


# MiFuture News

## Industry news, papers and events related to 6G C MIMO

## November 2025

Grant Agreement Number: 101119643
Project Acronym: MiFuture
Project Title: ultra-massive MIMO for future cell-free heterogeneous networks
Call: HORIZON-MSCA-2022-DN-01
Type of action: HORIZON TMA MSCA Doctoral Networks- Industrial Doctorates
Granting authority: European Research Executive Agency
Project start date: 01/01/2024

## MiFuture News: Monthly Updates on 6G and MIMO Technologies

MiFuture News is a monthly publication of the MiFuture project, complementing the MiFuture Newsletter, which will be published every six months. While the Newsletter includes internal project updates, MiFuture News features articles and information from external sources freely available on the internet.

This publication aims to gather the most interesting industry news, relevant technical papers, and upcoming events related to 6G and MIMO technologies to share with supervisors and PhD students within the project.

If you come across any interesting news, please share it with us for inclusion in the next issue.


## ZTE unveils Pre6G GigaMIMO, pioneering ultra-large-scale array technology for 6G evolution

Nov. 06 - ZTE Corporation (0763.HK / 000063.SZ), a global leading provider of integrated information and communication technology solutions, showcased its Pre6G GigaMIMO solution, a forward-looking technology for the evolution of wireless networks, at the 14th China International Patent Fair. This groundbreaking technology represents a significant leap forward in wireless network evolution, building upon ZTE's established legacy in Massive MIMO innovation.

## Nokia Bell Labs and KDDI Research unite to drive innovation in 6G energy efficiency and network resiliency

Nov. 06 - Nokia and KDDI Research have entered into a joint research agreement to accelerate the development of sustainable, intelligent and resilient 6G networks. By combining KDDI’s real network data and operational insights with Nokia Bell Labs’ advanced energy consumption models and features and expertise in programmable network architectures, the companies can jointly explore new approaches to energy efficiency and distributed core network design.

## stc Group Conducts MENA’s First 6G Trial on 7 GHz Band in Collaboration with Nokia and CST

Nov. 06 - stc group, Saudi Arabia’s leading digital enabler, has successfully conducted the Middle East and North Africa’s first trial of the 7 GHz frequency band, a key component of sixth generation (6G) technology, in collaboration with the Communications, Space & Technology Commission and Nokia.

## India: TEC, IIT Bombay Accelerate 6G and Advanced Networks

Nov. 08 - The Telecommunication Engineering Centre (TEC), the technical arm of the Department of Telecommunications (DoT), is collaborating with the Indian Institute of Technology, Bombay (IIT-Bombay) on joint studies, research and technical contributions in advanced telecom technologies and global standardisation activities.

## China Builds World's Largest 5G Network While Developing 6G Technology

Nov. 06 - China plans to increase its resources to advance the construction of 5G networks. The country also wants to expand the implementation of 5G in various sectors.

## Putting people first: Europe's 6G push for connectivity that serves society

Nov. 07 - As Europe prepares for the leap to 6G, researchers, policymakers and citizens are working together to make sure that the next digital revolution is not just faster, but also ethical, sustainable and inclusive.

## Keysight, MediaTek advance pre-6G technology with improved spectrum use

Nov. 04 - Keysight Technologies, Inc. (NYSE:KEYS) and MediaTek have demonstrated advances in pre-6G integrated sensing and communication (ISAC) technology that shows improved spectral efficiency compared to current 5G approaches, according to a press release statement. Keysight, with a market capitalization of $31.17 billion, has seen its stock surge 25.36% over the past six months, trading near its 52-week high of $187.11. According to InvestingPro data, the company appears to be slightly overvalued at current levels.

## Nokia, SoftBank sign network modernization deal in Japan

Nov. 05 - Finnish vendor Nokia has deepened its partnership with Japanese carrier SoftBank through a new agreement to modernize and expand the operator’s 4G and 5G radio access networks across Western Japan.

