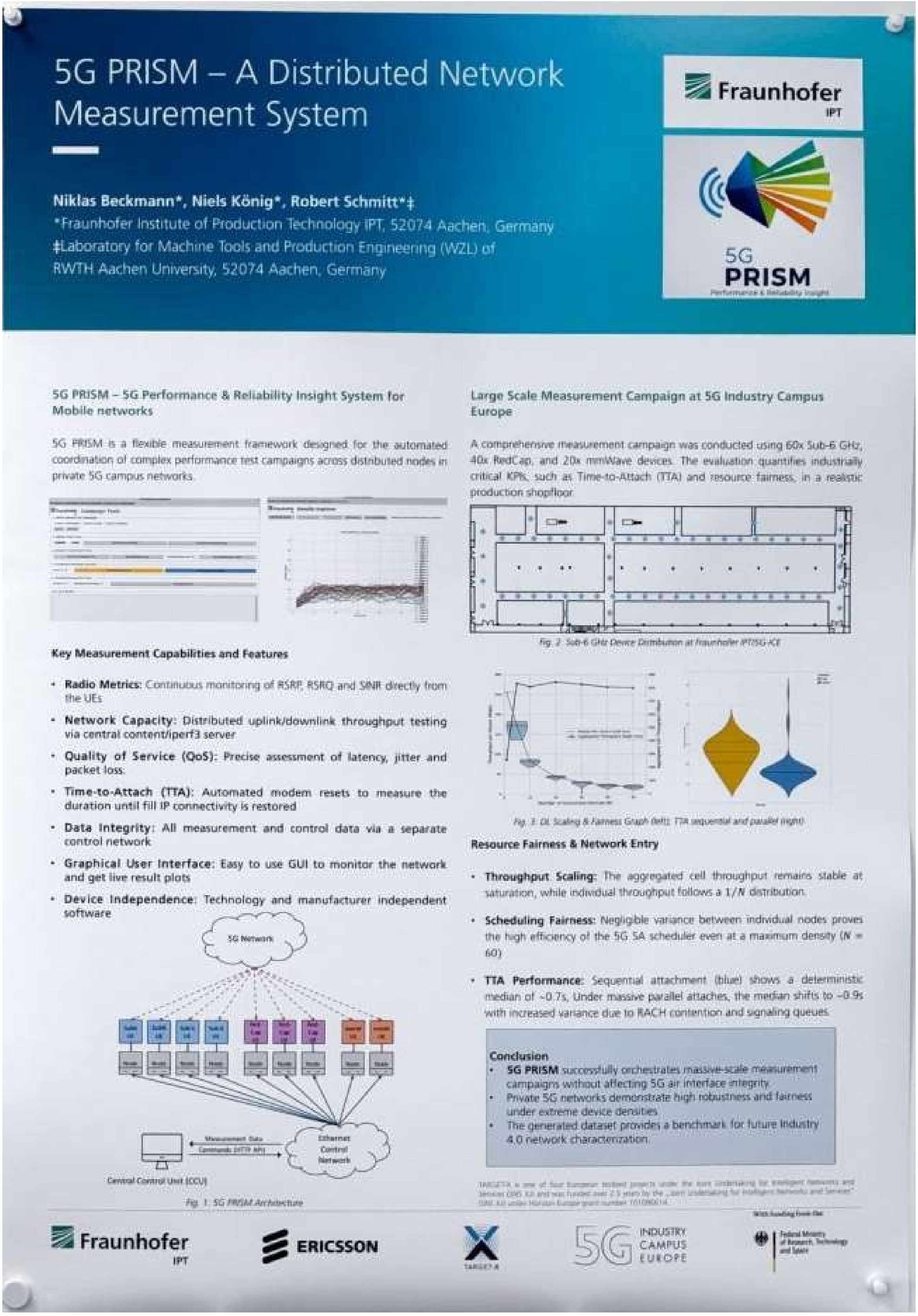
Poster presentation (GJWS7-P01)

5G PRISM: A Distributed Network Measurement System

Niklas Beckmann, Niels König, Robert Schmitt

5G PRISM is a distributed network monitoring and measurement system. It can do distributed load testing, stress tests, baseline monitoring and more. The system itself is device independent. We will present the system itself, as well as some results of a large scale measurement campaign conducted at Fraunhofer IPT (more than 100 devices in total).



Poster presentation (GJWS7-P02)

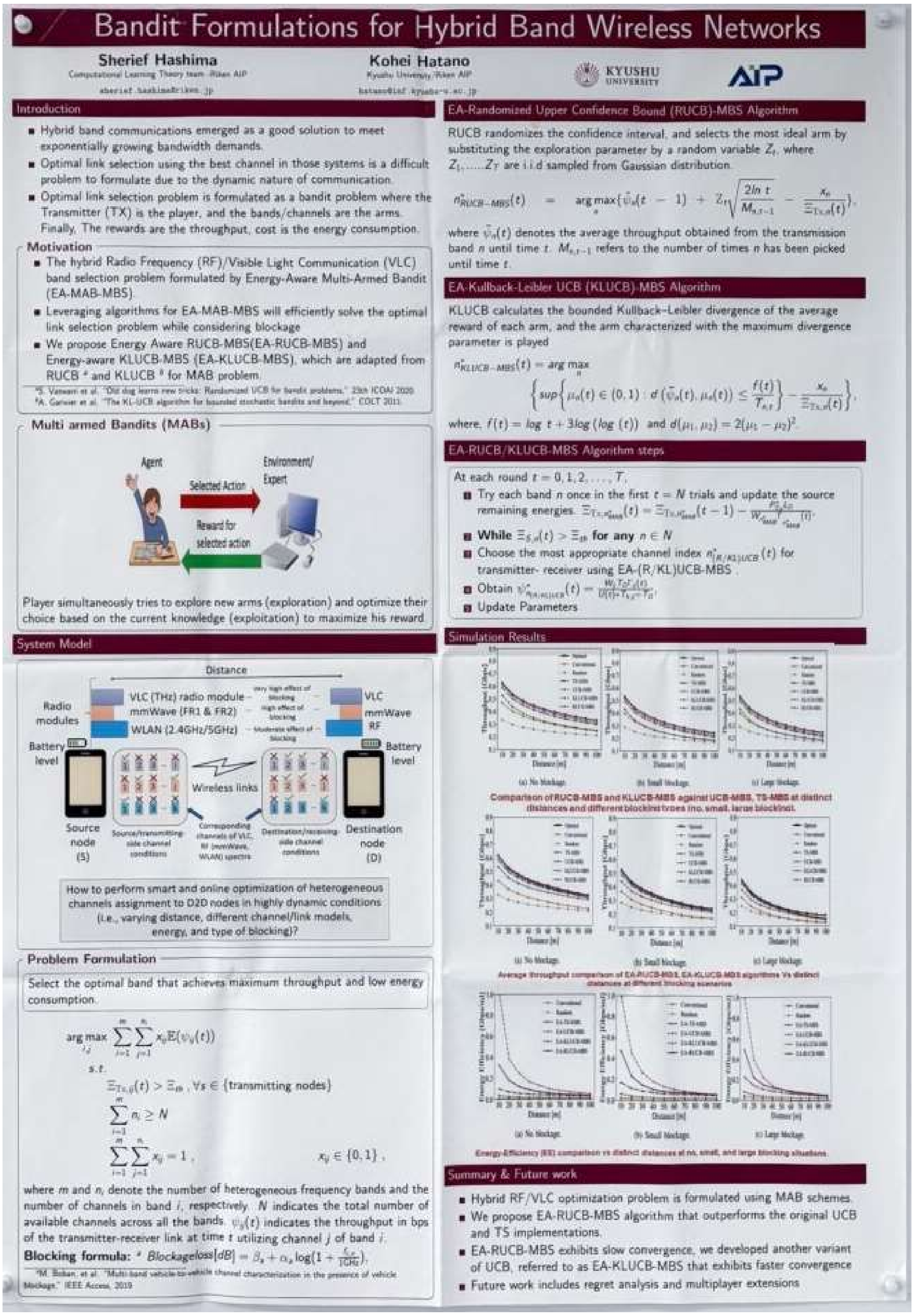
Bandit Formulations for Hybrid Band Wireless Networks

