

ITU-R Update: **WRC-23 and IMT-2030 (6G)**

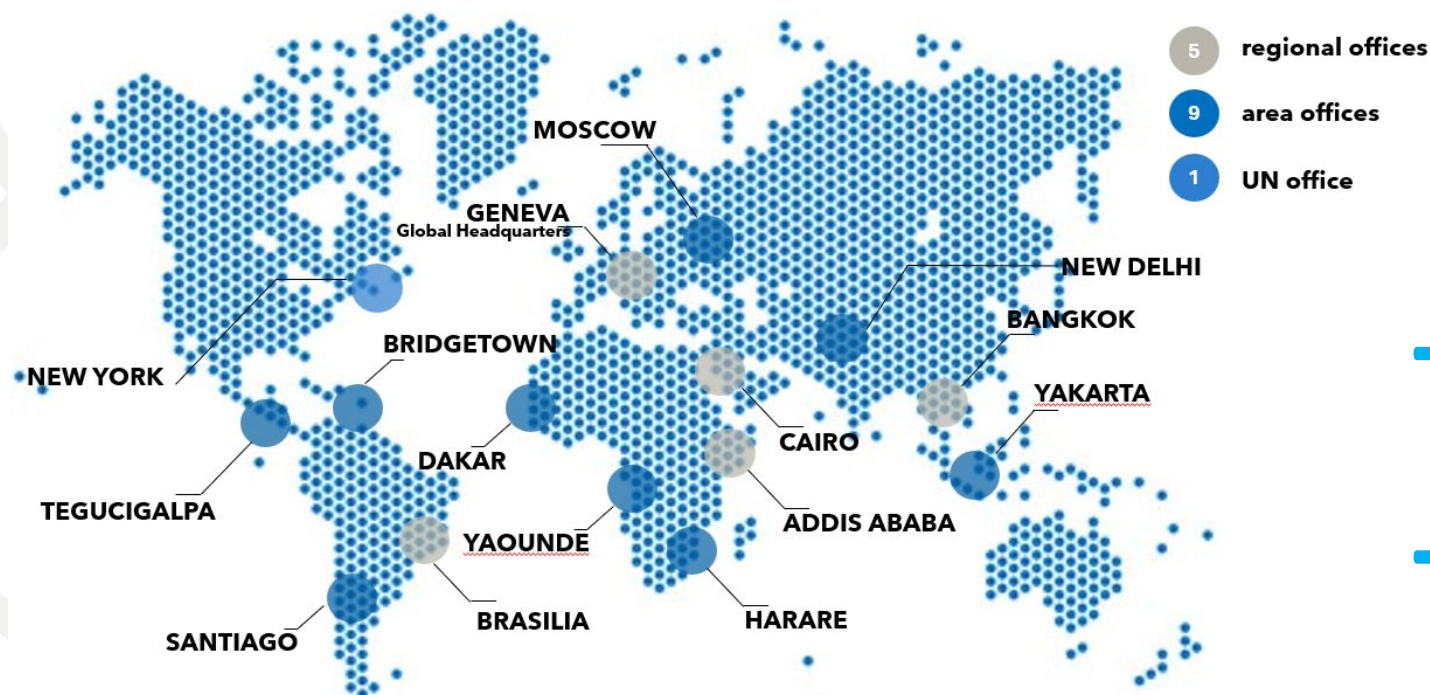
Uwe Löwenstein
Counsellor, ITU-R SG 5

Table of Contents

- ITU Organisation
 - From WRC-23 to WRC-27
 - IMT
 - IMT-Family
 - IMT-Process
 - IMT-2030
 - ITU-R Work on IMT-Satellite/NTN
 - IMT-2030 in ITU-R and ITU-T
-
- Helpful links & other information

ITU is global

The [International Telecommunication Union \(ITU\)](#) is the United Nations specialized agency for information and communication technologies (ICTs)



194 Member states

+700 Companies/organizations

+170 Academia members

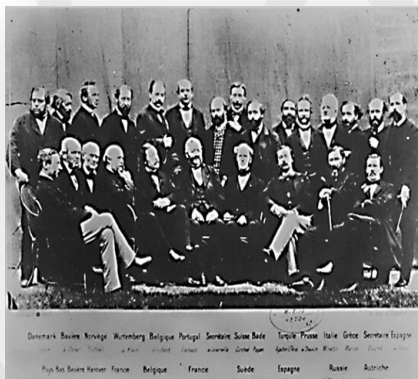
Brief History of ITU

Committed to Connecting the World



1865
(Paris)

The International Telegraph Union:
Founded on 17 May 1865 by 20 nations



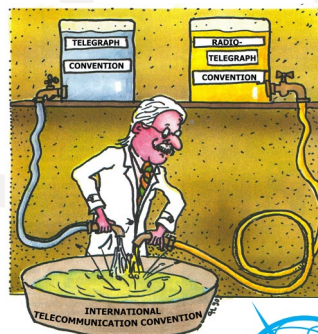
1906
(Berlin)

International Radiotelegraph Convention
(1st Radio Regulations - binding rules)



1932
(Madrid)

Telegraph & Radiotelegraph Conventions merged:
the International Telegraph Union became the **International Telecommunication Union**



1947
(Atlantic City)

- Created the IFRB (International Frequency Registration Board)
- **ITU becomes a UN Specialized Agency**



1992
(Geneva)

Radiocommunication Sector (ITU-R):

- ITU-R Study Groups (formerly CCIR)
- RRB (Radio Regulations Board) (formerly IFRB)
- BR (Radiocommunication Bureau)



