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Setting the 5G context (ITU-R)

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- ❖ IMT-2020/5G process
- ❖ WRC-19 decisions and work towards WRC-23
- ❖ Bands assigned for 5G deployment
- ❖ Current status of 5G bands in Europe (CEPT)

IMT-2020/5G Process

IMT-2020 radio interface standardization process

- ❖ Development plan
- ❖ Market/services view
- ❖ Technology & research kick off
- ❖ Vision - IMT for 2020
- ❖ Name
- ❖ Process optimization

- ❖ Technical performance requirements
- ❖ Evaluation criteria
- ❖ Invitation for proposals
- ❖ Sharing study parameters (IMT-2020)
- ❖ Sharing studies in preparation for WRC-19

- ❖ Technical proposals
- ❖ Evaluation Groups
- ❖ Methodology
- ❖ Consensus building

- ❖ Spectrum/band arrangements
- ❖ Decision & radio framework
- ❖ Detailed IMT-2020 radio specifications
- ❖ Future enhancement/ update plan & process

IMT-2020 spectrum allocation process

WP5D#36bis
17.-19.11.20

- ❖ < 6 GHz Spectrum view
- ❖ ITU-R Study Group activities/studies
- ❖ Spectrum/band arrangements (post WRC-15)

- ❖ CPM Report (IMT bands, WRC-19)
- ❖ Sharing study reports
- ❖ Spectrum/band arrangements (WRC-19)

2012-2015

2016-2017

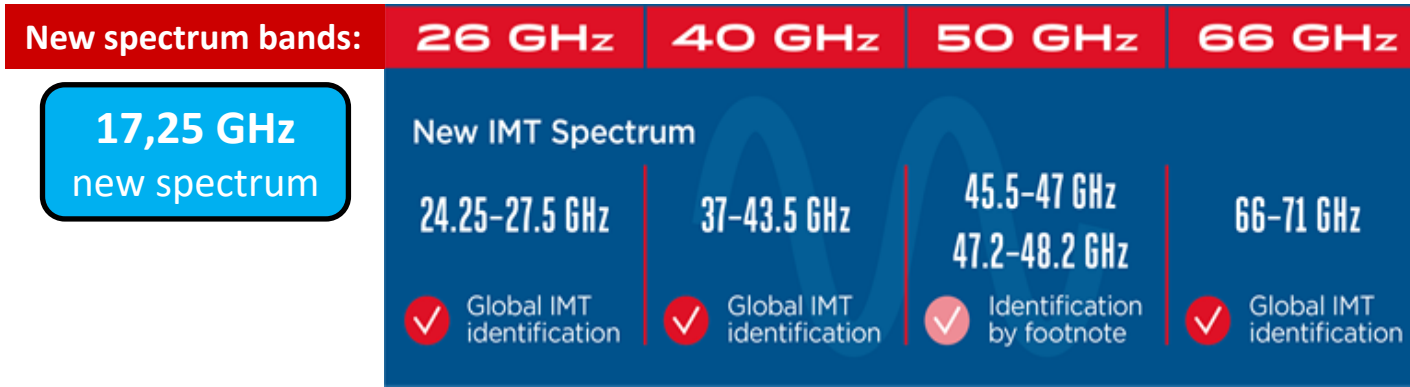
2018-2019

2019-2020

Setting the stage for the future:
vision, spectrum, and technology views

Defining the technology
Allocate the spectrum

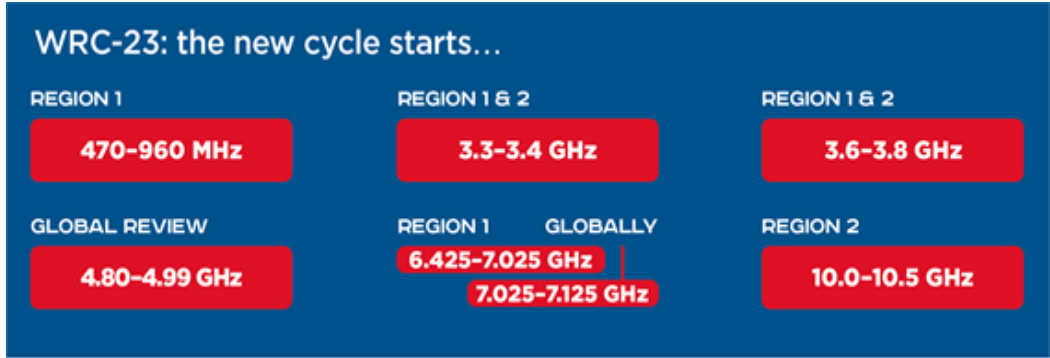
WRC-19: 5G related spectrum decisions












WRC-23: Studies to identify frequencies for new components of 5G, e.g. mobile connectivity by High Altitude IMT Base Stations (HIBS).