Sherief Hashima, Kohei Hatano RIKEN/AIP

Hybrid band communications emerged as a good solution to meet exponentially growing bandwidth demands. Optimal link selection using the best channel in those systems is a difficult

problem to formulate due to the dynamic nature of communication. This problem is formulated as a bandit problem where the Transmitter (TX) is the player, and the bands/channels are the arms.

Finally, the rewards are the throughput, cost is the energy consumption.

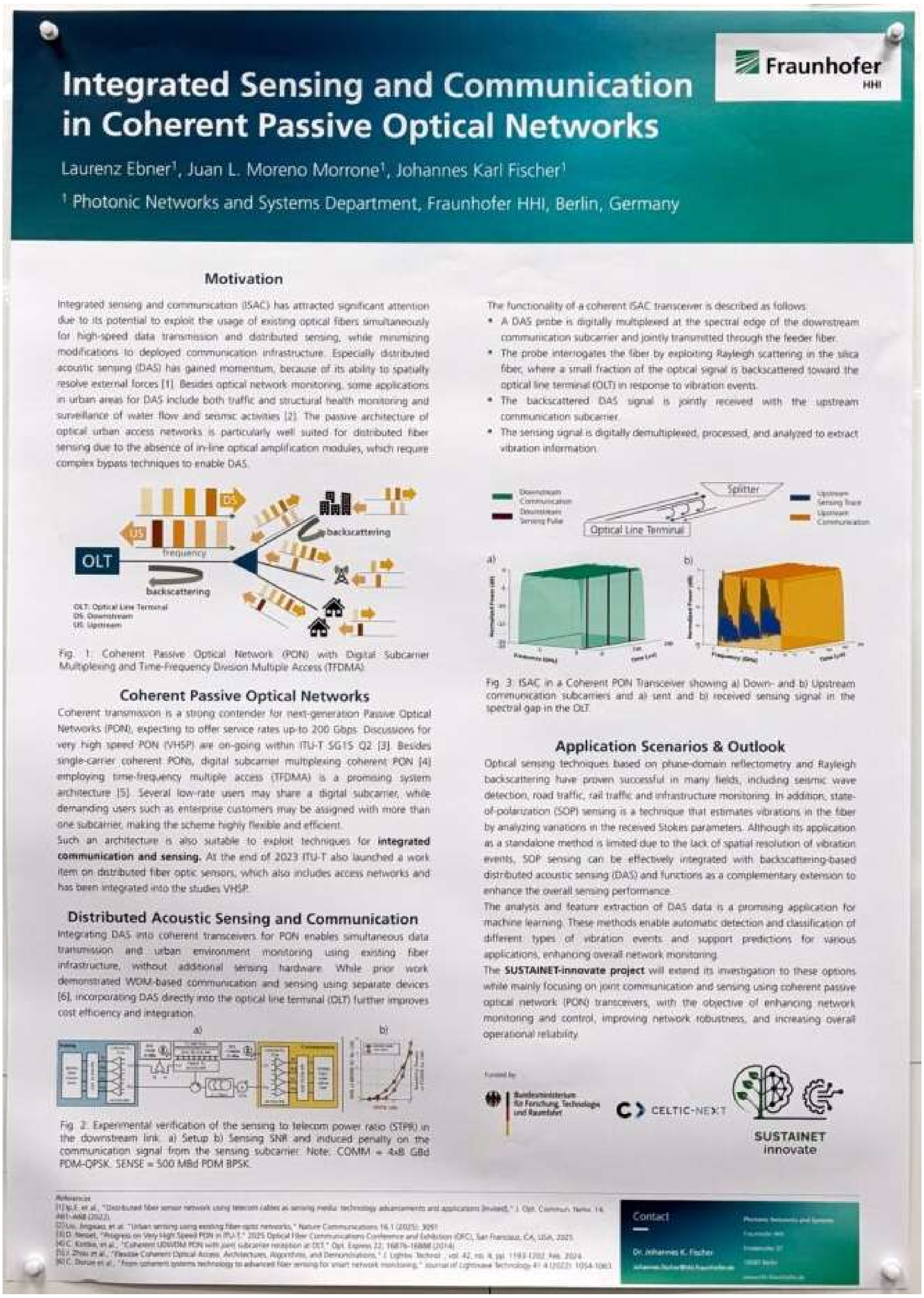


Poster presentation (GJWS7-P03)

Integrated Sensing and Communication in Coherent Passive Optical Networks

Laurenz Ebner (Fraunhofer HHI), Juan L. Moreno Morrone (Fraunhofer HHI), Johannes K. Fischer (Fraunhofer HHI)

Integrated sensing and communication (ISAC) has attracted significant attention due to its potential to exploit the usage of existing optical fibers simultaneously for high-speed data transmission and distributed sensing, while minimizing modifications to deployed communication infrastructure. Especially distributed acoustic sensing (DAS) has gained momentum, because of its ability to spatially resolve external forces. Besides optical network monitoring, applications in urban areas for DAS include both traffic and structural health monitoring and surveillance of water flow and seismic activities. This work investigates distributed fiber sensing for passive optical networks in urban areas.

