



I bandi di Horizon 2020 per la fabbrica intelligente

Verso la fabbrica intelligente

Confindustria Udine, 27 novembre 2014

Agenda

- a) Il programma Horizon 2020 e le opportunità di finanziamento per la fabbrica intelligente
 - 1. Factories of the Future e Sustainable Process Industries
 - 2. SME instrument
 - 3. Fast Track to Innovation
- b) Friuli Innovazione e lo Sportello APRE FVG - Udine
- c) Approfondimenti su topic

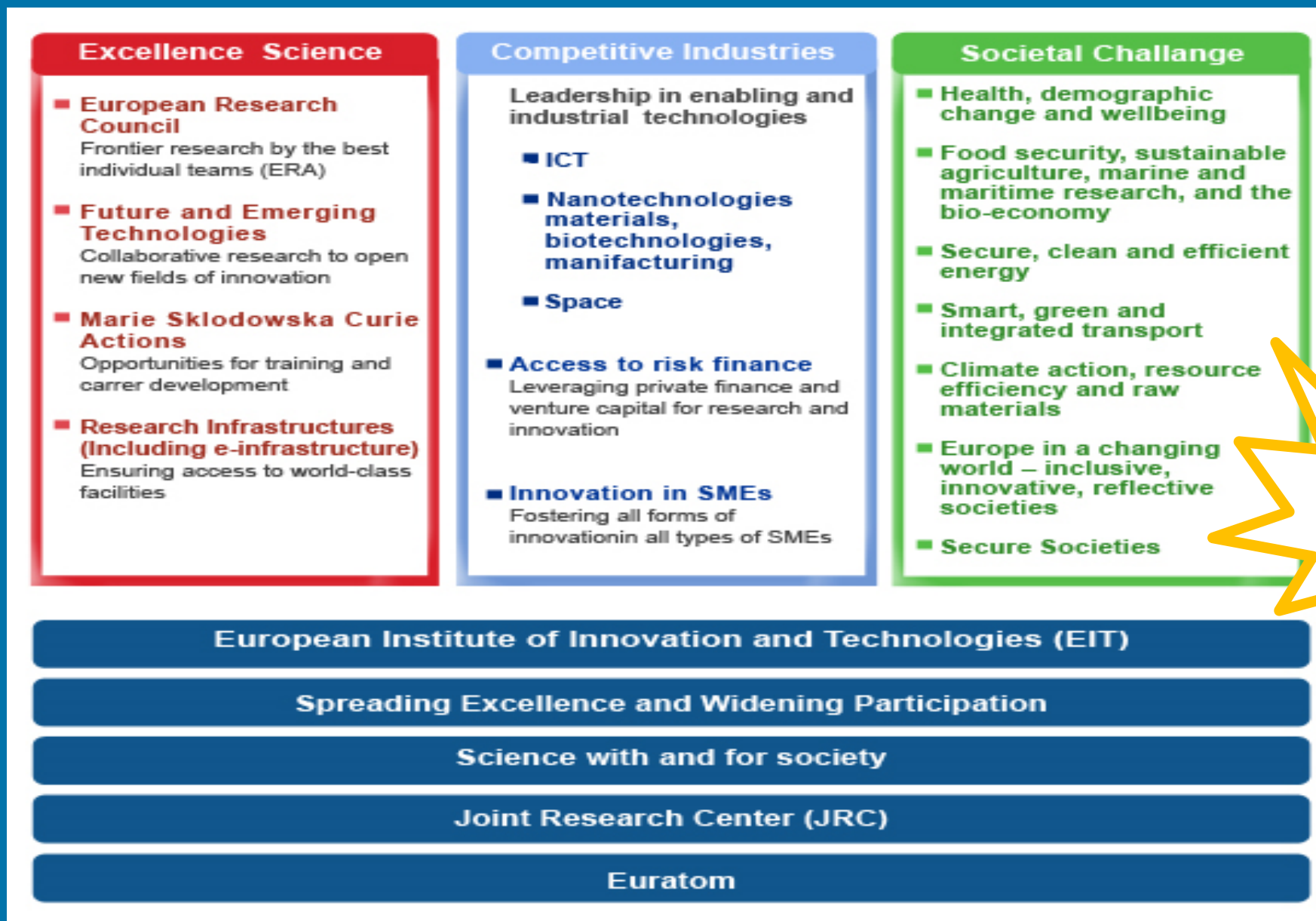


a) Il programma Horizon 2020 e le opportunità di finanziamento per la fabbrica intelligente

