MiFuture News

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

February 2025

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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.

Industry news

Samsung to Implement AI in 6G to Improve Network Quality

February, 6 - Samsung published its first white paper on 6G back in 2020, and today, the company has more to say about where it is on the road to the future in communications.

The new white paper stated the company aims to integrate the latest AI technology throughout the telecommunication system and improve network quality for a future-oriented and sustainable user experience.

Telefónica & Huawei: EU Tech Consortium to Tackle 6G ESG

February, 3 - Ten organisations have come together to launch an initiative to reduce telecom carbon footprint by tackling the overall environmental impact of 6G.

Keysight and The University of Malaga Open State-of-the-Art 6G Research and Innovation Laboratory

January, 30 - Keysight Technologies, Inc. (NYSE: KEYS) and the University of Malaga (UMA) have opened a 6G research and innovation Lab. The facility is dedicated to advancing 6G technology through comprehensive solutions that address key use cases and technological challenges.

6G Technologies Facing Commercialization Risk in 2025 and Beyond

February, 6 - Here's a list of 6G enabling technologies that are getting plenty of attention now and are trending into 2025, but have a higher commercialization risk.

February, 3 - Work on 6G is now well underway, but industry reactions to the forthcoming GSMA mobile standard have ranged from negative (among carriers) to clueless (from trade journalists and analysts). These responses stem from a fundamental failure to grasp the killer application that will define 6G when it arrives around 2030 as a technology equally essential to the future of the world as artificial intelligence (AI).

Op-Ed: We need 6G for the trillion-device network

January, 31 - Speedy, powerful, AI-ready and highly distributed - work has already begun to define the next generation of mobile networking, 6G. Here are some of the main differences between 5G and 6G.

What are the key differences between 5G and 6G?

From underwater systems to satellites in space, Northeastern wireless network researchers showcase their work

February, 6 - Since launching five years ago, Northeastern University's Institute for Wireless Internet of Things has grown to over 182 members and filed more than 110 patents in areas including 5G/6G mobile networks, software-defined networking, Wi-Fi systems, network security and IoT medical devices.

WBA calls for unified approach to 6G as wireless industry faces fragmentation

January, 14 - The Wireless Broadband Alliance (WBA) has called for collaboration between Wi-Fi, cellular, and other wireless technologies in its newly released 6G vision statement, warning that industry fragmentation could threaten the goal of achieving truly ubiquitous connectivity.

