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INTERNATIONAL CONFERENCE ON COMMUNICATIONS

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IEEE Communications Society

IEEE International Conference on Communications
23 - 27 May 2016 // Kuala Lumpur // Malaysia
IEEE ICC'16: Communications for All Things

PROGRAM HIGHLIGHTS

#IEEEICC16

Highlighting the Entire Communications Spectrum Ranging from 5G to Energy Harvesting

IEEE ICC 2016 will hold its annual premier international event 23-27 May in Kuala Lumpur at the globally-benchmarked Kuala Lumpur Convention Centre located close to some large ICT industries and research facilities.

Themed "**Communications for All Things**," IEEE ICC 2016 offers an unsurpassed educational agenda with 1,500+ presentations given by representatives from leading corporations and research institutions, as well as the opportunity to exchange visions and viewpoints with nearly 2,000 scholars and researchers from 70+ countries.

Dedicated to the research, advancements and implementations of the next wave of wired and wireline technologies, IEEE ICC 2016 will feature hundreds of technical presentations, panels, forums, tutorials, workshops and keynotes exploring key industry topics ranging from 5G and IoT to mobile cloud computing and green ICT.

PROGRAM AT A GLANCE

Time/Day	Monday 23 May		Tuesday 24 May		Wednesday 25 May		Thursday 26 May		Friday 27 May	
08:00 - 09:00	Registration		Registration		Registration		Registration		Registration	
09:00 - 10:30	AM Tutorials	AM Workshops	Welcoming & Opening Ceremony		Plenary and Keynote Session		Plenary and Keynote Session		AM Tutorials	AM Workshops
10:30 - 11:00	Coffee Break		Coffee Break		Coffee Break		Coffee Break		Coffee Break	
11:00 - 12:30	AM Tutorials	AM Workshops	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	AM Tutorials	AM Workshops
12:30 - 14:00	Lunch Break		Awards Luncheon		Lunch Break		Lunch Break		Lunch Break	
14:00 - 15:30	PM Tutorials	PM Workshops	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	PM Tutorials	PM Workshops
16:30 - 16:00	Coffee Break		Coffee Break		Coffee Break		Coffee Break		Coffee Break	
16:00 - 17:30	PM Tutorials	PM Workshops	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	Technical Symposia	Industry Forums	PM Tutorials	PM Workshops
18:30 - 21:00	Welcome Reception									
19:00 - 22:00			Conference Banquet							

IEEE ICC 2016 PATRONS

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KEYNOTE SPEAKERS

Keynote Session
Tuesday, 24 May 2016
09:25 - 10:10

John Cioffi

John Cioffi, CEO & Chairman, Member of the Board of Directors of ASSIA Inc. and Professor Emeritus at Stanford University, **will examine "WI→FIve-G"** and explore technological evolutionary steps and challenges that may well define the true emergence of high-speed internet connectivity reliably to all future internet data consumers.

Keynote Session
Wednesday, 25 May 2016
09:00 - 09:45

Seizo Onoe

Seizo Onoe, CTO, EVP & Member of the Board Directors of NTT DOCOMO, will **discuss "5G and Beyond"** including the history of mobile system evolution, requirement analysis and experimental trials, and the ambition and prediction for longer term trends of technology convergence or divergence.

Keynote Session
Wednesday, 25 May 2016
09:45 - 10:30

Henning Schulzrinne

Henning Schulzrinne, Technical Advisor at the Federal Communications Commission (FCC) and Levi Professor at Columbia University, will speak about **"The Internet of Things and Other Challenges to the Internet as We Know It"** and attempt to show there is no single Internet of Things, but rather overlapping models that pose different challenges, with computing and storage moving back-and-forth between edge and core networks.

Keynote Session
Thursday, 26 May 2016
09:00 - 09:45

Mischa Dohler

Mischa Dohler, Chair Professor at King's College London and Member of the Board of Directors of Worldsensing, will talk about **"An Internet of Skills, where Robotics meets AI and the Tactile Internet"** and the disruptive technology approaches which will allow us to break through the next tech frontier.

