

Flexible and
Autonomous
Manufacturing Systems
for Custom-Designed
Products



FASTEN

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This project has received funding from SEPIN/MCTI under the 4th Coordinated Call BR-EU in CIT and from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement Nº 777096



FASTEN

Flexible and Autonomous Manufacturing
Systems for Custom-Designed Products

Coordinators

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Joint EU-BR Calls

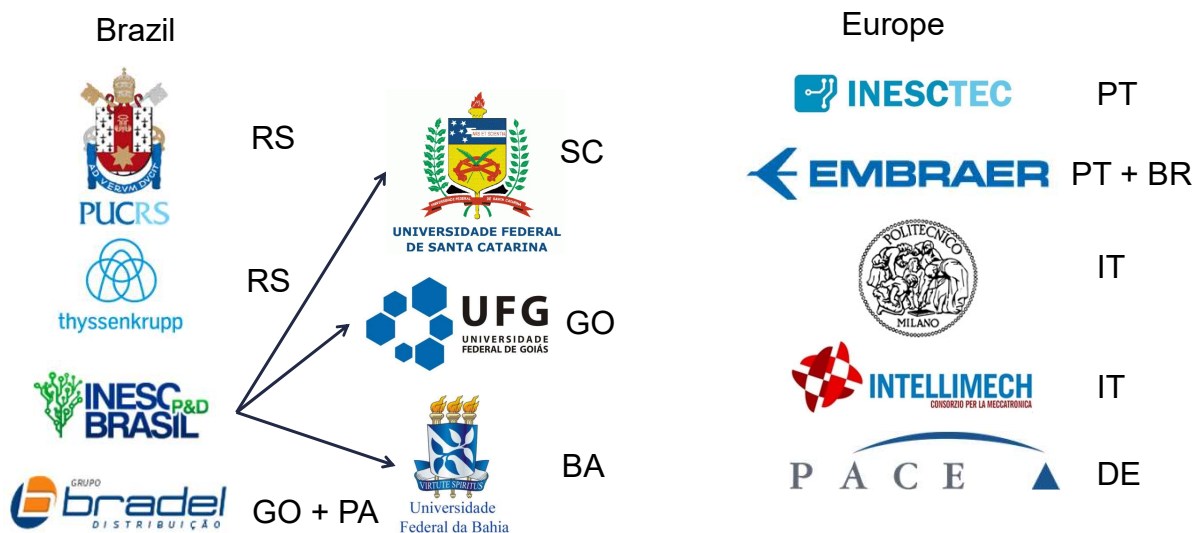
- IoT Pilots - EUB-02-2017
 - Smart Manufacturing: Customization
 - Continuous additive manufacturing
 - Flexible automation for robot manufacturing
 - Robot systems for additive manufacturing
 - Production of one-of-a-kind customer designs; and dynamic production systems and shop floors - mobile robot for efficient and flexible use in cleanrooms

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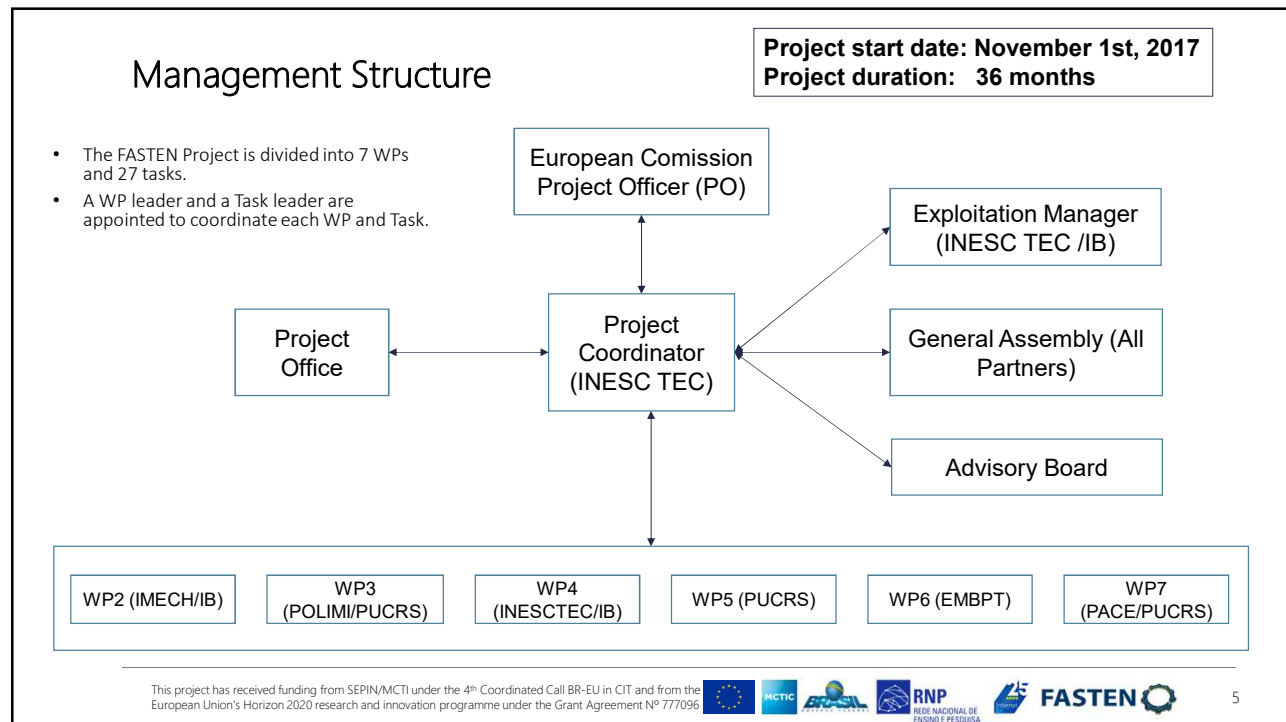
Project Partners



