NGMN Alliance – an Introduction

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Objectives of the NGMN Alliance

- The NGMN Alliance is developing, consolidating and communicating **operator requirements** to ensure that customer needs and expectations on mobile broadband are fulfilled.

- The Alliance actively drives **global alignment, harmonisation and convergence of technology standards and industry initiatives** with the objective to avoid fragmentation and to guarantee industry scale.

- A global presence has been established that comprises a **leadership network of more than 60 partners**: Operators, Vendors, and Universities. Several Cooperation Partners support the NGMN Alliance in projects, conferences, and through liaison statements

- The **joint work programme** covers key topics on Networks, Devices, and Application Enablers as well as Spectrum Demand, SDO Alignment and Technology Evolution.

The Alliance is supported by key industry players

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the engine of broadband wireless innovation

Members: 18 worldwide leading mobile operators

at&t, Bell, 中国移动通信 CHINA MOBILE, T, KDDI, kpn, olleh kt, LG U+, docomo, orange, SK telecom, TELECOM ITALIA, Telefónica, TeliaSonera, Telstra, TELUS, vodafone, Yota

More than 50% of world wide subscribers

Sponsors: 41 worldwide leading technology vendors

actix, AIRCOM, Alcatel·Lucent, Anritsu, AsiaInfo Linkage, Cambridge, CISCO, COMMSCOPE, communology, 大唐移动 DTmobile, DAX, ERICSSON, FUJITSU, HITACHI, HUAWEI, ICERA, intel, JUNIPER NETWORKS, LG, MIMON, MOTOROLA, NEC, NOKIA, Nokia Siemens Networks, Powerwave, QUALCOMM, reVerb NETWORKS, RIM, ROHDE&SCHWARZ, SAMSUNG, SEQUANS, Sony Ericsson, ST ERICSSON, symena, Tekelec, Telcordia, tellabs, ubidyne, Violin MEMORY, WiCHORUS, ZTE中兴

