MiFuture News

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

January 2026

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.

ETSI mWT SDN Plugtests Advance Multi-Vendor Interoperability in 5G/6G Networks

Jan. 11 - ETSI has published the official report from its fifth mWT SDN Plugtests™ for Wireless Transport, held 10–14 November 2025 at ETSI headquarters. The event marked a significant milestone in advancing multi-vendor interoperability and automation for Software Defined Networking (SDN) across Wireless Backhaul and X-Haul transport networks.

Integration of Large Language Models Into Devices Explored for 6G Wireless Technology

Jan. 09 - The development of sixth-generation (6G) wireless technology is bringing artificial intelligence, particularly large language models (LLMs), into focus as a potential transformative element. Researchers are examining how LLMs, which have shown significant advancements in adaptability and versatility compared to traditional AI systems, could play a pivotal role in the evolution of 6G networks. These models may offer new opportunities to enhance communication systems and improve on-device processing capabilities.

Transfer hub “6G-life²” enters the next funding phase

Jan. 08 - With the start of the second funding phase of the "6G-life²" project, the Technical University of Munich (TUM) and the Dresden University of Technology (TUD) are strengthening their leading roles in the development of future communication technologies. Interdisciplinary teams are developing concepts and technical solutions for the sixth generation of mobile communications, expected to launch commercially in 2030. The current project phase of the "6G-life²" transfer hub runs until December 2029.

An ultra-fast quantum tunneling device for the 6G terahertz era

Jan. 09 - A research team affiliated with UNIST has unveiled a quantum device, capable of ultra-fast operation, a key step toward realizing technologies like 6G communications. This innovation overcomes a major hurdle that has long limited the durability of such devices under high electrical fields.

6G networks will host AI agents to automate enterprise workflows

Jan. 07 - Future 6G mobile networks will go beyond simple connectivity by hosting AI agents to automate complex enterprise workflows.

While 5G focused on bandwidth and latency, early standardisation work suggests the next generation of mobile infrastructure will function as a distributed intelligence platform, capable of interpreting business intent and coordinating autonomous actions across devices.

6G discussions: How things have changed

Dec. 19 - The moment that 3GPP published the first 5G standard (Release 15), discussions started about what 6G should do. Nobody at the time knew how 5G would unfold. We've now seen how 5G has changed — or not changed — wireless communications. 6G conferences started in 2020, and since then, the discussions have changed as 5G issues have emerged.

6G standardisation moves closer as 2026 begins

Jan. 08 - After several years of exploratory research, the global telecommunications industry is preparing for a more concrete phase in the development of sixth-generation wireless systems. While commercial 6G networks are not expected until around 2030, 2026 is shaping up as a key year in which formal 6G standardisation work is set to begin.