**119 years of
Radio Regulations**

2025



From WRC-23 to WRC-27

Member States
represented

Revised
resolutions

Delegates

New resolutions

Member States

Women

20.11.-15.12.23



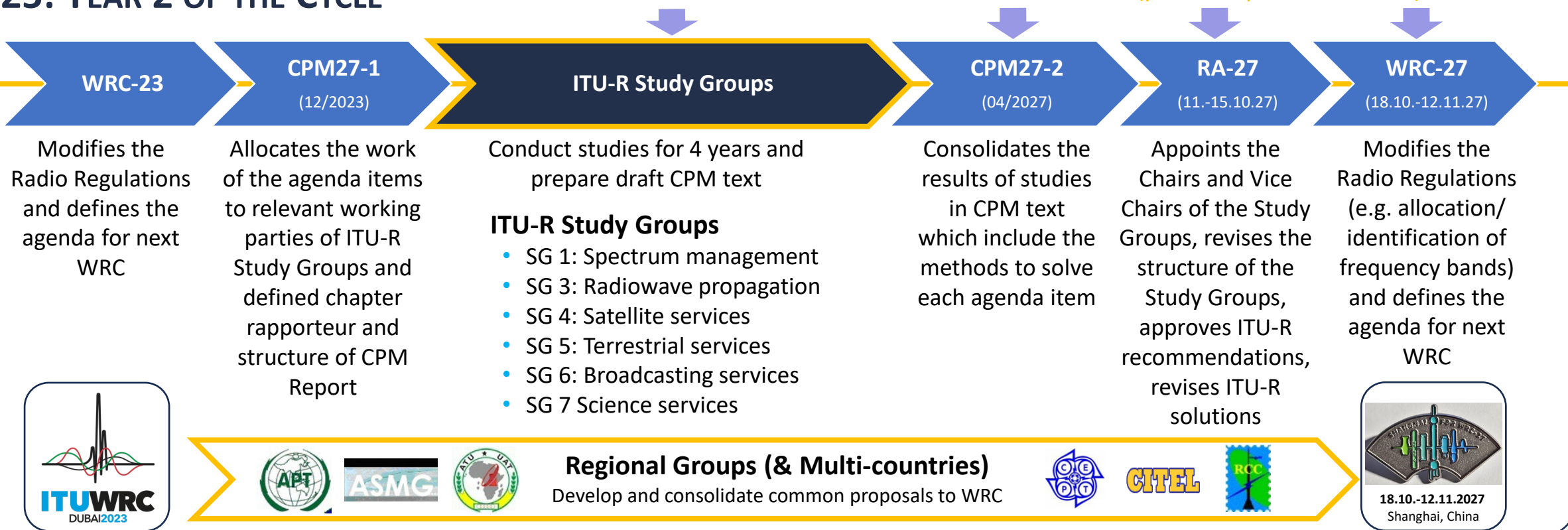
Radio Regulations and WRC-Process



- Intergovernmental treaty governing the use of spectrum / orbit resources by Member States
- Define the rights and obligations of Member States in respect of the use of the limited resources
- Revised and adopted every 4 years by the World Radiocommunication Conference (WRC)

2025: YEAR 2 OF THE CYCLE

ITU Member States and ITU-R Members (public & private sectors)





WRC-27 – Agenda Items

FIXED-SATELLITE AND BROADCASTING-SATELLITE

- 1.1 Aeronautical/maritime earth stations in motion
47.2-50.2 GHz / 50.4-51.4 GHz
- 1.2 13.75-14 GHz – Uplink earth stations
- 1.3 51.4-52.4 GHz – Gateway earth stations
- 1.4 17.3-17.7/8 GHz – Fixed/broadcasting allocation in Region 3
- 1.5 Unauthorized operations of non-geostationary-satellite orbit earth stations
- 1.6 Equitable access for fixed-satellite service satellite networks/systems
37.5-42.5 GHz / 42.5-43.5 GHz / 47.2-50.2 GHz / 50.4-51.4 GHz
- 7 Satellite regulatory issues

MOBILE-SATELLITE

- Space-to-space links**
1 518-1 544 MHz / 1 545-1 559 MHz
1 610-1 645.5 MHz / 1 646.5-1 660 MHz
1 670-1 675 MHz / 2 483.5-2 500 MHz
- MSS - Allocations for IoT development**
1427-1432 MHz / 1645.5-1646.5 MHz 1880-1920 MHz / 2010-2025 MHz
- MSS - IMT-space stations connectivity**
- MSS - Additional allocations**

- 1.7 4400-4800 MHz / 7125-8400 MHz / 14.8-15.35 – IMT
- 1.8 231.5-275 GHz / 275-700 GHz – Radiolocation
- 1.9 Aeronautical mobile (OR) high frequency modernization
- 1.10 71-76 GHz / 81-86 GHz – Power flux-density / power limits

FIXED, MOBILE AND RADIOLOCATION

Res. 813 (WRC-23)

- Lunar communications**
- Radio Quiet Zones**
- Space weather sensors protection**
- ≥ 76 GHz – Earth exploration service protection**
- Earth exploration-satellite service allocation**
4200 – 4400 MHz / 8400-8500 MHz

SCIENCE

Work towards WRC-27 in ITU-R

The Conference Preparatory Meeting (CPM) allocates WRC agenda items to the relevant ITU-R Study Group

SG 4 (Satellite Services)

WP 4A

1.1 1.3 1.5
1.2 1.4 1.6

WP 4C

1.11 1.13
1.12 1.14

SG 5 (Terrestrial Services)

WP 5B

1.8
1.9

WP 5C

1.10

WP 5D

1.7

SG 7 (Science Services)

WP 7B

1.15

WP 7C

1.17
1.19

WP 7D

1.18 1.16

AI	Topic	Resolution	WP 5A	WP 5B	WP 5C	WP 5D	Other WPs/TG (R)	R
1.1	Aeronautical and maritime ESIM	Res. 176 (Rev.WRC-23)	C	C	C	C	3M, 4A, 4C, 7B, 7C, 7D	4A
1.2	FSS with small antenna sizes in the frequency band 13.75-14 GHz	Res. 129 (WRC-23)	C	C	C	-	3M, 4A*, 7A, 7B, 7C	4A
1.3	Non-GSO in the FSS in the frequency band 13.75-14 GHz	Res. 130 (WRC-23)	C	-	C	-	3M, 4A, 7C, 7D	4A
1.4	New allocation for FSS in 17.3-17.7 GHz and BSS in 17.3-17.8 GHz	Res. 726 (WRC-23)	C	C	C	-	3M, 4A, 4B, 6B, 7C	4A
1.5	Unauthorized operations of non-GSO FSS and MSS earth stations	Res. 14 (WRC-23);	-	-	-	-	1B, 3M, 4A, 4B, 4C, 6A, 7B, 7C, 7D	4A
1.6	FSS in the bands 37.5-42.5 GHz, 42.5-43.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz	Res. 131 (WRC-23)	C	C	C	C	1B, 3M, 4A, 4B, 4C, 6A, 7B, 7C, 7D	4A
1.7	IMT in the bands 4400-4800 MHz, 7125-8400 MHz (or parts thereof) and 14.8-15.35 GHz	Res. 256 (WRC-23)	C	C	C	R	1B, 3K, 3M, W4A, 4C, 7B, 7C, 7D	5D
1.8	Radiolocation service in the bands 231.5-275 GHz and the frequency range 275-700 GHz	Res. 663 (Rev.WRC-23)	C	R	C	-	3J, 3K, 3M, 4A, 4C, 7C, 7D	5B
1.9	Update RR, Appendix 26 in support of aeronautical mobile (OR) high frequency modernization	Res. 411 (WRC-23)	-	R	C	-	3L, 6A, 7A	5B
1.10	Protection of FS and MS by FSS, MSS and BSS in the bands 71-76 GHz and 81-86 GHz	Res. 775 (Rev.WRC-23)	C	C	R	-	1A, 3J, 3M, 4A*, 4C*, 6A, 7C	5C
1.11	Space-to-space transmission between NGSO and GSO in the bands 1.6 GHz and 2.5 GHz	Res. 249 (Rev.WRC-23)	C	C	C	C	3L, 3M, 4A, 4B, 4C, 6A, 7B, 7C, 7D	4C
1.12	MSS (low-data NGSO) in the bands 1427-1432 MHz, 1645.5-1646.5 MHz, 1880-1920 MHz and 2010-2025 MHz	Res. 252 (WRC-23)	C	C	C	C	3L, 3M, 4B*, 4C, 7B, 7C, 7D	4C
1.13	MSS (direct to device) in IMT-bands between 694/698 MHz to 2.7 GHz	Res. 253 (WRC-23)	C	C	C	C	3L, 3M, 4A, 4B, 4C*, 6A, 7B, 7C, 7D	4C
1.14	MSS in the 2 GHz	Res. 254 (WRC-23)	C	-	C	C	3L, 4B, 4C, 7B, 7C	4C
1.15	Space research service allocations, for communications on the lunar surface and lunar orbit	Res. 685 (WRC-23)	C	C	C	C	1B, 3J, 3M, 4A, 4C, 7B, 7C, 7D	7D
1.16	Protection of RAS in radio quiet zones	Res. 681 (WRC-23)	C	C	-	C	1B, 3J, 3M, 4A, 4C, 7D	7D
1.17	Space weather sensors (several bands in the 30 MHz, 70 MHz, 600 MHz range)	Res. 682 (WRC-23)	C	C	C	C	3L, 3M, 4A, 4C, 6A, 7B, 7C, 7D	7C
1.18	Protection of EESS & RAS from unwanted emissions of active sensors above 76 GHz	Res. 712 (WRC-23)	C	C	C	-	3J*, 3M*, 4A, 4C, 7C, 7D	7C/7D
1.19	EESS globally in 4.3 and 8.5 GHz	Res. 674 (WRC-23)	C	C	C	C	4A, 7B, 7C	7C

