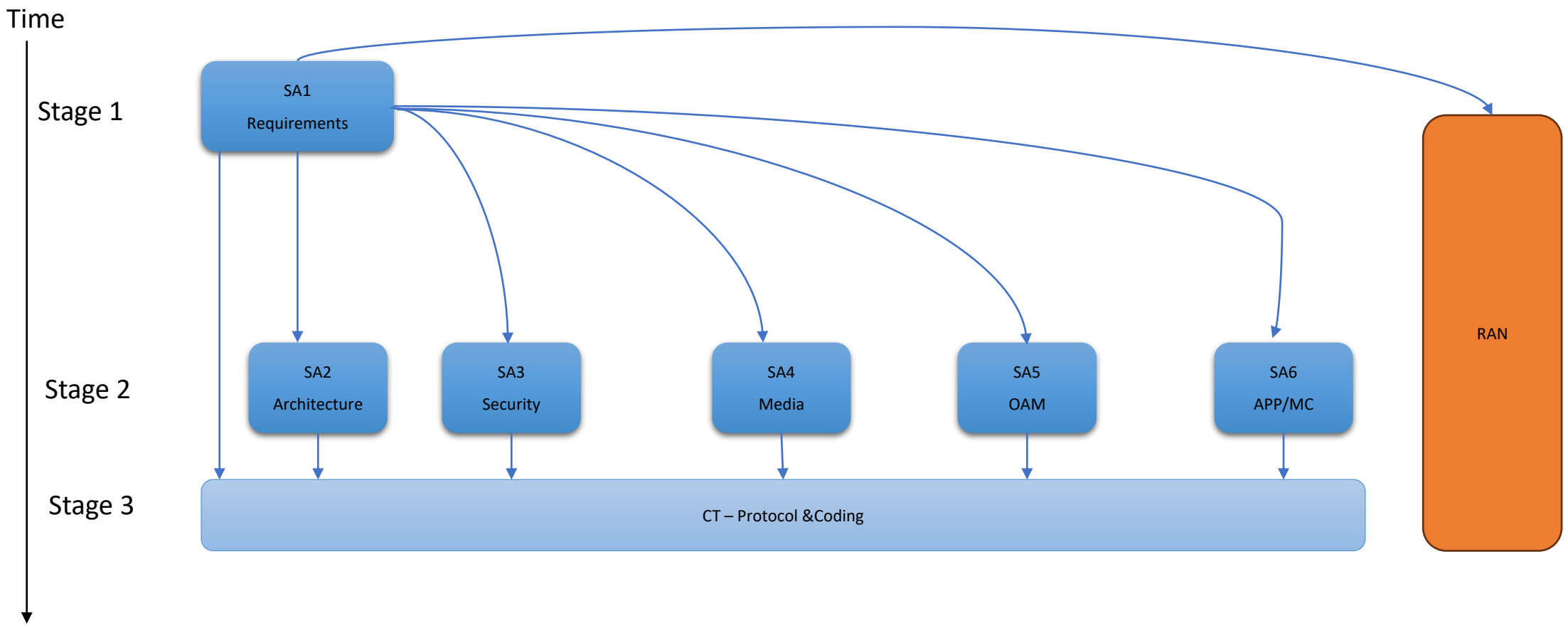
3GPP Terminology

- **Change control:** procedure whereby proposed modifications to a specification are presented for approval to the TSG as formal Change Requests.
- **Change Request (CR):** formal proposal presented on a standard form to modify a specification which is under change control.
- **pseudo Change Request (pCR**): similar to a Change Request but has no CR number and is intended to propose new or revised text for inclusion in 3GPP TSs or TRs not yet under change control (i.e. still in the drafting phase). Known in some groups as "text proposal".

