V 2.0

5G Update
2021 and beyond

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Services and Evolution

- **List of 5G Service Enablers**
  - Higher Throughput (what a surprise :-))
  - But watch out: 5G is not faster just because it is (4+1)G!
  - Focus on lower latency (target: < 1 ms e2e)
  - Beyond Cellular: 5G also contains FWA, Industry, IoT Car-2-X
  - Virtualization paves the way to entirely new service areas
- **Cartoon: 5G around the World**
- **Network Slicing**
- **Mobile Edge Computing**
- **What about Voice in 5G?**
- **What about IoT and mMTC?**

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What is the Position of 5G in June 2021?

- **Some Numbers**
  - No. of Operators preparing for or already offering 5G Services
  - No. of announced / commercially available UEs
  - Types of 5G UEs currently available
- **Which Frequency Bands do these UEs support?**
- **Situation in the US: Auction of Band n77**
- **Some unpleasant Remarks & Concerns in the middle of 2021**

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Important Developments within the next Two Years

- **What to expect in the Years 2021 – 2023**
- **5G Stand Alone: Option 2 vs Option 4**
- **The mysterious 5G Core Network**
- **Kubernetes and 5GC Cloud Operation**
- **Unpredictable yet: The impact of ORAN**
- **Campus Networks and their Implementation Options**
- **5G over Satellite?**

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Technical Updates w/ R16 and R17 (Selection)

- **Technical Enhancements with 3GPP Release 16**
  - NR-U
  - 256-QAM for FR2
  - NR-Mobility
  - New Configurations for CA and DC
  - NR-Positioning
  - UE Power Saving Techniques
  - 2-Step RACH Procedure
- **Technical Enhancements with 3GPP Release 17**
  - New frequency ranges (NR beyond 52.6 GHz)
  - Sidelink enhancements
  - IAB enhancements
  - NR support over non-terrestrial networks
  - RedCap / NR-LIGHT