RLAN: Regulatory provisions revised to accommodate both indoor and outdoor

3 new bands to study in the range 4-20 GHz



5G Bands – Globally and Europe (CEPT)


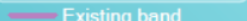
	<1GHz	3GHz	4GHz	5GHz	24-30GHz	37-50GHz	64-71GHz	>95GHz
	600MHz (2x35MHz) 900MHz (2x3MHz) 2.5/2.6GHz (B41/n41)		3.1-3.45GHz 3.45-3.55GHz 3.55-3.7GHz	3.7-4.94GHz 4.98GHz 4.99GHz	5.9-7.1GHz	24.25-24.45GHz 24.75-25.25GHz 27.5-28.35GHz	37-37.6GHz 37.6-40GHz 47.2-48.2GHz	57-64GHz 64-71GHz >95GHz
	600MHz (2x35MHz)		3.475-3.65 GHz 3.65-4.0GHz		26.5-27.5GHz 27.5-28.35GHz	37-37.6GHz 37.6-40GHz	57-64GHz 64-71GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz	5.9-6.4GHz	24.5-27.5GHz		57-66GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz		26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz		26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.46-3.8GHz		26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.6-3.8GHz		26.5-27.5GHz		57-66GHz	
	700MHz 2.5/2.6GHz (B41/n41)		3.3-3.6GHz	4.8-5GHz	24.75-27.5GHz		40-43.5GHz	
	700/800MHz 2.3-2.39GHz		3.4-3.42GHz 3.7GHz 4.0GHz	5.9-7.1GHz	25.7-26.5GHz 26.5-28.9GHz 28.9-29.5GHz	37.5-38.7GHz	57-66GHz	
			3.6-4.1GHz 4.5-4.9GHz		26.6-27GHz 27-29.5GHz	39-43.5GHz	57-66GHz	
	700MHz		3.3-3.6GHz		24.25-27.5GHz 27.5-29.5GHz	37-43.5GHz		
			3.4-3.7GHz		24.25-27.5GHz	39GHz	57-66GHz	

EC Implementing Decisions

- (EU)2017/899 **700 MHz** already available; networks launched: 9*
- (EU)2019/235 **3.6 GHz** already available; networks launched: 12*
- (EU)2019/784 **26 GHz** licensing ongoing

* according to GSMA (08/2020)

©by Qualcomm (9/20)

New 5G band	
	Licensed
	Unlicensed/shared
	Existing band

Status of 5G Bands in Europe (CEPT)

European “5G pioneer bands”

700/3600 MHz → already available/deployed

26 GHz (24.25-27.5 GHz)

- EC-Dec. 2019/784 → to make available by EOY-2020
- ECC Report 317 on “Authorisation regimes other than individual rights of use: toolkit ...”
- Update of ECC-Dec. (18)06 on “the harmonised technical conditions for MFCN in the band 24.25-27.5 GHz” post WRC-19 (incl. Res. 750 limits starting from 1.1.24)

mmWaves

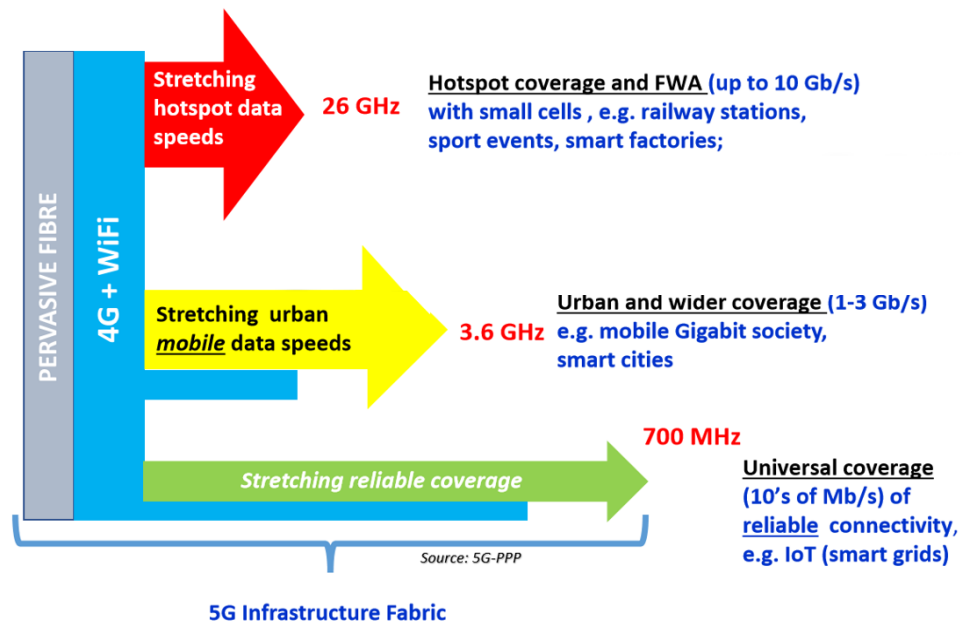
40 GHz (40.5-43.5 GHz)

- CEPT working on (with finalisation target of July 2021)
 - New CEPT Report: least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems)
 - New ECC Decision on MFCN harmonisation: comprising a band plan and technical conditions suitable for 5G

66 GHz (66-71 GHz)

- At CEPT level, technology neutral regulation already available in ERC/Rec. 70-03 allowing already the introduction of MFCN 5G systems in this band.

