



Establishing Thematic Group for  
**Nanotechnology and New  
Production Technologies**  
- Virtual/Rapid Prototyping/  
Manufacturing -

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This Project is funded by the EU

## Factory of the Future (PPP)



### FP7 INFORMATION DAYS for PPP

11+12 July 2011 in Brussels

[http://ec.europa.eu/research/industrial\\_technologies/fp7-information-day-for-ppp-2011\\_en.html](http://ec.europa.eu/research/industrial_technologies/fp7-information-day-for-ppp-2011_en.html)

### IMS (Intelligent Manufacturing Systems)

An industry-led, global, collaborative research and development programme, started in 1995 as the world's only multilateral collaborative R&D framework.

[http:// www.ims.org](http://www.ims.org)



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## ICT WORKPROGRAMME 2011



### 6.7 Challenge 7: ICT for the Enterprise and Manufacturing

#### **Objective FoF-ICT-2011.7.1 Smart Factories: Energy-aware, agile manufacturing and customisation [40 MEuro]**

Demonstration and benchmarking of novel process automation and control (for discrete, continuous or batch industries) [IP]

Large-scale validation of advanced industrial robotics systems [STREP]

Applications based on factory-wide networks of intelligent sensors and new metrology tools and methods [IP]

Lasers and laser systems for manufacturing and materials [STREP]



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## ICT WORKPROGRAMME 2011



#### **Objective FoF-ICT-2011.7.2 Manufacturing solutions for new ICT products [ 20 M Euro ]**

Feasibility demonstrators for industrial, low cost, high volume and high throughput manufacturing processes and production of organic and large area electronics and photonics products. [IP]



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## NMP Workprogramme 2012



**NMP.2012-1** Adaptive production systems and measurement and control equipment for optimal energy consumption and near-to-zero emissions in manufacturing processes [IP]

**NMP.2012-2** Methodologies and tools for the sustainable, predictive maintenance of production equipment [SME STREP]

- Developing R&M (Reliability & Maintainability) design practices/methods
- Developing and integrating of advanced and generic embedded information devices
- Defining new algorithms and techniques based, for example, on Artificial Intelligence and Data Mining methodologies
- “SMEs should have the decision making power in the project management”



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## NMP Workprogramme 2012



**NMP.2012-3** Intelligent production machines and 'plug-and-produce' devices for the adaptive system integration of automation equipment, robots and other intelligent machines, peripheral devices, smart sensors and industrial IT systems [SME STREP]

- Scalable extension of the system capabilities through addition of new components;
- Reconfiguration of the system functionality whenever new components are brought into it;
- Reuse of manufacturing equipments on all levels;
- Migration and transition of the manufacturing systems to modern architectures;
- Customisation of products by flexible manufacturing.
- “SMEs should have the decision making power in the project management”



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## NMP Workprogramme 2012



**NMP.2012-4** New high-performance manufacturing technologies in terms of efficiency (volumes, speed, process capability etc), robustness and accuracy [DEMO]

**NMP.2012-5** High precision production technologies for high quality 3D micro-parts [STREP]



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## NMP Workprogramme 2012



**NMP.2012-6** Knowledge based tools and approaches for process planning and integrated process simulation at factory level [STREP]

- Development of platforms and tools ... for non-linear process planning.
- New tools and methodologies for robust optimisation of process chains
- New tools which for optimisation and monitoring of manufacturing processes ...
- Design of structures to support processes of human-system interaction, ...



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## NMP Workprogramme 2012



### **NMP.2012-7** New technologies for casting, material removing and forming processes [DEMO]

- sustainable, low resource consuming, flexible and high performance processes at low cost
- The recycling aspect is also a key issue for future manufacturing processes
- New process technologies are needed to support casting and forming processes, material removing ...
- New materials pose new challenges for cost efficient and sustainable manufacturing.



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## Part 2 - Optional



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## EU Funding principles



1. Funding: SMEs. Research, Higher Education: 75%  
Private organisations (non-SME): 50%
2. Overheads/Indirect Cost:
  - Real overheads
  - 20% Flat rate or 60% Flat rate
3. “Cost Sharing”: Cost incurred for the work on a project are “shared” with the EC according to the funding rate.  
Cost incurred = Real cost
4. Collaboration principle:
  - No support for single organisations
  - Only consortia from different countries



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## Submitting proposals



Project proposals can only be submitted in response to specific **Calls for Proposals**

These define:

- The scientific/technical topic areas to be addressed
- The deadline for submission
- The specific structure of the proposals



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## IPR Issues



[ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf)

**"Foreground"** means the results, including information, materials and knowledge, generated in a given project, whether or not they can be protected.

