

Sharif
University
of
Technology

MWTS
2017

Introduction

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Booklet

Welcome

This Conference, held at Sharif University of Technology, mainly focuses on the fifth generation of telecommunication systems, known as 5G. This technology will be the successor of 4G LTE with higher bit rate, higher simultaneous connection handling capability, significantly higher spectral efficiency, lower latency, higher signalling efficiency and many other advantages which will take mobile network capabilities to a whole new level. These new capabilities enable the use of 5G-based networks in various domestic, scientific, industrial, financial, and medical applications which are the topics of this conference. All these uses work towards enhancing the quality, efficiency and safety of human lives and the cost effectiveness of mobile networks for both users and operators. Currently, many worldwide R & D projects are underway in various institutes to create the infrastructure required to make the use of this technology possible till the expected year of launch, 2020.

The MWTS Team warmly welcomes you to this conference and hopes you find what you seek in knowledge through the workshops, speeches, and demonstrations of this event. In this booklet, you will find all the information you require for 4 days at this conference. In case you require more info, either visit our website at:

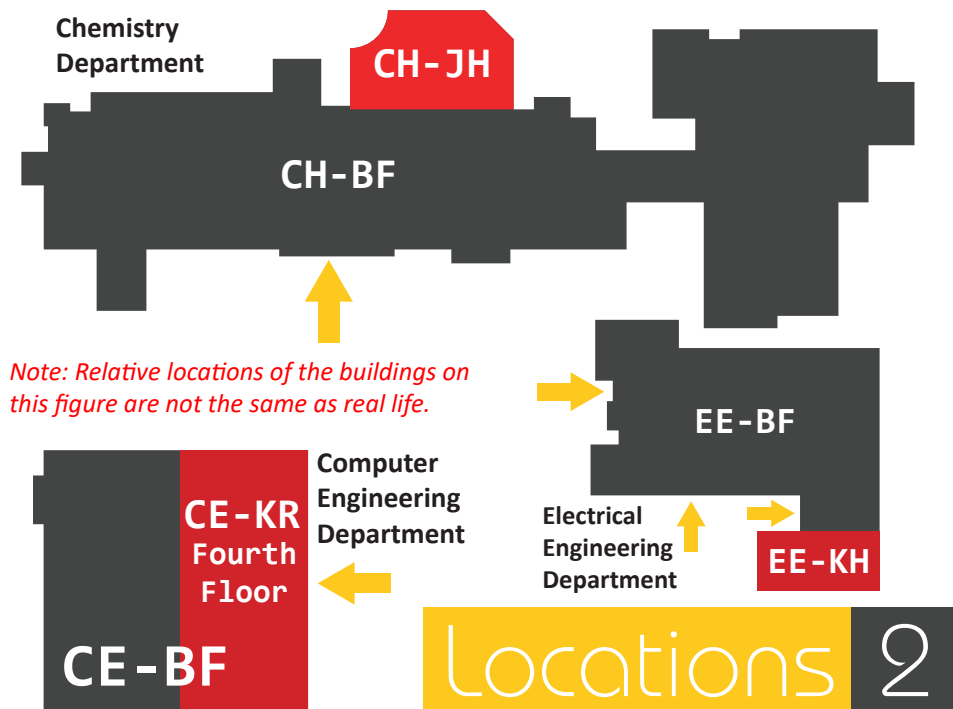
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or ask one of our organization team members in the university. You'll surely have no problem finding them walking around the place during the course of the event.

Locations Guide

Each location for the events in this conference has been given a “location code” to make finding the locations easier. Below is a guide on the various location codes used in the schedule tables on the following pages. Refer to the full university campus map provided with this booklet to find each building.

