6G-RIC Workshop
October 11, 2024, Fraunhofer HHI, Salzufer 15-16, Berlin

6G-RIC Research and Innovation Cluster

AGENDA

08h00-08h30	Registration & Welcome	(6G-RIC Showroom, E-02)

BLOCK 1

08h30-10h30	Plenary Session "6G-RIC Technology Advancements"	(Plenary Room, E-07)
10h30-13h00	6G-RIC Demo & Research Highlights + xG-Incubator + Lunch	(6G-RIC Showroom, E-02)

BLOCK 2

13h00-14h30	Parallel Session I "Microelectronics & PHY-Layer Technologies"	(Plenary Room, E-07)
13h00-14h30	Parallel Session II "Network as a Sensor & Digital Twins"	(5th Floor, Room 5-28/29)
13h00-14h30	Parallel Session III "AI for Communication & Edge Intelligence"	(6G-RIC Showroom, E-02)
14h30-15h15	Coffee Break + 6G-RIC Demo & Research Highlights + xG-Incubator	(6G-RIC Showroom, E-02)

BLOCK 3

15h15-16h30	Plenary Session "6G Technologies: Architectural & System Aspects, Future Topics"	(Plenary Room, E-07)
16h30-	Get-together	(6G-RIC Showroom, E-02)

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BLOCK 1
08h30-10h30

PLENARY SESSION I "6G-RIC TECHNOLOGY ADVANCEMENTS" (Plenary Room, E07)

Session Chair
Slawomir Stanczak (Fraunhofer HHI)

08h30-09h45

TALKS

Lorenzo Miretti (Fraunhofer HHI)
"Cell-Free MIMO: The most underrated 6G Technology?"

Corrado Carta
"Advances in microelectronics for very high
frequency communications"

Gianluigi Liva (DLR)
"Massive Grant Free Access for 6G"

 Andre Drummond (TU Braunschweig)
"OPEN RAN Evolution for 6G Campus Networks: Architecture & Security Challenges"

Robert Schober (FAU)
"The Role of IRS in 6G – The 6G-RIC View"

09h45-10h30

PANEL DISCUSSION

Moderator
Slawomir Stanczak (Fraunhofer HHI)

Panelists
Andreas Müller (Bosch)
Michael Meyer (Ericsson Research)
Ulrich Barth (Nokia Bell Labs)
Mariam Kaynia (Telefonica)

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BLOCK 2
13h00-14h30

PARALLEL SESSION I "MICROELECTRONICS & PHY-LAYER TECHNOLOGIES" (Room TBD)

<u>Session Chair</u>
Wolfgang Heinrich (FBH-Berlin)

13h00-14h00   **TALKS**

Taro Eichler (Rohde & Schwarz)
„Sub-THz Communication and Sensing:
Leveraging Electronics and Photonics"

Christos Oikonomopoulos-Zachos (IMST)
"D Band Active Antenna Array with Lens Enabling
Quasi optical and Analogue Beam Reconfiguration
for 6G Applications"

Friedel Gerfers (TU Berlin)
"Advanced Circuit Design Techniques for
6G mmWave Front-Ends"

Vadim Isakov (TU Braunschweig)
„mmWave Signal Generation and Conversion for Integrated
6G Transceivers in CMOS and BiCMOS"

14h00-14h30   **PANEL DISCUSSION**

<u>Moderator</u>
Wolfgang Heinrich (FBH Berlin)

<u>Panelists</u>
Taro Eichler (Rohde & Schwarz)
Christos Oikonomopoulos-Zachos (IMST)
Friedel Gerfers (TU Berlin)
Vadim Isakov (TU Braunschweig)

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BLOCK 2
13h00-14h30

PARALLEL SESSION II "NETWORK AS A SENSOR AND DIGITAL TWINS" (5th Floor, 5-28/29)

Session Chair
Ehsan Tohidi (Fraunhofer HHI)

13h00-14h00   **TALKS**

Silvio Mandelli (NOKIA)
"Integrated Sensing and Communications:
Practical challenges for providing 6G with radar capabilities"

Kenan Turbic (Fraunhofer HHI)
"Network as a Sensor: 6G-RIC Perspective on ISAC"

Andreas Eisenblätter (atesio)
 "Communicating Digital Twins"

George Yammine/Patrick Agostini (IIS, HHI)
"Channel Charting: Exploring Velocity and Spatial Mapping"

14h00-14h30   **PANEL DISCUSSION**

Moderator
Ehsan Tohidi (Fraunhofer HHI)

Panelists
Silvio Mandelli (NOKIA)
Kenan Turbic (Fraunhofer HHI)
George Yammine/Patrick Agostini (HHI, IIS)
Bernhard Kloiber (Siemens)
Andreas Eisenblätter (Attesio)

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BLOCK 2
13h00-14h30

PARALLEL SESSION III "AI for COMM. & EDGE INTELLIGENCE" (6G-RIC SHOWROOM, E02)

Session Chair
Jochen Fink / Zoran Utkovski (Fraunhofer HHI)

13h00-14h00

TALKS

Miguel Lopez (Ericsson Research)
"PHY design from 2G to 6G: The past, present and
future of physical layer technologies, or how did we
get here and where are we going?"

