

ITU Forum

"Towards 5G Enabled Gigabit Society"

Athens, 11-12 October 2018

5G - Shaping the future of Broadcasting

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Head of TV Development
Greek Radio Television (ERT)

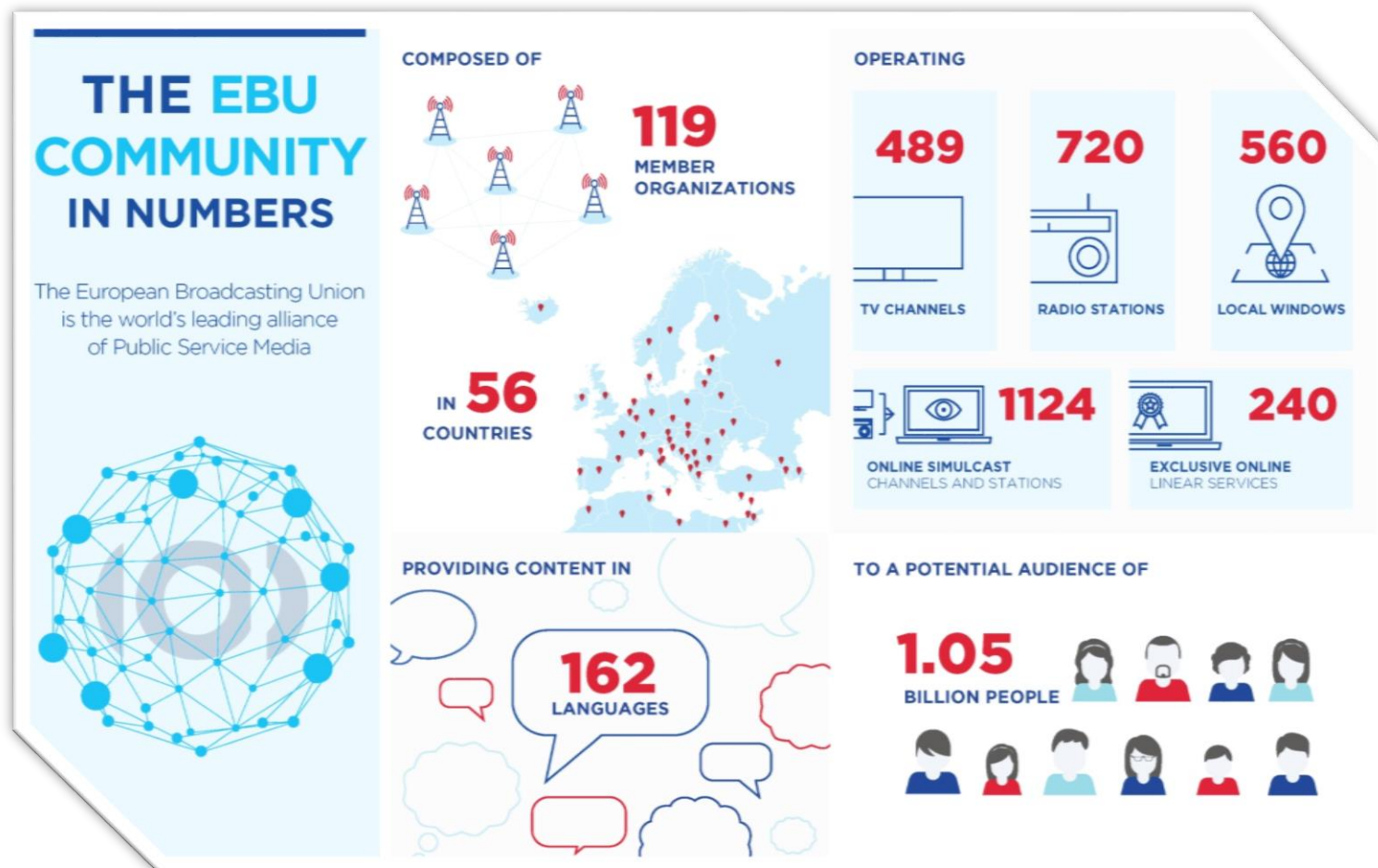