#IEEEICC2016

NEARLY **2,000** ATTENDEES FROM **70+** COUNTRIES

Keynote Session
Thursday, 26 May 2016
09:45 - 10:30

Sanqi Li

Sanqi Li, CTO of Products and Solutions at Huawei Technologies, will speak about **"Building a Better Connected World in Digital Economy"** including platform initiatives directly addressing the core of carrier business transformation, i.e., cloud network, IoT, video, ICT infrastructure and digital operation.

INDUSTRY PROGRAM

The Industry Program specifically dedicated to industry practitioners includes executive forums, moderated business panels and other presentations designed to promote new ideas, trends and product innovations, while facilitating peer networking opportunities.

EXECUTIVE FORUMS

Tuesday, 24 May 2016 • 11:00 - 12:30
CTO Forum I: Technology Evolution 2020

In this forum, CTOs will address these and other questions.
- How will Internet evolve from today till 2020?
- What kind of changes do we foresee in future Internet capabilities?
- How will operators meet the cost challenge and network economics for sustainability?
- What are the key changes in the network architecture to accomplish the evolution of convergence (Fixed-Mobile, TDM-IP, Offline-Online, Physical-Digital etc)?
- What kind of challenges cyber security will pose for operators in the future?
- What actions operators need to take to remain proactively secure & ensuring risk mitigation?

Invited Panelists:
Amandeep Singh, Group Chief Technology Officer, Axiata Group Berhad, Malaysia
Dato' Abdul Satar bin Mohamed, Chief Network Officer, Celcom Malaysia
Joachim Horn, Chief Technology & Integration Advisor, PLDT, Philippines
Giorgio Migliarina, Chief Technology & Innovation Officer, Telekom Malaysia

Wednesday, 25 May 2016 • 11:00 - 12:30
CTO Forum II: Achieving Vision 2020:
Key Technology Challenges for Emerging and Developed Economies

This forum features CTOs addressing these and other questions.
- How much spectrum will be required for delivering services of the future?
- Will device evolution drive technology adoption or will technology evolution drive device evolution?
- How can telcos contribute to smart cities / smart economies across nations?
- Will microwave technology remain relevant by 2020 or beyond?
- Will operators be able to leverage NFV & Cloud technologies?
- What kind of quality of services the customers would expect by 2020?

Invited Panelists:
Benoit Hanssen, Chief Technology Officer, Vodafone, Australia
Denis Seek Kwai Yin, Chief Technical Officer, M1, Singapore
Anil Tandan, Chief Technology Officer, Idea, India

PANELS

Tuesday, 24 May 2016 • 14:00 - 15:30
IF-01: Cellular Technologies in Shared Spectrum: LTE Unlicensed, LAA and Beyond

To deal with severe spectrum crunch in sub-6GHz bands, technologies such as LTE Unlicensed (LTE-U), Licensed Assisted Access (LAA) and LTE Wi-Fi Aggregation (LWA) have been proposed recently by cellular ecosystem to leverage unlicensed spectrum. This panel will discuss the corresponding trade-offs, the concerns and controversies regarding impact to Wi-Fi deployments, and its relevance to 5G network design.

IF-02: 5G Architecture

This panel will explore novel concepts in the context of mobile network architecture for the 5G era, like cloud-based mobile architectures, functional split and placement, convergence of RAN and Core Network, multi-service and multi-tenancy architectures.

Tuesday, 24 May 2016 • 16:00 - 17:30
IF-03: 3GPP Standards toward 5G

In this panel session, leading experts from major operators, infrastructure, terminal and chipset vendors will discuss about the important 5G technology drivers for the industry to focus on and the standards roadmap to realize commercial deployments of 5G networks in 2020 and beyond.

IF-04: Dynamic Spectrum Access: The Ways Forward

Dynamic Spectrum Access (DSA) promises to opportunistically use the underutilized spectrum whenever and wherever the spectrum becomes available. This panel attempts to discuss the ways forward for DSA covering perspectives from political to economic, social and technological.

Wednesday, 25 May 2016 • 11:00 - 12:30
IF-05: Integrating Knowledge of Telecom Standards into Engineering Education

Standards and standardization processes are not usually incorporated into university curricula. This panel will proposes methods to integrate knowledge of standards into engineering education programs, and explore avenue for industry and academia to work together towards this goal.

