



The NGMN Alliance – at a Glance



next generation mobile networks

The NGMN Alliance: Partners and Objectives

The NGMN Alliance was founded by leading international mobile network operators in 2006. Its objective is to ensure that the functionality and performance of next generation network infrastructure, service platforms and devices will meet the requirements of operators and, ultimately, will satisfy end user demand and expectations.

The operators in NGMN jointly defined already in 2006 the requirements for the next generation of mobile networks. These requirements are documented and published in the NGMN reference document »White Paper on Next Generation Mobile Networks beyond HSPA & EVDO« and in papers recently published (see “Publications and Deliverables”).

The NGMN Partners in their work-programme continue to ensure that requirements are identified, consolidated, prioritised, documented and published. This paves the way for a focused and milestone-oriented development and implementation. The respective standards are being developed by standards developing organisations (SDOs).

NGMN Partners



It is, of course, not only about technological issues – the allocation of sufficient global spectrum needs to be provided by the ITU-R WRC (World Radio Conference) and tangible commercial conditions must be established, for instance, by providing greater transparency for royalty rates and recommendations on patent pools.

In its projects, task-forces and workshops, the NGMN Alliance

- establishes clear functional and non functional requirements
- lays out scenarios for effective spectrum utilisation
- shares operational experience in up and running networks
- gives input to standards developing organisations
- identifies and removes barriers to successful implementation of attractive services
- provides a networking platform to assess and to address technology challenges
- evaluates and drives technology evolution

NGMN seeks to provide guidance to the industry in its role of developing requirements for technology evolution and in fostering system implementations as well as efficient network operations. The NGMN Alliance has also initiated information exchange among its members by encouraging dialogue with a focus on issues of immediate and significant concern. The NGMN recommendations have been acknowledged by the recognized SDOs such as ETSI, 3GPP and IEEE. Input to the ITU-R WRC in the area of frequency allocation is provided on an ongoing basis.

To ensure success of its work, co-operations with industry organisations such as ETSI, GCF, GSMA, GTI, OMA, Small Cell Forum, TDIA, TMF, UMTS Forum, WIP, WWRF and 4G Americas have been established. Scope of these co-operations is to support each other by jointly promoting public messages, events and by carrying out joint project activities.

In the initial phase, NGMN successfully enabled the launch of commercial LTE services in 2010 through its working groups on Technology, Spectrum, IPR, Ecosystem, and Trials. Moving forward, the NGMN Alliance now addresses End to End QoS & User Experience, Architecture Evolution & Cloud, Operational Excellence & Efficiency, and Implementation Aspects.

Key strengths and characteristics of the NGMN Alliance:

- Requirements defined by operators, solutions identified by vendors and research perspective delivered by academia
- Well established and growing partnership of worldwide leading operators and vendors – strong, international industry backing
- Clear focus on next generation technology – covering end-to-end system and services aspects for LTE and LTE-Advanced
- Business driven – consideration of end user demand and industry needs
- Open perspective – activities across standards, co-operations with international fora
- Decision oriented governance through Operating Committee and Board
- Lean organisational structure, project oriented approach and efficient processes
- Based on Partner contributions – projects under the lead of NGMN Partner representatives and staffed with experts from NGMN Partner companies
- Working on requirements level – the standards are being developed by SDOs
- NGMN Industry Conference & Exhibition – well established international key event

Vision and Mission

The vision of the NGMN Alliance is to provide a platform for innovation by moving towards one integrated network for the seamless introduction of mobile broadband services.



The mission of the NGMN Alliance is

- To establish clear functionality and performance targets as well as fundamental requirements for deployment scenarios and network operations
- To give guidance to equipment developers and standardisation bodies, leading to the implementation of a cost-effective network evolution
- To drive implementation of NGMN recommendations and to establish liaison statements and project agreements as needed with SDOs and industry organisations
- To provide an information exchange forum for the industry on critical and immediate concerns and to share experiences and lessons learnt
- To actively promote the technology's performance, availability and customer benefits
- To deliver all of the above by addressing spectrum requirements and supporting the establishment of a transparent and predictable IPR regime

Join the Alliance

Become an NGMN Partner by signing up as a Member (mobile operators), as a Sponsor (vendors / manufacturers), or as an Advisor (universities or non-industrial research institutes).