Location Code (LC)	Tag	Description
GB - SE	General Buildings	South Entrance
GB - DH	General Buildings	Dining Hall
EE - BF	Electrical Engineering Department	Base Floor
EE - KH	Electrical Engineering Department	Kahroba Hall
CE - BF	Computer Engineering Department	Base Floor
CE - KR	Computer Engineering Department	Kharazmi Hall
CH - BF	Chemistry Department	Base Floor
CH - JH	Chemistry Department	Jaber Ibn Hayyan Hall



Day 0

Monday, March 6th - 2017

Time	Program	Person of Interest	Description	LC
07:30 - 09:00	Reception			GB-SE
09:00 - 11:00	Workshop	Dr. Ahmad Rostami	End-to-End Programmability in 5G Networks	EE-KH
11:00 - 11:30	Long Break			EE-BF
11:30 - 12:30	Workshop	Dr. Toktam Mahmoudi	Role of 5G in Revolutionizing More Traditional Industries	CE-KR
12:30 - 14:00	Lunch and Prayers			GB-DH
14:00 - 15:30	Workshop	Dr. Mohammad Ali Maddah Ali	Cache Networks: Opportunities and Challenges	CE-KR
15:30 - 16:00	Long Break			CE-BF
16:00 - 17:30	Workshop	Dr. Alireza Farhadi	Control of Emerging Complex Systems and Networks in 5G	EE-KH

Lecturers Info

#	Name	Description
1	Dr. Ahmad Rostami	Senior Researcher at Ericsson Research, Sweden
2	Dr. Toktam Mahmoudi	Faculty of Communications, Kings College London, United Kingdom
3	Dr. Mohammadali Maddah Ali	Faculty of Communications, EE Dept, Sharif University of Technology
4	Dr. Alireza Farhadi	Faculty of Control, EE Dept, Sharif University of Technology

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Schedule

Day 1

Tuesday, March 7th - 2017

Time	Program	Person of Interest	Description	LC
07:30 - 08:30	Reception			CH-BF
08:30 - 09:00	Quran and National Anthem			CH-JH
09:00 - 09:10	Speech	Prof. Mahmoud Fotuhi		CH-JH
09:10 - 09:20	Speech	Prof. Hamidreza Rabiee		CH-JH
09:20 - 09:40	Speech	Prof. Babak Hossein Khalaj		CH-JH
09:40 - 10:00	Speech	Dr. Mahmoud Vaezi		CH-JH
10:00 - 10:20	Speech	Mozaffar Pour Ranjbar		CH-JH
10:20 - 10:40	Speech	Dr. Rasool Saraeian		CH-JH
10:40 - 11:00	Speech	Dr. Hamidreza Nikoofar		CH-JH
11:00 - 11:15	Speech	S. M. Hossein Sajjadi Nayeri		CH-JH
11:15 - 11:30	Speech	Dr. Mohammadreza Pakravan		CH-JH
11:30 - 11:45	Speech	Dr. Ali Fotowat Ahmadi		CH-JH
11:45 - 12:00	Speech	Dr. Azim Fard		CH-JH
12:00 - 13:30	Lunch and Prayers			GB-DH
13:30 - 13:50	Speech	Mohammad M. Abbaskhani		CH-JH
13:50 - 14:10	Speech	Ralf Pichler		CH-JH
14:10 - 14:45	Speech	Daniel Boniecki		CH-JH
14:45 - 15:00	Short Break			CH-BF
15:00 - 16:15	Workshop	Dr. Saeedeh Parsaeifard	Converged Resource Management over Software Defined Virtualized 5G Networks: Opportunities and Challenges	CH-JH
16:15 - 16:30	Short Break			CH-BF
16:30 - 17:45	Workshop	Dr. Alireza Fereydoonian	Advanced Metering Infrastructure Data Analytics in Smart Grid	CH-JH