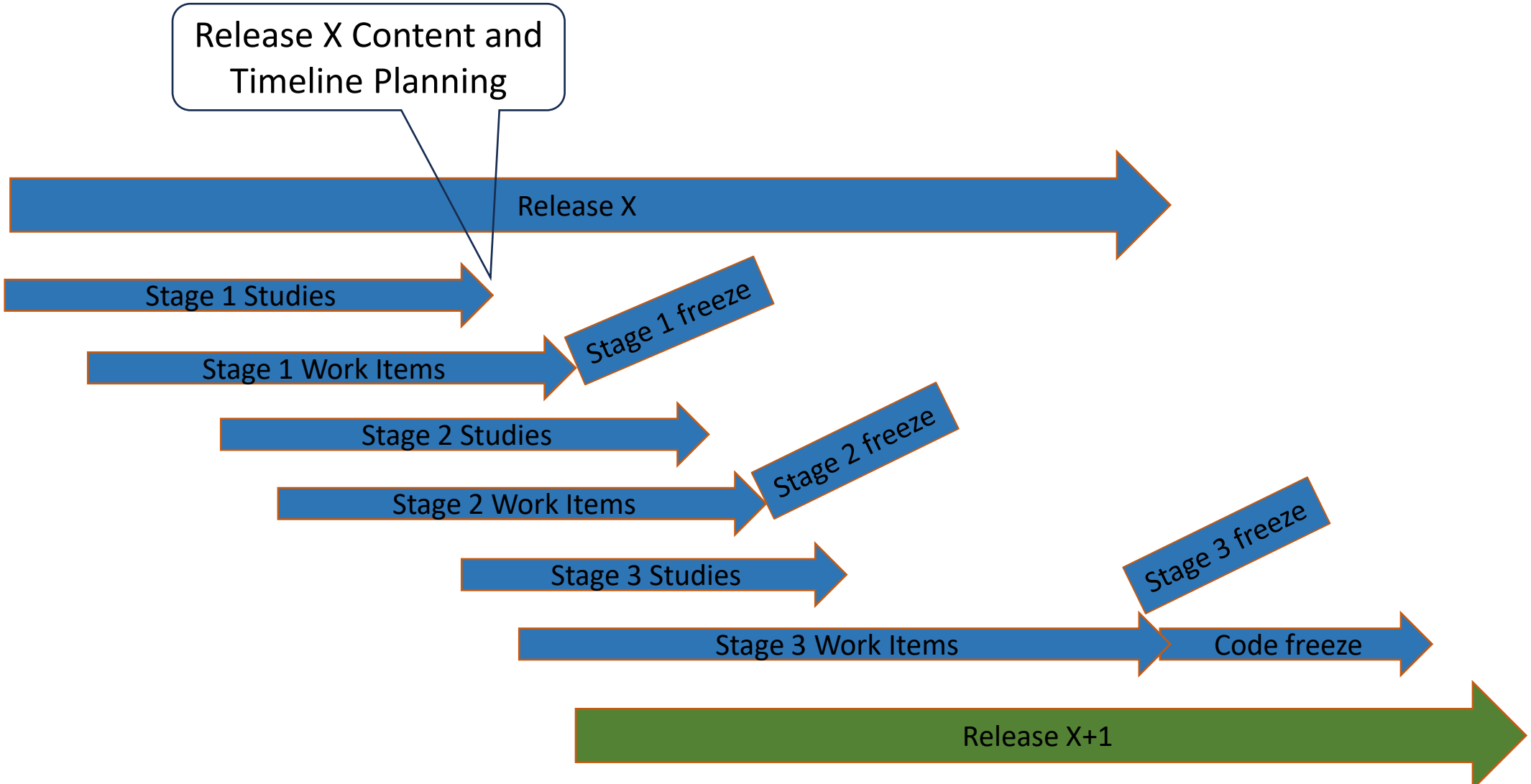
3GPP Terminology

- **Work Item description (WID):** description of a Work Item in a standard Work Item Description sheet.
- **Study Item description (SID):** description of a Study Item in a standard Work Item Description sheet.
- **Mobile Competence Centre (MCC):** the permanent secretariat, or support team, of 3GPP.