How surgeons could soon be operating on you from a different country

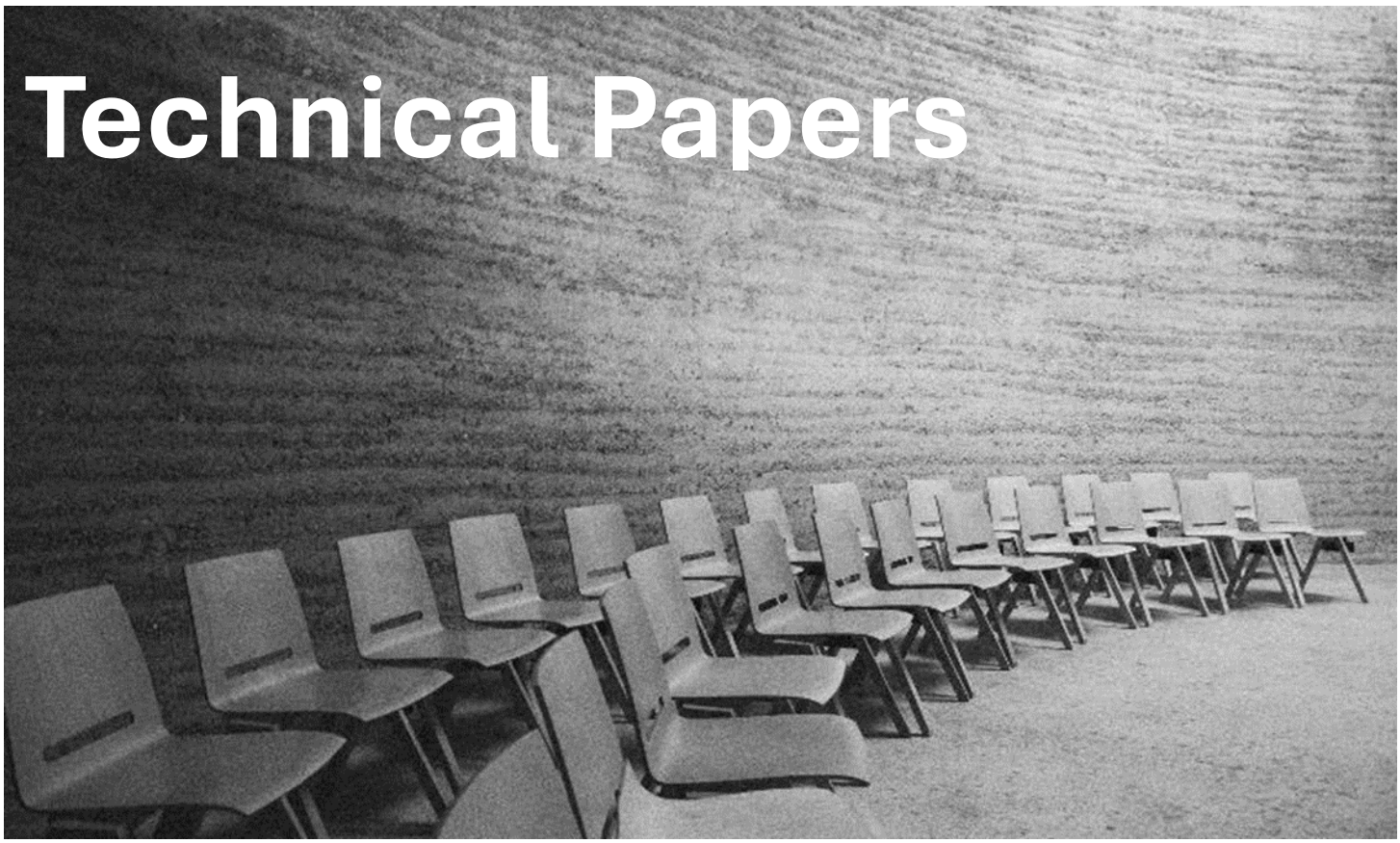
February, 7 - This could be the new reality within a matter of years as technology companies look roll out 6G networks worldwide, according to a senior figure involved in its development.

China plans to upgrade its 5G network, accelerate 6G innovation, and spruce up construction of national data infrastructure

January, 6 - China will continue to accelerate the research and development (R&D) and innovation of 6G cellular technology and upgrade its 5G mobile network to reach the 5G-A level under its new data infrastructure construction plan, which was released recently.

Network convergence will drive enterprise 6G wireless strategies

January, 16 - The traditional separation between Wi-Fi and cellular networks — a cornerstone of enterprise wireless planning — is facing fundamental challenges according to a new 6G vision statement released this week by the World Broadband Association.



Samsung Electronics Unveils 6G White Paper and Outlines Direction for AI-Native and Sustainable

Samsung Electronics

Samsung Electronics has published a 6G white paper titled “AI-Native & Sustainable Communication,” detailing the latest trends in next-generation mobile communication technologies. Following the first 6G white paper “The Next Hyper-Connected Experience for All.” in July 2020, this white paper covers the latest trends driving 6G standardization and next-generation mobile communications — including evolving market and technology needs, emerging services, key attributes of 6G and enabling technologies. Samsung aims to integrate the latest AI technology throughout the telecommunication system and improve network quality for a future-oriented and sustainable user experience. “We are intensifying our 6G research efforts, focusing on AI-enabled communication technologies and sustainable networks,” said Charlie Zhang, Senior Vice President of Advanced Communications Research Center (ACRC), Samsung Research. “As the telecom ecosystem industry accelerates 6G standardization this year, Samsung will develop technologies to align with market demands.”.

White Paper on RF Enabling 6G – Opportunities and challenges from technology to spectrum

Pärssinen, A., Alouini, M., Berg, M., Kuerner, T., Kyösti, P., Leinonen, M. E., Matinmikko-Blue, M., McCune, E., Pfeiffer, U., & Wambacq, P. (Eds.). (2020). White Paper on RF Enabling 6G – Opportunities and Challenges from Technology to Spectrum. 6G Research Visions, No. 13. University of Oulu

6G aims to achieve Tbps data rates by 2030, raising key questions about feasibility and sustainability. This white paper explores the challenges and opportunities for RF technologies, addressing high-speed communications, ultra-low power solutions, and scalable, energy-efficient systems. 6G will integrate communications and sensing,

with wide bandwidth enabling high-precision sensing applications. While current technologies will evolve, innovative solutions are crucial. The convergence of radio and optical communications offers new possibilities. The paper highlights potential roadblocks in 6G development and poses critical questions for experts across disciplines, emphasizing collaboration to overcome challenges and unlock the full potential of 6G radio technologies.

