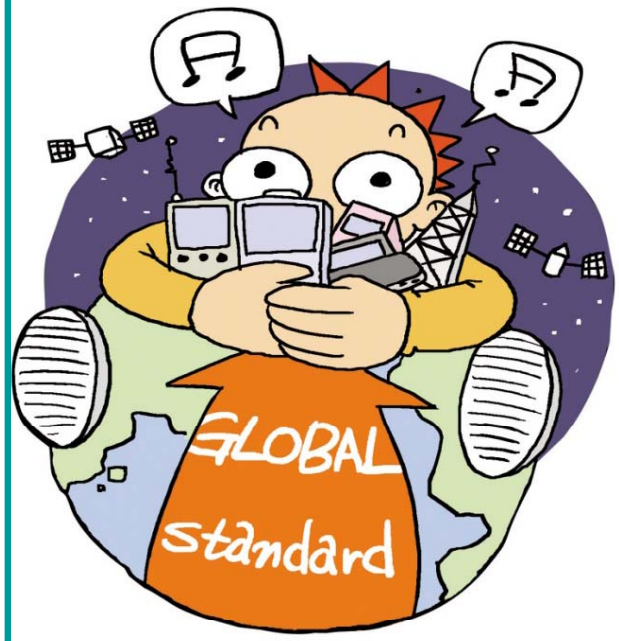

IEEE 802.16m Evaluation by TTA PG 707

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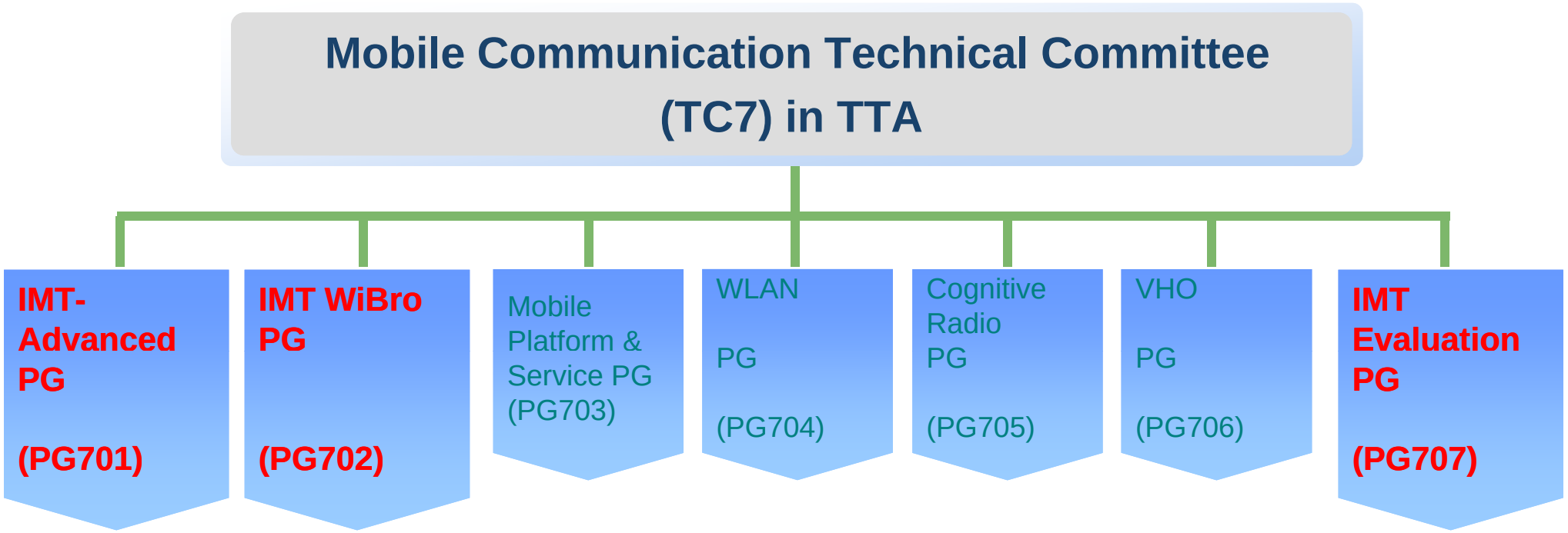
TTA PG 707 Vice Chair