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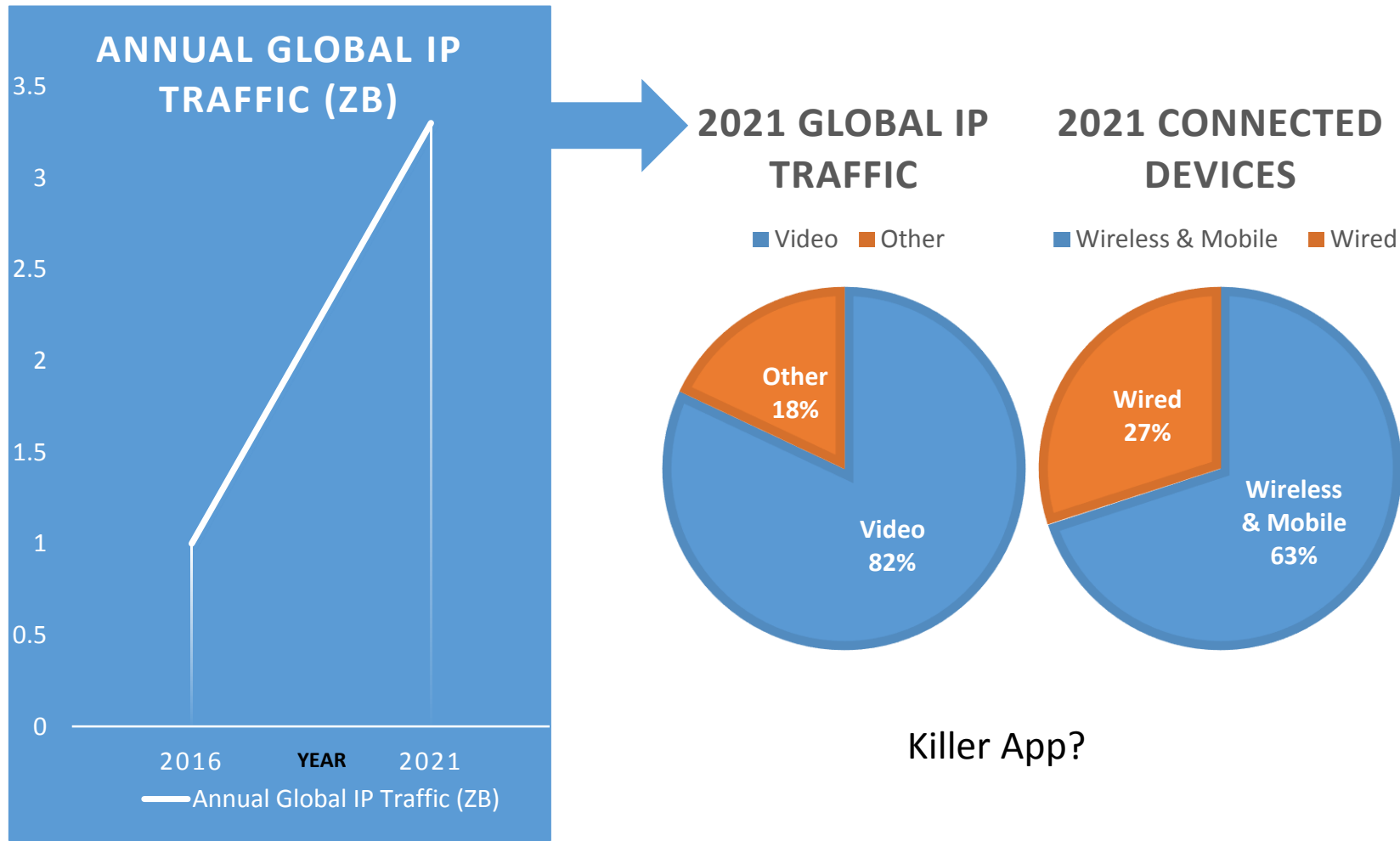
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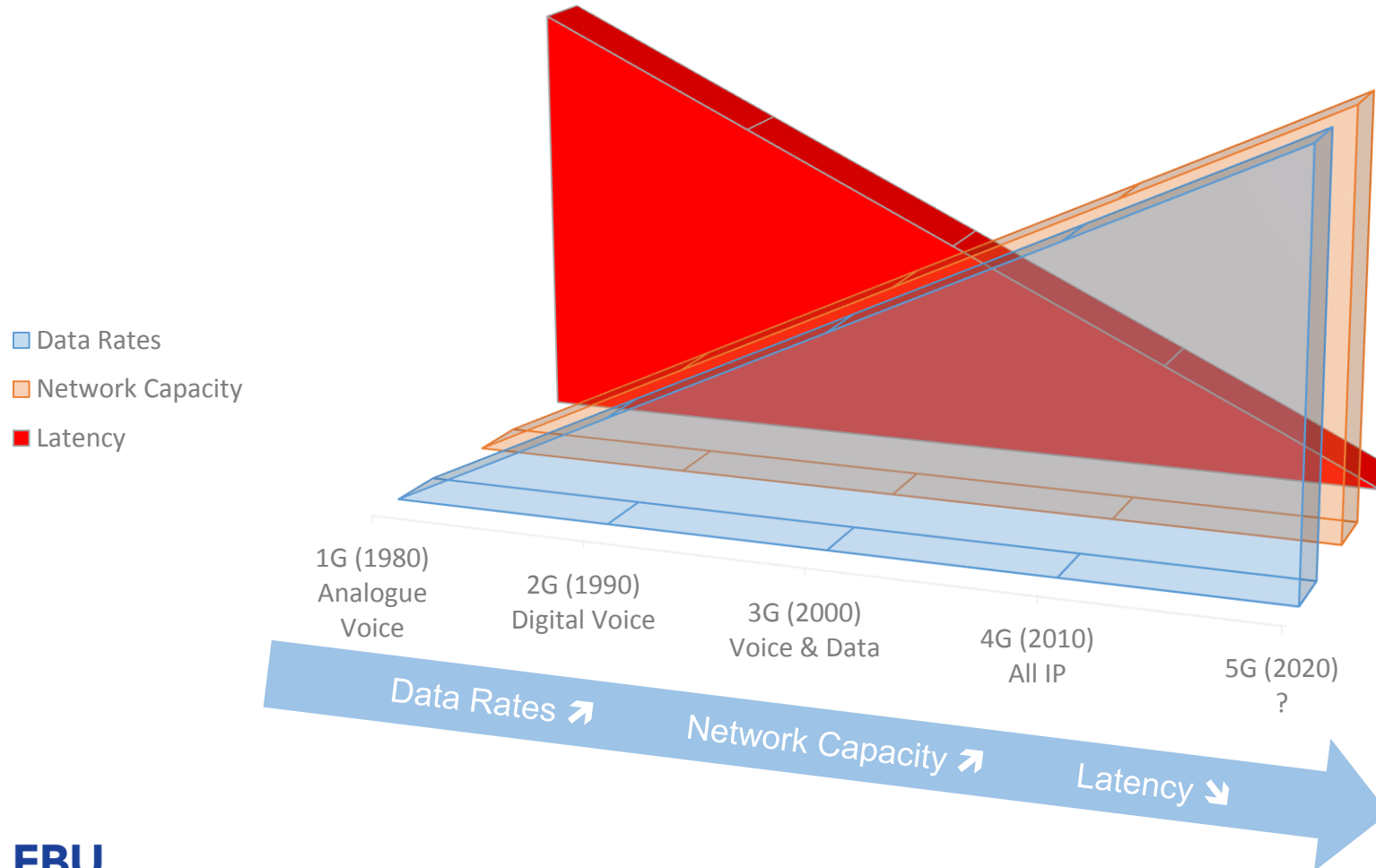
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Gigabit Society in a Zettabyte Era



