

# IEEE 5G Summit Dresden

PRESENTED BY



**5G Lab  
GERMANY**

**SEPTEMBER 19, 2017**

**INTERNATIONAL  
CONGRESS CENTER  
DRESDEN, GERMANY**

# IEEE 5G Summit Dresden

## Content

IEEE 5G Summit Dresden.....	5
5G Summit Morning Agenda.....	6
5G Summit Afternoon Agenda.....	7
Wireless Track Agenda .....	8
Wireless Track Supporters.....	11
Network & Cloud Track Agenda .....	12
Network & Cloud Track Supporters .....	14
Hardware Track Agenda.....	15
Application Track Agenda.....	18
Application Track Supporters .....	20
5G Mission.....	21
5G Summit Venue Map .....	22
5G Summit Exhibition Map .....	24
5G Summit Patrons.....	26
5G Summit Venue Map.....	28

## 5G Lab GmbH Contact

Dr. Rico Radeke

**T** +49 351 463 39245

**F** +49 351 463 37163

**E** [contact@5glab.de](mailto:contact@5glab.de)

**H** [www.5glab.de](http://www.5glab.de)



## 5G Lab Germany Partners

Industry Partners are welcome to join our initiative. 5G Lab Germany is offering a platform for companies to explore the impact of 5G on their business and gain experience of 5G technologies through our unique interdisciplinary approach, access to the latest research results and close contacts to world-class experts.

The 5G Lab Germany is already supported by highly innovative companies:



NOKIA

ERICSSON

NEC

CLAAS



accenture

Hewlett Packard  
Enterprise



LIEBHERR

VOLKSWAGEN

AKTIENGESELLSCHAFT

## IEEE 5G Summit Dresden

The 5G Lab Germany at TU Dresden and IEEE are jointly organizing the second IEEE 5G Summit Dresden, which is held on September 19, 2017 at International Congress Center Dresden, Germany. We are proud to be the 25th IEEE 5G Summit, a series held worldwide. We will exchange visions and ideas on future 5G technology developments, driving for making 5G a great success. 5G demonstrations by industry and 5G Lab Germany researchers are shown on an area of more than 800 sqm.

The main contributors to the Summit will be decision makers of international corporations. As leaders in defining the roadmap of 5G, the 5G Lab Germany will again bring forward a festival of ideas and display many technical demonstrators, showing how real some 5G technology is today already.

The summit will address a holistic approach on 5G system design, ranging from hardware, wireless, network & edge cloud, towards Tactile Internet applications.

The summit is built on a history of over 20 years Industry Partner Program Event and the previous IEEE 5G Summit Dresden, respectively. We are welcoming you to the second IEEE 5G Dresden Summit.

Yours faithfully,

**Prof. Gerhard Fettweis**  
5G Lab Germany  
Coordinator

**Prof. Frank Fitzek**  
5G Lab Germany  
Coordinator

## 5G Summit **Morning Agenda**

- 08:00 **REGISTRATION AND WELCOME COFFEE**
- 08:45 **WELCOME ADDRESSES**
- 09:00 **PLENARY KEYNOTE**// 5G Lab Germany Vision  
Prof. Frank Fitzek  
Prof. Gerhard Fettweis  
Coordinators// 5G Lab Germany
- 09:30 **PLENARY KEYNOTE**// 5G – Challenges and Opportunities for Leading Telcos  
Dr. Hannes Ametsreiter  
CEO//Vodafone Germany
- 09:50 **PLENARY KEYNOTE**// Realizing 5G through Cross-Industry R&D Collaboration Activities  
Stefan Koetz  
Chairman of the Management Board//Ericsson
- 10:10 **PLENARY KEYNOTE**// 5G Standardization in 3GP  
Balazs Bertenyi  
Chairman 3GPP RAN//Nokia
- 10:30 **COFFEE BREAK**
- 11:00 **PARALLEL TRACKS**// Morning Sessions
- 13:00 **LUNCH & EXHIBITION**