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Schedule 4

Day 1^{Continued}

Tuesday, March 7th - 2017

Lecturers Info

#	Name	Description
1	Prof. Mahmoud Fotuhi	President of Sharif University of Technology
2	Prof. Hamidreza Rabiee	Faculty of CE Department, Sharif University of Technology
3	Prof. Babak Hossein Khalaj	Conference Chair, Faculty of Communications, SUT
4	Dr. Mahmoud Vaezi	Iran Minister of Information and Communication Technology
5	Mozaffar Pour Ranjbar	CEO of Parsian Data Processing Group (Main Sponsor of MWTS)
6	Dr. Rasool Saraeian	CEO of Telecommunication Company of Iran (TCI)
7	Dr. Hamidreza Nikoofar	Deputy CEO of Mobile Company of Iran (MCI)
8	Seyyed Mohammad Hossein Sajjadi Nayeri	ICT Deputy of Presidential Center for Innovative and Technological Cooperation
9	Dr. Mohammadreza Pakravan	Chairman of Rightel Board
10	Dr. Ali Fotowat Ahmadi	VP of Telecom Industries Syndicate and CEO of Kavoshcom Asia
11	Dr. Azim Fard	Communications Regulatory Authority
12	Ralf Pichler	President & Head of Ericsson Iran
13	Daniel Boniecki	Senior Partner of McKinsey and Company, Poland Branch
14	Mohammad Mahdi Abbaskhani	CEO of NAK Telecom Managed Services
15	Dr. Saeedeh Parsaeefard	Researcher at Iran Telecommunication Research Center
16	Dr. Alireza Fereydunian	Faculty of Khajeh Nasireddin Toosi University of Technology

Day 2

Wednesday, March 8th - 2017

Time	Program	Person of Interest	Description	LC
07:30 - 09:00	Reception			GB-SE
09:00 - 09:45	Speech	Prof. Jawad A. Salehi	Optical Networks	EE-KH
09:45 - 10:15	Speech	Dr. Hamzeh Beyranvand	The Role of Optical Access Networks in 5G	EE-KH
10:15 - 10:45	Speech	Dr. Azad Ravanshid	Cloud Native End-to-End Platform for 4G to 5G Evolution	EE-KH
10:45 - 11:00	Short Break			EE-BF
11:00 - 11:20	Speech	Dr. Mohammadreza Sabbagh	4G Evolution to 5G in 3GPP	EE-KH
11:20 - 12:00	Speech	Dr. Roghayeh Joda	5G Roadmap in Iran	EE-KH
12:00 - 12:30	Speech	Siamak Khalaj	Smart Meters in Iran as First IOT Solution	EE-KH
12:30 - 14:00	Lunch and Prayers			GB-DH
14:00 - 15:30	Workshop	Mohammad Fakhrazadeh	Millimeter-wave Technology for Next Generation of Wireless Systems (5G)	EE-KH
15:30 - 16:00	Long Break			EE-BF
16:00 - 17:30	Workshop	Deniz Koylu	On the Road to 5G	EE-KH

Lecturers Info

#	Name	Description
1	Prof. Jawad A. Salehi	Faculty of Communications, EE Dept, Sharif University of Technology
2	Dr. Hamzeh Beyranvand	Faculty of Amirkabir University of Technology, Tehran
3	Dr. Azad Ravanshid	Research Associate at Sharif University of Technology
4	Dr. Mohammadreza Sabbagh	Iran Telecommunication Research Center
5	Dr. Roghayeh Joda	Head of 5G Roadmap Project and Researcher at Iran Telecommunication Research Center
6	Siamak Khalaj	Dispatching and ICT Director of Monenco Consulting Iran
7	Dr. Mohammad Fakhrazadeh	Faculty of Electronics, EE Dept, Sharif University of Technology
8	Deniz Koylu	Strategic Network Evolution at Ericsson RMEA

Schedule 6

Day 3

Thursday, March 9th - 2017

Time	Program	Person of Interest	Description	LC
07:30 - 09:00	Reception			GB-SE
09:00 - 13:00	Paper Presentation and Ph.D Talks	Elahe Rezaei Shabnam Namazkar, Masoud Sabaei Havar Bathaee, Dr. Roghayeh Joda Masoumeh Sadat Tohidi, Mahnaz Sinaei Dr. Hamidreza Bakhshi		EE-KH
13:00 - 14:30	Lunch and Prayers			GB-DH
14:30 - 16:00	Ph.D Talks	Parisa Lotfi, Ali Asghar Razavi Mohammad Hossein Mazaheri Dr. Basiri		CH-JH
16:00 - 16:30	Long Break			CH-BF
16:30 - 18:00	Closing Ceremony			CH-JH