## Verizon CTO states 6G must learn from 5G follies

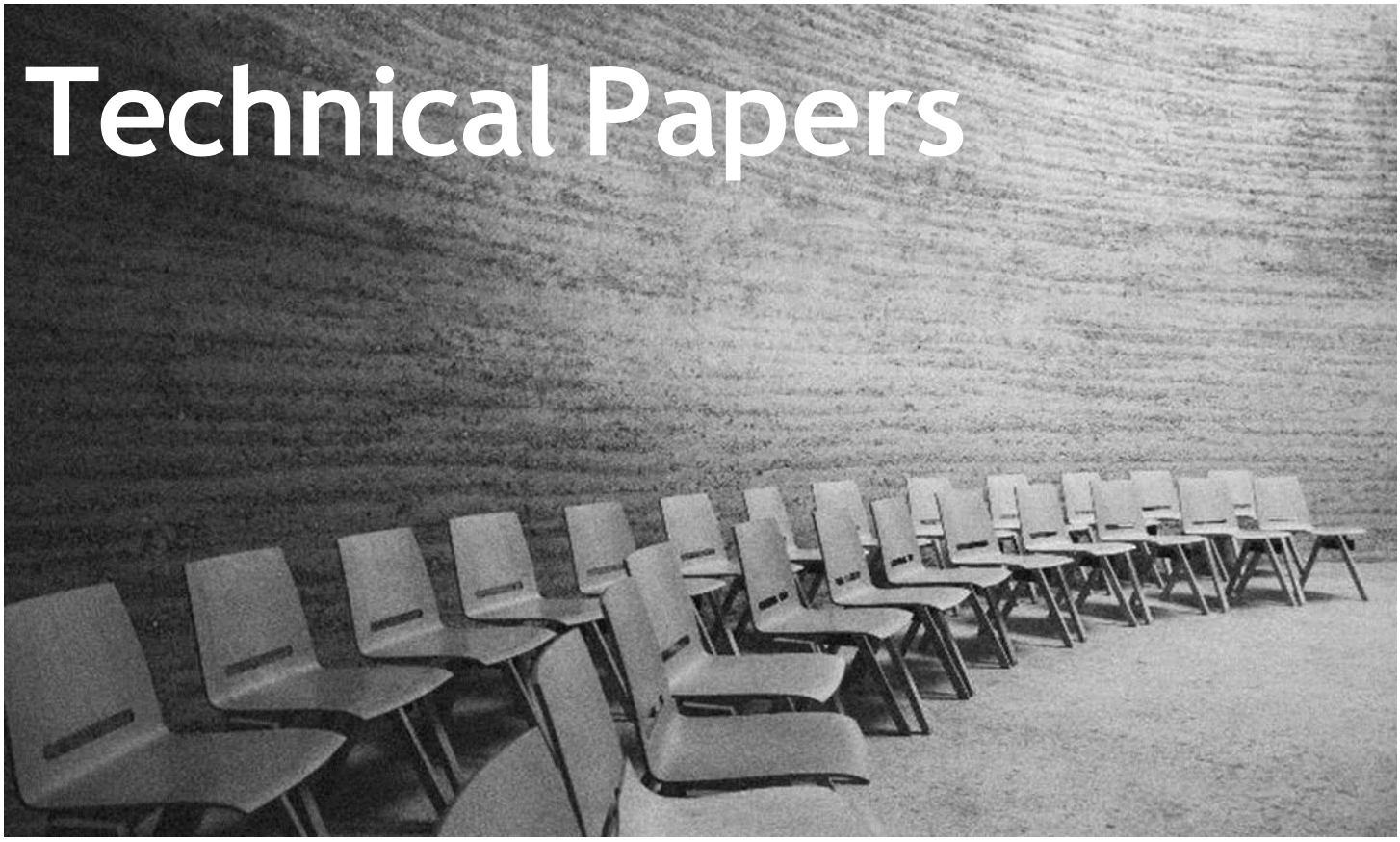
Nov. 07 - Verizon CTO Yago Tenorio laments the way 5G technology has evolved but hopes the industry can learn from past mistakes as it works toward 6G. Tenorio took his position during a keynote at this week’s Brooklyn 6G Summit, pointing to several issues that continue to plague 5G, including a particular angle on spectrum alignment that has impacted the transition from non-standalone (NSA) to standalone (SA) network cores.