## 5G Summit **Afternoon Agenda**

- 14:00 **PARALLEL TRACKS**// Afternoon Sessions
- 16:00 **COFFEE BREAK & EXHIBITION**
- 17:30 **CLOSING SESSION & PANEL DISCUSSION**
- 17:30 **PLENARY KEYNOTE**// Gearing Up for 5G  
Dr. Bruno Jacobfeuerborn  
CTO//Deutsche Telekom
- 17:50 **PANEL DISCUSSION**  
Dr. Bruno Jacobfeuerborn  
CTO//Deutsche Telekom
- Dr. Eric Kuisch  
CTO//Vodafone Germany
- Dr. Branimir Stantchev  
Head of Spectrum for Wireless Broadband//European Commission
- Andreas Kwoczek  
Leitung Ortung und Kommunikation//Volkswagen
- Prof. Sachin Katti  
Associate Professor//Stanford University
- 19:30 **NETWORKING SESSION INCL. DINNER**// until Midnight

# Wireless Track Agenda

→ **Wireless Track**  
led by Prof. Fettweis

- 11:00 **KEYNOTE** // Wireless for 5G and Beyond  
Prof. Gerhard Fettweis  
Coordinator // 5G Lab Germany+ Vodafone Chair Mobile Communications Systems // TU Dresden
- 11:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Information and System Theory - The Guide to Optimal Information Transmission and Processing  
Dr. Meik Dörpinghaus  
The Gain of Joint Decoding for Multi-Connectivity  
Albrecht Wolf  
Analytic Evaluation of the Achievable Rate of Bandlimited Coarsely Quantized Channels  
Sandra Bender
- 11:40 **KEYNOTE** // Massive Antenna System for Mobile Broadband and its Application  
Naoto Ishii  
Senior Researcher // NEC
- 12:00 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Mobile Communication in the mm-Wave Regime  
Dr. Wolfgang Rave  
100+Gb/s Wireless Backhaul  
Xiaohang Song  
Pilot-Assisted Hybrid Beamforming Algorithm for Millimeter Wave Links  
Hsiao-Lan Chiang  
Experimental Validation of Resource Efficient Beamalignment Algorithms  
Tobias Kadur  
Advanced Multicarrier Waveforms for Future Mobile Communication  
Dr. Dan Zhang  
Iterative MIMO Detection for Generalized Frequency Division Multiplexing  
Maximilian Matthé

# Wireless Track Agenda

→ **Wireless Track**  
led by Prof. Fettweis

- 12:31 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Orthogonal Pilot Design for Channel Estimation in Non-Orthogonal Systems  
Shahab Ehsan Far  
GFDM for High Throughput Wireless Communication  
Ahmad Nimr
- 12:40 **KEYNOTE** // Massive MIMO, Network Slicing, and Artificial Intelligence – The Next Generation Technology for Ran Design  
Dr. Jens Voigt  
RF Engineering Manager // Amdocs
- 13:00 **LUNCH & EXHIBITION**
- 14:00 **KEYNOTE** // Accelerating 5G Design and Test with a Platform Approach  
Eric Starkloff  
EVP // National Instruments
- 14:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
New Machine Learning Approaches for IOT  
Dr. Janis Nötzel
- 14:40 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Heterogeneous Future Wireless Systems - Modelling and Optimization  
Dr. Meryem Simsek  
Modeling and Improving Buffered Video Streaming QoE in Interference-Limited Cellular Networks  
Philipp Schulz  
Statistical Multiplexing Gain in Fronthaul Networks  
Jay Chaudhary  
Applying Reliability Theory for Future Wireless Communication Networks  
Tom Hößler