Lecturers Info

#	Name	Description
1	Elahe Rezaei	University of Texas, Dallas
2	Shabnam Namazkar	Amirkabir University of Technology
3	Dr. Masoud Sabaei	Amirkabir University of Technology
4	Havar Bathaee	Researcher at Iran Telecommunication Research Center
5	Dr. Roghayeh Joda	Head of 5G Roadmap Project and Researcher at Iran Telecommunication Research Center
6	Masoumeh Sadat Tohidi Kashani	Tehran Shahed University
7	Mahnaz Sinaei	Yasouj University
8	Dr. Hamidreza Bakhshi	Tehran Shahed University
9	Parisa Lotfi	Hong Kong University of Science and Technology
10	Ali Asghar Razavi	Sharif University of Technology
11	Mohammad Hossein Mazaheri	Sharif University of Technology
12	Dr. Basiri	Amirkabir University of Technology

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Schedule

Workshop 1



Date: Monday, March 6th

Time: 09:00 AM- 11:00 AM

Presenter: Dr. Ahmad Rostami

Title: End-to-End Programmability in 5G Networks

Abstract

The 5th. generation of mobile communication systems (5G) will provide a common platform for offering a variety of networking services, ranging from enhanced mobile broadband to media delivery and industrial applications. Supporting these services requires, among other things, a flexible and end-to-end programmable infrastructure, which enables agile service composition and scaling in a cost- and resource-efficient manner. Furthermore, as end-to-end services are increasingly deployed in a distributed cloud environment, this programmability should span all relevant domains, including radio access network (RAN), various (transport) network domains and distributed processing, in an orchestrated manner. Software defined networking (SDN) and network function virtualization (NFV) are technologies of choice for fulfilling these flexibility and programmability requirements.

This talk will present an overview of some of major topics in programmable 5G networks. This includes an overview of 5G systems and corresponding architectural options and use cases, programmable transport, RAN and core networks based on SDN/NFV, network virtualization and slicing, cross-domain orchestration and end-to-end programmability, as well as relevant research challenges and future directions.

Workshop 2



Date: Monday, March 6th

Time: 11:30 AM- 12:30 PM

Presenter: Dr. Toktam Mahmoudi

Title: Role of 5G in Revolutionizing More Traditional Industries

Abstract

The mobile ecosystem has evolved from being an environment of bilateral relationship between cellular operators and their customers, to a plethora of specialised companies providing services at different positions of the value chain. 5G will be instrumental for the digitalisation of the traditional industry in its race for better productivity and competitiveness. Cementing strong relationship between Telecom industry, i.e. operators and vendors, and the telecom consumers industry, i.e. verticals, will open the field to new value proposition. The SMEs, including start-ups, play a substantial role in the vertical value chain as suppliers, service providers and knowledge providers. While SMEs are often restricted by the sector structures they operate in, policies towards innovation friendly digital business ecosystems can help them to break out of these boundaries. Advances in 5G including infrastructure capabilities, Big Data assets and the IoT development can help verticals to create more value, better sector knowledge, and ultimately stronger ground for new sector applications and services. This talk will focus on such 5G advances and developments, and their role in the success of verticals. The energy, including oil and gas industry, and healthcare are two examples that will be elaborated in more details.

Workshop 3



Date: Monday, March 6th

Time: 14:00 - 15:30

Presenter:

Dr. Mohammad Ali Maddah Ali

Title: Cache Networks: Opportunities and Challenges

Abstract

Caching is an essential technique to improve throughput and latency in a vast variety of applications. There is a rich and beautiful theory, developed mostly in the computer science community during the 80s and 90s, for systems with a single cache. However, when it comes to networks of caches the existing theory falls short, and engineers instead rely on heuristics and the intuition gained from the analysis of single-cache systems. In addition, the contribution the underlying communication network (wireless or wired), connecting cache memories and users, has been basically unexplored.

The goal of this tutorial is to discuss some of the very recent results in this area, and highlights various opportunities and challenges in designing and using cache networks. In particular, we will argue that when the caching strategy is designed jointly with the delivery scheme, considering the properties and limits of the underlying communication networks, the overall performance of the system can substantially improved. This improvement can even scale with the size of the networks. The new designs are based on developing and exploiting the state of art in information theory, coding, communications, and networking. These recent developments have motivated researchers in academia and industry to investigate the role caching in achieving the demanding requirements of 5G, the next generation of wireless communication.

