6G-RIC
Research and Innovation Cluster

@ Berlin 6G Conference 2024

Demos | Sessions | Guided Tours

6G Conference 2024 — Demos

Partner	Demo Title
IHP	Long range sub-THz communcation with Phased array system
IHP	BB-Tx and Rx developement with FPGA and with a 240 GHz link
IHP	RRAM- demo
HHI-PN	Space division Multiplexing PON
HHI-WN	Energy-efficient waveform design sub-THz
TUB-TKN	Multi-RIS-based Signal Amplification using Channel Splicing for Calibration
HHI-WN, TUB-TKN	Simulation-based demo RIS
HHI-WN	D-Band Sensing
HHI-WN	Simulation Environment ISAC + Channel Charting
HHI-WN	mmWave Sidelink
HHI-WN	Neuromorphic Wireless Cognition
DLR	Semantic-aware (massive) multiple access
HHI-PN	Autonomous Link-Capacity Adjustment in Optical Metro- Aggregation Networks (Software & Hardware)
HHI-WN	Telemetry for RAN
HHI-WN + TUB-TKN	Open RAN / OAI Development
FOKUS, TU-BS	Intent-based Optical Transport Control
HHI-WN	OAI MU-MIMO (First step of Cell free MIMO)
HHI-WN + TUB-Control	Networked Collaborative Robotics

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6G Conference — Berlin Congress Center (bcc), 02.-04. July 2024

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6G Conference 2024 — Technical Sessions Tuesday 1/2

Time / Room	Title

14:00-15:30 / PM1-A05

<u>Innovation Management</u>
Involved Projects: 6G-RIC, Open6GHub, 6GEM, 6G-Life
Session Chair: Dr.-Ing. Lisa Underberg, ifak Magdeburg

14:00-15:30 / PM1-A08

<u>Integrated Communication and Sensing (ICAS) in Cellular Infrastructure and Sidelink</u>
Involved Projects: 6G-ICAS4Mobility, KOMSENS-6G, 6G-RIC
Session Chair: Dr. Oliver Blume, Bosch (6G-ICAS4Mobility), Ulrich Barth, Nokia Bell Labs (KOMSENS-6G)

6G-RIC Talks: Prof. Dr.-Ing. habil. Slawomir Stanczak (Fraunhofer Heinrich Hertz Institute, Berlin & TU Berlin)
"A beam of hope: the perks of beamforming for ICAS"

14:00-15:30 / PM1-A06

<u>Security for 6G and Beyond</u>
Involved Projects: 6G-RIC, 6G-life, UltraSec
Session Chairs: Igor Bjelakovic, Fraunhofer HHI (6G-RIC), Prof. Holger Boche, TU München (6G-life),
Prof. Stefan Katzenbeisser, Uni Passau (6G-RIC)

6G-RIC Talks: Felix Klement (Uni Passau)

"Safeguarding the Future: Enhancing Security in Open RAN Networks"

6G Conference 2024 — Technical Sessions <u>Tuesday 2/2</u>

Time / Room	Title
16:00-18:00 / PM2-A05	<u>Sub-THz Channel Measurements and Modeling for 6G and Beyond</u>
	Involved Projects: 6G-RIC, 6GEM, 6G-ADLANTIK
	Session Chair: Dr.-Ing. Michael Peter, Fraunhofer HHI (6G-RIC)
	6G-RIC Talks: Dr. Michael Peter, Fraunhofer HHI
	„Characteristics of the sub-THz radio channel – insights from measurement-based analyses for various scenarios"
	Alexander Ebert, Fraunhofer IIS, Technische Universität Ilmenau
	„Characterization of propagation in an industrial scenario from sub-6 GHz to 300 GHz"
	Lucas Cândido Ribeiro, Technische Universität Braunschweig
	„Small scale propagation characterization at 300 GHz in an industrial environment"
16:00-18:00 / PM2-A06	<u>Resilience in Wireless Communication Networks</u>
	Involved Projects: 6G-RIC, MassIMO, 6GEM, Open6GHub
	Session Chairs: Prof. Dr.-Ing. Eduard Jorswieck, TU Braunschweig (6G-RIC, MassIMO)
	Prof. Dr.-Ing. Falko Dressler, TU Berlin (6G-RIC)
	6G-RIC Talks: Setareh Maghsudi, Ruhr-Universität Bochum
	„Intelligent Cooperation to Boost the Network Resilience Against Resource Volatility"

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6G Conference 2024 — Technical Sessions Wednesday 1/3