# Wireless Track Agenda

→ **Wireless Track**  
led by Prof. Fettweis

- 15:00 **KEYNOTE** // Strategies to Support Emerging Market Use Cases in 5G  
Dr. Fisseha Mekuria  
Chief Research Scientist // Council for Scientific & Industrial Research (CSIR) South Africa
- 15:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Resilience and Real-time in Mobile Communications  
Dr. Norman Franchi  
Mobility Management in Next Generation Wifi  
Dr. Ali Haider Mahdi  
Spectrum Sensing Networks for Efficient Coexistence and Resource Management  
Dr. Kedar Kulkarni  
Methods of Cooperative Relaying and Decentralized Congestion Control for Improving Vehicular Networks  
Sebastian Kühlmorgen
- 15:40 **KEYNOTE** // 5G: Turn Visions into Reality  
Peter Riedel  
COO // Rohde & Schwarz
- 16:00 **COFFEE BREAK & EXHIBITION**
- 17:30 **CLOSING SESSION & PANEL DISCUSSION**

# Wireless Track Supporters

→ **Vodafone Chair**  
Industry Partner Program (IPP) Members



Intel Mobile Communications



# Network & Cloud Track Agenda

→ **Network & Cloud Track**  
led by Prof. Fitzek

- 11:00 **KEYNOTE** // ONAP: An Open Global Network Automation Platform  
Chris Rice  
Senior Vice President AT&T Labs // AT&T
- 11:20 **KEYNOTE** // Introduction to 5G, Network Coding and Cloud  
Prof. Frank Fitzek  
Coordinator // 5G Lab Germany + ComNets // TU Dresden
- 11:40 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Implementing Mobile Edge Clouds - The Good, The Bad and The Ugly  
Sreekrishna Pandi  
Joint Compressed Sensing & Network Coding in Finite Fields  
Maroua Taghouti  
What Does Distributed and Agile Edge Storage Has to Teach to Distributed and Agile Edge Computing?  
Juan Cabrera  
Meshmerize - Making Wireless Mesh Great Again!  
Simon Wunderlich
- 12:00 **KEYNOTE** // Wireless Communication Enters the Next Generation towards Seamless Global Connectivity  
Dr. Josef Hausner  
Head of Next Gen. Wireless Arch. // Intel
- 12:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Getting C2x Communication on the Road – In-Vehicle Measurements with An 802.11P Testbed  
Sebastian Rettlinger  
Cooperation Potential in Meshed Vehicular Networks  
Christopher Lehmann  
Enhanced Multipath with Network Coding  
Frank Wilhelm  
Mobile Edge Cloud: Orchestration Challenges  
Alexander Kropp

# Network & Cloud Track Agenda

→ **Network & Cloud Track**  
led by Prof. Fitzek

- 12:40 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
L4 for 5G – The Case for Using Microhypervisors as Software-Base for 5G  
Prof. Hermann Härtig
- 13:00 **LUNCH & EXHIBITION**
- 14:00 **KEYNOTE** // Mobile Communications for the “Digitalization Century”  
Dr. Walter Weigel  
VP Huawei European Research Institute // Huawei
- 14:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Quantitative Analysis for 5G  
Prof. Christel Baier
- 14:40 **KEYNOTE** // Facebook Connectivity  
Jin Bains  
Head of the Connectivity Lab // Facebook
- 15:00 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Privacy and Security in 5G  
Prof. Thorsten Strufe
- 15:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Secure Edge Computing  
Prof. Christof Fetzer
- 15:40 **KEYNOTE** // Edge & Cloud Evolution to 5G  
Marie-Paule Odini  
Director // Hewlett Packard Enterprise
- 16:00 **COFFEE BREAK & EXHIBITION**
- 17:30 **CLOSING SESSION & PANEL DISCUSSION**

