

INFO DAY - Infso D4

08 October 2010, Brussels

The Factories of the Future ICT Objectives 7.4

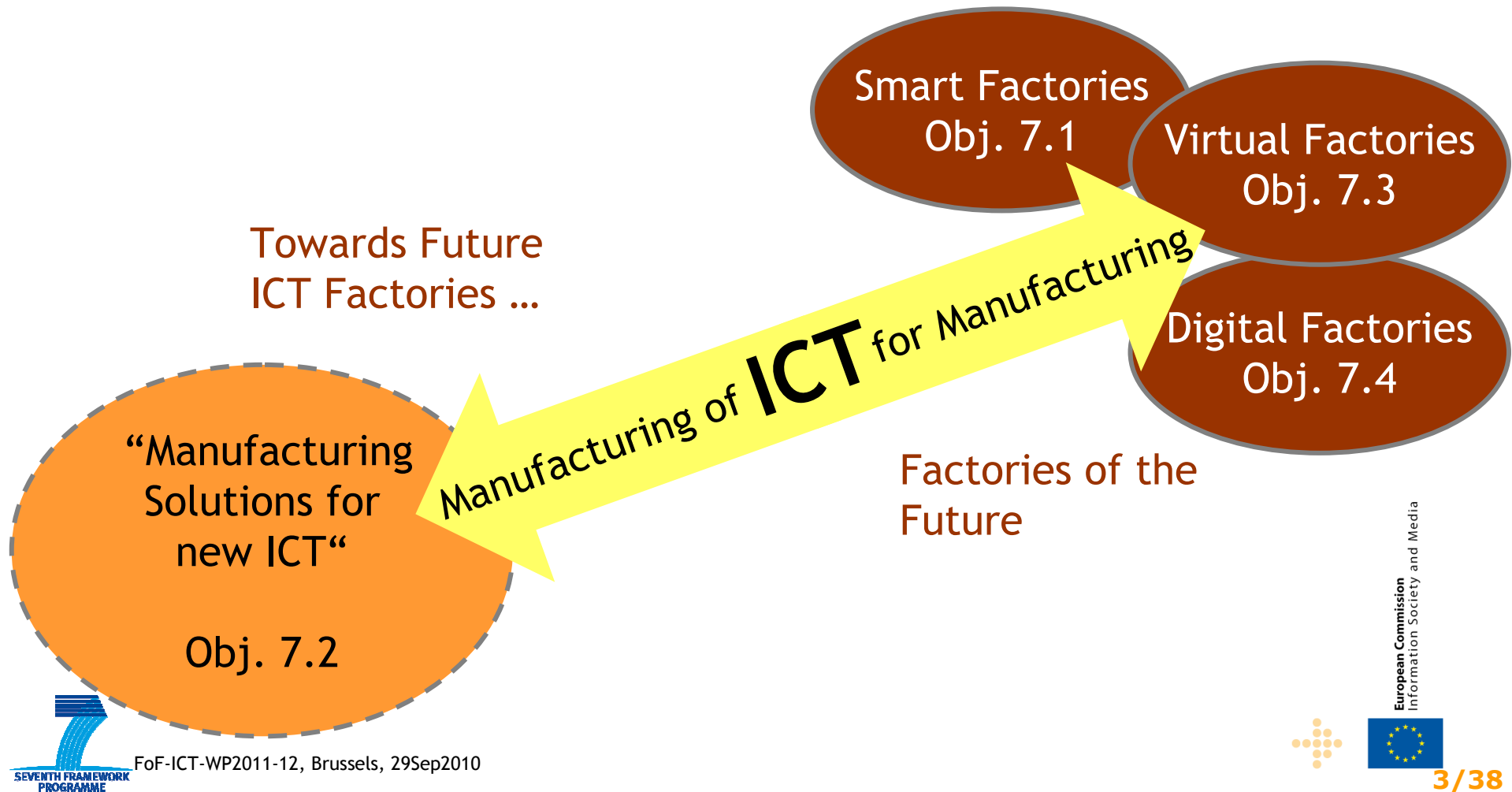
Erastos Filos, FoF ICT Coordinator
Rolf Riemenschneider, 7.4 Coordinator

