ITEA 3

Project Profile

OPTIMUM

Enhance digital manufacturing & material handling

In the field of manufacturing and material handling, the ITEA project OPTIMUM aims to improve aspects of distributed control, context and location awareness, interoperability and 3D engineering. By applying latest technologies to real industrial needs, future industrial software solutions can offer greater efficiency, enhanced safety and improved usability.

ADDRESSING THE CHALLENGE

Manufacturing goods make over 75% of the EU's export volume yet control of the industrial processes continues in a highly centralised and hierarchical manner rather than in a distributed way. Material handling components, e.g. cranes or forklifts, are largely operated manually using extremely heterogeneous hardware. Industry 4.0 concepts, like collaborative or component-based automation, must be embraced as the next stage in manufacturing and material handling, to move forward towards greater software modularity, interoperable frameworks and the realisation of an Industrial Internet of Things (IIoT).

Distributed control & assistance functions for material handling

PROPOSED SOLUTIONS

OPTIMUM (OPTimised Industrial IoT and Distributed Control Platform for Manufacturing and Material Handling) aims to support a range of innovative concepts for engineering, commissioning, control and supervision of smart manufacturing and material handling. Firstly, central control systems will be replaced with intelligent components based on distributed control software. An open, interoperable platform will be designed to ensure modularity, the basis for IIoT. Secondly, controls and applications will be enhanced with context and location awareness, for example collision avoidance, to make industrial manufacturing and material handling safer and more efficient. Thirdly, distributed applications will be enabled via real-time capabilities of devices. To keep the increasingly complex systems manageable by human operators, 3D engineering and common model-based support systems will also be developed. These improve user friendliness, allowing for a smoother migration from manual to (semi-)automatic systems. The consortium's use cases will encompass numerous stakeholders, including IIoT component/platform providers, component manufacturers, localisation software designers and engineering tool providers. All work will be in line with ongoing national, European and international digital manufacturing initiatives.

PROJECTED RESULTS AND IMPACT

Upon completion, the consortium will transfer the results to the wider manufacturing and material handling domains, with the potential to influence standardisation and the move towards digital manufacturing. By increasing the efficiency of industrial processes, businesses will become more competitive while reducing their development costs and consumption of natural resources. Additionally, the adoption of interoperable software and component-based distribution is a gateway into the emerging field of Industry 4.0.

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OPTIMUM

Project start
November 2017

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ITEA is a transnational and industry-driven R&D&I programme in the domain of software innovation. ITEA is a EUREKA Cluster programme, enabling a global and knowledgeable community of large industry, SMEs, start-ups, academia and customer organisations, to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society.

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