Workshop 4



Date: Monday, March 6th

Time: 16:00 - 17:30

Presenter: Dr. Alireza Farhadi

Title: Control of Emerging Complex Systems and Networks in 5G

Abstract

Advances in communication, embedded computing, sensor and actuator technologies, are leading to a new generation of systems and networks. Examples of these systems are tele-surgery, autonomous road/ground, underwater and unmanned aerial vehicles, fleets of simple collaborative mobile autonomous/robotic systems, automated irrigation networks, automated transportation systems, smart power grids, etc.

The main barrier to developing these emerging complex systems and networks is the lack of co-design frameworks, which allow integration of control, communication and computation in a single unified framework. For these systems, we need to find novel integrated frameworks that allow real time communication of data, and compensation of communication and computation imperfections and limitations in control loops. A logical approach to addressing the above problem is to first consider less complicated scenarios (e.g., control/communication co-design, control/computation co-design, etc.) and then extension of these integrated frameworks to more complicated frameworks (e.g., control/communication/computation co-design).

In this workshop, we first introduce a few emerging complex systems and networks. Then, we discuss the major issues on the design and development of these systems. After that, we describe some of the new integrated co-design frameworks developed for tele-operation of autonomous vehicles, coordination of fleets of autonomous under water vehicles and automated irrigation networks; and we show that using these integrated co-design frameworks the desired performance is achieved; while using the available classical design methodologies, the performance of these systems and networks is very poor.

Workshop 5



Date: Tuesday, March 7th

Time: 15:00 - 16:15

Presenter: Dr. Saeedeh Parsaeefard

Title: Converged Resource Management over Software Defined Virtualized 5G Networks: Opportunities and Challenges

Abstract

Fifth-generation (5G) cellular wireless networks are envisioned to predispose service-oriented, flexible, high spectrum- and energy-efficient edge to core infrastructure, aiming to offer diverse applications such as Internet of things (IoT), tactile Internet and critical mission applications. To cater desirable quality-of-service (QoS) experience for end users of such diverse applications, 5G networks must be designed in highly dynamic structure to provide appropriate configuration based on each services. End-to-end convergence of software-defined networking (SDN), software defined radio (SDR) compatible with multiple radio access technologies (RATs), and virtualization concepts over 5G is providing the main framework to reach this dynamic architecture where the principal technique behind them is to separate the control and traffic planes, from the deep core entities to the edge of wireless access points (APs). This separation also allows the abstraction of resources as transmission parameters of each user over the 5G where the pool of resources can be allocated to each services based on QoS requirements. Besides, 5G resorts to new trends of physical layer technologies such as millimeter-wave transceivers, massive multiple input multiple output (MIMO) scenarios, and non-orthogonal transmission, to improve its own resource utilization, energy efficiency, and decrement of end-to-end delay transmission. Consequently, the pool of resources in 5G contains diverse physical to network layer parameters where it can enable converged multi-layer (CML) resource management over the portfolio of resources. In this talk, we will investigate the CML resource management in 5G, highlight its advantageous, and discuss about its implementation challenges.

Workshop 6



Date: Tuesday, March 7th

Time: 16:30- 17:45

Presenter: Dr. Alireza Fereidunian

Title: Advance Metering Infrastructure Data Analytics in Smart Grid

Abstract

Main Topics:

1. Introduction to Smart Grid
2. Advance metering Infrastructure (AMI)
3. Demand Response (DR)
4. Data Analytics Methods
5. Case Study: AMI Data Analytics for DR

Workshop 7



Date: Wednesday, March 8th

Time: 14:00- 15:30

Presenter:

Dr. Mohammad Fakharzadeh Jahromi

Title: Millimeter-wave Technology for Next Generation of Wireless Systems (5G)

