Materials
The technological key enablers for answering Societal Grand Challenges

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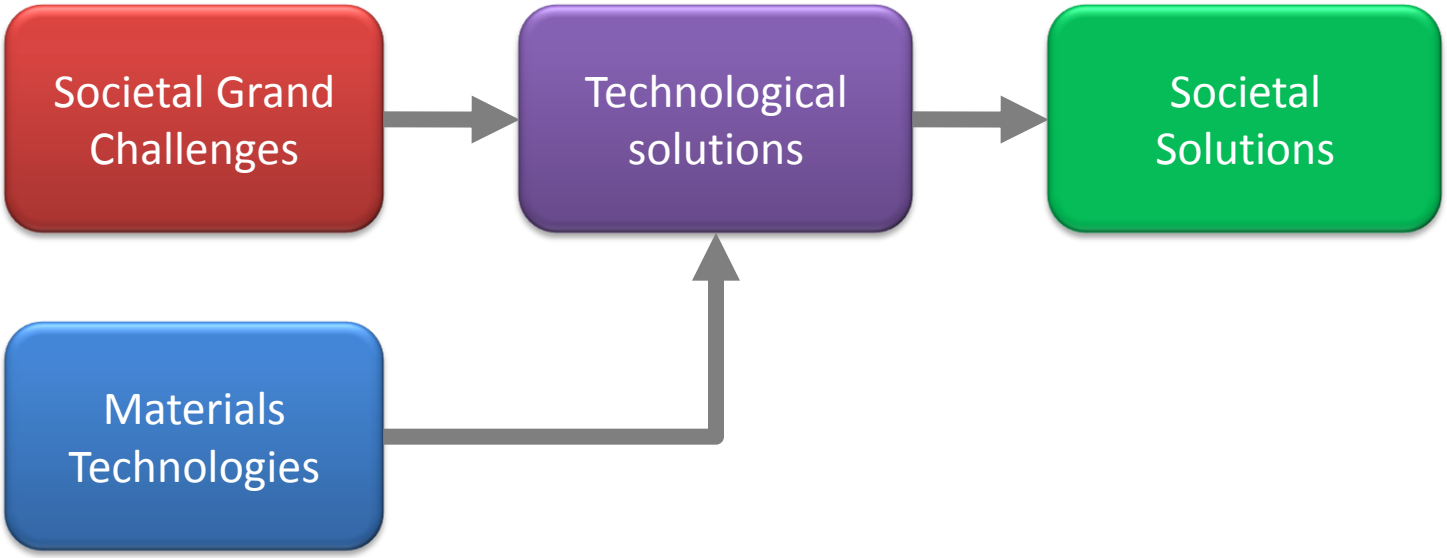
EuMaT regards the Societal Grand Challenges as a starting point, recognises the recommendations of the Lund Declaration and makes a projection of those onto the space of advanced materials to identify research domains, which are of strategic importance for the potential solutions of the Grand Challenges.



