Upwards and onwards in Spectrum: From mm-wave mobile access towards Terahertz Communications

Dr. Maziar Nekovee

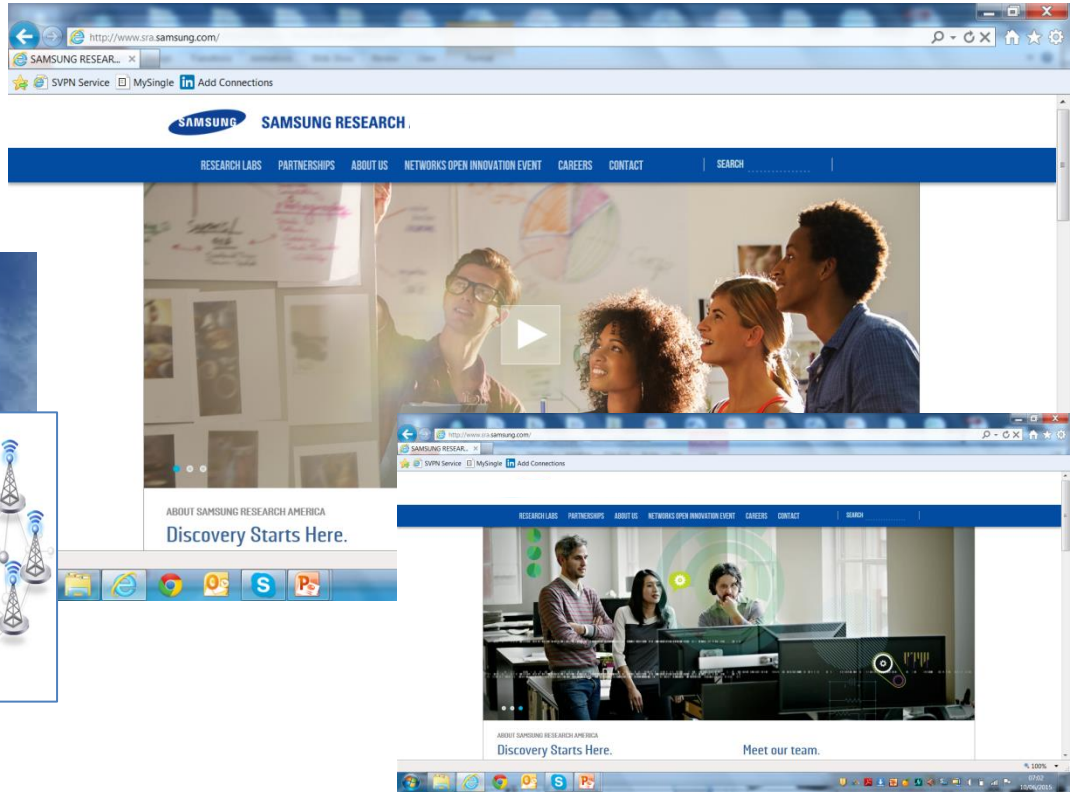
Head of 5G Research and Collaborations

Samsung Electronics R&D Institute UK

m.nekovee@samsung.com

Presented by Dr. David Gutierrez

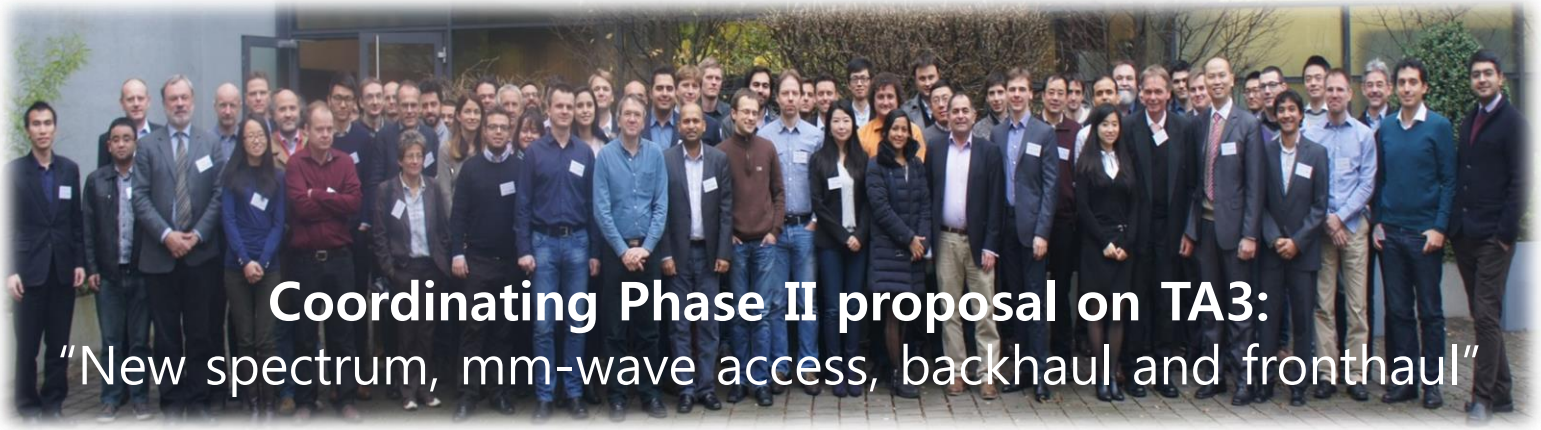
R&D is at the heart of everything we do



European 5G activities

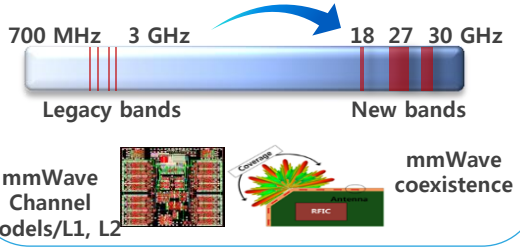
- **5G (pre)-standards research, focusing on strategic collaborations with industry and academia on next generation mobile communication system (5G)**
  - European hub of Samsung's global 5G R&D
  - Key roles in telecommunication standards
  - Radio Spectrum regulation
  - Mobile devices and smart TV's
  - Automotive

