Decentralised architectures for optimised operations via virtualised processes and manufacturing ecosystem collaboration

From 2016-09-01 to 2019-08-31, ongoing project

Project details

<table>
<thead>
<tr>
<th>Total cost:</th>
<th>Topic(s):</th>
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<tbody>
<tr>
<td>EUR 3 468 312,50</td>
<td>FOF-11-2016 - Digital automation</td>
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<th>EU contribution:</th>
<th>Call for proposal:</th>
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<tr>
<td>EUR 3 468 312,50</td>
<td>H2020-FOF-2016 See other projects for this call</td>
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<th>Coordinated in:</th>
<th>Funding scheme:</th>
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<tbody>
<tr>
<td>Italy</td>
<td>RIA - Research and Innovation action</td>
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Objective

"Industry 4.0 is the next developmental stage in the organisation of the manufacturing value chain. ICT-based systems will play a major role, mainly by creating a virtual copy of the physical world and facilitating decentralised structures through Cyber-Physical Systems (CPS). Over the IoT, CPS cooperate with each other and humans in real-time. Via the Internet-of-Services, internal and cross-organisational services are utilised by participants of the value chain. DISRUPT aims to spearhead the transition to the next-generation manufacturing by facilitating the vision of a “Smart Factory”. The new era of manufacturing asks for 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. Our concept is to DISRUPT that pyramid by utilising the capabilities offered by modern ICT to facilitate (i) in-depth (self-)monitoring of machines and processes, (ii) decision support and decentralised (self-)adjustment of production, (iii) effective collaboration of the different IoT-connected machines with tools, services and actors (iv) seamless communication of information and decisions from and to the plant floor and (v) efficient interaction with value chain partners. Within DISRUPT, each element of production is controlled via the IoT by its virtual counterpart. The data collected is analysed to detect complex events that trigger automated actions. DISRUPT offers a set of decision support tools based on three core modules (modelling, simulation and optimisation) and a secure and flexible "plug-n-play" platform that will allow engineers from different disciplines to collaborate in developing services. It will be cloud-based to accommodate the anticipated high data volume and computational needs, while offering accessibility via any device anywhere in the world."
Coordinator

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**EU contribution:** EUR 483 500

**Activity type:** Research Organisations

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**EU contribution:** EUR 376 562,50

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

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**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

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**EU contribution:** EUR 397 500

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

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**EU contribution:** EUR 387 250

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

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EU contribution: EUR 412 750

Activity type: Higher or Secondary Education Establishments
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Last updated on 2017-07-28
Retrieved on 2018-07-21

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