



IEEE 802 EC 5G standing committee

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Agenda for March meeting

- **Monday**
 - **Introduction (17-02) – Glenn Parsons**
 - Role of this standing committee
 - **802 5G Project analysis (36)**
 - **ITU-R IMT-2020 (10, 34) – Roger Marks**
 - **ITU-T IMT-2020 (37) – Glenn Parsons**
 - **IEEE 5G (35-01)– Patrik Slaats**
- **Tuesday**
 - **Contributions**
 - 802.1CM (38-01) – Janos Farkas
 - 802.1CF (39) – Max Riegel
 - 802.3 (40-01) - Marek Hajduczenia
 - 802.11 (41)– Joseph Levy
 - 802.15 (42) – Bob Heile
 - 3GPP RAN 2 (43) – Richard Burbidge
 - **Next Steps**
- **Wednesday**
 - **Scope revision**

Role of the 5G standing committee

Background

- **January IEEE 802 EC workshop discussion**
 - 5G standardization landscape
 - IMT process ([EC-16-10](#)) – Roger Marks
- **Scope developed for a 5G EC standing committee**
 - create a report for the EC to guide IEEE 802
 - Formalize SC as a type 2 EC subgroup
- **Motion approved by EC – Feb 8, 2016**
 - Chair appointed

Approved Scope

- **To provide a report on the following items to the EC:**
 - **Costs and benefits of creating an IEEE 5G specification**
 - **Costs and benefits of providing a proposal for IMT-2020, considering possible models of a proposal:**
 - as a single technology,
 - as a set of technologies,
 - or as one or more technologies within a proposal from external bodies (e.g., 3GPP)
- **During its lifetime, to act as the communication point with other IEEE organizations on this topic.**

Organization

- The committee is chartered for 6 months (i.e., due July 2016 at the 802 plenary) as an EC SC (type 2).
 - LMSC P&P section 5.6, item #2
 - The subgroup is responsible for assisting the Sponsor (e.g., drafting all or a portion of a document, drafting responses to comments, drafting public statements on standards, or other purely advisory functions).
- Any 802 WG voting member may participate as a voting member of the committee.

Operating practice

- **Leadership**
 - **Chair – Glenn Parsons**
 - **Secretary (for this plenary) – Max Riegel**
- **Consensus**
 - **Any voting, approvals will be done by the EC**
- **Attendance credit for 802 WGs**
 - **policy is per home WG**
- **Meetings**
 - **Face-to-face monthly**
 - **Conference calls weekly, as necessary**
- **Documents on [Mentor](#)**
 - **Post on EC mentor under “EC 5G SC”**
- **Mailing list on [IEEE Listserv](#)**
 - **STDS-802-5G@listserv.ieee.org**

Meetings

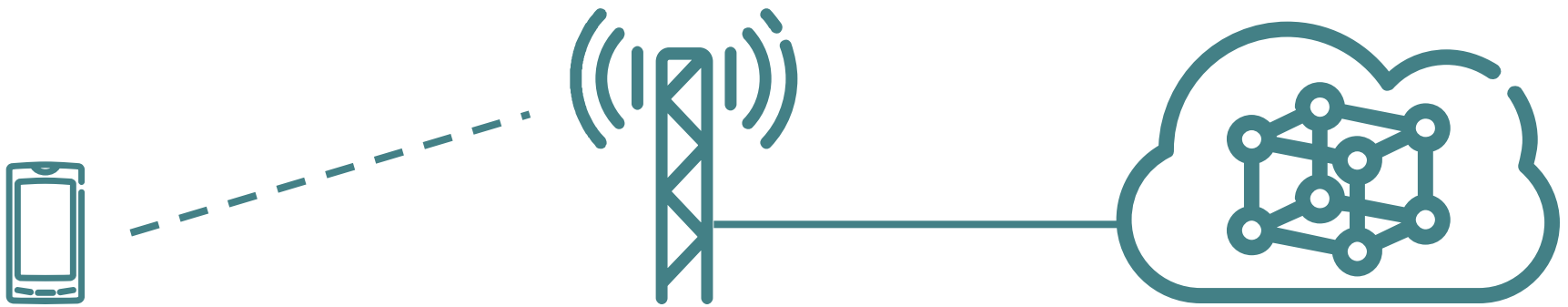
- **Face-to-Face Meetings *proposal***
 - March 14 & 15 – IEEE 802 plenary, Macau, CN
 - ~~April 22 – IEEE SA CAG, 5G workshop, Tokyo, JP~~
 - May 20 – IEEE 802 wireless interim, Waikoloa, HI
 - May 25 – IEEE 802.1 interim, Budapest, HU
 - June 15 – Ottawa, CA
 - July 25 & 26 – IEEE 802 plenary, San Diego, US
- **Conference calls**
 - **Schedule weekly**
 - Cancel if no agenda items
- **Details**
 - **To be announced**

Weekly Conference call times

- Starting March 30th for 1 hour
 - Alternating between 10am and 6pm each week
- Wednesday 10am Ottawa (ET)
 - 9am Dallas (CT)
 - 7am San Jose (PT)
 - 5pm Helsinki
 - 11pm Tokyo
 - **1am Wednesday, Sydney**
- Wednesday 6pm Ottawa (ET)
 - 5pm Dallas (CT)
 - 3pm San Jose (PT)
 - **1am Helsinki**
 - 7am Wednesday, Tokyo
 - 9am Wednesday, Sydney

What is 5G?