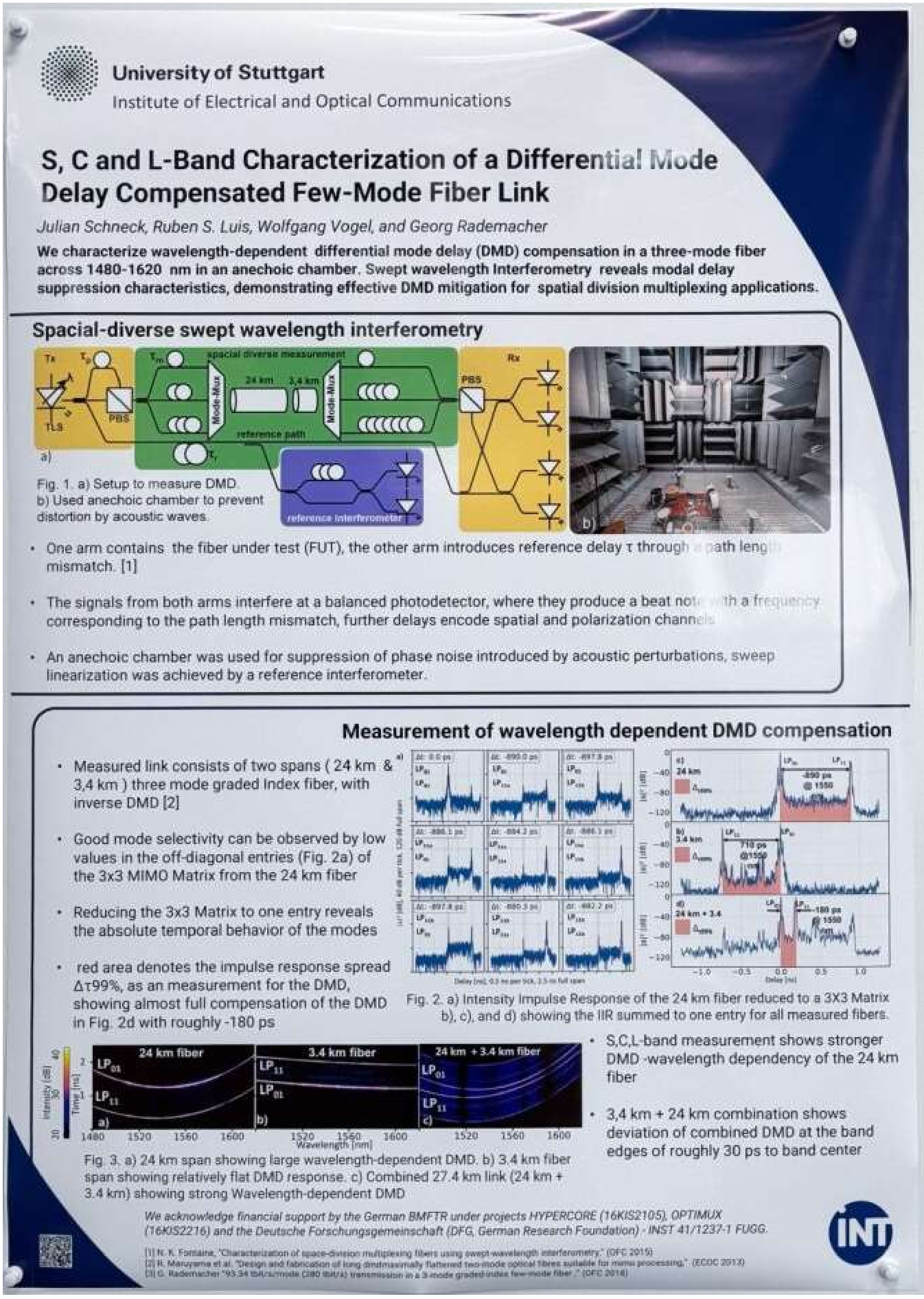


Poster presentation (GJWS7-P04)

S, C and L-Band Characterization of a Differential Mode Delay Compensated Few-Mode Fiber Link

Julian Schneck (University of Stuttgart), Wolfgang Vogel (University of Stuttgart), and Georg Rademacher (University of Stuttgart)

Spatial division multiplexing (SDM) in few-mode fibers offers a promising pathway to overcome the capacity limits of single-mode transmission systems. However, differential mode delay (DMD)—the temporal separation between propagating modes—poses a significant challenge, causing inter-modal interference and limiting transmission reach. Effective DMD compensation is therefore critical for realizing practical SDM links. In this work, we characterize wavelength-dependent DMD compensation in a three-mode fiber across the extended wavelength range of 1480–1620 nm. Measurements were conducted in an anechoic chamber to minimize environmental perturbations. Using swept wavelength interferometry, we quantify modal delay suppression characteristics and demonstrate effective DMD mitigation strategies applicable to next-generation SDM systems.

