ngmn
the engine of broadband
wireless innovation

**NGMN Industry Conference &
Exhibition 2015
24 – 25 March 2015
Kap Europa, Frankfurt,
Germany**

5G Highlight of the Year

The 5th generation of mobile technology (5G) is positioned to address the demands and business contexts of 2020 and beyond. It will enable a fully mobile and connected society that is characterized by a tremendous growth in connectivity, traffic density and volume as well as a broad range of use cases and business models.

NGMN had and still has a central role in the definition of operator requirements contributing significantly to the overall success of LTE. In the meantime, LTE and LTE – Advanced have become truly global and mainstream mobile technology, that will continue to support the customer and market needs for many years to come.

A global initiative has been launched by NGMN to define the end-to-end requirements for 5G. The requirements have been outlined by the operators, in close interaction with all NGMN partners, in the **NGMN 5G White Paper**, to address the needs of customers and markets beyond 2020. The White Paper serves as a guideline for 5G definition and standardization, and also delivers insight into areas of further exploration by NGMN and other industry stakeholders.

The content and main messages of the 5G White Paper will be publicly presented at the **NGMN Industry Conference & Exhibition 24-25 March 2015 in Frankfurt / Germany**. Board Directors, senior industry and research representatives as well as subject matter experts will be on stage to share detailed insights and viewpoints, and to discuss in panels and with the audience the White Paper and all related technology and eco-system aspects.

The conference will provide a comprehensive overview on 5G requirements, technology evolution, architecture principles, future services, spectrum demand and IPR policy. In addition you will get a clear and coherent view on the coming years' roadmap and end-to-end solutions including access, core, devices and network management.

Networking Lunch & Exhibition Visit
kindly sponsored by Ericsson

An opportunity for dialogue and conversation with industry thought leaders and for a visit of the exhibition.

Register online via
ice2015.ngmn.org/registration.html

Find the latest programme and information on the website.

- A limited number of rooms have been reserved at the Maritim Hotel Frankfurt.

- Significant Group Discounts available!

Evening Event
kindly sponsored by Huawei

Meet colleagues during our entertainment & networking get-together on 24th March! Enjoy an evening with uplifting music, multinational food and cool drinks in a pleasant atmosphere!

Agenda

Conference Day 1, Tuesday, March 24th 2015

09.00 – 09.30
Welcome and Opening

Welcome Note:

Peter Meissner,
CEO, **NGMN Alliance**

Opening Keynote:

Bruno Jacobfeuerborn
Chairman, **NGMN Alliance**, CTO, **Deutsche Telekom**

09.30 – 12.45
NGMN 5G White Paper Keynote Session

The NGMN 5G White Paper outlines end-to-end operator requirements that have been developed in close interaction with the NGMN Partners. This session will provide an overview on the structure and content of the White Paper. It serves as an introduction to the following sessions covering the different White Paper sections on "Vision, Business Context and Use-Cases", "Requirements", "Technology & Architecture", "Spectrum" and "IPR".

Speakers: **Rachid El Hattachi**
SVP, **Deutsche Telekom**

Javan Erfanian
Distinguished Member of Technology, **Bell Mobility**

White Paper Session on Vision, Business Context and Use Cases

5G is positioned to address the market demand and business environment of 2020 and beyond. It will enable a fully mobile and connected society and will empower socio-economic transformations in countless ways. The industry will see the emergence of new use cases and business models driven by customers' and operators' needs. These will be enabled both by the maturity of current technologies and by the emergence of new key technologies.

This session will highlight the main use-cases, business models and operator value proposition envisaged for 2020 and beyond.

Speaker: **Sandro Dionisi**
Director of Engineering & Telecom Italia Lab,
Telecom Italia

Panellists: **Armando Annunziato**
NGMN Work Stream Lead;
NW Design and Development, **Telecom Italia**

Bertrand Grau
Principal, **Arthur D. Little**

Kevin Holley
Head of Standards, **Telefónica**

Joachim Horn
CTIO, **Tele2**

White Paper Session on Requirements

5G requirements are derived out of NGMN's vision of the potential use cases and business models for 2020 and beyond. NGMN believes that the requirements shall satisfy the value creation that operators intend to deliver to the different types of customers and partners. Requirements have been defined along the six dimensions: User experience, system performance, devices, enhanced service, business models and network management & operation.

Speakers in this session will give an in-depth introduction to the White Paper requirements, highlight the most challenging parameters and will propose priorities.