Related frequency bands under WRC-27 Agenda Items

WP 5D

1.7

WRC-27 IMT bands under consideration

Region 1	Region 2	Region 3
4 400-4 800 MHz		4 400-4 800 MHz
7 125-7 250 MHz 7 750-8 400 MHz	7 125-8 400 MHz	7 125-8 400 MHz
14.8-15.35 GHz	14.8-15.35 GHz	14.8-15.35 GHz

WP 4C

1.12

1.13

1.14

WRC-27 Mobile-satellite service (MSS) bands under consideration

 AI 1.13 Direct to Device	 New Mobile Satellite
Mobile satellite in IMT bands between 694/698 MHz and 2.7 GHz	1 427-1 432 MHz 1 645.5-1 646.5 MHz 1 880-1 920 MHz 2 010-2 025 MHz 2 120-2 170 MHz

From:
 "Spectrum Policy Trends 2024",
 GSMA, 02/2024

IMT and ITU-R M.2160

IMT-Family and naming conventions

Committed to Connecting the World



Resolution ITU-R. 56 “Naming for IMT”

Documents for previous IMT-generations, see “IMT-Family History” (annex)

International Mobile Telecommunication (IMT)

Name

Rec.

Radio Interface Technology (RIT)

Year

1st / latest publication
(as of 1. October 2024)

Market name

IMT-2000

ITU-R M.1457-15

- IMT-2000 CDMA DS
- IMT-2000 CDMA MC
- IMT-2000 CDMA TDD
- IMT-2000 TDMA SC
- IMT-2(RIT)000 FDMA/TDMA
- IMT 2000 OFDMA TDD WirelessMAN

05/2000 – 10/2020

IMT-Advanced

ITU-R M.2012-6

- LTE-Advanced
- WirelessMAN-Advanced

02/2014 – 12/2023

IMT-2020

ITU-R M.2150-2

- 3GPP 5G-SRIT
- 3GPP 5G-RIT
- 5Gi³
- DECT 5G-SRIT

³ In Document 5D/926, TSDSI indicates that the 5Gi technology is merged into the 3GPP 5G specifications from Release 17 forward, and that TSDSI does not intend to submit proposals to WP5D for any further updates of 5Gi

02/2021 – 12/2023

IMT-2030

Res. ITU-R 56-3
(Rev. WRC-23)

- recognising j
- resolves 4 ... *that the term “IMT-2030” be applied to those systems*

2030 ?



“3G”



“4G”



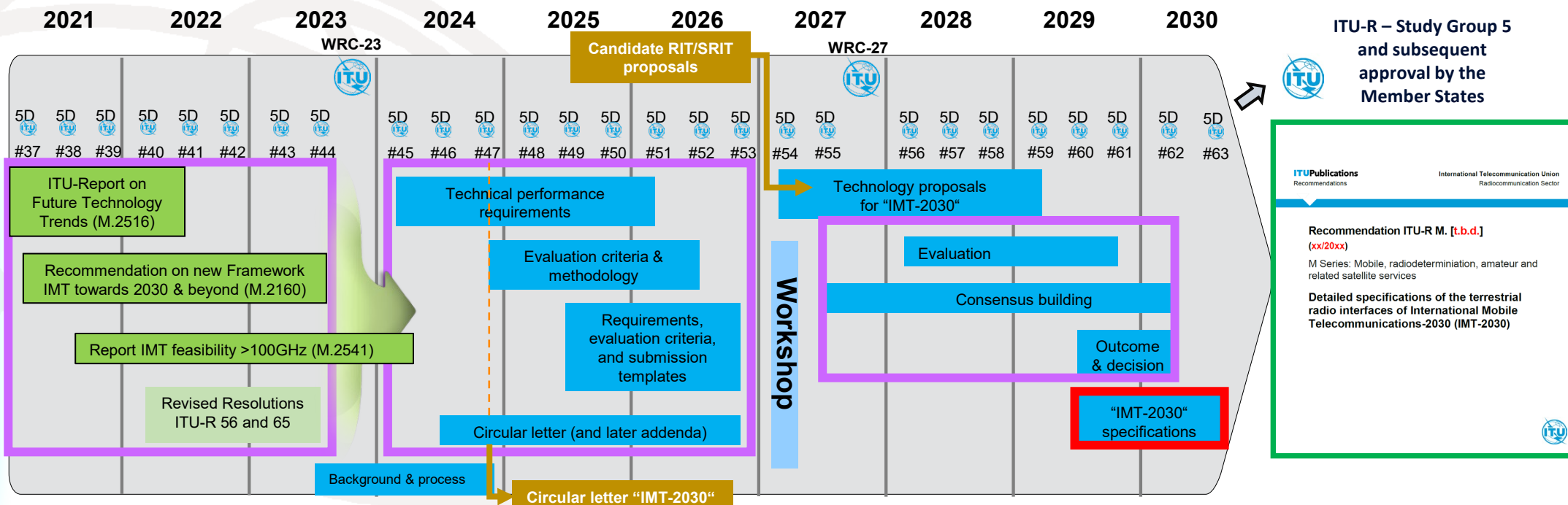
“5G”