Wednesday, 25 May 2016 • 14:00 - 15:30
IF-06: Rising Industrial IoT Applications

This panel will address the identification of promising industrial IoT implementations, their needs in terms of openness and standardization, how to overcome the "verticalization" of solutions enabling the possible integration of platforms and components supporting different applications domains, the identification of a supporting industrial ecosystem and the consolidation of business models.

IF-07: Towards 5G: Mobile Network Softwarization

This panel will discuss the concept of network softwarization, an overall transformation trend for designing, implementing, deploying, managing, maintaining, and re-designing when necessary network equipment and/or network components by software programming. Challenges and characteristics of network softwarization will be discussed as well as economic incentive aspects.

Wednesday, 25 May 2016 • 16:00 - 17:30
IF-08: Industry Training - MATLAB® and Simulink®: Accelerate 5G and LTE/WLAN Research and Development
MathWorks engineers will demonstrate existing 4G-LTE and WLAN solutions and how they can be used to investigate all the key evolving technologies such as Massive MIMO, Modulation Schemes, RF design, Antenna Array Design, Beamforming, and channel models that will form the core of 5G systems and their prototyping and verification on SDR and FPGA platforms.

More information about the Industry Program is available at http://www.icc2016.ieee-icc.org/

INDUSTRY PROGRAM

IF-09: 5G for Verticals: Game Changers, Catalysts and New Players
This panel aims at engaging the ICT and vertical market stakeholders, to further identify paradigm shifts, catalysts, social impact and showstoppers.

Thursday, 26 May 2016 • 11:00 - 12:30
IF-10: 5G: The PHY, the MAC, the Network, Anything Else: What will Make it Special?
With its 4th generation standard LTE, digital cellular has experienced the first world-wide standard. It came together clearly under the pressure of an eminent WiMax competitor. Can this be done for 5G again, without a competing contender? Is there enough innovation in the upcoming 3GPP specs to define 5G as a step forward?

IF-11: IEEE 802.11 in a 5G Landscape
This panel will lead a discussion of advanced technology features in IEEE 802.11, both existing and under developmental, that will provide key components to 5G rollouts globally.

Thursday, 26 May 2016 • 14:00 - 17:30
IF-12: Industry Training - mmWave for 5G: From Theory to Practice
The proposed training will address the challenges, solutions and key trade-offs of mmWave system prototyping. The hardware and software architecture of wide-band mmWave software defined radios (SDRs) will be discussed including front end design, calibration, signal processing, and real-time data movement.

Thursday, 26 May 2016 • 14:00 - 15:30
IF-13: Industry Roadmap to 5G: Standards Timeline and Spectrum Requirement
As 5G related research matures, the next focus will be on 5G standardization and spectrum allocations. This panel will evaluate the unique 5G requirements and assess if/how the current standardization and spectrum regulatory models will be workable in 5G.

Thursday, 26 May 2016 • 16:00 - 17:30
IF-14: Recent Developments in Patent Laws and Policies Relevance to Our Industry
The panel will address the interactions of patents with standards, the synergies with other forms of protection (eg copyright, trade secrets) and other business models such as open source, the peculiarity of Software patentability, the balance between the interests of owners and users of Intellectual Property.

PODIUM PRESENTATION

Tuesday, 24 May 2016 • 10:10 - 10:30
A Window on 5G Test (Randy Becker, Keysight Technologies, USA)

Tuesday, 24 May 2016 • 15:40 - 16:00
Presentation by Rohde & Schwarz

Wednesday, 25 May 2016 • 10:10 - 10:30
Real-time mmWave Prototyping: 28 GHz and Beyond (Sarah Yost, National Instruments, USA)

Wednesday, 25 May 2016 • 15:40 - 16:00
Internet of Things - DLM & myMaker (Abdul Karim Abdul Razak, MCMC, Malaysia)

Thursday, 26 May 2016 • 10:10 - 10:30
LTE WiFi Link Aggregation (Yeoh Chun Yeow, Telekom Malaysia R&D, Malaysia)

Thursday, 26 May 2016 • 15:40 - 17:40
Lightning Talks offer a lively, informal format for 20 separate presenters to address timely and pressing technical industry topics in brief, five-minute talks. Speakers that desire to present lightning talks are encourage to sign up online at http://icc2016.ieee-icc.org/content/lightning-talks

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02 CHIEF EXECUTIVE FORUMS

14 PANELS

06 PODIUM PRESENTATION

www.icc2016.ieee-icc.org

TECHNICAL PROGRAM

The Technical Program includes tutorials, workshops and a comprehensive symposia featuring oral and poster presentations grouped into 13 thematic symposia, and more than 15 parallel sessions. Specific presentations will target next generation research in device-to-device communications, self-organizing networks, green communications and computing, millimeter wave communications, content centric network design, vehicular networks, Internet security, video streaming, data storage, game theory, routing and reliability, and big data networking, among hundreds of other topics.