More than 90% of worldwide equipment

Advisors: 3 universities / research institutes

UNIKASSEL VERSITÄT, RWTH AACHEN UNIVERSITY, TU/e

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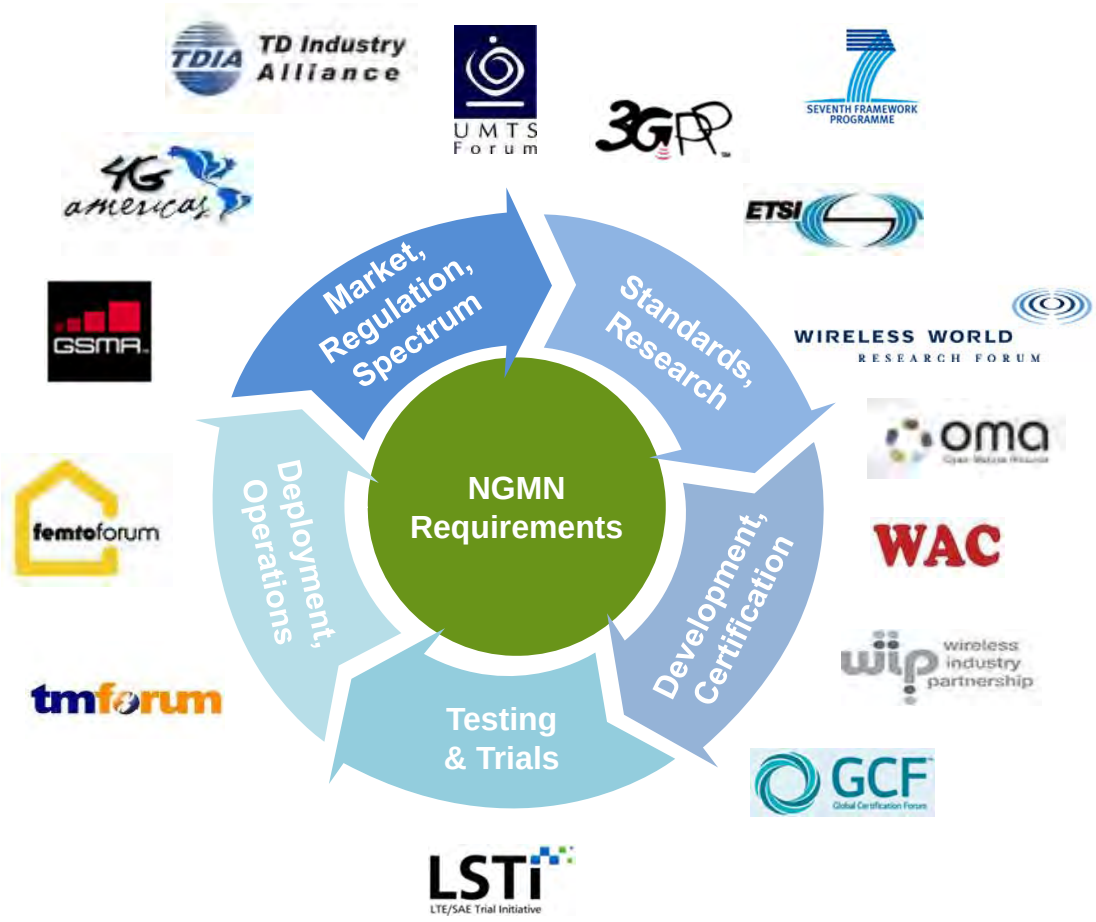
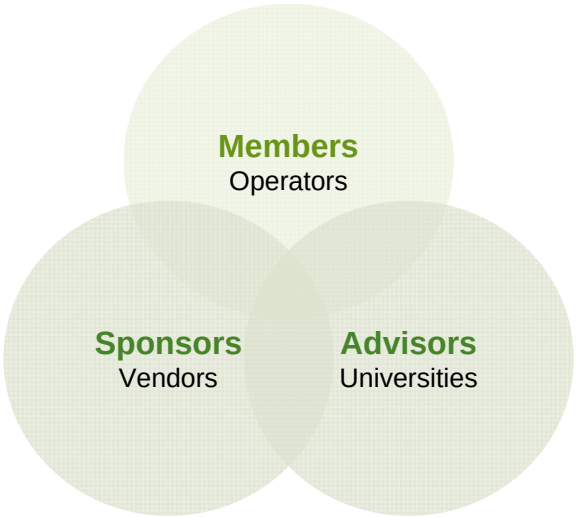
The Alliance closely cooperates with several organisations



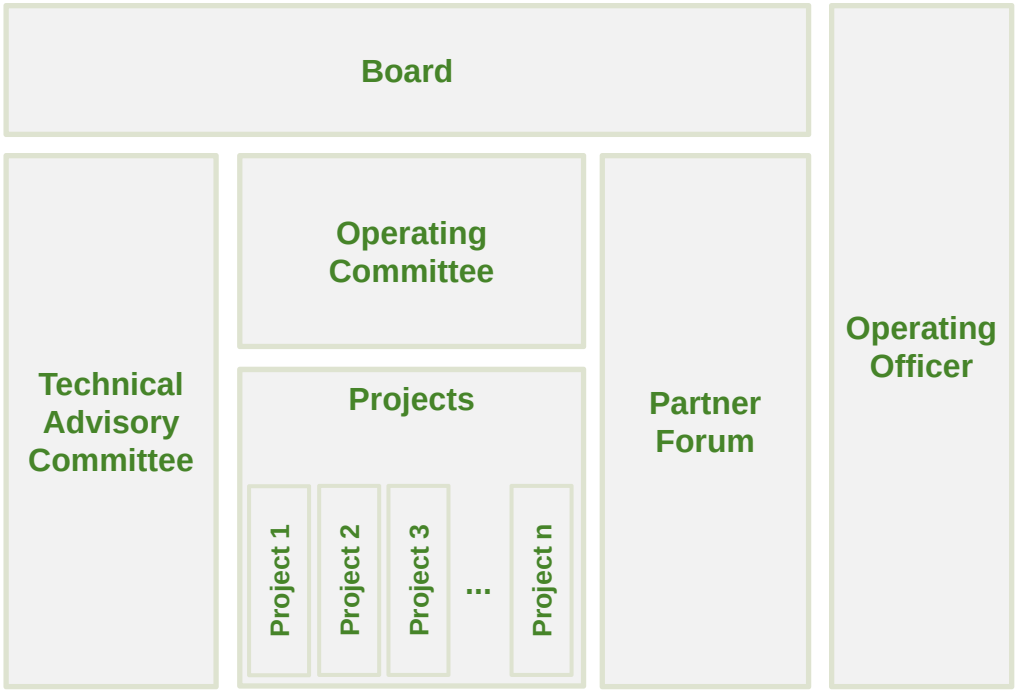
Logos of NGMN's cooperation partners and organizations NGMN includes in liaison statements