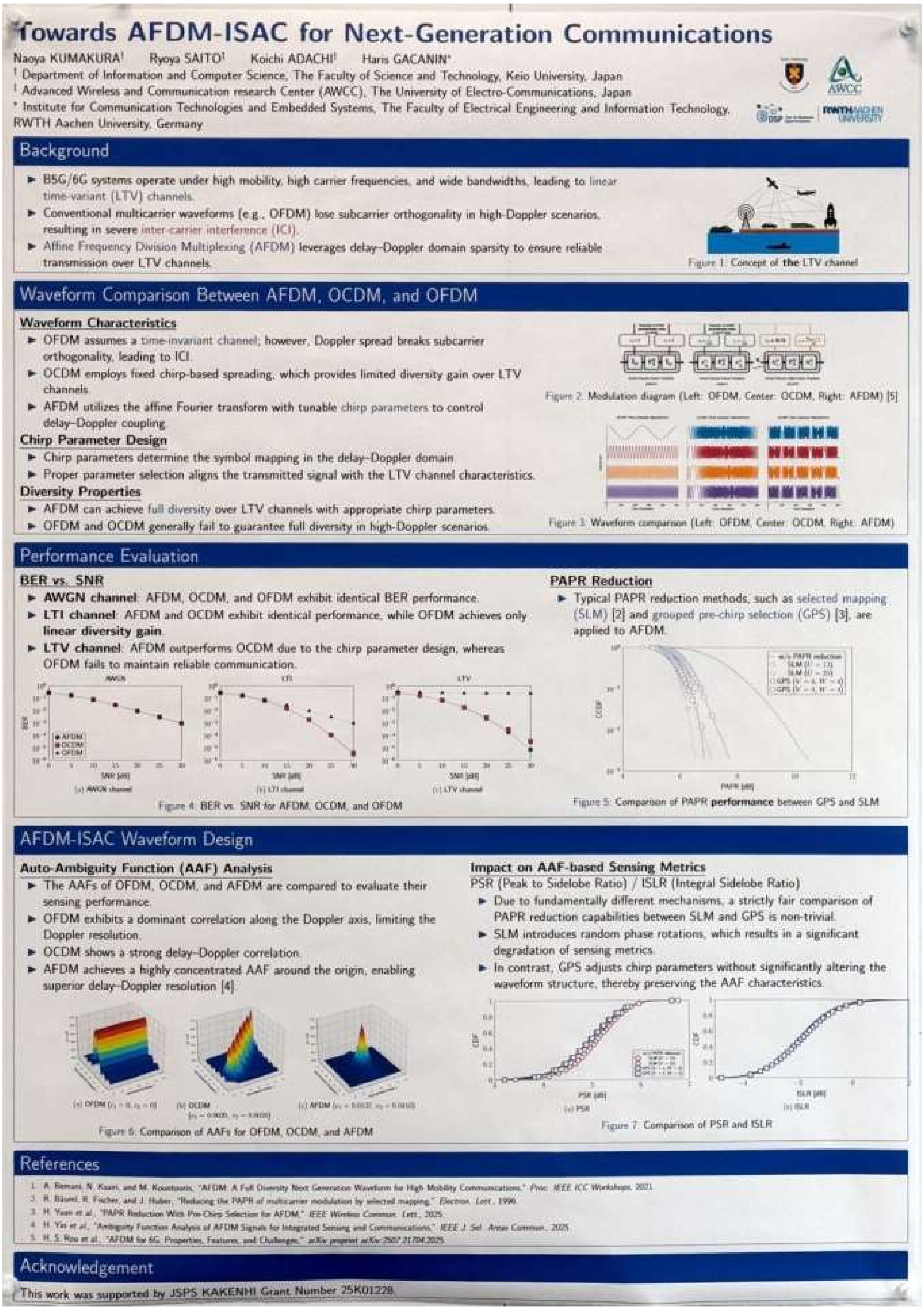


Poster presentation (GJWS7-P05) --- The Best Poster Award ---

Towards AFDM-ISAC for Next-Generation Communications

Naoya Kumakura (Keio Univ.), Ryoya Saito (UEC), Koichi Adachi (Keio Univ.), Haris Gacanin (RWTH Aachen Univ.)

We evaluate the impact of peak-to-average power ratio (PAPR) reduction technique on the ambiguity function (AF) of affince-frequency division multiplexing (AFDM)-integrated sensing and communication (ISAC), which is a promising candidate for the future wireless communication systems.

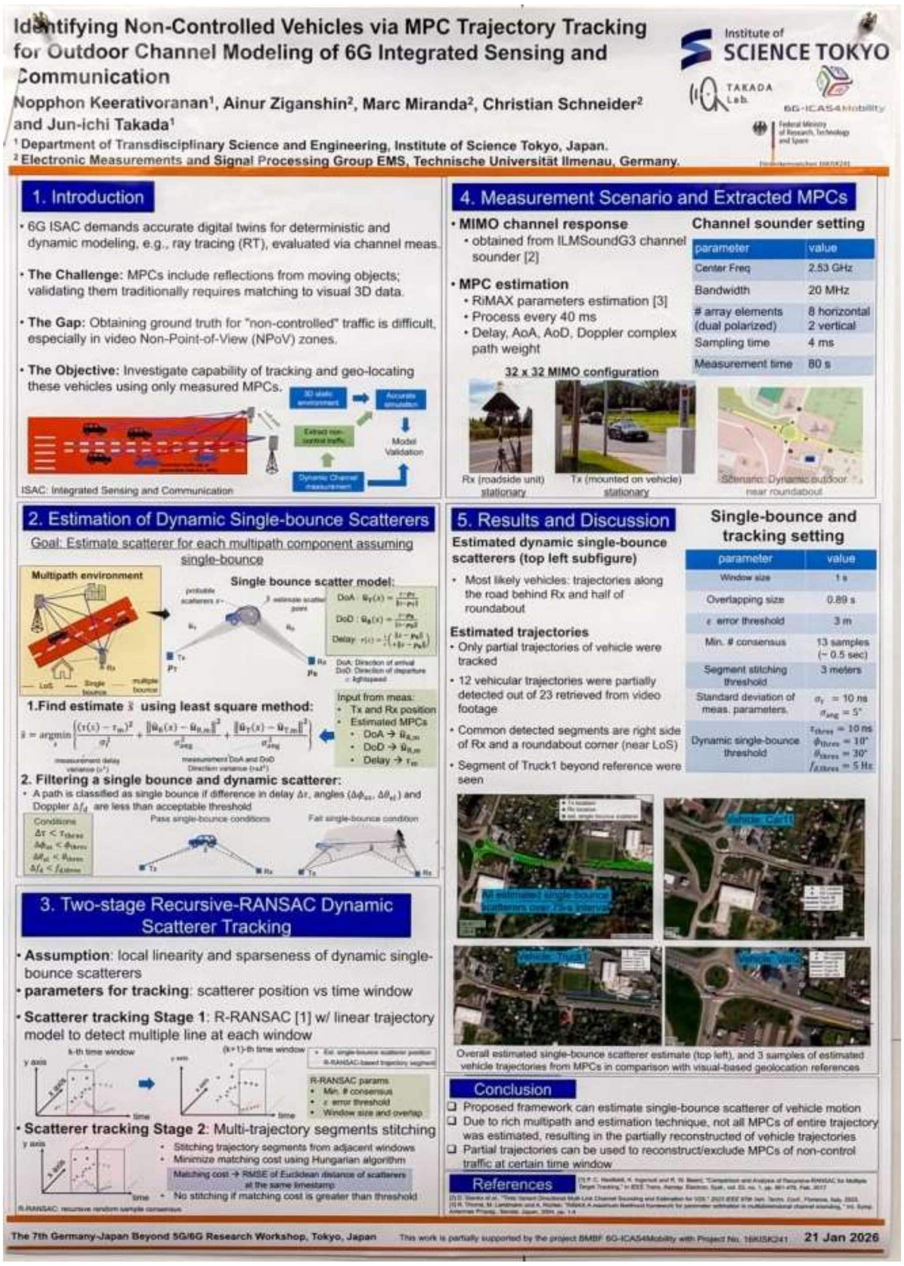


Poster presentation (GJWS7-P06)

Identifying Non-Controlled Vehicles via MPC Trajectory Tracking for Outdoor Channel Modeling of 6G Integrated Sensing and Communication