5G architecture



... simplified

Will the SC define 5G?

- No
- **But 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

What are the options we
have been asked to consider?

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, installation cost, operational cost, energy cost, etc.
 - Are there unexpected costs?
 - Are there unanticipated benefits?
- **Estimate value relative to a baseline**

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
- **Benefits**
 - ...
- **Costs**
 - ...

2. IMT-2020 - single technology

- **Description**
 - Just radio interface of simplified architecture
 - E.g., 802.11, 802.15.4, ...
 - IMT-2020 proposal by IEEE
- **Benefits**
 - ...
- **Costs**
 - ...

3. IMT-2020 - set of technologies

- **Description**
 - At least radio interface of simplified architecture , but likely more
 - Single or multiple radio interfaces
 - Management and Control
 - Backhaul/fronthaul
 - A combination of multiple IEEE 802 standard technologies, profiled in a single standard
 - IMT-2020 proposal by IEEE
- **Benefits**
 - ...
- **Costs**
 - ...

4. IMT-2020 - external proposal

- **Description**
 - **Part of a complete architecture**
 - multiple radio interfaces
 - Management and Control
 - Backhaul/fronthaul
 - **A combination of IEEE 802 standard technologies with other technologies (e.g., 3GPP)**
 - **IMT-2020 proposal by external party (e.g., 3GPP)**
- **Benefits**
 - ...
- **Costs**
 - ...

5G SC report

Philosophy

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

Proposed Table of Contents

- Introduction
- Options Considered
 1. IEEE 5G
 - Description
 - Benefits
 - Costs
 2. IMT-2020 – single technology
 - Description
 - Benefits
 - Costs
 3. IMT-2020 – set of technologies
 - Description
 - Benefits
 - Costs
 4. IMT-2020 – external proposal
 - Description
 - Benefits
 - Costs
- Conclusion

802 Project analysis

Initial potential 5G related projects

- 802.1
 - P802.1CF – OmniRAN architecture
 - P802.1CM – TSN for Fronthaul
- 802.3
- 802.11
 - P802.11ax – high aggregate throughput. High density of users.
 - IEEE Std 802.11ad – high individual throughput, short range.
 - P802.11ay – next generation of 802.11ad.
 - P802.11ah - <1 GHz for IoT requirements
- 802.15
 - P802.15.3d
 - 100Gb/s THz project
 - P802.15.7 REVa, Optical Wireless Communications,
 - P802.15.4 family.
- 802.16
 - 802.16.1
- 802.21
 - P802.21.1

Next Steps

Contributions requested

- **802 projects**
 - Indicate relationship to 5G
 - Indicate which options are applicable

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

Straw Polls

- **Should we meet again this week to discuss scope?**
 - **Yes – 14, No - 11**
- **Will you participate in conference calls?**
 - **Yes – 34, No - 2**
- **Will you participate in face-to-face meetings?**
 - **Tokyo – 3 , Waikoloa – 31, Budapest - 14, Ottawa - 12**
- **Will you make future contributions?**
 - **Yes -6**

~~Approved~~ Revised Scope A

- To provide a report on the following items to the EC:
 - Costs and benefits of creating an IEEE 5G specification, **using unlicensed spectrum**
 - Costs and benefits of providing a proposal for **IMT-2020**, considering possible models of a proposal:
 - as a single technology,
 - as a set of technologies,
 - or as one or more technologies within a proposal from external bodies (e.g., 3GPP)
- During its lifetime, to act as the communication point with other IEEE organizations on this topic.

~~Approved~~ Revised Scope B

- Consider mechanisms to ensure that IEEE 802 technologies have access to sufficient spectrum ~~to allow these technologies to be used as part of the NGN~~
- To provide a report on the following items to the EC:
 - Costs and benefits of creating an IEEE 5G specification, **identifying appropriate spectrum needs**
 - Costs and benefits of providing a proposal for IMT-~~2020~~, considering possible models of a proposal:
 - as a single technology,
 - as a set of technologies,
 - or as one or more technologies within a proposal from external bodies (e.g., 3GPP)
- During its lifetime, to act as the communication point with other IEEE organizations on this topic.

Meeting Summary

Summary

- **Vibrant discussion**
 - level set on ITU IMT-2020, IEEE 5G and 3GPP 5G
 - assessment of 802 projects
 - there are multiple projects that are related to 5G
- **Consensus on**
 - Report framework
 - Meeting schedule and conference calls
- **Additional meeting - scope revision**
 - Initiated based on view that some points were missing
 - Spectrum and IMT-Advanced
 - No consensus on revised scope...