## Network & Cloud Track Supporters

→ **Network & Cloud Track**  
led by Prof. Fitzek



**ERICSSON** 

**NOKIA**



**VOLKSWAGEN**  
AKTIENGESELLSCHAFT

## Hardware Track Agenda

→ **Hardware Track**  
led by Prof. Plettemeier

- 11:00 **KEYNOTE** // Fast and Energy-efficient Integrated Circuits for 5G  
Prof. Frank Ellinger  
Chair for Circuit Design and Network Theory // TU Dresden
- 11:20 **KEYNOTE** // 0.4V ULP Design Enablement for 5G SoCs Based on GLOBALFOUNDRIES' 22FDX® Technology  
Holger Eisenreich  
CEO // Racyics
- 11:40 **KEYNOTE** // Antenna Switching Concepts for Adaptive 5G Systems  
Prof. Dirk Plettemeier  
Chair for RF and Photonics Engineering // TU Dresden
- 11:45 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
mm-Wave Antennas and On-Chip Characterization  
Bernhard Klein  
RoF and FTTA Concepts for 5G  
Dr. Zaid Al-Husseini  
Body Area Communication in the 5G Era  
Dr. Qiong Wang
- 12:00 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Chip-Package Co-Design and Electro-Optical Integration for Advanced Packaging  
Dr. Karsten Meier, Dr. Krzysztof Niewegłowski
- 12:20 **KEYNOTE** // Millimeter-wave Packaging and System Integration for 5G  
Dr. Ivan Ndip  
Department Leader // Fraunhofer IZM
- 12:40 **KEYNOTE** // 5G Thriving by FDSOI  
Dr. Rutger Wijburg  
SVP & GM Fab 1 // Globalfoundries

# Hardware Track Agenda

→ **Hardware Track**  
*led by Prof. Plettemeier*

## 13:00 **LUNCH & EXHIBITION**

14:00 **KEYNOTE** // 5G Vision with Multi-gigabit Wireless Communications at the Network Edge  
Mohammad Akhter  
Director, Technical Staff Architect // IDT

14:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Design And Optimization of 5G Signal Processing Systems  
Dr. Emil Matus  
Adaptive Memory Pooling in Heterogeneous MPSoCs  
Friedrich Pauls  
Resilient Network-on-Chip (NoC) for Many Core Systems-on-Chip  
Sadia Moriam  
Accelerating Database Applications in MPSoCs  
Sebastian Haas

14:40 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Prospects and Challenges for Integrated Photonic Devices in the 5G Era  
Prof. Kambiz Jamshidi

15:00 **KEYNOTE** // Defending the Edge: Implementing Advanced Security Features in Power-Constrained Devices  
Dr. Yankin Tanurhan  
VP Engineering, Solutions Group // Synopsys Inc.

15:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Chip Design for Energy Efficient 5G Systems and Machine Learning  
Dr. Sebastian Höppner

# Hardware Track Agenda

→ **Hardware Track**  
*led by Prof. Plettemeier*

15:40 **KEYNOTE** // 3GPP's Nb-IoT Standard Goes Live – The Beginning of 5G's Massive IoT Aspiration  
Dr. Matthias Weiss  
CEO // Commsolid

## 16:00 **COFFEE BREAK & EXHIBITION**

## 17:30 **CLOSING SESSION & PANEL DISCUSSION**

# Application Track Agenda

→ **Application Track**  
led by Prof. Altinsoy

- 11:00 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Silent Speech Technology  
Prof. Peter Birkholz
- 11:20 **KEYNOTE** // Challenges and Trends in Construction  
Machinery Industry – Viewpoint of an OEM  
Dr. Wolfgang Burget  
Managing Director // Liebherr-Emtec
- 11:40 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
Human-Robot Interaction with Wearables  
Maria Piechnick
- 12:00 **KEYNOTE** // Next Generation Robotics: Interaction,  
Connectivity & Learning  
Prof. Sami Haddadin  
Director // Institute of Automatic Control // Leibniz  
Universität Hannover
- 12:20 **APPLICATION TRACK PANEL** //  
Thorsten Hehn  
5G Leader // VW
- Prof. Sami Haddadin  
Director // Institute of Automatic Control // Leibniz  
Universität Hannover
- Dr. Wolfgang Burget  
Managing Director // Liebherr-Emtec
- John Cioffi  
CEO // Assia
- 13:00 **LUNCH & EXHIBITION**