## Nokia, Rohde & Schwarz collaborate on AI-powered 6G receiver

Nov. 04 - The precise technological definition of 6G networks is still some time away, but it seems clear that one of the biggest anticipated challenges of 6G network roll-outs will be coverage limitations inherent in 6G’s higher-frequency spectrum, and looking to alleviate the issue, Nokia and Rohde & Schwarz have created and tested a 6G radio receiver that uses artificial intelligence (AI) technologies to overcome potential limitations.

## The Road to 6G: Vision, Key Technologies, and Intelligent Network Evolution

Nov. 04 - The sixth generation (6G) of wireless communication systems is expected to emerge around 2030, representing a major step beyond the fifth generation (5G) in both technological depth and societal impact. While 5G has successfully enabled enhanced mobile broadband (eMBB), ultra-reliable low-latency communication (uRLLC), and massive machine-type communication (mMTC), the next generation will move toward the deep fusion of communication, sensing, computation, and artificial intelligence (AI). The 6G network aims to realize true ubiquitous connectivity — a seamless integration of terrestrial, aerial, maritime, and space-based networks — to support the growing demands of intelligent automation, immersive experiences, and digital twins of the physical world.




## White Paper on Channel Modeling and Simulation for Reconfigurable Intelligent Surface

*T. J. Cui, J. H. Zhang, J. W. Dou, S. Jin, Y. F. Yuan, Q. Y. Liu, N. X. Li et al. "Channel Modeling and Simulation for Reconfigurable Intelligent Surface," FuTURE Forum, Nanjing, China, Apr 2025.*

The rapid growth of wireless technologies has created a need for more efficient and intelligent communication systems. Reconfigurable Intelligent Surfaces (RIS), built from configurable metamaterials, can control electromagnetic wave propagation to enhance spectral efficiency, reduce latency, and improve coverage—making them a key enabler for 6G networks. Accurate channel modeling and simulation are essential to assess RIS performance and guide its technological development. This white paper provides an overview of recent advances in RIS channel modeling and simulation, summarizes key research findings, and outlines future directions to support standardization and the broader adoption of RIS in next-generation wireless systems.

## White Paper on Potential Standardization Work for Reconfigurable Intelligent Surface

*N. X. Li, Y. F. Yuan, Q. Y. Liu, Y. J. Zhao, S. Jin, et al. "White Paper on Potential Standardization Work for Reconfigurable Intelligent Surface White Paper," FuTURE Forum, Nanjing, China, Apr 2025*

Reconfigurable Intelligent Surface (RIS) has been widely studied in both academia and industry in recent years. A series of RIS prototypes have been developed by colleges and companies in different regions, and various field trials have demonstrated notable improvements in both coverage and capacity performance. All these progresses reveal the high potential capability of RIS for future wireless network. With 6G standardization activities set to begin in 3GPP in 2025, this white paper seeks to bridge the gap between academic research and industrial deployment by proposing practical directions for RIS-related standardization. Through the collaborative input of various companies and research institutes, it provides insights into diverse RIS architectures, outlines high-level design principles, and proposes potential standardization work across system

architecture, control information, reference signal, and beam management. It is hoped that this white paper can serve as a foundation to facilitate industry consensus and accelerate the integration of RIS into global 6G standardization activities.

