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5th ECTP Annual Assembly: Cultural Heritage parallel session

Warsaw, Radisson Blu hotel,
4-5/10/2011

EU Research and Innovation policy for tangible cultural heritage

European Commission

DG « Research & Innovation »

Directorate « Environment »

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Cultural Heritage & EU Environmental Research Programme: rationale

- Since 1986, **EC** has supported **research** (through FPs, ENV prog.) for the preservation of **tangible Cultural Heritage**
- **Common methodologies, tools and products for assessment, conservation, restoration** to avoid duplication of efforts (**150 M€, 500 stakeholders, 130 research projects**)
- **Sustainability Policy** at EU, National & Regional levels is more pressing than ever: cultural heritage, sustainable per definition, is however exposed to damages through **pollution, climate change and socio-econ. pressures**
- **Cultural tourism** and heritage : attractivity of European sites and places, job creation ,quality of life, reinforce collective identity.





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EU Cultural Heritage and Economy

- **9 million jobs** linked directly or indirectly to the tourism sector
- Market conservation of this heritage is estimated at **EUR 5 billion per year** in the EU





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EU Cultural Heritage is FRAGILE

Loss: Equivalent of **14 billion Euro/year**

Protection of cultural heritage, in the context of global change, is a major concern for decision-makers, stakeholders and citizens





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Cultural Heritage (C.H.) and Environmental Technologies

Objectives : Development of technologies

- for the environmentally sound and sustainable management of the human environment including the built environment, urban areas and landscapes,
- for the protection, conservation and restoration of cultural heritage from environmental pollution

Research

- for advanced and non-destructive techniques for damage diagnosis,
- new products and methodologies for restoration,
- mitigation and adaptation strategies for the sustainable management of both movable and immovable cultural assets.





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Key-drivers for C.H. research during FP7

More than in the past, a multiple integrated approach:

- Focus more on **complex assemblies** and not only on individual materials
- Integration of **damage functions**, assessment and **monitoring** for preservation
- Importance of **context** in research on the preservation of **movable and immovable heritage**





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Environmental Technologies Cultural Heritage 2007 Call

- **ENV.2007.3.2.1.1: Damage assessment, diagnosis & monitoring for the preventive conservation & maintenance of the cultural heritage**
 - **TEACH** Assessment and diagnosis of air pollution
 - **POPART** Preservation of plastic artefacts in collections
 - **SMOOHs** Smart monitoring of historic structures
- **ENV.2007.3.2.2.1: Technologies, knowledge transfer and optimisation of results in cultural heritage**
 - **NET-Heritage** European network on research programme applied to the preservation of tangible cultural heritage
- **ENV.2007.3.2.2.2: Consolidation & dissemination of results**
 - **CHRESP** (Ljubljana Conference)





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Environmental Technologies Cultural Heritage 2008 Call

- **ENV.2008.3.2.1.1:** Methodologies, technologies, models and tools for damage assessment, monitoring and adaptation to climate change impacts (excluding extreme events):
 - **CLIMATE FOR CULTURE** Damage assessment, economic impact and mitigation strategies for sustainable preservation of cultural heritage in times of climate change
- **ENV.2008.3.2.1.2:** EU cultural heritage identity card:
 - **EU-CHIC** European cultural identity card (promotes a system of regular inspection for monitoring and maintenance)
 - **“WRECKPROTECT”** Strategies for the protection of shipwrecks in the Baltic Sea
- **ENV.2008.3.2.2.1:** Framework conditions to enhance most promising prototypes :
 - **“MUSECORR”** Protection of cultural heritage by real-time corrosion monitoring
 - **ROCARE** Roman cements for architectural restoration to new high standards





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EU Cultural Heritage (FP7) CLIMATE FOR CULTURE

"Damage Risk Assessment, Macroeconomic Impact and Mitigation Strategies for Sustainable Preservation of Cultural Heritage in the Times of Climate Change" aims to identify the risks for cultural heritage associated to climate change in specific regions. Mitigation/adaptation strategies.