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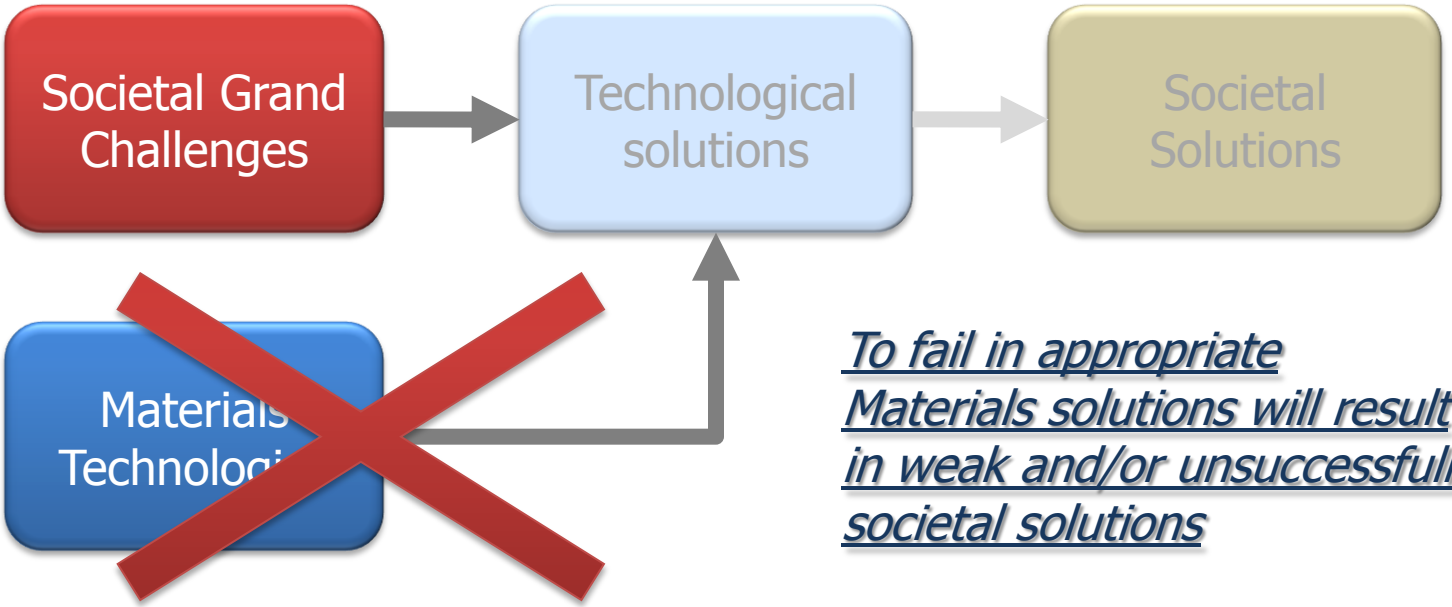

To fail in appropriate Materials solutions will result in weak and/or unsuccessfully societal solutions

Two views to merge

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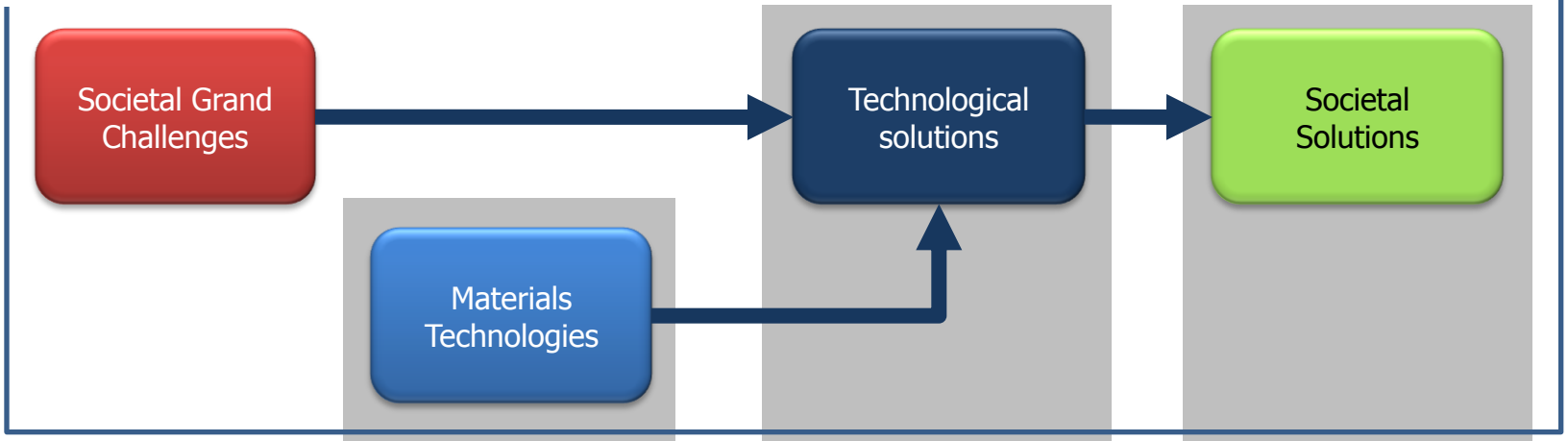
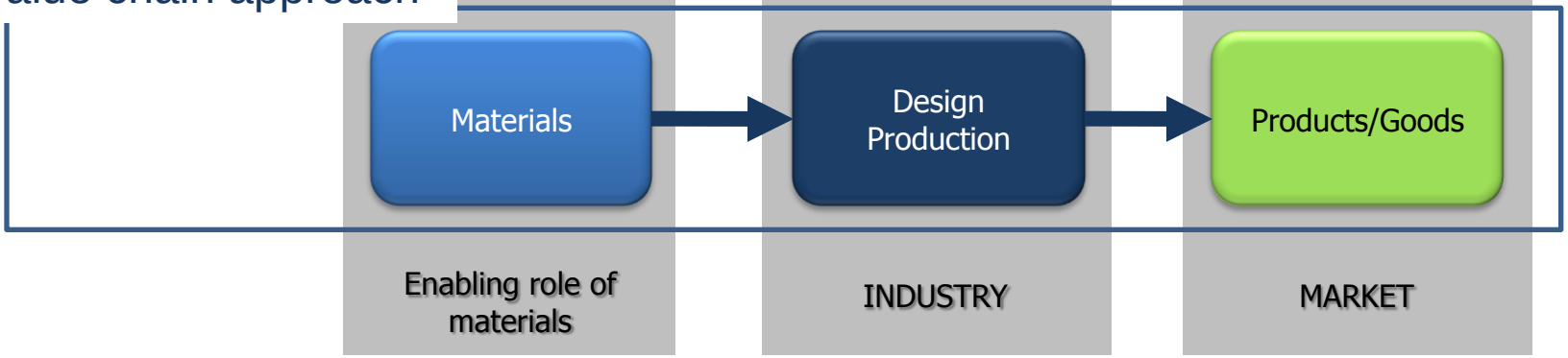
Materials for Impact



