Spectrum for 5G

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Corporate Strategy
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Dynamic Spectrum Access Networks (DySPAN 2015)

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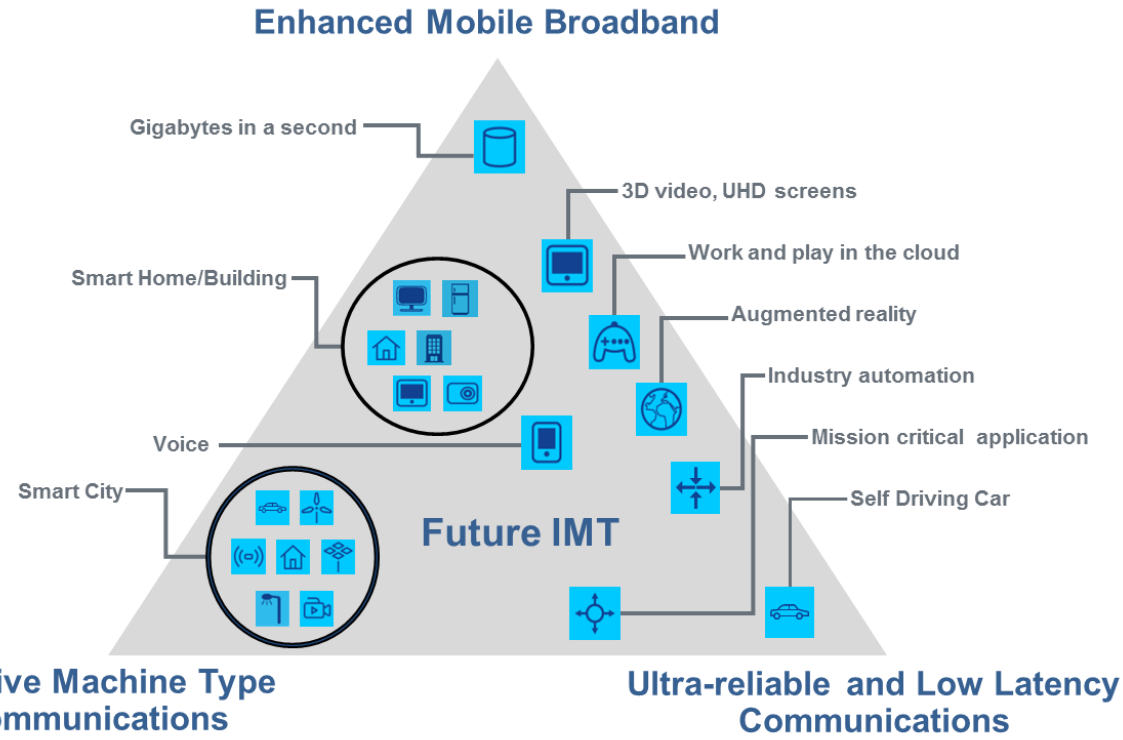
5th generation of mobile technology

Source: ITU-R[1]

- According to the ITU:

"IMT for 2020 and beyond is envisaged to expand and support diverse usage scenarios and applications that will continue beyond the current IMT."

