



The Standards People

ETSI Research Conference 2023

Maximizing the Impact of European 6G
Research through Standardization



CENTRIC

CENTRIC: Towards an AI-Native, User-Centric Air Interface for 6G Networks

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6G SNS

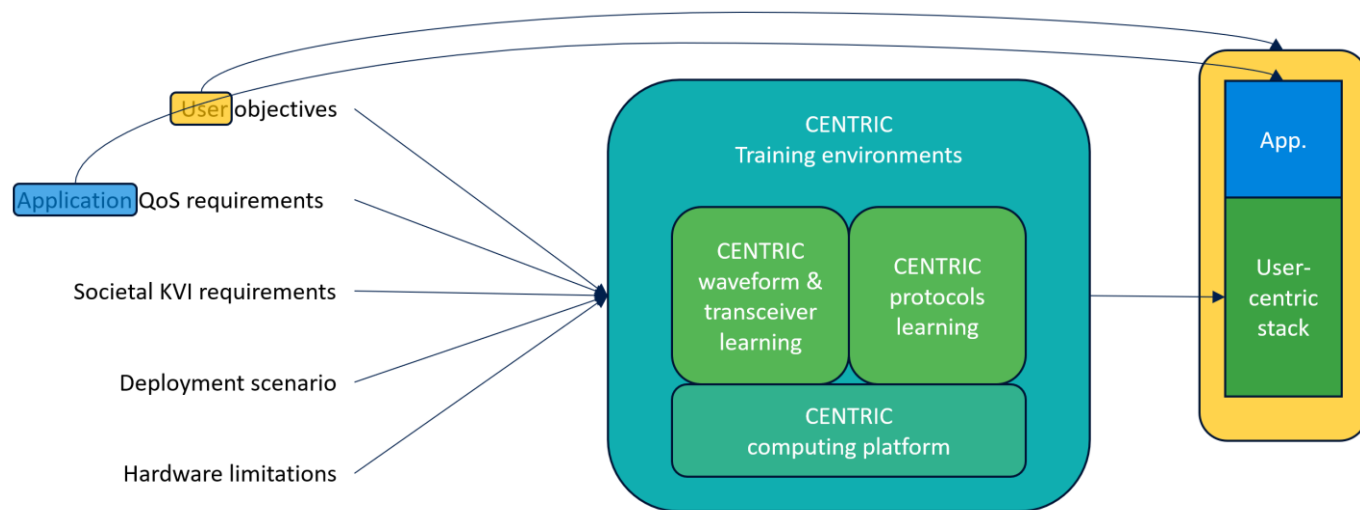


1. Project Overview

- **Project Name:** CENTRIC: Towards an AI-Native, User-Centric Air Interface for 6G
 - **Project website:** <https://centric-sns.eu/> (available soon)
- **Stream:** STREAM-B-01-02 – Wireless Communication Technologies and Signal Processing
- **Members:**
 - **Coordinator:** Eurescom (DE).
 - **Academic:** Aalborg University (DK), CNIT (IT), CNR (IT), King's College London (UK), University Oulu (FI).
 - **Industry:** Nokia Networks France (FR), NVIDIA (DE), Sequans Communications (FR), Keysight Technologies (ES), Interdigital Europe (UK), Nokia Solutions and Networks (DE)
 - **SME:** Synthara AG (CH)



2. Technical Information



- **Key technologies investigated:** deep neural networks NNs (graph NNs, attention/transformers), multi-agent reinforcement learning, GPU acceleration, neuromorphic computing, and more.

- **Project Key Objectives:** to enable sustainable, user-centric 6G networks through an AI-native Air Interface. This comprises:
 - To design AI methods capable of generating waveforms, transceivers, and communication protocols for upcoming 6G systems
 - Co-design of hardware and algorithms for optimized energy- and computational efficiency
 - Development of training and monitoring environments for AI-based communication models, as well as validation frameworks.
 - For CENTRIC concepts and technologies to impact future 6G products and standards.