IEEE 802.16 IMT-Advanced Evaluation Group Coordination Meeting @ San Diego, CA
Jan. 2010

ToR (Terms of Reference) of TTA PG707

- **Evaluate proposals of IMT-Advanced RIT/SRIT**
  - **Develop evaluation report / Submit evaluation report to ITU-R**
- **Cooperate and coordinate with other standardization bodies related to evaluation works**
  - **ITU-R WP5D, 3GPPs, IEEE 802, CJK SIG, SDOs**



About TTA PG 707

- **Members**
  - **13 organizations, 47 members**
  - **ETRI, Korea Univ., Samsung Electronics, LG Electronics, TTA, LG Telecom, Intel, KT, Qualcomm Korea, LG-Nortel, RRA, KEIT, Telcoware**
- **Web-site**
  - **http://www.tta.or.kr/English/new/standardization/Committee_newEngList_pop.jsp?commit_code=PG707**
- **Chair**
  - **Dr. Chung HK, ETRI, hkchung@etri.re.kr**
- **Vice-chairs**
  - **Prof. Oh, Seong-Jun, Korea University**
  - **Dr. Kim, Ki-Jun, LG Electronics**
  - **Dr. Cho, Jaeweon, Samsung Electronics**
- **Secretary**
  - **Mr. Choi, Hyoungjin, TTA, ibm686@tta.or.kr**

Activities

- TTA PG707 was set up on July 31, 2008
  - registered as an evaluation group in Dec. 2008

- Activities
  - Regular member meetings to discuss the evaluation issues
  - Harmonization of PG707 members' evaluation works from university, industries and research institute sectors
  - Shaping Drafting Group for Evaluation Reports
  - Cooperation : EVAL SIG in CJK B3G meeting

- Contributions to ITU-R WP5D
  - LLS results / Channel Model C-source codes
  - M.2135 corrections

Work Principle

- **Independent Evaluation Group registered in ITU-R**
  - **Terms of Reference includes**
    - ✓ **Evaluate proposals of IMT-Advanced RIT/SRIT**
    - ✓ **Develop / Submit the report(s) to ITU-R**
    - ✓ **Cooperate and coordinate with other evaluation groups**

- **Complementary Works**
  - **Check if the proposal(s) satisfies the requirements according to the guidelines of M.2135**
  - **May provide complementary evaluation works in order to make sure of evaluation results.**

- **Views on the other group's Evaluation Works**
  - **May provide PG707 views on the evaluation works from other registered evaluation groups, if necessary.**

IEEE 802.16m Evaluation Process

- **Full scale evaluation of IEEE 802.16m's TDD and FDD**

- **Contribution-based Approach**
  - **Members submit contribution (simulation results)**
  - **On-line/Off-line meetings to discuss the technical issues including detailed simulation configurations**
  - **Evaluation report after the consensus**
  - **For non-simulation results, we validate the self-evaluation report**

Summary of Simulation Results

- **In all four configurations (InH, UMi, UMa, RMa), the simulation results show that IEEE 802.16m meets the ITU-R requirements**
  - **Most of simulation configurations and parameters are from IEEE's self-evaluation**

- **Our numbers are similar to IEEE's self-evaluation**
  - **Based on the contributions received by 2010 Jan. 7**
    - ✓ **Will be updated for Feb. ITU-R WP5D meeting**
  - **Four Configurations in TDD then FDD**
  - **The following results are obtained**
    - ✓ **Cell Spectral Efficiency (CSE) – Bits/Sec/Hz/Sector**
    - ✓ **Cell Edge User Spectral Efficiency (CEUSE) – Bits/Sec/Hz/User**
    - ✓ **VoIP capacity**

