



CENIM

Centro Nacional
de Investigaciones Metalúrgicas

metallurgy
europe



Metallurgy Europe

Francisca G. Caballero
CENIM-CSIC
September, 25th 2014



MatSEEC



Materials Science and Engineering Expert Committee (MatSEEC)

Metallurgy Europe – A Renaissance Programme for 2012-2022

Science Position Paper

June 2012

David Jarvis (Working Group Leader)

European Space Agency-Netherlands

Dierk Raabe

Max-Planck-Institut für Eisenforschung GmbH-Germany

Robert Singer

Friedrich-Alexander-Universität-Germany

Paul Van Houtte

Katholieke Universiteit Leuven-Belgium

Constantin Vahlas

CNRS-France

Neil Alford

Imperial College-UK

Krzysztof Kurzydowski

National Centre for Research and Development-Poland

Risto Nieminen

Aalto University School of Science-Finland

Andreas Mortensen

Ecole polytechnique fédérale de Lausanne-Switzerland

Herbert Gleiter

Karlsruhe Institute of Technology-Germany

Michael Loretto

University of Birmingham-UK

Yves Brechet

Institut National Polytechnique de Grenoble-France

Hans-Jörg Fecht

Universität Ulm-Germany

Metallurgy Europe – a Eureka Cluster Programme Proposal

Technical Roadmap for 2014-2020

The 13 top-level R&D topics that push the frontiers of metallurgy include:

- Light alloys and metal-matrix composites
- High-temperature extreme alloys and composites
- **New and improved steels**
- Advanced superconductors
- High-ZT thermoelectric alloys
- **Biocompatible metallurgy**
- Metal-based 3D micro-parts & embedded sensors
- **Automated additive manufacturing**
- **Combinatorial alloy development**
- **Coatings & surface protection**
- **Powder metallurgy techniques**
- **Predictive modelling and advanced characterisation**
- **Recycling, refinement, re-use and waste elimination**

