MiFuture News

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

November 2024

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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

University of Sheffield engineering professor set to drive development of 6G networks

November, 1st - A University of Sheffield professor is set to play a key role in developing the next generation of mobile networks - 6G - after being awarded a new Research Chair from the Royal Academy of Engineering.

6G Foundry: Why economic innovation is a key focus for our mobile future

October, 23rd - The jump to a new generation of wireless technology typically comes with the fanfare of the game-changing innovations it will enable, but with 6G, one of the biggest disruptions could be how much more bang carriers will get for their buck. That's because 6G, which is slated to emerge around 2030, is being designed from the ground up to be more cost efficient.

Optimizing data transmission in 6G software defined networks using deep reinforcement learning for next generation of virtual environments

October, 28th - Efficient data transmission is essential for a seamless VR experience, demanding high bandwidth and low latency. Emerging 6G technologies like Software Defined Networking (SDN), resource slicing, and Deep Reinforcement Learning (DRL) are pivotal in meeting these needs. DRL enables dynamic resource management, optimizing data rates and minimizing latency, while slicing techniques help distribute resources across diverse services. A proposed SDN-based VR model for 6G enhances resource management, significantly improving VR video transmission by balancing network load and supporting large-scale, dynamic networks.

6G phone networks could be 9000 times faster than 5G

October, 18th - Wireless data has been sent at 938 gigabits per second, or more than 9000 times the average speed of a current 5G phone connection. This would be the equivalent of downloading more than 20 average-length movies a second. The speed is a record for multiplex data – where two or more signals are mixed.

Delivering a true ‘hetnet’ world: A vision of 6G that makes sense

October 9th - Mobile generations tend to come along every 10 years, and we are now midway between the advent of 5G in 2020 and the introduction of 6G scheduled around 2030. This is a good time to review what we have learned from 5G and where we should focus our efforts on 6G..

Can't get there from here: 6G requires 5G SA

Sept. 16th - Despite the palpable disdain that has recently grown around 5G in the tech press and the futuristic love for 6G — which Fierce reminds y’all is still six years away — the successor cellular standard will rely on a major piece of standalone 5G (5G SA) technology to operate.

Don't expect a revolution with 6G, says ETSI boss

Sept. 10th - Jan Ellsberger, ETSI's new director-general, doubts 6G will mark a radical break with 5G but downplays talk the global standard is in danger of splitting.

Paving the way for 6G – a collaborative visión

October, 1st - Telecoms.com periodically invites expert third parties to share their views on the industry’s most pressing issues. In this piece, two Network X exhibitors share their views on the development of 6G.

