

# Factories of Future

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Delegado Nacional ao NMPB do Horizonte 2020

Porto, 18<sup>th</sup> of September 2014

Lisboa, 19<sup>th</sup> of September 2014



# Rationale of the FoF PPP

Manufacturing contributes with 23% of European jobs (or over 30 million) directly and twice as many jobs indirectly.

The vast majority are in SMEs.

Manufactured goods amount to 80% of EU exports.

Advanced manufacturing is a complex R&D-intensive activity, requiring a long term horizon.

Innovative and green EU factories to make high added-value products need to be developed and deployed, but the R&D costs and risks are high.

Technological capabilities and supply chains are dispersed across the EU. A critical mass of stakeholders at EU level is needed.

# Call for Factories of the Future (FoF PPP)

**Aim:** help EU manufacturers (incl. SMEs) to adapt to global competitive pressures

**How:** developing necessary key enabling technologies across broad range of sectors

Meet increasing global consumer demand for greener, more customised and higher quality products

Transition to demand-driven industry with lower waste and energy consumption

## **Activities :**

- Industry-led R&D projects (incl. Demo activities)
- Cross-sectoral, addressing needs of SMEs
- Contribution from ICT part



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## 'Factories of the Future 2020': Roadmap 2014-2020

The 'Factories of the Future' public-private partnership (PPP) under Horizon 2020 is centred on the priorities of 'Factories of the Future 2020', an ambitious and far-sighted strategic multi-annual research roadmap produced by EFFRA.

'Factories of the Future 2020' is the basis for research call topics and the overall direction of research in the 'Factories of the Future' public-private partnership under Horizon 2020

The roadmap was developed over a period of 24 months through working meetings including discussions with the European Commission within the 'Factories of the Future' public-private partnership Ad-hoc Industrial Advisory Group (AIAG) and close consultations with representatives of companies and RTOs organised in other related European technology platforms.

[Download 'Factories of the Future 2020'](#)

### Research Priorities

Against a background of mega-trends (such as globalisation, resource scarcity and the global knowledge society) and following the Manufacturing 2030 vision, European manufacturing sectors need to undergo innovation-driven transformations.

The 'Factories of the Future' PPP identifies and realises these transformations by pursuing a set of research priorities across and innovation domains:

-  - Advanced manufacturing processes
-  - Adaptive and smart manufacturing systems



## Manufuture



**EFFRA**  
EUROPEAN FACTORIES OF THE FUTURE  
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*Assuring the future of a competitive and sustainable manufacturing in Europe*

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**PPP Factories of the Future**

As part of the European Economic Recovery Plan, the Commission is launching three Public-Private Partnerships (PPPs). The three PPPs represent a powerful means of boosting research efforts in three large industrial sectors - automotive, construction and manufacturing - which have been particularly affected by the economic downturn and where innovation can significantly contribute towards a more green and sustainable economy.

In this framework, the European Commission and the industrial partners work intensively together to develop the implementation plans for the Public Private Partnership "Factories of the Future" initiative for the manufacturing sector (PPP-FoF).

As response, the Manufuture Platform launched the: [Initiative EFFRA, European Factories of the Future Research Association](#)



# Clusters



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(Máquinas, Equipamentos e Sistemas)

- [ACONTROL](#), AUTOMAÇÃO E CONTROLE INDUSTRIAL, LDA.
- [ADIRA](#), METAL FORMING SOLUTIONS
- [ANTÍPODA Consultoria e Equipamentos](#) - Paulo Jorge Azevedo Unipessoal Lda
- [ARSOPI](#) - INDÚSTRIAS METALÚRGICAS ARLINDO S. PINHO, S.A.
- [AZEVEDOS INDÚSTRIA](#) - MÁQUINAS E EQUIPAMENTOS INDUSTRIAIS, S.A.
- [BRESIMAR AUTOMAÇÃO](#), S.A.
- [CEI](#) - COMPANHIA DE EQUIPAMENTOS INDUSTRIAIS, LDA.
- [EFACEC ENGENHARIA E SISTEMAS](#), S.A.
- [ENERMETER](#), Sistemas de medição, Lda.

