5G ACIA

5G Alliance for Connected Industries and Automation

Dr. Andreas Mueller

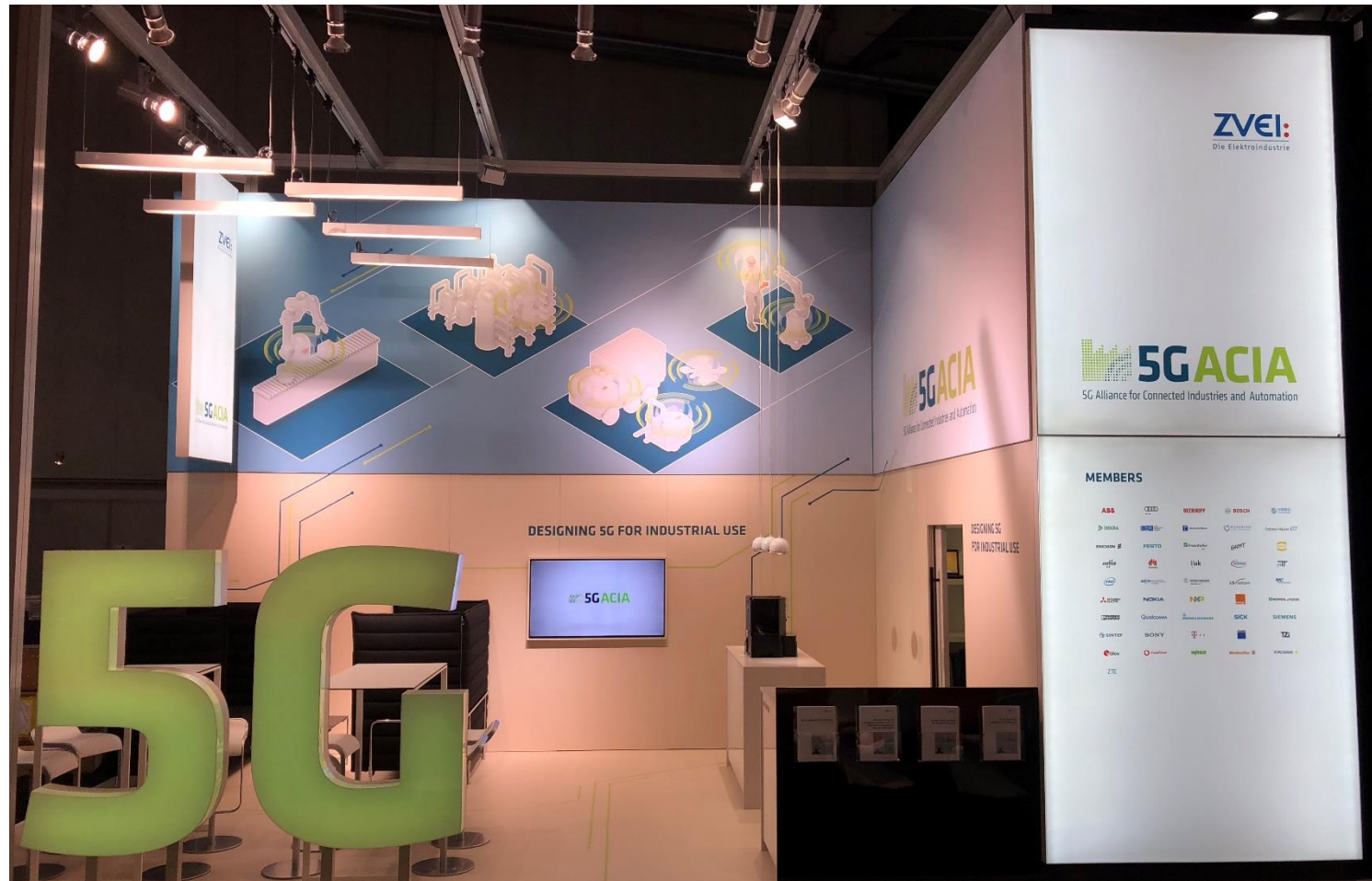Robert Bosch GmbH | Chairman of the 5G-ACIA

5G-ACIA brings 5G to Hannover Messe 2019

Visit the 5G-ACIA booth in the 5G-Arena in Hall 16 / D38

5G Alliance for Connected Industries and Automation
The Role of 5G for Industry 4.0

Industry 4.0

- Increase the **flexibility**, **versatility**, **productivity**, **resource efficiency** and **usability** of industrial production
- **Connectivity** as a key enabler for cyber-physical production systems

The 5G Factory

5G

- Strong focus on **machine-type communication** and the IoT[1]
- URLLC[2] and mMTC[3] enable completely **new applications**, also in industry
- 5G as **"one size fits all" solution**

[1]Internet of Things, [2]Ultra-Reliable and Low-Latency Communication
[3]Massive Machine-Type Communication

5G as a key enabler for new & optimized use cases and applications
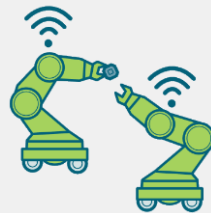
| Mobile Robots | Factory Automation | Augmented Reality | Logistics |

5G and Industry 4.0 | A Perfect Match

5G ACIA
5G Alliance for Connected Industries and Automation

5G will lift Industry 4.0 to the next level

Industry 4.0 may become the killer application for 5G ☺!