Speaker: **Li Zhengmao**
EVP, **China Mobile Communications Corporation**

Panellists: **Eric Hardouin**
NGMN Work Stream Co-lead;
Coordinator of Research on Wireless NW, **Orange**

Hugh Bradlow
Chief Scientist, **Telstra**

Tom Keathley
SVP, **AT&T**

Günther Ottendorfer
CTO, **Telekom Austria**

Zhu Peiying
Huawei Fellow, **Huawei**

White Paper Session on Technology & Architecture

The 5G architecture should be designed in a way to accommodate a wide range of use cases, business and partnership models. The overall aim is to optimize network usage and to address the market needs in an agile and cost efficient manner.
Speakers in this session will present the White Paper technology gap analysis, design principles and the initial architecture concepts.

Speaker: **Seizo Onoe**
EVP & CTO, **NTT DoCoMo**

Panellists: **Mikio Iwamura**
NGMN Work Stream Lead;
Director, Wireless Research Group, **NTT DoCoMo**

Russell Hsing
Professor, **National Chiao Tung University**

Uwe Janssen
VP Innovation & Research, **Deutsche Telekom**

Theodore Sizer
VP Wireless Research Program, **Alcatel-Lucent**

Agenda

Conference Day 1, Tuesday, March 24th 2015 (continued)

White Paper Session on Spectrum

Evolving today's smartphone use cases and expanding into a wide range of new ones with significant traffic growth will require far more spectrum than is currently allocated to mobile broadband. Ensuring the availability of the right amount of spectrum, considering relevant spectrum bands and spectrum management, is key to providing the required consistent user experience across different use cases.
International subject matter experts will provide an overview on spectrum bands for 5G, spectrum management options and the related ITU roadmap.

Speaker: **Alain Maloberti**
SVP Networks, **Orange**

Panellists: **Stefan Apetrei**
NGMN Work Stream Lead;
Dep. Direct., Strategy & Intern. Plan., **Orange**

Gerhard Fettweis
Member Board of Governors, ComSoc, **IEEE**

Eric Smeitink
Manager Technology & Innovation, **KPN**

Simon Wilson
Head of Spectrum Technology, **Telefónica**

White Paper Session on IPR

NGMN is aiming for a transparent and predictable IPR eco-system across the mobile industry that will support the commercial implementation of 5G technologies and will ensure that the business case for 5G is sustainable.
Operator and vendor specialists will discuss the current IPR eco-system and present potential future improvements.

Speaker: **Luke Ibbetson**
Head of R&D Technology, **Vodafone**

Panellists: **Stefan Engel-Flechsig**
Legal Counsel, **NGMN Alliance**

Luigi Licciardi
Head of Tech. Plan and Standards, **Telecom Italia**

Philippe Lucas
SVP International Standards, **Orange**

Martin Natt och Dag
Senior Group Legal Counsel, **Ericsson**

Dirk Weiler
Head of Standards Management & Horizontal, **Nokia**

13.45 – 16.10
Services, Vertical Industry Applications & Devices

Demand for new services from end-customers, enterprises and industry verticals like health or automotive will drive and shape the evolution of 5G. This session provides insights into current trends and potential future developments around mobile applications, services and the underlying enabling platforms. Furthermore, the market demand for new devices and chipsets and the related technology roadmap will be discussed.

Moderator: **Luis-Jorge Romero**
Director General, **ETSI**

The Mobile Ecosystem 2020 and beyond

- Mobile industry trends and phenomena
- Value chain disruptions and demand development: consumer and industry verticals
- Business opportunities and the related technology platform impact

Speaker: **Martin Reitenspieß**
Vice President/Partner, **Strategy&**

Winning Next Gen Mobile User with an Agile Network

- 5G: Tipping point for the industry
- Business opportunities, partnerships, value creation
- Critical technology components, platforms, processes

Speaker: **Jack Barrett**
Senior Director, Strategic Field Marketing, **Juniper**

IoT and 5G

- What is IoT and what are its several challenges?
- The IoT and its communication needs, possibilities and disruptions
- The synergies between IoT and 5G

Speaker: **Roberto Minerva**
Head of Innovative Architectures, **Telecom Italia**

Agenda

Succesful mHealth App Publishing

- What is the size of the mHealth app market opportunity?
- What are the components of a best-in-class mHealth app?
- Which business models will work in the next 3 years?
- How to create user retention?
- What roles exists in the mHealth app ecosystems and which will work best?

