

# 26 GHz: a global 5G band

Harmonization of 24.25-27.5 GHz

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## Finding a pioneer band for 5G at mmWave

- In response to agenda item 1.13, CEPT considered mmWave bands for 5G.

*1.13 to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution 238 (WRC-15);*

- The first action was to find a pioneer mmWave 5G band to complement the primary 5G band at 3.4-3.8 GHz.
- CEPT needed to select a frequency band that has the potential to become a global 5G band.

## WRC-19 provides the context for 5G in mmWave

WRC-19 Agenda item 1.13 looks at new frequency bands for IMT in the range from 24.25 GHz to 86 GHz:

24.25-27.5 GHz

31.8-33.4 GHz

37-43.5 GHz

45.5-50.2 GHz

50.4-52.6 GHz

66-71 GHz

71-76 GHz

81-86 GHz

IMT (International Mobile Telecommunications) is the global standard that will deliver 5G

# The CEPT 5G roadmap makes 26 GHz a pioneer band

## Key messages on 26 GHz

### Harmonisation

Decision harmonising 26 GHz for 5G adopted (ECC Decision(18)06). It takes into account compatibility and protection of services in the same and adjacent bands

### IMT identification

Signal internationally that CEPT supports an IMT identification in 24.25-27.5 GHz and intends to harmonise this band in Europe for 5G before WRC-19

### Satellite use of 28 GHz

Signal clearly that Europe has harmonised the 27.5-29.5 GHz band for broadband satellite and is supportive of the worldwide use of this band for ESIM. This band is therefore not available for 5G.

## CEPT studied sharing and compatibility for 5G in 26 GHz

### Services in the 26 GHz band

Inter-satellite service

EESS & SRS earth stations (s-E)

Fixed satellite service (uplink)

Fixed service

### Services in adjacent frequency bands

EESS (passive)

Radio astronomy

# Results of studies: technical conditions in ECC Decision (18)06

Band plan

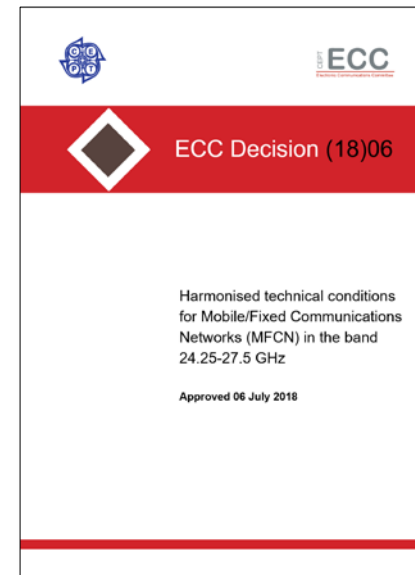
TDD band plan with 200 MHz blocks

Adjacent band emission limits to protect EESS (passive)

Base stations:  $-42$  dB(W/200 MHz)  
 Terminal stations:  $-38$  dB(W/200 MHz)

Antenna beam pointing

Main beam to be normally below horizontal; Mechanical pointing must be below horizontal



## These technical conditions should apply globally

Under WRC-19 Agenda item 1.13

- CEPT supports the unwanted emission limits of  $-42$  dBW/200 MHz Total Radiated Power (TRP) for base stations and  $-38$  dBW/200 MHz TRP for mobile terminals, into the 23.6-24 GHz band, to be included as mandatory limits in **Resolution 750**.
- Technical conditions on base station antenna beam pointing should be included in a **WRC Resolution** on IMT in the 24.25-27.5 GHz band.
- ITU-R should develop a **Recommendation** to assist administrations in ensuring protection of existing and future SRS/EESS earth stations operating in the frequency band 25.5-27 GHz

## Conclusions

- CEPT has chosen 24.25-27.5 GHz as the pioneer band for 5G in Europe
- Working in the framework of WRC-19, CEPT is proposing to identify 24.25-27.5 GHz globally for IMT
- CEPT has harmonized the 26 GHz band in Europe through ECC Decision (18)06, which contains all technical conditions for sharing and compatibility with other services
- CEPT supports the inclusion of these technical conditions in the Radio Regulations



# Thank you

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## Further information

CEPT 5G roadmap

<https://cept.org/ecc/topics/spectrum-for-wireless-broadband-5g>

ECC Decision (18)06

<https://www.ecodocdb.dk/download/5e74d0b8-fbab/ECCDec1806.docx>

ECC PT1 web page

<https://cept.org/ecc/groups/ecc/ecc-pt1/>