- ✓ Duration: 60 months (1/11/2009-30/10/2014)
- ✓ 27 Partners in 14 countries
- ✓ Project Coordinator: Fraunhofer Gesellschaft
- ✓ High resolution climate modelling on regional scale with hygrothermal simulation software
- ✓ Combination of high resolution climate modelling with buildings simulation software to predict microclimates inside historic buildings
- ✓ Quantification of energy to be used
- ✓ Project Web Site: <http://www.climateforculture.eu/>





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Environmental Technologies Cultural Heritage 2009 Call

- **ENV.2009.3.2.1.1: Technologies for protecting cultural heritage assets from risks and damages resulting from extreme events, especially in the case of earthquakes:**

NIKER Development of new integrated technologies and tools for systematic improvement of seismic behaviour of cultural heritage

PERPETUATE Development of a displacement-based approach for the vulnerability evaluation and the design of devices for earthquake protection of cultural heritage

- **ENV.2009.3.2.1.2: Technologies for protecting cultural heritage assets from risks and damages resulting from extreme events, especially in the case of fires and storms:**

FIRESENSE Development of an early warning system for remote monitoring for the protection of cultural heritage areas from the risk of fire and extreme weather conditions





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Environmental Technologies Cultural Heritage 2010 Call

- **EeB.ENV.2010.3.2.4-1** Compatible solutions for improving the **energy efficiency of historic buildings** in urban areas (protection and rehabilitation of historic buildings in urban areas especially contributing to energy saving in the context of **European Economic Recovery Plan** to contribute to the fight against current economic crisis)
 - **3ENCULT**: Efficient Energy for EU Cultural Heritage
- **ENV.2010.3.2.1-1** **Non-destructive diagnosis technologies** for the safe conservation of movable assets diagnosis technologies (potential applications for authentication, traceability) **for sustainable and integrated management of movable cultural assets**
 - **MEMORI** : Measurement, Effect assessment and Mitigation of pollutant Impact on movable cultural assets. – Innovative research for market transfer
 - **SYDDARTA** : SYstem for Digitization and Diagnosis in ART Applications (from 1/10/2011)



COOPERATION



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EU Cultural Heritage (FP7-EeB) project "3ENCULT"

"**Efficient ENergy for EU Cultural Heritage**" aims to develop solutions for improving the energy efficiency of **historic buildings in urban areas**

- ✓ 23 partners in 11 European Countries, 8 case studies
- ✓ Duration: 42 months (1/10/2010-31/3/2014)
- ✓ Project Coordinator: Accademia Europea Bolzano/EURAC (Italy)
- ✓ Test feasibility of "Factor 4" to "Factor 10" reduction in energy demand
- ✓ Passive and active solutions for conservation and energy effic.retrofit
- ✓ Website: <http://www.eurac.edu/en/eurac/welcome/default.html>



COOPERATION



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Environmental Technologies Cultural Heritage 2011 Call

- ENV-NMP.2011.3.2.1-1 Development of **compatible advanced materials and techniques and their** application for the protection , conservation and restoration of cultural heritage assets:
Joint call « FP7-ENV-NMP-2011 »: 5 projects under negotiation (3 projects under negotiation EC-RTD-ENV: IMAT, PANNA, NANOMATCH & 2 other projects HEROMAT and NANOFORART under NMP directorate)
- ENV.2011.3.2.2-1 "Coordination Action in support of implementation by participation States of a **Joint Programming Initiative (JPI)**" on "**Cultural Heritage and Global Change : a new challenge for Europe**": CSA –JHEP





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European Construction Technology Platform (ECTP) including Focus Area on Cultural Heritage

- ECTP gathers important **private and public stakeholders** in the field of construction at European level ; also about 30 National TPs
- The **Focus Area on Cultural Heritage (FACH)** mostly for immovable Cultural heritage but “driver” for the movable C.H., includes 6 “vertical” and 6 “horizontal” WGs.
 - **Vertical WGs: Diagnosis & assessment, materials, intervention techniques, environment & energy management, exploitation and maintenance, cities and territorial aspects;**
 - **Horizontal WGs: Education & training, preservation of art works, technical standards, socio-economic aspects, disaster prevention, communication**
- The overall “umbrella” ECTP - FACH has set-up a **“Strategic Research Agenda”** also leading to **Implementation Plan”** setting priorities to be addressed during FP7 (active role of proposition of topics to EC)





