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CONVERGING

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DELIVERABLE

D2.3 – Design of the Open Pilot Networks

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Executive Summary

This document provides an overview of four Open Pilot Lines to be developed under the CONVERGING Project. The Open Pilot Lines are real-scale pilot facilities designed to demonstrate and transfer novel methodologies to manufacturing companies. They serve as platforms for showcasing the feasibility of developed technologies and fostering collaboration among end-users, technology developers, and system integrators.

The main objectives of this deliverable are to present the key features and offerings of each Open Pilot Line, including their value propositions, facilities, technologies, service provisioning, preliminary business models, and training plans.

Section 1 introduces the purpose of this document, highlighting the significance of Open Pilot Lines in promoting innovation and experimentation in manufacturing processes. It outlines the objectives and structure of the deliverable to provide a clear framework for readers.

Section 2 delves into the details of each Open Pilot Line within the CONVERGING network. For each of the Open Pilot Lines, the section showcases its value proposition, state-of-the-art facilities, cutting-edge technologies, service offerings, and preliminary business model. A comprehensive training plan is also presented to equip technological-based companies with essential skills.

The Automotive Open Pilot Line, managed by TECNALIA, focuses on automating the crucial step of polishing draw dies used in car manufacturing. Currently, this manual process poses ergonomic risks for operators due to difficult positions and repetitive movements. The pilot case aims to reduce these risks and improve efficiency by implementing a well-defined process. Operators will inspect the dies for wear or damage and mark any issues for repair. A robot will then efficiently polish the damaged areas, ensuring optimal performance and extending the die's lifespan, ultimately enhancing production requirements for the automotive industry.

The White Goods Open Pilot Line, operated by IPK, provides a test environment for applications related to the automation of the grasping, cable placement, cable fastening, and plug insertion of industrial tasks. These tasks are today almost exclusively manual, and there is large interest in automating, especially to support increasing electrification of household goods at competitive prices. As the current degree of automation is low, the trainings and feasibility studies described here can help increase the maturity of European cabling automation, building competence and awareness in factory engineers, integrators, and technology suppliers.

TF-CC manages the Aeronautics Open Pilot Line, where smart collaborative robotic solutions for remote inspection and maintenance of aircraft fuel tanks are being developed. The complete set-up, including a true aircraft wing – fuel tank and robot with advanced sensorial system, based on AI algorithms, is used to efficiently execute the complex maintenance procedures, while ensuring the operator’s safety. The Pilot is hosted in the premises of TF-CC and designed and implemented in collaboration with LMS.

The Additive Manufacturing Open Pilot Line, headed by AIMEN, is an innovative facility that offers robotics and digital solutions for post-processing additive manufacturing operations for medium and large size parts. The pilot enables the testing and validation of new technologies developed within the CONVERGING project and provides training and technical support to help end-users adopt and implement these innovative solutions in their own industrial settings following a didactic factory approach searching for synergies towards increasing productivity, quality, performance, well-being and safety.

Section 3 presents a comprehensive summary of the overall CONVERGING Open Pilot Line offer. It outlines the collective value proposition, shared facilities, collaborative technologies, service provisioning, preliminary business model, and joint training plan.

Finally, Section 4 concludes the document by summarizing the significance of Open Pilot Lines in advancing manufacturing technologies and promoting collaboration among industry stakeholders. It reiterates the benefits of these real-scale pilot facilities in driving innovation, experimentation, and prototyping for technological-based companies.

The comprehensive insights presented in this document serve as a valuable resource for manufacturing companies, technology developers, and system integrators to engage with Open Pilot Lines and leverage their capabilities for technological advancements and business growth.

This is an initial proposition done during the design process of the Open Pilot Lines. The evolution of the Open Pilot Lines development will be influenced by the other tasks of the project. Further enhancements in the CONVERGING Open Pilot Lines will be made in the following months, as the Project maturates. The relevant updates will be included in the follow up deliverables (D7.1-M24 and D7.2-M36).