Lean structures and a contribution driven approach are the key success factors

NGMN Partners



NGMN Ltd.



Work focus on deployment, operations and future technology enhancements

Overview of NGMN Work Areas

→ Share experiences from initial deployment to identify gaps

→ Provide requirements to drive future technology enhancements

→ Ensure global alignment to avoid fragmentation and to build scale

Deployment Aspects

- Trials, trial result sharing
- Forum for operational experience exchange
- Antenna design and configuration

Operational Efficiency

- SON use cases
- OSS interfaces
- Operation requirements for Converged Networks
- Operation requirements for Heterogeneous Networks

Network Architecture

- Optimised Backhaul Solutions
- Centralised RAN
- Heterogeneous Networks

Spectrum

- Global spectrum harmonisation
- Bandwidth aggregation

Devices

- Executive Workshop on Devices
- Multi-mode, multi-band devices
- Certification

Application Enablers

- QoS, QoE
- API standardisation
- Smart Networks

SDO Alignment

- Standards evolution (LTE-A)
- Technology evaluation
- Voice over LTE
- NGRAI
- LTE FDD/TDD

Overview running projects (1/3)

	Lead	Scope
Service Quality Definition	vodafone	▪ Definition of de-facto KPIs / Metrics for end-to-end service quality ▪ Measurement of service quality, management of e2e algorithms **Proposal – Under Preparation**
Heterog. NWs Operations	orange	▪ Future network transition, seamless Wi-Fi integration ▪ Operations of Heterogeneous Networks (e.g. interworking functionality, operations intelligence) **Proposal – Under Preparation**
ETSI ISG ORI	T vodafone	▪ Open baseband remote-radio-head interface (at BTS) – Project initially launched at NGMN and then transferred to ETSI in order to develop the related standards ▪ Monitoring, issue tracking and support still through NGMN committees
Next Generation Converged Operations	T	▪ O&M requirements and guidance to SDOs (3GPP, TMF) and to the industry (TEM, IT, OSS supplier, …) ▪ Relevant areas: Fault management / Northbound interface, tooling requirements, information model, inventory management
Optimised Backhaul Solutions	orange	▪ Requirements and scenarios for mobile broadband backhaul ▪ Relevant areas: Dimensioning, deployment scenarios, forwarding & control plance, QoS, security, protection / high availability, phase / time synchronisation
C-RAN*	China Mobile, SK telecom, Alcatel-Lucent, alleh kt	▪ Analysis of RAN architecture with regards to potential improvement areas ▪ Requirements and solutions for future optimised RAN architecture – low-cost, flexible through concepts as e.g. centralized processing, co-operative radio

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*C-RAN: Centralised Processing, Collaborative Radio, Real-Time Cloud Computing, Clean RAN System

Overview running projects (2/3)

	Lead	Scope
Multi-Band, Multi-Mode Requirements	China Mobile	▪ Overview on operator frequency band / mode requirements (per region, along timeline) ▪ Review and discussion with UE (component / platform) vendors to assess technical feasibility, complexity, potential issues and solutions
Executive Workshop on Devices	kpn T Telecom Italia	▪ Series of workshops (~ 2 times per year. Next one planned for June 2011) ▪ Participants: Device / Chipset / Measurement-equipment vendor representatives and NGMN Operator representatives ▪ Tracking of device / chipset availability, identification and solving of issues in device / chipset development, testing
Multi Antenna	China Mobile Ericsson	▪ Experience sharing in the area of compact antenna designs and deployment, co-sited multi-system antennas ▪ Guidelines for future multi-antenna deployment
Basestation Antenna Standards	Telecom Italia CommScope	▪ Collection and analysis of existing Basestation Antenna (BSA) standards ▪ Recommendation on global BSA standards – common performance parameters and tolerances, measurement procedures, methodology for compliance etc.