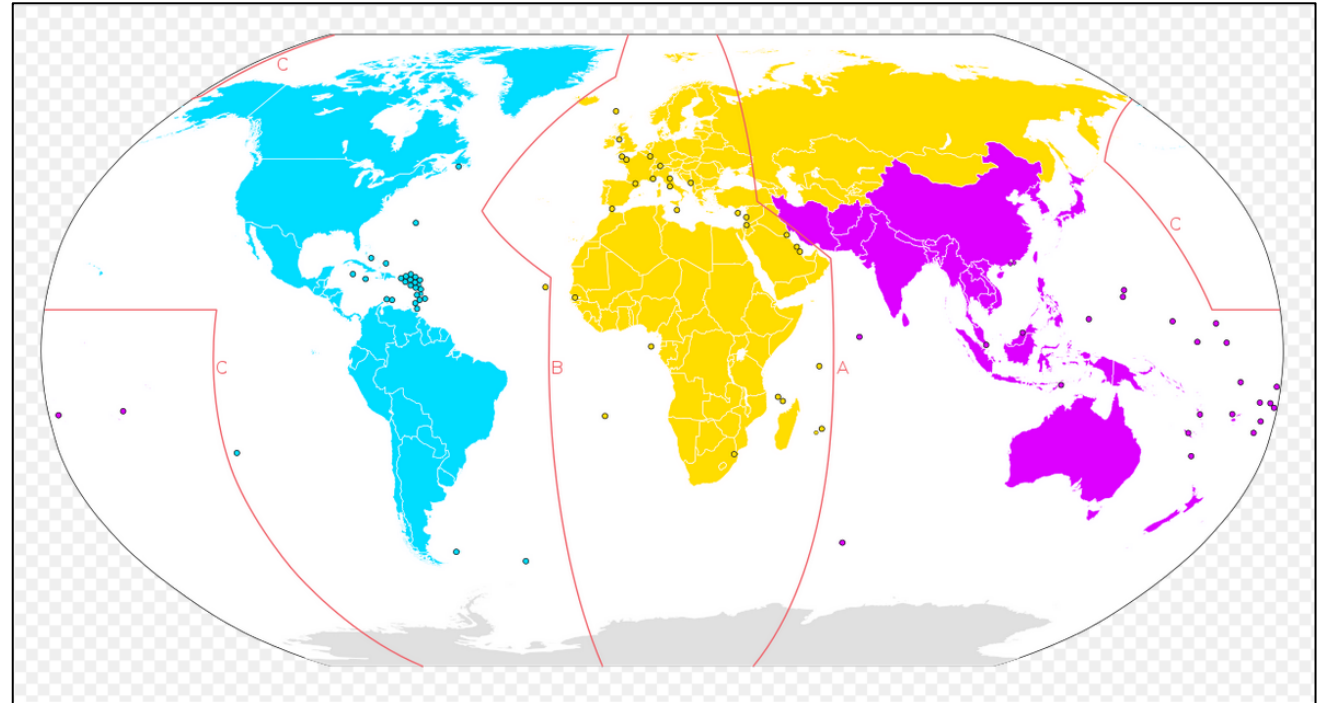
Note: CEPT is currently not supporting the implementation of IMT in the 50 GHz bands



