

**Work Programme 2014/15  
(LEIT-ICT for Factories of the Future)**

**New funding opportunities in ICT for  
Manufacturing in 2015**

**Milan– June 30, 2014**

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European Commission - DG CONNECT – A3

# ICT support to FoF cPPP in 2015

## – Call Planning

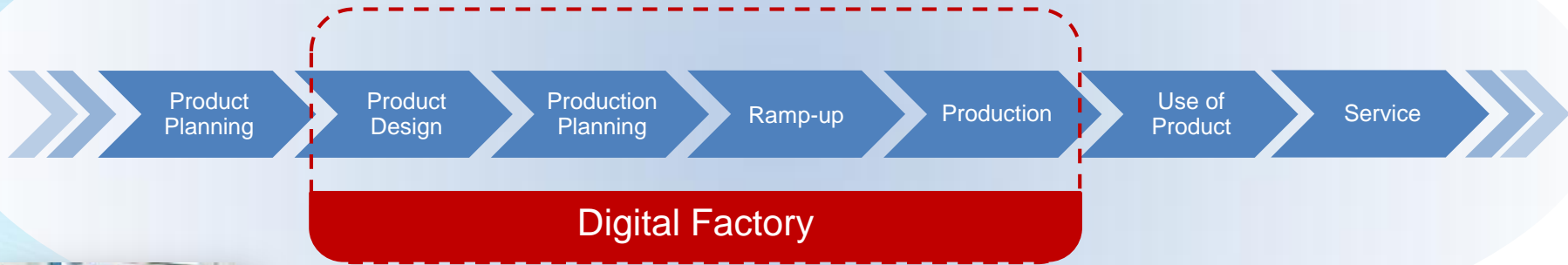
LEIT - FOF		2015
ICT-enabled modelling, simulation, analytics and forecasting technologies	FoF8	31
		1
ICT Innovation for Manufacturing SMEs (I4MS)	FoF9	35
		1
		68

Overall tentative budget: EUR 68 million from the year 2015 budget

Instruments: CP100: 100% of eligible costs  
 CP70: 70% of eligible costs  
 CSAs

# Modelling, simulation, analytics & forecasting

## CAX



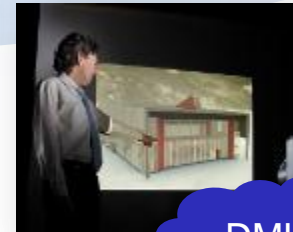
CAD



CAE  
(CFD, FEA,  
...)



CAPP



CAM



Virtual  
Training

DMU

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# Obj. FoF8 ICT-enabled modelling, simulation, analytics and forecasting technologies

31\* M€

## What we ask for : Research and Innovation Actions - main themes

1. Innovative modelling, simulation, analytics and forecasting tools for manufacturing at large, building on advances in ICT.

Tentative deadline  
Feb 2015

- ✓ driven by industrial use-cases
- ✓ including proof-of-concept/demo for validation on real process chains.

2. Integrated modelling, simulation and information management systems benefiting from recent advances in ICT.

- ✓ including pre-normative/standardisation activities
- ✓ reference implementations and demonstration and validation in min two industrial use cases

\*the budget is intended to be tentative

# Obj. FoF8 a) Innovative modelling, simulation, analytics and forecasting tools for manufacturing

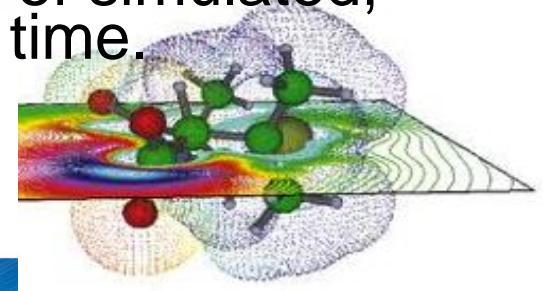
## What we ask for : Research and Innovation Actions (1)

Small projects (2-4 M€)

100% funding

- i. **Modelling and simulation methods for multiple phenomena** (physical, mechanical, energetic, chemical, energy, material characteristics, cost, ...) which include multi-scale and integrated discrete/continuous models, multidisciplinary and multi-objective design optimisation tools taking a holistic approach;

New developed methods can integrate virtual and physical experiments building on the combination of simulated, experimental, and real world data in real time.