**"Background"** is information and knowledge (including inventions, databases, etc.) held by the participants prior to their accession to the Grant Agreement, as well as any intellectual property rights which are needed for carrying out the project or for using foreground.

**Ownership of background** is not affected by participation in an FP7 project.



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## IPR Issues



**Foreground** resulting from the project is owned by the participant generating it.

When foreground is generated jointly (i.e. where the separate parts of some result cannot be attributed to different participants), it will be jointly owned, unless the participants concerned agree on a different solution .



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## Access rights



### Access rights to foreground and background

It should be noted that under the Grant Agreement access to another participant's foreground or background is only to be granted if the requesting participant needs that access in order to carry out the project or to use its own foreground.

In principle, the granting of access rights does not include the right to sublicense (not even to parent/affiliate companies of consortium members), unless the owner of the foreground or background at stake consented hereto.



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## IPR



### Summary of the main (mandatory) access rights

	Access rights to background	Access rights to foreground	Timing (to request access rights)
<b>For implementing the project</b>	Yes, if a participant needs them for carrying out its own work under the project (Article 49.1-2 RfP ; Article II.33.1-2 of GA)		Until the end of the project (Article 48.6 RfP ; Article II.32.4 of GA)
	Royalty-free, unless otherwise agreed before acceding to the grant agreement (Article 49.2 RfP ; Article II.33.2 of GA)	Royalty-free (Art. 49.1 RfP ; Art. II.33.1 GA)	
<b>For use purposes (exploitation + further research)</b>	Yes, if a participant needs them for using its own foreground (Article 50.1-2 RfP ; Article II.34.1-2 of GA)		Until 1 year (unless otherwise agreed) after the end of the project or the termination of the participant concerned (Article 50.4 RfP ; Article II.34.4 of GA)
	Either royalty-free, or on fair and reasonable conditions to be agreed (Article 50.1-2 RfP ; Article II.34.1-2 of GA)		
<b>Notes</b>	Provided that the participant concerned is free to grant such access rights (Article 49-50.2 RfP ; Article II.33-34.2 of GA)		
	The background <i>needed</i> may be defined by the participants (Article 47 RfP ; Article II.31 of GA)		





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## Part 3 Optional



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## FP7 Overview



### COOPERATION

#### THEMES (Topics)

1 2 3 4 5 6 7 8 9 10

### IDEAS

European Research Council  
ERC

### PEOPLE

#### Marie Curie Measures

Initial Training  
Life-long Learning  
Industry-Academia  
INCO  
Specific Actions

### CAPACITIES

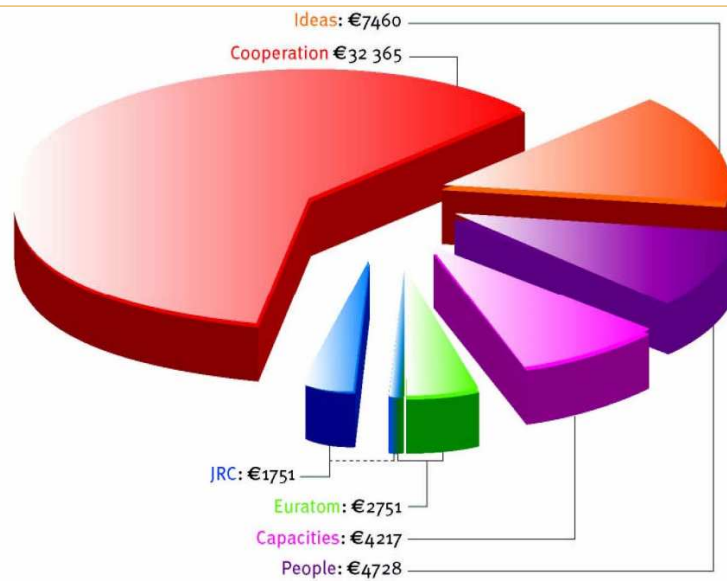
Infra-structures  
SMEs  
Regions of Knowledge  
Research Potential  
Science in Society  
INCO

