

Objective FoF-ICT-2011.7.3

Virtual Factories and enterprises

EXTRACT FROM WORK PROGRAMME 2011



Challenge 7: ICT for the Enterprise and Manufacturing

The Factories of the Future (FoF) initiative is part of the European Economic Recovery Plan launched in November 2008 to respond to the global economic crisis. This Public-Private-Partnership (PPP) aims at helping EU manufacturing enterprises, in particular SMEs, to adapt to global competitive pressures by improving the technological base of manufacturing across a broad range of sectors. The ICT contribution to this initiative aims at improving the efficiency, adaptability and sustainability of manufacturing systems as well as their better integration within business processes in an increasingly globalised industrial context. Challenge 7 is fully dedicated to supporting the FoF PPP.

The Challenge includes the areas:

- 'Smart factories' including application experiments of control and sensor-based systems, laser systems and industrial robots.
- 'Manufacturing solutions for new ICT products' addressing manufacturing processes for Organic Large Area Electronics (OLAEs) and organic photonics.
- ➔ **'Virtual factories and enterprises'** addressing end-to-end integrated ICT allowing for innovation and higher management efficiency in networked operations and supporting the emergence of 'smarter' virtual factories and enterprises.
- 'Digital manufacturing' including products life cycle management, modelling, design and optimisation.

Research addressing this Challenge in particular will encourage international cooperation under the Intelligent Manufacturing Systems (IMS) scheme.

Virtual Factories and enterprises

This objective focuses on end-to-end integrated ICT solutions that enable innovation and higher management efficiency in networked enterprise operations.

Projects are expected to be industry-driven and to contain a strong validation element with quantifiable targets.

Target Outcomes

a) **Distributed, adaptive, and interoperable virtual enterprise environments** for business innovation, extensive monitoring, evaluation, forecasting, risk assessment and prevention, e.g. through collaborative business intelligence, productivity, knowledge management and/or mixed reality tools. R&D should aim at integrating novel management

methods and ICT to help virtual factories and enterprises move beyond existing operational capability.

b) **Real-time management of volatile manufacturing assets:** ICT tools and applications to support end-to-end management of tangible and intangible assets (e.g. inventories, stakeholder relationships, product configurations, production knowledge, skills) across the entire value

chain. Proposed solutions should be validated for scalability, interoperability, reliability, and security.

c) **Component based tools and architectures enabling the innovative dynamic composition of services** for product operation (maintenance, reliability, upgrades), and end-of-life use (re-manufacturing, recycling, disposal). The proposed solutions should help achieve efficient and sustainable lifecycle management of products and services.

d) **Internet based, user centric collaboration, sharing and/or mixed reality tools** supporting the emerging networked enterprise concepts. They should enable new manufacturing business models and practices that enhance and sustain the value of products and services (including value-added, service-enhanced products) by involving all relevant stakeholders in the innovation process, from R&D and design phases to after-sales.

Expected Impact

- Higher management efficiency of networked and sustainable business operations.
- ICT tools enabling the participation of SMEs in virtual factory environments.
- New business models and innovation scenarios for a low-carbon economy.

Funding Schemes

IPs/STREPs

Indicative Budget Distribution

EUR 45 million, with a minimum of 50% to IPs and 30% to STREPs

Call (published July 20, 2010; deadline for submission of proposals: December 2, 2010)

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For further information:

- INFSO-FOF@ec.europa.eu
- http://ec.europa.eu/research/industrial_technologies/lists/factories-of-the-future_en.html
- http://cordis.europa.eu/fp7/ict/micro-nanosystems/ict-for-fof_en.html
- http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7DetailsCallPage&call_id=3339&act_code=ICT&ID_ACTIVITY=3