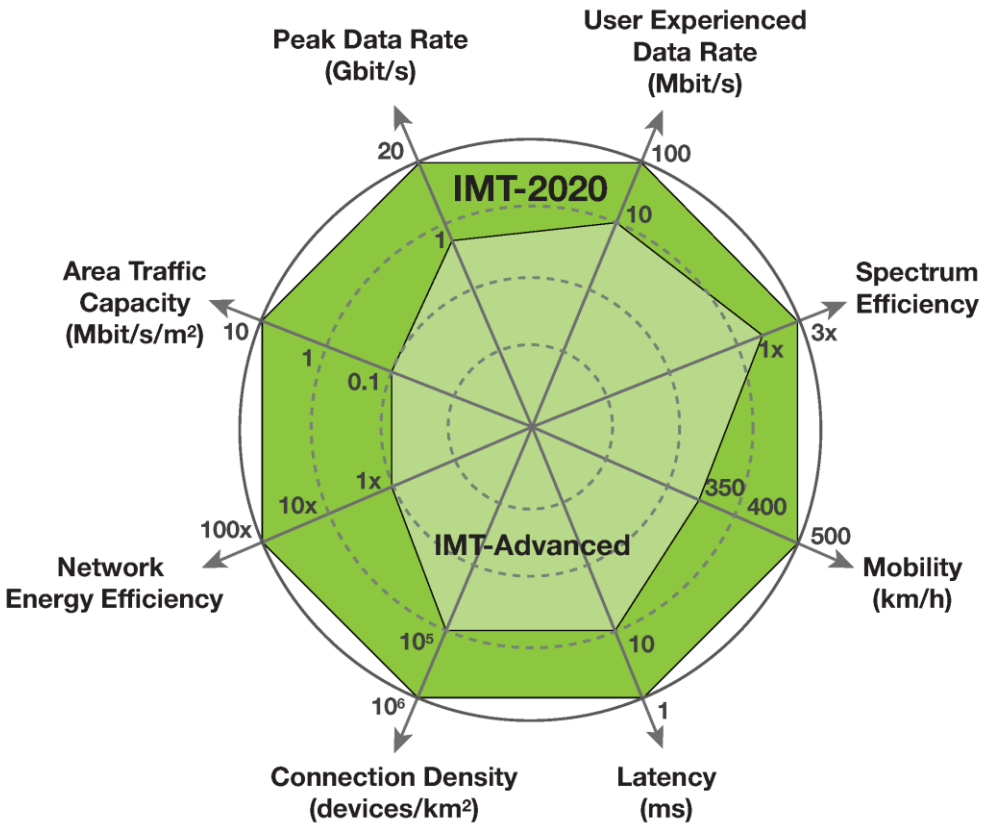


1 ITU WP-5D, "IMT Vision: Framework and overall objectives of the future development of IMT for 2020 and beyond," June 2015.

5G capabilities

Source: ITU-R[1]

- Energy efficiency: 100× IMT-A
- Area traffic capacity: 10 Mbps/m^2
- Mobility: 500 km/h
- Latency: 1 ms
- Connection density: 10^6 devices/km^2
- User experienced data rate: 100-1000 Mbit/s
- Peak data rate: 20 Gbit/s
- Spectrum efficiency: 3× IMT-A