Technical Symposia features 960 peer-reviewed papers on current research and development organized into the following 13 Symposia consisting of oral and interactive sessions and special sessions organized by the Editor-in-Chief of IEEE Wireless Communications Letter.

AHSN: Ad Hoc and Sensor Networking Symposium
CISS: Communications and Information Systems Security Symposium
CQRM: Communications QoS, Reliability and Modeling Symposium
CRN: Cognitive Radio and Networks Symposium
CSSMA: Communications Software, Services and Multimedia Applications Symposium
CT: Communication Theory Symposium
GCSN: Green Communications Systems and Networks Symposium
MWN: Mobile and Wireless Symposium
NGN: Next-Generation Networking and Internet Symposium
ONS: Optical Networks and Systems Symposium
SAC-ASN: Selected Area – Access Systems and Networks
SAC-CSG: Selected Area – Communications for the Smart Grid
SAC-CCN: Selected Area – Cloud Communications and Networking
SA-DS: Selected Area – Data Storage
SAC-E-HLT: Selected Area – e-Health
SAC-IoT: Selected Area – Internet of Things
SAC-SSC: Selected Area – Satellite and Space Communications
SAC-SN: Selected Area – Social Networking
SPC: Signal Processing for Communications Symposium
WCL: Wireless Communications Letter
WCS: Wireless Communications Symposium

Tuesday, May 24 2016 • 11:00 - 12:30
AHSN-1: Energy-Efficient Networks I
AHSN-2: Distributed Algorithms
CISS-1: Security of Cyber-physical Systems
CQRM-1: Networking & Transporting Techniques
CQRM-IS-1: Communication QoS, Reliability and Modeling (Interactive)
CRN-1: Spectrum Sensing
CSSMA-IS-1: Communications Software, Services and Multimedia Applications (Interactive)
CT-1: Cellular 5G
GCSN-IS-1: Green Powered Network (Interactive)
MWN-1: Resource Allocation
MWN-2: Mobile Networks
NGN-1: Future Internet and Next-generation Networking Architectures I
ONS-1: Access Networks
SAC-CCN-IS1: Cloud Communications and Networking (Interactive)
SAC-DS-1: Data Storage
SAC-E-HLT-IS-1: E-Health (Interactive)

SAC-SSC-1: Networking
SPC-1: Full Duplex
WCS-1: Cooperative Networks and Relaying Communications I
WCS-2: Small Cells and Heterogeneous Networks I
WCS-3: Multiple Access
WCS-4: Massive MIMO I
WCS-IS-1: Interference Characterization and Interference Management (Interactive)

IEEEICC2016
960
PRESENTATIONS
ACROSS 13 THEMATIC SYMPOSIA

Tuesday, May 24 2016 • 14:00 - 15:30
AHSN-3: Energy-Efficient Networks II
AHSN-4: Mobile and Vehicular Ad Hoc Networks I
CISS-2: Internet Security I
CQRM-2: Network Coding
CQRM-IS-2: Communication QoS, Reliability and Modeling (Interactive)
CRN-2: Resource Management I
CT-2: Multiple Access I
CT-IS-2: Communication Theory (Interactive)
GCSN-IS-2: Energy Efficiency 1 (Interactive)
MWN-3: Caching and Offloading
MWN-4: IoT and M2M
NGN-2: Future Internet and Next-generation Networking Architectures II
ONS-2: Visible Light and Optical Wireless Communications I
SAC-DS-IS-2: Distributed Data Storage (Interactive)
SAC-E-HLT-IS-2: E-Health (Interactive)
SAC-IoT-1: Security and Trust in IoT
SAC-SSC-2: Management
SPC-2: Millimeter-wave Communications
WCS-5: MIMO I
WCS-6: Device to Device Communications I
WCS-7: Cooperative Networks and Relaying Communications II
WCS-8: Energy Harvesting I
WCS-IS-2: Featured Wireless Communications: RFID and UAV (Interactive)