Mobile Communications Generations





5G Goals



Higher Data Rates

KPI
>20 Gb/s (downlink)
peak data rates

Use case
enhanced Mobile
BroadBand (eMBB)

Download
< 2 sec



Larger Network Capacities

KPI
>1 M/km²
connections

Use case
massive machine-type
communications (MMTC)

Connect
humans
& devices

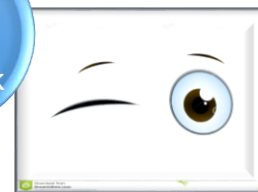


Lower Latency

KPI
<1 ms
latency

Use case
ultra-reliable low-latency
communications (URLLC).

respond
< 1/100
eye blink



Network Slicing

LTE Broadcast

Evolved Multimedia Broadcast Multicast Services (eMBMS)

- A point-to-multipoint interface specification for cellular networks.
- One source to many recipients, at the same time, in a given area.
- Time multiplexed with unicast traffic.
- Use cases:
 - Broadcasters.
 - Public Safety Services.
 - Mobile Network Operators.



5G & EBU

Strategic Program “Future Distribution” groups

- Mobile Technologies and Standards (MTS).
- 5G in Content Production (5GCP).
- 5G Deployments.

High level requirements

- Free2air Reception: free to air linear TV without SIM cards.
- Standalone eMBMS Network: operation using entire capacity of a carrier.
- Predictable and sustained QoS.
- Large Coverage Areas.
- Flexible Use of Network Capacity (incl. 100% broadcast).
- Fixed and Mobile Reception.
- Mixed Unicast/Broadcast Use (Shared Network).

3GPP Releases (14+)

3GPP Release 14 (Summer 2017)

- All high level requirements of Broadcasters.
- eMBMS → FeMBMS (Further evolved Multimedia Broadcast & Multicast Services).
- 4G (LTE).

3GPP Release 15 (June 2018)

- First release with some 5G features.
- New radio interface → 5G New Radio (5G-NR).
- No broadcast mode in 5G-NR.
- All LTE eMBMS features from 14.

3GPP Release 16.