Samsung and SK Telecom Join Forces To Lead 6G Era With AI-RAN Technology

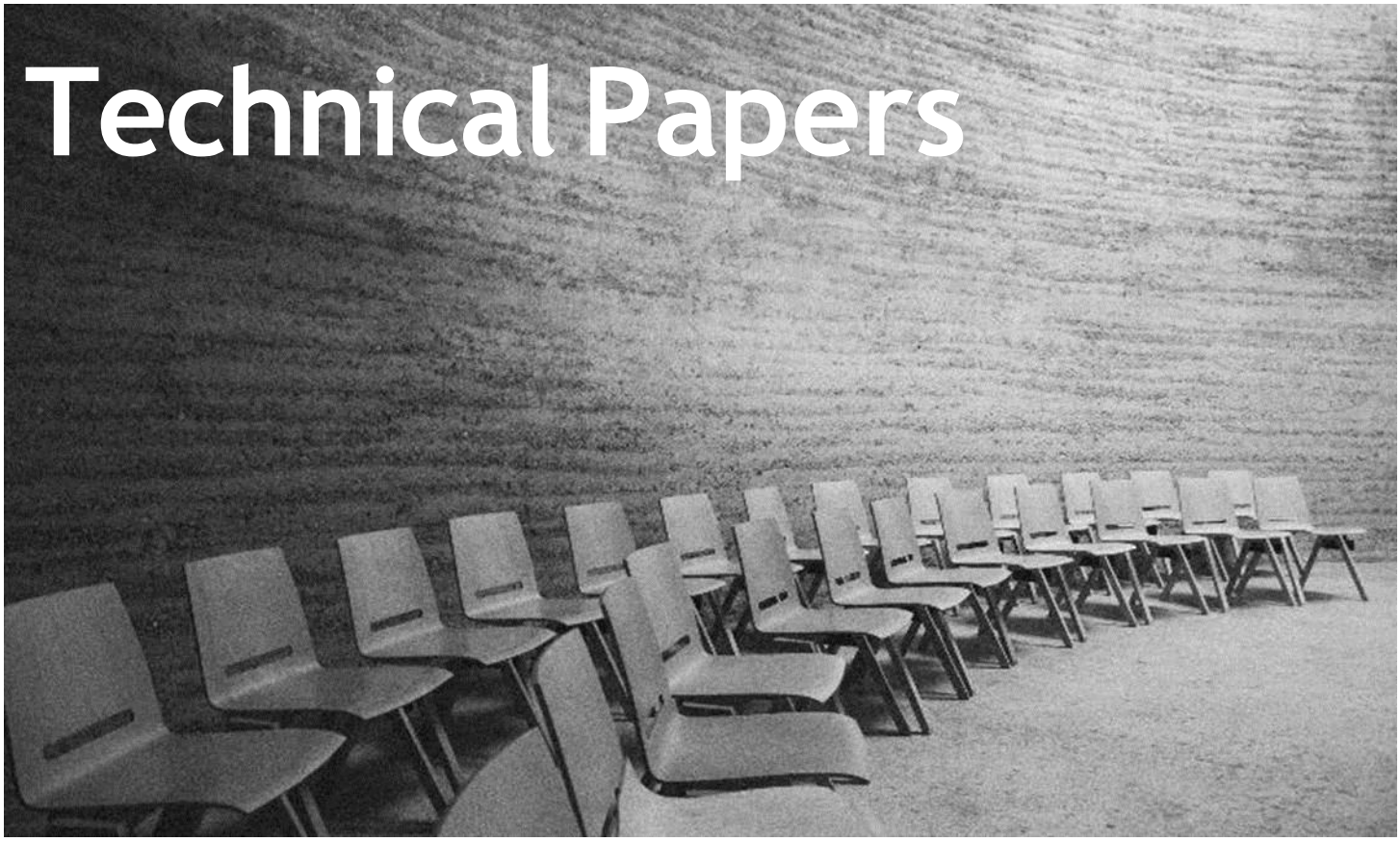
Nov. 26 - Samsung Electronics and SK Telecom (SKT) signed a memorandum of understanding (MOU) to develop core 6G technologies, with a primary focus on artificial intelligence-based radio access network (AI-RAN) technology. The companies will develop and test key technologies for the 6G era including AI-based channel estimation, distributed multiple-input multiple-output (MIMO) transmission, AI-RAN-based schedulers and core network architectures. Samsung Research of Samsung Electronics and the Network Technology Office of SK Telecom will lead the collaborationFinnish 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.

6G: The time for global alignment is now!

Jan. 05 - While 5G's potential is still unfolding, the conversation around 6G is gradually progressing. Positioned as the next evolution of communications networks for the 2030s, 3GPP – the global standards body for mobile networks – has been actively shaping this future through its latest standardisation work. 3GPP's Release 20 is seen as a significant milestone that finalises enhancements for 5G-Advanced, while simultaneously laying the technical foundations for a 6G network.