Crucial factor for our economy & society!

Image: BOSCH

Peculiarities of the Industrial Domain

Image: BOSCH

Many use cases & applications
with highly diverse & very demanding requirements

Local deployments in a plant
in a rather controlled environment

Challenging propagation environment
with many reflections and potentially high interference

Typically brownfield installations
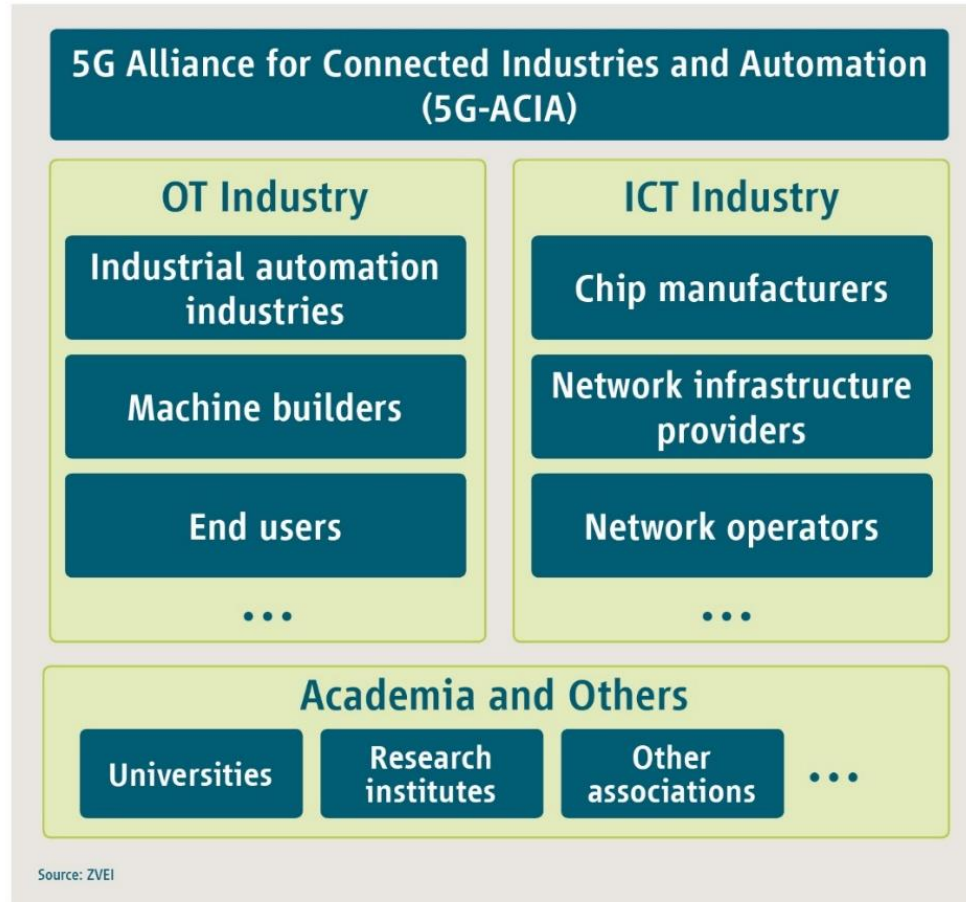requiring seamless integration in existing infrastructure

Safety & security are crucial
with highest requirements on availability & reliability

Own language
which has to be aligned with telecom world

5G Alliance for Connected Industries and Automation
5G-ACIA | A Joint Initiative of OT and ICT Industry

5G Alliance for Connected Industries and Automation (5G-ACIA)

OT Industry
- Industrial automation industries
- Machine builders
- End users
- ...

ICT Industry
- Chip manufacturers
- Network infrastructure providers
- Network operators
- ...

Academia and Others
- Universities
- Research institutes
- Other associations
- ...