Alex Keller (NVIDIA)
"Real-Time Neural Receivers Drive AI-RAN Innovation"

Renato Cavalcante (Fraunhofer HHI)
"Mathematical Foundations of Resource
Allocation: Unlocking New Insights for Enhancing Neural Networks"

Henning Sanek (Apple)
"Towards Native AI/ML in 6G: a UE perspective (**to be confirmed**)"

14h00-14h30

PANEL DISCUSSION

Moderator
Zoran Utkovski / Jochen Fink (Fraunhofer HHI)

Panelists
Miguel Lopez (6G-ANNA)
Alex Keller (NVIDIA)
Renato Cavalcante (HHI)

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BLOCK 3
15h15-16h30

PLENARY SESSION II "6G TECHNOLOGIES: ARCHITECTURAL & SYSTEM ASPECTS, FUTURE TOPICS" (Plenary Room, E07)"

<u>Session Chair</u>
Slawomir Stanczak (Fraunhofer HHI)

15h15-16h30

TALKS (Q & A)

Andreas Benzin & Wilhelm Keusgen (TU Berlin)
"6G Wide Area Coverage in the 7-15 GHz Frequency Range using Giga-MIMO and Open RAN"

Andreas Müller (Bosch)
"Network of Networks and Digital Twins"

Zoran Utkovski (Fraunhofer HHI)
"Semantic Communication & Next Gen. AI"

Stefano Cioni (European Space Agency - ESA)
"Non-Terrestrial Networks (NTN) in 3GPP" (**virtual talk**)

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OCTOBER 11
10h30-13h00   **DEMO AND STARTUP SESSION** (6G-RIC Showroom, E-02 + Integration Lab, E-01)
14h30-15h15   Session Coordinators: Leszek Raschkowski, Kenan Turbic, Ramez Askar, Zoran Utkovski

and on OCTOBER 10
16h00-17h00

xG-Incubator Startups (6G-RIC Showroom, E-02)
S01: Modular Open RAN Radio Unit Platform for 6G Research   Massive Beams
S02: 6G Network Planning and Customized 5G/6G RAN: Adaptive Network Slicing   airpuls
S03: MOCZ - an alternative Physical Layer to OFDM for short-packet communication   MOXZ

6G-RIC Demos (6G-RIC Showroom, E-02)
S04: 2*2 D-band LOS-MIMO Demo   IHP
S05: Secrecy Maps Demo   HHI-WN + TUB
S06: Channel Charting for Positioning   IIS-LV
S07: Photonic Neuromorphic Computing for Nonlinear Optical Signal Equalization (NELI) HHI-PN+TUB-PKS
S08: Intent-based Optical Transport Control   FOKUS, TUBS-KN, HHI-PN
S09: Autonomous Link-Capacity Adjustment in Optical Metro-Aggregation Networks   HHI-PN
S10: Multi-RIS-based Signal Amplification using Channel Splicing for Calibration   TUB-TKN
S11: Application level energy monitoring for Green 6G   HHI-WN
S12: AI native control interfaces   HHI-WN
S13: Signal Equalization using Micro-Ring Resonator based Reservoir Computing   CAU
S14: Simulation Environment ISAC + Channel Charting   HHI-WN
S15: Simulation-based demo RIS   HHI-WN, TUB-TKN

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14h30-15h15   Session Coordinators: Leszek Raschkowski, Kenan Turbic, Ramez Askar, Zoran Utkovski

and on OCTOBER 10
16h00-17h00

6G-RIC Demos (6G-RIC Showroom, E-02)
S16: Simulation-based demo RIS   HHI-WN
S17: Networked Collaborative Robotics   HHI-WN + TUB-Control
S18: Neuromorphic Wireless Cognition   HHI-WN
S19: 240GHz Single-Carrier Demo   IHP
S20: Energy-efficient Sub-THz Waveform Design   HHI-WN
S21: Space division Multiplexing PON   HHI-PN
S22: Automatic Deployment of Mobile Network Services   TUC
S23: Semantic-aware (Massive) Multiple Access   DLR
S24: D-Band Sub-THz Sensing and Communication   HHI-WN