More information about the Technical Program is available at http://www.icc2016.ieee-icc.org/

TECHNICAL PROGRAM

Tuesday, May 24 2016 • 16:00 - 17:30
AHSN-5: Localization, Tracking and Mobility
AHSN-6: Security and Privacy
CISS-3: Internet Security II
CQRM-3: SDN/NFV
CQRM-IS-3: Communication QoS, Reliability and Modeling (Interactive)
CRN-3: Resource Management II
CT-3: Channel Modeling & Performance
CT-IS-3: Coding (Interactive)
MWN-5: LTE and Beyond I
MWN-6: Multiple Access
NGN-3: Content-based Networking
ONS-3: Coding, Modulation, and Signal Processing in Optical Networks
SAC-ASN-IS-3: Access Systems and Networks (Interactive)
SAC-CSG-1: Communications for the Smart Grid
SAC-IoT-IS-3: Internet of Things (Interactive)
SAC-SSC-3: Antennas
SPC-3: Massive MIMO
WCL-IS-3: Wireless Communications Letters – Selected Papers (Interactive)
WCS-10: MIMO II
WCS-11: Interference Characterization I
WCS-12: Wireless Channels and Propagation
WCS-9: Estimation and Detection I
WCS-IS-3: Radio Resource Management (Interactive)

Wednesday, May 25 2016 • 11:00 - 12:30
AHSN-7: Delay Tolerant Networks and Opportunistic Networking
AHSN-IS-4: Wireless Network Applications I (Interactive)
CISS-4: Mobile and Wireless Network Security I
CISS-5: Security of Large-Scale Systems and SDN
CQRM-4: Virtualization and Cloud

CRN-4: Spectrum Access
CT-4: Multiple Access II
GCSN-1: Energy Harvesting I
MWN-7: LTE and Beyond II
MWN-IS-4: Mobile Wireless Networks (Interactive)
NGN-4: Mobile/Wireless Content Distribution I
NGN-5: Software Defined Networking I
ONS-4: Optical Networks for Data Centers
SAC-CCN-1: Future Cellular Networks and Mobile Cloud Computing
SAC-CSG-IS-4: Communications for the Smart Grid (Interactive)
SAC-IoT-2: Cloud, Edge Computing and IoT
SPC-4: MIMO
SPC-IS-4: Advanced Receiving Techniques (Interactive)
WCS-13: Small Cells and Heterogeneous Networks II
WCS-14: Smart Antennas
WCS-15: Massive MIMO II
WCS-IS-4: OFDM and Multi-carrier Systems (Interactive)

Wednesday, May 25 2016 • 14:00 - 15:30
AHSN-8: Mobile and Vehicular Ad Hoc Networks II
CISS-6: Mobile and Wireless Network Security II
CISS-IS-5: Application Security (Interactive)
CQRM-5: Multimedia Communications
CRN-5: Spectrum Sharing I
CT-5: Coding I
GCSN-2: Wireless Power I
MWN-8: Cellular Networks
MWN-9: Vehicular Networks
NGN-6: Mobile/Wireless Content Distribution II
NGN-7: Software Defined Networking II
ONS-5: Visible Light and Optical Wireless Communications II
SAC-CCN-2: Cloud Networks and Data Centers
SAC-CSG-IS-5: Communications for the Smart Grid (Interactive)
SAC-IoT-3: Location, Management and Infrastructure Services for IoT
SAC-SN-IS-5: Social Networking (Interactive)
SPC-5: Localization
SPC-IS-5: Multicarrier Communications (Interactive)
WCL-IS-5: Wireless Communications Letters – Selected Papers (Interactive)
WCS-16: Energy Harvesting II
WCS-17: Cooperative Networks and Relaying Communications III
WCS-18: Energy Efficient Communications
WCS-IS-5: MIMO, Multi-user MIMO and Massive MIMO (Interactive)

