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5G PPP Workshop “Spectrum for 5G”

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Wrap up - Conclusions

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Spectrum for 5G applications

- EC update on spectrum orientations:
 - ➔ UHF Decision on 25 May 2017: towards 700MHz harmonization
 - ➔ Recommendations for vertical applications: IoT, ITS & V2V, Audiovisual
- Automotive applications: 5GAA.
Bosch: “Sharing solutions & interoperability are much better than coexistence...”
- NGMN Spectrum White Paper & Recommendations on further bands: 32 GHz & 37GHz – 43.5GHz

Millimetre wave technology

- METIS-II: → Target 5G Spectrum: capacity, coverage, reliability (dedicated spectrum)
 - Spectrum at lower frequencies is a baseline for 5G coverage of diverse deployment scenarios; mmW spectrum will be used in more specific use cases (hot spots)
- mmMAGIC: Mobility is the key challenge. mmW systems must comprise directional beamforming, in order to counter the high path loss and to boost tracking accuracy
 - Nv antennas needed to combat path loss
- Samsung: Early pilot/trials 5G deployments in Asia, and field tests in Korea and Japan

Management of 5G Spectrum

- Predictability of the licensing process is key, as well as the increase in duration of licenses
- Sharing of spectrum to be encouraged:
 - sub-licensing, sub-leasing
 - dynamic spectrum access (DSA)while protecting the existing services (satellite, ...)
- Satellite: part of 5G ecosystem (backhaul for 5G,...). Stability requested in Ka/Ku bands

Timely access to spectrum (1)

- 5G-IA: Leveraging 5G pioneer bands in EURO 2020 cities:
 - 700MHz: large area coverage with outdoor-to-indoor penetration
 - 3.4-3.8 GHz: dense urban coverage + airport + stadium + public transport
 - 26 GHz: coverage in selected hot spots (airport, stadium, press center)
 - Vertical industries can benefit from pioneer bands by participating in the pan-european trials...
 - New investments: « 5G is an addition, not a substitution »; no need to re-invest
- ➔ Existing technologies & accesses can be re-used...

Timely access to spectrum (2)

- Bosch: for autonomous vehicles, **speed, latency, reliability and mobility** are necessary all together
➔ a key challenge for 5G...
 - pricing is also an important issue
- DT: at 700 MHz, New Radio or LTE Evolution ?...
- SES: be careful in the 26 GHz, compatibility studies are ongoing in ITU, due to existing services

Thank you !

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