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### Associados Aderentes

As entidades que actualmente pertencem como **Associados Aderentes** são as seguintes:

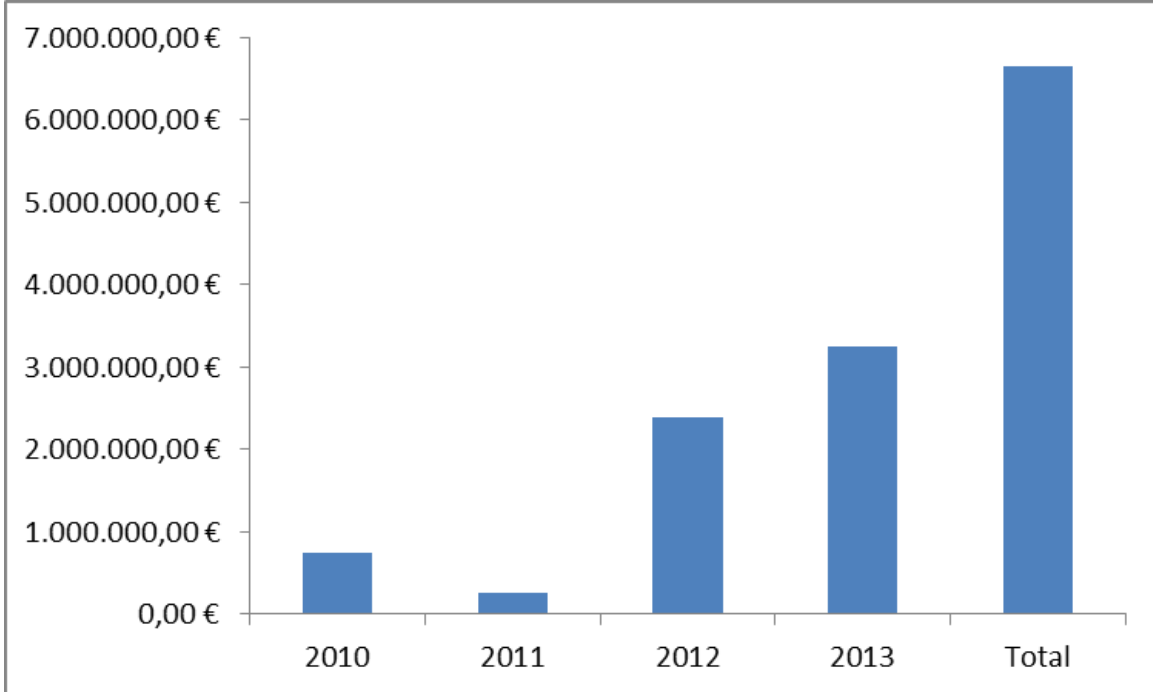
- [3DTECH - Prod., Optimização e Reengenharia Lda.](#)
- [AIDA - Associação Industrial do Distrito de Aveiro](#)
- [ANÍBAL H. ABRANTES](#) - Indústrias de Moldes e Plásticos, S.A.
- [AZEMOLDES](#), Moldes de Azeméis, Lda.
- [BOURBON AUTOMOTIVE PLASTICS](#) Marinha Grande S.A.

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# PT Results in FP7 FoF



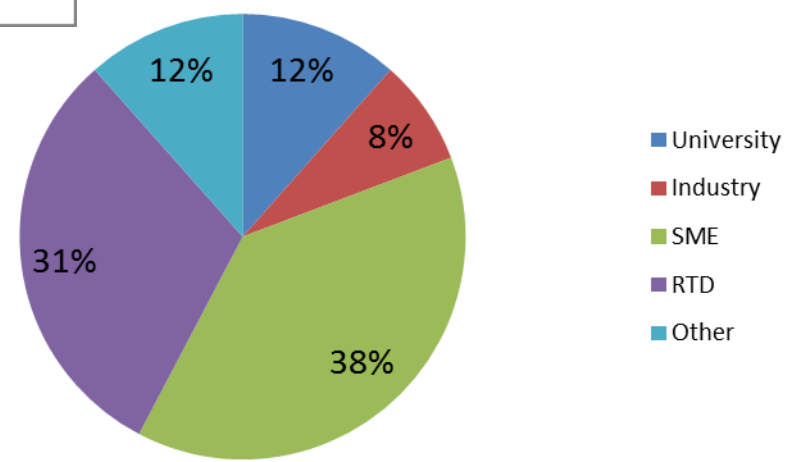
Total  
PT Funding Rate: 1,61%  
PT Total Funding: 6,7M€