Time / Room	Title
10:50-12:30 / AM2-C01	**Joint Communication and Sensing**
	Involved Projects: 6G-RIC, 6G-life, 6GEM, Open6GHub, 6G-CampuSens, 6G-Campus
	Session Chairs: Prof. Dr.-Ing. Falko Dressler, TU Berlin (6G-RIC)
	Prof. Dr.-Ing. Norman Franchi, FAU (Open6GHub)
	6G-RIC Talks: Dr. Kenan Turbic, Fraunhofer HHI
	"Network as a Sensor: 6G-RIC Perspective on JCAS"
10:50-12:30 / AM2-A08	**Towards Ubiquitous Coverage with 6G**
	Involved Projects: 6G-Sentinel, Open6GHub, 6G-RIC
	Session Chair: Dr. George Yammine, Fraunhofer IIS (6G-RIC)
10:50-12:30 / AM2-A05	**Sensing Technologies for Health in 6G Networks**
	Involved Projects: 6G-RIC, KOMSENS-6G, 6G-Health
	Session Chair: Prof. Dr.-Ing. habil. Slawomir Stanczak, Fraunhofer HHI & TU Berlin (6G-RIC)
	6G-RIC Talk: Dr. Johannes Dommel, Fraunhofer HHI
	"Insights from experimental measurements in the subTHz regime" (6G-RIC)

6G Conference 2024 — Technical Sessions <u>Wednesday 2/3</u>

Time / Room	**Title**

14:00-15:30 / PM1-A03/A04 — <u>Technologies and Circuits for Sub-THz Communication and Sensing</u>

Involved Projects:	6G-RIC, Open 6G Hub, 6GEM, ESSENCE-6GM, CampuSens, MassIMO, 6G-TERAKOM
Session Chairs:	Prof. Dr. Corrado Carta, IHP (6G-RIC)
	Prof. Dr. Ivan Ndip, Fraunhofer IZM
6G-RIC Talks:	Robert Stöcker, Fraunhofer IZM, BTU Cottbus-Senftenberg
	„Advanced RF Packages, Integrated Antennas and Reflectarrays for 6G and Sub-THz Radar Sensing Applications"
	Prof. Corrado Carta, IHP GmbH
	„SiGe BiCMOS Integrated Transceivers and Module Integration for Resilient Communication at D-band"
	Dr. Ramez Askar, Fraunhofer HHI
	„D-Band Sensing Testbed: Advancing Ultra-Broadband Near-Realtime Capabilities

14:00-15:30 / PM1-A06 — <u>Reconfigurable Intelligent Surfaces: Theory, Optimization, and Experiments</u>

Involved Project:	6G-RIC, 6GEM, 6G-Life, Open6GHub, 6G-LICRIS
Session Chairs:	Aydin Sezgin, RUB (6GEM)
	Robert Schober, FAU (6G-RIC)
	Ehsan Tohidi, Fraunhofer HHI, TU Berlin (6G-RIC)
6G-RIC Panelist:	Prof. Eduard Jorswieck, TU Braunschweig

6G Conference 2024 — Technical Sessions <u>Wednesday 3/3</u>

Time / Room	**Title**

16:00-18:00 / PM2-A03/A04 <u>Panel discussion: Paving the way to 6G architecture – do we need a revolution?</u>

Involved Projects:	6G-ANNA, 6G-RIC
Session Chairs:	Dr. Gerald Kunzmann, 6G-ANNA
	Prof. Admela Jukan, TU Braunschweig (6G-RIC)

16:00-18:00 / PM2-A05 <u>From XL to cell-free MIMO: next-generation multi-antenna technologies</u>

Involved Projects:	6G-RIC, 6GEM, 6G-life, 6G-ANNA, MassIMO
Session Chair:	Prof. Dr.-Ing. Eduard Jorswieck, TU Braunschweig (6G-RIC, MassIMO)
	Dr. Lorenzo Miretti, Fraunhofer HHI, TU Berlin (6G-RIC, 6G-ANNA, MassIMO)
6G-RIC Talks:	Prof. Giuseppe Caire, TU Berlin
	"Fairness Scheduling and Fronthaul Optimization in Cell-Free User-Centric Massive MIMO Networks"
	Dr. Lorenzo Miretti, Fraunhofer HHI, TU Berlin
	"Revisiting Cell-Free Massive MIMO Versus Small Cells"

6G Conference 2024 — Technical Sessions <u>Thursday 1/5</u>

Time / Room	Title

09:15-10:20 / AM1-C01

<u>Beyond Metal: The Future of Robotics Powered by 6G</u>
Involved Project: 6G-RIC, 6GEM, 6G-Life, ICAS4Mobility
Session Chair: Prof. Dr.-Ing. habil. Slawomir Stanczak, Fraunhofer HHI, TU Berlin (6G-RIC)

6G-RIC Talk: Michael Epp, TU Berlin
          "Over-The-Air Consensus for Collision Avoidance and Formation Control in Multi-Robot Systems"
6G-RIC Panelist: Michael Epp, TU Berlin

09:15-10:20 / AM1-A08

<u>Control Plane aspects of 6G technology</u>
Involved Projects: 6G-RIC, 6G-ANNA, Open6GHub
Session chairs: Dr. André Drummond, TU Braunschweig (6G-RIC)
          Dr. Zoran Utkovski, Fraunhofer HHI (6G-RIC)

6G-RIC Talks: Dr. Lorenzo Miretti, Fraunhofer HHI
          "There's no free spectrum: opportunities and challenges of sub-THz communications"
          Osman Basaran, TU Berlin
          "O-RAN Real-time RIC"
          Dr. Julius Schulz-Zander, Fraunhofer HHI
          " RAN Telemetry"
          Dr. Marius Corici, Fraunhofer FOKUS
          "RAN-Core convergence"