## Practical Challenges for Reliable RIS Deployment in Heterogeneous Multi-Operator Multi-Band Networks

*Monemi, Mehdi; Rasti, Mehdi; de Sena, Arthur S.; Fallah, Mohammad Amir; Latva-Aho, Matti; Di Renzo, Marco (2025-05-29)*

Reconfigurable Intelligent Surfaces (RISs) consist of nearly passive, tunable elements that can manipulate radio signal reflection or transmission. While most research focuses on user-assist RIS (enhancing user QoS) and malicious RIS (degrading victim QoS), the unintended interference RISs may cause in multi-carrier, multi-user, and multi-operator networks remains understudied. This article examines how RISs deployed to aid specific users can unintentionally disrupt others operating on different frequencies or networks. It also explores the potential of ultra-narrowband metasurfaces to mitigate these effects and presents simulation results illustrating practical challenges of RIS deployment in shared public wireless environments.

## Coverage Analysis for 3D Indoor Terahertz Communication System Over Multi-Cluster Fluctuating Two-Ray Fading Channels

*Tang, Zhifeng; Yang, Nan; Durrani, Salman; Zhou, Xiangyun; Juntti, Markku; Jornet, Josep Miquel (2025-05-20)*

his paper presents a novel analytical framework for 3D indoor terahertz (THz) communication systems, incorporating accurate wall blockage modeling using Manhattan line processes and multi-cluster fluctuating two-ray (MFTR) channel modeling. The approach also considers molecular absorption, user blockages, and 3D directional antennas. Access points (APs) are modeled via a Poisson point process, with users connecting to the nearest line-of-sight AP. The analysis evaluates coverage probability within rectangular room environments, accounting for interference and fading. Simulation results validate the model, showing that user location and room size significantly influence coverage performance and optimal AP density for efficient THz network deployment..

## Digital-Twin-6G Empowered Future Smart Grid Applications

*Kharbouch, Abdelhak; Aghdam, Farid Hamzeh; Gholipoor, Narges; Rasti, Mehdi (2025-05-27)*

In the era of digitalization, industries are experiencing transformative advancements driven by technology and data utilization. The energy sector, in particular, is leveraging digital solutions to enhance efficiency, sustainability, and resilience. A key innovation in this context is the digital twin (DT), a virtual representation of physical systems that enables real-time monitoring, simulation, and optimization. This article explores the integration of DTs with 6G technology, highlighting the framework and connectivity requirements essential for this synergy. We present two use cases: DT for home energy management and DT for open radio access network (O-RAN), demonstrating the potential benefits and outcomes of such integration. Furthermore, we discuss the challenges and future directions, emphasizing the need for artificial generative intelligence, the Internet of DTs (IoDTs), and sustainable practices in the deployment of 6G and DTs in energy systems. This evolution not only promises improved operational performance but also supports global efforts toward achieving energy sustainability and resilience.


Events


Welcome to the 6G
Resilience Summit


# The15th International Conference on the Internet of Things (IoT 2025)

Nov. 18 – 21, 2025
Vienna, Austria

## International workshop on AI native Communications Systems towards Integrated Intelligent and Highly Efficient Communications Systems (IIHECS 2025)