Wednesday, May 25 2016 • 16:00 - 17:30
AHSN-9: Mobile and Vehicular Ad Hoc Networks III
CISS-7: Privacy and Privacy Enhancing Technologies
CISS-IS-6: Authentication, Access Control, and Other Topics (Interactive)
CQRM-6: QoE
CRN-6: Spectrum Sharing II
CT-6: MIMO
GCSN-3: Energy Efficiency II

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TECHNICAL PROGRAM

MWN-10: Multimedia Transmission
MWN-IS-6: Mobile Wireless Networks (Interactive)
NGN-8: Machine-to-Machine, Device-to-Device, Machine-Type-Communications in Next Generation Internet
NGN-9: Next-generation Network Management and Control
ONS-6: Optical Network Planning and Optimization
SAC-CCN-3: Resource Allocation and Flow Scheduling in Data Centers
SAC-IoT-4: Crowdsensing and IoT Enabling Services
SAC-SSC-IS6: Analysis (Interactive)
SPC-6: Cloud Radio Access Networks
SPC-7: Distributed Signal Processing
WCL-IS-6: Wireless Communications Letters – Selected Papers (Interactive)
WCS-19: Modulation and Coding
WCS-20: Millimeter Wave and Terahertz Communications I
WCS-21: Device to Device Communications II
WCS-IS-6: Physical-layer Based Network Issues (Interactive)

Thursday, May 26 2016 • 11:00 - 12:30
AHSN-10: Routing
AHSN-IS-7: Wireless Network Applications II (Interactive)
CISS-8: Cloud Security
CQRM-7: Resource Allocation I
CRN-7: Privacy and Security
CSSMA-1: Mobile Network Services
CT-7: RRM
GCSN-4: Energy Harvesting II
GCSN-5: Power/Energy Minimization
MWN-11: Wireless Networks
MWN-12: Radio Access Networks
NGN-10: Next-generation Flow Management
NGN-IS-7: Future Internet and Next-generation Networking Architectures III (Interactive)
ONS-IS-7: Optical Networks and Systems (Interactive)
SAC-CCN-IS-7: Cloud Communications and Networking (Interactive)
SAC-E-HLT-1: e-Health Networks
SAC-SN-1: Social Media
SAC-SN-I-7: Social Networking (Interactive)
SPC-8: Spatial Modulation
WCS-22: Energy Harvesting III
WCS-23: Cooperative Networks and Relaying Communications IV
WCS-24: Millimeter Wave and Terahertz Communications II

Thursday, 26 May 2016 • 14:00 - 15:30
AHSN-11: Performance Evaluation
CISS-9: Security of Smart Device Systems
CQRM-8: Resource Allocation II
CRN-IS-8: Emerging Topics, Services, and Applications I (Interactive)
CSSMA-2: Future Networking Services and Technologies
CT-8: Molecular Communication
GCSN-6: Energy Management I
MWN-13: IEEE 802.11 Networks
MWN-14: Device to Device (D2D) Communications
NGN-11: QoS and QoE in Next-generation Networks
NGN-IS-8: Next-generation Access Networking and Mobile Security (Interactive)

ONS-IS-8: Optical Networks and Systems (Interactive)
SAC-ASN-1: Integrated Wired/Wireless Access
SAC-E-HLT-2: Healthcare Sensor Networks
SAC-SN-2: Social Dynamics
SAC-SSC-IS-8: Communications (Interactive)
SPC -9: Channel Identification and Shortening
WCS-25: Network Coding
WCS-26: Interference Characterization II
WCS-27: Interference Management I
WCS-28: Massive MIMO III
WCS-IS-8: Interference Management and Coordination (Interactive)

19 TUTORIALS

14 WORKSHOPS

Thursday, 26 May 2016 • 16:00 - 17:30
AHSN-12: Power Control
CISS-10: Physical Layer Security
CQRM-9: Tools and Methods
CRN-IS-9: Emerging Topics, Services, and Applications II (Interactive)
CSSMA-3: Multimedia Streaming and Video Delivery
CT-9: Coding II
GCSN-7: Energy Management II
MWN-15: Heterogeneous Wireless Networks
MWN-16: Small Cell Networks
MWN-IS-9: Mobile Wireless Networks (Interactive)
NGN-12: Centralized-RAN and Cloud-RAN Architectures
NGN-IS-9: Next-generation Internet Applications and Services (Interactive)
ONS-7: Next Generation Optical Networks
SAC-CCN-4: Cloud Network Optimization and Flow Control
SAC-E-HLT-3: e-Health Applications
SAC-SN-3: Privacy and Security
SPC-10: Cooperative and Heterogeneous Networks
WCS-29: Estimation and Detection II
WCS-30: Interference Management II
WCS-31: Physical Layer Security
WCS-IS-9: Recent Advances in MIMO and OFDM (Interactive)