Value chain approach



The technological drivers of future Materials R&D strategy

- generation of new advanced materials able to support the development of totally new products and goods

- the radical improvement in the characteristics of widely used conventional materials

- the substitution of traditional materials with most eco-efficient ones

- the replacement and/or recycling of rare and/or scarce materials with less critical or expensive alternatives

The value characteristics of Materials R&D

• Materials are multidisciplinary, cross cutting and impacting almost any industrial sector with an intrinsic trend to convergence and integration

• In many key industrial sectors, Materials has a leading role in driving innovation

• Broad spectrum of scientific disciplines and research areas that contribute to Materials development. As a consequence cross-disciplinary research is prevalent

• New Materials are often key element of new products, many end products producers also engage in Materials R&D

Materials R&D in the FPs landscape

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SEVENTH FRAMEWORK PROGRAMME

1998-2002	2002-2006	2007-2013
Competitive and sustainable growth (GROWTH)	Block 1: Focusing and Integrating European Research	 Cooperation
Research and technological development activities of a generic nature New and improved industrial materials	Priority Thematic Areas 3 Nanotechnologies and nano-science, knowledege-based functional materials, new processes and devices	*COOPERATION* THEME 4 *NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES - NMP*

Materials R&D in the FPs landscape

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SEVENTH FRAMEWORK PROGRAMME

Materials R&D is a standalone action constantly present in FPs

Research and technological development activities of a generic nature

New and improved industrial materials

Priority Thematic Areas 3

Nanotechnologies and nano-science, knowledege-based functional materials, new processes and devices

COOPERATION

THEME 4

NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES - NMP

Materials R&D in the FPs landscape

The European Commission, through the FPs, has achieved relevant results to assure a strong European dimension to Materials R&D and to promote a collaborative attitude among the European materials science community and the various European industries who produce and transform advanced materials into innovative solutions and products

Materials R&D in the FPs landscape

The structural results achieved so far in enforcing the materials science-industry collaboration have to be further developed and improved in view of the key role of materials in providing cost effective options for the future technological requirements posed by the SGC

KET
May be the way beyond the FP7

Materials R&D in the FPs landscape

The structural results achieved so far in enforcing the materials science-industry collaboration have to be further developed and improved in view of the key role of materials in providing cost effective options for the future technological requirements posed by the SGC