Email: INFSO-FOF@ec.europa.eu

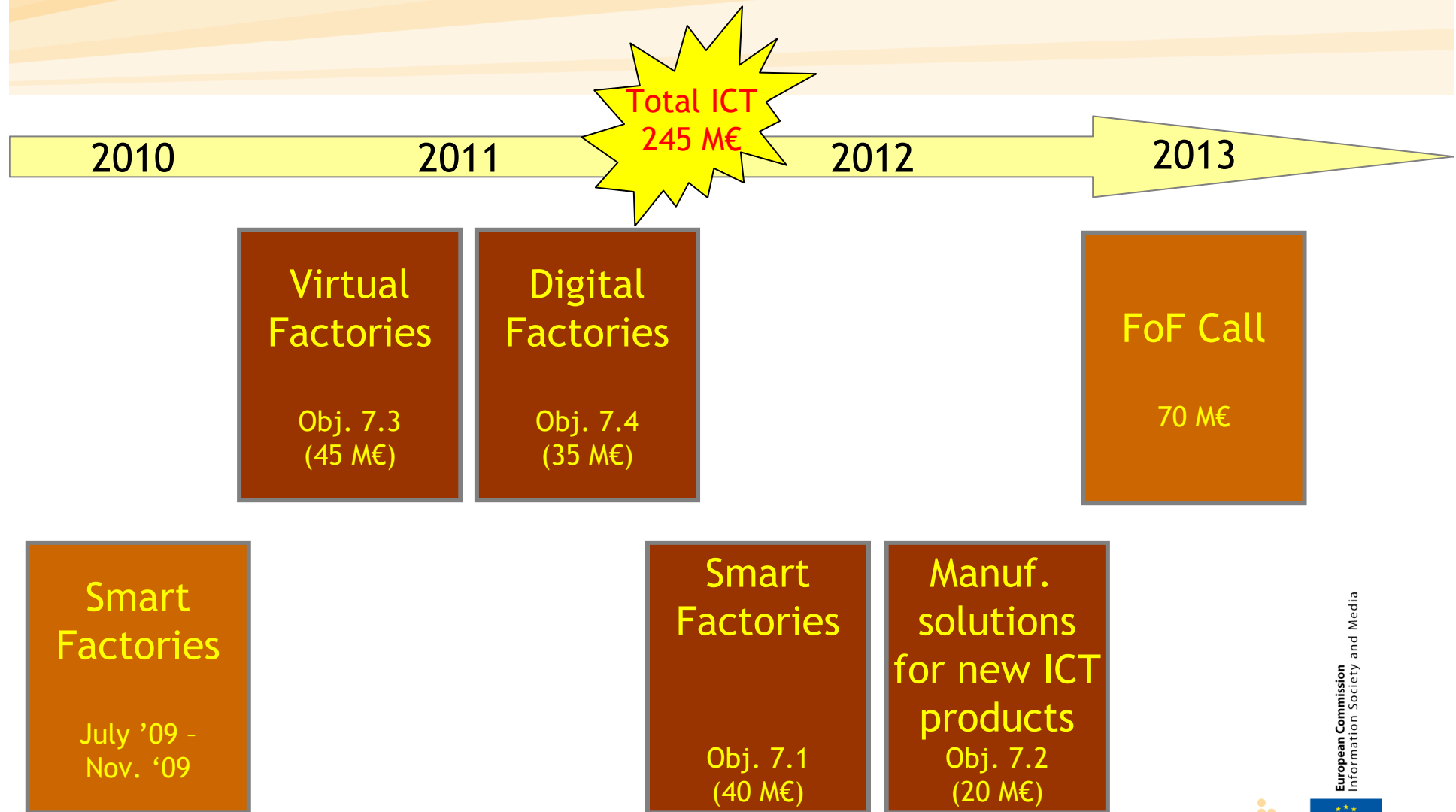


- FoF: Challenge 7
- The FoF ICT Calls in 2011
 - Obj. FoF-ICT-2011.7.3 Virtual Factories and enterprises
 - Obj. FoF-ICT-2011.7.4 Digital factories: Manufacturing design and PLM
- General remarks, Useful links