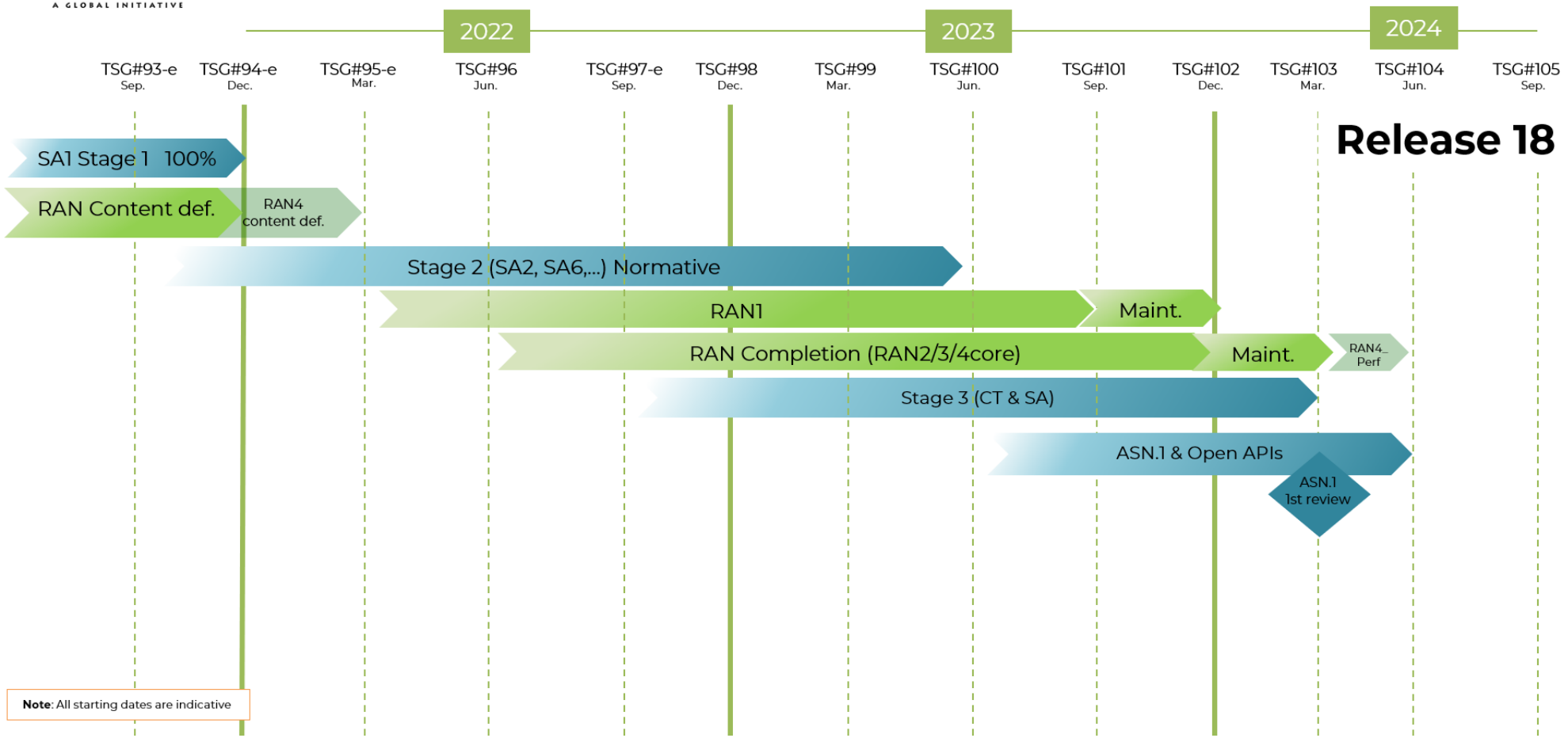
Stage 1/2/3 (Simplified view of SA)