How the UK’s JOINER platform could bring a new phase of future network research

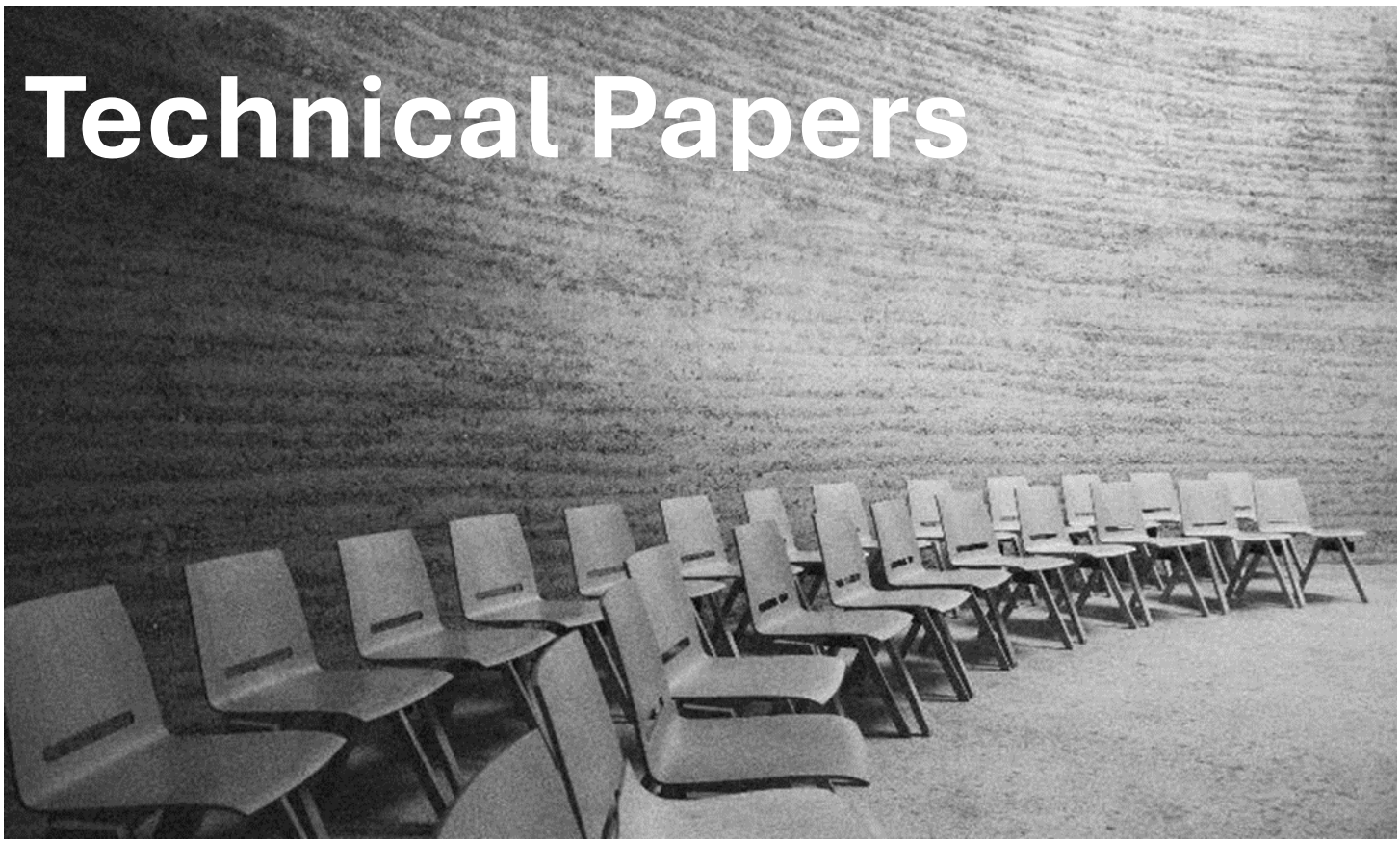
October 7th - 6G Research in the UK is being underpinned by a new shared network platform - JOINER. JOINER's lead says it will change the R&D capabilities of advanced network researchers. Others could even learn from the project, she says.

AI-RAN collaboration set to advance mobile networks

Sept. 19th - The collaboration centres around the newly launched NVIDIA AI Aerial platform, a suite of accelerated computing software and hardware designed to optimise wireless networks and cater to the needs of generative AI across various sectors, including mobile devices, robotics, autonomous vehicles, and smart factories.

IMT-2030 Vision: Industry experts outline the path to 6G

Sept. 20th - As the world prepares for the transition to 6G, industry experts have shared their insights on the ITU’s IMT-2030 Vision framework. This collaborative effort between industry, government, and academia aims to shape the future of mobile communications, focusing on key technologies and standards that will guide the development of 6G.



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.

As 6G technology aims for Tbps communication by 2030, major challenges and opportunities emerge, particularly around sustainable development and ultra-high data rates. This white paper examines these issues from an RF perspective, exploring how existing wireless infrastructure and ultra-low power communications can support the expanded range of applications in 6G. Notably, 6G will integrate communications and sensing, with wide bandwidths enhancing precision sensing uses. Achieving energy efficiency, scalability, and multi-use functionality involves complex tradeoffs and demands innovation beyond current solutions. The paper also addresses potential barriers in RF technologies and outlines critical questions for cross-disciplinary stakeholders shaping the future of 6G.

MediaTek 6G Vision

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With 5G expanding globally and evolving through 3GPP Release-18, the groundwork for 6G is underway. MediaTek, a leader in 5G devices, is positioned to shape the 6G landscape. While 5G has supported diverse use cases—like enhanced mobile broadband (eMBB) and industrial IoT—its complexity and cost have hindered full deployment, especially in mmWave. MediaTek envisions 6G as a transformative, adaptive, and scalable network that merges devices and network infrastructure, using higher spectrums, including THz. Leveraging AI and machine learning, 6G will support ultra-efficient and autonomous operation across varied environments, from short-range to satellite communications.

Co-creating a cyber-physical world

Athanasios Karapantelakis, Bengt Sahlin, Bipin Balakrishnan, Dinand Roeland, Göran Runen, Gustav Wikström, Henning Wiemann, Jari Arkko, Konstantinos Vandikas, Mikael Coldrey, Panagiota Lioliou, Patrik Persson, Paul Schliwa-Bertling, Per-Erik Eriksson, Peter Öhlén, Robert Baldemair, Stefan Parkvall and Wolfgang John, ERICSSON.