“6G”

ITU-R Timeline and Process

Committed to Connecting the World



Note 1: WP 5D #59 will additionally organize a workshop involving the Proponents and registered Independent Evaluation Groups (IEGs) to support the evaluation process

Note 2: While not expected to change, details may be adjusted if warranted. Content of deliverables to be defined by responsible WP 5D groups



IMT-2030 (6G) – Overall Framework

Committed to Connecting the World



ITU-R ([WP 5D](#)) completed the initial phase for the development of IMT-2030

- Report ITU-R **M.2516 - Future Technology Trends**
- Report ITU-R **M.2541 - Feasibility of IMT above 100 GHz**
- **Recommendation ITU-R M.2160**
“Framework and overall objectives of the future development of IMT for 2030 and beyond”

Currently, **WP 5D** is

- defining technical performance requirements (TPR) and
 - developing evaluation criteria
- for potential radio interface technologies (RIT) for IMT-2030

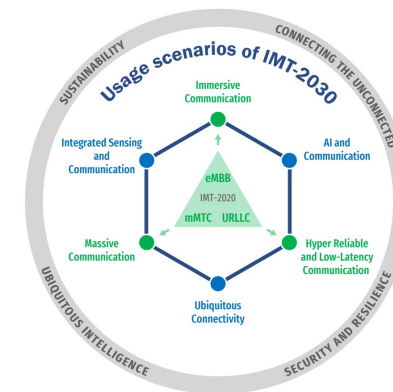
ITU Publications
Recommendations

International Telecommunication Union
Radiocommunication Sector

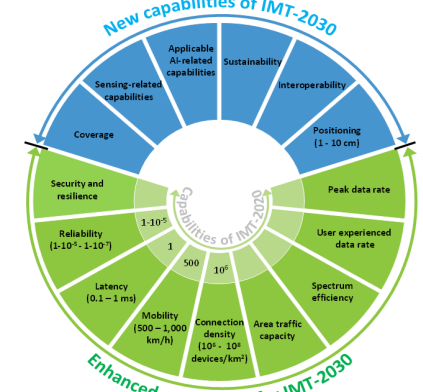
Recommendation ITU-R M.2160-0 (11/2023)

M Series: Mobile, radiodetermination, amateur and related satellite services

Framework and overall objectives of the future development of IMT for 2030 and beyond

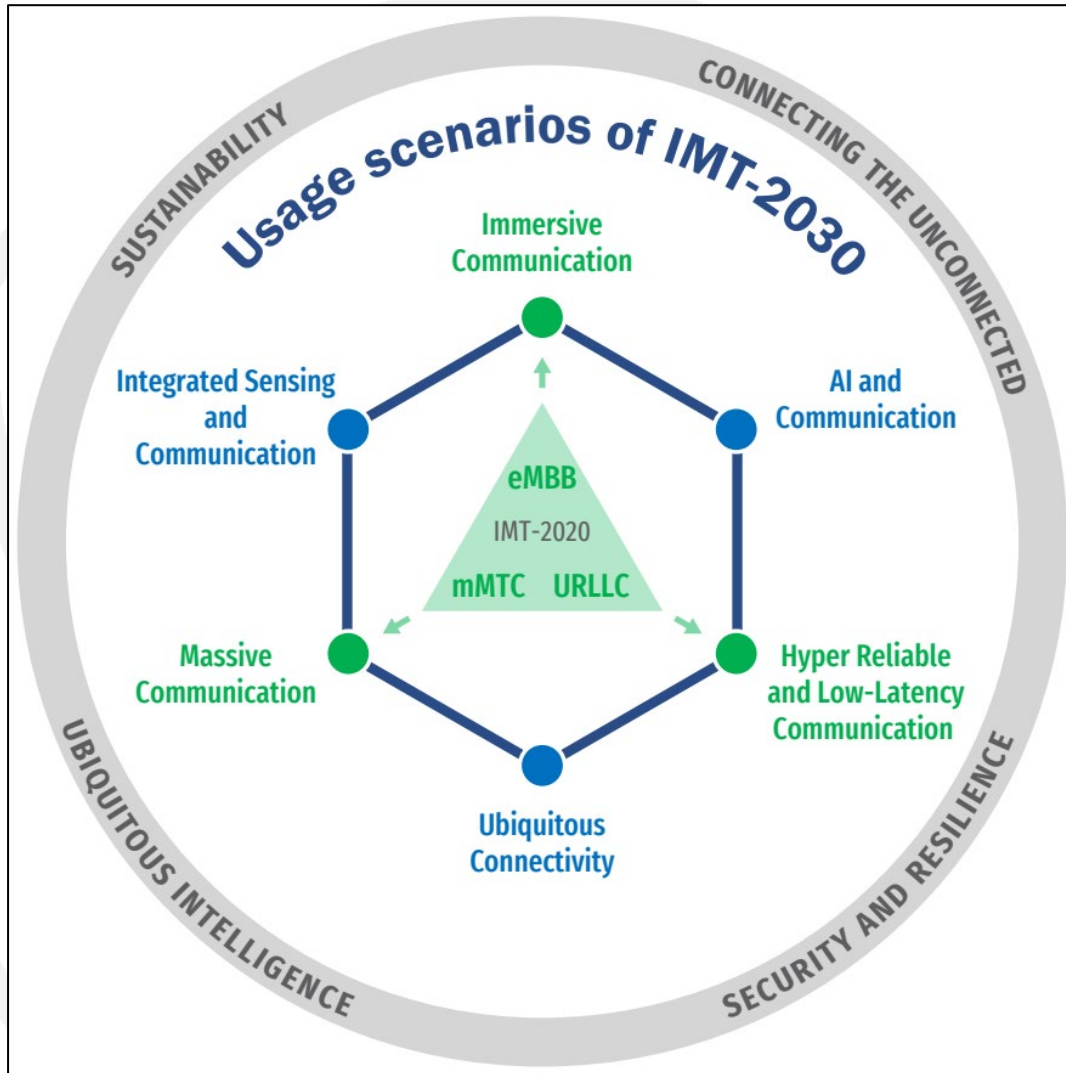


a.k.a. “wheel diagram”



a.k.a. “palette diagram”

ITU-R M.2160 (§3) - Usage scenarios for IMT-2030



6 Usage scenarios

Extension from IMT-2020 (5G)

eMBB → Immersive Communication

mMTC → Massive Communication

URLLC → HURLLC (Hyper Reliable & Low-Latency Communication)