Nopphon Keerativoranan and Jun-ichi Takada from Institute of Science Tokyo, Ainur Ziganshin and Christian Schneider from Technische Universität Ilmenau

Accurate channel characterization for 6G Integrated Sensing and Communication (ISAC) requires high-fidelity digital twins that account for dynamic outdoor environments. A major challenge in this domain is the presence of "non-controlled" traffic—vehicles lacking ground-truth positioning data—which complicates the validation of ray-tracing simulations against measurement data. This poster presents a methodology to detect, track, and geo-locate these non-controlled vehicles using only Multipath Components (MPCs) extracted from channel sounder measurements. We employ a two-stage Recursive-RANSAC algorithm that first detects consistent linear trajectories within processing windows and subsequently stitches them over time using Hungarian-based pairing. Experimental validation compares the tracked MPCs extracted from channel measurements at 2.53 GHz (using both SAGE and RIMAX estimators) with reference trajectories extracted from video footage, demonstrating that the reconstructed trajectories align with physical road geometries.

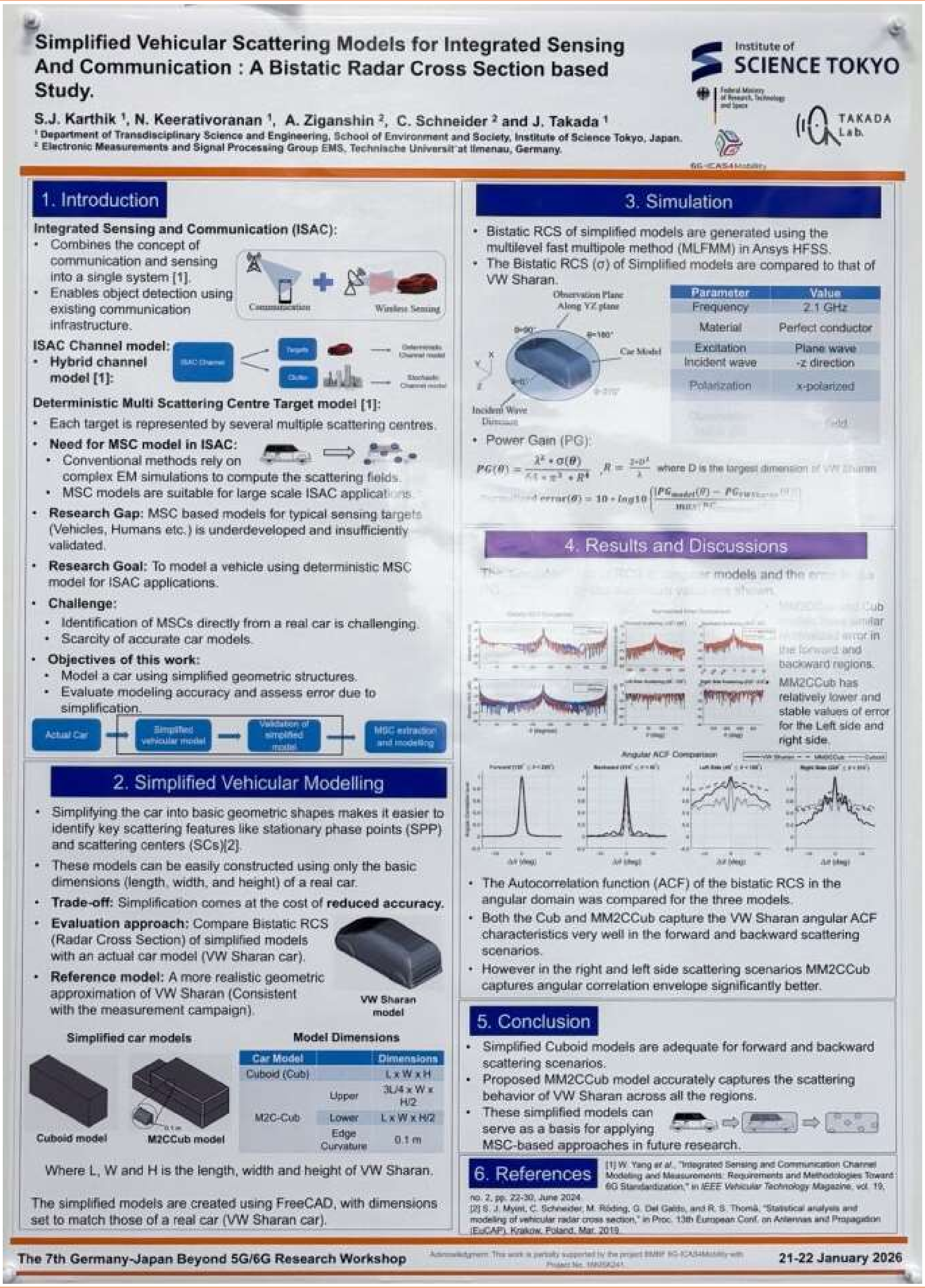


Poster presentation (GJWS7-P07) --- The Best Poster Award ---

Simplified Vehicular Scattering Models for Integrated Sensing And Communication: A Bistatic Radar Cross Section based Study

Karthik Subhash Jayasree (Institute of Science Tokyo), Nopphon Keerativoranan (Institute of Science Tokyo), Junichi Takada (Institute of Science Tokyo)

This work investigates the suitability of simplified vehicular models for Integrated Sensing and Communication (ISAC) systems. Multiple simplified geometric models based on cuboids and curved cuboids are generated using the physical dimensions of a real vehicle, namely the VW Sharan. The bistatic radar cross sections of these models are computed using full wave electromagnetic simulations using the multilevel fast multipole method. To evaluate the scattering behavior, both radar cross section and received power responses of the simplified models are compared against those of the full scale VW Sharan model at an operating frequency of 2.1 GHz. The comparative analysis shows that the modified two curved cuboid model provides the closest approximation to the scattering characteristics of the VW Sharan car.



