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SEVENTH FRAMEWORK
PROGRAMME

European perspectives addressing safety technology

7th Framework Programme Theme 4 NMP

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Content Outline

- RTD policy – Safety
- 7th Framework programme
- Technology Platforms



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Basis of EU Research Programmes

- **Objective “Lisbon”**: to become the most dynamic and most competitive knowledge-based economy
- **Objective “Göteborg”**: sustainable development (environment, health, economy, employment)
- **European Research Area (ERA)**: Integrating, reinforcing, structuring and stimulating investment in Research & Development



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RTD policy in support of industrial safety

- **Support from RTD to other EU policies (HSW action plan, Seveso, IPPC and ATEX directives, standardisation)**
- **Major element in RTD portfolio with several projects and networks being funded under FP5/GROWTH and FP6/NMP specific programmes and others**
- **Guidance and support to the initiative of stakeholders to launch a technology platform on industrial safety**
- **Support seamless contacts with industrial sectors and other TPs**
- **Ensure continuity into the 7th FP**
- **Support in implementing EU priorities defined in the SRA**
- **Support for synergy of EU national and private efforts**



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Coordination of activities

Aiming at:

- Avoiding fragmentation of work, create synergy between efforts, bring together stakeholders
- Address efficiently common goals for standardisation, communication, training, future strategy

Areas addressed

Risk based methods, human factors, process safety, monitoring, structural safety

Examples

- RIMAP, SAFERELNET, PRISM, FITNET, S 2 S, ADVANCED CREEP, SHAPERISK, SAMCO, IALAD



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RTD Projects

Aiming at:

- Development and implementation of new technology responding to programme objectives

Areas addressed

- Structural monitoring and control, Risk based methods, industrial ecotoxicology

Examples

- RIMAP RTD, OMNIITOX, XPECTION, HIDA APPLICABILITY,



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FP6 PRIORITY 3 NMP

Two integrated projects launched

VIRTUALIS: Virtual reality and human factors applications for improving safety

Aiming at reducing hazards in production plants and storage sites moving from static paper-based assessments to dynamic virtual simulations, addressing practical safety issues in all stages of the production lifecycle

NANOSAFE 2: Safe production and use of nanoparticles

Aiming at developing innovative detection, measurement, tracing and characterization techniques for engineered nanoparticles, and advanced technologies to limit both exposure to nanoparticles and leaks to environment in the framework of a global risk management strategy



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7th Framework Programme Content

4 Specific Programmes

1. *Cooperation* – Collaborative research

2. *Ideas* – Frontier Research

3. *People* – Human Potential

4. *Capacities* – Research Capacity



JRC (non-nuclear)

JRC (nuclear)

Euratom

9 Cooperation Themes

1. Health
2. Biotechnology
3. Information Society
4. Nano, Materials & Production
5. Energy
6. Environment
7. Transport
8. Socio-economic Research
9. Security & Space



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7th Framework Programme 2007-2013



Building the Europe of Knowledge

Theme 4 : N & N, Materials, Production



Improve the competitiveness of European Industry



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Theme 4: Nanosciences, nanotechnologies, materials and new production technologies

Overall objective: improve the competitiveness of EU industry (including SMEs) and ensure its transformation through:

- the effective transition from a resource-based to knowledge-based industry
- generation of new breakthrough, applicable, knowledge
- strengthening EU leadership in nano, materials and production technologies
- emphasis on integrating different technologies and disciplines across many sectors

Importance of Technology Platforms to help establish common research priorities and targets



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Theme 4: Nanosciences, nanotechnologies, materials and new production technologies

1. Nanosciences and nanotechnologies

Objective: increase and support the take up of knowledge generated in this revolutionary field for all industrial sectors

Topics include: interface and size dependent phenomena; materials properties at nano-scale; self assembly; metrology; new concepts and approaches; impacts on health and safety; convergence of emerging technologies



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Theme 4: Nanosciences, nanotechnologies, materials and new production technologies

2. Materials

Objective: generate new knowledge to enable new industrial products and processes to be achieved, exploiting the potential of interdisciplinary approaches in materials research.