6G4Society: From 6G connectivity to sustainable innovation

Nov. 19 - Debates on sustainability, digital rights, and responsible innovation show that being technically viable is no longer enough. What matters is not just whether technologies are adopted but also their acceptability and trustworthiness, their alignment with ethical expectations, their contribution to sustainability, and their reflection of shared social values. As the development of 6G technology progresses, these questions are central to its legitimacy. The 6G4Society project explores how 6G can integrate societal, environmental, and economic dimensions into innovation itself



Enhancing 6G wireless performance through advanced MIMO techniques

Arun Ananthanarayanan, S. Kanithan, Sathish Kumar Harl, Naeem Ahmed

Accurate channel state information (CSI) is essential for efficient beamforming and high-data-rate communication in modern wireless networks, particularly in dynamic environments where conventional methods struggle. This paper proposes a Deep Single-Carrier OFDM (DS-OFDM) framework for 6G systems that integrates CNN and LSTM neural networks in an end-to-end architecture. The model jointly performs modulation and equalization, exploiting CNNs for spatial feature extraction and LSTMs for temporal modeling. Compared to standard OFDM and existing deep learning-based approaches, the proposed method achieves lower PAPR, improved BER performance, faster convergence, and higher spectral efficiency, making it suitable for intelligent and energy-efficient 6G transceiver design.

6G for Media and Entertainment

SNS JU Technical Board (Nov 2025)

This whitepaper by the 6G Infrastructure Association / SNS JU examines how 6G technologies (including ultra-massive MIMO) will transform the Media & Entertainment sector. It compiles input from 22 EU 6G research projects and 46 use cases to analyze current M&E trends and future network requirements. The paper notes that 6G offers major opportunities to revolutionize media delivery – enabling hybrid physical/digital events, truly immersive XR broadcasting, holographic telepresence, cloud-native content production, and more. Key 6G features discussed include extreme capacity wireless links (leveraging technologies like ultra-massive MIMO and THz bands), sub-ms latency, integrated sensing, and intelligent network orchestration – all of which will be needed to support on-demand, interactive and AI-generated media in the 2030s. The whitepaper provides a holistic view of how 6G's technical enablers (from advanced radio interfaces to edge computing) can accelerate M&E services, and includes recommendations for stakeholders to ensure these 6G-enabled applications are technically feasible, economically sustainable and societally acceptable.

6G Security and Trust: Insights from European SNS Projects

6G Infrastructure Association (6G-IA) Security Working Group – contributions from multiple EU SNS projects

This whitepaper, compiled by the 6G-IA Security Working Group, synthesizes R&D insights on 6G network security from several European projects. While not solely about radio/MIMO, it is relevant to 6G technology broadly. It advocates for a proactive, AI-driven security architecture in 6G, moving beyond 5G's approaches. Key innovations highlighted include: Zero-trust frameworks and zero-touch automation for security management, AI/ML techniques for threat detection (with Explainable AI for transparency), privacy-preserving technologies (like federated learning and confidential computing), and even "sustainable security" measures that balance cybersecurity with energy efficiency. The paper underscores that 6G's broadened attack surface – due to ultra-dense networks, massive IoT, and new features like cell-free MIMO or reconfigurable surfaces – will demand fundamentally new security paradigms. It calls for network digital twins for security testing, dynamic trust metrics, and close collaboration with standardization bodies to bake trustworthiness into 6G from the ground up.

An extensive review of THz communication in 6G: Facilitating technologies with edge computing and native AI

Subhankar Shome, Suman Das, Saumya Das

Sixth-generation (6G) networks are expected to support advanced services such as immersive extended reality, holographic telepresence, digital twins, and ultra-reliable autonomous communications, relying on the terahertz (THz) spectrum for extreme bandwidth. However, THz communications face major challenges, including high propagation loss, beam misalignment, blockage sensitivity, and synchronization in dynamic environments. This paper proposes a Native-AI paradigm, embedding artificial intelligence and edge computing directly into the THz communication infrastructure. Using techniques such as deep reinforcement learning, graph neural networks, and federated learning, the architecture enables adaptive beamforming, proactive channel estimation, and distributed mobility management. The work presents a unified AI-driven blueprint addressing scalability, robustness, security, and practical deployment challenges for future 6G systems.