Benefit from the work of the NGMN Alliance:

- Drive industry and technology development in NGMN projects
- Shape the future mobile services ecosystem
- Closely interact and network with other leading international operators, vendors and research institutes
- Share latest technology expert know-how
- Enhance your organisation's visibility through contributions to NGMN events (like the NGMN Industry Conference & Exhibition) and other communication activities

Please contact NGMN Office (office@ngmn.org) or visit www.ngmn.org for further details on the benefits of becoming an NGMN Partner.

NGMN Achievements

- Defined fundamental requirements for next generation mobile networks beyond HSPA & EVDO in the White Paper 3.0
- Carried out projects to close remaining performance gaps, to address technology development, and to enhance operations with an end-to-end perspective – activities like: Centralised RAN, Devices, Backhaul, Security, Open Baseband Remote Radiohead Interface, Converged Operations, Basestation Antenna Standards and Self Organising Networks
- Developed “NGMN Field Trial Requirements” and a trial evaluation methodology to monitor and to assess shared trial results
- Facilitated and supported Multi-SDO activities on “Converged Management of Fixed/Mobile Networks”
- Executed IPR “Trusted Third Party” (TTP) process rounds with all NGMN Partners to increase transparency on royalty rates
- Concluded an NGMN patent pool feasibility study, conducted RFI with potential licensing administrators, and provided industry guidance on LTE patent pools
- Evaluated the ecosystem with regards to success factors and barriers to innovation and adoption of mobile broadband services – Results to be found in white papers on API Standardisation, QoS and Heterogeneous Networks
- Stated spectrum requirements in the NGMN Spectrum White Paper and carried out lobbying to promote these requirements at ITU-R WRC 2012 and following conferences
- Established a platform for sharing deployment experiences with the objective to further enhance standards and drive technology development – like in the area of Voice over LTE

Publications are available for download at www.ngmn.org

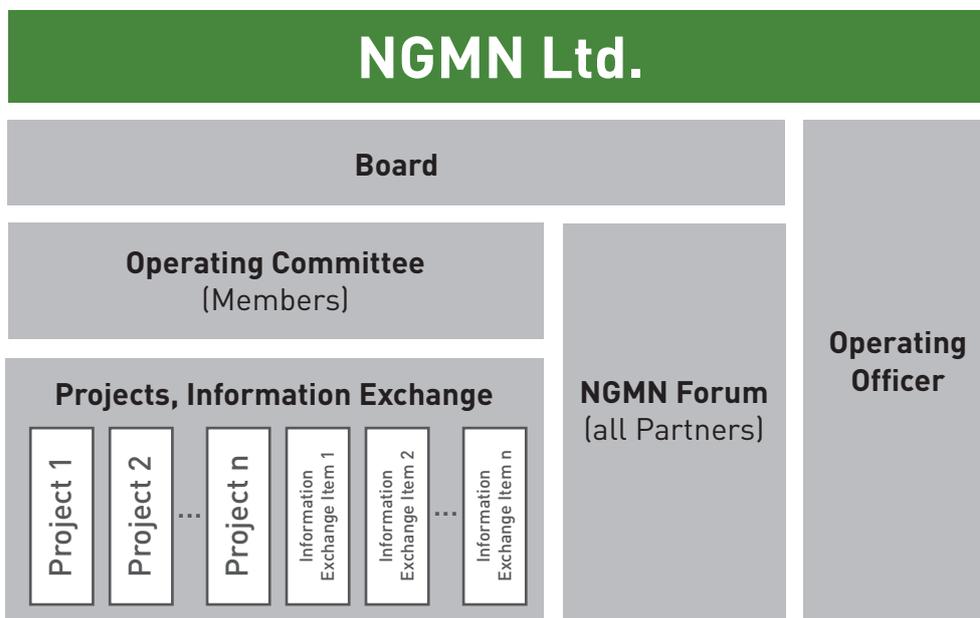
Organisation and Governance

The NGMN Alliance offers a highly flexible and effective organisation. The organisational and governance structures are characterised by short decision-making paths, efficient processes and a project-oriented mode of operation.

The management bodies of NGMN are the Board of Directors, the Operating Committee (OC) and the NGMN Forum. The Board consisting of Operator representatives decides on the strategic direction, project launch, publication of results and the budget. The OC leads the project management and manages the work programme. The NGMN Forum establishes the dialogue between operators, vendors, and researchers and identifies and proposes new projects. The work programme as such is implemented by projects under the lead of NGMN Partner representatives and fully staffed with experts from NGMN Partner companies.