More information about the Technical Program is available at http://www.icc2016.ieee-icc.org/

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TECHNICAL PROGRAM

TUTORIALS
are half day lectures on current topics in communications and networking.

Monday, 23 May 2016 • 09:00 - 12:30
T01: Designing 5G Networks: An Energy Efficient Perspective
T02: LTE Mobility Security and Virtualization
T03: Advanced Ad Hoc and Mesh Networks: From Theoretical to Practical
T04: Mobile Crowdsourcing: Incentives, Trust, and Privacy

Monday, 23 May 2016 • 14:00 - 17:30
T05: Greening Big Data Networks
T06: Denial of Service Attacks on the Smart Grid: Classification, Solutions, and Challenges
T07: Distributed Mobility Management towards Software Defined Networking
T08: Towards 5G: Carrier-Grade Programmable Virtual Mobile Networks
T09: Back-haul/Front-haul Technologies for Heterogeneous Small Cell Networks
T10: Nanoscale Wireless Networking: Opportunities, Challenges and Recent Advances

Friday, 27 May 2016 • 09:00 - 12:30
T12: Energy Efficient Broadband Access
T13: Big Sensed Data: Evolution, Challenges and Practical Directions
T14: Centralized Radio Access Networks: Moving Baseband to the Cloud
T15: Emerging Concepts and Technologies towards 5G+ Wireless Networks
T16: Radio Resource and Interference Management in 5G Cellular Networks

Friday, 27 May 2016 • 14:00 - 17:30
T17: Network Coding: From Theory to Practice
T18: Wireless Caching towards 5G: Network Coding and PHY Considerations
T19: Understanding Small Cell Networks: The Present and the Future
T20: Distributed Resource Allocation for 5G Communications and Networks

WORKSHOPS
are in-depth half or full day programs on the latest technical and business issues in communications and networking, and include a mix of regular papers, invited presentations and panel discussions.

Monday, 23 May 2016 • 09:00 - 12:30
W04: Next Generation Backhaul/Fronthaul Networks (BackNets)
W05: Novel Medium Access and Resource Allocation for 5G Networks (MAC&RA for 5G)

Monday, 23 May 2016 • 09:00 - 17:30
W01: 5G Architecture (5GArch)
W02: Optical Wireless Communications (OWC)
W03: Wireless Physical Layer Security (PHY Security)

Monday, 23 May 2016 • 14:00 - 17:30
W06: Advances in Network Localization and Navigation (ANLN)
W07: Convergent Internet of Things (Convergent IoT)
W08: Integrating Communications, Control and Computing Technologies for Smart Grid (ICT4SG)

Friday, 27 May 2016 • 09:00 - 12:30
W12: Quality of Experience-based Management for Future Internet Applications & Services
W13: Advanced PHY & MAC Technology for Super Dense Wireless Networks
W14: Massive Uncoordinated Access Protocols

Friday, 27 May 2016 • 09:00 - 17:30
W09: 5G RAN Design
W10: Cooperative & Cognitive Networks
W11: Orchestration for Software-Defined Infrastructures

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SOCIAL PROGRAM

Welcome Reception

WELCOME RECEPTION
Monday, 23 May 2016 • 18:30 - 21:00

"Tak Kenal Maka Tak Cinta"

a local Malay saying that beckons anyone to experience Malaysia's cultural heritage of traditional arts and crafts. Honed from the influences of nature, spiritual beliefs and ancestral roots, these handcrafts not only tell a tale of its people, but shed light on the rich history that has shaped the modern nation. In keeping these traditions alive, conference delegates and guests are invited participation in these **eight not-to-be-missed cultural experiences at the Welcome Reception.**