RAN Scenario Generators and Their Critical Role for Future-Proofing AI-Native RAN in Advanced 5G and

VIAVI Solutions

Artificial intelligence is becoming a core component of modern telecommunications, evolving from task-specific automation to intelligent, context-aware decision making in 5G and emerging 6G networks, particularly for MU-MIMO systems. While AI has traditionally been deployed as an add-on to optimize existing functions, AI-native architectures shift it to the center of network operation, enabling autonomous management in complex, heterogeneous environments such as Open RAN and RIC-based SMO networks. This shift raises challenges related to data availability, representativeness, and long-term reliability. The paper argues for a hybrid training approach combining real and synthetic data with RAN scenario generator testing to prevent AI drift, improve robustness, enhance energy efficiency, and support massive MIMO and future 6G deployments.

Events

WINTER SATELLITE WORKSHOP

PARTICIPATE INSTRUCTIONS PREVIOUS EVENTS ORGANIZERS

Conference program

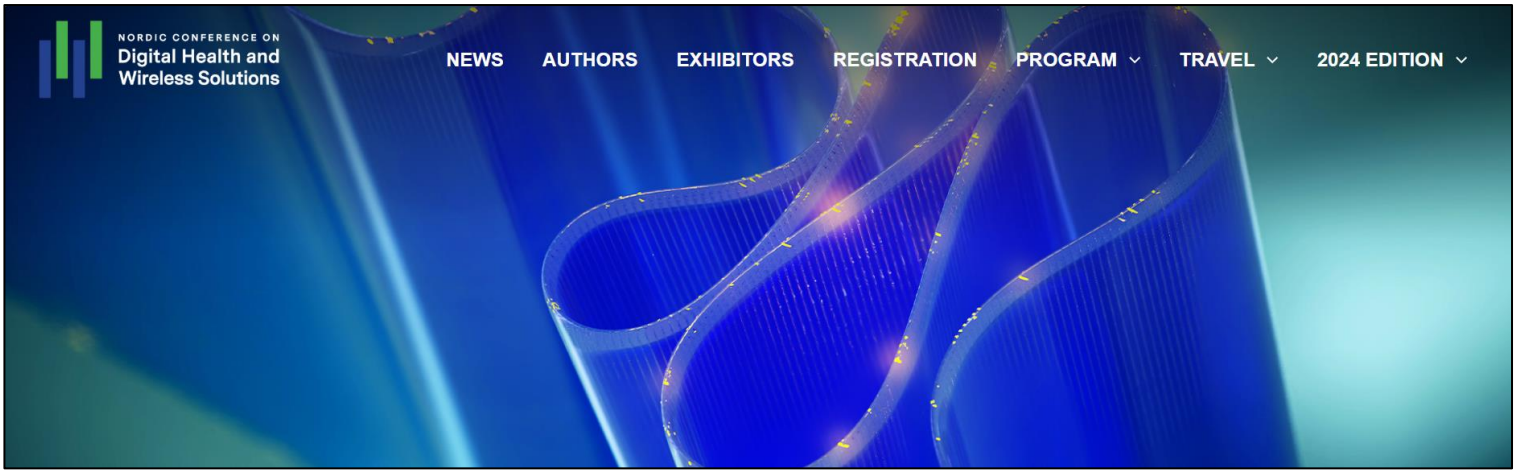
20 - 23 January 2026, Espoo, Dipoli, Finland