# Application Track Agenda

→ **Application Track**  
led by Prof. Altinsoy

- 14:00 **KEYNOTE** // Autonomous Driving and Challenges  
Prof. Ercan Altinsoy  
Chair of Audio & Haptic Engineering // TU Dresden
- 14:20 **KEYNOTE** // On the Way towards Safe and  
Autonomous Driving – How Can 5G Help to Achieve  
this Goal  
Prof. Lars Hannawald  
CEO // VUFO GmbH
- 14:40 **KEYNOTE** // Autonomous Driving and the 5G  
Connected Car  
Christian Wolf  
VP AIG // IDT
- 15:00 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
5G: An Added-Value Infrastructure in Process  
Industries?  
Markus Graube
- 15:20 **PROJECTS PRESENTED BY TRACK MEMBERS** //  
HPC Data Analytics: Flexible Computing Environments  
with Highest Performance  
Prof. Wolfgang Nagel
- 15:40 **KEYNOTE** // First NB-IoT Applications – Promises,  
Challenges and Limitations  
Dr. Matthias Stege  
CEO // Exelonix
- 16:00 **COFFEE BREAK & EXHIBITION**
- 17:30 **CLOSING SESSION & PANEL DISCUSSION**

## Application Track Supporters

→ **Application Track**  
led by Prof. Altinsoy



 **KORAMIS**



**SIEMENS**

## 5G Mission

**Understand and Drive the Holistic Requirements and Solutions of 5G**

**Deliver Technology Breakthrough**

**Be Opinion Leader in Forming 5G**

**Deliver Lab Examples and Test Beds**

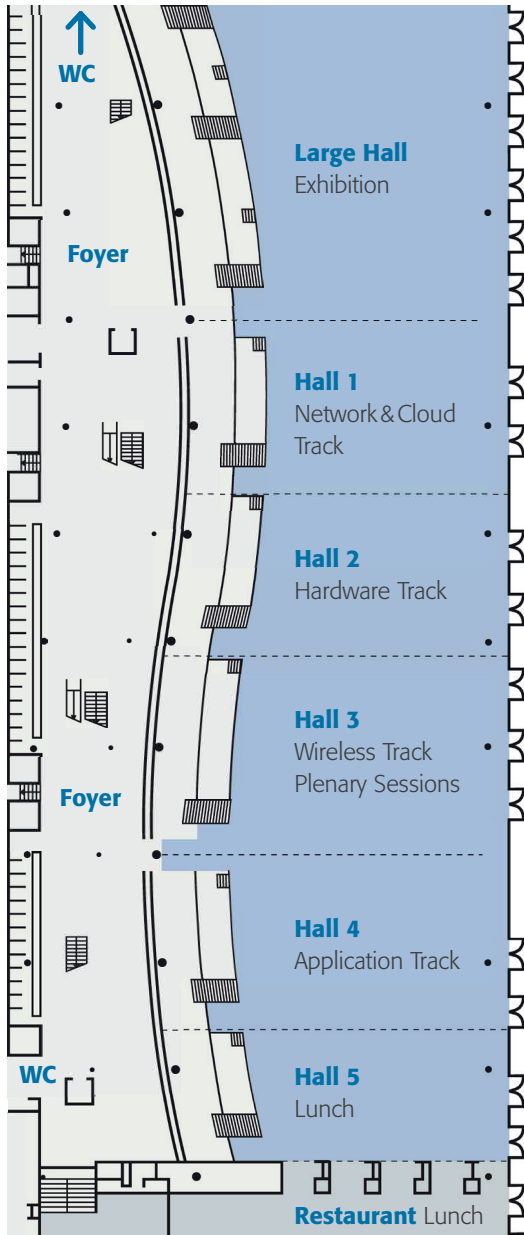
**Business Innovation Through Technology Transfer and Cooperation**