…but some improvements are needed in view of the new EU policies

- **Agenda 2020**
- **Innovation Union**
- **Innovation Partnerships**

Key Enabling Technologies
May be the way beyond the FP7


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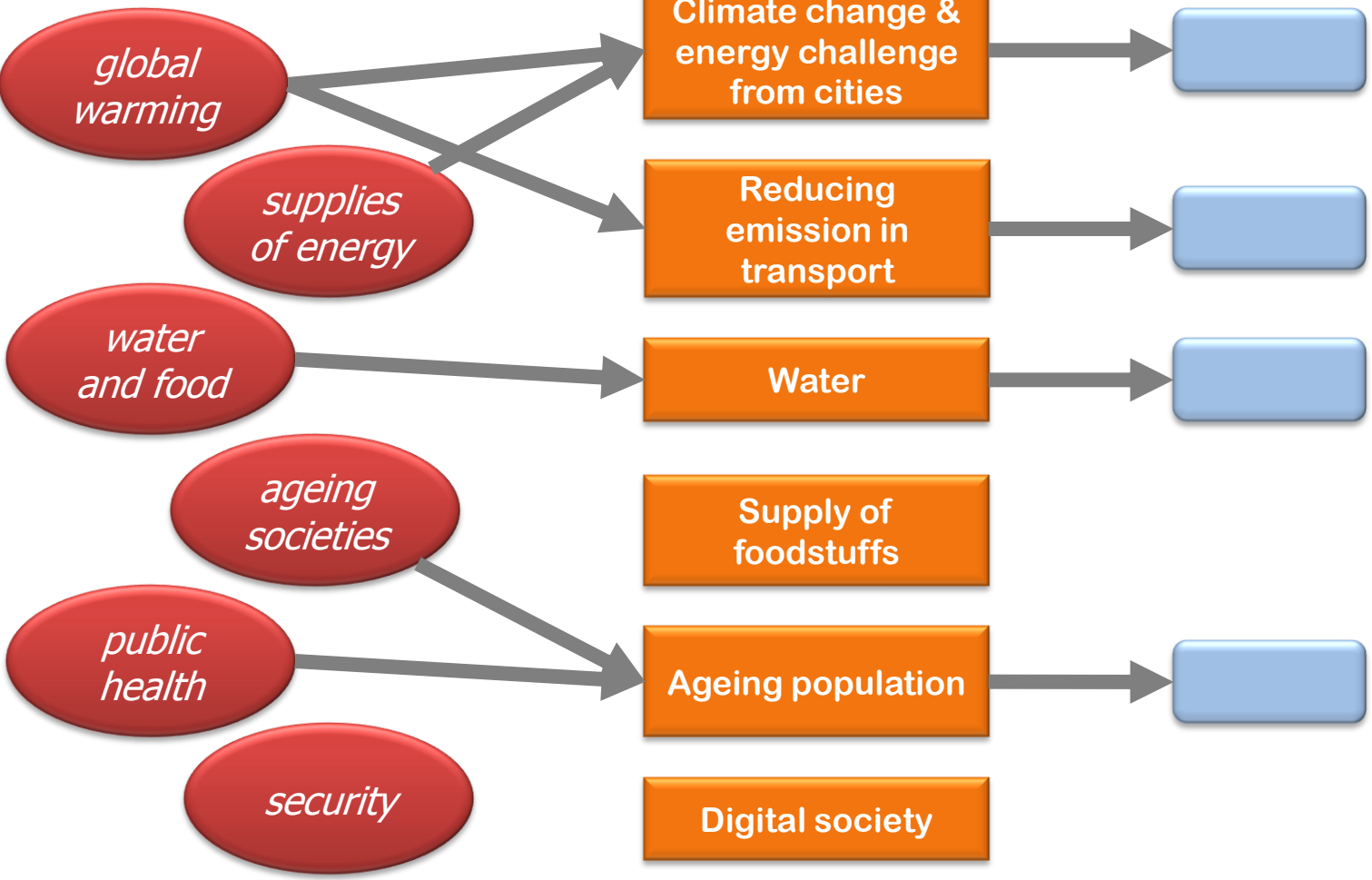
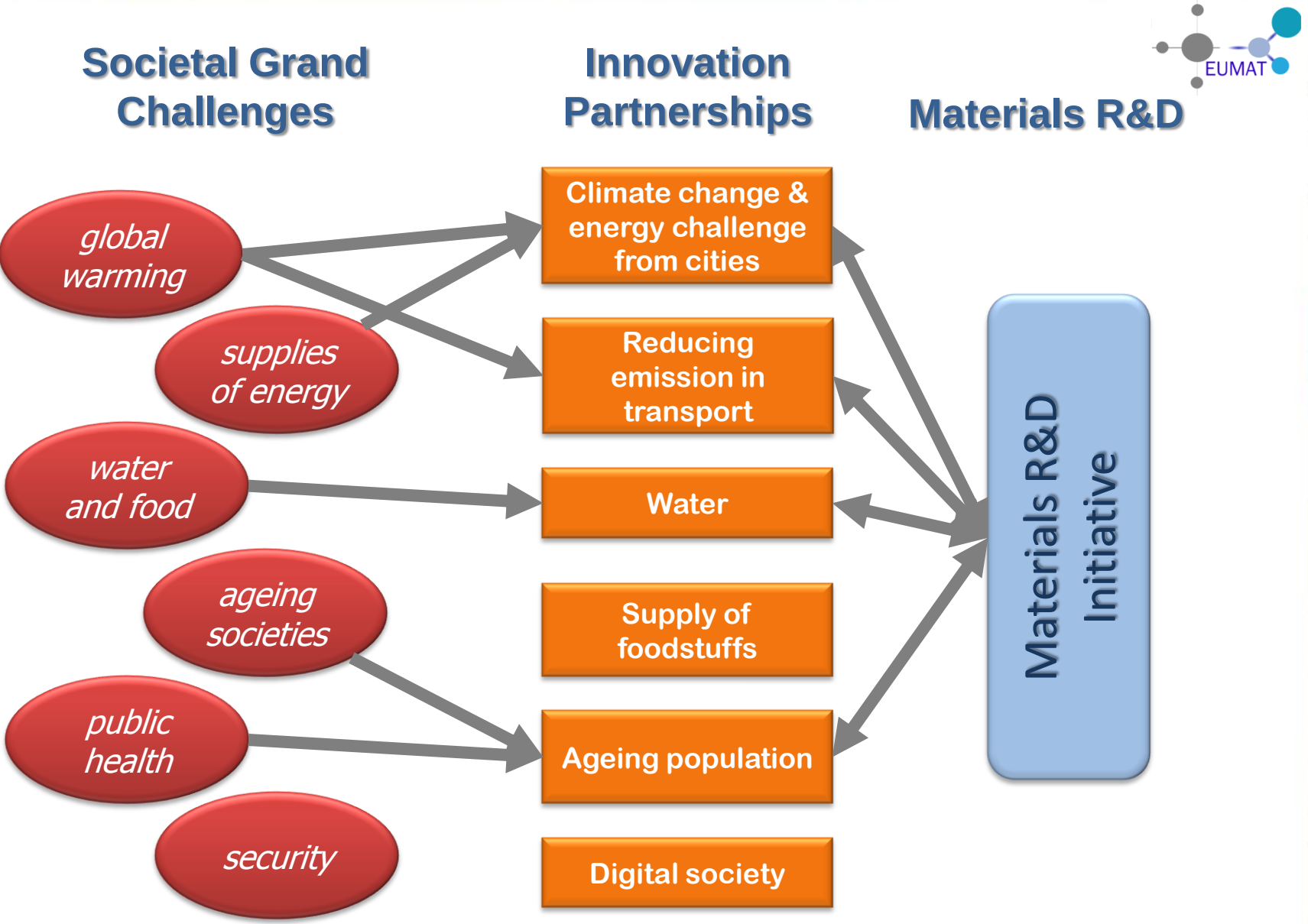