- Joint efforts of Broadcasters and Mobile Industry to develop further LTE MBMS features to meet the requirements of 3GPP Tech Report TR 38.913 (Scenarios and Requirements for Next Generation Access Technologies).

Trials & Tests on MBMS

Stakeholders

- Public service broadcasters.
- National and regional governments.
- Regulators.
- Mobile network operators.
- Equipment manufacturers.

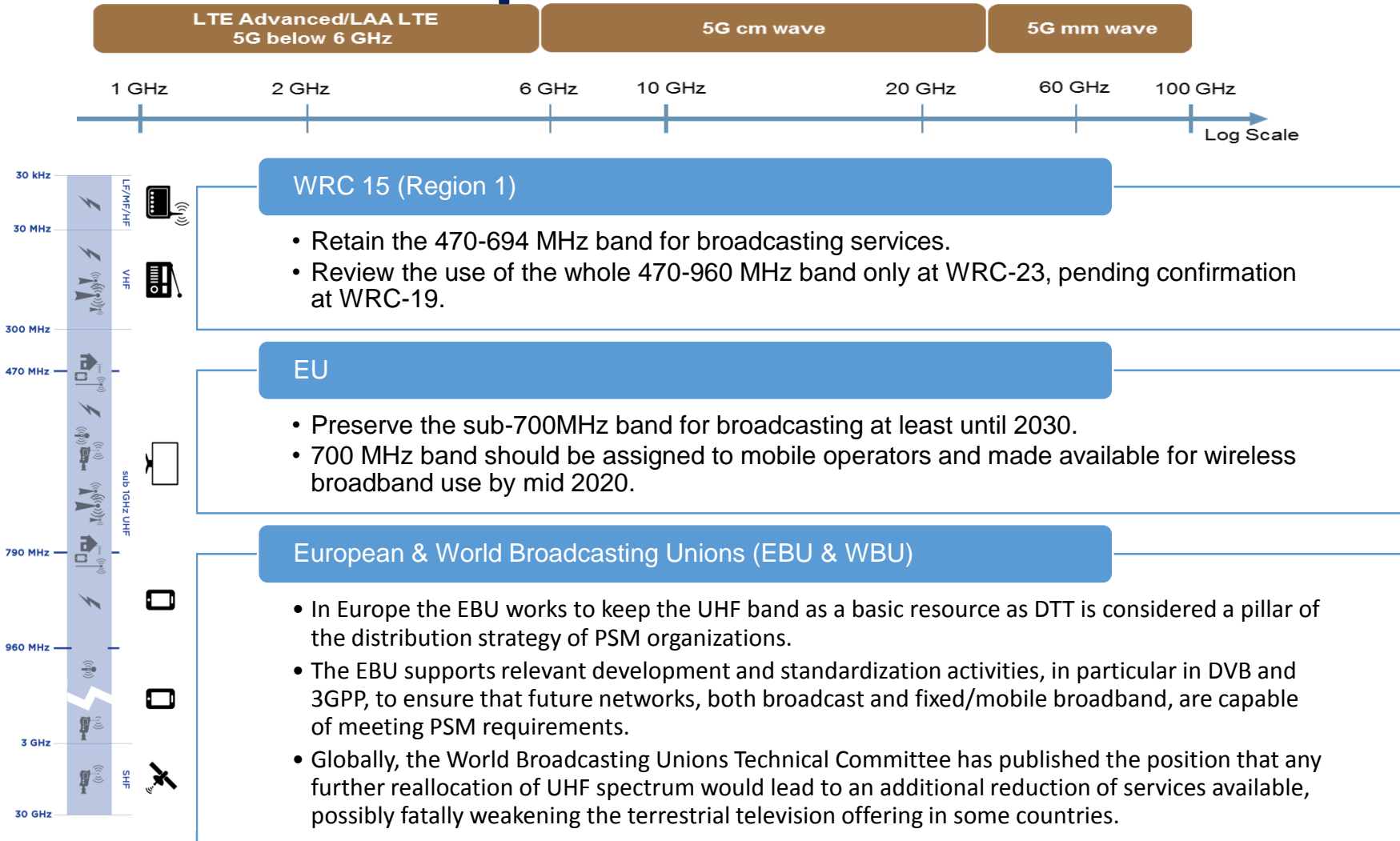
Technologies

- Rel-14 FeMBMS & EnTV.
- eMBMS from 3GPP releases prior to Rel-14.
- Pre-standardization technologies.

Examples

- Tower Overlay over LTE-Advanced+ (TOoL+) in two field trials in Paris, France, and the Aosta Valley, Italy.
- UK's "5G RuralFirst" project, integrates spectrum sharing strategies for 5G; (Autonomous tractors and farmland drones and radio on phones).

Radio Spectrum Positions



Thank you

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