Lovén, L., Bordallo López, M., Morabito, R., Sauvola, J. & Tarkoma, S. (Eds.) (2025). Large Language Models in the 6G-Enabled Computing Continuum: a White Paper [White paper]. (6G Research Visions, No. 14). University of Oulu.

Large Language Models in the 6G-Enabled Computing

The shift to 6G will transform communication networks, with artificial intelligence (AI) playing a pivotal role. This white paper explores integrating Large Language Models (LLMs) into 6G systems to enhance network functionalities through intent recognition, reasoning, and command execution. A key component is the AI Interconnect framework, which supports AI operations within the network. The proposed architecture combines LLMs with pre-generative AI and machine learning (ML) algorithms, merging traditional and modern approaches. This integration positions AI as central to future networks, offering a new perspective on the structure and applications of AI-driven 6G systems.

NETWORK AND SERVICE MANAGEMENT ADVANCEMENTS

6G SNS

Software plays a critical role in 5G and 6G networks, enabling efficient operation through programmability, automation, and integration of AI and machine learning (ML). Application Programming Interfaces (APIs) and frameworks are essential for network programmability, facilitating seamless interaction between software components and services, while supporting edge computing, AI/ML, cloud integration, and IoT. APIs enhance interoperability and dynamic service creation, while frameworks ensure scalability, intelligent operations, and security.

6G will introduce intelligent network management for diverse use cases, with AI-driven zero-touch management for End-to-End slices. Security in 6G focuses on privacy, decentralized analytics, SOAR, and cyber threat intelligence to ensure a trustworthy environment. These elements make 6G a dynamic, scalable, and secure platform for future applications.

AI/ML as a KEY ENABLER of 6G NETWORKS: Methodology, Approach and AI-Mechanisms in the SNS JU

5GPP

The Smart Networks and Services Joint Undertaking (SNS JU) leads Europe's push for 6G leadership under Horizon Europe. It focuses on integrating AI and Machine Learning (ML) into future networks to boost performance, energy efficiency, and security. A survey across 33 R&I projects reveals the development of 199 AI/ML mechanisms, targeting areas such as RAN, resource management, and diagnostics. Neural networks dominate (51%), with supervised learning (50%) and reinforcement learning (25%) as key approaches. Projects use a mix of synthetic (41%) and real datasets (33%), adopting privacy-preserving methods like federated learning. SNS JU aims to build AI-native 6G systems, promoting innovation, transparency, and Europe's technological sovereignty.


Events


MWC
GSMA
SNS JU goes to MWC25
Join us in Barcelona
Monday 3 March - 09:00 am
Marconi Stage - Hall 6
#SNSJUatMWC

IEEE WCNC

IEEE Wireless Communications and Networking Conference

24-27 March 2025 // Mico Milano Congressi, Milan, Italy

6G Horizons: Bridging Beyond Wireless

IEEE ComSoc
IEEE Communications Society

International Workshop on Resilient 6G Networks (WResNet 6G)

24 March 2025

IEEE 6G Summit Dresden 2025

May 14–15, 2025 in Dresden, Germany

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6G Summit

Discover the future of mobile networks at the 6G Summit, where industry stakeholders gather to envision the next generation of connectivity.

Industry stakeholders are already talking about the next generation mobile networks, known as **6G**, and what this might look like. Many research and white papers have already been published by reputable organisations—from vendors and CSPs to standards bodies and universities—that discuss the potential 6G technologies represent. Partnering with **ATIS** and **Next G Alliance** provides access to valuable insights in the USA and data on global telecommunications.

IEEE INTERNATIONAL CONFERENCE ON

MACHINE LEARNING FOR COMMUNICATION AND NETWORKING

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IEEE ICMLCN

IEEE ComSoc

Welcome to 2025 EuCNC & 6G Summit

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The Institution of Engineering and Technology

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