Demos (6G-RIC Integration Lab, E-01)
I01: Next-Gen RAN: User mobility and energy saving   HHI-WN
I02: OAI MU-MIMO (First step of Cell free MIMO)   HHI-WN
I03: mmWave Sidelink   HHI-WN
I04: Interactive Channel Emulation for 5G Sidelink   HHI-WN, airpuls
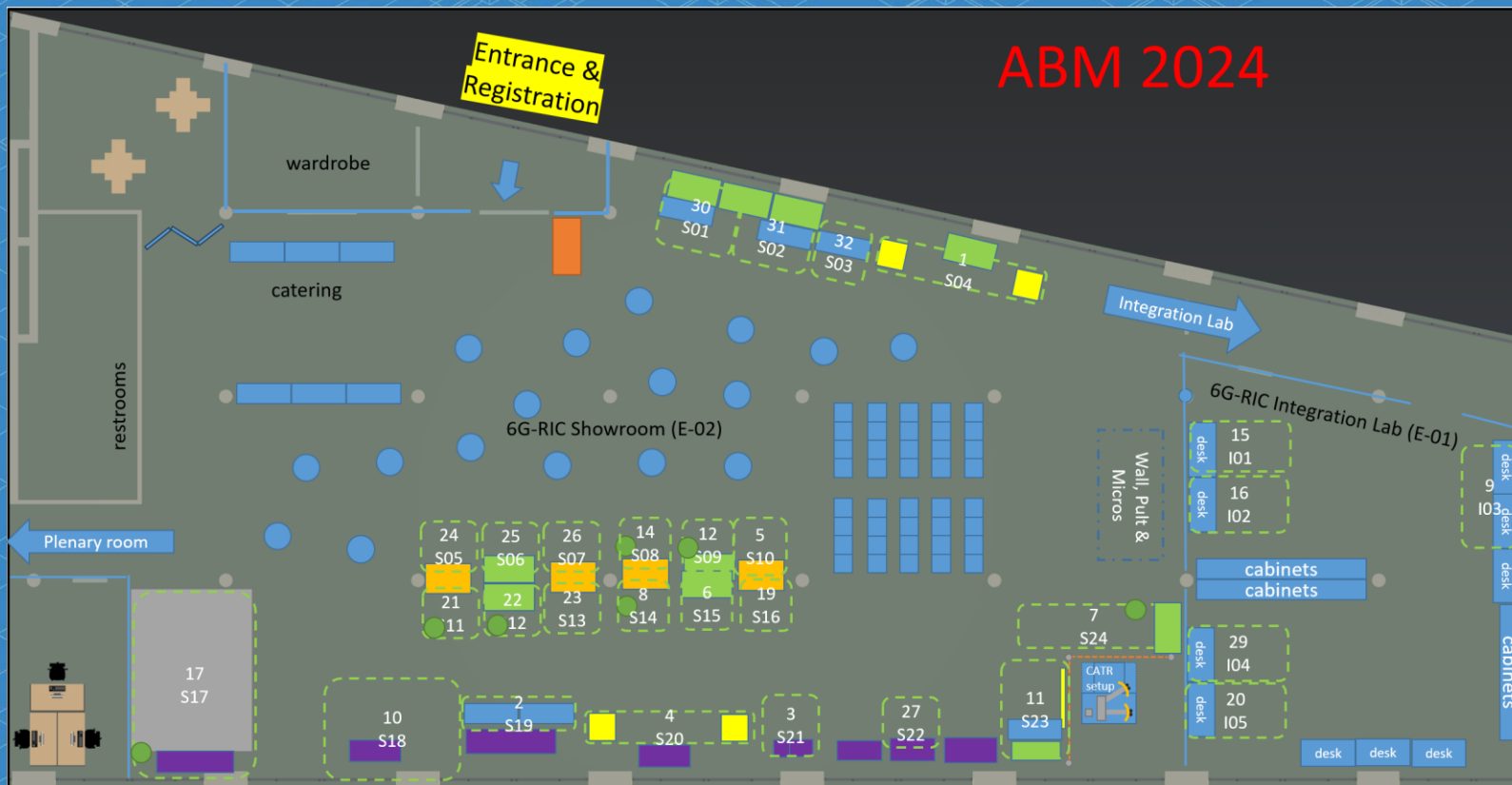I05: CSI exposure for ISAC (NVIDIA ARC)   HHI-WN

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6G-RIC
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ABM 2024

Entrance & Registration

wardrobe

catering

restrooms

Integration Lab

6G-RIC Integration Lab (E-01)

6G-RIC Showroom (E-02)

Plenary room

Wall, Pult & Micros

cabinets
cabinets

cabinets

CATR setup

desk desk desk

Legend:

- 5 rows of 8 chairs (40 chairs)
- 17 x of 20 bistro tables (D = 80cm)
- 7 of 10 bistro tables (D = 60cm)
- 4 of 4 double-sided TV stands
- 10 of 10 mobile TV stands
- 7 of 38 tables (60cm x 160cm) + 6 tables for catering
- 8 Stationary TV stands
- Reception desk
- Office desks (80cm x 160cm)
- Poster panel (3 available)
- Wall
- magnetoplan Mobile foldable Display Board
- Tables (80cm x 80cm)

List of Demos:
6G-RIC_ABM & Workshop_Demo Planning

FLOORPLAN
6-RIC SHOWROOM
Stand 02.10.2024 12:02