**Simple One-stop Shop for Complex 5G Research Topics**



**5G Lab  
GERMANY**

# 5G Summit Venue Map



International Congress Center Dresden // Hall Level

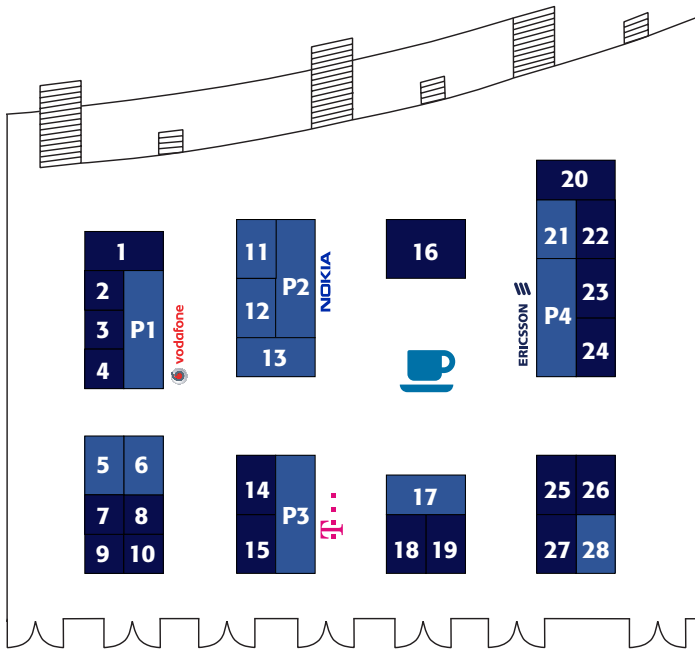
# 5G Summit Venue Map

- Welcome Coffee**..... Foyer ..... Hall Level
- Plenary Sessions**..... Hall 3 ..... Hall Level
- Exhibition**..... Large Hall ..... Hall Level
- Network & Cloud Track** ... Hall 1 ..... Hall Level
- Hardware Track** ..... Hall 2 ..... Hall Level
- Wireless Track** ..... Hall 3 ..... Hall Level
- Application Track**..... Hall 4 ..... Hall Level
- Lunch**..... Hall 5 ..... Hall Level
- Networking Session incl. Dinner**..... Terrace Level

## CO-SPONSORS



# 5G Summit Exhibition Map



- P1. **Vodafone** // Experiencing Low Latency  
 P2. **Nokia** // 5G Event Experience  
 P3. **Telekom** // The Hot Wire  
 P4. **Ericsson** // Programmable 5G Networks  
 – Addressing Public Safety