BACKUP

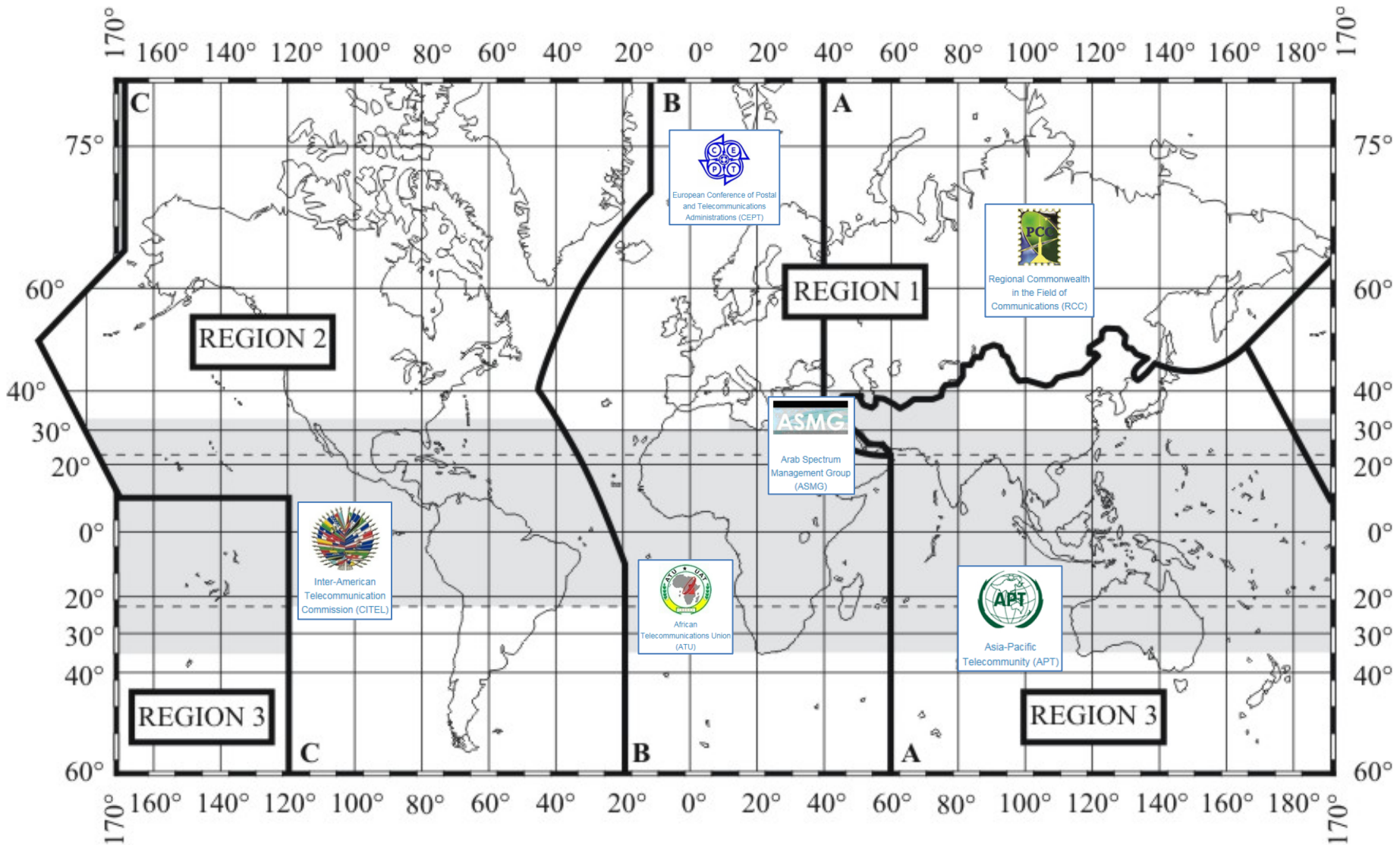
ITU-Regions

- Region 1
Europe, Africa, Russia
- Region 2
Americas
- Region 3
Asia-Pacific



Regional Groups

- | | |
|--|---|
| <ul style="list-style-type: none"> – RRC (<i>Region 1 & 3</i>) – CEPT – ASMG – CITEL – ATU – APG | <p>Regional Commonwealth in the Field of Communications</p> <p>Conference Européen de Poste et Telecommunications</p> <p>Arab Spectrum Management Group</p> <p>Inter-American Telecommunication Commission</p> <p>African Telecommunication Union</p> <p>APT (Asia Pacific Telecommunications) Conference Preparatory Group</p> |
|--|---|



Welcome to the
“City of Peace”
Opening speech of his highness,
Abd al-Fattah as-Sisi,
President of Egypt



WRC-19 facts

“Olympiads of
Spectrum Experts”

- **4 week** meeting in Egypt, Sharm El-Sheik (28.10.-22.11.19)
(2nd WRC outside Geneva, after WRC-2000 in Istanbul)
- **“Int. Conference Centre”** with >30 meeting rooms
- **>3400 delegates** from **165 nations** (administrations and sector members)
- **>350 sessions** in 6 committees, 15 working-groups, 34 sub-working groups and numerous drafting groups
 - Various night meetings – the longest until 03.15 morning (with next meeting starting at 09.00)
 - Overall, more than 1600 documents (temps and finals) have been produced
- The **Radio Regulations (RR-2020)** have been updated accordingly
 - 58 new / 35 updated resolutions became part of the new “RR”



<https://www.itu.int/pub/R-REG-RR-2020>

*As per a 2013 Council decision, the pdf
versions are posted free of charge*

„Nothing impossible in
the land of the pharaohs“
Closing speech of
ITU director **Mario Maniewicz**

Timeline for IMT-2020