The Operating Officer with the NGMN Office is in charge of

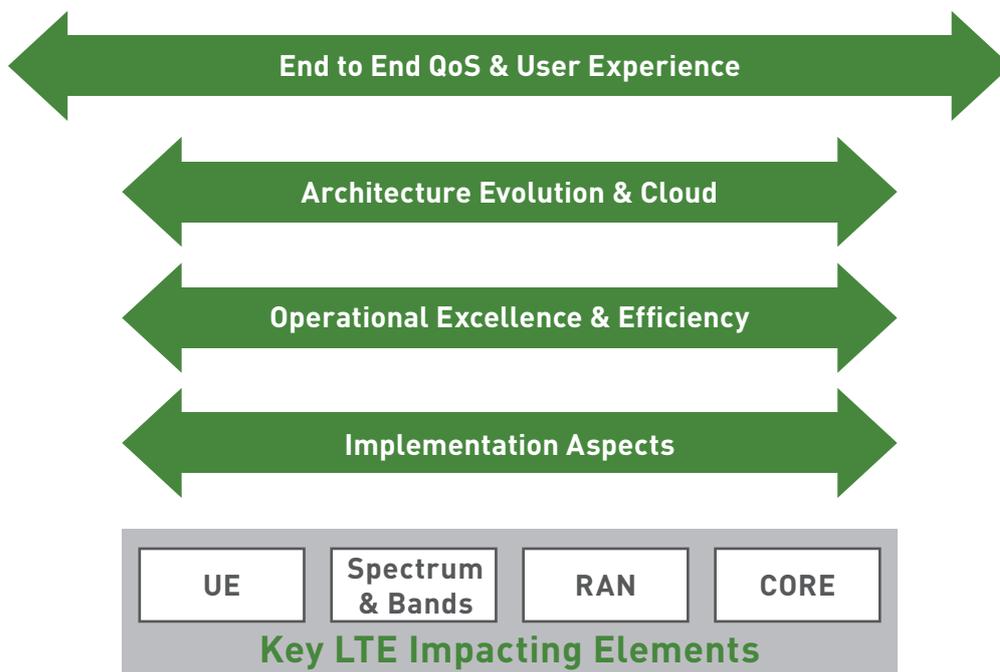
- agenda setting for the Board, OC and NGMN Forum
- programme management (project co-ordination, milestone tracking etc.)
- processes and governance
- partner management and support
- IT platform and communication infrastructure
- meeting and workshop logistics
- events, communication and press releases
- day-to-day management of NGMN Ltd.
- competition guidelines and legal matters
- financials (budget, invoicing etc.)



Scope of Work

The NGMN Alliance's activities focus on the current key technology and industry challenges and should have a mid-term period (1 to 3 years) impact.

The scope of work covers the following areas:



Running projects and potential future activities:

- RAN evolution (C-RAN, dynamic spectrum allocation, CoMP, fronthaul, multi-RAN)
- Small Cells (operations, backhauling, multi-vendor networks)
- Mobile Content Delivery Optimisation (mobile CDN architecture and functionalities, 3GPP EPC enhancements)
- Congestion Management (congestion detection/manager, enforcement points)
- Service Quality Definition and Measurement (e2e QoS metrics, QoS/QoE correlation)
- LTE/LTE-A Deployment Experiences (network implementations and technical challenges, deployment plans)
- Next Generation Converged Operations Requirements (configuration-, performance- and service inventory management)

Events and Communication

The NGMN Alliance carries out various public communication measures to promote mobile broadband services and to drive the implementation of its requirements in this area.

Broad media coverage is achieved with its press releases, public website and white papers covering the NGMN requirements and project results.

The NGMN Alliance develops and hosts every two years the NGMN Industry Conference & Exhibition to present its latest achievements, the actual work-plan and objectives, and to facilitate the presentation of recent mobile broadband developments. The event serves as a networking and presentation platform for the NGMN Partners and representatives from the wider mobile industry.

Further to its Industry Conference & Exhibition, NGMN has integrated numerous contributions into the conference programs of other leading telecom events. The most prominent example is the well established joint GSMA/NGMN conference stream on Technology Evolution at Mobile World Congress.

