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CONVERGING

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DELIVERABLE

D2.2 – Design of the Reference Software Architecture

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Executive Summary

This document is the tangible output of Tasks 2.3 “Specifications for CONVERGING core enabling technologies” and T2.4 “Multi agent AI resources interconnectivity - Reference architecture for industrial take-up”. In particular, this deliverable, namely D2.2 ”Design of the Reference Software Architecture” provides the reference architecture and technical specifications that will lead the developments in the CONVERGING projects and that address the user requirements that have been captured in D2.1 “Pilot case scenarios, user requirements & validation metrics definition”. The technical specifications include functional, communication and interfacing specifications at both the module level and also at the system architecture level.

The system level architecture provides a helicopter view of the system and defines how the different modules and external systems integrate and interoperate. The architecture follows the OpenFlow architecture that promotes flexibility, robustness, and openness of communication. To this end, sequence UML diagrams have been created, that show the interactions between the different modules in detail. Highlighting the interactions between modules, the system level functionalities are grouped by Pilot Case. In each Pilot Case the different interactions have been grouped by functionality and in a way that is both comprehensible and aligned with each Pilot Case and its requirements.

In the CONVERGING module level, the architectural design of each software module is provided. This includes the interfaces, the functionality that will be offered, the connections with other modules, the software interfaces that will be used as well as a detailed specification of technology plan for the module. In particular for each module the technology plan has been presented in an easy-to-read table. The technology plan for each software module specifies details such as the hardware needed, the operating system, the computing resources, like RAM, HDD and CPU cores. In addition, it captures the communication technologies and protocols, and the distribution technology. The technology plan also specifications for hardware required for each module.

This document also provides more in-depth description of the hardware specifications of each module. Focusing on the production entities per Pilot Case and describing in detail the connection with the requirements that are connected with the hardware.

This deliverable will be used as an input for the design and development of the CONVERGING project modules, work to be conducted in WP3, WP4, WP5 and WP6.