- **Topics include: high performance, sustainable and knowledge-based materials; design and simulation; nano-, bio- and hybrid materials and their processing; chemical technologies and materials processing industries**



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Theme 4: Nanosciences, nanotechnologies, materials and new production technologies

3. New production

Objective: create continuously innovating production capabilities to achieve leadership in industrial products & processes in the global marketplace.

- ***Topics include: Knowledge-intensive production; new paradigms for emerging industrial needs; adaptive, networked and knowledge-based production; convergence of technologies for next generation of high value-added products (nano, bio, info, cognitive..)***



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Theme 4: Nanosciences, nanotechnologies, materials and new production technologies

4. Integration of technologies for industrial applications

Objective: accelerate the rate of industrial transformation by exploiting the application potential of new generic technologies.

Topics include: Integration of nano, materials and production technologies in sectoral and cross-sectoral applications (e.g. health, construction, transport, energy, chemistry, environment, textiles & clothing, pulp & paper, mechanical engineering, safety)



Holistic approach to Knowledge Based Factories

Development and validation of new industrial models and strategies

is about...

*improving the operations efficiency of a **factory** through new production models and systems integration*

Adaptive production systems *is about...*

*enhancing the **production system** performance within a factory through holistic manufacturing engineering concepts*

Networked production *is about...*

*enabling customer-oriented and cost-efficient manufacturing operations within **dynamic networks** of companies*

Rapid transfer and integration of new technologies into the design and operation of manufacturing processes *is about...*

*development of **knowledge based engineering** capacities drawing on in-depth understanding of the behaviour of machines, processes and systems*

Exploitation of the convergence of technologies *is about...*

*stimulating the creation of **new industries** through application of basic research results in converging technologies*



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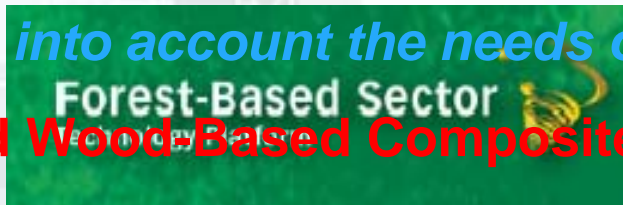
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Integration of technologies for industrial applications

Some identified topics for Year1

....established as a priority through a thorough consultation with Dir G, ensuring the contribution towards overall objectives of the theme

....and taking into account the needs of SMEs in particular



Advanced Wood Based Composites and their Production (Forestry ETP)

Resource Efficient and Clean Buildings (Construction ETP)



Innovative added-value construction services (Construction ETP) (SME topic)

Application of New Materials Including Bio-Based Fibres in High-Added Value Textiles Products (Textiles ETP) (SME topic)





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Instruments

1. Collaborative projects

- ("small or medium-scale focused research" projects)
- ("large-scale integrating" projects)
- ("Projects may also be targeted to special groups such as SMEs")

2. Networks of Excellence

3. Co-ordination and support actions

- **Support to actions aimed at "coordinating or supporting research activities"**
- **ERA-Net and ERA-Net+**





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Financing

Research and technological activities – 50% of eligible costs except that for:

- **SMEs – 75%**
- **Public bodies – 75%**
- **Secondary and higher education establishments – 75%**
- **Research organisations (non-profit) – 75%**

Demonstration activities – 50% of eligible costs

Management, audit costs, etc. – 100% of eligible costs

Coordination and support actions – 100%



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Implementation in 2007

Indicative budget: around 500 million Euros

Indicative timetable: *For Collaborative projects and SME dedicated projects*

- Publication: Dec 06
- Deadline 1st stage: Mid April 07
- Evaluation 1st stage: Mid May 07 (2 weeks)
- Deadline 2nd stage: Beginning Oct 07
- Evaluation 2nd stage: Beginning Nov 07
- Results : End Nov 07