Publications and Deliverables

2006

- White Paper – Next Generation Mobile Networks Beyond HSPA & EVDO

2007

- NGMN Use Cases related to Self Organising Network, Overall Description
- NGMN Informative List of SON Use Cases

2008

- NGMN Optimised Backhaul Requirements
- NGMN Radio Access Terminal Requirements
- NGMN Radio Access Performance Evaluation Methodology
- NGMN Recommendation on SON and O&M Requirements
- NGMN Broadcast and Multicast Support

2010

- NGMN Technical Achievements 2007 - 2010
- NGMN Field Trial Requirements
- NGMN TOP OPE recommendations
- API Standardisation and Access to 'Data Gems' – White Paper
- An Explanatory Paper by the NGMN Alliance - User data rates in mobile data networks
- NGMN Initial Terminal Device Definition
- NGMN Requirements of TDD/FDD Single Chipset for LTE Devices (included in Technical Achievements 2007-2010)

2011

- The Next Generation Mobile Networks Spectrum Requirements
- Guidelines for LTE Backhaul Traffic Estimation
- NGMN Whitepaper on LTE Backhauling Deployment Scenarios
- Heterogeneous Networks – Whitepaper Summary

2012

- A Whitepaper on Machine-to-Machine Communication
- NGMN Whitepaper on Security in LTE backhauling
- NGMN Whitepaper on Small Cell Backhaul Requirements
- NGMN Next Generation Converged Operations Requirements Phase 1 Final Deliverable
- Multi-Antenna Technology-Compact Antenna Solutions
- Multi-Antenna Technology-Antenna Co-site Solutions
- Backhaul Evolution – Integrated QoS Management

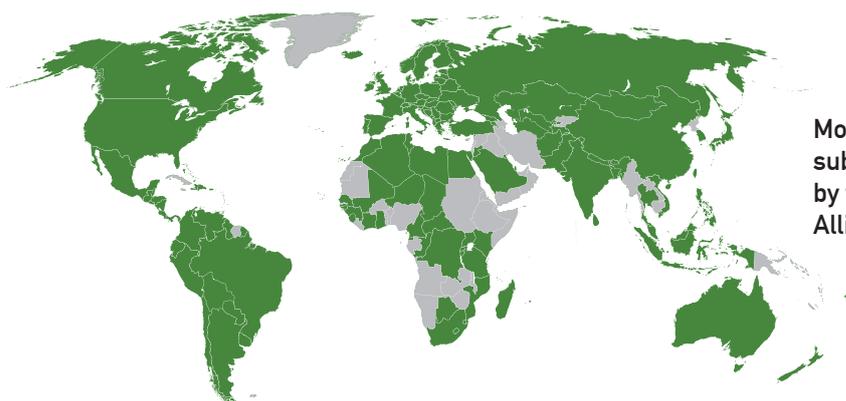
2013

- C-RAN: Liaisons and Contributions to 3GPP and ETSI
- NGMN Project Report on Multiband Multimode Requirements – Multiband Multimode Technology Evolution and Global Roaming
- NGMN Project Report: Multi-Antenna Technology - Multi-Antenna Future Requirements
- NGMN Whitepaper: Recommendation on Base Station Antenna Standards

Publications are available for download on www.ngmn.org

Partners of the NGMN Alliance (as of February 2013)

Members



More than 60 % of worldwide subscribers are being served by the operators of the NGMN Alliance

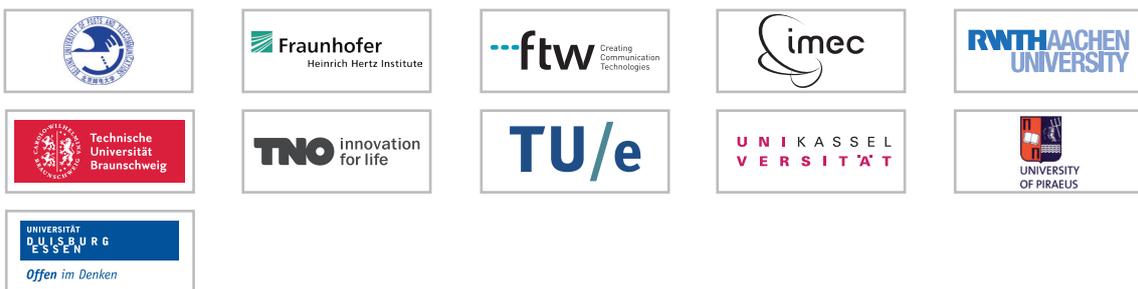
Board Directors

- **Jae-Woan Byun**
Board Chairman NGMN Alliance, CTO, SK Telecom
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Group Chief Networks Officer, Vodafone
- **Enrique Blanco Nadales**
CTO, Telefonica
- **Seizo Onoe**
CTO, NTT DOCOMO
- **Thierry Bonhomme**
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- **Peter Meissner**
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Sponsors



Advisors



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