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Overview running projects (3/3)

	Lead	Scope
Spectrum	kpn	▪ Requirements on band plans for new IMT bands, evaluation of applicability for TDD/ FDD, requirements for WRC ▪ Input to other NGMN projects with regards to spectrum issues
QoS	SK telecom	▪ QoS in next generation networks: Standardisation options, operator and industry requirements, vendor capabilities and product roadmap ▪ Objective: Development of requirements and check against standards/ products
Voice / SMS over LTE	orange	▪ Requirements and optimisation proposals for Circuit-switched Fall-back solution for Voice ▪ Requirements for Voice over LTE (IMS based) solutions (co-operation with GSMA)
Trial	中国移动通信 CHINA MOBILE	▪ Field trial requirements (KPIs) ▪ Trial result evaluation and discussion

Other running activities	▪ IPR – ex-ante declaration and patent pool initiative, IPR workshops ▪ SDO alignment and co-ordination ▪ Development of an update of the initial NGMN Whitepaper covering additional topics as e.g. M2M, energy efficiency, future RAN performance, …

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High-priority areas

OSS: Harmonisation TMF / 3GPP

Open Interfaces (e.g ORI, OSS ItN)

3GPP Release 10 / 11 (Status, priorities, performance)

Devices (Certification, features, Voice support, Multi-Band)

Future Radio Access Architecture ("Cloud based RAN")

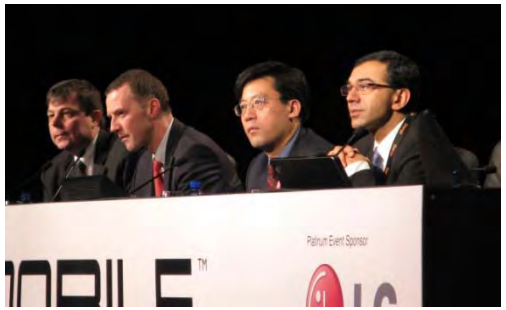
Deployment Issues (Antennas, Uplink performance)

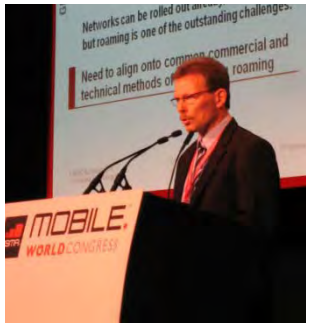
NGMN builds on conference contributions as an impactful tool to reach its target audience

Bi-annual NGMN Industry Conference & Exhibition

- Presentations, panels and NGMN exhibition 2006, 2008, 2010, 2012
- Networking and presentation platform for Partners

Joint GSMA / NGMN stream





One-day conference stream "Technology Evolution" at Mobile World Congress 2009, 1010, 2011, 2012

NGMN streams / contributions to major conferences

Conference streams and sessions at

- Broadband World Forum
- CTIA
- ITU Telecom World
- Transport Networks for Mobile Operators

Contributions at

- LTE World Summit
- Open Mobile Summit

- Communicate NGMN requirements and identified gaps to drive adoption and awareness in the industry
- Latest insights from industry leaders, decision makers, research labs on high-impact issues
- Present NGMN achievements, work plan, objectives
- Show proof of concept of next generation mobile networks in presentations and at exhibitions

Summary

The NGMN Alliance

- **drives LTE standardisation with aligned operator requirements**: Support from the broad NGMN Partner base
- **ensures global harmonisation of future standards:** Consolidated international view from NGMN Partners
- **provides industry feedback on standardisation work to allow for improvement and prioritisation:** Business and management perspective on technology issues and options
- **builds consensus and create alignment among industry organisations:** Close cooperation on management level with all leading organisations
- **promotes industry-wide achievements and challenges:** NGMN Industry Conferences and event contributions on mobile broadband status and future

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Annex

Vision and Mission of the NGMN Alliance

Vision

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.