1. Factories of the Future e Sustainable Process Industries
2. SME instrument
3. Fast Track to Innovation



a) Il programma Horizon 2020 e le opportunità di finanziamento per la fabbrica intelligente



77
miliardi
euro



1. Factories of the Future e Sustainable Process Industries

Excellence Science

- **European Research Council**
Frontier research by the best individual teams (ERA)
- **Future and Emerging Technologies**
Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie Actions**
Opportunities for training and career development
- **Research Infrastructures (Including e-infrastructure)**
Ensuring access to world-class facilities

Competitive Industries

Leadership in enabling and industrial technologies

- **ICT**
- **Nanotechnologies materials, biotechnologies, manufacturing**
- **Space**
- **Access to risk finance**
Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
Fostering all forms of innovation in all types of SMEs

Societal Challenge

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research, and the bio-economy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Europe in a changing world – inclusive, innovative, reflective societies**
- **Secure Societies**



1. Factories of the Future e Sustainable Process Industries

> Work Programme 2014-2015

iii) Nanotechnologies, Advanced Materials, Biotechnology and **Advanced Manufacturing and Processing**

> Call for **FoF - Factories of the Future**

> Call for **SPIRE - Sustainable Process Industries**



1. Factories of the Future

> Call for FoF - Factories of the Future

helping EU manufacturing enterprises, in particular **SMEs**, to adapt to **global competitive pressures** by developing the necessary key enabling technologies

help European industry to meet the increasing global consumer demand for **greener, more customised and higher quality products** through the necessary transition to a **demand-driven industry** with lower waste generation and energy consumption

innovative technologies for adaptable machines, ICT for manufacturing, and the novel industrial handling of advanced materials

ICT plays an essential role in innovating production systems in all sectors. It allows notably for a **more personalized, diversified and mass-produced product portfolio** and for **rapid and flexible reaction** to market changes



1. Factories of the Future

Opening date: 22 October 2014

Deadline date: 4 February 2015

Budget: 143,17 Milion euro

Topics:

- FoF-08-2015: ICT-enabled modelling, simulation, analytics and forecasting technologies
- FoF-09-2015: ICT Innovation for Manufacturing SMEs (I4MS)
- FoF-10-2015: Manufacturing of custom made parts for personalised products
- FoF-11-2015: Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots
- FoF-12-2015: Industrial technologies for advanced joining and assembly processes for multi-materials
- FoF-13-2015: Re-use and remanufacturing technologies and equipment for sustainable product lifecycle management
- FoF-14-2015: Integrated design and management of production machinery and processes



1. Sustainable Process Industries

> Call for SPIRE

brings together cement, ceramics, chemicals, engineering, minerals and ores, non-ferrous metals, steel and water sectors, several being **world-leading sectors** operating from Europe

These sectors all have a **high dependence on resources** (energy, raw materials and water) in their production and processing technologies and they all have a clear and urgent **interest in improved efficiency and competitiveness**

The **general goal** is **to optimise industrial processing**, reducing the consumption of energy and resources, and minimising waste

The **specific goals** are:

- A reduction in fossil energy intensity of up to 30% from current levels by 2030.
- A reduction of up to 20% in non-renewable, primary raw material intensity
- A reduction of greenhouse gas emissions by 20% below 1999 levels by 2020