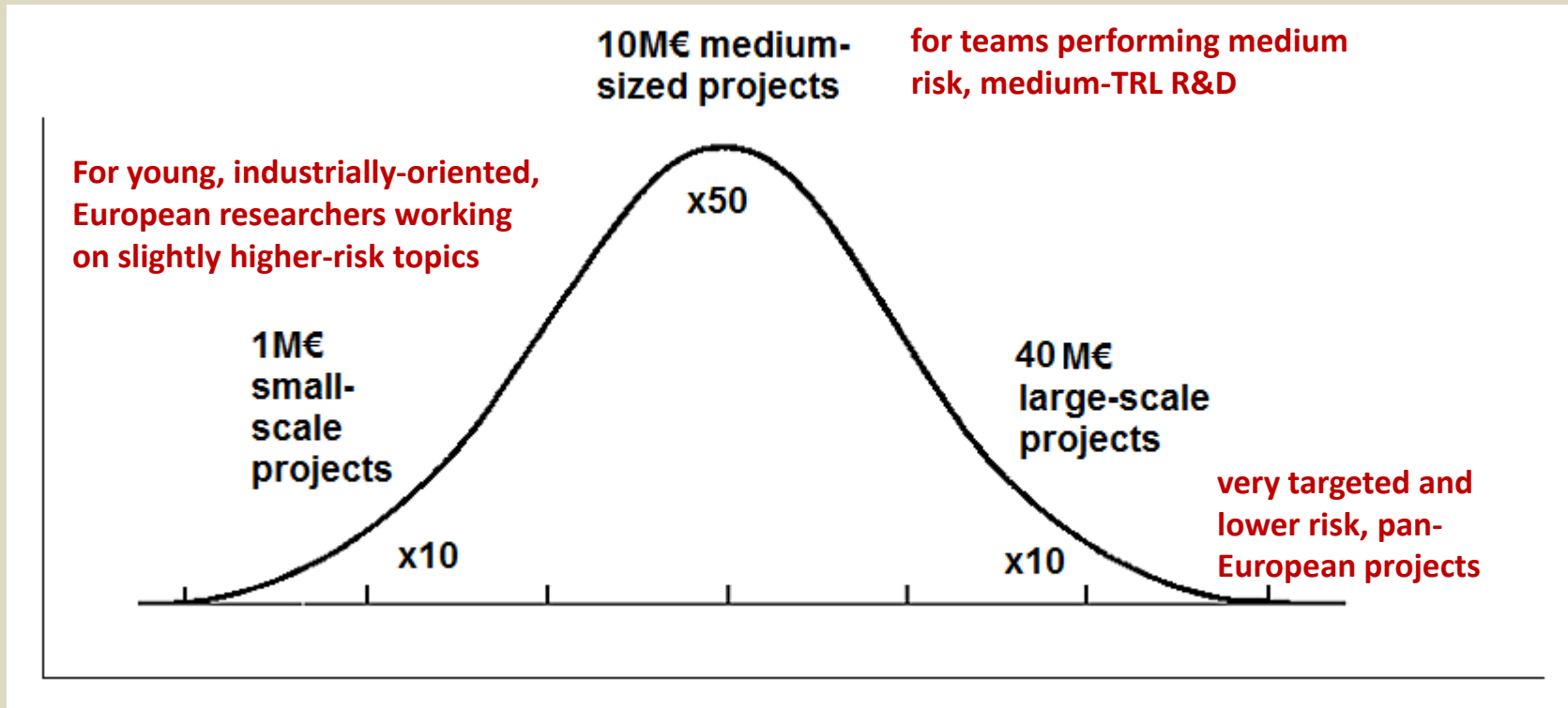
May 13th, 2014

Metallurgy Europe – a Eureka Cluster Programme

- **First-phase Eureka labelling successfully achieved**, giving the team 12-18 months to get organized with the infrastructure.
- **1 billion euro total funding over 7 years**. National funding to be allocated during 2015 - some countries have funding already in 2014.
- **Metallurgy European Map:**
 - **14 countries** (DE, UK, SE, CH, AT, IR, FR, IT, **ES**, FI, CZ, PT, TK, CY) **officially on board**.
 - **A few countries** (LU, NO, NL, DK, BE) **still discussing** in their ministries
 - **Some other countries** (MT, EE, HU, SK, SI, PL) are out.
- International **press event on Tues 9th Sept in London**
- **Technical meeting** at ESTEC **on 18-19th Sept** to trigger the project building phase amongst all the industries, and to **define calls 1 & 2**.
- A follow-up meeting in **October to establish the Public Authorities Board** (i.e. collection of all the national funding bodies concerned with Metallurgy Europe).
- Meeting to discuss the hosting of the **Metallurgy Europe Cluster Office** (Prof. Hans Fetch, Director of Institute of Micro and Nanomaterials at Ulm University-DE).

June 20th, 2014

Metallurgy Europe – a Eureka Cluster Programme



Size distribution of projects within the Metallurgy Europe cluster programme

EUREKA CLUSTERS

Initiated by European industry, EUREKA Clusters are long-term and strategically significant initiatives, developing generic technologies of key importance for European competitiveness. Addressing the needs of large companies and SMEs, they are the engine for industrial innovation and economic growth.

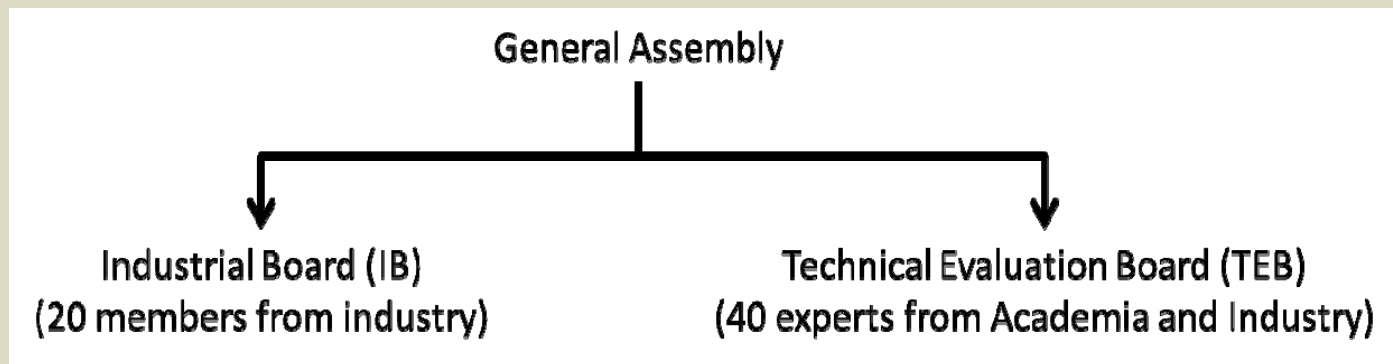
CLUSTER		NUMBER OF PROJECTS		PROJECT COSTS (M€)	
		2012	2013	2012	2013
ACQUEAU (water technologies) labelled 2 projects for total costs of 4 million euros.		3	2	12.2	4.0
CATRENE (micro and nanoelectronics) labelled 9 projects for total costs of 245 million euros.		5	9	152.1	245.4
CELTIC-PLUS (telecommunications) labelled 8 projects for total costs of 72 million euros.		9	8	87.0	72.2
EURIPIDES/EURIPIDES² (smart electronic systems) labelled 7 projects for total costs of 51 million euros.		7	7	27.6	50.8
EUROGIA+/EUROGIA 2020 (energy technologies) labelled 2 projects for total costs of 72 million euros.		5	2	25.2	71.9
ITEA 2 (embedded software) labelled 19 projects for total costs of 364 million euros.		15	19	180.1	363.6
MF.IND (manufacturing) has expired in 2013, renewal is under way. It has two projects still running for a total cost of 40 million euros.		8		146.0	
	Total	44	47	630.2	807.8

Technical meeting at ESTEC on 18-19th Sept

Short Round of *Introductions* **125 participants including industrial partners, technological centres and Universities; 11 Spanish delegates**

Metallurgy Europe Overview (David Jarvis, ESA)

- (i) overall vision, metallurgy challenges, key R&D topics in road map & impact
- (ii) consortium structure, governance, industrial board, technical evaluation board, cluster office, secretariat, fees, annual calls, evaluation process, national funding, project building etc.