New

Ubiquitous Connectivity

AI and Communication

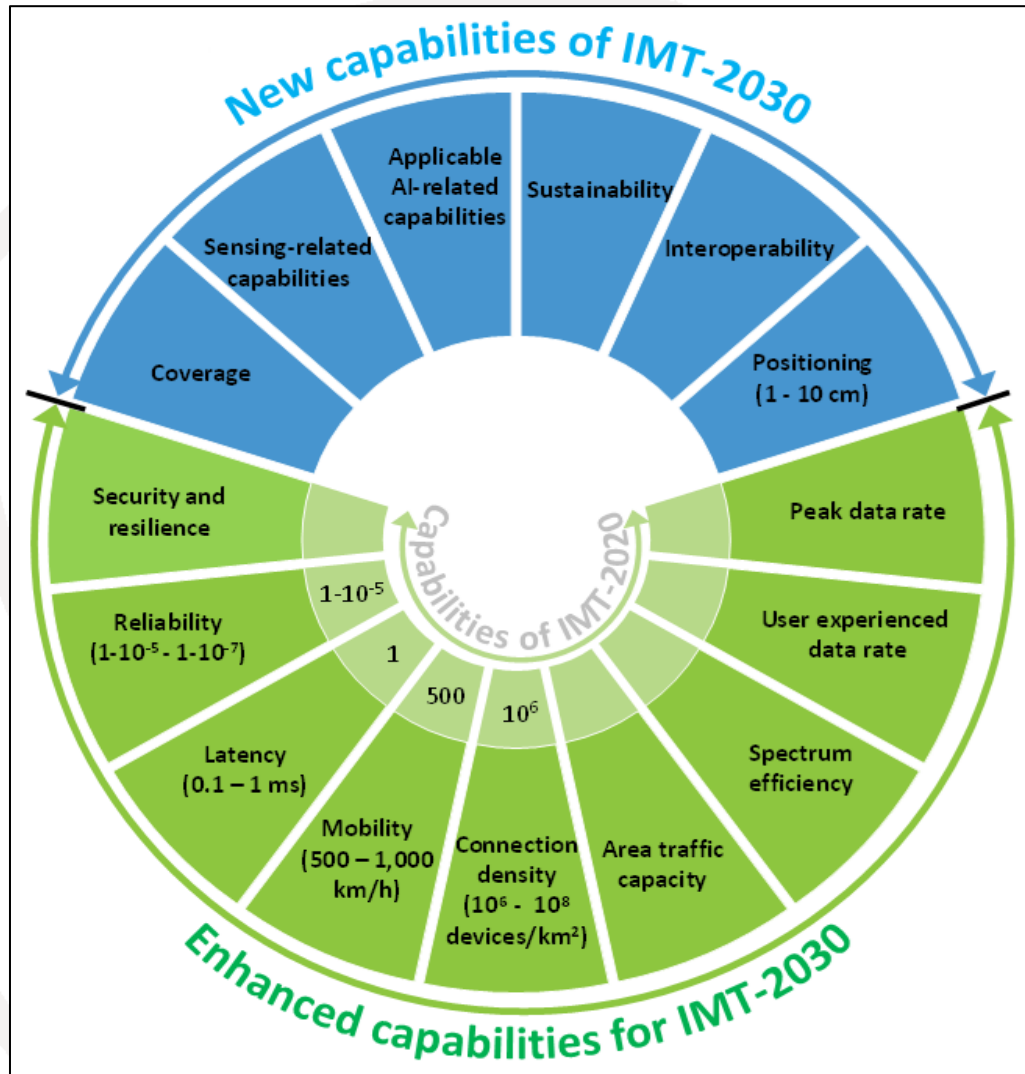
Integrated Sensing and Communication

4 Overarching aspects

act as design principles commonly applicable to all usage scenarios

- Sustainability
- Connecting the unconnected,
- Ubiquitous intelligence,
- Security / resilience

ITU-R M.2160 (§4) - Capabilities of IMT-2030



IMT-2030 Framework Recommendation identifies **15 capabilities** for 6G technology

- Nine of those capabilities are derived from existing 5G systems

The range of values given for capabilities are estimated targets for research and investigation of IMT-2030

- All values in the range have equal priority in research and investigation
- For each usage scenario, a single or multiple values within the range would be developed in future in other ITU-R Recommendations/Reports

IMT-2030 is also expected to help **address the need for increased environmental, social and economic sustainability**, and also support the goals of the Paris Agreement of the United Nations Framework Convention on Climate Change

IMT-2030 - Drivers

Societal Goals:

- Support UN Sustainable Development Goals like environmental sustainability, healthcare, poverty and inequality reduction, safety, privacy, aging populations, and urbanization.

Market Expectations:

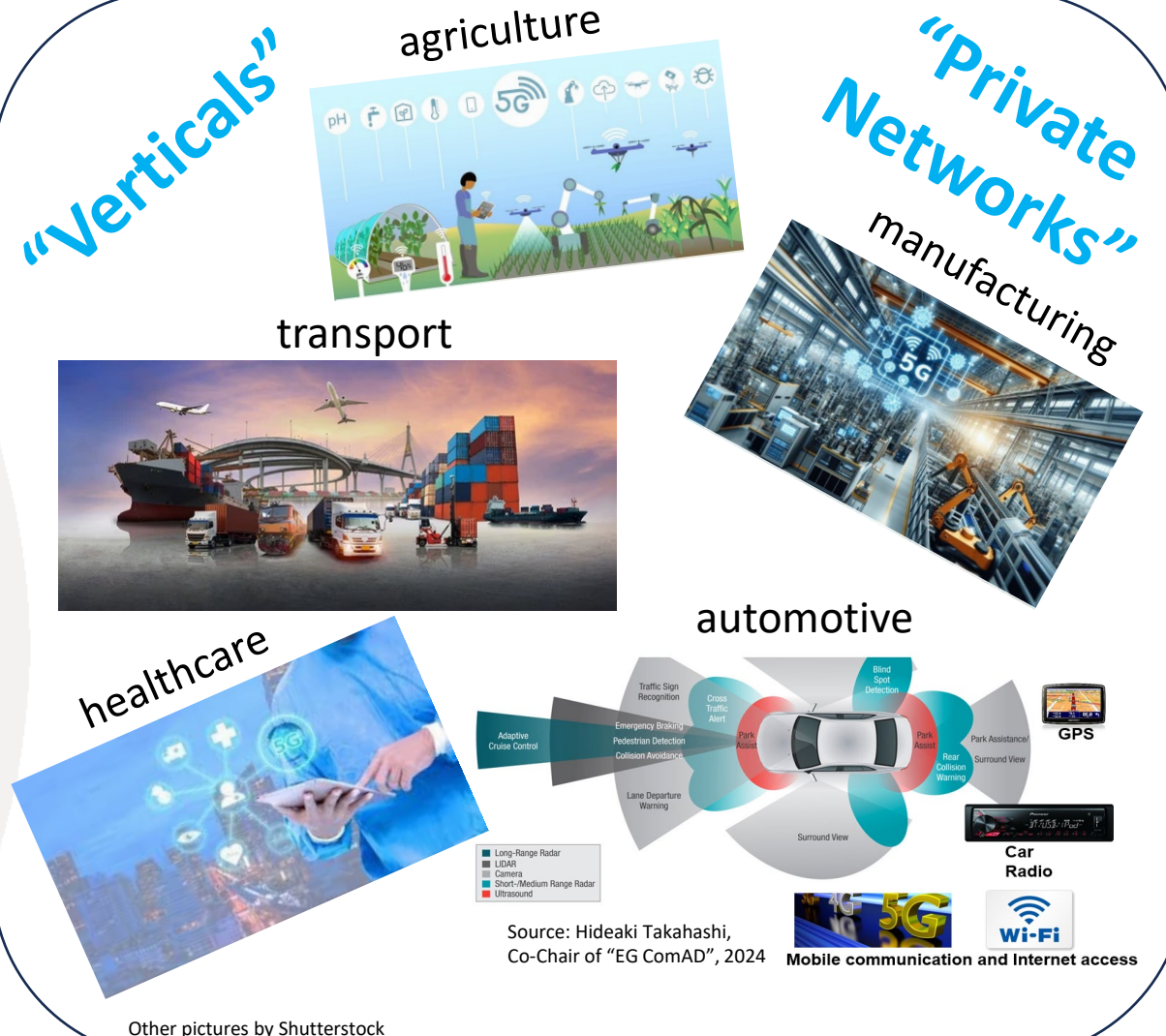
- Enable novel capabilities, new and differentiated services, and expanded market opportunities.