Source: ZVEI

Key Goals

- ✓ **Representation of the complete ecosystem**

- ✓ **Intended as a truly global initiative**

- ✓ **Characterized by openness & fairness**

- ✓ **Not a replacement of existing standardization bodies & associations, but a supplement with clear focus on 5G for the industrial domain**

- ✓ **Closer interaction and alignment of activities with other relevant organizations, such as 3GPP, IIC[1], IEC[2], FFPA[3], Platform Industry 4.0 and others**

OT: Operational Technology ICT: Information and Communication Technology

[1]Industrial Internet Consortium, [2]International Electrotechnical Commission, [3]Flexible Factory Partner Alliance

5G Alliance for Connected Industries and Automation
5G-ACIA: Major Milestones in the 1st Year

Pre-5G Era

3 April 2018
Founding of 5G-ACIA

June 2018
1st 5G Specs Fixed

04 November 2018
**3GPP Market
Representation Partner**

3 April 2019
**5G Forum +
1st Anniversary**

24 April 2018
Public Launch@HMI

14/15 March 2019
1st Meeting in Korea

5G Alliance for Connected Industries and Automation
5G-ACIA | Current Members (2 April 2019)

5G Alliance for Connected Industries and Automation
Global Reach & External Collaborations

Meeting Locations in 2019

Chicago
Paris
Frankfurt
Seoul
Shanghai

External Interactions (Selection)

PLATTFORM INDUSTRIE 4.0

3GPP A GLOBAL INITIATIVE

GCF Global Certification Forum

FLEXIBLE FACTORY PARTNER ALLIANCE

industrial internet CONSORTIUM

ETSI

GSMA

5G Forum

5G Alliance for Connected Industries and Automation
Recent and Current Focus Topics (Selection)

| Working Group 1	Working Group 2	Working Group 3	Working Group 4	Working Group 5
Use Cases & Requirements	Spectrum & Operator Models	Architecture & Technology	Liaisons & Dissemination	Validation & Tests

