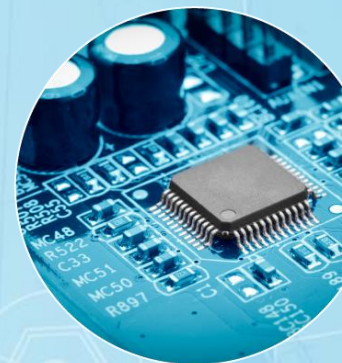


IEEE Ecosystem for Innovation and Standardization in 5G-relevant Technologies



Alexander Gelman, Ph.D.

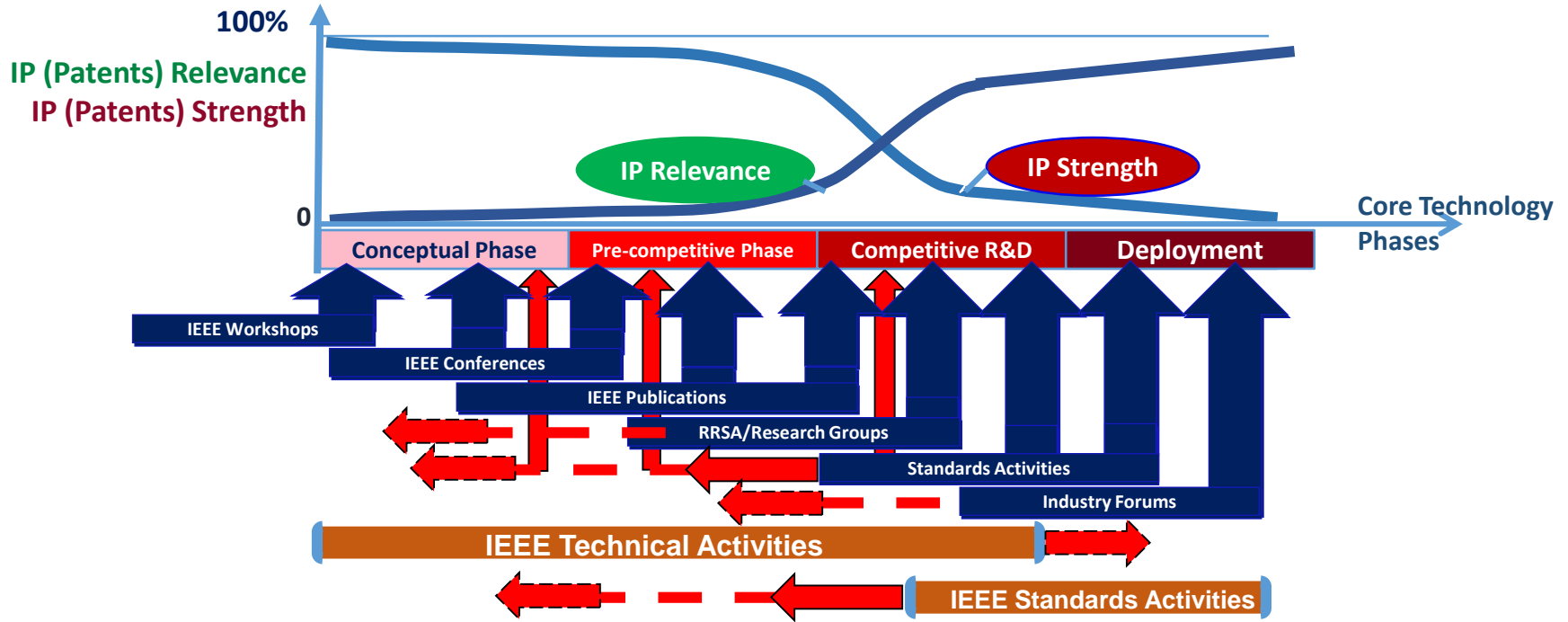
Director of Standardization Programs Development