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E2B European Initiative

- The objective of **Energy Efficient Buildings (EeB) European Initiative** is to deliver, implement and optimise **building and district concepts** that have the technical, economic and societal potential to drastically **decrease the energy consumption and reduce CO2 emissions** due to existing and new buildings at the overall scale of the European Union.
- The EeB European Initiative is expected **to speed up research on key technologies** and develop a competitive industry in the fields of energy efficient construction processes, products and services, with the main purpose of reaching the goals set forth for 2020 and 2050 to **address climate change issues** and contribute to improve **EU energy independence** thereby transforming these challenges into a business opportunity.
- The EeB Initiative also applies to **retrofitting of existing constructions and built heritage**





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Indicative gaps, challenges & emerging issues for C.H. (not exhaustive..)

- Technologies and tools for the protection of **submerged cultural heritage including maritime, coastal & archaeological heritage**, topic included in call 2012
- Integration of CH in **urban setting through refurbishment / renovation** especially regarding energy efficiency at « **district/quartier** » level (see EeB multiannual roadmap, topic included in call 2012)
- Protection of **rural/cultural landscapes and archaeological sites** with special focus on preventive archaeology and conservation
- New tools for **integral management of significant interesting historic places**
- Actions to better support **innovative high-tech SMEs** to move from new concepts to **prototypes and marketable products/technologies**
- Dissemination of knowledge, training activities, exploitation of results (more EC projects to show **results in existing fairs in C.H.**: eg Ferrara, AR&PA Innovation Valladolid May 2012, ESOF July 2012,, Leipzig...); also possible event in Cyprus at end October 2012, **economic impact** and « externalities ».





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What is most needed for C.H.?

- More **complementarity & coordination** needed
 - at **European level, national, and regional level (JPI)**
 - with other **EU research programmes and sub-activities** and linked initiatives (ECTP/FACH, PPP EeB initiative)
 - and **operational EU programmes**: Education and Culture, Regional policy, External relations (Europe-Aid, Euromed etc..)
 - With other European organisations-eg Council of Europe-..., NGOs (e.g. Europa Nostra)
- Foster the **international dimension**
 - MPC countries, Latin America, China, Japan, India, US etc.
 - with worldwide organisations/agencies UNESCO, ICCROM, ICOM, ICOMOS and Associations





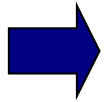
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Main EU « Policy Drivers » for research up to 2020

- ✓ Europe 2020 Strategy:
... a Strategy for smart, sustainable and inclusive growth
- ✓ Innovation Union Flagship
- ✓ Resource Efficiency Flagship

TRANSFORMATIVE and RESPONSIBLE INNOVATION





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« post FP7 »: HORIZON 2020

COMMON STRATEGIC FRAMEWORK (CSF) for EU RESEARCH and INNOVATION:

- European Research Area framework
- European Innovation Partnerships (Linking more research and innovation)
- Streamlined EU programmes (simplification)
- European added value
- Impacts and results
- New financial and legal instruments (EIB and Risk Sharing Finance Facility, EU patent)
- Reform of standardisation system
- <http://www.ec.europa.eu/research/csfri>