Mission

The NGMN Alliance is a forum to share, assess, and drive aspects of mobile broadband technologies focusing on LTE & EPC (Evolved Packet Core) and its evolution.

The NGMN Alliance complements and supports the work within standardisation bodies and industry fora by providing a coherent view of what the operator community is going to require for successful deployment and in order to deliver mobile broadband technology quickly and cost-effectively and serve the benefits of the end-user.

Mission (cont'd) – Role and activities of NGMN

- Analysis of technical frameworks and relevant solutions
- Development of performance targets
- Requirements definition based on use cases
- Identification of gaps in standards
- Contribution to SDOs & Industry Associations
- Sharing of experience from deployment and operations
- Development of implementation guidelines
- Early assessment of technology trends
- Active communication on the technology's performance, availability and customer benefits
- Supporting a transparent and predictable IPR regime

Key messages and proposals from the document

“Service Provider’s position on cooperation between 3GPP and TM Forum”

signed by CIOs & CTOs from DT, FT, VF, BT and PT

This document was sent to 3GPP TSG SA and TM Forum on January 29th, 2011

Service Provider's position on cooperation between 3GPP and TM Forum (1/4)

- Document that underpins SP's position with respect to the ongoing discussion on cooperation between 3GPP and TMF:

"It is about development of aligned standards for the interface between the production infrastructure and the management environment, hence the network and the OSS"

Challenges:

- Variety of network and service production infrastructures: mobile, fixed, converged
- Increasing demand to maintain and improve customer experience, which requires full e2e service management and hence multi technology and multi vendor network management capabilities
- High pressure to improve operational efficiency

Service Provider's position on cooperation between 3GPP and TM Forum (2/4)

Key message:

"Due to the **lack of aligned standardized interfaces** between OSS and the production infrastructure the deployment of new technologies and services requires an **ever growing integration tax**.

The undersigning companies are **no longer willing to increase payment for this shortcoming** of the Telco industry and the standardisation bodies, respectively".

Important initiatives:

- TMF: Management functions (MTOSI, OSS/J, *Frameworx,* etc.)
- 3GPP: Network related functions for voice and data services
- NGMN: Defining and aligning SP's requirements (Operational Efficiency, SON, NGCOR, etc.)

Service Provider's position on cooperation between 3GPP and TM Forum (3/4)

Options to develop "the interface":

1. No interface standardisation – not an option at all
2. One common interface standardisation – ideal, but hardly to be expected in a reasonable time frame
3. This is the option the SP's voted for :

"A cooperative, federated interface definition"

All involved parties agree on **one common information framework** – on a certain model level and **acting as an umbrella for e2e management** purposes.

This umbrella should allow for **federation/integration of the various network resource models** – mobile and fixed, today and in future.

Service Provider's position on cooperation between 3GPP and TM Forum (4/4)

Proposal:

- **Joint development of optimal interface standards** (e.g. information model, transfer protocols, bi-directional message formats and semantics) supported by widely accepted specification methods and adequate tools.
- **Telco and OSS industry must drive the development** and be fully committed to the common results. Ultimate target is **"zero integration tax"!**
- **SPs must clearly define and state their business and functional requirements** – most suitable through a common forum like the NGMN Alliance.

Next steps:

- **Establish close cooperation and joint working groups between the SDOs** with recognized and experienced experts and project managers
- **Define clear objectives** for these working groups (deliverables, results, timelines)
- **Implement a senior steering group** (SDOs, Telco/OSS industry, SPs)
- **Monitor working group plans, results and milestones; allow for escalation**
- The involved parties are asked to make any effort in **resolving their legal issues,** like handling of copy rights and bi-directional granting of access rights.