Societal Grand Challenges
Innovation Partnerships
Materials R&D
global warming
supplies of energy
water and food
ageing societies
public health
security
Climate change & energy challenge from cities
Reducing emission in transport
Water
Supply of foodstuffs
Ageing population
Digital society

EuMaT

European Technology Platform for Advanced Engineering Materials and Technologies



TechBreak – ESF-ESA Kick off conference
Brussels 29-30 November 2010

Open questions still remain unsolved

How do KETs, and Material R&D in particular, will merge with the Innovation Union view?

Synergy and coordination in Materials R&D are mandatory to avoid duplications and wasting of resources among the different initiatives proposed under the Innovation Partnership Commission Communication. How does the Commission intended to approach this matter?

Is it credible to work for a future 'partnerships' on Material R&D within the Innovation Partnerships schemes?

If not! How can we assure coordination among the different planned Innovation Partnerships as far as concern Material R&D?

How does a proper balance between fundamental research and value chain driven actions have to be obtained?

The EuMaT's view on future Commission supported Materials R&D programmes

KET

Placed in the frame of the next FP8 (similarly to Collaborative Research)

Keywords:

- to support the EU system to maintain its leading role on Material science
- to allow long term R&D

Materials Initiative

A flexible initiative responding, following and supporting the Innovation Union policies, as far as concern the Materials R&D activity for SGC

Keywords:

- Value Chain approach
- Innovation Partnerships
- Industrial driven
- R&D/Innovation
- Flexibility

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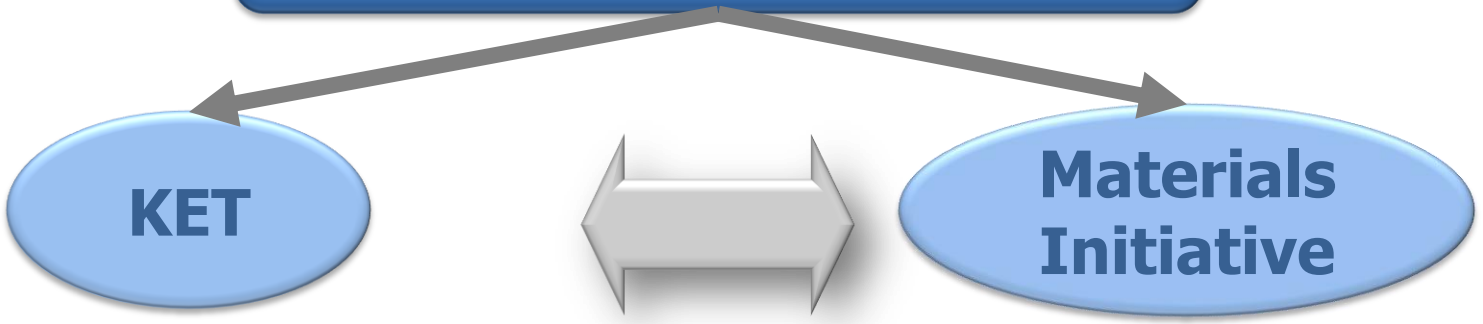

Two coordinated lines of action
NOT two alternative exercises

Placed in the frame of the next FP8 (similarly to Collaborative Research)

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A flexible initiative responding, following and supporting the Innovation Union policies, as far as concern the Materials R&D activity for SGC

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- ***Level 1*** - it includes the ETPs directly related to Materials science, technology, production, transformation [EuMaT, Suschem, Textile, Manufuture, SMR, ESTEP] in short "the core"

