

- Welcome and Introductions -- Ashutosh Dutta
- Initiative Overview/Background -- Ashutosh Dutta
- Working Group Reports
 - Web Portal/Content Development -- James Irvine
 - Publications -- Geoffrey Li/Chih-Lin I
 - Education -- Rulei Ting/Ravi Annaswamy
 - Community Development -- James Irvine/Alex Wyglinski
 - Roadmap -- Mischa Dohler/Chi-Ming Chen
 - Standards -- Alex Gelman/Paul Nikolich
 - Industry Engagement -- Meng Lu/Michael Condry
 - Conferences/Events -- Ashutosh Dutta/Latif Ladid
- Discussion and Wrap-Up -- Ashutosh Dutta

IEEE 5G Initiative Overview

Ashutosh Dutta, Co-Chair
Gerhard Fettweis, Co-Chair
Harold Tepper, Senior Program Director

17 November 2016

- Foster collaboration and connect technical & business communities to IEEE 5G experts and resources
- Establish IEEE as a **Thought Leader** and essential to the 5G community
- To be recognized as the go-to resource for engineering and technology professionals in industry, academia and government working on 5G
- Develop and promote valued programs, products and services for the 5G community
- Present a single IEEE face/voice to the 5G marketplace
- Be a true global 5G initiative capturing the needs of all global regions
- Create a neutral platform/forum where those interested in 5G can engage and collaborate
- Be the catalyst for IEEE cross-society activities on 5G

- IEEE, like many other organizations, believes that 5G ecosystem is rather large and will cover many different areas:
 - Not only an evolution of LTE
 - New services, new technologies, new frequencies (6 GHz and mm-wave), new industries, new business models
 - Multi connectivity across bands & technologies
 - carrier aggregation with integrated MAC across sub- 6GHz & above 6GHz, 802.X and macro cells (legacy)
 - carrier aggregation for mission-critical resilience via multi-connectivity
 - “Rethinking” of fundamental areas used in previous ‘Gs’ (cell architectures, antennas, core networks, etc. -- Is it appropriate to continue to use the word “generation”?)

- Emerging applications such as SDN/NFV, IOT, M2M, eHealth are some key drivers for 5G
- Helps to build a neutral environment involving operators, vendors, academics, regulators, and users to identify problems and propose solutions
- 5G is disruptor and creates opportunities for startups and entrepreneurs
- IEEE can drive the ongoing industry efforts with an all inclusive approach

- Establish and grow a vibrant global 5G Technical Community that binds heavily with the IEEE
- Identify standardization opportunities and standardization gaps related to 5G
- Facilitate the development of 5G technical architectures
- Develop 5G products: Conferences, Publications, Education, Training, etc.
- Leverage IEEE's value and platform for 5G industry-wide consensus development
- Help create a vibrant 5G ecosystem (e.g., policy) toward 2020 and beyond
- Develop a future roadmap for the anticipated paradigm shifts (evolutionary and revolutionary)

- Convened Kick-Off Workshop in Princeton, NJ on 29-30 August 2016
 - Participation by over 30 volunteers and IEEE staff representing 12 Societies/OUTs
 - Communications
 - Computer
 - Solid States Circuits
 - Signal Processing
 - Vehicular Technology
 - Technology and Engineering Management
 - Instrumentation & Measurement
 - Intelligent Transportation
 - Microwave Theory and Techniques
 - Standards Association
 - Educational Activities
 - Future Directions
- Identified Working Groups and Projects for 2016/2017



2016 Milestones

■ Initiative Launch

- Convened 2 day kick-off workshop in late Aug.
- Attended by over 30 volunteers/staff representing 12 societies/councils/OU's

■ Working Group Formation

- Established volunteer led Working Groups to drive activity including: Web Portal, Content Development, Community Development, Standards, Education, Publications, Branding, Roadmap, Events and Industry Engagement

■ 5G Summits

- Conducted 6 summits across the world: US, China, Germany, India, and Denmark

■ Roadmap (Workshop at Globecom)

- Launched Technical Working Groups including Standardization Building Blocks, Mobile Edge Cloud, Massive MIMO and Millimeter Wave

■ IEEE 5G Web Portal

- Launched new portal on 6 October 2016

■ IEEE 5G Newsletter

- ⁹ Named Editor-in-Chief, Managing Editor and Assistant Managing Editor

2017 Plans

■ 5G Summits (www.5gsummit.org)