Simplified View of a Release



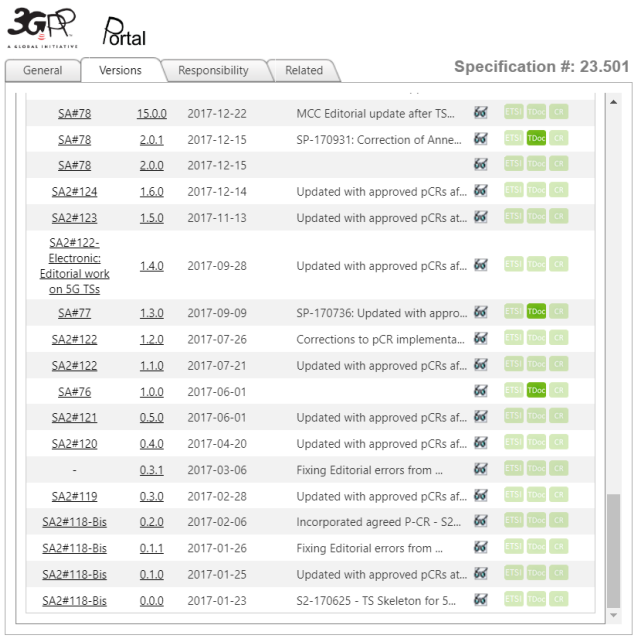
Release 18 timeline



Change Request

- Once a specification has been approved by the TSG and version x.0.0 (where x >= 3) has been produced, it shall be considered ***to be under change control***. Any technical change which may be identified for inclusion in the specification from this point on shall be accomplished by means of a Change Request (CR).
- A CR may be raised by any individual member and brought to the attention of the responsible Group.
- A Change Request shall relate to a specific version of a specification.
- A unique (for that specification) reference number shall be allocated to the CR by the 3GPP portal or the Support Team. CR details shall be entered into a CR database maintained by the Support Team and made available on the 3GPP file server. CR numbers shall not be re-used, even if a CR is ultimately rejected by the TSG. A CR may undergo one or more revisions before a final decision is made on it. The database shall show all revisions of each CR.

