Objective

The growing complexity of modern engineering systems and manufacturing processes is an obstacle to concept and implement Intelligent Manufacturing Systems (IMS) and keep these systems operating at high levels of reliability. Additionally, the number of sensors and the amount of data gathered on the factory floor constantly increases. This opens the vision of truly connected production processes where all machinery data are accessible allowing easier maintenance of them in case of unexpected events. SERENA project will build upon these needs for saving time and money, minimizing the costly production downtimes. The proposed solutions are covering the requirements for versatility, transferability, remote monitoring and control by a) a plug-and-play cloud based communication platform for managing the data and data processing remotely, b) advanced IoT system and smart devices for data collection and monitoring of machinery conditions, c) artificial intelligence methods for predictive maintenance (data analytics, machine learning) and planning of maintenance and production activities, d) AR based technologies for supporting the human operator for maintenance activities and monitoring of the production machinery status. SERENA represents a powerful platform to aid manufacturers in easing their maintenance burdens and for this purpose will be applied in different applications. More specifically, SERENA project will focus on advancing the TRL of the existing developments into levels TRL5 to TRL7. For this purpose, SERENA consortium will fully demonstrate the proposed approach in different industrial areas (white goods, metrological engineering and elevators production) and investigate applicability in steel parts production industry (extended-demonstration activities) checking the link to other industries (automotive, aerospace etc.) showing the versatile character of the project.

Related information
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EU contribution: EUR 533 750

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