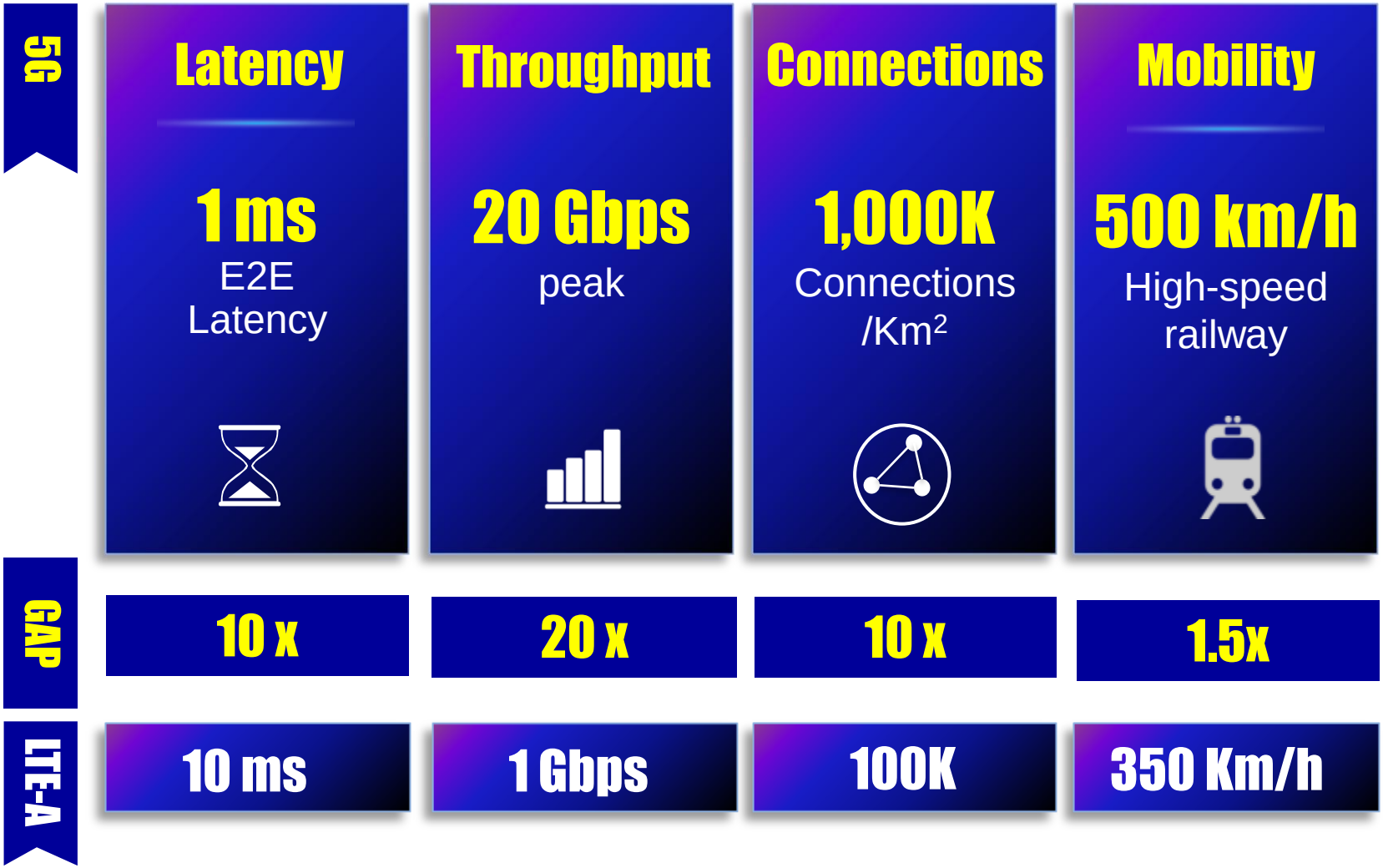


- 5G to be standardized at 3GPP from 2016.

1 ITU WP-5D, “IMT Vision: Framework and overall objectives of the future development of IMT for 2020 and beyond,” June 2015.