1. Sustainable Process Industries

Opening date: 22 October 2014

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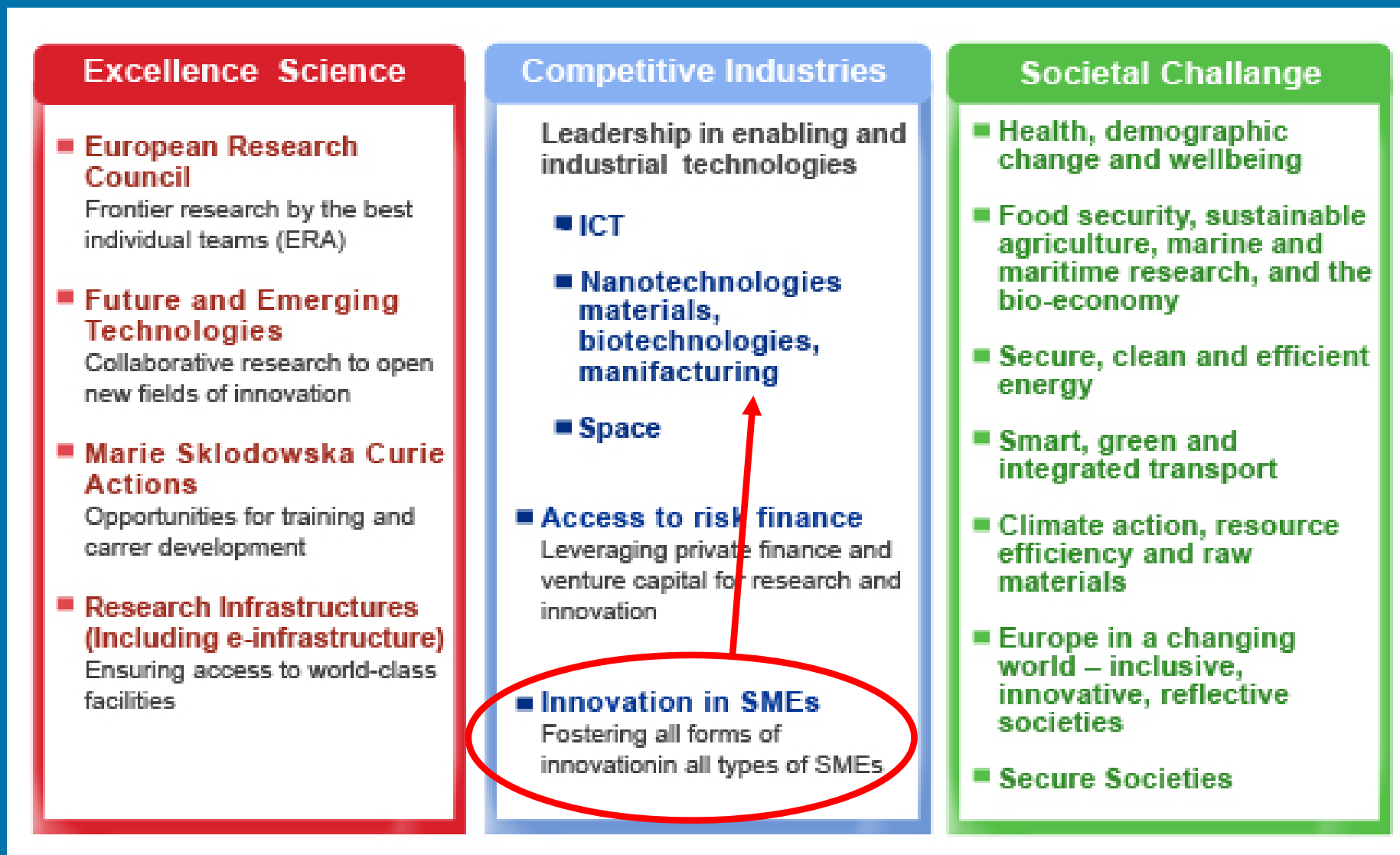
Budget: 75,17 Million euro

Topics:

- SPIRE-05-2015: New adaptable catalytic reactor methodologies for Process Intensification
- SPIRE-06-2015: Energy and resource management systems for improved efficiency in the process industries
- SPIRE-07-2015: Recovery technologies for metals and other minerals
- SPIRE-08-2015: Solids handling for intensified process technology



2. SME instrument



2. SME instrument

Topic “Accelerating the uptake of nanotechnologies, advanced materials or **advanced manufacturing and processing technologies** by SMEs”