Speaker: **Ralf Jahns**
Managing Director, **research2guidance**

The Network-Centric Approach to Healthcare: New Perspectives on Connected Health

- Understanding how enhanced access to medical data is increasing the efficiency of healthcare systems
- Overcoming the challenges of big data in healthcare through smart data
- Leveraging real-time access to patient information via connected medical devices to provide better patient care

Speaker: **Benjamin Sarda**
Director of Product Marketing, **Orange Healthcare**

The Connected Car - Opportunities and Solutions - Data and Business Models

- Customer need for intelligent and connected mobility solutions in urban/metro areas
- Drivers for change in the automotive industry
- New business models and the role of OEM in automotive

Speaker: **Stefan Butz**
VP New Digital Data- and Business Models, **BMW**

Next Generation Cellular System Requirements – An Automotive Perspective

- Automotive trends
- Use cases / requirements
- Mapping and prioritizing

Speaker: **Kobi Scheim**
Senior Researcher, **General Motors**

Connected and Convenient Mobility enabled by 5G

- Future mobility trends and drivers
- Industry chances and impacts of improved connected vehicle
- Enablers for more convenient and safe driving experience

Speaker: **Anes Hodzic**
Managing Director, **Bosch Professional Systems**

5G Vision and Implication on Access and Silicon Technologies

- Key technology drivers and Innovations
- Needed breakthrough
- End to end security
- Implications of massive densification
- Way forward – millimeter wave

Speaker: **Bernd Adler**
VP Platform Engineering Group, **Intel**

16.40 - 18.30
Technology Outlook (Research Perspective)

Several 5G research initiatives and programs have been successfully launched. In this session, representatives from leading research institutes will provide their perspective on future technology development, most promising technology candidates and potential challenges. Among others, the speakers will explore topics such as the concepts of full-duplex, tactile internet, mm-wave communication, and information-centric networking.

Moderator: **Chih-Lin I**
Chief Scientist, Wireless Technologies,
China Mobile Research Institute

A Holistic View on 5G

- 5G is not just another "G" aiming at a new air interface alone
- 5G is about controlling and steering real and virtual object in real-time Tactile Internet latency of down to 1ms
- 5G is also about integrating WLAN with speeds reaching for 1Tb/s
- An agile and distributed cloud, enabling seamless user experience and new market opportunities
- 5G will also reach into mmWave communications, but which frequency range makes sense?

Speaker: **Gerhard Fettweis**
Vodafone Chair Mobile Communications Systems,
Technical University Dresden

Agenda

Conference Day 1, Tuesday, March 24th 2015 (continued)

5G Research Challenges and how to Address them in Practice

- Massive MIMO
- Millimeter Wave for Backhaul and Access
- Waveforms
- 5G-Berlin Testbed

Speaker: **Thomas Haustein**
Head of Wireless Comm. and Networks,
Fraunhofer Heinrich Hertz Institute

Spatial Modulated Co-frequency and Co-Time Duplex

- System Specification
- Test Method
- Demo system

Speaker: **Jiao Bingli**
Professor, **Peking University**

Bringing Open-Source Technology into the 5G Arena

- The need for Open-Source in 5G prototyping
  - bringing academia into 5G experimentation
  - better integration of IT technologies
- The OAI Software Alliance
  - Objectives and target industry partner areas
  - License and Membership options
  - 5G Targets
- Case Study for OAI : CloudRAN

Speaker: **Raymond Knopp**
Professor, **Eurecom**

Ultra-high Data Rate Transmission with Steerable Antennas at 300 GHz

- Possible applications for ultra-high data rates of 100 Gbit/s and beyond
- Requirement for beam steering
- BMBF-VIP-Project TERAPAN
- Demonstrator

Speaker: **Thomas Kürner**
Professor, **Technische Universität Braunschweig**

Full-Duplex for 5G: Signal Processing and Technological Issues

- Full Duplex (FD) transmission for 5G
- FD basics, motivating aspects for 5G, practical challenges
- FD system requirements
- FD transceiver realization (overcoming self-interference)
- Potential FD applications

Speaker: **Rudolf Mathar**
Professor, **RWTH Aachen**

The METIS 5G Concept

- 5G scenarios
- METIS 5G system concept overview
- Three generic 5G services
- Four main enablers
- Selected technology components and simulation result

Speaker: **Hugo Tullberg**
Technical Manager of the METIS project, **Ericsson**

Agenda

Conference Day 2, Wednesday, March 25th 2015

09.00 – 12.40
CTO Keynote Session:
5G Technology and Solutions

Long-term research, thorough strategic planning and a market-oriented technology development is required to build the envisaged 5G platform addressing a breadth of use-cases and business models. Operator and vendor CTO speeches in this session will reflect on the guidelines provided in the NGMN 5G White Paper and will highlight the needs, challenges and requirements from a global and regional perspective.