# Obj. FoF8 a) Innovative modelling, simulation, analytics and forecasting tools for manufacturing

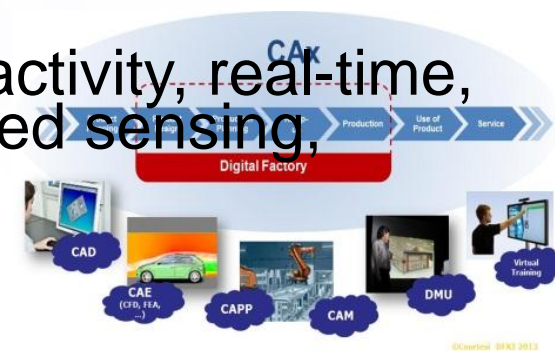
## What we ask for : Research and Innovation Actions (2)

Small projects (2-4 M€)

100% funding

- ii. Development of **integrated knowledge-based systems** covering the full product life-cycle which are based on advanced analytics, smart decision support systems and self-learning capabilities exploiting "big data" coming from smart sensors, historical process files, or human-authored data;

Important aspects to be addressed are interactivity, real-time, data-fusion, imprecise computing, compressed sensing, advanced visualisation, security and privacy.



# Obj. FoF8 b) Integrated modelling, simulation and information management systems

What we ask for : Research and Innovation Actions (3)

Large projects (5-8 M€)

100% funding

- I. **Integrated information management systems for product-process-production systems** that are well embedded into their social, environmental and economic context.
  
- II. **Advanced computer aided technologies (CAx)**, modelling, simulation and decision support toolboxes tailored **for novel manufacturing processes**, e. g. laser-based and additive manufacturing.

- ✓ including pre-normative/standardisation activities
- ✓ reference implementations and demonstration and validation in min two industrial use cases

# Obj. FoF8 ICT-enabled modelling, simulation, analytics and forecasting technologies

**What we ask for : Support Action (CSA)**

1\* M€

Main tasks include:

- Roadmapping activities and constituency building for novel concepts in manufacturing enabled by ICT on
  - ✓ wider adoption of virtual, integrated, scalable, semantic factory models
  - ✓ merging design and production models
  - ✓ integrating novel ICT for creativity
- Stimulating EU-US cooperation on research and innovation related to modelling and simulation

\*the budget is intended to be tentative



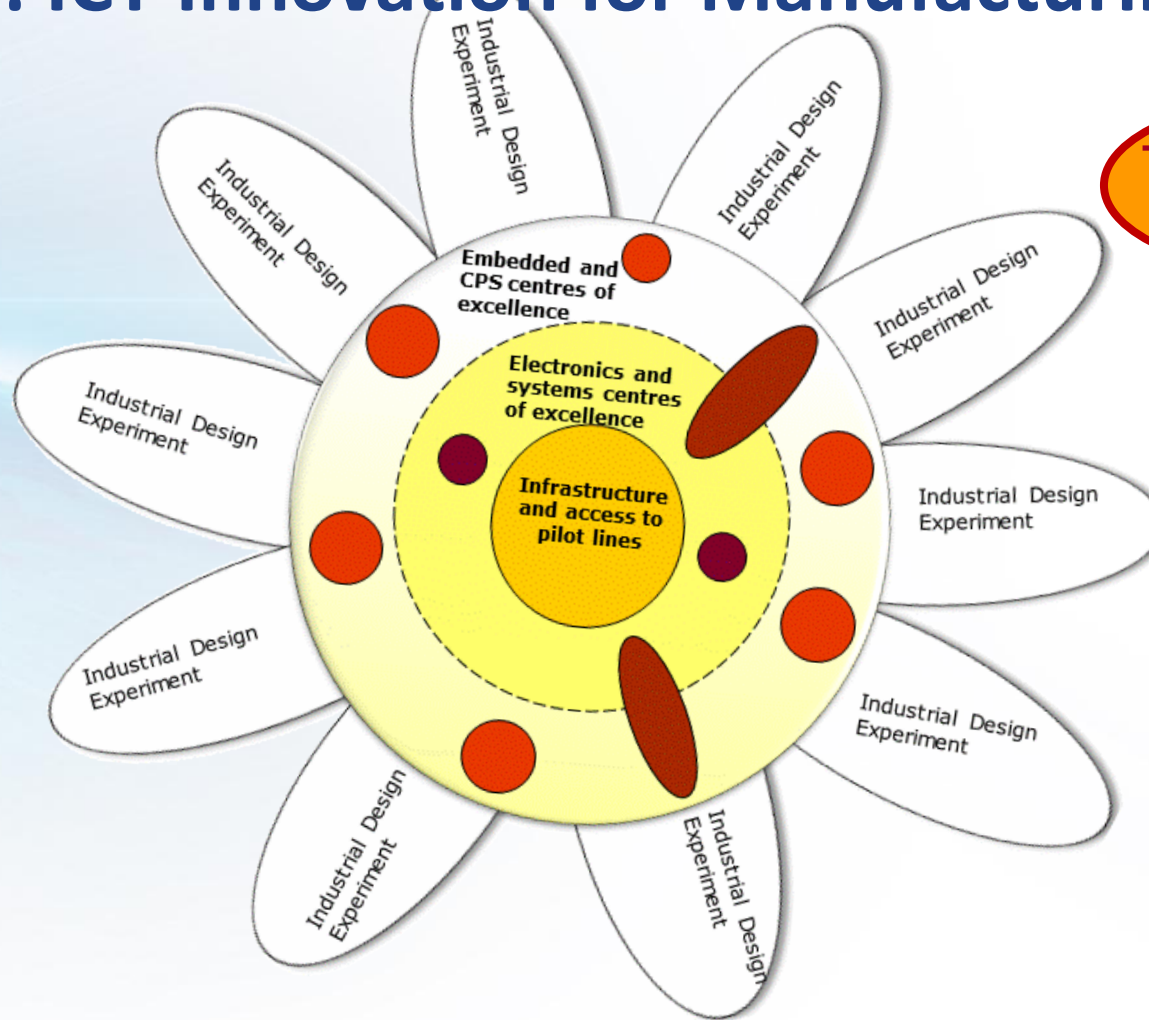
# Obj. FoF8 ICT-enabled modelling, simulation, analytics and forecasting technologies