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Implementation in 2007

Indicative Timetable: *For Coordination/Support actions*

- Publication: Dec 06
- Deadline: Sept 07
- Evaluation 1st stage: Oct 07
- Results: Mid Nov 07

Evaluation: in 2 stages for collaborative & SME projects; 1 stage for Coordination/Support actions

- Short 1st stage proposal (10 pages?); emphasis on S&T excellence & Impact
- Full proposal: reduced number of evaluation criteria (S&T excellence, Impacts, Management)



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Activity 4.3 New Production (10 topics)

WP Overview

Year 1

Large **Small** **SME**

4.3.1 Development and validation of new industrial models and strategies (3 topics)

4.3.1-1 Beyond Lean Manufacturing

– New industrial models for products and process life cycle - LA

4.3.1-2 New added-value user-centered products and product services – SME dedicated

4.3.1-3 Integrated risk management in plants, industrial parks, industrial systems and networks - LA

4.3.2 Adaptive production systems (2 topics)

4.3.2-1 Rapidly configurable machines and production systems - SM

4.3.2-2 Process intensification in chemical production - SM





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Activity 4.3 New Production (10 topics)

WP Overview

Year 1

LArge

SMall

SME

4.3.3 Networked production (1 topic)

4.3.3-1 Innovative customer-driven product-service design in a global environment - SM

4.3.4 Rapid transfer and integration of new technologies into the design and operation of manufacturing processes (2 topics)

4.3.4-1 Rapid manufacturing concepts for small series industrial production – SME dedicated

4.3.4-2 Innovative pathways in Synthesis – improving efficiency by smart synthesis, design and reduction of the number of reaction steps - SM

4.3.5 Exploitation of the convergence of technologies (2 topics)

4.3.5-1 Processes and equipment for high quality industrial production of nano-surfaces - LA

4.3.5-2 Production technologies for micro-manufacturing - LA



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Year 1

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Activity 4.3 New Production (10 topics)

WP Overview

Year 1

Large

Small

SME

Activity 4.4 Integration of technologies for industrial applications (7 topics)

4.4.1 Advanced wood-based composites and their production - LA

4.4.2 Application of new materials including bio-based fibres in high-added value textile products
– SME dedicated

4.4.3 Multifunctional materials for the future vehicles - LA

4.4.4 Substantial innovation in the European medical industry - LA

4.4.5 Resource efficient and clean buildings - LA

4.4.6 Innovative added-value construction product-services – SME dedicated

4.4.4-5 ERA-Net on Construction – ERA-net+



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Integrated Risk Management in Industrial Systems

Technical Content/Scope: Development of **integrated risk assessment** and **risk management** methods. Integration of **new safety concepts** with the aim of reducing overall risks and **achieving total safety management** of industrial systems and networks

Funding Scheme: Large-scale integrating projects

Special Features: Industrial leadership; demonstration elements; covering **multiple sectors**

Expected Impact: Directly supporting the successful implementation of the strategic research agenda of the **European Technology Platform on Industrial Safety**.

www.industrialsafety-tp.org



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Future proposals CONCENTRATE ON:

- ✓ Real industrial needs as determined by the market demand and by sustainability objectives
- ✓ Active and strong industrial participation
- ✓ Real pilot cases on new production models
- ✓ Complementarity of contributions and roles of the actors in the value chain
- ✓ Collectively covering a number of distinct discrete manufacturing sectors (eg. White goods, automotive, machinery,





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Future proposals

WHAT SHOULD BE AVOIDED ?

- ✓ Pure SW development with no research,
- ✓ Pure methodology with no research and innovation on technology and/or pilot cases,
- ✓ Consultancy activities, without any real/proven industrial participation (both solution providers and end users)
- ✓ No 'local' applications with no added value at European level (Point and Partial solutions)





Technology platforms - the concept

Technology platforms should

- Be established in areas where RTD plays a vital role in **addressing major economic, technological and societal challenges**
- generate **sustainable competitiveness** of the EU, stimulate increased and **more effective investment in RTD, accelerate innovation** and **eliminate barriers** to the deployment and growth of new technologies.

