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ANDANTE

AI for New Devices And Technologies at the Edge

D5.6 Raport about progress of the implementation of the use cases

Deliverable No.	D5.6	**Due Date**	*28-Feb-2023*
Type	Report	**Dissemination Level**	*Confidential*
Version	1.0	**Status**	Final
Description	This document describes the progress and the status regarding the implementation of the different Use Cases based on the technologies, ICs and platforms developed by ANDANTE.		
Work Package	WP5 – Application Integration and Evaluation.		

Abstract (Published Summary)

The objective of WP5 ”Application, Integration, Validation and Evaluation” is to confirm the applicability of the ANDANTE results for application domains, which are essential for the future of Europa. These domains include 14 use cases distributed over five domains. Furthermore, the work in WP5 build upon the results from WP1 to WP4.

This deliverable includes contributions of all WP5 tasks. It presents the intermediate status of the development, the first evaluation results of the use cases as well as the work that needs to be done until the end of the project. Furthermore, the timeline of WP5 is strongly impacted by challenges and problems of WP3 and WP4. Hence, the partners outline alternative plans for the case that further problems occur.

The use cases are quite varied and serve different purposes. Nevertheless, a summary of the development status is provided. Firstly, many of the use cases have completed the development of the basic demonstrator setups and used these setups to gather and prepare data sets for the evaluation and benchmarking. Secondly, many use cases completed the realization of additional components that are necessary to realize the demonstrator system as well as the implementation of reference setups. Examples for this point are the labeling algorithms implemented for use case 1.1a and the sensors developed in context of use case 2.1. Thirdly, all use cases have started the work on the algorithms for their corresponding neuromorphic hardware based on the results from WP3 and WP4. Furthermore, some use cases even started with the deployment of the trained models on the accelerators and the integration of the specialized AI hardware in the demonstrator setups. Finally, many use cases generated first evaluation results of at least parts of the demonstrator systems.

Regarding the steps to be done until the end of the project, most of the use cases need to complete the algorithms development, deployment of the trained model on the accelerators, and the integration of the ANDANTE hardware in the demonstrator systems. Afterwards, the partners will perform the evaluation and benchmarking.

As this summary shows significant progress towards the completion of use cases was made. However, the problems and delays of WP3 and WP4 strongly impacted the development work and delayed WP5 in turn. The biggest issue is the platform 4.1a delays, since many use cases depend on it. With the extension of the project most partners predict a successful finalization of their work. Nevertheless, further problems may occur. Hence, the project partners created alternative plans for the realization of the demonstrators and the evaluation. Most of these plans are about reducing the scope of system demonstrators and evaluating the use cases not with live demonstrations.