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a. Challenges being addressed

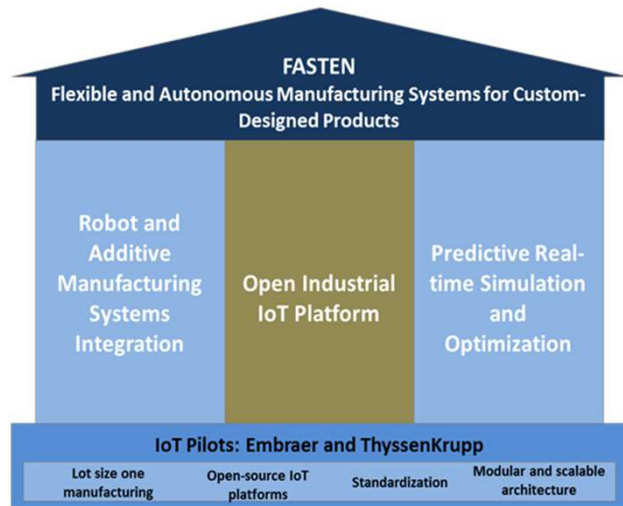
- Develop and demonstrate a flexible and scalable robotic system and its integration with mass customization production lines
- Standardize data repository and decision-making integration, from end-users (consumers) services to the manufacturing and supply levels
- Optimize, synchronize, and improve the coordination in real-time of the production and logistic activities
- Validate and demonstrate the FASTEN Framework in two cross-sectorial industrial pilot cases
- Improve the overall supply-chain performance and decision-making effectiveness
- Validate technology and IoT architectures

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b. Objectives



- Foster digital manufacturing sustainability and be an enabler of technology development between Brazil and Europe
- Provide a multi-disciplinary decision support tool that will improve the trade-off analysis
- Contribute to the competitiveness of Brazilian and European industries

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c. FASTEN Impact

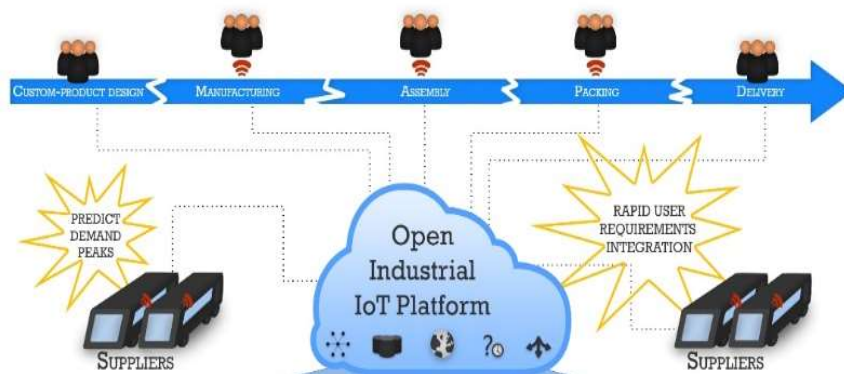
- Promote and speed up the adoption of Industry 4.0, fostered by additive manufacturing and IoT solutions, both on the Brazilian and European scenarios
- Propose a sustainable approach to the manufacturing industry improvement, with highly efficient energy management designs, reduced raw material consumption, improved scheduling approaches