Abstract

It is universally agreed that mm-wave (30-300 GHz) is a key enabling technology for the next generation of mobile communication, known as 5G. Use of mm-wave technology has significant advantages, such as obtaining very high throughput with low power modulation schemes, small antenna form factor, and less interference. For example, the mm-wave bands provide 10 times more bandwidth than the 4G cellular-bands. Nevertheless, some of the disadvantages compared to microwave systems are: higher propagation loss, lower generated power and blockage by buildings and most of the objects. European Union (EU) has defined several projects in horizon 2020 to develop and design new concepts for mobile radio access technology (RAT) for deployment in the 6 to 100 GHz range. These activities are led and coordinated by Samsung. Ericsson acts as technical manager, while Intel, Fraunhofer HHI, Nokia, Huawei and Samsung will each lead one of the five technical work packages of the project. In the meanwhile, in the US and Korea experiments are carried to study wave propagation and radio performance at mm-wave bands.

In this workshop, first we study the use-cases of mm-wave for 5G, and potential frequency bands at mm-wave that can be used for 5G. Then we investigate wave propagation at these bands, and discuss important channel parameters. Next, we discuss how mm-wave technology can be used in 5G radio access technology (RAT), particularly in multi-beam base station, user-end devices, smart antennas and as an enabler for advanced beamforming solutions. Besides, some of our research activities at Sharif University of Technology in mm-wave area will be presented.

Workshop 8



Date: Wednesday, March 8th

Time: 16:00- 17:30

Presenter: Deniz Köylü

Title: On the Road to 5G:
Massive IoT and 5G Plugins

Abstract

Massive IoT

Cellular networks already today provide the foundation for a very wide range of Internet of Things applications and machine-to-machine services. They cover 90 percent of the world's population today with over 230 million cellular M2M subscriptions.

The number of connected devices is growing but there are a number of factors that will influence mass market adoption of IoT on cellular. The three key challenges are: the cost of devices, device battery life and deep indoor coverage to reach down into basements for instance. Other factors such as quality of service and security are already strengths of cellular as I talked about in previous slide.

Cost is clearly a key enabler for large volume, mass market applications: cellular has to compete with other long range technologies where the cost of the devices can be below \$5. The currently cost of a 2G device- of the order of about \$4 to \$10- is competitive enough for a good range of applications, but the current cost of about up to \$40 for LTE modules is too high for low margin, high volume needs.

Then- battery life is really important. A lot of IoT devices are battery powered – and in a lot of cases the cost of going out into the field to replace batteries just isn't viable. So long battery life is a key enabler and what's typically being asked for is battery durations of 10 years or more.

Lastly if we look at coverage. Coverage is especially important for indoor applications, to reach into places like basements, where lots of IoT devices (like smart meters) will end up being installed., as well as to reach remote outdoor locations for applications like agricultural monitoring.

5G PLUG-INS

To facilitate a rapid evolution of 5G access networks and the successful adoption of 5G services we have announced 5G Plug-Ins- software-driven innovations that bring essential 5G technology concepts to today's cellular networks. The development of 5G is a perfect example of how development is now driven by new potential applications. We are working with partners in many different industries, as well as universities and research centers, on use cases for 5G technology. This ensures that we are developing the

Workshop 8

Continued

right technology for real-world applications and gives us the experience to help our customers understand how to accelerate innovation.

5G use cases will include faster and more robust high speed mobile broadband and video everywhere, a proliferation of connected sensors to support the IoT and everything from driverless buses to remote surgery to immersive augmented reality. To enable this 5G future, mobile operators need to start evolving their networks to support new 5G technology concepts, while also investing in their LTE networks. LTE is expected to reach 4.3 billion subscriptions by 2021 and it will play a strong role in tomorrow's 5G networks. Ericsson will continue to innovate in LTE to improve network performance and efficiency with award-winning solutions like Gigabit LTE and Ericsson Lean Carrier.

At the same time, we're also making it easier for operators to evolve their networks for a 5G future with Ericsson 5G Plug-Ins. These are software-driven innovations that bring key 5G technology concepts to today's mobile networks. 5G Plug-Ins are based on many of the breakthrough capabilities developed in our award-winning 5G Radio Test Bed and 5G Radio Prototypes, already deployed in operator field trials.