6G Conference 2024 — Technical Sessions <u>Thursday 2/5</u>

Time / Room | **Title**

09:15-10:20 / AM1-A03/A04   <u>Reconfigurable Intelligent Surfaces: Theory, Optimization, and Experiments</u>

Involved Project:	6G-RIC, 6GEM, 6G-Life, Open6GHub, 6G-LICRIS
Session Chairs:	Prof. Aydin Sezgin, RUB (6GEM)
	Prof. Robert Schober, FAU (6G-RIC)

6G-RIC Talks: Robert Stöcker, Fraunhofer IZM
„On the realization of RIS – about trade-offs, drawbacks and impairments"

6G-RIC Panelists: Robert Stöcker, Fraunhofer IZM
Prof. Wilhelm Keusgen, TU Berlin

09:15-10:20 / AM1-A05   <u>Optical Access and in-building Networks for 6G</u>

Session Chairs: Prof. Volker Jungnickel, Fraunhofer HHI

6G-RIC Talk: Wilhelm Keusgen, TU Berlin, Christoph Kottke, Fraunhofer HHI
„Millimeter-wave and LiFi"

6G Conference 2024 — Technical Sessions <u>Thursday 3/5</u>

Time / Room	**Title**
10:50-12:30 / AM2-C01	<u>Future Research Topics</u>
	Involved Project: 6G-RIC, Open6Ghub
	Session Chairs: Prof. Dr. Stephan ten Brink, Uni Stuttgart (Open6Ghub)
	Prof. Dr.-Ing. habil. Slawomir Stanczak, Fraunhofer HHI, TU Berlin (6G-RIC)
	6G-RIC Talk: Dr. Zoran Utkovski (Fraunhofer HHI)
	"AI for next gen. communication networks"
10:50-12:30 / AM2-A08	<u>Wireless Access Protocols for 6G</u>
	Involved Projects: 6G-RIC, 6G-ANNA
	Session Chair: Dr. Andrea Munari, DLR (6G-RIC)
	6G-RIC Talks: Dr. Zoran Utkovski, Fraunhofer HHI
	"Unsourced Multiple Access for Next Generation IoT Connectivity"
	Dr. Gianluigi Liva, German Aerospace Center, DLR, Oberpfaffenhofen
	"Massive grant-free access in 6G Networks"
	Prof. Giuseppe Caire, TU Berlin
	"Fast Unsourced Random Access, Channel Estimation and Localization in Cell-Free User-Centric Massive MIMO Networks"

6G Conference 2024 — Technical Sessions <u>Thursday 4/5</u>

Time / Room	**Title**

10:50-12:30 / AM2-A03/A04 <u>Quantum Technologies for 6G and Beyond</u>

Involved Project:	6G-RIC, 6G-life, SquaD
Session Chairs:	Igor Bjelakovic, Fraunhofer HHI (6G-RIC)
	Marc Geitz, T-Labs
	Janis Nötzel, TU München (6G-life)
	Henrike Wissing, Fraunhofer HHI (SquaD, 6G-RIC)
6G-RIC Talk:	Igor Bjelakovic, Fraunhofer HHI, TU Berlin
	"Quantum Hardware Aware Security for 6G Networks"

10:50-12:30 / AM2-A05 <u>Optical Transport Evolution Towards 6G</u>

Session Chairs:	Dr. rer. nat. Colja Schubert, Fraunhofer HHI (6G-RIC)
	Dr.-Ing. Johannes Fischer, Fraunhofer HHI (6G-RIC)

6G Conference 2024 — Technical Sessions Thursday 5/5

Time / Room	Title
14:00-15:30 / PM1-A08	<u>Antennas and frontends for Beyond 5G and 6G applications</u> Session Chairs: Prof. Dr. Wilhelm Keusgen, TU Berlin (6G-RIC) Dr. Christos Oikonomopoulos, IMST
14:00-15:30 / PM1-A05	<u>Next Generation Wireless Networks and the Role of Machine Learning</u> Involved Projects: 6G-RIC, 6G-ANNA Session Chair: Dr. Renato Luis Garrido Cavalcante, Fraunhofer HHI (6G-RIC) 6G-RIC Talk: Dr.-Ing. Jochen Fink, Fraunhofer HHI "Fixed-point methods and model-driven AI for 6G PHY optimization"
14:00-15:30 / PM1-A06	<u>Highly-Efficient PAs for 5/6G</u> Session Chair: Prof. Friedel Gerfers, TU Berlin (6G-RIC) Prof. Amelie Hagelauer, Fraunhofer EMFT / TUM

We offer Guided Tours of our Demos in selected time slots. You can register beforehand at the 6G-RIC Booth.

We can accommodate 15 people per Guided Tour.

Tuesday:	Wednesday:	Thursday:
13:00 – 13:50	13:00 – 13:50	13:00 – 13:50

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