Operational Necessities:

- Manage complexity, drive efficiency, reduce costs with end-to-end automation and visibility.

Innovation as a Core Driver

- Technological evolution and user needs drive innovation in IMT-2030.
- Focus on productivity, connectivity, and efficient management of resources.



ITU-R Work on IMT-Satellite/NTN

IMT Satellite Radio Interfaces (NTN)

“The Non-Terrestrial Network (NTN) could complement existing terrestrial mobile networks and enhance the next generation of mobile networks and services, striving to improve connectivity for users in unserved and underserved areas, benefiting both consumers and industries.”

Rec. ITU-R M.2160 “Framework for IMT-2030”

IMT-2020

Radio interface of the satellite component

- Report [ITU-R M.2514](#) – Vision, requirements and evaluation guidelines
- Evaluation of candidate RITs and SRITs has concluded
→ **Report [ITU-R M.2543-0](#)**
- The “*Draft new Recommendation ITU-R M.[IMT 2020-SAT.SPECS] - Detailed specifications of the satellite radio interfaces of International Mobile Telecommunications-2020 (IMT-2020)*” has been finalised and sent to **SG 4** for its potential adoption (Document 4/41).

From the very beginning of the IMT-development, a satellite component was part of the ITU-R work and a series of ITU-R Recommendations for the satellite component for the according IMT generation has been developed:

IMT-2000

Recs ITU-R [M.818-2](#), [M.1167](#), [M.1182-1](#), [M.1850-2](#) and [M.2014-1](#)

IMT-Advanced

Recommendation ITU-R [M.2047](#)

ITU Publications

International Telecommunication Union
Radiocommunication Sector

Report ITU-R M.2543-0 (11/2024)

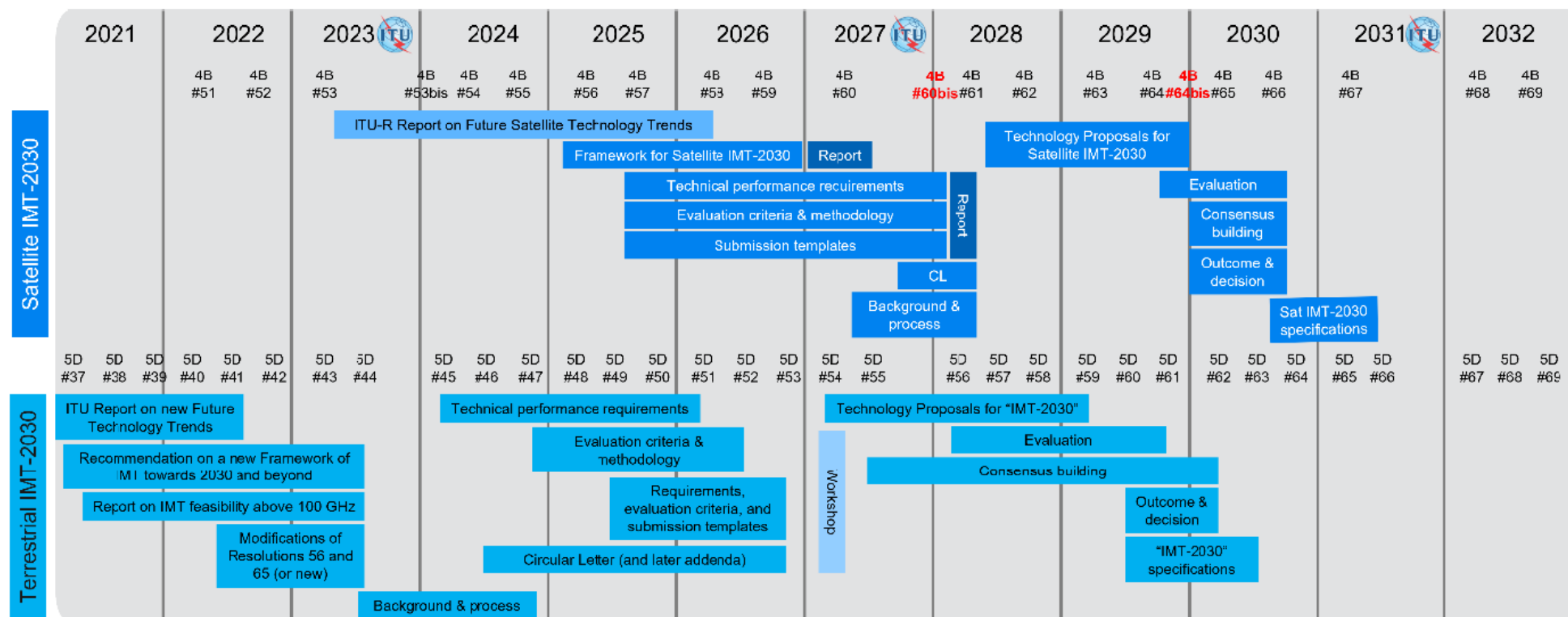
M Series: Mobile, radiodetermination, amateur and related satellite services