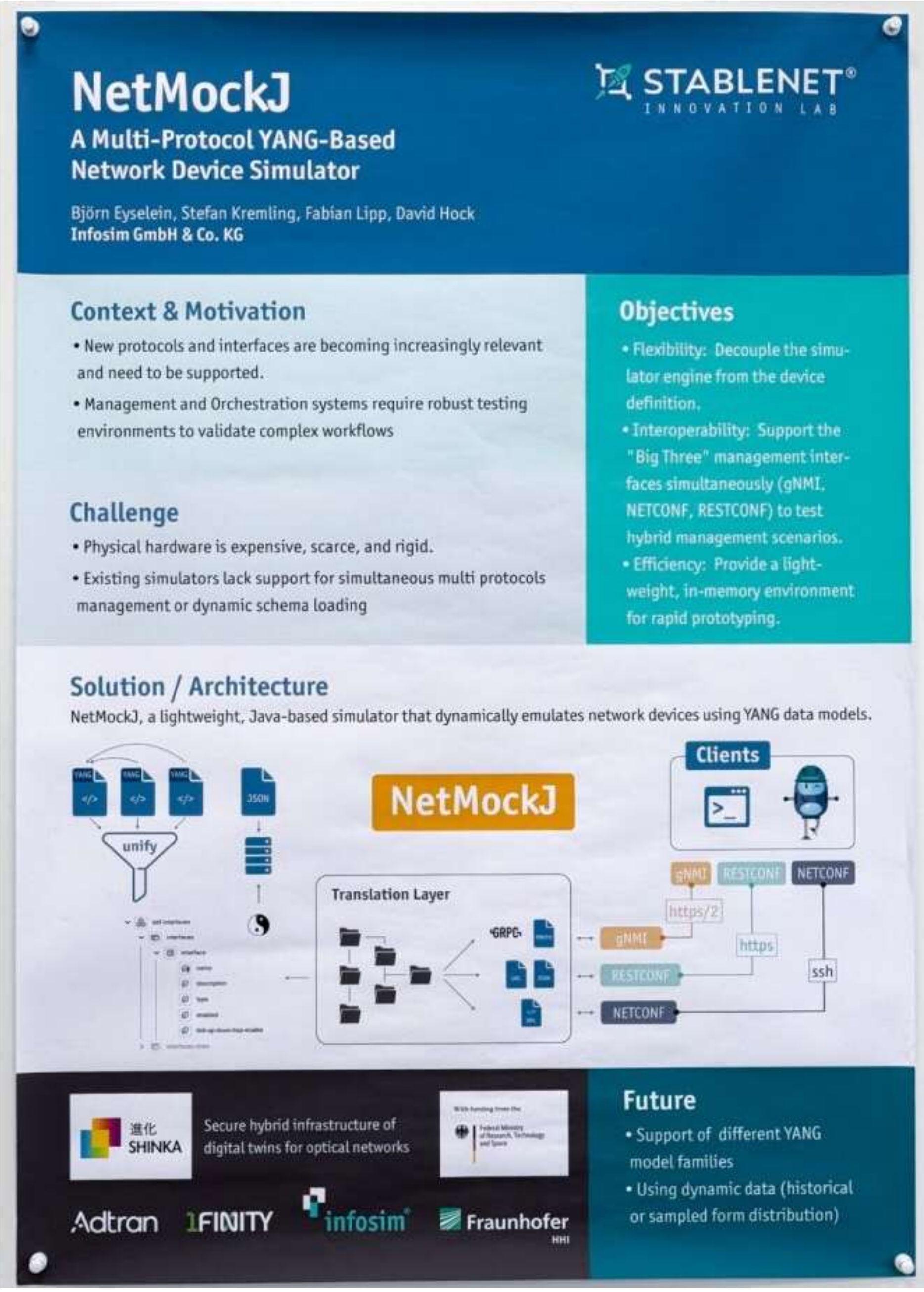
Poster presentation (GJWS7-P08)

NetMockJ: A Multi-Protocol YANG-Based Network Device Simulator

On site presenters: David Hock, Infosim & Fabian Lipp, Infosim - Additional authors: Björn Eyselein, Infosim & Stefan Kremling, Infosim

We present NetMockJ, a network device simulator developed as a Proof of Concept (PoC) within the SHINKA project, funded by the BMFTR. In the context of Beyond 5G and 6G, where network functions are increasingly softwarized, flexible testing environments for Management and Orchestration (MANO) systems are essential. NetMockJ enables the simulation of network devices by dynamically loading YANG data models to define their structure and state.

The simulator maintains a unified internal data store, exposed simultaneously via three industry-standard interfaces: gNMI, NETCONF, and RESTCONF. This multi-protocol approach allows researchers to validate orchestration workflows across different management paradigms within a single, lightweight environment, bypassing the need for physical hardware. As a functional prototype, NetMockJ serves as a tool for accelerating research and prototyping in next-generation network management and experimental automation scenarios.

