

NGMN Alliance

Update on 5G Work Programme

07/2015

For GSC19

Klaus Moschner
NGMN Office
16th July 2015

The NGMN Alliance Is Supported by Key Industry Players



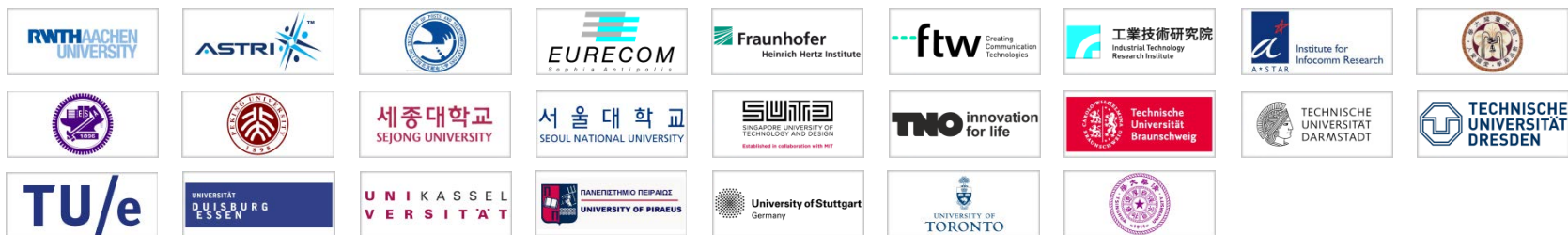
25 Worldwide Leading Mobile Operators



36 Worldwide Leading Technology Vendors



25 Universities / Research Institutes



NGMN 5G White Paper finalised – approved by the NGMN Board



NGMN 5G White Paper

1. Executive Summary
2. Introduction
3. 5G Outlook
4. Requirements
5. Technology & Architecture
6. Spectrum
7. IPR
8. Way Forward

NGMN 5G White Paper,
Version 1.0, 17-February-2015

- Global view
- End-to-end scope
- Specific, comprehensive requirements
- High quality
- Timely delivery
- Business perspective, operator led