Technology platforms should

- **bring together all stakeholders** (research, industry, regulators, policy makers) **to develop a long term vision** for the deployment and growth of new technologies, including the downstream regulatory environment in which technologies are developed and marketed
- **create a coherent strategy and action plan** to deliver agreed programs of activities and optimise the benefits of all
- elaborate and follow-up a **strategic research agenda**



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TP for safety: What for?

The challenge: Meeting societal expectations in safety and environmental protection while remaining competitive

The means: Breakthrough progress in industrial and environmental safety via co-ordinated focussed research and implementation process

Strategy

Communication

Systemic approach

Education, training

Risk governance

Standards, regulation

Knowledge transfer and
implementation

National platforms

Focus RTD groups:

- Risk assessment and management
- Risk reduction
- Structural safety
- Human factors, organisational safety
- New emerging risks
- Nano-safety



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A wider picture

EU policies related to industrial and environmental safety:

- **DG ENTERPRISE**
- **DG EMPLOYMENT**
- **DG ENVIRONMENT**
- **DG JOINT RESEARCH CENTRE**
- **DG RESEARCH**

International cooperation



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National platforms (i)

To maximise synergy with the European platform:

- **Improve awareness at national level**
- **Collaborate for vision, SRA & roadmap**
- **Implementation at national level**
- **Set up links, promote new participation**
- **Disseminate outcome within all MS**
- **Involve & represent national authorities**

Work in local language



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National platforms (ii)

At national level a key role for real impact:

- Set up links with regional & local stakeholders (authorities, academia, regulatory bodies, trade unions)
- Improve the involvement of SMEs
- Define research needs
- Implement a dedicated training & education strategy;
- Feedback to European level
- Identify & involve national and regional research
- Identify gaps and barriers to innovation
- Create synergy with other national platforms
- Identify and enhance national financial support schemes



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Summary

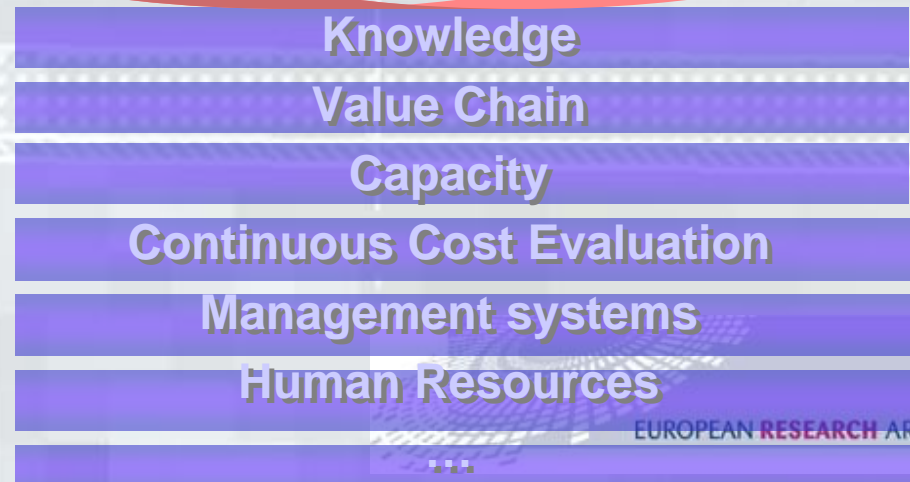
Value proposition as defined action

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- Continuity with past activities
- Support industrial change;
- Collaborative research with industrial relevance;
- Multi-annual research planning linked to innovation;
- SME responsive;



Transfer function
Role of FP7





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Thank you for your attention!

<http://ec.europa.eu/research>

<http://cordis.europa.eu/technology-platforms>

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