- **Key player in EU's Horizon 2020 5G PPP Phase-I**
  - Elected member Horizon 2020 5G PPP Association
  - Coordinator of 5G PPP mmMAGIC https://5g-mmmagic.eu
  - 5G PPP METIS-II
  - 5G PPP FANTASTIC-5G
  - 5G White Papers and 5G SRIA contributor

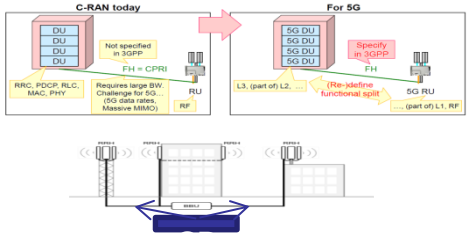


5G Technologies we are developing

5G mm-wave (cellular & WiFi)

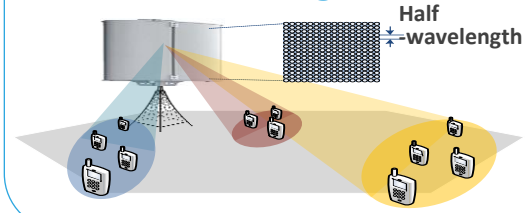


5G C-RAN enables

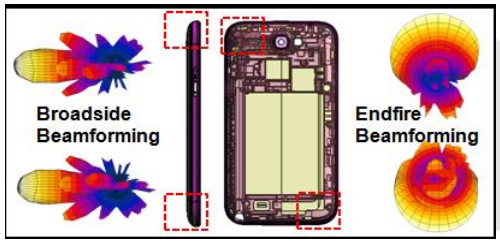


5G Verticals

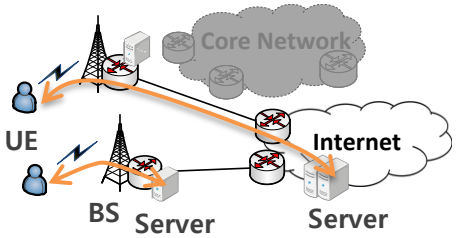
< 6 GHz Massive MIMO/FD MIMO



5G devices/Chipsets

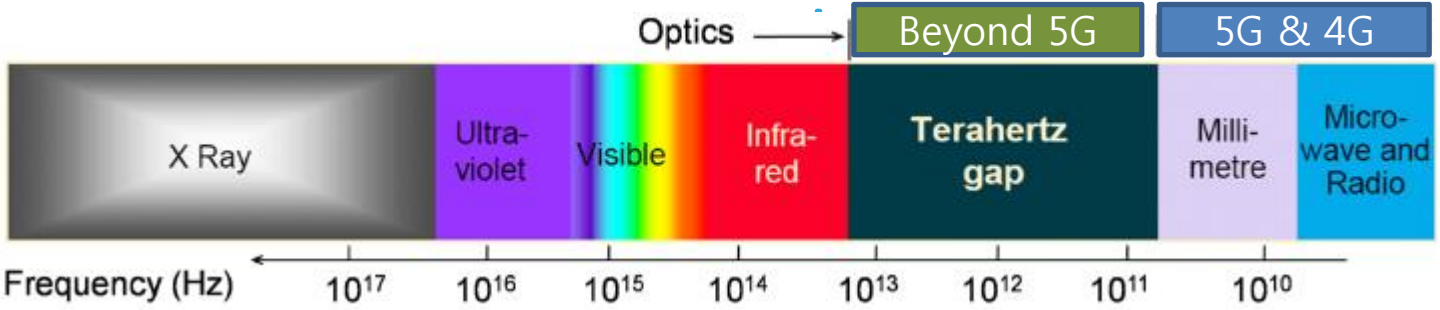


5G Network Architecture

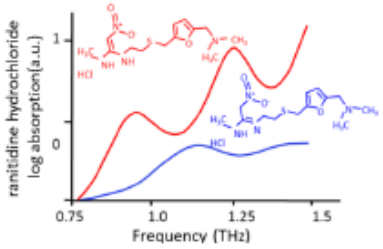


Open to new collaborations 5G PPP & “beyond 5G”

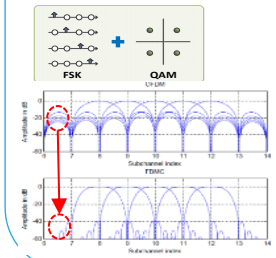
Terahertz communications

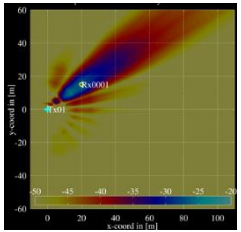


Channel models

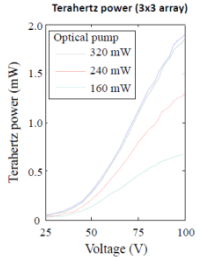


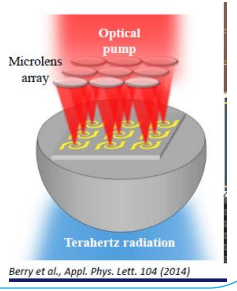
Waveforms & multi-antenna





Higher radiation power





Berry et al., Appl. Phys. Lett. 104 (2014)

THANK YOU!