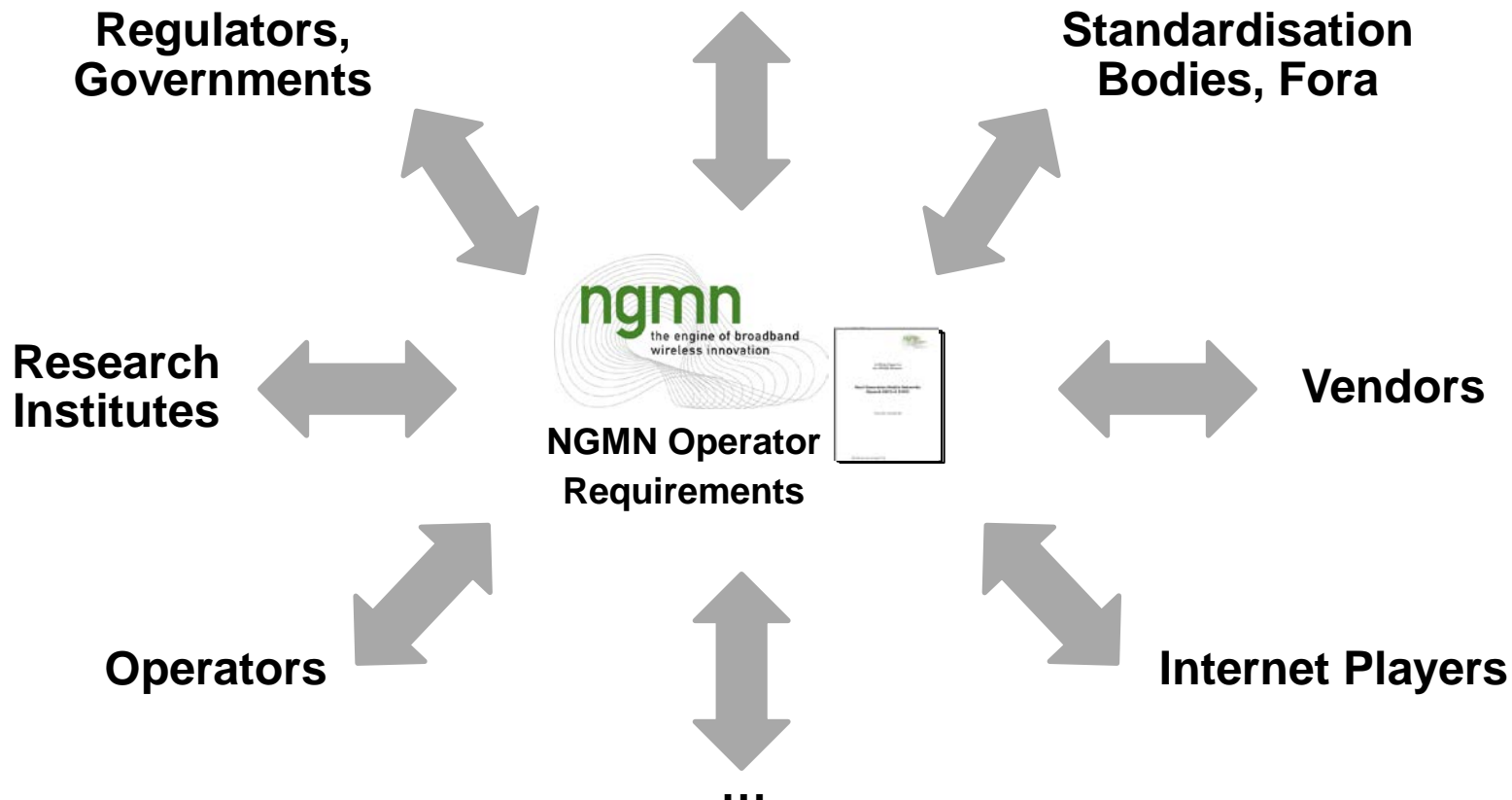
NGMN Board Members



NGMN White Paper publication at MWC 2015, presentation and discussion at NGMN Industry Conference & Exhibition 2015

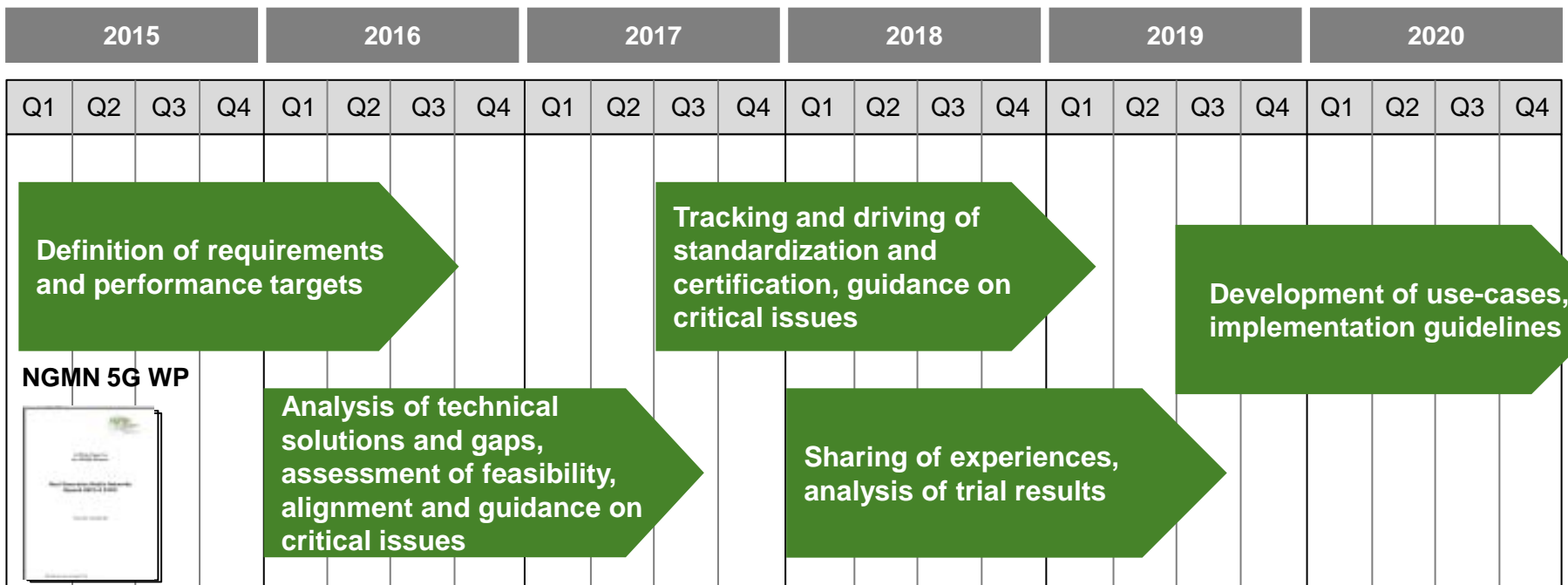
NGMN to reach out and co-operate with all ecosystem stakeholders

“5G” Industry Initiatives



Orchestrated Effort for Global and Aligned Development of “5G”

NGMN Role in the 5G Development



NGMN 5G Work Programme: Approved and Launched



Business Principles Group BPG

Objective:

- Ensuring that 5G is architected and underpinned by solid business principles
- Identifying & modelling elements & capabilities of future business models

Requirements & Architecture

Objective:

- Providing timely guidance on 5G solutions to all relevant industry stakeholders – definition of technical requirements, architecture principles, input to SDOs and other organizations.