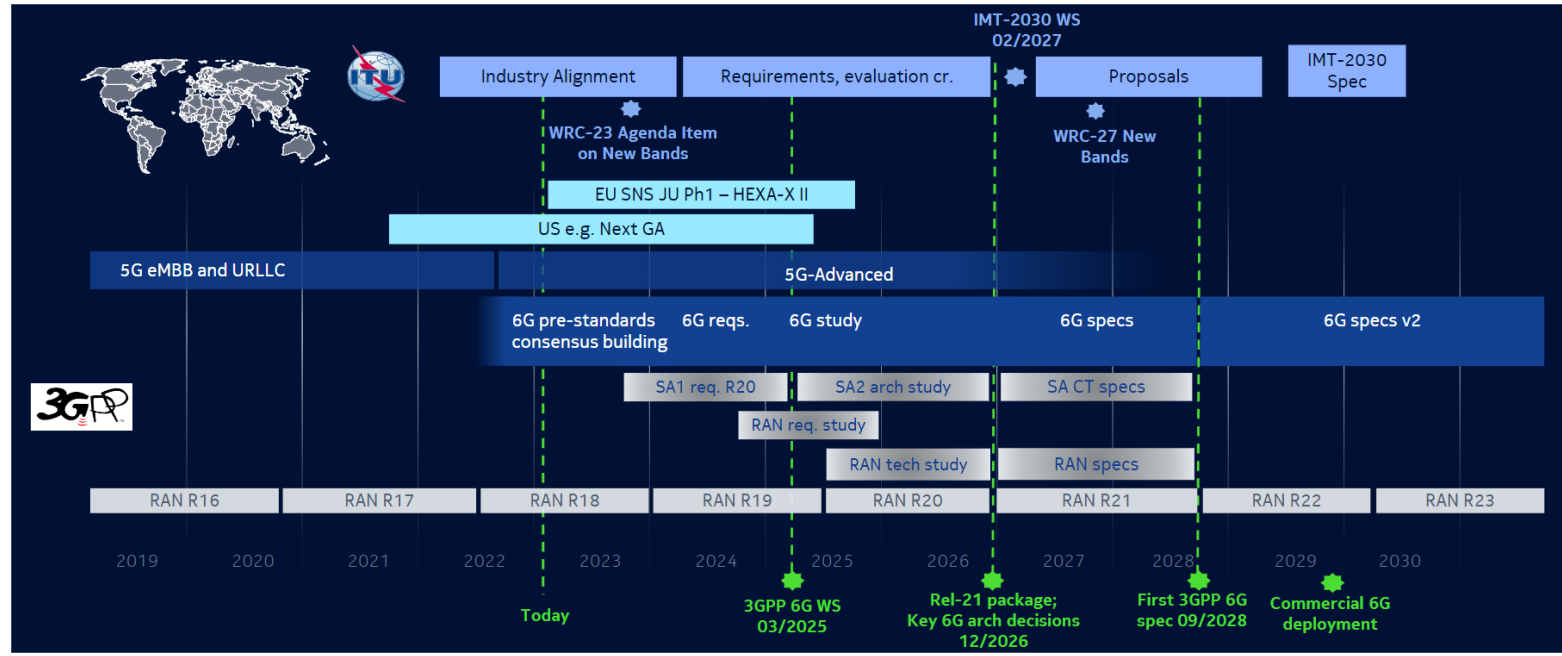
3. Planned Standardization Activities

- **Standardization plans / objectives:**
 - **Goals:** to leave a footprint on future communication network standards and products, thus maximizing the project's technical and commercial impact.
 - **Strategy:**
 - Leveraging the strong position of our industrial partners in the targeted SDOs
 - Intra-project coordination of the technical proposals and result submission to SDOs
 - Alliance with other industrial partners and SNS-JU projects to propose Study Items in 3GPP.
- **Project activities / technologies that may lead to standardization:**
 - Design of signalling and interfaces to enable AI training and monitoring
 - Development of testing and validation frameworks for AI-based wireless networks components
 - Definition and/or evaluation of baseline AI-based algorithms (e.g., for CSI enhancement, beam management, etc.)

3. Planned Standardization Activities



- **Potential targeted SDOs and groups:**
- **Primary targets:**
 - 3GPP (RAN1, RAN2, SA1, SA2)
 - ETSI: ISGs on THZ, RIS and potential others.
- **Other:**
 - IEEE 802.11 WNG & TGBf, O-RAN



Source: Hexa-Hex II

- **Standardization planning and estimated time plan:**
 - 6G standardization at 3GPP is expected to start after project completion.
 - CENTRIC will focus on TDoc contributions to 3GPP Rel. 18, where study item on AI for the NR air interface are ongoing.
 - CENTRIC will aim to influence the definition and scope of upcoming study/work items beyond Rel. 18