



IEEE 802 EC 5G/IMT-2020 SC draft report

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5G SC report

Philosophy

- Include and describe all options
 - That are derivatives of the four requested cases
- Expand cost/benefit for each
 - **In a prioritized manner**
- SC conclusion recommended
 - Consensus preferred on preference
 - not required
 - Worst case straw poll preference
 - Recommend way forward for preference (s)

What are “costs and benefits”?

- **This is a cost-benefit analysis**
 - But without monetary cost, only relative costs
 - A quantitative pros vs cons
 - Strengths, Weaknesses, Opportunities and Threats
- **Brainstorm all costs and benefits**
 - E.g., resource cost, standards development cost, installation cost, operational cost, energy cost, etc.
 - Are there unexpected costs?
 - Are there unanticipated benefits?
- **Estimate value relative to a baseline**

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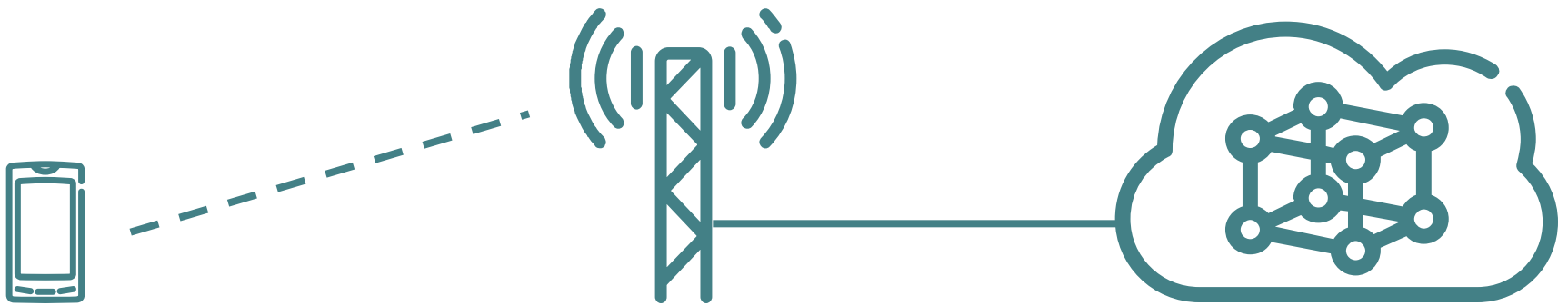
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What is 5G?

Will the SC define 5G?

- **There will be two contexts**
 - **IEEE 5G**
 - Some sort of description will be required
 - This may include use cases and requirements
 - **IMT-2020**
 - This is (or will be) defined by ITU-R

5G architecture



... simplified

What are all the derivatives
of options?

1. IEEE 5G

- **Description**

- Not related to IMT-2020
- At least simplified architecture , but likely more
- A combination of multiple IEEE standard technologies, profiled in a single standard

- a) **IEEE 802 wireless 5G**

- i. 802.11 only
- ii. 802.15 only

- b) **All IEEE 802 5G**

- c) **All IEEE 5G**

2. IMT-2020 - single technology

- **Description**
 - Just radio interface of simplified architecture . Single or multiple singles...
 - IMT-2020 proposal by IEEE
- a) **Hotspot (<6GHz)**
 - i. IEEE 802.11ax
 - ii. IEEE 802.11ac
 - iii. IEEE 802.11n
- b) **Hotspot (>6GHz)**
 - i. IEEE 802.11ay
 - ii. IEEE 802.11aj
 - iii. IEEE 802.11ad
- c) **Low latency – IEEE 802.11p**
- d) **MTC – IEEE 802.11ah**
- e) **P802.15.3d**
- f) **100Gb/s THz project**
- g) **P802.15.7 REVa, Optical Wireless Communications,**
- h) **P802.15.4 family.**

3. IMT-2020 – set of technologies

- **Description**
 - At least radio interface of simplified architecture , but likely more
 - A combination of multiple IEEE 802 standard technologies, profiled in a single standard
 - IMT-2020 proposal by IEEE
- a) **IEEE 802.11**
 - i. Hotspot (<6GHz) – IEEE 802.11 ax,ac,n
 - ii. Hotspot (>6GHz) – IEEE 802.11 ay,aj,ad
 - iii. Low latency – IEEE 802.11p
 - iv. MTC – IEEE 802.11ah
- b) **IEEE 802.11 with 802.1/3**
- c) **IEEE 802.15**
 - P802.15.3d
 - 100Gb/s THz project
 - P802.15.7 REVa, Optical Wireless Communications,
 - P802.15.4 family.
- d) **IEEE 802.11 with 3GPP 5G**
 - i. LWA
 - ii. LWIP
 - iii. New?

4. IMT-2020 - external proposal

- **Description**
 - Part of a complete architecture
 - A combination of IEEE 802 standard technologies with other technologies (e.g., 3GPP)
 - IMT-2020 proposal by external party (e.g., 3GPP)
- a) **IEEE 802.11 with 3GPP 5G**
 - i. LWA
 - ii. LWIP

Next Steps

Contributions requested

- **Derivative options**
 - Expand list
 - Prioritize list

- **Report content**
 - Indicate which option
 - Expand costs and benefits