Spectrum

Objective:

- Providing continuous contributions to international fora and groups regarding NGMN spectrum requirements, in order to ensure the allocation of sufficient spectrum for future 5G services.

IPR Forum

Objective:

- Co-operate with relevant industry partners to develop implementation plans for the 5G IPR recommendations outlined in the NGMN 5G White Paper.

... supported by all NGMN Partners (Operators, Vendors, Research Institutes)

A large, decorative graphic on the left side of the slide consists of numerous thin, grey, wavy lines that curve from the bottom left towards the center, creating a sense of motion and depth.

Thank You!

Backup



Examples of press clippings 2015



telecompaper

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NGMN Alliance publishes white paper on 5G requirements

Tuesday 3 March 2015 | 13:05 CET | News



The Next Generation Mobile Networks (NGMN) Alliance has released its white paper on 5G at the Mobile World Congress, outlining the operator requirements intended to support the standardisation and subsequent availability of 5G by 2020. The NGMN started work on 5G last year, setting up a team of over 100 industry experts to research the white paper. The group will discuss the paper and industry developments further at a conference later this month in Frankfurt.

The white paper's vision for 5G includes new use cases and business models building on the extended network capabilities of the next generation of networks. 5G networks will support much greater throughput, lower latency and higher connection density. To cope with the growing number of use cases and business models, 5G must provide a high degree of flexibility and scalability by design, the paper said. In addition, it should show foundational shifts in cost and energy efficiency.

While the commercial introduction of 5G is expected to vary from operator to operator, the NGMN encourages industry players to work towards availability of global and commercial products by 2020. The NGMN said will continue to work with its partners on ensuring 5G equipment fulfils the requirements in its white paper.

<http://www.telecompaper.com/news/ngmn-alliance-publishes-white-paper-on-5g-requirements--1068683>

(Mar. 2015)

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Home > Featured Content > Home Banner > NGMN unveils 5G operator wishlist

3rd March 2015

NGMN unveils 5G operator wishlist

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A 5G White Paper unveiled by the Next Generation Mobile Networks (NGMN) Alliance aims to settle industry debate over the technology's future standards. by Guest

Following a decision late last year by the NGMN board of more than 20 operator CTOs, a team of 100 technical specialists were asked to contribute towards defining the end-to-end requirements for 5G. The resulting White Paper, according to the NGMN, now presents a consolidated view of operator requirements intended to support the standardisation and subsequent availability of 5G for 2020 and beyond.

"The White Paper provides essential and long expected input for the work of many industry bodies", said Peter Meissner, CEO of the NGMN Alliance. "Together with our global partners from within industry and research, we will now focus on setting up and implementing a 5G work-programme ensuring that future solutions will meet our ambitious targets."

The NGMN document states it would like to see any 5G ecosystem as being global, lacking in fragmentation and open to innovation. However, while conceding that commercial deployment timescales will vary across the operator community, it urges 5G availability by 2020.

The White Paper is set for open discussion at the NGMN industry conference in Frankfurt this month. However, equipment vendors have been calling for open collaboration across industry

<http://www.mobileworldlive.com/ngmn-unveils-5g-operator-wishlist>

(Mar. 2015)

Examples of press clippings 2015



The Register
Biting the hand that feeds IT

DATA CENTRE SOFTWARE NETWORKS SECURITY BUSINESS HARDWARE SCIENCE BOOTNOTES VIDEO FORUMS WEEKEND EDITION

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The phoney phone standards chat is over and the real work has begun

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http://www.theregister.co.uk/2015/03/04/carriers_want_5g_to_do_everything_everywhere/
(Mar. 2015)

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Mobile industry seeks to put the user at the heart of 5G networks

March 24, 2015 | By Anne Morris

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FRANKFURT, Germany--The mobile industry has often been criticized for putting technology ahead of what users actually want, but operators and vendors appear to be placing significantly more effort on putting users first as they prepare for "5G" networks.