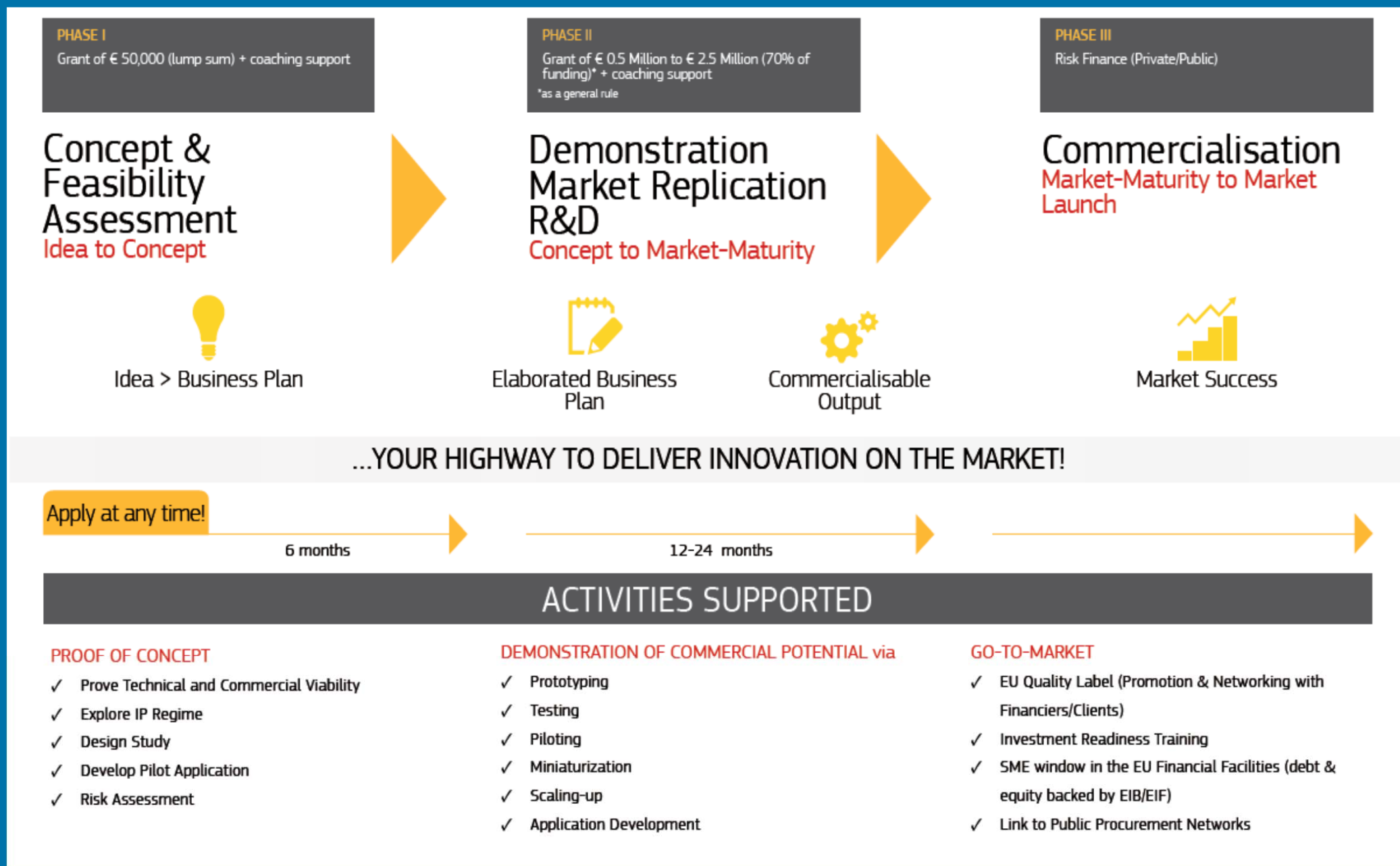
Specific challenge: Research results should be taken up by industry, harvesting the hitherto untapped **potential of nanotechnologies, advanced materials and advanced manufacturing and processing technologies**.