## Expected impact:

- **Increased productivity** for higher mass customization capacity for big enterprises as well as SMEs
- **Improved cost efficiency, accuracy, reliability and speed** of simulation for manufacturing processes and products
- **Reduced time to production** enabled by tool interoperability and data integration
- **Enhanced interoperability** of integrated product and production systems **enabling new type of services** (e. g. data analysis, simulations and visualization techniques)

# Obj. FoF9 I4MS – Phase II

## I4MS: ICT Innovation for Manufacturing SMEs



**Tentative budget  
35 M€**

**Innovation action: Large projects (5-8 M€) - 70% funding**

# Obj. FoF9 - 2015 - I4MS – Phase II

## ICT Innovation for Manufacturing SMEs

What we ask for : Innovation Actions in the following areas of technologies

Tentative deadline:  
Feb 2015

Large projects (5-8 M€)

70% funding

- Highly flexible and near-autonomous **Robotics** systems

Application experiments



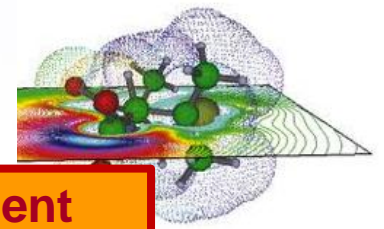
- HPC Cloud**-based modelling, simulation and analytics services for modelling multiple interconnected phenomena

Application experiments



- Integration of **CPS modules** in manufacturing processes and process chain

Application/Assessment experiments



# Obj. FoF9 - 2015 - I4MS – Phase II

## ICT Innovation for Manufacturing SMEs

### Expected impact:

- **Attract new users** of advanced ICT in the manufacturing sector
- **Innovative technology suppliers** to provide with new equipment, components, and tools for improved manufacturing and engineering operations
- **More competitive European service providers** provisioning new types of services
- Exploration of **new application areas for advanced ICT in manufacturing** at large

**In particular,  
SMEs**



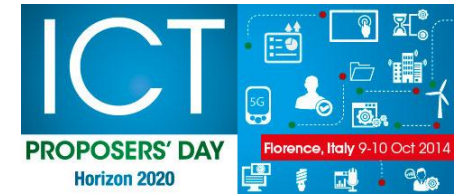
# Next events

- ICT Proposers day – 9-10 October 2014 – Florence (Italy)

<http://ec.europa.eu/digital-agenda/en/ict-proposers-day-9-10-october-2014>

- FoF Infoday – 21 October 2014 – Brussels

[http://ec.europa.eu/research/industrial\\_technologies/information-day-for-ppp-2014\\_en.html](http://ec.europa.eu/research/industrial_technologies/information-day-for-ppp-2014_en.html)





# THANK YOU

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DG CONNECT (FoF on DAE Web):

<http://ec.europa.eu/digital-agenda/en/smart-manufacturing>

Horizon 2020 on the web:

[http://ec.europa.eu/research/horizon2020/index\\_en.cfm](http://ec.europa.eu/research/horizon2020/index_en.cfm)

LEIT ICT-FoF-8 call on the web:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2187-fof-08-2015.html>