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Transform manufacturing for Industrie 4.0

Support harmonious integration of innovative technologies into a holistic manufacturing system for fully connected, automated, and optimised production flow for the Factories of the Future.



DISRUPT is an EU-funded project under the topic H2020-FOF-11-2016 on digital automation. Grant Agreement 723541.

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PROJECT OVERVIEW

DISRUPT aims to spearhead the transition to the next-generation manufacturing by facilitating the vision of a "Smart Factory". The new era of manufacturing requires flexible factories that can be quickly reprogrammed to provide faster time-to-market responding to global consumer demand, address mass-customisation needs and bring life to innovative products.

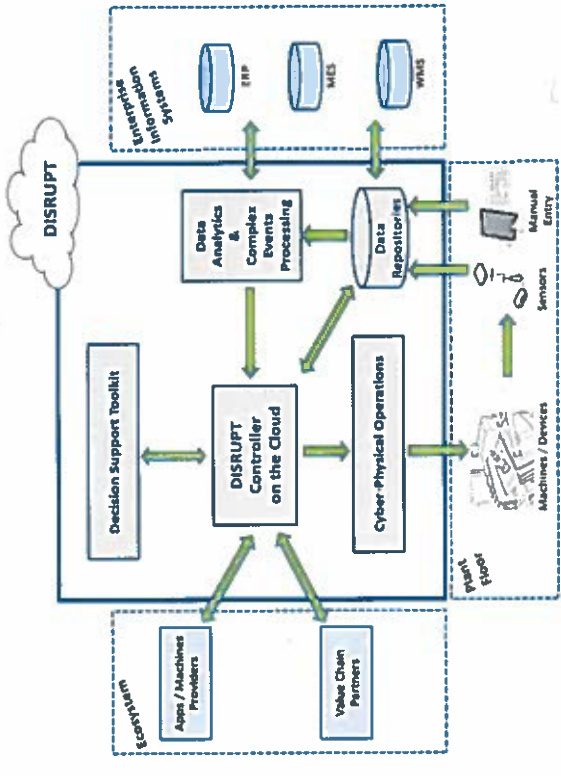
The traditional automation pyramid seems unable to accommodate this transformation. Through DISRUPT this pyramid will be disrupted by utilising the ICT capabilities to facilitate in-depth (self-)monitoring of machines and processes, provide decision support and decentralised (self-)adjustment of production, and foster the effective collaboration of the different IoT-connected machines with tools, services and actors. By doing so, the DISRUPT project will allow seamless communication of information and decisions from and to the plant floor and facilitate efficient interaction with value chain partners.



DISRUPT TECHNOLOGIES

The DISRUPT system architecture is structured in four interrelated and interacting modules, namely:

- The Data Analytics and Complex Event Processing module
- The Cyber-Physical Operations module
- The Decision Support Toolkit
- The DISRUPT Controller on the Cloud



USE CASES

Arçelik: Consumer Electronics

DISRUPT delivers market-driven production reconfiguration, scaling and optimization services to revolutionise the Arçelik production planning. Through offering an integrated toolset, DISRUPT will support manufacturing decisions.

CRF-FCA: Automotive

DISRUPT aims to address the need to ensure business continuity in the ever-changing contemporary manufacturing environment, where production goals are often derailed by late-cycle changes, the use of unqualified and nonstandard parts, unexpected plant floor events.

DISRUPT OBJECTIVES

- **Provide ICT support in manufacturing execution:** offer a multi-sided, cloud-based platform for large corporations and SMEs to optimise business goals
- **Materialise ICT-enabled innovation in manufacturing:** unify automation hierarchy of IoT and CPS production systems under a seamless data-intensive modelling approach
- **Implement modular, decentralised production topologies:** integrate Smart Objects into analytics, simulation and optimisation tools for efficient decision support in the context of plant's virtual production model
- **Devise novel and coherent business models:** sustain individual strategies and visions of manufacturing companies and especially SMEs, while optimising the entire manufacturing chain