Completed Activities

❑ Collection of use cases and clarification of corresponding requirements

❑ Evaluation of radio propagation in industrial environments

❑ Various contributions to ITU-R

❑ Analysis of possible scenarios for non-public 5G networks

❑ Analysis of general test and validation aspects

Ongoing Activities

❑ Traffic modeling for industrial applications

❑ Seamless integration of 5G & Industrial Ethernet

❑ Security aspects

❑ 5G-ACIA testbed framework

❑ Relevant parameters and properties for industrial network slices

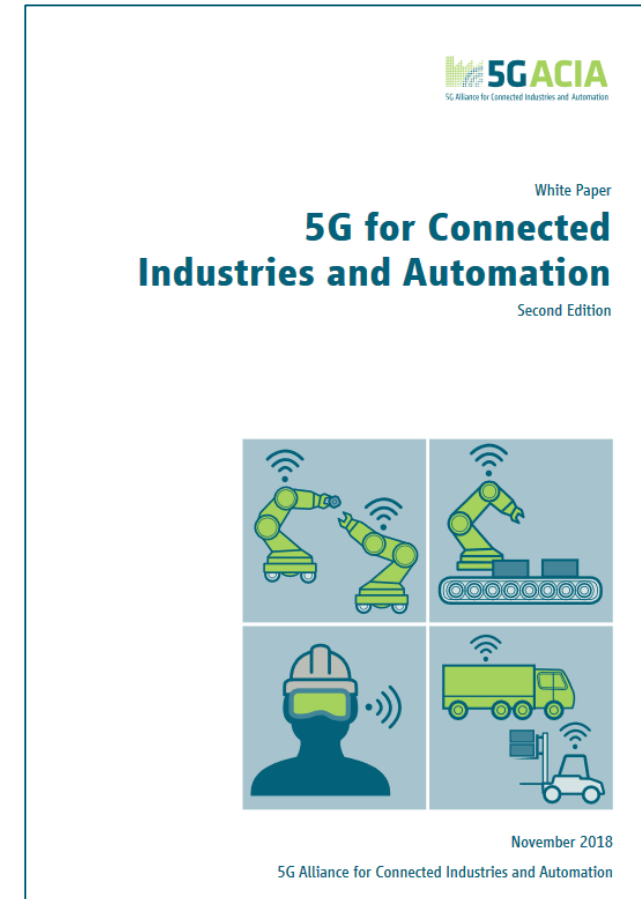❑ Pre-alignment of contributions to 3GPP

5G Alliance for Connected Industries and Automation
3 New White Papers
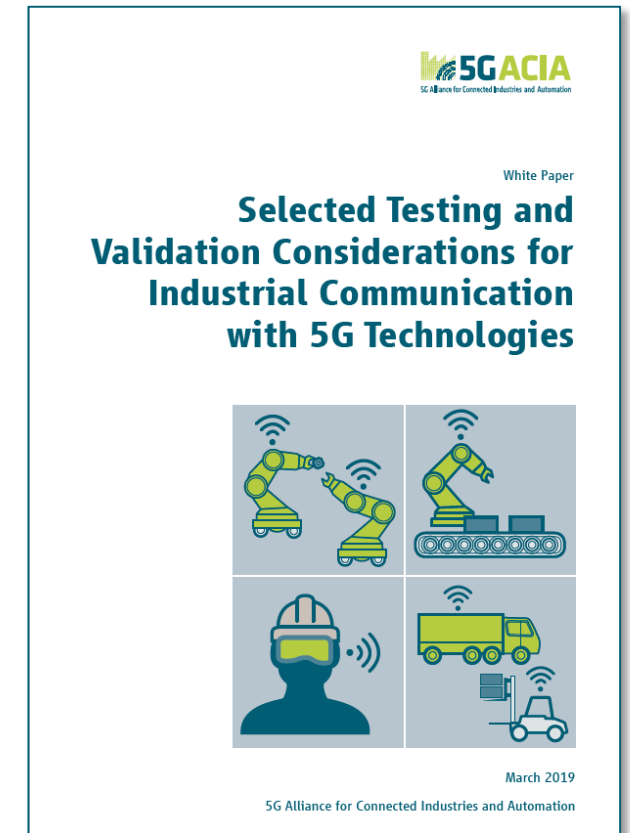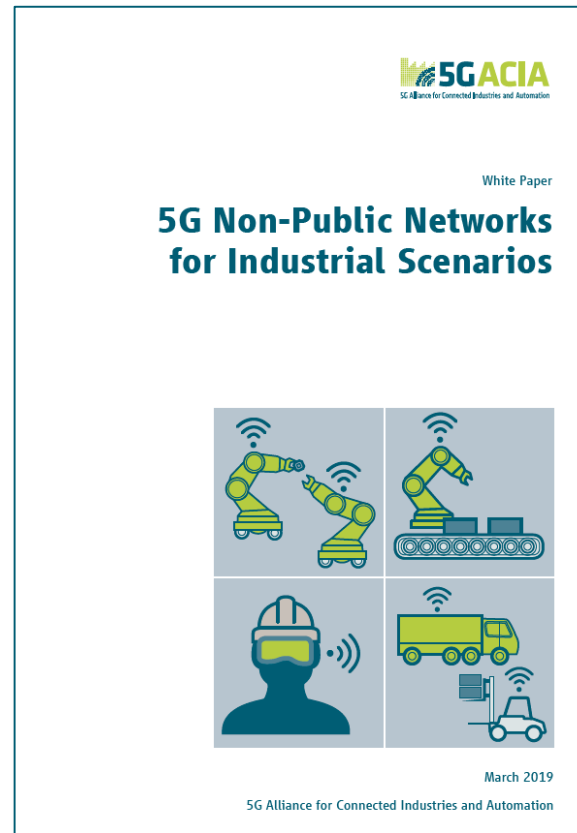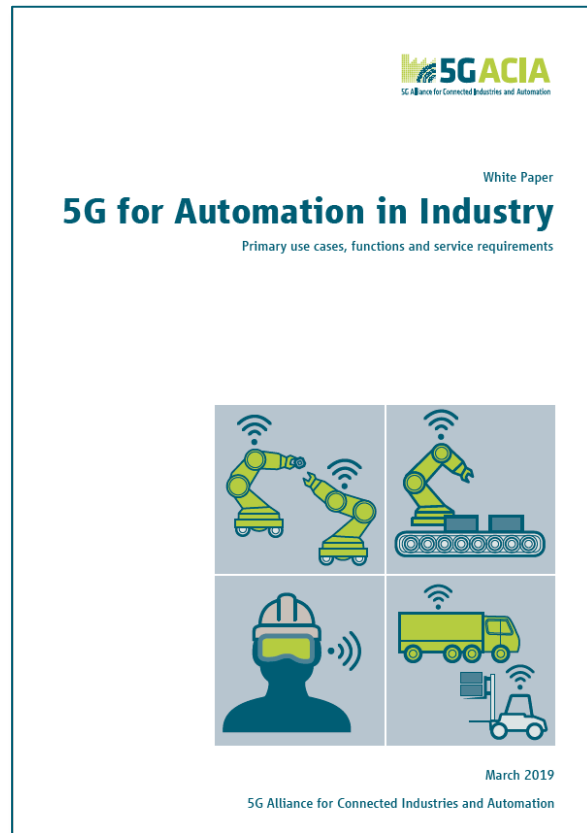
5G Alliance for Connected Industries and Automation
Further Information

www.5g-acia.org

Second Edition