IEEE Communications Society

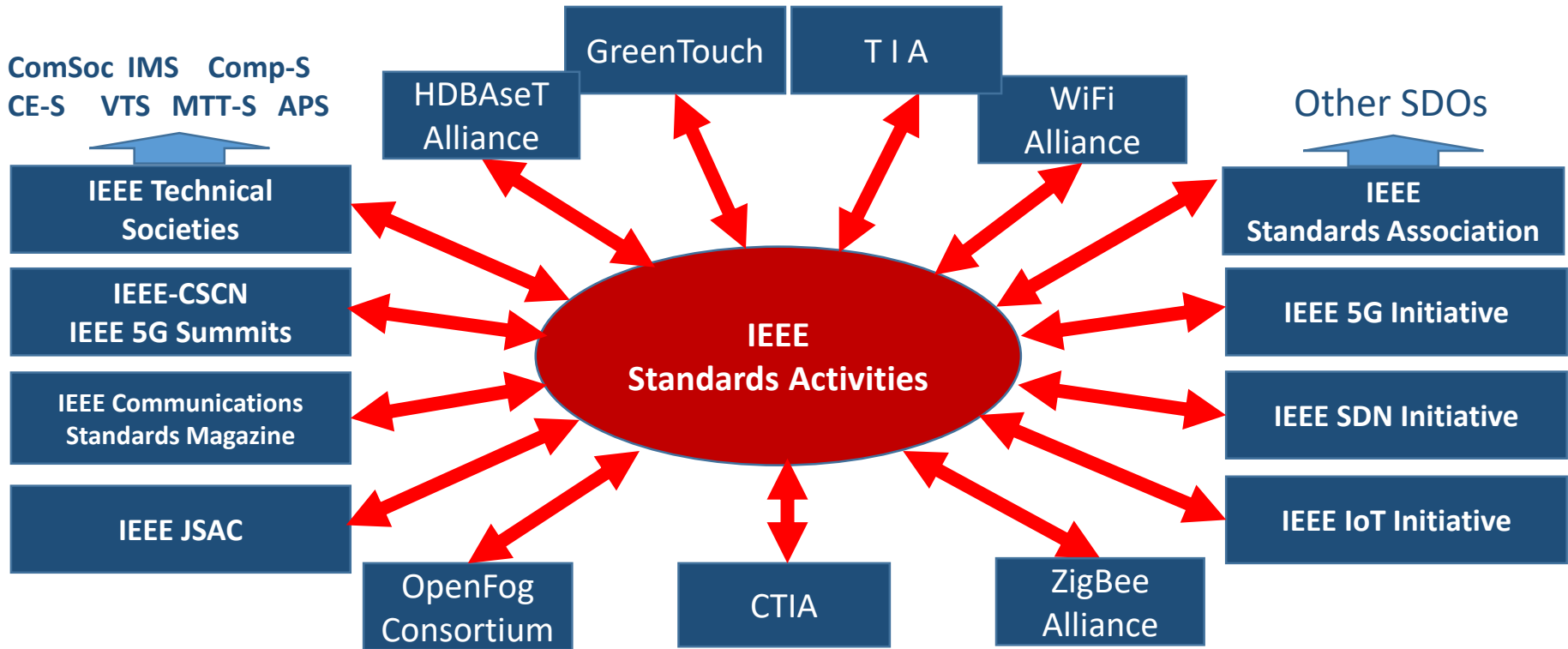
IEEE 5G-IoT Summit

Helsinki, Finland, September 18-2017

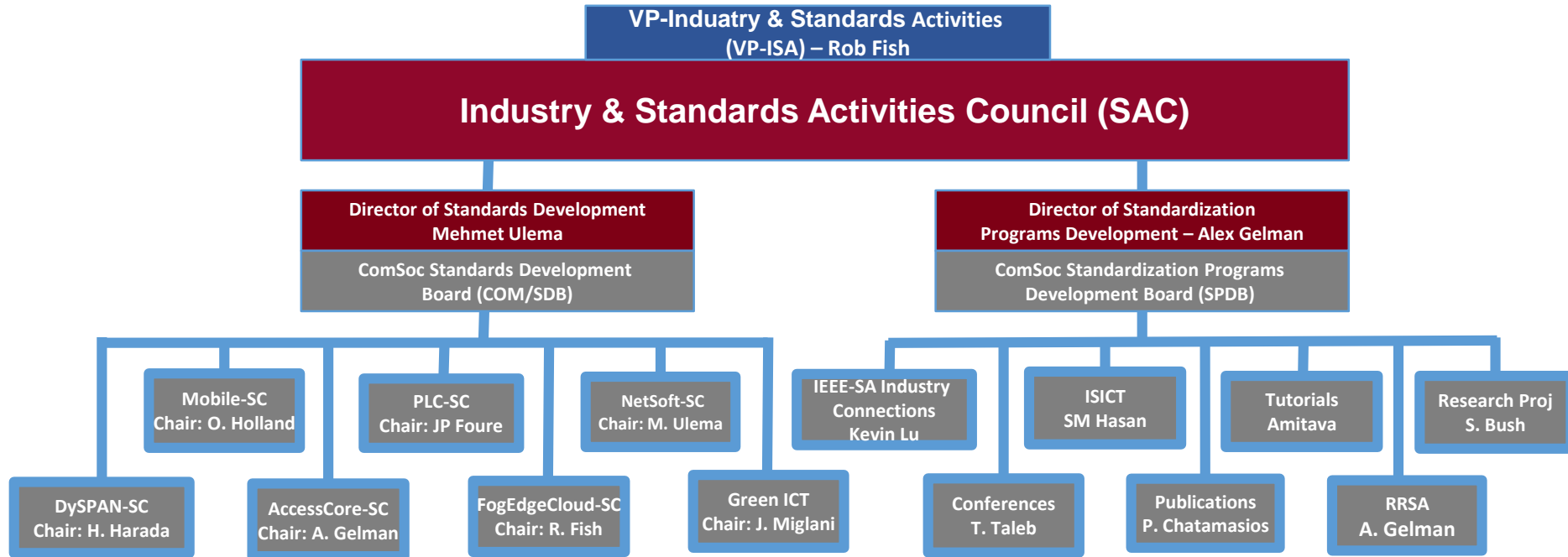
IEEE Cuisine for Innovation and Standardization



IEEE Standards Ecosystem for 5G-Relevant Technologies



IEEE ComSoc Standards Activities



ComSoc Standards For 5G and Beyond

- ❑ IEEE P1900.1 Working Group on Terminology and Concepts for Next Generation Radio Systems and Spectrum Management
- ❑ IEEE P1900.2 Working Group on Recommended Practice for Interference and Coexistence Analysis
- ❑ IEEE P1900.3 Working Group on Recommended Practice for Conformance Evaluation of Software Defined Radio (SDR) Software Modules
- ❑ IEEE P1900.4 Working Group on Architectural Building Blocks Enabling Network-Device Distributed Decision Making for Optimized Radio Resource Usage in Heterogeneous Wireless Access Networks
- ❑ IEEE P1900.5 Working Group on Policy Language and Policy Architectures for Managing Cognitive Radio for IEEE Dynamic Spectrum Access Applications
- ❑ IEEE P1900.6 Working Group on Spectrum Sensing Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communication Systems
- ❑ IEEE P1900.7 Working Group on Radio Interface for White Space Dynamic Spectrum Access Radio Systems Supporting Fixed and Mobile Operation

IEEE ComSoc Standards for 5G and Beyond

- ❑ IEEE 1903-2011: Standard for the Functional Architecture of Next Generation Service Overlay Network (NGSON)
- ❑ IEEE P1903.1™: Standard for Content Delivery Protocols of Next Generation Service Overlay Network (NGSON)