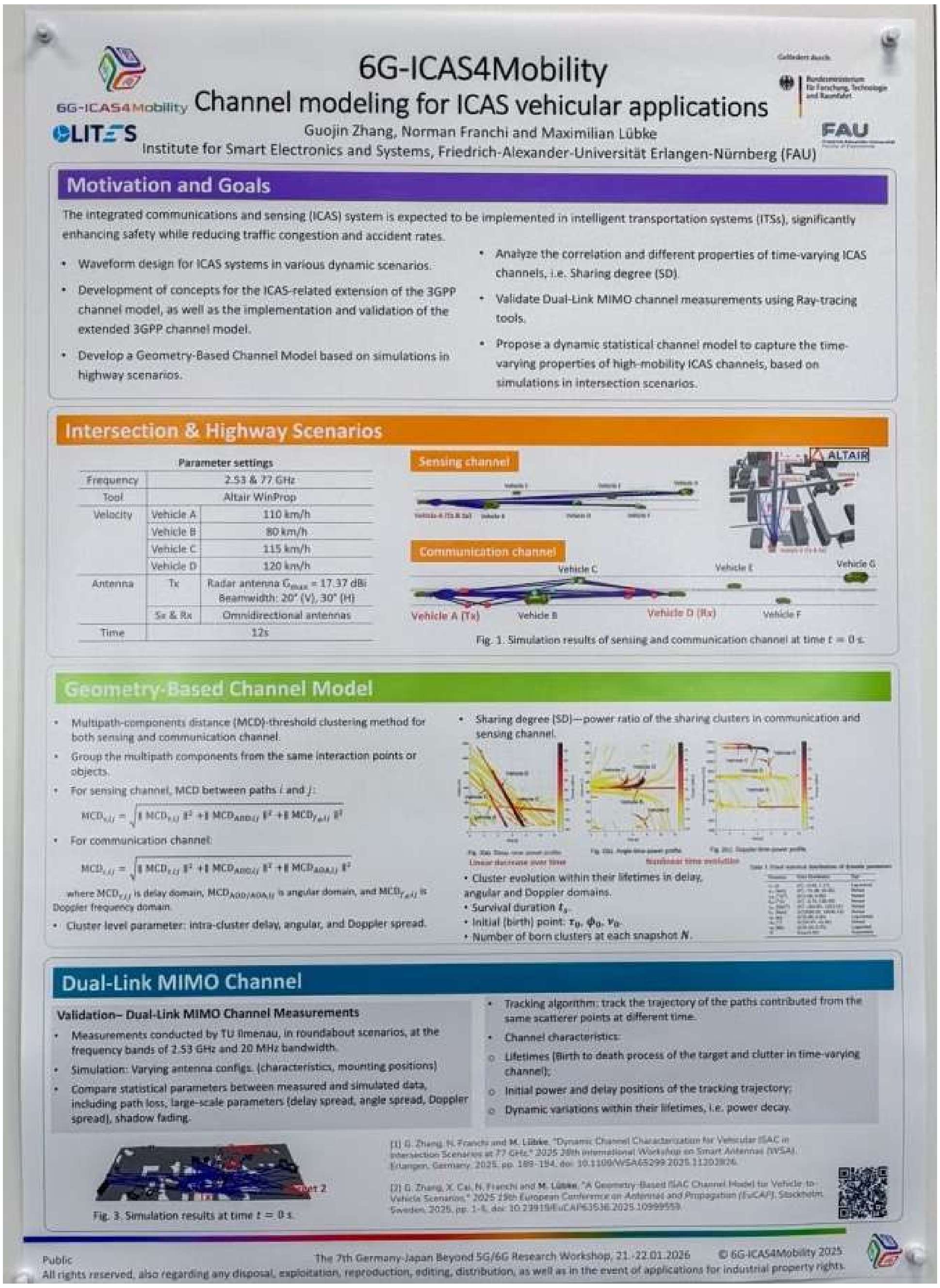


Poster presentation (GJWS7-P09)

Channel Modeling for ICAS vehicular applications

Maximilian Lübke (FAU Erlangen-Nürnberg)

Integrated sensing and communication (ISAC) for vehicular applications has attracted significant attention due to its potential to improve traffic safety and enhance spectral efficiency. To enable reliable system design and performance evaluation for vehicular applications, an accurate understanding and modeling of the time-varying characteristics of vehicular ISAC channels are essential. A dynamic sensing channel model is proposed for vehicular ISAC scenarios, based on 3D Ray tracing simulations conducted at mmWave frequencies in intersection scenarios. An improved multipath-component-distance (MCD) threshold-based cluster identification and tracking algorithm for sensing channel is proposed, which groups the multipath components (MPCs) contributed from the same target vehicles or surrounding buildings into clusters and subsequently tracks their evolution over time. To model the dynamic evolution process of channel, parameters characterizing the birth-to-death behavior of clusters are investigated. These include the cluster survival duration, initial (birth) point, number of born clusters and cluster evolution in the delay, azimuth and Doppler domains, which constitute a dynamic model for the outdoor vehicular ISAC channel.



Poster presentation (GJWS7-P10)

Radio Channel Characterization for ICAS (Channel4ICAS)

Christian Schneider

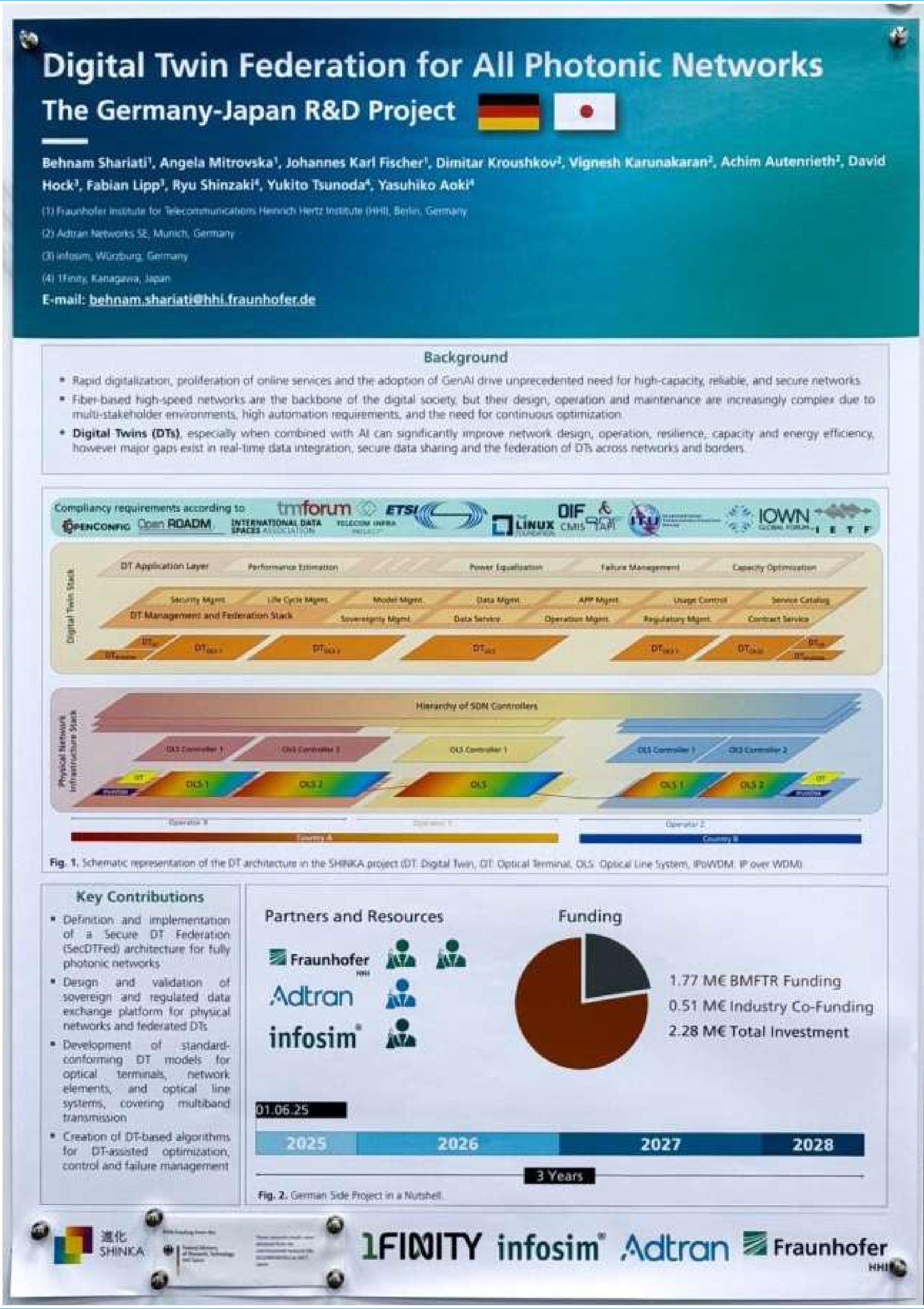
This work presents a joint German-Japanese research effort focused on radio channel characterization for Integrated Communications and Sensing (ICAS). Serving as an extension to the BMBF-funded 6G-ICAS4Mobility project, the effort aims to study the aspects of sensing and security in automotive communications. Key objectives include acquiring and analyzing high-resolution multi-link MIMO channel measurements in various frequency bands, validating state-of-the-art ray-tracing tools, and developing concepts for the extension of 3GPP channel models for use in simulations. Furthermore, channel analysis and modeling results are used to study optimal waveform design, to evaluate ICAS resource allocation as well as parameter estimation algorithms. The project aims for a holistic understanding of radio channels for ICAS, supporting demands in next-generation vehicular networks and strengthening German-Japanese research activities.