- Continue to conduct summits on a global basis

■ Roadmap

- Develop and publish an IEEE 5G Roadmap modeled after the ITRS Roadmap

■ Publications

- Launch an IEEE 5G Newsletter with original content focused on a broad audience

■ Web Portal/Content Development

- Refresh the portal on a regular basis with original content including written Q&As, interviews, opinion pieces and podcasts

■ Community Development

- Establish and build a global, engaged IEEE 5G Community through a broad range of channels including Collabratec, Twitter and LinkedIn

■ Education

- Introduce a series of webinars and tutorials

■ Standards

- Inventory, update and track 5G related standards activity across industries


[Join the IEEE 5G Technical Community](#)
[Home](#)
[About](#)
[What's New](#)
[Conferences](#)
[Education](#)
[Publications](#)
[Standards](#)


IEEE GLOBECOM 2016
#IEEEGC16: Freedom through Communications
4-8 December 2016 // Washington, DC USA



Workshop on IEEE 5G Initiative Roadmap 8 December 2016 9:00am-4:00pm

[Click here to contribute to the workshop](#)



What's New



5G's Role in the Internet of Things - Live Webinar
Thursday, 17 November 2016

Feature Article



Millimeter Waves Travel More Than 10 Kilometers in Rural Virginia 5G Experiment

A key 5G technology got an important test

Technology Spotlight



User-Centric Networks will Drive New Architectures

UCNs will have a broad and significant impact on how networks are developed

Useful Links

- [IEEE 5G Summit](#)
- [Infographic: On the Road to 5G](#)

5G TRIVIA
by IEEE 5G



[See our tech topics in](#)

