DEDALUS

DIRECT ENERGY DEPOSITION MACHINES WITH INTEGRATED PROCESS ALGORITHMS UNDER DEDICATED MONITORING AND CONTROL SYSTEM

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eit Manufacturing

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PRIMA INDUSTRIE

LMS
Laboratory for Manufacturing Systems & Automation

MANUFACTURING AND SOCIETAL CHALLENGE

During the past years, Additive Manufacturing (AD) and more specifically, Direct Energy Deposition (DED) technologies have gained more and more interest in the industry. Although these technologies are thought to have a great potential, they still don't have enough maturity due to the limitations they present. The DEDALUS project is responding to this challenge by means of developing process monitoring and control system for two different DED technologies, Laser Metal Deposition (LMD) and Wire Arc Additive Manufacturing (WAAM).

PROPOSED SOLUTION and EXPECTED RESULTS

The proposed solution and main expected outcome of DEDALUS project is and specific monitoring and control system for both WAAM and LMD technologies. These systems will consist in a set of sensors, different depending on the technology, that could be integrated into any machine together with integrated process knowledge and control increasing both processes reliability and reproducibility. This will allow the introduction of DED technologies in the industry.

Monitoring systems expected during DEDALUS project will no be prepared for commercialization due to its non-continuity during next year. Despite this, some advances have been made during DEDALUS. It is very important to highlight that currently additive manufacturing represents between 10-15% of the total AD and so any little advance in this field could suppose a big difference in the industry on the hole.

ROLE OF EIT and RESULTS

EIT with its funding contribution has collaborated to the early development of the mentioned monitoring systems. Through the way, all partners have gain experience and knowledge about both processes and have been able to define the sensors that will form monitoring systems.

The main results obtained during DEDALUS project: in depth knowledge about processes, selection and first testing of the sensors as well as the development of a simulation tool. As the next year has not been financed, the idea is to find funds for it in another program.

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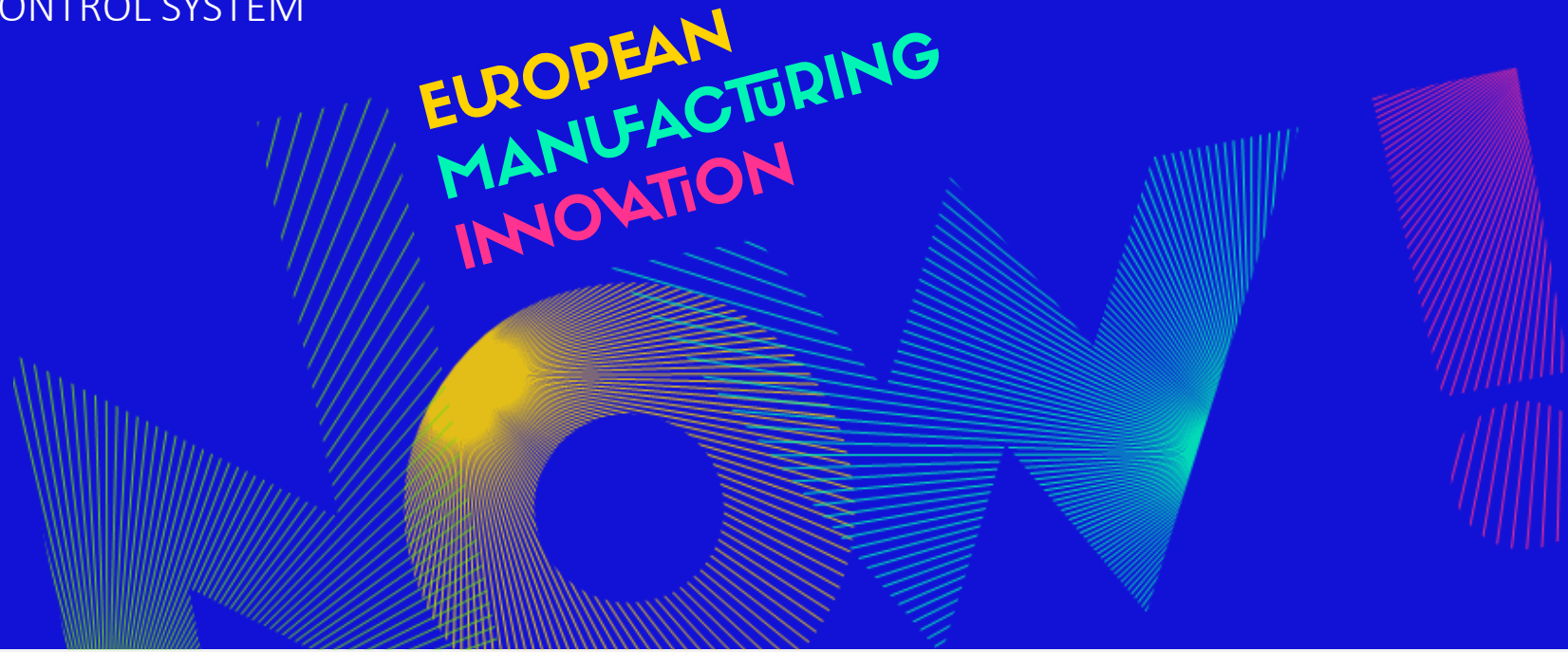

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