pCRs for versions bellow 3



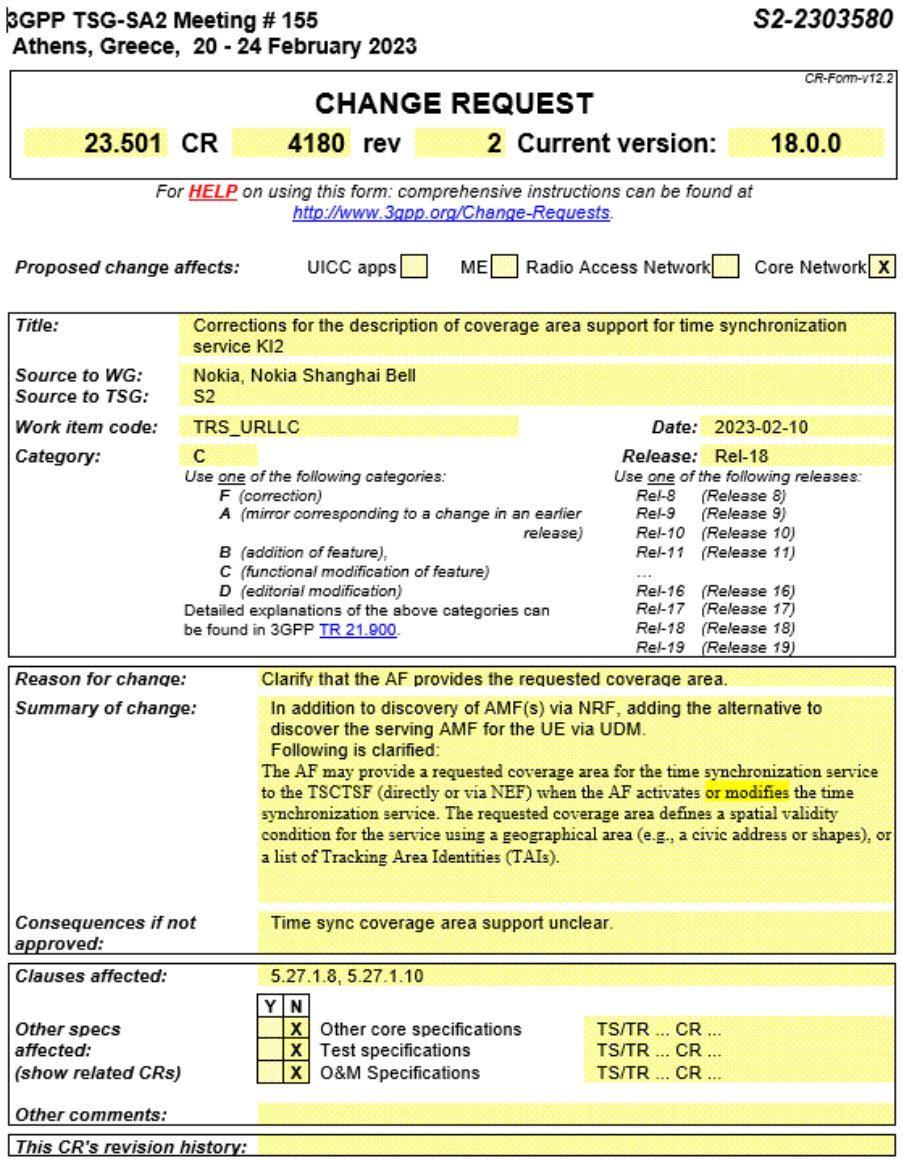
Example of CRs to TS 23.501

1

	Spec #	CR #	Revision #	CR Cat	Impacted Version	Target Release	Title	WG TDoc #	CR status at WG	WG meeting ref	WG Source information	TSG TDoc #	CR status at TSG	TSG meeting ref	TSG Source information	New Version	Work Items	Remarks
	23.501	5344	2	F	18.4.0	Rel-18	Clock status indication from RAN to TSCTSF	S2-2403821	agreed	SA2#161	NTT DOCOMO	SP-240110	approved	SA#103	SA WG2	18.5.0	TRS_URLLC	
	23.501	5343	1	F	18.4.0	Rel-18	Max MTU for XR, and, for PDU sessions subject to handover from EPS to 5GC	S2-2403065	agreed	SA2#161	Vodafone	SP-240114	approved	SA#103	SA WG2	18.5.0	5GS_Ph1, XRM	
	23.501	5342	2	F	18.4.0	Rel-18	DSCP and ECN within the IP Header	S2-2403564	agreed	SA2#161	CATT	SP-240114	approved	SA#103	SA WG2	18.5.0	XRM	
	23.501	5339	2	F	18.4.0	Rel-18	Incorrect Protocol Description options including SRTP together with RTP Payload Format	S2-2403598	agreed	SA2#161	Intel	SP-240113	approved	SA#103	SA WG2	18.5.0	XRM	
	23.501	5334	1	F	18.4.0	Rel-18	Alignments for the Accuracy checking capability in TS 23.501	S2-2403041	agreed	SA2#161	Vivo	SP-240191	approved	SA#103	SA WG2	18.5.0	eNA_Ph3	
	23.501	5332	2	C	18.4.0	Rel-18	Support of 5GC UE level measurements collection	S2-2403681	agreed	SA2#161	Verizon, Samsung	SP-240094	approved	SA#103	SA WG2	18.5.0	AIMLsys	
	23.501	5331	4	F	18.4.0	Rel-18	Clarification on support of PDU Set based QoS	S2-2403565	agreed	SA2#161	Nokia, Nokia Sh...	SP-240113	approved	SA#103	SA WG2	18.5.0	XRM	
	23.501	5328	1	F	18.4.0	Rel-18	Correction of ECN Marking for L4S by UPF	S2-2403080	agreed	SA2#161	Nokia, Nokia Sh...	SP-240113	approved	SA#103	SA WG2	18.5.0	XRM	
	23.501	5327	2	F	18.4.0	Rel-18	Corrections to timing synchronization status	S2-	agreed	SA2#161	Nokia, Nokia	SP-	approved	SA#103	SA WG2	18.5.0	TRS_URLLC	