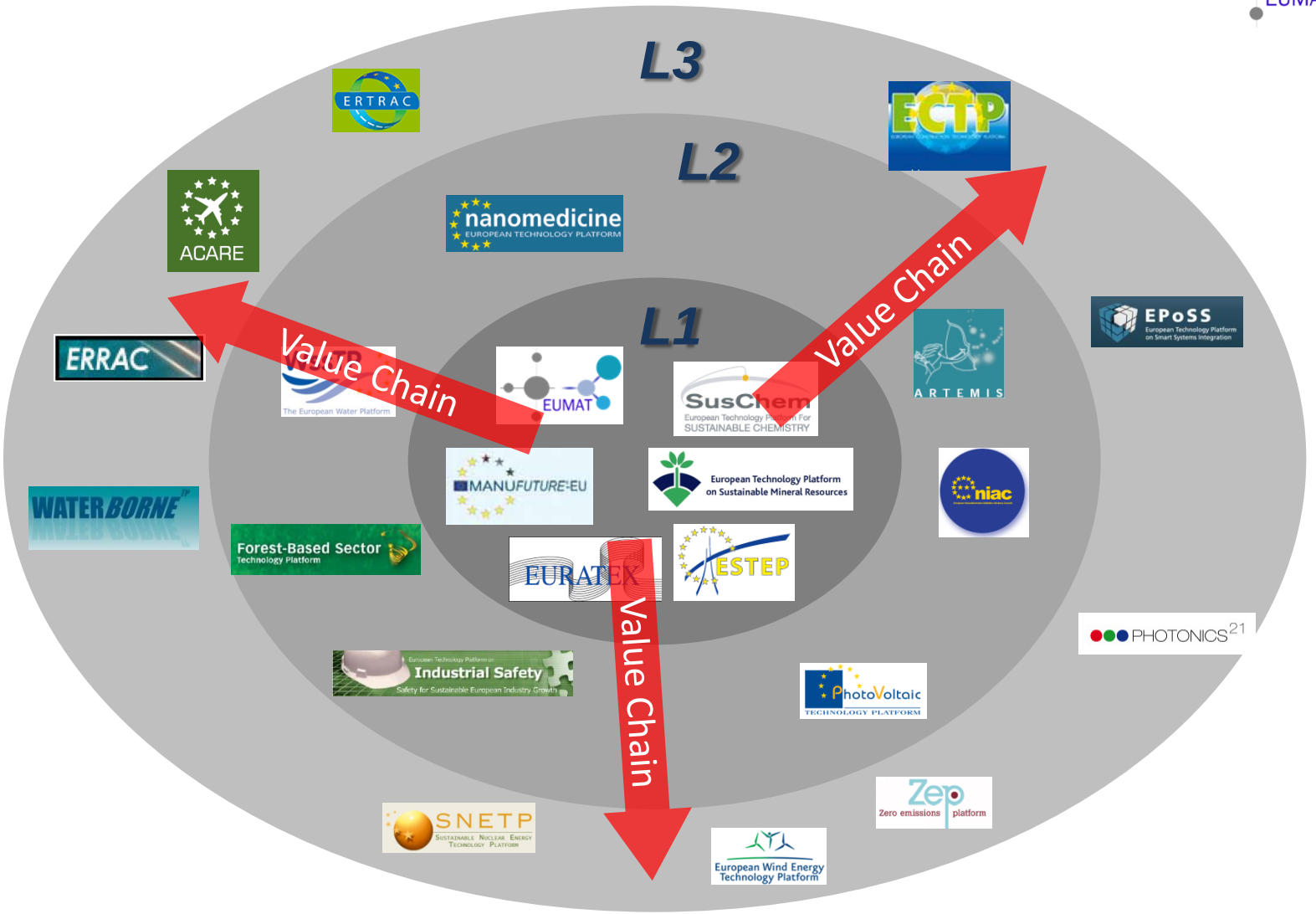
- ***Level 2*** – it includes other ETPs which have evident links to the materials related aspects [ETPIS, PV, ENIAC, ARTEMIS, NanoMed, etc..]

- ***Level 3*** – it includes the final transformers of materials, and/or the end users [ACARE, ERTRAC, ERRAC, ZEP, ECTP, etc…] in short the final 'industrial sectors'

A gradual involvement of different ETPs follows a pragmatic approach based on the logic of 'Levels'

EuMaT

European Technology Platform for Advanced Engineering Materials and Technologies



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Conclusions

The major European industrial sectors are clearly committed in long term R&D strategies for achieving significant improvements in their respectively technological domain with the aim to provide answers to the SGCs

Among the different R&D strategies, the Material R&D is a common crosscutting element appearing in relevant form in almost any of these strategies

In that context Materials appear as a critical enabling technologies with an evident direct impact in the future chances of success to solve SGCs

The EuMaT vision is to contribute to the Material R&D effort to bring together and to increase efficiency and synergies between the industrial system and the scientific Community, with the aim of improving the resource effectiveness

Conclusions

EuMaT supports the appearance of the Materials R&D within the KET environment and intends to continue to give contribution to the Commission in this crucial phase that should bring to the definition of the future FP8 structure

EuMaT together with several ETPs, with a fundamental and significant materials component in their strategy, is working to provide in the near future a proposal for a concrete Initiatives on how to align **the value chain** consisting of the supply of materials, to convertors, and the manufacturing needed to address the key societal challenges defined within the EU 2020 policy objectives.

This Initiative has to continue to grow in the context of the KET current discussion and the Innovation Union initiative

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Thank you for your attention