The first series of 5G Plug-Ins include:

- **Massive MIMO Plug-In:** Improving both the user experience as well as the capacity and coverage of the mobile network, Massive MIMO combines MIMO with beamforming on advanced antennas.
- **Multi-User MIMO Plug-In:** Multi-User or MU-MIMO provides a better user experience, enhances network capacity and coverage, and reduces interference. MU-MIMO increases capacity by transmitting data to multiple user devices simultaneously using the same time and frequency resources with coordinated beamforming.
- **RAN Virtualization Plug-In:** RAN Virtualization improves network efficiency and performance by enabling Virtual Network Functions (VNF) to be centralized on a common platform supporting both 4G and 5G.
- **Intelligent Connectivity Plug-In:** Intelligent Connectivity increases the combined data throughput of 4G and 5G resources by enabling the network to robustly anchor and intelligently route data based on application requirements and network resource availability.
- **Latency Reduction Plug-In:** Latency reduction reduces time to content while enabling real-time communications for key 5G applications such as smart vehicles. By shortening access procedures and modifying the frame structure, Latency Reduction enables instant network access and more frequent transmissions.

Forty percent of the world's mobile traffic is carried over Ericsson networks and we enable these networks to flexibly evolve based on user demand, new applications, and local market requirements. With 5G Plug-Ins, mobile operators can begin to trial and implement 5G technology as early as this year, and evolve to 5G at their own pace.

Ericsson 5G Plug-Ins are available for operator trials starting in 2016 and will be available for commercial networks starting in 2017.

Keynote Speakers

In alphabetical order

#	Name	Description
1	Mohammad Mahdi Abbaskhani	CEO of NAK Telecom Managed Services
2	Dr. Hamzeh Beyranvand	Faculty of Amirkabir University of Technology, Tehran
3	Daniel Boniecki	Senior Partner of McKinsey and Company, Poland Branch
4	Dr. Azim Fard	Communications Regulatory Authority
5	Dr. Mohammad Fakharzadeh	Faculty of Electronics, EE Dept, Sharif University of Technology
6	Dr. Alireza Farhadi	Faculty of Control, EE Dept, Sharif University of Technology
7	Dr. Alireza Fereydunian	Faculty of Khajeh Nasireddin Toosi University of Technology
8	Dr. Ali Fotowat Ahmadi	VP of Telecom Industries Syndicate and CEO of Kavoshcom Asia
9	Prof. Mahmoud Fotuhi	President of Sharif University of Technology
10	Prof. Babak Hossein Khalaj	Conference Chair, Faculty of Communications, SUT
11	Dr. Roghayeh Joda	Head of 5G Roadmap Project and Researcher at Iran Telecommunication Research Center
12	Siamak Khalaj	Dispatching and ICT Director of Monenco Consulting Iran
13	Deniz Koylu	Strategic Network Evolution at Ericsson RMEA
14	Dr. Mohammad Maddah Ali	Faculty of Communications, EE Dept, Sharif University of Technology
15	Dr. Toktam Mahmoudi	Faculty of Communications, Kings College London, United Kingdom
16	Dr. Hamidreza Nikoofar	Deputy CEO of Mobile Company of Iran (MCI)
17	Dr. Mohammadreza Pakravan	Chairman of Rightel Board
18	Dr. Saeedeh Parsaeefard	Researcher at Iran Telecommunication Research Center
19	Ralf Pichler	President & Head of Ericsson Iran
20	Mozaffar Pour Ranjbar	CEO of Parsian Data Processing Group
21	Dr. Azad Ravanshid	Research Associate at Sharif University of Technology
22	Dr. Ahmad Rostami	Senior Researcher at Ericsson Research, Sweden
23	Seyyed Mohammad Hossein Sajjadi Nayeri	ICT Deputy of Presidential Center for Innovative and Technological Cooperation
24	Prof. Jawad A. Salehi	Faculty of Communications, EE Dept, Sharif University of Technology
25	Dr. Rasool Saraeian	CEO of Telecommunication Company of Iran (TCI)
26	Dr. Mahmoud Vaezi	Iran Minister of Information and Communication Technology

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