

This project has received funding from the Electronic Components and Systems
for European Leadership Joint
Undertaking under grant agreement No 876925



ANDANTE

AI for New Devices And Technologies at the Edge

D6.16 Newsletter V4

Deliverable No.	D6.16	Due Date	<i>29-Feb-2024</i>
Type	Report	Dissemination Level	<i>Public</i>
Version	1.0	Status	Final
Description	Newsletter V4		
Work Package	WP6 – Project Management, Dissemination and Exploitation.		

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Abstract (Published Summary)

This document contains the description of the fourth and last ANDANTE newsletter, as published on the ANDANTE Web site at: <https://www.andante-ai.eu/newsletters/>

The project newsletters constitute, together with the project's website, an important communication channel with ANDANTE's stakeholders and public interest. ANDANTE newsletters are intended to be informative documents describing the most relevant aspects, activities and results generated throughout the project.

This fourth newsletter "A cutting-edge European project focused on Edge AI neuromorphic hardware processors" provides an overview of the **final results obtained in the ANDANTE project**, including technological prototypes and demonstrators of future products in the field of Edge AI, based on effective neuromorphic solutions.

- **ANDANTE activities and value chain**

ANDANTE targets efficient neuromorphic processors for Edge applications. To achieve this goal, ANDANTE addresses the complete value chain, from new memory technologies to Edge AI applications.

- **Emerging embedded Non-Volatile Memories (eNVM)**

In the space studied on eNVM, three main memory applications were selected as potential solutions for the developed technologies (FeFET, RRAM, PCM and SOT-RAM).

- **Methods and Tools, and AI Building Blocks,**

Dedicated tools and methodologies are required for training, profiling and mapping a neural network to a hardware target at the Edge.

- **Advanced Neuromorphic Processors for IoT Edge Solutions**

Ultra-low power Edge AI processors ICs to run artificial and spiking neural networks using different design techniques and embedded non-volatile memory technologies with bit quantization for inference, object detection and classification are required.

- **Demonstrators of Edge AI use cases**

In ANDANTE, more than 19 demonstrators over 14 use cases in 5 applications domains were developed based on ANDANTE hardware and reference platforms to validate and evaluate the project results.

Overall, at the end of the final review of the entire ANDANTE project, the consortium has concluded the following points based on the work around the use cases and their evaluation:

- ANDANTE has produced many great results which have set the stage for further developments after the project and ensuring Europe's competitiveness.
- Neuromorphic technologies are maturing and slowly reaching the productivity plateau of the Gartner hype cycle, leading to a clearer picture of what is possible with them across ANDANTE's different application areas.