- ❑ IEEE P1903.2™: Standard for Service Composition Protocols of Next Generation Service Overlay Network (NGSON)
- ❑ IEEE P1903.3™: Standard for Self-Organizing Management Protocols of Next Generation Service Overlay Network (NGSON)
- ❑ IEEE P1912™: Standard for Privacy and Security Architecture for Consumer Wireless Devices
- ❑ IEEE P1913.1™: Draft Standard for Software-Defined Quantum Communication
- ❑ IEEE P1914.1™: Standard for Packet-based Fronthaul Transport Networks
- ❑ IEEE P1915.1™: Standard for Software Defined Networking and Network Function Virtualization Security
- ❑ IEEE P1916.1™: Standard for Software Defined Networking and Network Function Virtualization Performance
- ❑ IEEE P1917.1™: Standard for Software Defined Networking and Network Function Virtualization Reliability
- ❑ IEEE 1918.1™: Tactile Internet: Application Scenarios, Definitions and Terminology, Architecture, Functions, and Technical Assumptions
- ❑ IEEE 1918.1.1™: Haptic Codecs for the Tactile Internet
- ❑ IEEE P1920.1™: Standard for Aerial Communications and Networking Standards
- ❑ IEEE P1921.1™: Standard for Software Defined Networking (SDN) Bootstrapping Procedures
- ❑ IEEE P1930.1™: Recommended Practice for Software Defined Networking (SDN) based Middleware for Control and Management of Wireless Networks
- ❑ IEEE P1931.1™: Standard for an Architectural Framework for Real-time Onsite Operations Facilitation (ROOF) for the Internet of Things
- ❑ IEEE P2413™: Draft Standard for an Architectural Framework for the Internet of Things