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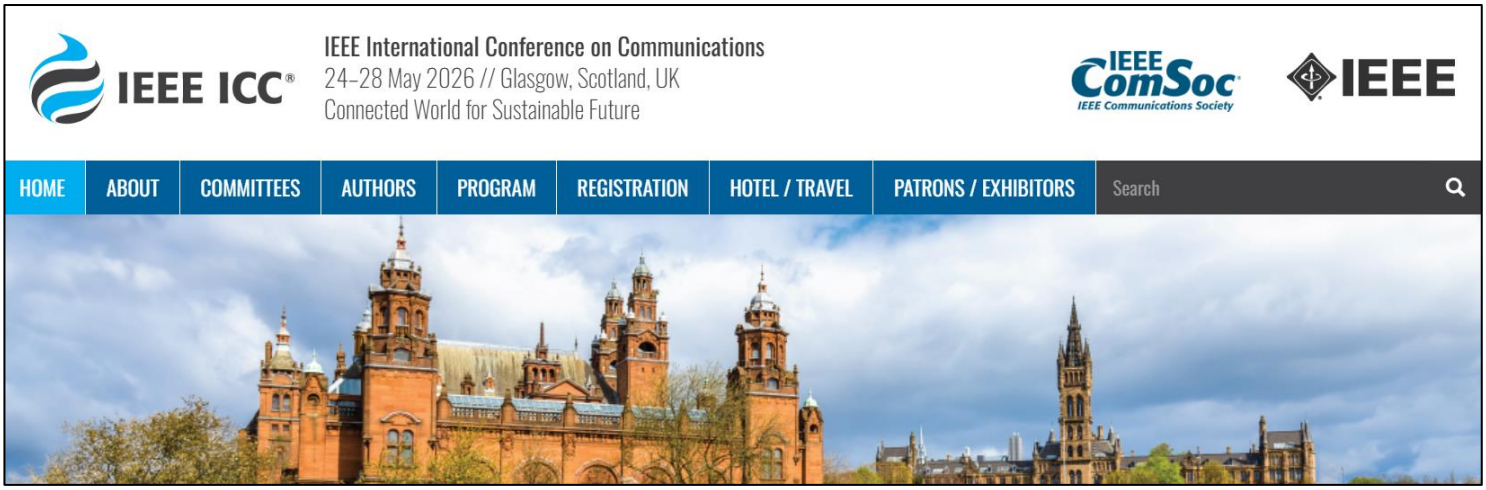
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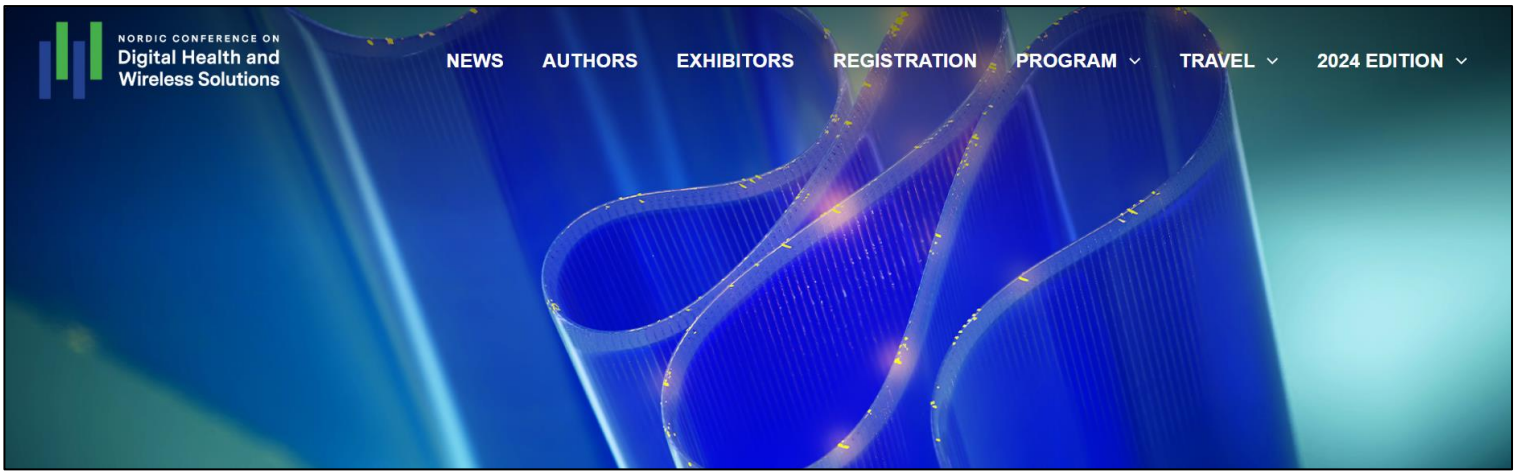
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