6G development has progressed to regulatory and standardization phases, while Ericsson's 2020 vision for 6G remains central. This vision foresees secure, efficient, and sustainable communication services reshaping business and society by 2030. Global telecom leaders are addressing key challenges and goals for successful collaboration, building on insights from expanding 5G networks. Future networks must be resilient, sustainable, and capable of handling a projected threefold increase in traffic by 2029, while meeting user needs and delivering value. Ericsson's 6G platform aims to optimize network efficiency, create new revenue streams, and provide enhanced services for enterprises, developers, and consumers.

Transforming the 6G vision to action

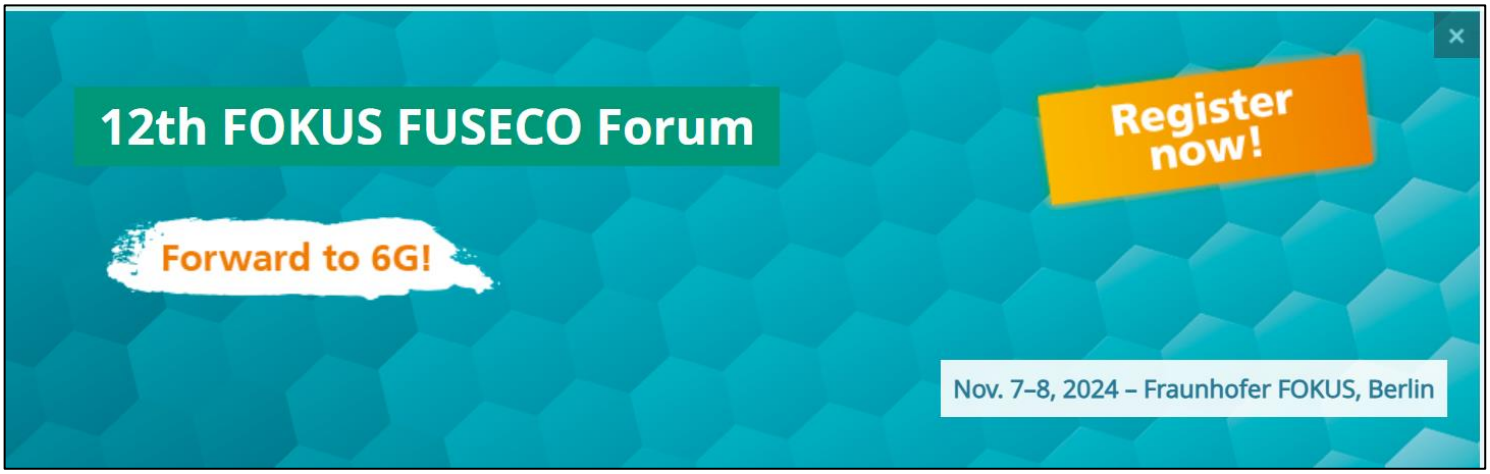
NOKIA

6G will support the vast and growing device ecosystem and harness and accelerate the power of AI along with many other emerging technologies — besides addressing the increasing need for network capacity. 6G will realize the next level of digital inclusion by offering greater accessibility, affordability and consumability. It will be sustainable and "Green" by design, trustworthy and highly secure. In this white paper, we outline Nokia's views for the 6G era, how the key emerging technologies enable this vision, and what to focus on for 6G day one to ensure it paves the way for commercial success and establishes a firm foundation for the future.

SK Telecom 6G White Paper

SK Telecom

6G refers to communications and services at the time of convergence of service terminal evolution and mobile communication evolution, which will arrive around 2030, based on the lessons learned from the world's first 5G commercialization. 6G requires setting achievable goals and continuous communication with the market and consumers. Efforts of all participants in the new 6G ecosystem are required, such as expanding of 6G usage scenarios, selecting candidate spectrums, vitalizing open interfaces, e.g., Open RAN, and simple architecture options, etc. SK Telecom plans to take the lead in developing 6G technology through collaboration with 6G partners in industry, academia and research, and aims to contribute to Korea becoming a leading global ICT country..



IEEE ComSoc 2024 2nd Workshop on Emerging 6G Technologies

The IEEE ComSoc 2024 Workshop on Emerging 6G Technologies is sponsored by the IEEE ComSoc ETI on Reconfigurable Intelligent Surfaces and its IEEE ComSoc TC Innovation Support Project in 2024, IEEE ComSoc UK and Ireland Chapter, IEEE ComSoc Special Interest Group on RIS for Smart Radio Environments, and London Digital Twin Research Centre. The co-supporters are one6G Association, Manchester Metropolitan University, King's College London, and Middlesex University London.

DATE
22 Nov 2024

TIME
All Day

LOCATION
Middlesex University London, UK