Technical meeting at ESTEC on 18-19th Sept

Short Round of *Introductions*

125 participants including industrial partners, technological centres and Universities; 11 Spanish delegates

Metallurgy Europe Overview (David Jarvis, ESA)

- (i) overall vision, metallurgy challenges, key R&D topics in road map & impact
- (ii) consortium structure, governance, industrial board, technical evaluation board, cluster office, secretariat, fees, annual calls, evaluation process, national funding, project building etc.

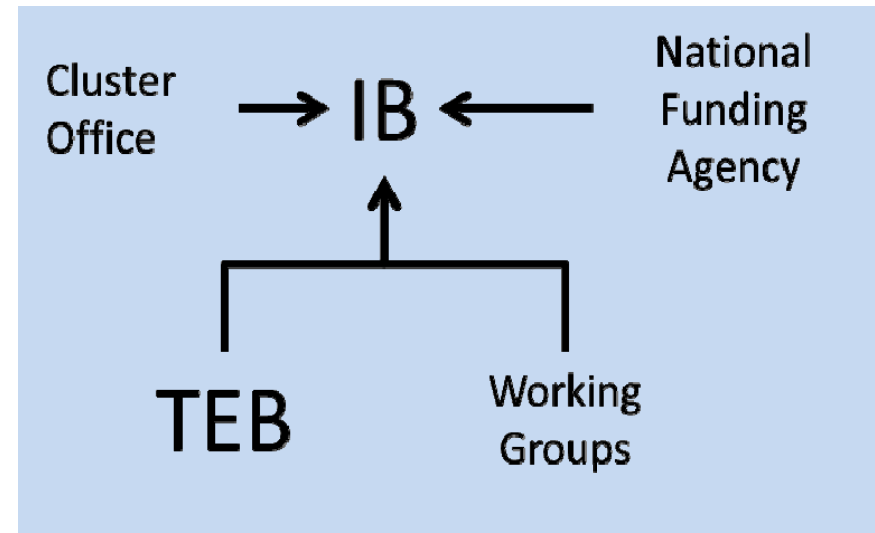
Industrial Board:

- 20 Members representing:
 - ❑ **Steel sector (Tata steel-NL, ThyssenKrupp-DE, ArcelorMittal-BE/FR)**
 - ❑ Advance manufacturing sector,
 - ❑ Aerospace sector
 - ❑ Automotive sector
 - ❑ Energy sector and
 - ❑ Biomedical sector
- None Spanish Members

Interested Partners:

Around 175 Interested Partners of 24 countries. Among them, 15 Spanish Partners (**7 industrial partners and 8 technological centres**)

Industrial Partners can still join Metallurgy Europe **NEVER later than Dec. 2014**. Still recruiting **Candidates for Technical Evaluation Board**



Technical meeting at ESTEC on 18-19th Sept

Short Round of *Introductions*

Metallurgy Europe Overview (David Jarvis, ESA)

- (i) overall vision, metallurgy challenges, key R&D topics in road map & impact
- (ii) consortium structure, governance, industrial board, technical evaluation board, cluster office, secretariat, fees, annual calls, evaluation process, national funding, project building etc.

Quick Introduction to the Technical Sessions (David Jarvis, ESA)

13 different R&D topics in roadmap, sequential discussion sessions, agreement on sub-topics and calls, start creating collaborative industrially-driven projects

During the course of the meeting, **46 rather large (up to 30 Partners), multi-million (10-40 M€) R&D projects** were discussed for both 2015 and 2016. The **Co-ordinators and collaborative partnerships** for the different topics were defined.

Technical meeting at ESTEC on 18-19th Sept

Timetable for Metallurgy Europe-Eureka Cluster:

- **October 2014:** to establish Legal framework following other Eureka clusters
- **November 2014:** Approval of Industrial Board
- **December 2014:** Partners Agreement and Signature
- **January 2015:** Calls Definition
- **February 2015:** Collection of membership fees
- **March 2015:** Cluster Labelling Authorization
- **April 2015:** Opening First Call
- **By the end of 2015:** Approval and Labelling of Projects
- **By early 2016:** First wave of project starts

metallurgy
europe