Computer Society Standards for 5G and Beyond

[IEEE 802.1™ Higher Layer LAN Protocols Working Group](#)

[IEEE 802.3™ Ethernet Working Group](#)

[IEEE 802.11™ Wireless LAN Working Group](#)

[IEEE 802.15™ Working Group for Wireless Specialty Networks](#)

[IEEE 802.16™ Broadband Wireless Access Working Group](#)

[IEEE 802.18™ Radio Regulatory Technical Advisory Group](#)

[IEEE 802.19™ Wireless Coexistence Working Group](#)

[IEEE 802.21™ Media Independent Handover Services Working Group](#)

[IEEE 802.22™ Wireless Regional Area Working Group](#)

[IEEE 802.24™ Vertical Applications Technical Advisory Group](#)

[IEEE P1857.6™: Standard for Digital Media Content Description](#)

[IEEE P1857.9™: Standard for Immersive Visual Content Coding](#)

[IEEE P3333.2.4™: Standard for Three-Dimensional \(3D\) Medical Simulation](#)

IEEE Standards for 5G and Beyond

IEEE Antennas and Propagation Society Standards

[IEEE P149™: Recommended Practice for Antenna Measurements](#)

[IEEE P211™: IEEE Standard Definitions of Terms for Radio Wave Propagation](#)

[IEEE 1720-2012: IEEE Recommended Practice for Near Field Antenna Measurements](#)

IEEE Instrumentation and Measurement Society Standards

[IEEE P1451™: Family of Smart Transducer Interface Standards](#)

[IEEE P1451™-99: Standard for Harmonization of Internet of Things \(IoT\) Devices and Systems](#)

[IEEE 1451.5™-2007: IEEE Standard for a Smart Transducer for Sensors and Actuator - Wireless Communication Protocols and Transducer Electronic Data Sheet \(TEDS\) Formats](#)

[IEEE P287.1™: Standard for Precision Coaxial Connectors at RF, Microwave, and Millimeter-wave Frequencies](#)

IEEE Microwave Theory and Techniques Standards

[IEEE P1765™: Recommended Practice for Estimating the Uncertainty In Measure of Modulated Signals for Wireless Communications with Application to Error Vector Magnitude and Other System-Level Distortion Metrics](#)

[IEEE P1770™: Recommended Practice for the Usage of Terms Commonly Employed in the Field of Large-Signal Vector Network Analysis](#)

[IEEE P1785.2™: IEEE Standard for Rectangular Metallic Waveguides and Their Interfaces for Frequencies of 110 GHz and Above—Part 2: Waveguide Interfaces](#)

IEEE Vehicular Technology Society / Intelligent Transportation System Society Standards

[IEEE 1609™: IEEE Wireless Access in Vehicular Environments \(WAVE\)](#)

IEEE Standards Activities

- ❑ Have access to the most visionary and skillful experts in the World
- ❑ Engage Industrial and Academic Researchers and Practitioners in the Emerging Technology Initiatives and Pre-standardization Activities
- ❑ IEEE-SA offers an open and most inclusive Standards Development Platform

IEEE is an Optimal Organization for Innovation and Standardization of Core Technologies

Useful Links

IEEE ComSoc

<http://www.ComSoc.org>

IEEE Standards Association:

<http://standards.ieee.org/>

IEEE Standards for 5G and Beyond:

<https://5g.ieee.org/standards>

IEEE IoT Initiative

<https://iot.ieee.org/>

IEEE SDN/NFV Initiative:

<https://sdn.ieee.org/>

IEEE 5G Initiative:

<https://5g.ieee.org/>