Moderator: **Hugh Bradlow**
Chief Scientist, **Telstra**

Ibrahim Gedeon
CTO, **Telus**

5G Vision and Requirements

- 5G Enabling technologies
- Our recent R&D updates
- 5G timeline
- Need for global 5G R&D & collaboration

Speaker: **Kyungwhoon Cheun**
EVP, **Samsung**

5G, the Way to a Better Connected World

- The key driving force of 5G
- 5G vision and mission
- How can we reach 5G?

Speaker: **Yang Chaobin**
Chief Marketing Officer, **Huawei**

5G Vision & Research for 2020 and Beyond

- 5G addresses the needs beyond today's trends including the need for more data, devices, richer content (4K video) and connected "things" for the internet of everything.
- 5G is about enabling new services and devices, connecting new industries, and empowering new user experiences
- Supporting the variety of use cases we foresee in 2020 and beyond: mobile broadband (indoor/outdoor), health services, smart phones, sensing what's around you, etc.
- New services, industries, and experiences will drive 5G requirements: always-on devices, robotics, etc.

- Support all that has been added to 4G, and much more; All licensed and unlicensed spectrum, addition of higher bands such as mmWave.
- 5G will transform the internet: with the device not being just an end-point, but an integral part of the network

Speaker: **Eduardo Esteves**
VP Product Management, **Qualcomm**

5G Impact on Operator Network Planning and Business Strategies

- Investigating 5G impacts across the network to understand logical evolution options
- Addressing complexity in 5G networks supporting multiple standards, frequency bands and layers
- Understanding network performance impacts on energy consumption
- How does the operator business model evolve to address new 5G use cases?

Speaker: **Ulf Ewaldsson**
Group CTO, **Ericsson**

The Path to 5G

- 5G service starts with single carrier on macro layer
  - Offers lower latency, connectionless service, improved efficiency and 5G control
- 5G service coverage extended indoor with single carrier on small cell
- 5G capacity even built out for massive capacity
  - Additional 5G carriers in low, and high bands on small cells
  - Existing LTE carriers on macro and small cell for capacity and coverage
- Parallel revolution in networking
  - Connectionless service
  - Flexible bearer configuration
- All prepared for by 3 key next steps
  - vRAN
  - SC
  - Multi-RAT connectivity

Speaker: **Philippe Keryer**
EVP Strategy & Innovation, **Alcatel-Lucent**

Agenda

Conference Day 2, Wednesday, March 25th 2015 (continued)

Building a new Foundation

- 5G use cases distinguished by their diversity –
  no single dominant case that will drive
  system
  requirements. All need to be supported within
  sustainable economic models
- Until now, Network evolution to accommodate the
  new usage models that have emerged since the
  design of the internet has been accomplished by
  adding layers of complexity. Continuing to increase
  complexity works counter to building better cost
  efficiency.
- It is time to understand and consider a network
  architecture that incorporates capabilities we
  consider essential today in the fundamental design
  of the network. These properties include Mobility,
  Security and Storage.
- With a visionary approach to 5G, the Mobility
  industry is poised to lead the creation of a new
  networking foundation that economically serves
  the 2nd 50 years of data networking

Speaker: **Paul Mankiewich**
CTO for Service Provider Mobility, **Cisco**

The Black and White of 5G

- The understanding of 5G use cases and
  requirements are becoming clearer e.g. with the
  publication of the NGMN white paper and a good
  number of Nokia 5G white papers and presentations
- 5G technology demonstrations are already here,
  showing that many technologies that were more on
  the idea level just a year or two ago can be built.
- Nokia, as a leading research organization
  participating in collaborative research projects,
  is helping the public 5G research to switch gears
  – the research will develop 5G building blocks
  further and organize them to an integrated 5G system
  embracing also LTE-Advanced evolution, Wi-Fi and fixed
- Spectrum is the key, identifying sufficient spectrum
  in which to deploy the new technologies, and
  having a focused execution in standardization
  are together needed to make the concepts and
  architecture innovations a successful reality
- Nokia passionately supports right technology related
  policies that enables healthy ecosystem in 5G era
- Nokia vision is a 5G as a platform for innovation
  expanding human possibilities of the connected
  world. Nokia hosting a Brooklyn 5G summit to gather
  the industry and academia together around 5G.