As executives from across the mobile industry gathered here for the NGMN Industry Conference & Exhibition 2015, speakers and panelists alike sought to underline that 5G will start with use cases and not with the technology. The conference aims to build on the momentum generated by the publication of the NGMN Alliance's white paper on 5G that outlined 25 "imagined" use cases for the next mobile generation.

"When we were discussing 4G, we were driven by the fact that 3G was not a success," observed Joachim Horn, CTIO of Tele2. Horn noted that some operators--fresh from spending in what some cases was billions of euros on 3G licences--were not happy, and much of 4G was about trying to solve the shortcomings of 3G networks.

<http://www.fiercewireless.com/europe/story/mobile-industry-seeks-put-user-heart-5g-networks/2015-03-24>

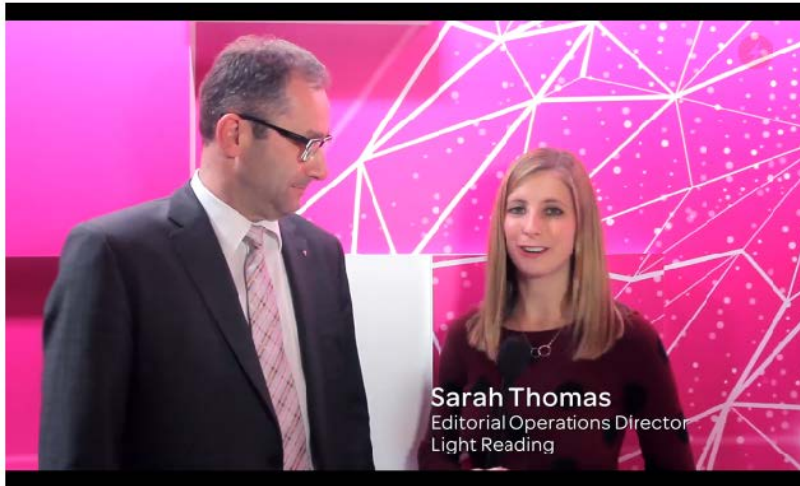
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Examples of press clippings 2015



MOBILE / 5G

NGMN Chairman Outlines His 5G Vision



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Bruno Jacobfeuerborn, chairman of the NGMN Alliance and Deutsche Telekom CTO, shares his thoughts on the challenges, opportunities and costs of 5G.

<http://www.lightreading.com/mobile/5g/ngmn-chairman-outlines-his-5g-vision/v/d-id/714242>

(Mar. 2015)

INSIDE5G MAKING SENSE OF THE 5G HYPE

Home 5Qs on

5Qs On 5G: With NGMN

March 06, 2015 5Qs on 5G, Standardisation, Virtualisation Comments Off

'Inside5G's '5Qs on 5G' series is back and it comes courtesy of Philipp Deibert of NGMN, just after the association has released its much-discussed **White Paper** at the Mobile World Congress. So there's no better time to catch up with the NGMN Alliance to find out exactly what they're all about.

What are the main challenges faced in the development and standardisation of 5G?

5G should leverage an eco-system that is truly global, free of fragmentation and open for innovations. To this end, NGMN calls the industry to develop a single 5G standard based on the principles of open and global standards, utilising open interfaces and delivered based on globally available and non-proprietary solutions.

With regards to the system performance and capabilities, improvements are needed in three dimensions when the baseline 4G system (which in the White Paper is considered to be 3GPP Release-12) is compared against the 5G requirements:

- network capabilities
- enablers for operational sustainability
- enablers for business agility

Substantial improvements are needed in all three dimensions to bring the current state of the art system on par with the requirements.

Have you identified any 5G technologies that look of particular interest?

In 5G, there is a need to push the envelope of performance to provide, where needed, for example, much greater throughput, much lower latency, ultra-high reliability, much higher connectivity density,

<http://inside5g.com/5qs-on-5g-with-ngmn/>

(Mar. 2015)

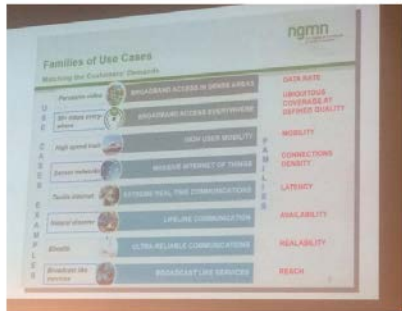
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Dean Bublely
@disruptiveDean

Following

Interesting & broad set of use-cases for #5G inc. "extreme realtime comms" #IC2015 @NGMN_Alliance