Outcome of the evaluation, consensus building and decision of the IMT-2020 satellite process (Steps 4 to 7), including characteristics of IMT-2020 satellite radio interfaces

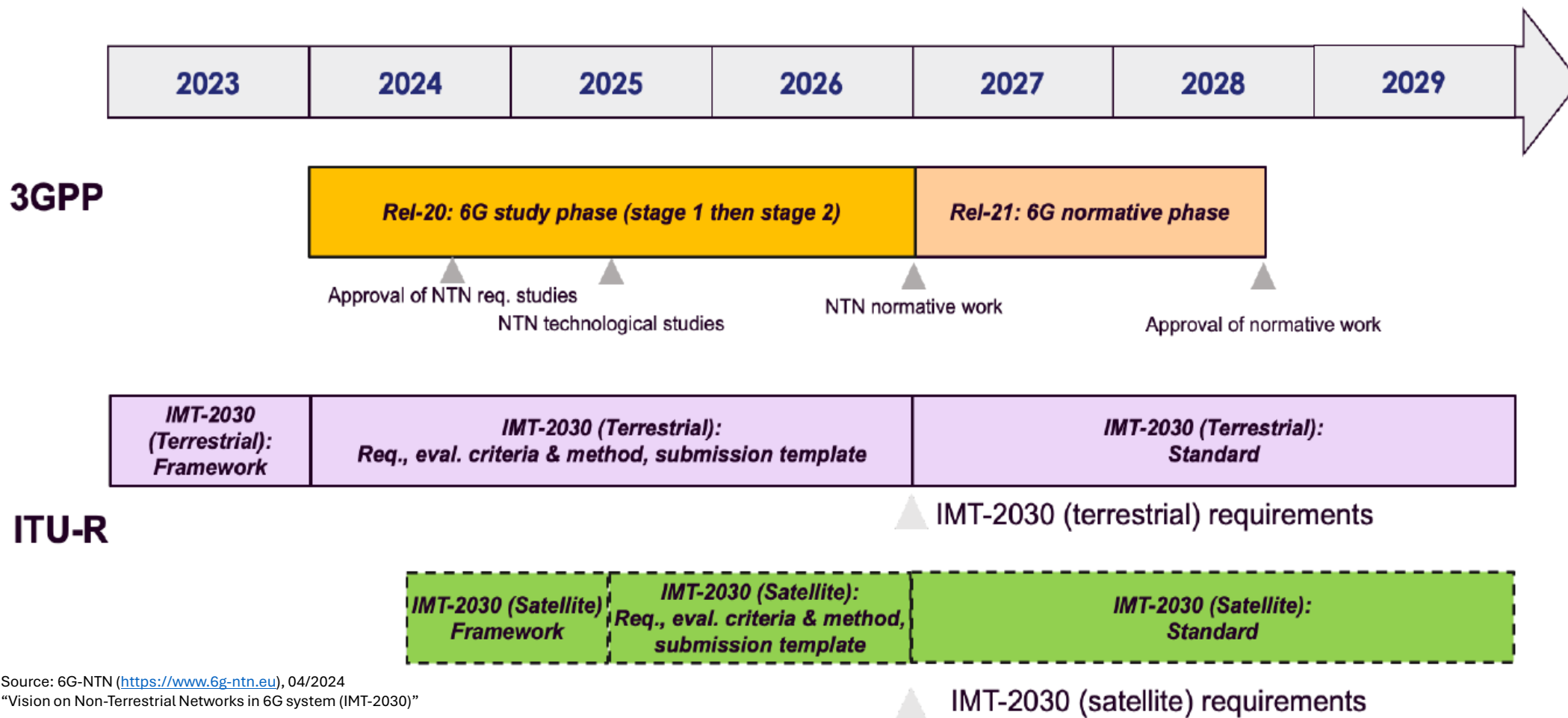
Timeline (IMT-2030 satellite component)

ITU-R ([WP 4B](#)) is also conducting studies on the future development of satellite IMT-2030, including the development of Reports on “The framework for satellite radio interfaces of IMT-2030” and “The development and technology trends for the satellite component of IMT-2030 and beyond” and the according work plans.

In 05/2025 WP 4B approved the timeline for the Satellite component of IMT-2030 (6G), ensuring the specification keeping pace with Terrestrial component and ready before WRC-31:



3GPP standardisation schedule with respect to IMT-2030 definition in ITU-R



Potential frequency bands for IMT-2030

Multiple frequency ranges would be needed to meet the capacity and coverage requirements of IMT systems and to serve the emerging services and applications in different geographical regions.

Key frequency categories for (terrestrial) spectrum

Low Bands (<1 GHz):

Nationwide coverage, deep indoor access, bridging digital divide.

Mid Bands:

Balance of coverage & capacity.

High Bands (mmWave, THz):

- > new use cases and applications with high data rate and low latency,
- > THz: could accommodate large contiguous bandwidth (tens of GHz)
- > Support data-heavy applications like holographic vision, future XR, capacity backhaul.

3GPP frequency ranges

	Frequency (GHz)	Carrier BW (MHz)	3GPP Rel.
FR1	0,41 - 7,125	5/10/.../50/100	Rel.15 (2018)
FR3	7,125 - 24,25	200/400	study item (Rel.18)
FR2	24,25 - 71	50/100/200/400	Rel.15 (2018)

3GPP frequency bands for NTN

S-Band / L-Band	2 GHz / 1.6 GHz	Rel.17	3GPP operating bands are defined in all satellite spectrum <3 GHz (~100 MHz)
Ka-Band	20/30 GHz	Rel.18	
Ku-Band	12/14 GHz	Rel.19	

WRC-27, AI 1.13

MSS (D2D) in IMT-bands between 694/698 MHz to 2.7 GHz

3x Vision / Framework in ITU-R

Satellite (ITU-R SG 4)

- Report [ITU-R M.2514](#) - “Vision, requirements and evaluation guidelines for satellite radio interface(s) of IMT-2020”

Broadcasting (ITU-R SG 6)

- Report [ITU-R BT.2522](#) - “A framework for the future of broadcasting”
- Report [ITU-R BT.2524](#) - “A framework for future of broadcast production”

IMT (ITU-R SG 5)

- Recommendation [ITU-R M.2160](#) - “Framework and overall objectives of the future development of IMT for 2030 and beyond”



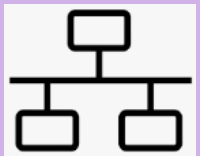
ITU-T SG 13

Future networks and emerging network technologies

- [ITU-T Y.3100](#) (09/17) - Terms and definitions for IMT-2020 network
- [ITU-T Y Suppl. 59: Y.3100-series](#) (11/22) - IMT-2020 standardisation roadmap