Ruka Chips Winter School

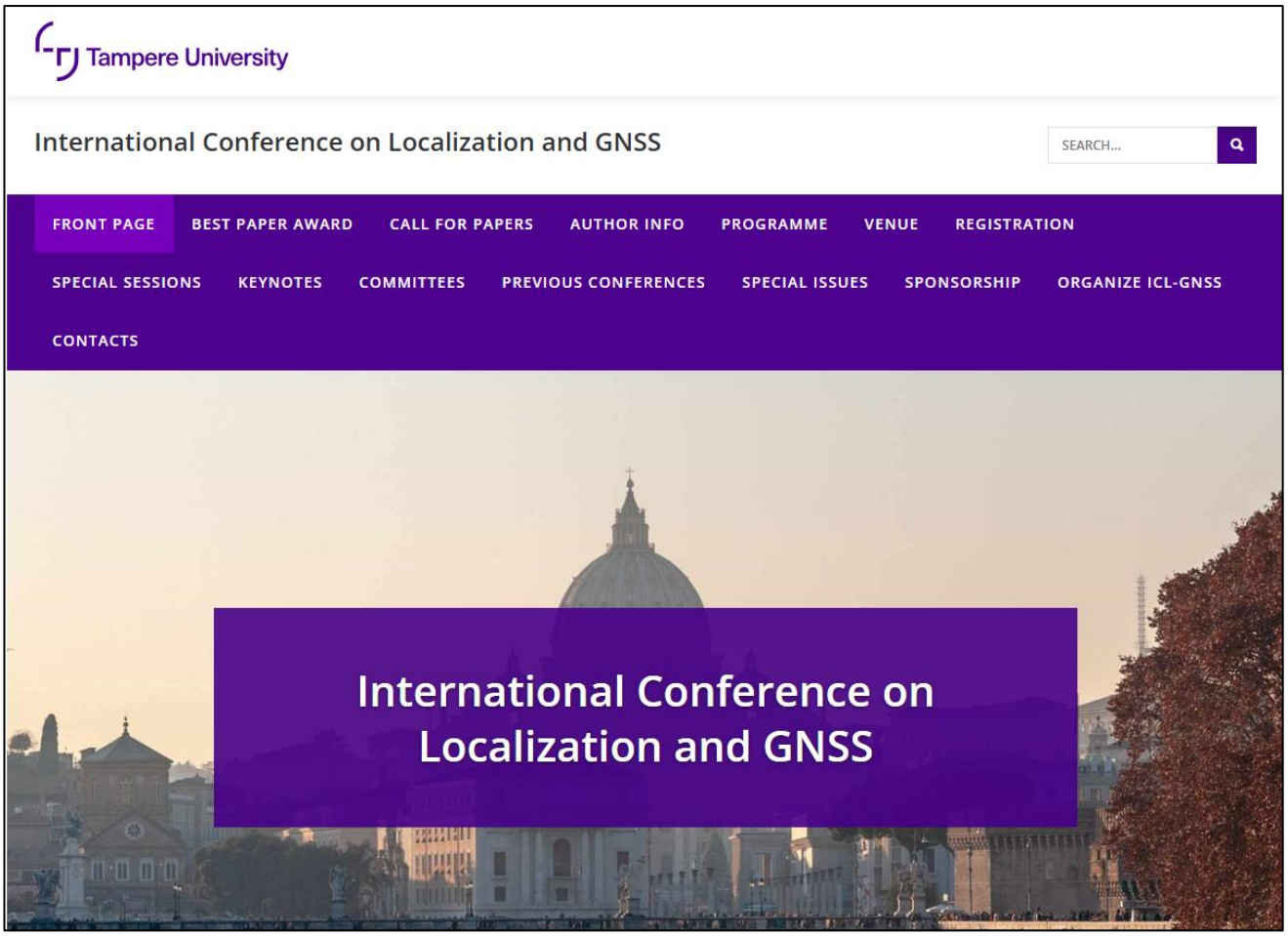
9–11 February 2026
Ruka Ski Resort, Finland

Come together to ideate microelectronics geared products!

Organized by Doctoral training


NORDIC CONFERENCE ON
Digital Health and
Wireless Solutions
NEWS
AUTHORS
EXHIBITORS
REGISTRATION
PROGRAM
TRAVEL
2024 EDITION


Welcome to 2026 EuCNC & 6G Summit
2-5 June | Málaga, Spain
6G, Connecting Intelligence


Tampere University
International Conference on Localization and GNSS
SEARCH...
FRONT PAGE
BEST PAPER AWARD
CALL FOR PAPERS
AUTHOR INFO
PROGRAMME
VENUE
REGISTRATION
SPECIAL SESSIONS
KEYNOTES
COMMITTEES
PREVIOUS CONFERENCES
SPECIAL ISSUES
SPONSORSHIP
ORGANIZE ICL-GNSS
CONTACTS
International Conference on
Localization and GNSS


Home / Events / IEEE International Symposium on Personal, Indoor and Mobile Radio Communications 2026
IEEE International Symposium on Personal, Indoor and Mobile Radio
Communications 2026