## Distribution Rate by type of participant

Total: 26 participants

Success Rate: 15%

Coordinator: 13



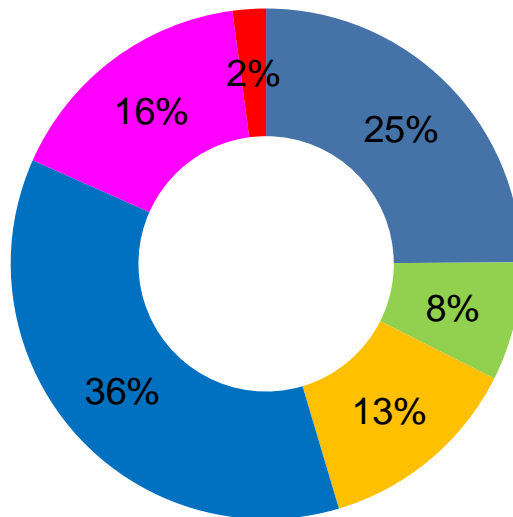
# H2020-FoF-2014

	<b>Eligible proposals</b>	<b>Main List</b>	<b>Success rate</b>
FoF 2 – 2014: Manufacturing processes for complex structures and geometries with efficient use of material	<b>73</b>	<b>4</b>	<b>5,5%</b>
FoF 3 – 2014: Global energy and other resources efficiency in manufacturing enterprises	<b>32</b>	<b>1</b>	<b>3,1%</b>
FoF 4 – 2014: Developing smart factories that are attractive to workers	<b>20</b>	<b>2</b>	<b>10,0%</b>
FoF 5 – 2014: Innovative product-service design using manufacturing intelligence	<b>27</b>	<b>6</b>	<b>22,2%</b>
FoF 6 – 2014: Symbiotic human-robot collaborations for safe and dynamic multimodal manufacturing systems	<b>21</b>	<b>2</b>	<b>9,5%</b>
FoF 7 – 2014: Support for the enhancement of the impact of FoF PPP projects	<b>8</b>	<b>5</b>	<b>62,5%</b>
<b>OVERALL</b>	<b>181</b>	<b>20</b>	<b>11,0%</b>

# H2020-FoF-2014

PROPOSALS	
Eligible nb	Main List nb
73	4
32	1
20	2
27	6
21	2
8	5
<b>181</b>	<b>20</b>

- FoF-02-2014
- FoF-03-2014
- FoF-04-2014
- FoF-05-2014
- FoF-06-2014
- FoF-07-2014



