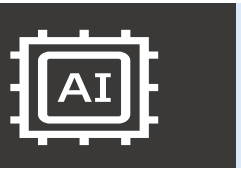
6G MIRAI

Project number: 101192369

HORIZON-JU-SNS-2024-STREAM-B-01-05

Overview Presentation

General Information



AI-native 6G air interface and RAN architecture

Concept validation and pre-alignment for standardization

Start April 2025, 36 months, budget of 3 MEuro (6G-MIRAI - EU part)

9 partners in EU, 7 partners in Japan

Collaboration between EU (6G-MIRAI) and Japan (HARMONY)

Collaboration EU-JAPAN

EU (6G-MIRAI project)

- Ericsson (Project Lead)
- Fraunhofer (Technical Lead)
- Apple (Communication Mgr)
- CNIT
- University Pisa
- KU Leuven
- IS-Wireless
- Telefonica
- Sequans

Japan (HARMONY project)

- UTokyo (Project Lead)
- TUAT
- NEC
- KYOCERA
- SHIMIZU
- KDDI

Goal & Objectives

Overall goal: 6G-MIRAI aims at developing reliable and robust AI-native wireless communication systems that enable the practical exploitation of the full potential of the latest physical layer technological advances, especially cell-free massive MIMO, and of next-generation virtualized and potentially disaggregated radio access networks.

O1: Reliable and robust AI/ML techniques for future wireless communications,

O2: Practical AI-native design of next-generation radio access networks,

O3: Common platform for data, benchmarking, and validation,

O4: Aligned strategy on future standardization efforts.

Expected Results

- AI-native 6G air interface (baseband) design considering realistic channels and hardware capabilities,
- AI-native 6G RAN architecture design allowing for intelligent network control and efficient multi-connectivity,

- Data handling methodology for validation and benchmarking suitable for AI-native wireless research,
- Deliver open, curated datasets which enable 6G-MIRAI and other projects to create robust ML algorithms,
- Deliver PoC framework to validate results and a common baseline for further collaborative work,

- EU standards pre-alignment, incl. Japan where applicable,
- Create roadmap for industrialization across EU and Japan.

Workpackages

6G-MIRAI (EU)		HARMONY (Japan)
WP1: AI-native practical 6G air interface WP2: AI distributed 6G RAN architecture & control	⟷	WP1: AI-Native and User-Centric RAN Architecture WP2: Harmonization of Multi-AI Networks WP3: AI-Native RAN
WP3: Scenarios & data, validation & benchmarking	⟷	WP4: Architecture and Component Technology Evaluation via Testbed Demonstrations
WP4: Cooperation, dissemination and impact WP5: Project management	⟷	Dissemination Project management

Contacts

Project Lead: Tobias Ley, tobias.ley@ericsson.com

Technical Lead: Renato Cavalcante, renato.cavalcante@hhi.fraunhofer.de

Communication Manager: Henning Sanneck, h_sanneck@apple.com

Co-funded by the European Union 6GSNS

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or SNS JU. Neither the European Union nor the granting authority can be held responsible for them.

6G-MIRAI has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101192369.