Development of Research Policies



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## Funding Budget



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19



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## COOPERATION



- 1 Health
- 2 Food, Agriculture and Biotechnology
- 3 Information and Communication Technologies
- 4 Nanosciences, Nanotechnologies, Materials and new Production Technologies
- 5 Energy
- 6 Environment (including Climate Change)
- 7 Transport (including Aeronautics)
- 8 Socio-economic Sciences and the Humanities
- 9 Space
- 10 Security

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20



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## NMP Activities for 2012



II.1	Activity 4.1 Nanosciences and Nanotechnologies
II.2	Activity 4.2 Materials
II.3	Activity 4.3 New Production
II.4	Activity 4.4 Integration
II.5	Recovery Package: Public-Private Partnership (PPP) topics within NMP
II.5.1	'Factories of the Future' Public-Private Partnership (FoF) - Cross-thematic Coordination between NMP and ICT
II.5.2	'Energy-efficient Buildings (EeB)' - Public-Private Partnership -
II.5.3	'Green Cars (GC)' - Public-Private Partnership -

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21



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## ICT Topics



<b>CALL 8 (Jan 2012)</b>		<b>Budget in mill Euro</b>
<b>1. Pervasive and Trusted Network and Service Infrastructure</b>		<b>335</b>
1.1 Future Networks		160
1.2 Cloud Computing, Internet of Services and Advanced Software Engineering		70
1.4 Trustworthy ICT		80
1.6 Future Internet Research and Experimentation (FIRE)		25
<b>2. Cognitive Systems and Robotics</b>		<b>0</b>
<b>3. Alternative Paths to Components and Systems</b>		<b>191</b>
3.1 Very advanced nanoelectronic components: design, engineering, technology and manufacturability		60
3.2 Smart components and smart systems integration		39
3.5 Core and disruptive photonic technologies		92
<b>4. Technologies for Digital Content and Languages</b>		<b>50</b>
4.4 Intelligent Information Management		50
<b>5. ICT for Health, Ageing Well, Inclusion and Governance</b>		<b>0</b>
<b>6. ICT for a Low Carbon Economy</b>		<b>85</b>
6.1 Smart energy grids		30
6.3 ICT for efficient water resources management		15
6.7 Cooperative systems for energy efficient and sustainable mobility		40
<b>7. ICT for the Enterprise and Manufacturing</b>		<b>0</b>
<b>8. ICT for Learning and Access to Cultural Resources</b>		<b>60</b>
8.1 Technology-Enhanced Learning		60
<b>9. Future and Emerging Technologies</b>		<b>59.5</b>
9.6 FET Proactive: Unconventional Computation (UCOMP)		15
9.7 FET Proactive: Dynamics of Multi-Level Complex Systems		23
9.8 FET Proactive: Minimising Energy Consumption of Computing to the Limit (MINECC)		15
9.12 Coordinating Communities, Identifying new research topics for FET Proactive initiatives and Fostering Networking of National and Regional Research Programmes		3
9.14 Joint Call ICT-SSH on 'Science of Global Systems'		3.5

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22



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<i>Call 9 (2013)</i>	<i>Budget in mill Euro</i>
<b>2. Cognitive Systems and Robotics</b>	<b>82</b>
2.1 Cognitive Systems and Robotics	82
<b>3. Alternative Paths to Components and Systems</b>	<b>0</b>
<b>4. Technologies for Digital Content and Languages</b>	<b>30</b>
4.3 Digital Preservation	30
<b>5. ICT for Health, Ageing Well, Inclusion and Governance</b>	<b>66.5</b>
5.2 Virtual Physiological Human	66.5
<b>8. ICT for Learning and Access to Cultural Resources</b>	<b>40</b>
8.2 ICT for access to cultural resources	40
<b>9. Future and Emerging Technologies</b>	<b>70.5</b>
9.9 FET Proactive: Quantum ICT (QICT) including ERA-NET-Plus	22
9.10 FET Proactive: Fundamentals of Collective Adaptive Systems (FOCAS)	23
9.11 FET Proactive: Neuro-Bio-Inspired Systems (NBIS)	23
9.12 Coordinating Communities, Identifying new research topics for FET Proactive initiatives and Fostering Networking of National and Regional Research Programmes	2.5