The goal is to create added value by **creatively combining existing research results** with other necessary elements, **to transfer results across sectors** where applicable, to accelerate innovation and eventually create profit or other benefits.

The research should **bring the technology and production to industrial readiness and maturity for commercialisation** after the project.



2. SME instrument



2. SME instrument

Scadenze/Cut off dates:

2014		2015	
<u>Fase 1</u>	<u>Fase 2</u>	<u>Fase 1</u>	<u>Fase 2</u>
18/06/2014	09/10/2014	18/03/2015	18/03/2015
24/09/2014	17/12/2014	17/06/2015	17/06/2015
17/12/2014		17/09/2015	17/09/2015
		16/12/2015	16/12/2015



3. Fast Track to Innovation

- **Pilot call**
- Provides funding for **close to market**, business driven projects
- Open to proposals in **any area** of technology or application
- Trans-disciplinary and cross-sector cooperation
- Consortia comprising **between 3 and 5 legal entities** established in at least three different EU Member States or countries associated
- **Substantial industry involvement** in FTI actions will be mandatory to ensure quick market take-up > within a three-year period after the start of the FTI-action



3. Fast Track to Innovation

- **Budget**: 2015, 100 million euro; 2016, 100 million euro
- One common and continuously **open call**
- Open for applications as of January 6 2015.
- **Three cut-off dates** in 2015: **29 April**, 1 September, 1 December
- **Innovation action** > funding level fixed at **70%** of the eligible costs¹.
- The indicative **EU contribution** per action is expected to be between **€1 million and €2 million**



a) Il programma Horizon 2020 e le opportunità di finanziamento per la fabbrica intelligente

Il Participant Portal

Link: <http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

The screenshot displays the European Commission Research & Innovation Participant Portal. At the top, there is a navigation bar with links: (A-Z), Sitemap, About this site, Contact, Legal Notice, and a language dropdown set to English. Below this is the main header with the European Commission logo and the text 'RESEARCH & INNOVATION Participant Portal'. A breadcrumb trail reads: European Commission > Research & Innovation > Participant Portal > Calls. A secondary navigation bar includes links: HOME, FUNDING OPPORTUNITIES (active), HOW TO PARTICIPATE, EXPERTS, and SUPPORT. On the right of this bar are LOGIN and REGISTER buttons. The main content area is divided into several sections. On the left, there are three boxes: 'Horizon 2020' with links for Calls, Search Topics, and Call Updates; 'FP7 & CIP Programmes' with links for Calls and Call Updates; and 'COSME' with a link for Other Funding Opportunities. The central section features a search bar with 'Creativity' entered, showing 7 results. Below the search bar, there are filters for Status (Open, Closed, Forthcoming) and Sort by (Title, Call Id, Publication Date, Deadline Date). A text box below the filters states: 'In addition, see all the open calls of Marie Skłodowska-Curie actions (MSCA) and European Research Council (ERC) grants for individual researchers of any nationality and research teams. The MSCA grants include opportunities for companies and SMEs. The MSCA and ERC grants are not restricted to specific topics.' At the bottom, there is a 'Quick finder for topics linked to H2020 cross-cutting priorities:' section with links for Cross-cutting Key-Enabling Technologies (KETs), ERA-NET, Gender, International cooperation, and SME Instrument.



b) Friuli Innovazione e lo Sportello APRE FVG - Udine





Università degli Studi di
Udine

Area Science Park

Agemont

ITI A. Malignani Udine

IRES FVG Udine



CCIAA di Udine

Confindustria Udine

Unione Industriali

di Pordenone



Consorzio per lo sviluppo
industriale del Friuli centrale

Comune di Udine

Provincia di Udine

Comune di Tavagnacco



Fondazione CRUP
Mediocredito FVG

Friuli Innovazione in sintesi

Aree di attività



Settori principali

- Biotecnologie
- Metallurgia e tecnologia delle superfici e dei materiali avanzati
- Extended ICT
- Energia e Ambiente
- Legno