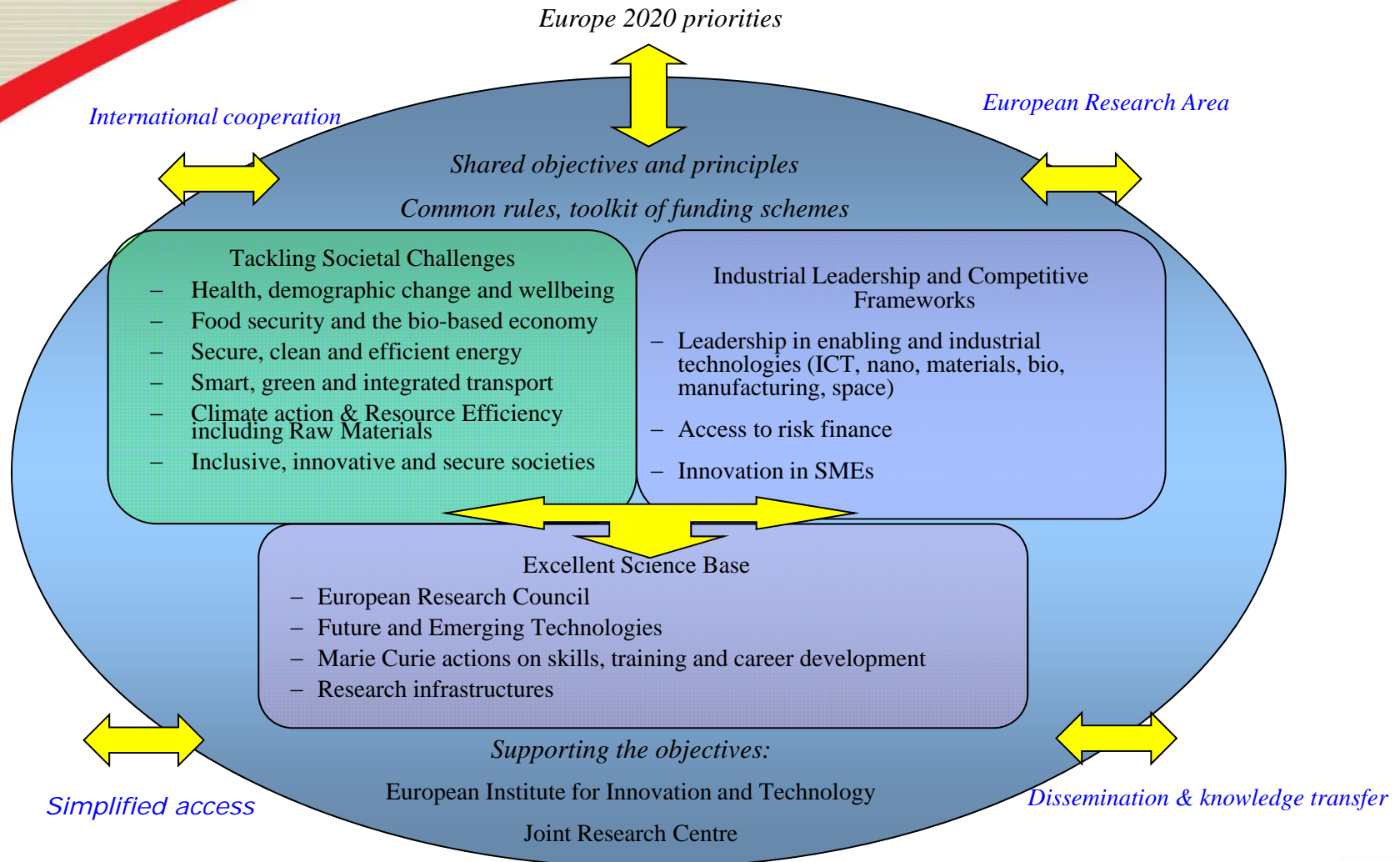




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Horizon 2020 – Objectives and structure





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Timeline: next steps

- **Negotiations on EU budget 2014-2020**
- **Commission proposals for Horizon 2020:** before end 2011 (end November or beginning December 2011):

30 November 2011 – proposed date for adoption by the European Commission of the draft legislative proposal for Horizon 2020 - the future Framework Programme for Research and Innovation.

5 December – 1st Innovation Convention in Brussels

6 December – Presentation of Horizon 2020 to the Competitiveness Council

- **FP7 2013 Work Programmes**, to bridge towards Horizon 2020
- **Legislative decisions** on Horizon 2020 by the Council and European Parliament (2012-13)
- **Horizon 2020** (from 2014)





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Useful Websites: FP7 & Environment Theme

- **Calls & Docs** : <http://cordis.europa.eu/fp7/calls>
EU environmental research:
http://cordis.europa.eu/fp7/environment/home_en.html
which includes EU C.H. research:
http://ec.europa.eu/research/environment/index_en.cfm?pg=cultural
- **NCP Network** :
http://cordis.europa.eu/fp7/ncp_en.html
- **Evaluators** : <http://cordis.europa.eu/experts>
- **Technology Platforms** :
http://cordis.europa.eu/technology-platforms/home_en.html
- **Innovation Union website:**
<http://ec.europa.eu/research/innovation-union/>





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Thank you for your attention