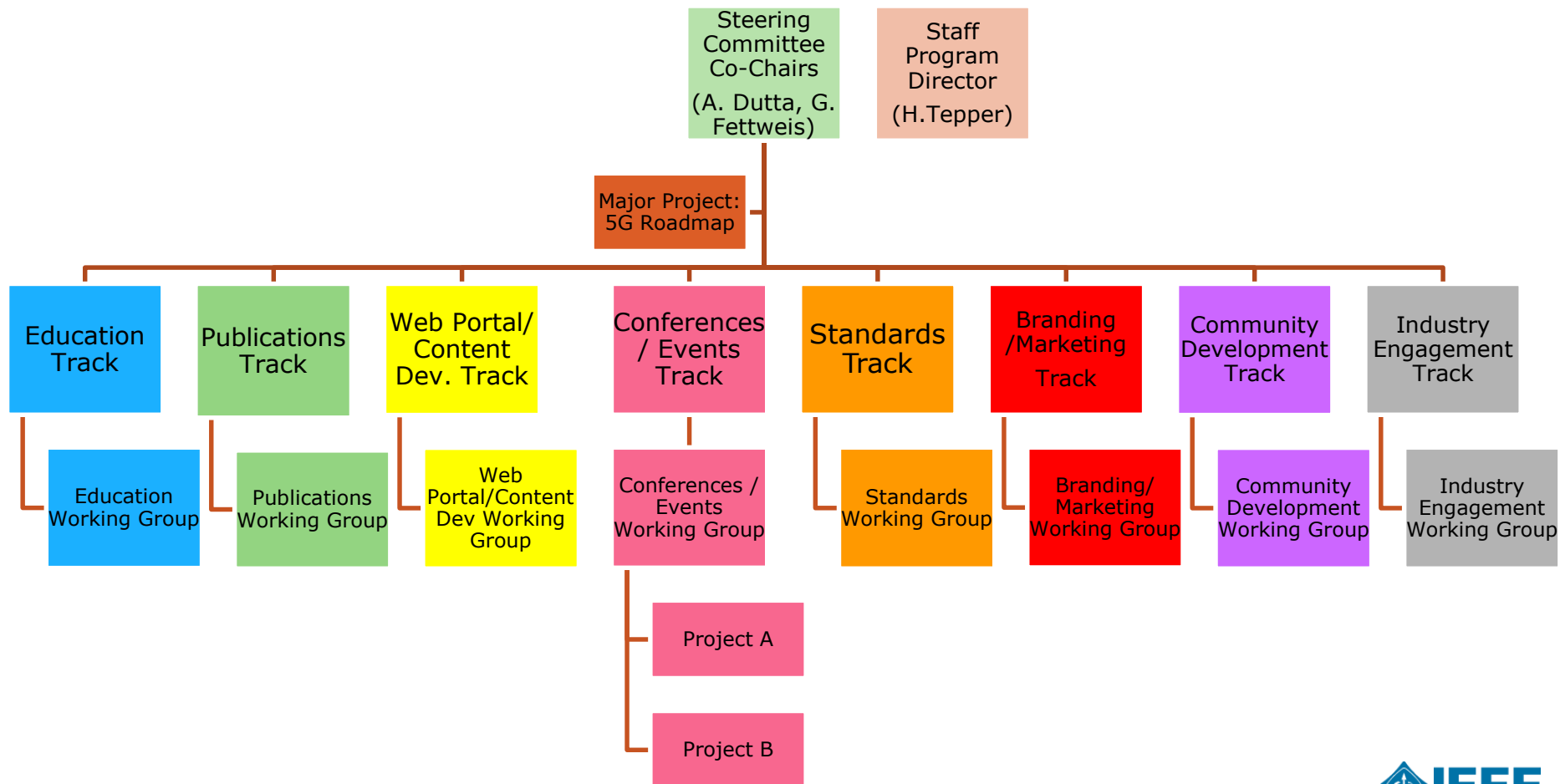
Galaxy of 5G Summit Series

A graphic titled "IEEE International 5G Summit" featuring a grid of 10 event locations. The background is a stylized illustration of a smart city with various IoT-connected elements like cars, houses, and people. The IEEE 5G Summit logo is in the top left, and a "Home" link is in the top right.

IEEE 5G SUMMIT Home

IEEE International 5G Summit

Princeton Tuesday, May 26, 2015	Toronto Saturday, Nov. 14, 2015	Santa Clara Monday, Nov. 16, 2015	Patna, India Tuesday, March 29, 2016
Aalborg, Denmark Friday, July 1, 2016	Austin, Texas Wednesday, August 3, 2016	Dresden, Germany Thursday, September 29, 2016	Tianjin, China Saturday, October 29, 2016
Berlin, Germany Wednesday, November 2, 2016	Seattle, Washington Saturday, November 5, 2016	New Delhi, India December 2, 2016	Lisbon, Portugal Thursday, January 26, 2017
Kuwait City, Kuwait March, 2017			



Education WG

(R. Ting, R. Annaswamy)

Publications WG

(C-L. I, G. Li)

Web Portal/ Content Dev. WG

(J. Irvine)

Conferences /Events WG

(A. Dutta, L. Ladid)

- Define, develop and manage portfolio of offerings/activities including:
 - eLearning Modules
 - Tutorials
 - Webinars
 - Podcasts
 - Google Hangouts
- Define, develop and manage portfolio of offerings/activities including:
 - eNewsletter
 - Journal, Transactions
 - Magazine
 - Supplements to other publications
 - Special issues in other publications
- Determine, source and manage content placed on portal
 - Ensure that portal is refreshed on a continuous basis
- Manage Initiative events
 - Conferences
 - Workshops
- Determine and manage participation in other events
 - Patron
 - Exhibitor
 - Panelist
 - Keynote

Standards WG

(A. Gelman, P. Nikolich)