Speakers: **Hossein Moiin**
CTO, **Nokia**

Enabling a Brand New World

- A world where everything will be hyper-connected
  and device
- Mobile communications, home entertainment
  and connectivity in 2020 and beyond where majority
  of people will have access to advanced connected
  communication devices

Speaker: **Gabriel Treiband**
VP Corporate Marketing, **Mediatek**

13.40 - 15.00
Innovations in Service Enablement, QoS

Key focus of operators' future technology strategy
will be on the enhancement of customer experience
and enablement of new services. Vendors from the
measurement, testing, monitoring and OSS area
are working on solutions to address these needs.
Presenters in this session will discuss the main
improvement levers, technology developments and the
business impact of their respective solutions.

Moderator: **Mats Svärdh**
VP Group Networks and IT Infrastrucure,
TeliaSonera

5G Evolution and Technologies, a View of the Device Quality, Customer Experience and Testing Industry

- Key technology evolutions influencing customer
  experience and device quality
- Metrics and measures for 5G, reviewing the
  headline KPI's
- Testing challenges and new requirements
- 5G technology enablers to enhance quality and
  customer experience

Speaker: **Jonathan Borrill**
Director of Marketing, **Anritsu**

Assuring Service Performance and Quality Over Virtualized & Dynamic Networks

- Virtualization and the threat to subscriber
  experience
- Five steps for service assurance in the transition to
  NFV and SDN
- The performance assurance maturity model

Speaker: **Christopher Cullan**
Global Director of Product Marketing, **Infovista**

Agenda

The Proactive Identification of Developing Network Service Problems through the Utilization of Customer Analytics

- Key challenges in handling network issues in today's and future networks
- Optimized view of subscriber experience
- Enhanced network operations, engineering, troubleshooting and ticket resolution workflow

Speaker: **Frank Galuppo**
VP & GM Customer Experience Management, **Spirent**

From mmWave Frequencies to End User Experience - 5G Test and Measurement Aspects

- Impact from 5G technology components to the T&M sector
- Assessing the need for channel impulse response measurements in the cm- / mm-wave frequency range as input to new channel models
- Assessing the impact from IP applications to both the cellular network and to end user devices in terms of signalling load and power consumption

Speaker: **Anton Messmer**
VP Mobile Radio Testers, **Rohde & Schwarz**

Predictive Analytics Driven Operational Agility and Innovation

- Industry outlook: Support of new types of services, management of trillion connected devices
- As the complexity of the Network grows through Virtualization and accelerated growth in End User Devices, the OSS platforms have to respond in near real time. This requires the platforms to assimilate the information from various sources like Fault, Performance, Call Trace logs, etc. and perform analytics to predict anomalies

Speaker: **Piyush Sarwal**
CTO, **IBM**

15.30 - 16.50 Technology Outlook (Industry Perspective)

A step-change in performance improvement and fundamental revolutionary changes in the architecture will be needed to meet the outlined qualitative and quantitative 5G requirements. Some leading international vendors which have already launched major initial R&D programmes will present in this session their technology vision and promising first results of their work. The presentations will cover 5G technology candidates, architecture concepts and an outlook on the remaining challenges.

Moderator: **Michael Fritsch**
Consultant, **Telecommunications & Technology**

The Future of mmWave Applications

- Research areas tackling 5G challenges
- MiWaves - beyond 2020 heterogeneous wireless network
- Use cases and requirements
- 5G network architectures

Speaker: **Michael Färber**
Director EU Wireless Research, **Intel**

Integrated & Distributed Antenna Structures for 5G

- Drivers for active integrated and distributed antennas
- View on interfaces for distributed architectures.