ICT Work Programme 2011-12: Challenge 7



Factories of the Future & ICT Work Programme



Challenge 7: ICT for Enterprise and Manufacturing

Research objectives:

- 7.1: Smart Factories: Energy-aware, agile manufacturing and customisation (*FoF-2012*)
- 7.2: Manufacturing solutions for new ICT products (*FoF-2012*)

- 7.3: Virtual Factories and enterprises (*FoF-2011*)
- 7.4: Digital factories:
Manufacturing design and product lifecycle management (*FoF-2011*)

- FoF: Challenge 7

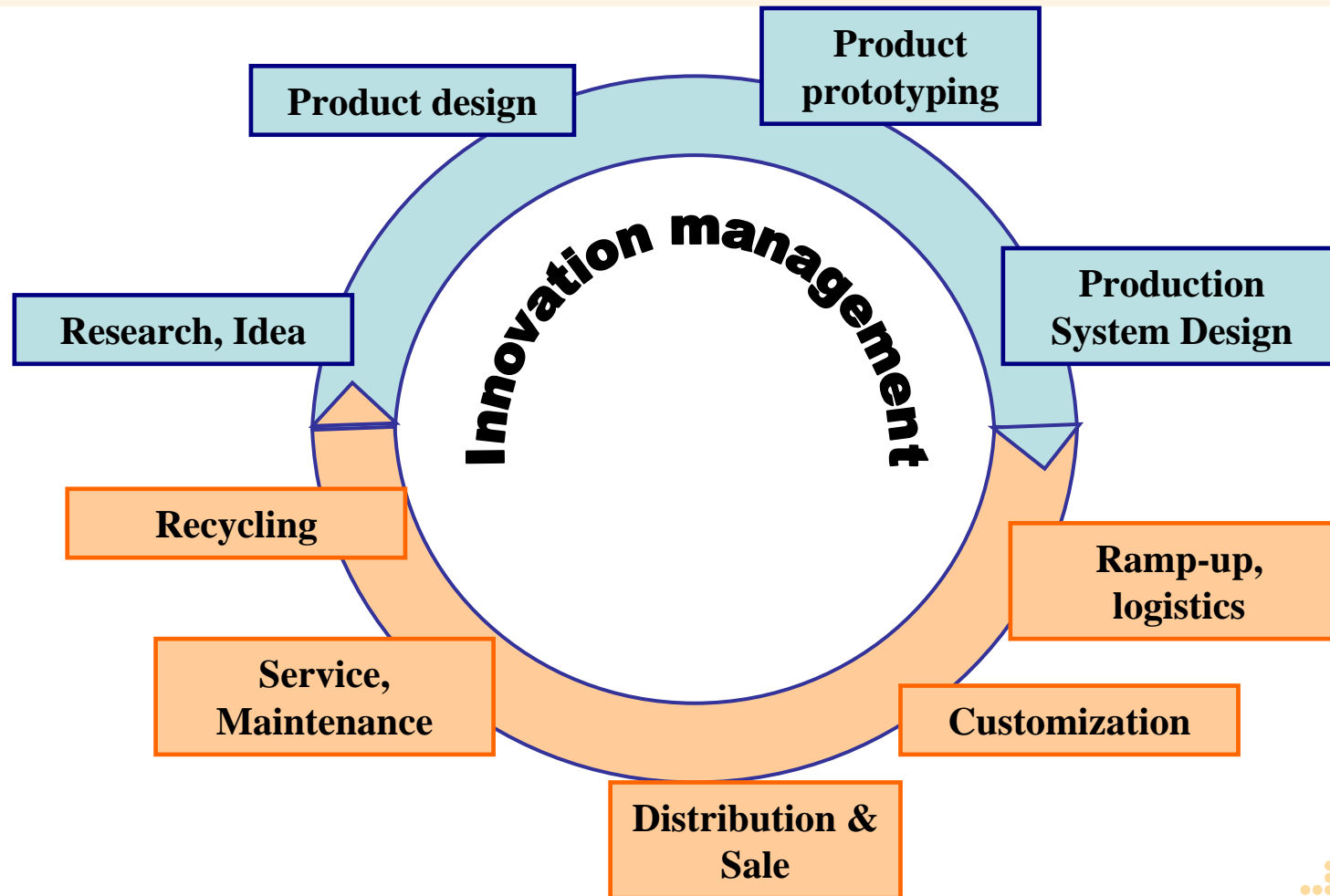
- The FoF ICT Calls in 2011

- Obj. FoF-ICT-2011.7.3 Virtual Factories and enterprises

- Obj. FoF-ICT-2011.7.4 Digital factories: Manufacturing design and PLM

- General remarks, Useful links

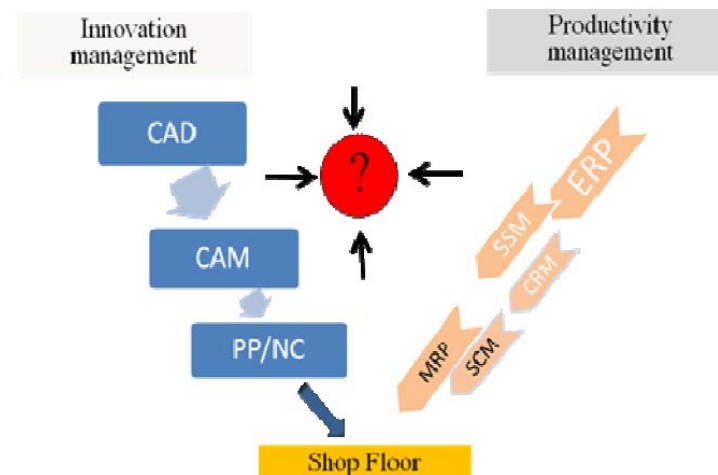
Challenges for Product Life Cycle Management



FoFdation: The Foundation for the Smart Factory of the Future

Engineering platform and standards to bridge
PLM, SCM, ERP and SCADA automation

- Aerospace (Airbus) & automotive domain (FIAT)
- A universal manufacturing information system based on open data exchange standards (e.g. STEP-related) for CNC automation



Courtesy: FoFdation project

Objective 7.4: Digital Factories

Manufacturing design & product lifecycle management

Where do we stand?

- PLM market size: 15 B\$/yr
- Market dominated by “island solutions”
- Key industry players: Dassault Systèmes, Delcam, Siemens PLM Systems, SAP, Eigner+Partner, many high-tech SMEs
- EU leadership threatened by competitors from the USA & India
- Today’s complex products (e.g. avionics) require thorough testing at early (digital) prototype stage

What do we want to achieve & why?