Indoor Hot Spot (InH) by TDD

- **DL**

	CSE	CEUSE
TTA PG 707	6.56	0.216
IEEE Self Eval	6.93	0.260
ITU-R Req.	3.0	0.1

- **UL**

	CSE	CEUSE
TTA PG 707	5.86	0.352
IEEE Self Eval	5.99	0.426
ITU-R Req.	2.25	0.07

- **VoIP users**

	DL
TTA PG 707	≥ 140
IEEE Self Eval	140
ITU-R Req.	50

Microcellular (UMi) by TDD

- **DL**

	CSE	CEUSE
TTA PG 707	3.39	0.101
IEEE Self Eval	3.22	0.092
ITU-R Req.	2.6	0.075

- **UL**

	CSE	CEUSE
TTA PG 707	2.68	0.108
IEEE Self Eval	2.58	0.111
ITU-R Req.	1.8	0.05

- **VoIP users**

	DL
TTA PG 707	≥ 80
IEEE Self Eval	82
ITU-R Req.	40

Base Coverage Urban (UMa) by TDD

- **DL**

	CSE	CEUSE
TTA PG 707	2.55	0.073
IEEE Self Eval	2.41	0.069
ITU-R Req.	2.2	0.06

- **UL**

	CSE	CEUSE
TTA PG 707	2.52	0.106
IEEE Self Eval	2.57	0.109
ITU-R Req.	1.4	0.03

- **VoIP users**

	DL
TTA PG 707	≥ 73
IEEE Self Eval	74
ITU-R Req.	40

High Speed (RMa) by TDD

- **DL**

	CSE	CEUSE
TTA PG 707	3.09	0.085
IEEE Self Eval	3.23	0.093
ITU-R Req.	1.1	0.04

- **UL**

	CSE	CEUSE
TTA PG 707	2.46	0.101
IEEE Self Eval	2.66	0.119
ITU-R Req.	0.7	0.015

- **VoIP users**

	DL
TTA PG 707	≥ 89
IEEE Self Eval	89
ITU-R Req.	30

Indoor Hot Spot (InH) by FDD

- **DL**

	CSE	CEUSE
TTA PG 707	6.52	0.21
IEEE Self Eval	6.87	0.253
ITU-R Req.	3.0	0.1

- **UL**

	CSE	CEUSE
TTA PG 707	5.98	0.357
IEEE Self Eval	6.23	0.444
ITU-R Req.	2.25	0.07

- **VoIP users**

	DL
TTA PG 707	≥139
IEEE Self Eval	139
ITU-R Req.	50

Microcellular (UMi) by FDD

- **DL**

	CSE	CEUSE
TTA PG 707	3.39	0.10
IEEE Self Eval	3.27	0.097
ITU-R Req.	2.6	0.075

- **UL**

	CSE	CEUSE
TTA PG 707	2.78	0.117
IEEE Self Eval	2.72	0.119
ITU-R Req.	1.8	0.05

- **VoIP users**

	DL
TTA PG 707	≥ 77
IEEE Self Eval	77
ITU-R Req.	40

Base Coverage Urban (UMa) by FDD

- **DL**

	CSE	CEUSE
TTA PG 707	2.51	0.07
IEEE Self Eval	2.41	0.069
ITU-R Req.	2.2	0.06

- **UL**

	CSE	CEUSE
TTA PG 707	2.61	0.109
IEEE Self Eval	2.69	0.114
ITU-R Req.	1.4	0.03

- **VoIP users**

	DL
TTA PG 707	≥ 72
IEEE Self Eval	72
ITU-R Req.	40

High Speed (RMa) by FDD

- **DL**

	CSE	CEUSE
TTA PG 707	3.01	0.086
IEEE Self Eval	3.15	0.091
ITU-R Req.	1.1	0.04

- **UL**

	CSE	CEUSE
TTA PG 707	2.53	0.104
IEEE Self Eval	2.77	0.124
ITU-R Req.	0.7	0.015

- **VoIP users**

	DL
TTA PG 707	≥ 90
IEEE Self Eval	90
ITU-R Req.	30

Future Work

- **Update the Simulation Results**

Thank you