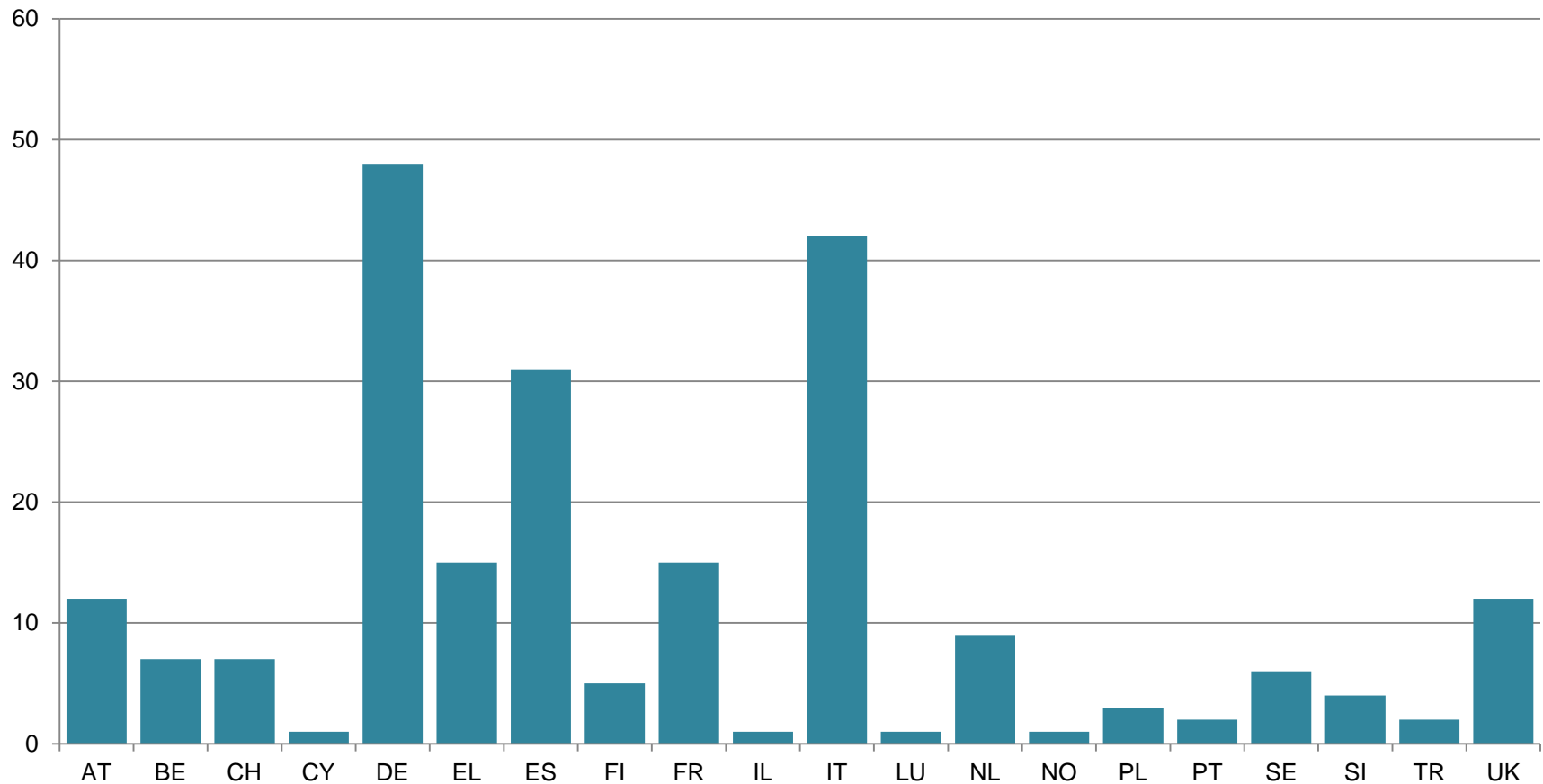
## Main List Requested funding

- FoF-02-2014
- FoF-03-2014
- FoF-04-2014
- FoF-05-2014
- FoF-06-2014
- FoF-07-2014



# H2020-FoF-2014

## Number of participants by country Main List



## PT Results in H2020 FoF 2014

<b>PT Funding</b>	2.173.938,00 €
<b>PT Funding Rate</b>	1,85%
<b>PT Success Rate</b>	7,50%
<b>PT Participants</b>	7
<b>PT Coordinator</b>	1

# ***FoF - Call topics for 2015***

**Total EC funding: €143 million**

NMP (75 M€)

**3 topics RIA**

**2 topics IA**

ICT (68 M€)

**1 topic RIA & CSA (32 M€)**

**1 topic IA & CSA (36 M€)**

**Open: 22 October 2014**

**Deadline: 4 February 2015**

**Areas covered include:** modelling and simulation; ICT for manufacturing SMEs; manufacturing of personalised products; flexible production; joining & assembly processes; re-use & re-manufacturing; and integrated design & management of production

# ***Calls 2015***

# ***FoF PPP***

- ***FoF 8: ICT-enabled modelling, simulation, analytics and forecasting technologies, RIA & CSA***
- ***FoF 9: ICT Innovation for Manufacturing SMEs (I4MS), IA&CSA***
- ***FoF 10: Manufacturing of custom made parts for personalised products, RIA***
- ***FoF 11: Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots, IA***
- ***FoF 12: Industrial technologies for advanced joining and assembly processes of multi-materials, IA***
- ***FoF 13: Re-use and re-manufacturing technologies and equipment for sustainable product lifecycle management, RIA***
- ***FoF 14: Integrated design and management of production machinery and processes, RIA***

## Technology Readiness Levels



TRL 1 – basic principles observe

TRL 2 – technology concept formulated

TRL 3 – experimental proof of concept

TRL 4 – technology validated in lab

TRL 5 – technology validated in relevant environment (industrial environment in the case of KETs)

TRL 6 – technology demonstrated in relevant environment (industrial environment in the case of KETs)

TRL 7 – system prototype demonstration in operational environment

TRL 8 – system complete and qualified

TRL 9 – Actual system proven in operational environment (competitive manufacturing in the case of KETs)

# Business plan

- **the planned key exploitable results and their expected key applications:** development status, facts and figures of the potential impact, differences from existing competing products/services, main IPR issues;
- **the exploitation team:** partners; their previous experience and business interests;
- **the market:** market size, market trends, main competitors and competitive advantage;
- **the business model:** marketing strategy, main clients;
- **the financial projections:** sales forecasts, investment, additional funding, complementary or parallel projects;
- **the commercialization roadmap:** the steps planned before the product is ready for the market (i.e. proof of concept, prototyping, demonstrations of technological performance and cost effectiveness field trials, pilots, validation and standardisation issues, regulatory requirements)

## Synergies with ESIF

- Business planning and thinking above and beyond the project
- Taking up the exploitation activities of a H2020 project with ESIF funding