Change Request Form

- To ensure an appropriate and consistent way of presenting and documenting Change Requests, there exist standardized front covers (forms) for CRs as well as rules on how to accurately identify the modified parts of the specification.
- The purpose of the CR form itself is to provide the relevant management information of the proposed changes, e.g. such as:
    - Target specification with its version number (i.e. the original version to which CR is drafted),
    - Source of the CR,
    - Reason for the proposed change and consequences if not accepted,
    - Category of proposed change (i.e. correction, Change Request corresponding to an earlier release Change Request, addition of feature, functional modification of feature, or editorial modification),
    - Cross-phase compatibility aspects.
- A CR to a major version of a specification can fall into any of five categories: A, B, C, D, E and F.



3GPP TSG-SA2 Meeting # 155
Athens, Greece, 20 - 24 February 2023

S2-2303580

CR-Form-v12.2

CHANGE REQUEST

23.501 CR 4180 rev 2 Current version: 18.0.0

For HELP on using this form: comprehensive instructions can be found at http://www.3gpp.org/Change-Requests.

Proposed change affects: UICC apps ☐ ME ☐ Radio Access Network ☐ Core Network X

Title:	Corrections for the description of coverage area support for time synchronization service KI2
Source to WG:	Nokia, Nokia Shanghai Bell
Source to TSG:	S2
Work item code:	TRS_URLLC
Date:	2023-02-10
Category:	C
Release:	Rel-18

Use one of the following categories:
F (correction)
A (mirror corresponding to a change in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Rel-8 (Release 8)
Rel-9 (Release 9)
Rel-10 (Release 10)
Rel-11 (Release 11)
...
Rel-16 (Release 16)
Rel-17 (Release 17)
Rel-18 (Release 18)
Rel-19 (Release 19)

Reason for change:	Clarify that the AF provides the requested coverage area.
Summary of change:	In addition to discovery of AMF(s) via NRF, adding the alternative to discover the serving AMF for the UE via UDM. Following is clarified: The AF may provide a requested coverage area for the time synchronization service to the TSCTSF (directly or via NEF) when the AF activates or modifies the time synchronization service. The requested coverage area defines a spatial validity condition for the service using a geographical area (e.g., a civic address or shapes), or a list of Tracking Area Identities (TAIs).
Consequences if not approved:	Time sync coverage area support unclear.
Clauses affected:	5.27.1.8, 5.27.1.10

Other specs affected: (show related CRs)	Y	N		
		X	Other core specifications	TS/TR ... CR ...
		X	Test specifications	TS/TR ... CR ...
		X	O&M Specifications	TS/TR ... CR ...

Other comments:

This CR's revision history:

Categories of Change Requests

Category	Meaning	Remarks
A	Corresponds to a change to an earlier Release	Used to reflect functionally equivalent changes made to an earlier Release of the same Specification. NOTE: The proposed change to the later Release of the Specification need not be absolutely identical to the proposed change to the earlier Release, since it is possible that, due to earlier change requests, the affected text is not identical in each Release. Category A should be used when the functional objective of the proposed changes is equivalent in the earlier and later Releases.
B	Addition or deletion of feature	The new feature is to be added to the Release; the reference is not to the Specification itself. This will normally correspond to an identified Work Item. This category shall not be used for a frozen Release, except for alignment CRs as described in clause 4.7.
C	Functional modification of feature	Any functional modification shall correspond to an identified Work Item. However backward compatibility shall be ensured when the issue has an impact on the UE. This category shall not be used for a frozen Release, except for alignment CRs as described in clause 4.7.
D	Editorial modification	Editorial modifications shall have no impact on an implementation. An editorial modification CR to a frozen Release shall not be permitted.
E	(not used)	
F	Correction	Used: 1 to correct an error in the specification (i.e. a clear instruction in the specification which leads to incorrect operation of the system); or 2 to correct an ambiguity in the specification which could lead to different implementations which cannot inter-operate; or 3 (void); or 4 to remedy the incorrect implementation of a previously approved CR; or 5 to correct a misalignment between the specifications (stage 1, stage 2 & stage 3) for a feature or service when not introducing a new function or functional change.

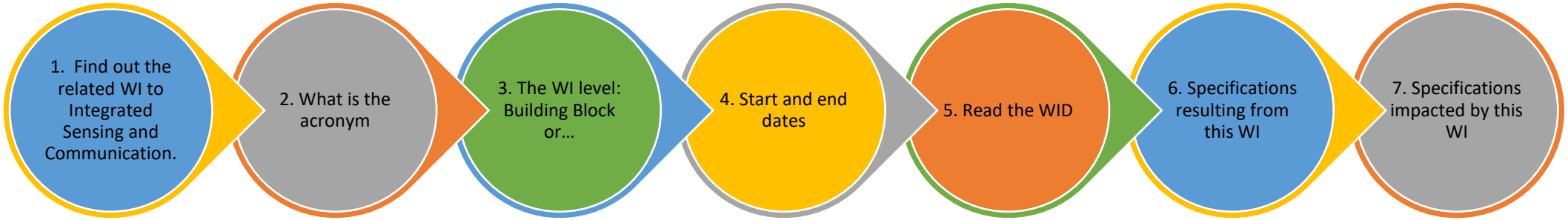
Avoiding Release information in WI name

- In principle, at the time a new Feature or Study Item is proposed, it is not known which Release the results will appear in. If work progresses faster than originally intended, it may be an earlier Release; and if slower, a later Release. Therefore, **it is strongly advised not to include any reference to a Release in a work item name or acronym**. Where work is conducted over a long period of time, inevitably spanning several Releases, the preferred method is to have two or more top-level work items distinguished by "phases", i.e. with the titles and acronymns of the work items showing "phase 1", "phase 2", etc. The "phase" is disassociated from a specific Release. Thus phase 1 might be completed in Release N but phase 2 might not be ready until Release N+3.
- For a new work item, the author of the work item description (WID) document should propose a work item code or acronym, following the above guidlines. This code is provisional and could be modified in the course of the WID approval process at TSG plenary level. When the code has been confirmed, if the WID is updated, the word "Proposed" should be deleted from the line "Proposed Acronym".