**Large Hall** // Hall Level

- TU Dresden**
- Companies**

1. **TU Dresden // Vodafone Chair Mobile Communications Systems (MCS)** // Bringing mmW to Cellular: Real-Time Access Link with Mobility
2. **TU Dresden // Vodafone Chair MCS (HAEC)** // High-speed Wireless Communications over 300 GHz
3. **TU Dresden // Vodafone Chair MCS** // Multi-Connectivity Handover Simulator for URLLC
4. **TU Dresden // Vodafone Chair MCS** // Resource Allocation for URLLC in Unlicensed Frequencies
5. **National Instruments** // Software-Defined Radio Tools for Massive MIMO and mmWave Communications Prototyping
6. **Rohde & Schwarz** // 5G OTA Testing at 28 GHz
7. **TU Dresden // Vodafone Chair MCS** // Flexible 5G Transceiver
8. **TU Dresden // Vodafone Chair MCS** // Tomahawk4: A Heterogeneous MPSoC for 5G Data Processing Applications
9. **TU Dresden // Vodafone Chair MCS** // 802.11ac based Dual Connectivity Demo
10. **TU Dresden // Vodafone Chair MCS** // V2X: Improving Intersection Safety with Cellular - V2X Communication
11. **Racyics** // 22FDX(R) ULV Design Enablement
12. **IDT** // 5G mmWave Demonstration
13. **Saxony** // Future Mixed-Reality Real-Time Applications
14. **TU Dresden // Chair of Privacy and Data Security** // Efficient, Intuitive and Secure Networks for Future Smart Systems
15. **TU Dresden // Chair of Privacy and Data Security** // Dynamic & live network micro-segmentation to seamlessly confine adversarial connections
16. **TU Dresden // Deutsche Telekom Chair of Communication Networks (ComNets)** // 5G Connected Cars
17. **Franka** // Music Demo
18. **TU Dresden // Deutsche Telekom Chair ComNets** // Network Coding in IPTV
19. **TU Dresden // Deutsche Telekom Chair ComNets** // Pendulum
20. **TU Dresden // Chair of Software Technology** // Mixed Reality Smart Home Control
21. **CodeOn & Steinwurf** // Gotta Wurf 'em all: Cross Platform, RLNC-Based, Reliable Multicast Solution for the Heterogeneous 5G Environment
22. **TU Dresden // Chair of Distributed Control Engineering** // NAMUR Open Architecture
23. **TU Dresden // Chair of Cognitive Systems** // Silent speech technology
24. **TU Dresden // Chair of Operating Systems** // Secure Real-Time Hypervisor for Edge Cloud and Beyond
25. **TU Dresden // Deutsche Telekom Chair ComNets** // Chocolate Cloud shooting the Cloud: Advantages of RLNC over traditional block codes for distributed storage systems
26. **TU Dresden // Chair of Algebraic and Logical Foundations of Computer Science** // Formal Analysis of 5G Protocols
27. **TU Dresden // Deutsche Telekom Chair ComNets** // HAEC - Playground: Highly Adaptive Energy-Efficient Computing
28. **New York University** // An Emulator for 5G mmWave Systems

# 5G Summit Patrons

## PLATINUM PATRONS



# 5G Summit Patrons

## GOLD PATRONS



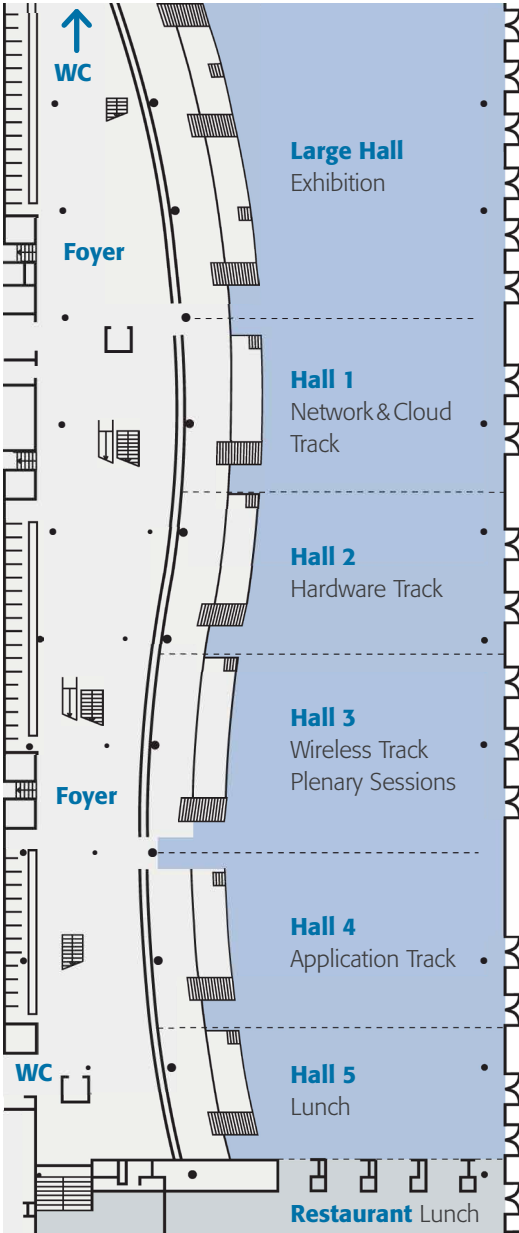
## SILVER PATRONS



## BRONZE PATRONS



# 5G Summit Venue Map



International Congress Center Dresden // Hall Level