Speaker: **Roland Gabriel**
Senior Director R&D, Electronic, **Kathrein**

ZTE's view on 5G

- A historic view of 5G: Prerequisites and goals of 2G/3G/4G/5G
- A technological view of 5G: Requirements versus technologies
- ZTE's Approach to 5G: Some tangible steps to begin with

Speaker: **David Huo**
OSSP - Strategy, **ZTE**

Agenda

Conference Day 2, Wednesday, March 25th 2015 (continued)

A New Network Architecture for Ultra Dense Networks: Bigger is Better than Small

- Requirements of dense spatial re-use of frequency resources
- Spatial frequency efficiency and its uniformity
- Options and analysis of dense network architectures
- Our new architecture its advantages
- The important role of our new class of repeaters
- Simulation and experiment results
- Comparisons
- Conclusions

Speaker: **Ping Liang**
Co-founder, **RF DSP**

Enabling 5G Gigabit Interactivity Everywhere

- Highlighting mobile operator use cases for 5G, including home and point-to-point backhaul applications to enable consumers to get full access to 5G, everywhere
- Technology roadmap for 5G, which has 10Kx better performance that 4G, must reach a price per gigabit that significantly lower than 4G, and what the first version of 5G should encompass

Speaker: **Khurram Sheikh**
President, **SiBeam**

16.50 – 18.00
Industry Organisations' Global Perspective on 5G

Technology standardisation will be essential for the global success of future 5G solutions and the related ecosystem. It avoids fragmentation and ensures (multi-vendor) interoperability and economies of scale. Given the range of interfaces, network elements and legacy systems, numerous standardization bodies are expected to get involved in the 5G standardization work. In this session, representatives of the most relevant players discuss the main priorities in standardisation, their organisation's roadmap and the need for industry alignment.

Moderator: **Gabriel Brown**
Senior Analyst, **Heavy Reading**

TSDSI - on the Path to Global Telecom Standards

- India-specific requirements, standardizing solutions for meeting these requirements and contributing these to international standards
- Contributing to global standardization in the field of telecommunications

Speaker: **Asok Chaterjee**
Executive Director, **TSDSI**

ITU-R Activities on 5G

- Vision for development of 5G
- Technical and operational requirements
- Spectrum requirements
- Standards development process

Speaker: **Colin Langtry**
Chief of the Radiocommunication SGD, **ITU-R**

5G Research in Europe in the Context of 5G PPP

- Link between Networld2020 ETP and 5G PPP research to involve the wider community
- 5G PPP vision and major requirements on 5G

Speaker: **Werner Mohr**
Chairman Steering Board, **Networld 2020**

OMA's Perspective on 5G

- Who OMA is
- OMA's Services 2020 study – Preliminary observations
- OMA believes Developers play an increasingly important role in 5G services creation

Speaker: **Eshwar Pittampalli**
Director Market Development, **OMA**

4G Americas' Vision of 5G in the Americas

- What is driving 5G development?
- Understanding user and network requirements for networks 2020 and beyond
- Improvements in mobile broadband networks towards 5G
- Recommended potential 5G technologies

Speaker: **Chris Pearson**
President, **4G Americas**

Agenda

Conference Day 2, Wednesday, March 25th 2015 (continued)

Management and Orchestration – Critical to Unlocking the Value of 5G

- Value the TM Forum brings to the table
- How the Forum can support the NGMN 5G vision
- Where the Forum plays in relation to the NGMN 5G White Paper
- Assets that exist and will be extended

Speaker: **Carl Piva**
Vice President, **TM Forum**

What Can We Expect?

- What will 5G do for me?
- Technologies for 5G
- The road into 5G
- Standards for 5G

Speaker: **Luis-Jorge Romero**
Director General, **ETSI**

5G: Roaming and Interconnect (or not?)

- How do you roam when you have a 1ms delay budget?
- Where do you interconnect to content if everything has local context?
- How do roaming and interconnect settlement regimes evolve to account for an Internet of Things dominated market place?
- No-one knows, but we'll need to find answers before 5G is live.

Speaker: **Alex Sinclair**
CTO, **GSMA**

18.00 – 18.10
Way Forward, Closing

The publication and dissemination of the NGMN 5G White Paper is only the initial step on the roadmap towards 5G launch and deployment. The key objective of NGMN's future activities is that the commercial 5G solutions will fulfil the NGMN requirements. In order to reach this objective, detailed milestones and a roadmap needs to be defined and the necessary steps within the roadmap have to be outlined. Guiding principle is that the migration towards 5G and the development of 5G solutions should be as efficient as possible for the operator and supplier industry stakeholders, and as beneficial and seamless as possible for the end-user.

Speakers: **Rachid El Hattachi**
SVP, **Deutsche Telekom**

Peter Meissner
CEO, **NGMN Alliance**

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