Part 3

Hands-On Technical Specification Exercise Session

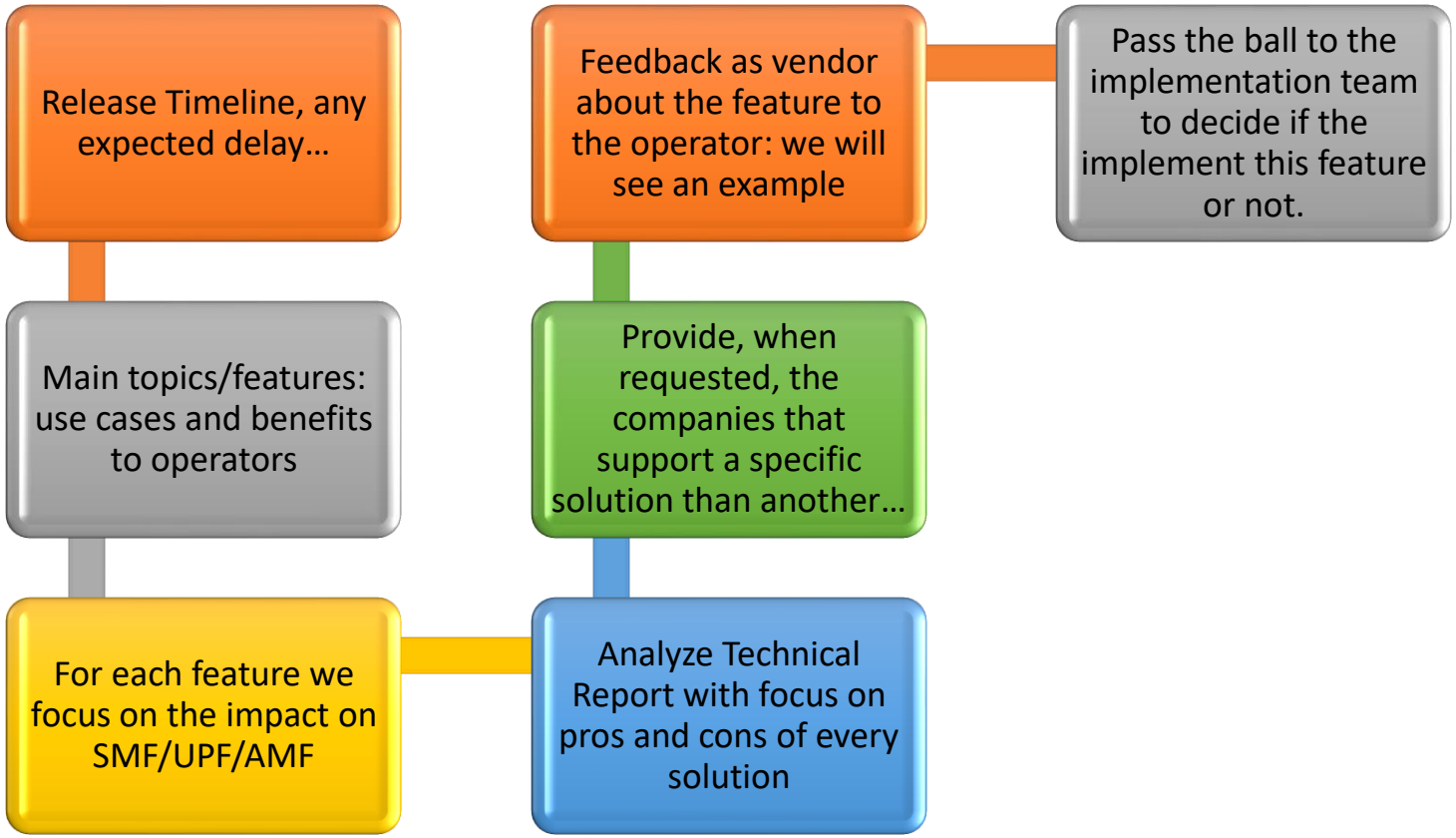
Exercise


1. Find out the related WI to Integrated Sensing and Communication.
2. What is the acronym
3. The WI level: Building Block or…
4. Start and end dates
5. Read the WID
6. Specifications resulting from this WI
7. Specifications impacted by this WI

Guidance

- Open the work plan:
  - https://www.3gpp.org/ftp/Information/WORK_PLAN, or via https://portal.3gpp.org/#/55935-work-plan
- Strat first with FS_Sensing, and find out the TR related to this study: TR 22.837, TR 38.901
- Identify impacted existing TS: TS 38.901

Tasks


Release Timeline, any expected delay…
Feedback as vendor about the feature to the operator: we will see an example
Pass the ball to the implementation team to decide if the implement this feature or not.
Main topics/features: use cases and benefits to operators
Provide, when requested, the companies that support a specific solution than another…
For each feature we focus on the impact on SMF/UPF/AMF
Analyze Technical Report with focus on pros and cons of every solution