FAVORITES

Live updates from NGMN ICE2015 5G conference

By Keith Dyer // 23 March 2015



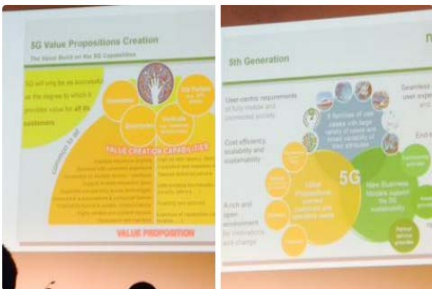
I am in Frankfurt bringing you live updates from NGMN's conference looking at all things 5G. Updates start Tuesday 24 March, 9am CET.

JH says it's a bit early to be thinking that way. SD says what we are trying to do is create an architecture that gives flexibility in business models. This is really an architecture concept, not just about the access network, but about the flexibility the architecture should have. We are including WiFi, cellular etc and this is feasible to make services and use cases we don't even envisage.

Sandro reassures as all that there's plenty of life in 4G and 4G Advanced. But by 2020 we recognise that might not be enough. Because data explosion faster and faster, new business models and partnerships possible but not allowed by previous technology. So NGMN decided it would have a 5G vision.

<http://the-mobile-network.com/2015/03/live-updates-from-ngmn-ice2015-5g-conference/>

(Mar. 2015)



David Noguier Bau
@dnoguier

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New #5g value propositions: is a user centric technology #IC2015 #ngmn

9:53 AM - 24 Mar 2015

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Building 5G networks without the band aid

March 31, 2015 | By Anne Morris

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Now that I've had a few days to let last week's conference on 5G organised by the NGMN Alliance sink in a little more, I've been struck anew by the degree to which the mobile industry is planning for a future that is currently largely imagined.



Anne Morris

The good news is that the industry is doing something it has not always been so good at in the past: it is putting the use case before the technology and then trying to design the requirements around the expected use cases. At the same time, the requirements are complex, confusing and in some cases--such as the ambition to achieve ultra low latency to enable the "tactile" internet--present a massive challenge to the industry.

<http://www.fiercewireless.com/europe/story/building-5g-networks-without-band-aid/2015-03-31>

(Mar. 2015)

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▶ MOBILE / 5G

You Can't Spell 5G Without LTE

...

He echoed statements made by Phillip Deibert, general manager of the **Next Generation Mobile Networks (NGMN) Ltd.**, that 5G is primarily being driven by a desire to work with new industry verticals like healthcare, the automotive industry and the Internet of Things. Deibert said smartphones will continue to drive mobile growth well into the future, but that the key for operators deploying 5G will be partnerships on the application side and supporting those partners for authentication and operation on the network. (See [NGMN Chairman Outlines His 5G Vision and 5G Use Cases, Pre-Standards Groups Proliferate](#).)

That -- the fact that 5G is being built for new use cases, rather than the other way around -- is what's most unique about it and why it's important to have.

<http://www.lightreading.com/mobile/5g/you-cant-spell-5g-without-lte/a/d-id/715111>

(Apr. 2015)

TELECOM TV

NGMN

Telefonica takes a collaborative approach to 5G standards



Kevin Holley, Head of Standards, Telefonica

NGMN

Virtualisation and cloud key to 5G for TeliaSonera



Mats Svärth, VP Group Networks and IT Infrastructure, TeliaSonera

NGMN

Tele2 to create networks on demand with 5G



Joachim Horn, EVP Group CTIO, Tele2

NGMN

NGMN positions operators at the forefront of 5G development



Bruno Jacobfeuerborn, CTO, Deutsche Telekom and Chairman, NGMN

NGMN White Paper published at MWC 2015



- Final approval in Board meeting 1st March 2015
- Press release distributed – coverage in all leading channels (lightreading, fiercewireless, ...)
- Press conference at DTAG booth
 - White Paper key messages presented by NGMN Chairman B. Jacobfeuerborn
 - Q&A with NGMN Board Members
 - All major vendor Partners, further Board Members, organisations, leading press present
- Extremely positive feedback received from Partners, organisations and other industry stakeholders



NGMN 5G White Paper in-depth presentation and discussion at NGMN Industry Conference & Exhibition



- Participation above expectations: >350 participants – senior management, thought-leaders, experts

Sponsors:



Exhibitors:



Cooperation Partners:



- DTAG launch 5G:haus; 5G-PPP and 5GMF MoU for 5G
- Media attendance and messages: Disruptive Analysis, 5GInside, Fierce Wireless, TelecomTV...