PEWTER-SMITHING

BASKET-WEAVING

SONGKET-WEAVING

HENNA-PAINTING

GAMELAN

CHINESE CALLIGRAPHY

BATIK PAINTING

BASKET-WEAVING

AWARDS LUNCHEON
Tuesday, 24 May 2016 • 12:30 - 14:00
Join us as we celebrate and honor fellow members of the IEEE Communications Society with a myriad of paper awards for their various contributions to the society. The Society's major paper awards recognize outstanding and original papers published in IEEE ComSoc journals and magazines, which essentially enlarge the field of communications engineering; for example, open new lines of research, envision bold approaches to communication and formulate new problems to solve. Award recipients discover, extend, or complement technological advancements in education, industry, research and service.

The Awards Luncheon is included in full registrations. Additional tickets are available for purchase via the registration system at a cost of USD 50 per person.

CONFERENCE BANQUET
Wednesday, 25 May 2016 • 19:00 - 22:00

While dining on exquisite Chinese cuisine, attendees will be treated to spectacular live performances featuring the Citrasari Dance Troupe and Malay Kampong Boy Live Musical Performance.

The Citrasari Dance Troupe will perform various traditional Malay dances such as the 'joget' - a dance influences by the Potugese, 'zapin' - a popular Johorean dance influenced by the Middle East, and 'inang' - a modernised version of the Mak Inang dance which was tremendously popular during the Sultanate period in Malacca. There will also be Indian and Chinese dances for a truly cultural fiesta.
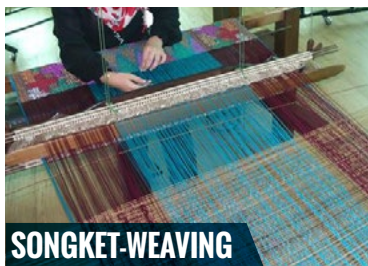
The Conference Banquet is included in full registrations. Additional tickets are available for purchase via the registration system at a cost of USD 100 per person. Please note that tickets will be on a first come-first-serve-basis. Please purchase your ticket now to avoid any disappointment!

More information about the Social Program is available at http://www.icc2016.ieee-icc.org/

FULL CONFERENCE REGISTRATION

CODES	CATEGORIES	REGISTRATION FEES
RG-01	MEMBER - ComSoc	USD 1,000.00
RG-02	MEMBER - IEEE/Sister Society	USD 1,040.00
RG-03	NON MEMBER	USD 1,300.00

LIMITED CONFERENCE REGISTRATION

CODES	CATEGORIES	REGISTRATION FEES
RG-04	MEMBER - ComSoc	USD 850.00
RG-05	MEMBER - IEEE/Sister Society	USD 890.00
RG-06	NON MEMBER	USD 1,150.00

ONE-DAY REGISTRATION (24 May, 25 May or 26 May)

CODES	CATEGORIES	REGISTRATION FEES
RG-07	MEMBER - ComSoc	USD 500.00
RG-08	MEMBER - IEEE/Sister Society	USD 520.00
RG-09	NON MEMBER	USD 640.00

STUDENT & LIFE MEMBER REGISTRATION

CODES	CATEGORIES	REGISTRATION FEES
RG-10	Student - IEEE Member	USD 350.00
RG-11	Student - Non Member	USD 460.00
RG-12	Life Member	USD 70.00

WORKSHOPS & TUTORIALS ONLY

CODES	CATEGORIES	REGISTRATION FEES
RG-13	Workshops & Tutorials on 23 May Includes 1 AM Workshop / Tutorial and 1 PM Workshop / Tutorial	USD 250.00
RG-14	Workshops & Tutorials on 27 May Includes 1 AM Workshop / Tutorial and 1 PM Workshop / Tutorial	USD 250.00

WORKSHOPS & TUTORIALS ONLY   (STUDENT MEMBER PRICE)

CODES	CATEGORIES	REGISTRATION FEES
RG-15	Workshops & Tutorials on 23 May Includes 1 AM Workshop / Tutorial and 1 PM Workshop / Tutorial	USD 150.00
RG-16	Workshops & Tutorials on 27 May Includes 1 AM Workshop / Tutorial and 1 PM Workshop / Tutorial	USD 150.00

Reserve your accommodations at Impiana Hotel to receive the conference rate.