Study Period 2022-2024

- Continuation of [ITU-T Question 20/13](#) – “Networks beyond IMT-2020 and machine learning: Requirements and architecture”
- New [ITU-T Question 23/13](#) - “IMT-2030 networks: Fixed, mobile and satellite convergence”
- [Draft New Recommendation ITU-T Y.3216](#) (EX Y.FMSC-DCN) “Fixed, Mobile and Satellite convergence – distributed core network for imt-2020 networks and beyond” (25.07.24)



Summary

- ITU is global with a **strong mandate to develop IMT further** and its **documents and regulation is binding and supported by government and industry, embedded in the UN framework**
- The **new “Framework Recommendation” ITU-R M.2160 for IMT-2030** describes the overall objectives including use cases. This marks the achievement of the initial phase, **setting the basis for the development of IMT-2030. The next phase (2024-2027)** will be the definition of relevant requirements and evaluation criteria for potential radio interface technologies (RIT) for the terrestrial component of IMT-2030.
- The **satellite component of IMT (“NTN”)** has always been a part of the **IMT-development**, but now - with the evolution of underlying satellite technologies, the development of the satellite component for IMT-2020 (and IMT-2030) will enable the delivery of IMT-service to those places where it is technically very difficult or too expensive to deliver with terrestrial network.
- Essential part of the IMT-process is **liaison with External Organizations (incl. “Verticals”)** to receive contributions covering and elaborating future trends and new services ...
... but also, **internal liaison within ITU** (other ITU-R Study Groups and ITU-sectors)



ITU – Radiocommunication Bureau

Questions to brmail@itu.int or uwe.loewenstein@itu.int

Uwe LÖWENSTEIN

Counsellor for ITU-R Study Group 5 (SGD/SG5)

International Telecommunication Union

Tel: +41 22 730 6046 | Fax: +41 22 730 5806

Mobile: + 41 79 89 37378

www.itu.int uwe.loewenstein@itu.int

Helpful links

More about ITU <https://www.itu.int/en/about/Pages/default.aspx>

ITU-Journal on Future and Evolving Technologies <https://www.itu.int/en/journal/j-fet/Pages/default.aspx>

More about IMT-2030

<https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/imt-2030/Pages/default.aspx>

Details about IMT-2020 submission & evaluation (ITU-R M.2150 Rev.3)

<https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/imt-2020/Pages/submission-eval-3rd-release.aspx>

Details about Satellite IMT-2020 submission and evaluation process

<https://www.itu.int/en/ITU-R/study-groups/rsg4/Pages/imt-2020-sat-submission-eval.aspx>

SG 4 <https://www.itu.int/en/ITU-R/study-groups/rsg4/Pages/default.aspx>

WP 4B <https://www.itu.int/en/ITU-R/study-groups/rsg4/rwp4b/Pages/default.aspx>

SG 5 <https://www.itu.int/en/ITU-R/study-groups/rsg5/Pages/default.aspx>

WP 5D <https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/Pages/default.aspx>



Rec. ITU-R M.2150 (IMT-2020)

<https://www.itu.int/rec/R-REC-M.2150/en>

Rec. ITU-R M.2160 (IMT-2030)

<https://www.itu.int/rec/R-REC-M.2160/en>

Rep. ITU-R M.2514 (Vision IMT-2020 SAT)

<https://www.itu.int/pub/R-REP-M.2514>

Rep. ITU-R M.2516 (FTT)

<https://www.itu.int/pub/R-REP-M.2516>

Bands identified for terrestrial IMT

Frequency Bands identified for IMT (MHz)	Footnotes identifying the band for IMT in the Radio Regulations			Available Bandwidth (MHz)	Timing
	Region 1	Region 2	Region 3		
450-470	5.286AA			20	WRC-07
470-698	5.307A**	5.295** 5.308A**	5.296A**	228	WRC-15/23
694/698-960	5.317A	5.317A	5.313A** 5.317A	262	WRC-07/2000
1 427-1 518	5.341A, 5.346**	5.341B	5.341C, 5.346A	91	WRC-15
1 710-2 025	5.384A, 5.388			315	WARC-92, WRC-2000
2 110-2 200	5.388			90	WARC-92
2 300-2 400	5.384A			100	WRC-07
2 500-2 690	5.384A			190	WRC-2000
3 300-3 400	5.429B**	5.429D	5.429F**	100	WRC-15/23
3 400-3 600	5.430A	5.431B	5.432A** 5.432B** 5.433A**	200	WRC-07
3 600-3 700	5.433B, ** 5.434B**	5.434	-	100	WRC-15/23
3 700-3 800 *	5.434B**	5.435B**	-	100	WRC-23
4 800-4 990	5.441B**	5.441A** 5.441B**	5.441B**	190	WRC-15
6 425-7 025 *	5.457E	5.457F**	5.457D**	600	WRC-23
7 025-7 125 *	5.457E	5.457F**	5.457E	100	WRC-23
10 000-10 500 *		5.480A		500	WRC-23
24 250-27 500	5.532AB			3250	WRC-19
37 000-43 500	5.550B			6500	WRC-19
45 500-47 000	5.553A**			1500	WRC-19
47 200-48 200	5.553B**			1000	WRC-19
66 000-71 000	5.559AA			5000	WRC-19

Reference Documents:

Recommendation [ITU-R M.1036](#) and [RR edition 2024](#)

List of frequency bands under WRC-27 agenda items (considered by ITU-R WP 5D)

Frequency bands	WRC-27 agenda items
608-614 MHz	1.17
694/698-960 MHz	1.13
1 427-1 518 MHz	1.12 (1 427-1 432 MHz), 1.13
1 710-1 785 MHz	1.13
1 805-2 025 MHz	1.12 (1 880-1 920 MHz, 2 010-2 025 MHz), 1.13, 1.14 (2 010-2 025 MHz)
2 110-2 200 MHz	1.13, 1.14 (2 120-2 170 MHz)
2 300-2 400 MHz	1.13
2 500-2 690 MHz	1.13 1.15
3 500-3 600 MHz	1.15
3 600-3 800 MHz	1.15
4 400-4 800 MHz	1.7 1.19 (4 200-4 400 MHz)
7 125-8 400 MHz	1.7 1.15 (7 190-7 235MHz) 1.19 (8 400-8 500 MHz)
14.8 – 15.35 GHz	1.7
25.25-28.35 GHz	1.15
37-43.5 GHz	1.6
47.2-48.2 GHz	1.1, 1.6

(Table 1 in Annex 4.9 to Document 5D/242)

* this band is identified for IMT from 01.01.2025 ** this band is identified in some countries of the Region