Branding/ Marketing WG

Ralph Irmer

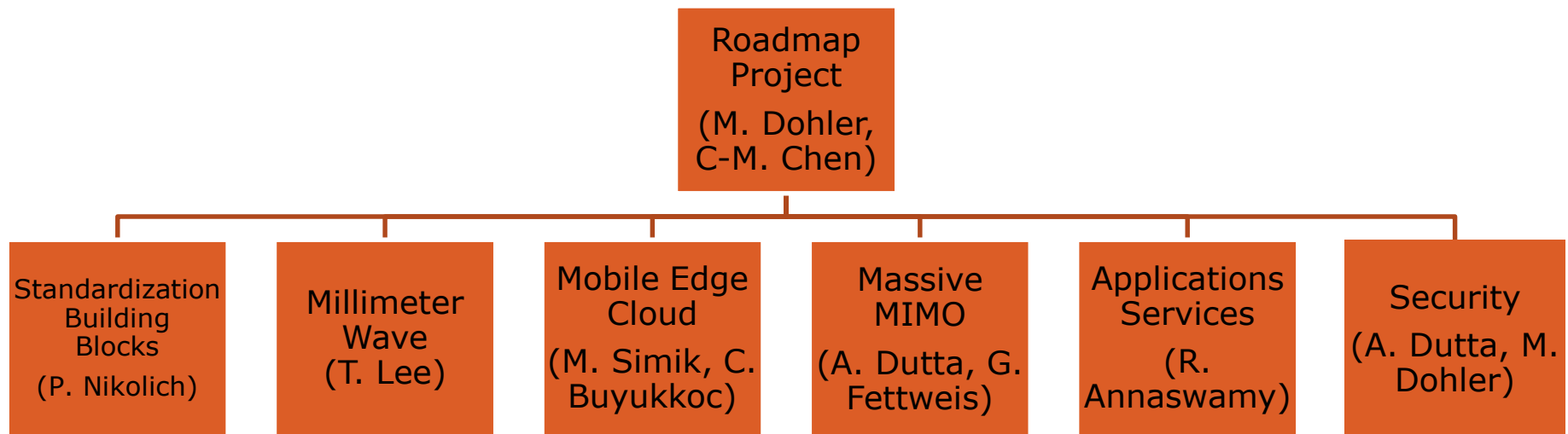
Community Development WG

(J. Irvine, A. Wyglinski)

Industry Engagement WG

(M. Lu, M. Condry)

- Manage portfolio of activities including:
 - New projects
 - Roundtable program for industry leaders
 - Engagement with SDOs and other external organizations
- Rebranding
- Logo development
- Marketing
 - Competitive positioning
 - Visibility
 - Messaging
 - Collateral
- Establish and grow a broad IEEE 5G Community including:
 - IEEE Technical Community
 - Collabratec
 - Twitter
 - LinkedIn
 - Facebook
 - FlipBoard
- Drive engagement with industry including:
 - Partnerships
 - Training
 - Career Development



- Seeking volunteers
 - Broad range of opportunities
 - Technical Areas – Massive MIMO, mmWave, Mobile Edge Cloud, Security.....
 - Functional Areas – Publications, Education, Roadmap, Content/Community Development....
- Contact us directly
 - Ashutosh Dutta, Initiative Co-Chair:
ad37@caa.columbia.edu
 - Gerhard Fettweis, Initiative Co-Chair:
Gerhard.Fettweis@tu-dresden.de
 - Harold Tepper, Initiative Senior Program Director:
h.tepper@ieee.org

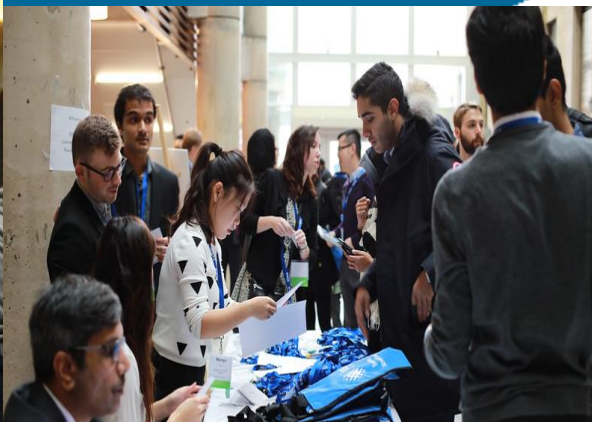
First IEEE 5G Summit

■ A successful event



5G Summit Highlights





Industry Speakers/Panelists

- ▶ Airbus Group
- ▶ Alcatel Lucent
- ▶ Altera
- ▶ Amdocs
- ▶ AT&T
- ▶ Bell Canada
- ▶ Cadence
- ▶ China Mobile
- ▶ Ciena
- ▶ Deutsche Telekom
- ▶ Ericsson
- ▶ Facebook
- ▶ Google
- ▶ Huawei
- ▶ IBM
- ▶ Integrated Device Technology
- ▶ Intel
- ▶ Keysight Technologies
- ▶ National Instruments
- ▶ NEC
- ▶ Nokia
- ▶ NTT DOCOMO
- ▶ Qualcomm
- ▶ Rohde & Schwarz
- ▶ Samsung
- ▶ Sprint
- ▶ Telecom Italia
- ▶ Telefonica
- ▶ Telus
- ▶ T-Mobile
- ▶ Toshiba
- ▶ Toyota
- ▶ Volkswagen
- ▶ XILINX