IEEE 802 EC
5G standing committee

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Agenda for March meeting

- Monday
  - Introduction (17-01) – 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 – Janos Farkas
    - 802.1CF – Max Riegel
    - 802.3 - ?
    - 802.11 – Joseph Levy ?
    - 802.15 – Bob Heile?
    - …
  - Next Steps

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”

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, Honolulu, 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

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 the 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.
- 802.21
  - P802.21.1

All project spreadsheet

WG	Project/Std #	Root Project	Type of Project	PAR App Date	PAR Expr Date	Expected Date of Ballot	Ballot Status	RevCom Target Date	Pub Date	Title	Scope
802	802-2001	802-1990	Revision	6/26/1997	6/26/2001		Complete	Published	2001	Standard for LAN/MAN (Local Area Network/Metropolitan Area Network): Overview and Architecture	An overview and the architecture of the IEEE 802 suite of standards.
802	802-2014	802-2001	Revision	2/27/2007	12/31/2014	2012	Complete	Published	2014	Standard for Local and Metropolitan Area Networks: Overview and Architecture	This standard contains descriptions of the IEEE 802 Standards published by IEEE for Local Area Networks (LANs), Metropolitan Area Networks (MANs), and Personal Area Networks (PANs)networks considered as well as a reference model (RM) for protocol standards. Compliance with the family of IEEE 802
802	802b-2004	802-2001	Amendment	2/13/2003	12/31/2007	12/1/2003	Complete	Published	2004	Standard for Local and Metropolitan Area Networks - Overview and Architecture - Amendment 2: Registration of Object Identifiers	The scope of this amendment is to define an Object Identifier hierarchy used within IEEE 802 for uniform allocation of Object Identifiers used in 802 standards.
802	P802c	802-2014	Amendment	6/11/2015	12/31/2017	1/1/2017		10/1/2017		Standard for Local and Metropolitan Area Networks -- Bridges and Bridged Networks Amendment: Automatic Attachment to Provider Backbone Bridging (PBB) services	This standard specifies the protocols, procedures and management objects for auto-attachment of network devices to Provider Backbone service instances by using Type, Length, Value (TLVs) within the Link Layer Discovery Protocol (LLDP)
802	P802d	802-2014	Amendment	12/5/2015	12/31/2019	8/1/2017				Standard for Local and Metropolitan Area Networks: Overview and Architecture Amendment: Uniform Resource Names (URN) Namespace	This amendment specifies a Uniform Resource Names (URN) namespace for IEEE 802 networks. This URN is used as the root identifier for YANG data models that allow configuration and status reporting for 802 network elements.
802	P802E	P802E	New	9/3/2015	12/31/2019	7/1/2017		10/1/2018		Recommended Practice for Privacy Considerations for IEEE 802 Technologies	This recommended practice specifies a privacy threat model for IEEE 802 technologies and provides recommendations on how to protect against privacy threats.