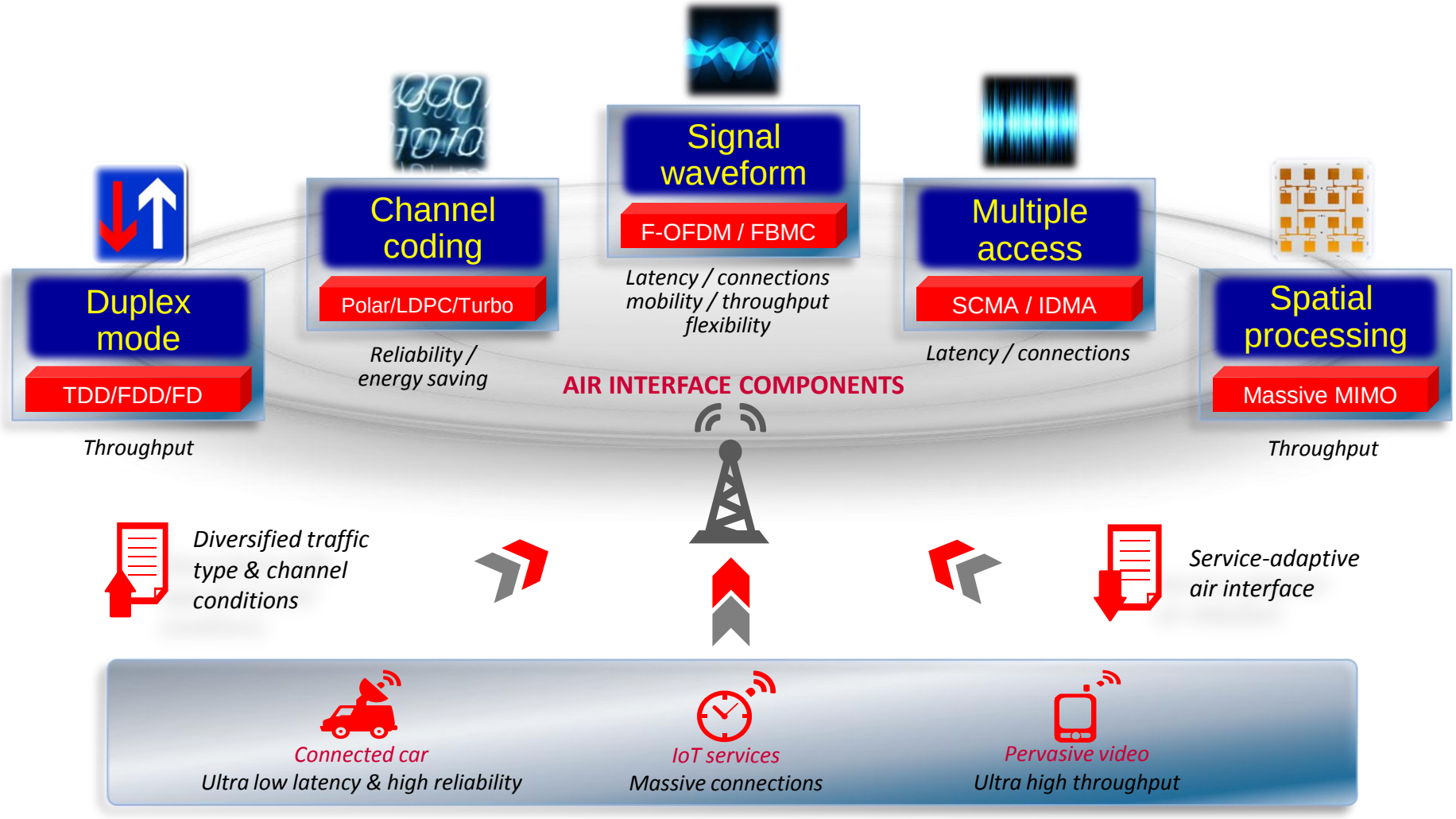
Diverse challenges for 5G

Summary



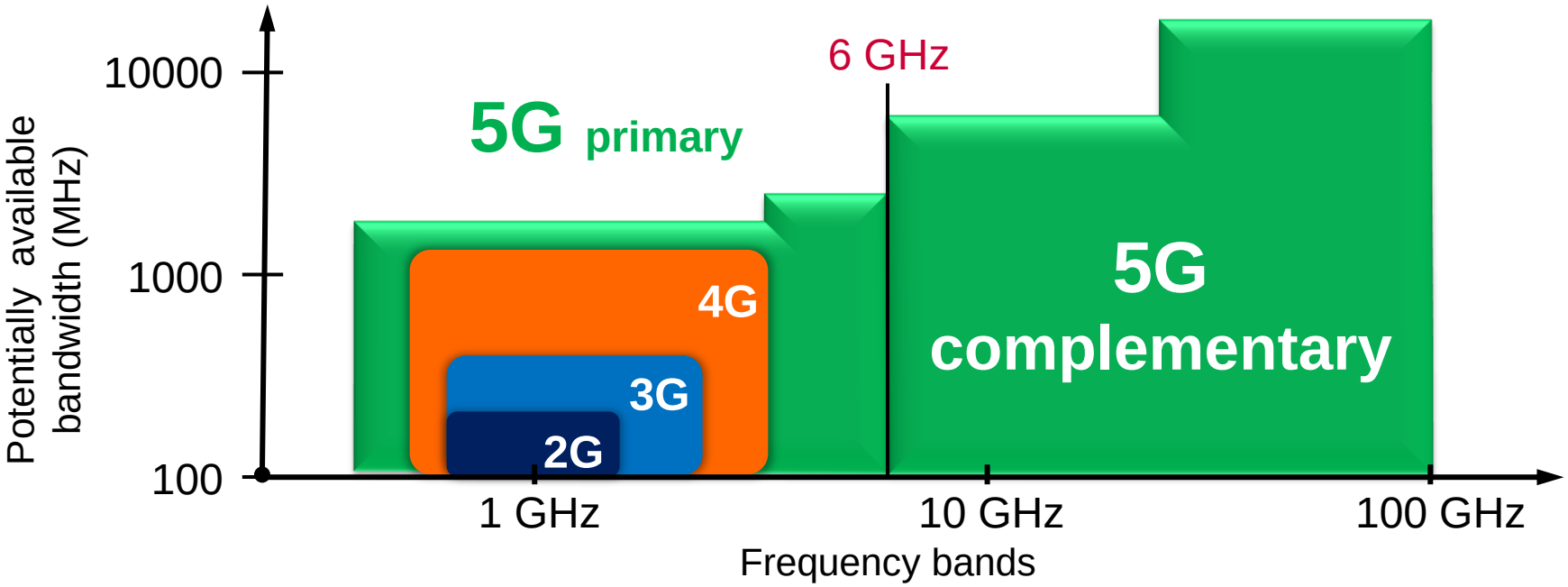
A “new” air-interface

Sufficiently flexible to support a range of applications



Spectrum landscape

- Spectrum below 6 GHz remains the primary range for IMT.
- Spectrum above 6 GHz is required for larger bandwidths to support demanding data rates expected from 5G.



Conclusions (1)

- 5G is driven by the need to support a variety of services, from enhanced MBB (HD audio-visual content), to the IoT and machine type communications (e.g. for vertical industries).
- We encourage administrations to ensure availability of sufficient and suitable 5G spectrum below 6 GHz. We consider sub-700 and the C-Band to be important in this respect for 4G+ and 5G.
- We encourage administrations to support the study of IMT designations in the 6-100 GHz range, with the objective of ensuring global harmonization.

Conclusions (2)

- We believe that the specific bands above 6 GHz to be considered for future IMT at WRC-19 should consist of both low and high frequencies over the 6-100 GHz range.

- In particular, we believe that studies should include:

  - The 6-30 GHz range, from the perspective of superior propagation characteristics.

  - The E-Band (71-76/81-86 GHz) from the perspective of the available large contiguous bandwidths.

- It is important for administrations to account for spectrum sharing mechanisms and regulatory measures to unlock spectrum on a shared basis. Availability of information on extent of existing use is paramount.

Thank you

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