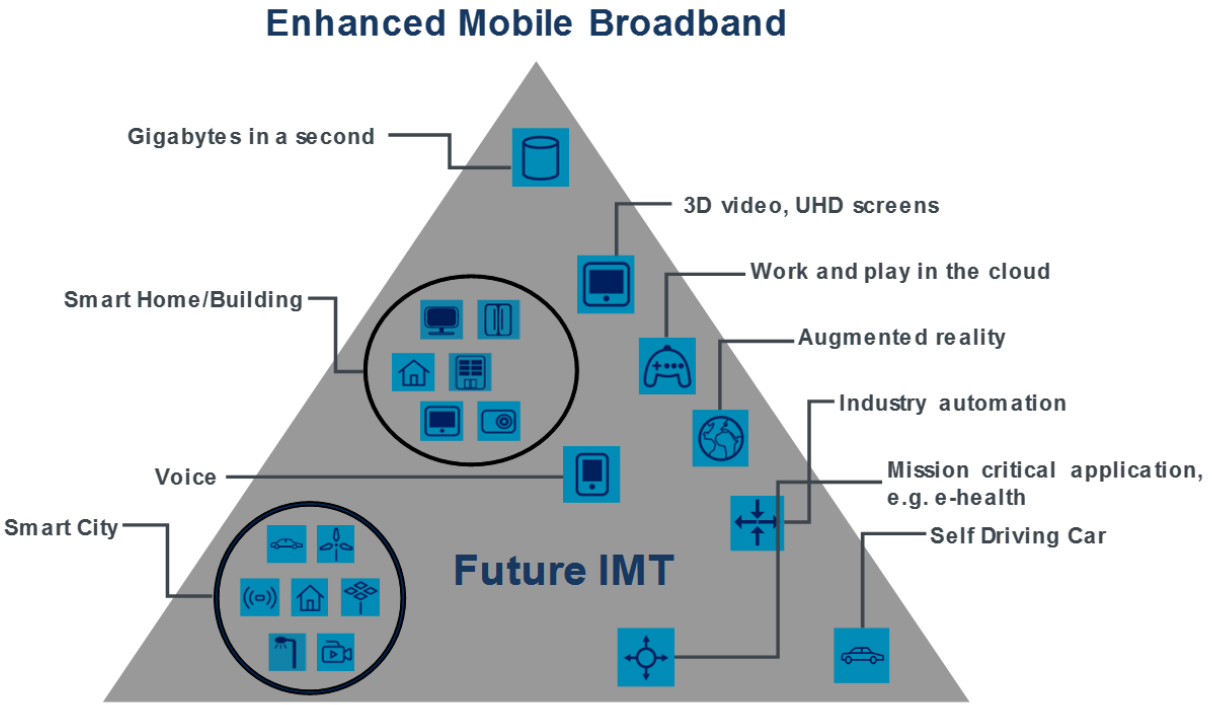
5G, EMF & Health

ITU Workshop, Warsaw, Poland, 5 December 2017

~ Chaesub Lee, TSB Director

5G usage scenarios



ITU standards & EMF

Ensuring safety

- ITU assists compliance with safety limits for human exposure to EMF
- e.g. ITU standards: ITU-T K.52, K.61, K.62, K.90, K.91, K.100

Building trust

- EMF Estimator Software calculates exposure levels in vicinity of radiocomms stations (ITU-T K.70)
- Long-term measurements of EMF & guidance to report related info to the public (ITU-T K.83)
- EMF Guide & Mobile App – 6 languages – EMF info accessible to all

EMF & 5G

ITU-T Study Group 5 (Environment and circular economy)

- New standardization project: “Environmental requirements of 5G systems”

Way forward: ITU-ETSI workshop on environmental requirements of 5G systems (23 Nov ’17)

- Ultra-lean 5G system design: Gains in energy efficiency with long-duration sleep modes
- Massive MIMO: Gains in network capacity and range
- Antenna design: Innovation needed to increase energy efficiency in 5G era
- EMC: Existing EMC standards do not cover all proposed 5G radiofrequencies
- Resistibility: Protection against EM disturbances (e.g. lightning) continues to be a challenge
- **Way forward for EMF (continued)…**

EMF & 5G

Way forward for EMF:

- Smart 5G macro and small cells to increase efficiency and keep EMF low
- ITU to provide leadership in the harmonization of EMF exposure limits
- ITU to provide government and industry with updated EMF information and frameworks for compliance relevant to 5G environment

Setting the framework:

- New supplement (L.Suppl.36): 5G technology and human exposure to EMF
- New standard (undergoing approval): Electromagnetic environment of wearable devices

e-Health

ITU-T H.810 series:

- Personal connected health devices (medical-grade wearable e-health devices)
- Continua design guidelines in collaboration with PCH alliance
- Blood pressure cuffs, glucose monitors, weight scales and a wide range of activity trackers

High-level data domains:

- ITU-T H.860: Multimedia e-health data exchange services: Data schema and supporting services
- ITU-T H.861.0: Requirements on communication platform for multimedia brain information
- Under development: Telemedicine systems using UHD imaging (ITU-T F.Med-UHD)

Collaboration with WHO:

- Under development: Specification for safe music listening devices (ITU-T F.SLD)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