Laboratori

- Laboratorio di Metallurgia e Tecnologia delle Superfici e dei Materiali Avanzati
- Istituto di Genomica Applicata

c) Friuli Innovazione e lo Sportello APRE FVG - Udine

Trasferimento
Tecnologico

Approccio
sistemico

Avvio e realizzazione
di progetti di TT

in collaborazione con altri attori
dell'innovazione sul territorio

Approccio
customer

Valorizzazione
attività di TT specifiche
a favore delle imprese



Promozione TT

- eventi su temi di ricerca applicata
- workshop e seminari su tematiche rilevanti per imprese e ricercatori
- attività di match-making



c) Friuli Innovazione e lo Sportello APRE FVG - Udine

Finanziamento
alle Imprese

- **APRE - Agenzia per la Promozione della Ricerca Europea** fornisce, supporto e assistenza per la partecipazione ai programmi europei per ricerca, sviluppo e innovazione.
- Gli **Sportelli APRE** sono punti di accesso alle informazioni e ai servizi diffusi sul territorio nazionale.
- Operano in collaborazione con gli **NCP - National Contact Points** ospitati da APRE Roma



c) Friuli Innovazione e lo Sportello APRE FVG - Udine

Finanziamento
alle Imprese



d) Approfondimenti su topic



d) Approfondimenti su topic

Call for FoF - Factories of the Future

Topic: FoF-11-2015: Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots

Specific challenge: **Easy and fast reconfigurable machinery and robots** are essential to answer to the increasing need for highly complex products and to react to rapid changes in market demands.

Smaller lot sizes and more product variations require a **highly flexible production capacity**.

New tools are required to support **more rapid and autonomous reconfiguration of production systems**.



d) Approfondimenti su topic

Scope: Demonstration activities should address all of the following areas:

- Integrated tools for the management of **agile production systems** as a whole and the fast reconfigurable individual machines and robots, optimising the changeover times and costs.
- **Protocols** for interconnecting the production system information with higher level plant management systems.
- **Integration** of automatic monitoring and optimisation of **energy usage** in the production system.

Activities expected to focus on **Technology Readiness Level 5-7**.

A **significant participation of SMEs** with R&D capabilities is encouraged.

Contribution from the EU between EUR 4 and 7 million



d) Approfondimenti su topic

Expected impact:

- Enabling existing production systems to produce on average **at least 50% smaller lot sizes and 50% more product variations** in an economical way
- **Reduction of at least 30%** of the set-up and changeover times and costs for existing production systems leading to a significant increase in production capacity.
- **Reduction of average energy consumption by 5%** through an optimised use of production capacity.

Type of action: **Innovation Actions**

Link: <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2190-fof-11-2015.html>



d) Approfondimenti su topic

Call for FoF - Factories of the Future

Topic: FoF-14-2015: Integrated design and management of production machinery and processes

Specific challenge:

Innovative machines and processes increasingly depend on **model-based approaches**, including the monitoring and control elements, throughout the whole machine lifecycle.

New integrated approaches are needed in **simulation methods**, tools and across hierarchical model layers requiring a **cross-disciplinary collaboration** between (**predominantly SME**) machine designers, industrial component suppliers, engineering software developers as well as making use of the process experience of manufacturers



d) Approfondimenti su topic

Scope: RTD and innovation activities should aim at **developing and testing suitable model-based approaches for production machinery** and at demonstrating the **power of model-driven approaches for machine innovation** through:

- The development of integrated and accurate simulation models and algorithms
- Tool programming strategies that are easy to use and can be rapidly modified or re-adapted by workers on the machine.
- Demonstration of the reliability of model-based machines with respect to production accuracy/quality, maintainability and lifecycle return-on-investment

Activities expected to focus on **Technology Readiness Levels 4-6**

contribution from the EU between EUR 3 and 6 million



d) Approfondimenti su topic

Expected impact:

- Improved system adaptability and **reduction of lifecycle costs by 30%** for manufacturing system and process.
- New maintainability concepts based on predictive "(self-) maintenance" with **machine reliability improved by 10%** and **reduced maintenance costs by 20%**.
- In terms of environmental impact: **Reduced waste and energy efficiency improved by 30%**.

Type of action: **Research and Innovation Actions**

Link: <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2193-fof-14-2015.html>



Grazie per l'attenzione!

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