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d. Approaches

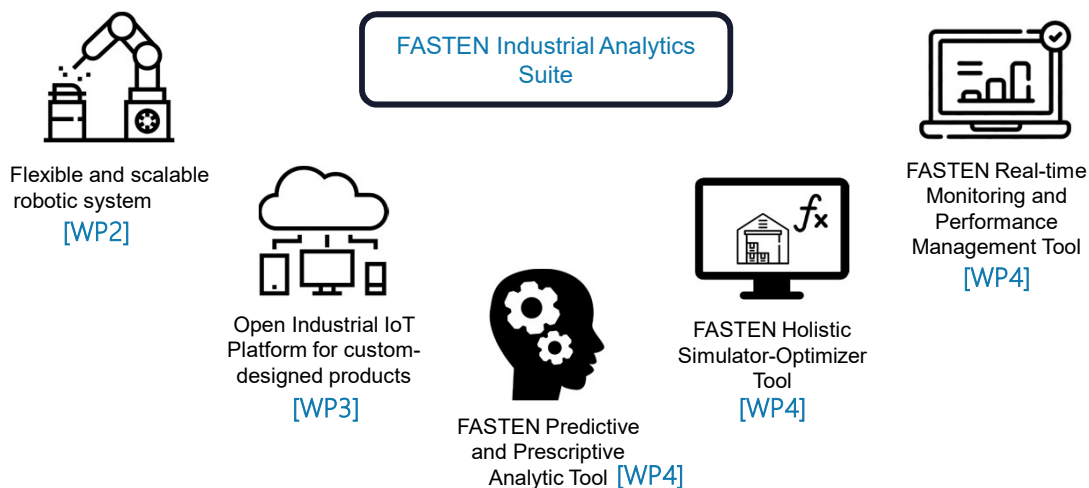


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d. Approaches

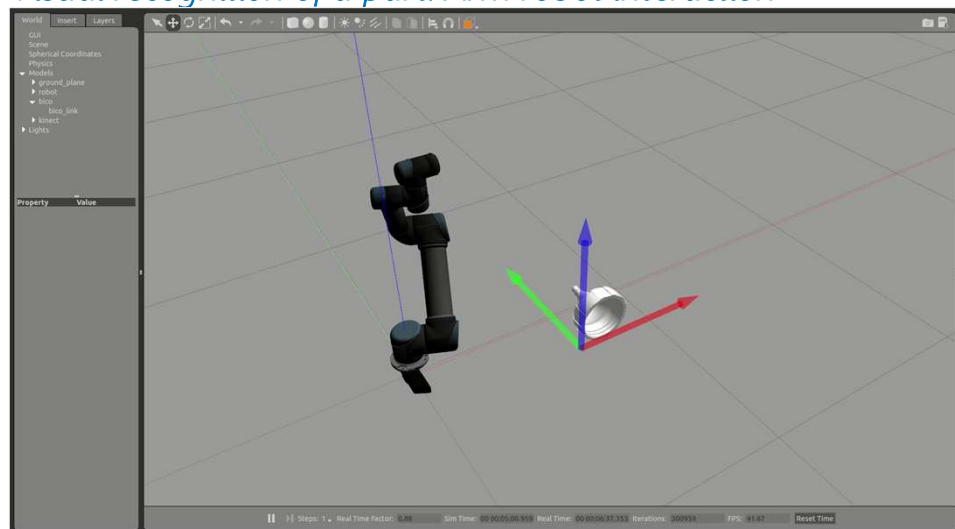


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d. Approaches – WP2 – Flexible and scalable robotic system –
Visual recognition of a part: Arm robot interaction

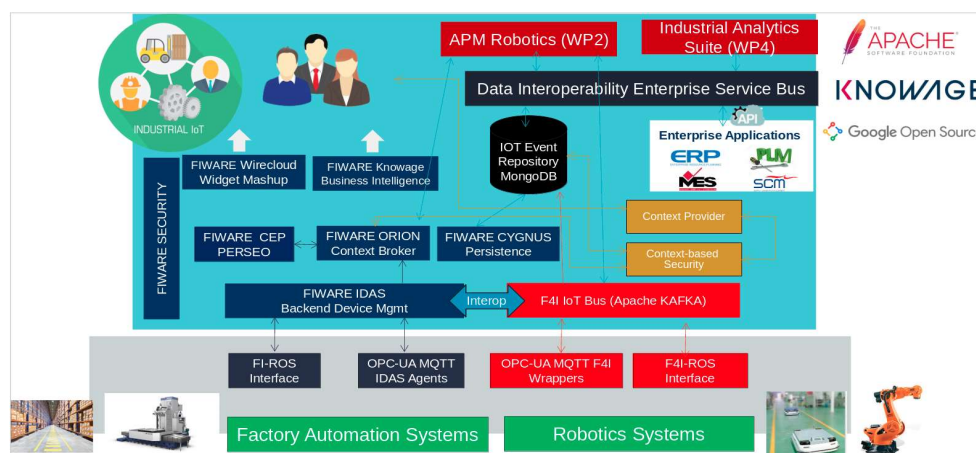


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d. Approaches – WP3 – Open Industrial IoT Platform for
 custom designed products – *Context Provider and Context-
 based Security modules integration*

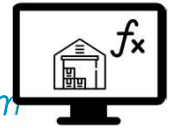


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d. Approaches – WP4 – Predictive Real-time Simulation and Optimization – *Design and simulation of the supply chain system*



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e. Roles and contributions: Embraer and ThyssenKrupp

1. Offer a real-workshop environment test zone and adequate infrastructure
2. Provide access to production facilities
3. Give support on the assessment of the industrial constraints
4. Identify relevant technical challenges
5. Contribute in the use case requirement definition and system integration

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Thank you!

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