Poster presentation (GJWS7-P11)

Digital Twin Federation for All Photonic Networks

Fraunhofer HHI

The German–Japanese project SHINKA investigates a secure platform for the cross-border and cross-network integration of digital twins. The project aims to establish an ecosystem for the design, control, and optimization of high-speed photonic networks. To this end, SHINKA develops an architecture in which multiple digital twins map the physical network infrastructure and are interconnected via a common management and federation layer. Standardized interfaces ensure compatibility with diverse applications. The project plans to experimentally demonstrate a secure data exchange platform and validate the ecosystem across interconnected testbeds in Germany and Japan.

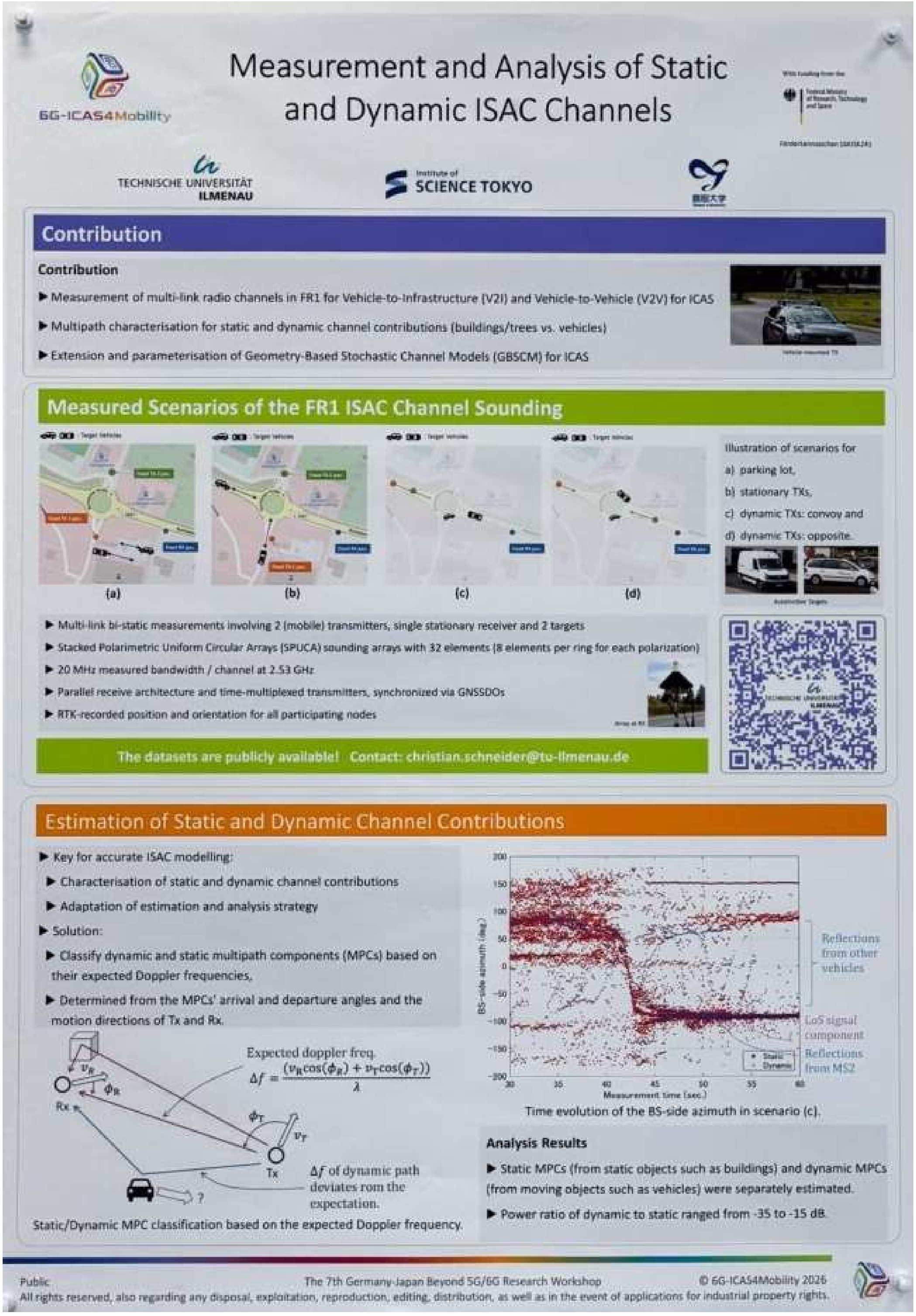


Poster presentation (GJWS7-P12)

Measurement and Analysis of Static and Dynamic ISAC Channels

Christian Schneider

Integrated sensing and communication (ISAC) is set to become a key technology for beyond-5G and 6G networks. In this poster, we present our work on characterising multi-link radio channels for sensing in vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) environments. Our work is based on relevant channel sounding measurement campaigns. Our objectives are to present ISAC datasets that are useful for multi-path propagation analysis, and to study the channel contributions related to static and dynamic objects within the ISAC propagation channel. This is a joint German-Japanese research project involving the Institute of Science in Tokyo, Tottori University, and Technische Universität Ilmenau.



Poster presentation (GJWS7-P13)

Reduction of absorption losses originated from NH bonds in high-Q SiN microring resonators based on low-temperature hot-wire deposition method

Kentaro Furusawa, Tomohiro Tetsumoto, and Norihiko Sekine (NICT)

Microcomb-based signal sources are anticipated to serve as important building blocks in various applications, ranging from telecommunication to sensing in the sub-terahertz frequency range. We have been developing microring resonators in the SiN platform using low-temperature deposition technique, key components in the microcombs. This approach not only eases the device fabrication thanks to the low-stress characteristics, but also paves a way to realize advanced photonic integrated circuits by employing various components available in the other platforms such as photo diodes via hybrid or heterogeneous integration. Recent progress in our device fabrication is presented, including the loaded Q-factors beyond 10^6 achieved by reducing the hydrogen content within the SiN films.