- Strengthen EU competence
- Reinforce EU leadership in knowledge-driven platforms, tools, methodologies, product development & manufacturing design
- New products to be realised with shorter time-to-market, shorter time-to-production
- Improve drastically accuracy, reliability & speed of products/process simulation techniques, permitting design decisions earlier (thus reducing costs)

Objective 7.4: Digital Factories

Manufacturing design & product lifecycle management

Target outcomes

a. Comprehensive engineering platforms

- Cross-disciplinary information sharing, workflow integration, knowledge capture

b. Simulation & virtual prototyping tools for product/process design

- E.g. better models with forward & backward compatibility, model auto-generation, meshing, optimisation
- Combination of cross-disciplinary models such as CAD, CAE, VR, volume, fluid, structure, polygonal and process models

c. Holistic modelling & simulation of full complex products/processes

- With multi-physics features, allowing tolerance changes
- Product/process behaviour simulation from micro to macro scale

Call FoF/2010 35 M€ IPs/STREPs/CSA

- **CP 33,5 M€** of which 50% to IPs; 30% to STREPs
- **CSA 1,5 M€** for c. only

Expected impacts

- Reinforced European leadership in knowledge-driven platforms, tools, methodologies, product development and manufacturing.
- Accelerated product design and manufacturing, enabling new products to be realised with a considerably shorter time-to-production and time-to-market.
- Drastically improved accuracy, reliability and speed of simulation techniques for manufacturing processes and/or full complex products permitting design decisions earlier in the design process.

- FoF: Challenge 7
- The FoF ICT Calls in 2011
 - Obj. FoF-ICT-2011.7.3 Virtual Factories and enterprises
 - Obj. FoF-ICT-2011.7.4 Digital factories: Manufacturing design and PLM
- General remarks, Useful links

FoF ICT Objectives 7.3 & 7.4

Must Have

- “Virtual Factories” (7.3) focus:
 - Integration of the distributed manufacturing enterprise (incl. supply chains)
 - Integration of products & services
 - Management of volatile manufacturing assets
- “Digital Factories” (7.4) focus:
 - Engineering platforms
 - Tools for simulation & virtual prototyping
 - Tools for complex products & process modelling & simulation

- **Proposals must:**
 - use advanced ICT-based technologies in production
 - be industry-driven
 - have a strong validation element with quantifiable targets
- “Downstream research”:
 - Industrial implementation horizon 2013-15

**Closing:
02 Dec,
2010**

Call Topics NMP programme FP7-FOF-NMP-2011

- **Attention: Different Instruments** (*Large, Small, SMETargeted*)
 - **FoF.NMP.2011-1**
The eco-factory: cleaner and more resource-efficient production in manufacturing - Large
 - **FoF.NMP.2011-2**
Cooperative machines and open-architecture control systems - Small
 - **FoF.NMP.2011-3**
Robots for automation of post-production & other auxiliary processes - Small
 - **FoF.NMP.2011-4**
High tech solutions in the production processes for customised, green, safe and healthy consumer products - SMETargeted
 - **FoF.NMP.2011-5** Towards zero-defect manufacturing - Large
 - **FoF.NMP.2011-6**
Manufacturing chains for nano-phased components and coatings - Large



Up-coming events

- **PAST - ICT Conference Sept 2010**
http://ec.europa.eu/information_society/events/ict/2010/
 - Networking - **room 1101 - 11 a.m.**
Towards Lean and Sustainable Manufacturing
 - Proposers session - **room T 007 - 14.00h**
Manufacturing Design & PLM (Digital Factories)

- **FoF beyond 2013: Which role for ICT?**
 - 14 October 2010, Brussels

- **ICT Proposers' Day 2011**
 - 19 - 20 May 2011, Budapest

Thank you

FoF on the web:

http://ec.europa.eu/research/industrial_technologies/lists/factories-of-the-future_en.html

FoF ICT projects launched in 2010:

http://cordis.europa.eu/fp7/ict/micro-nanosystems/docs/ict-fof-project-summaries-2010_en.pdf

FoF call & contacts:

<http://cordis.europa.eu/fp7/dc/>

7.3 Objective: Christina.Martinez@ec.europa.eu
Erastos.Filos@ec.europa.eu

7.4 Objective: Rolf.Riemenschneider@ec.europa.eu
Alkis.Konstantellos@ec.europa.eu
Erastos.Filos@ec.europa.eu