

Objectives and content of the EU GROWTH Thematic Network Lifetime

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EU GROWTH
Thematic Network
 LIFETIME



Time Schedule: Start 01. 04. 2002.
 End 31. 03. 2005

Project Co-ordinator:

Technical Research Centre of Finland, VTT Building and Transport, FIN
 Professor, Dr. Asko Sarja

Principal

Contractors:

Taylor Woodrow Construction ltd	UK
Centre Scientifique et Technique du Batiment,	F
Imperial College of Science Technology and Medicine, (T H Huxley School of Environment, Earth Sciences and Engineering)	UK
Universitaet Karlsruhe (University of Karlsruhe) Facility Management and Institut f. Maschinenwesen im Betrieb	<u>D</u>

PARTNERS

Class of partners	Number of partners
COUNTRIES	
Total number of participating countries	31
Countries from EU, EU associated countries and new EU candidate countries	26
Other countries	5
PARTNERS	
Total number of individual partners	97
- Principal Contractors	5
- Members	81
- Participants	11
FINANCING	
Members (MB) with EU financing	89
- Members from EU	70
- Members from EU-Associated and EU Candidate countries	19
Members from Europe without EU financing (Swiss)	2

Phases

- Application, May 2001
- Contract Negotiations: September -December 2001
- Signature of the Contract: May, 2002
- Execution phase: June 2002 - May 2005

BACKGROUND

- The built infrastructure (buildings and civil infrastructures) are the **longest lasting products** of our society
- **Demands of owners, users and society** are getting **stronger** in the framework of sustainable development and **life time quality**
- The majority of the built **infrastructure is getting old** and partly deteriorating
- currently exists a dilemma between infrastructures as a very **long-term product** and **short-term approach to design, management and maintenance planning**

The challenge

- INFRASTRUCTURE (Buildings and Civil Infrastructures) are important for the **sustainable development** of European societies
- We have ***to learn to design, operate, maintain, repair, rehabilitate, modernise, resue and recycle our infrastructure on an optimised way***

LIFETIME ENGINEERING

- **Lifetime engineering is a theory and practice of predictive and integrated long-term investment planning, design, management and maintenance planning of assets.**
- **With the aid of lifetime engineering we can control and optimise the management of assets corresponding to the objectives of owners, users and society.**
- **Lifetime engineering includes:**
 - **Integrated lifetime investment planning and decision making;**
 - **Integrated lifetime design;**
 - **Integrated lifetime management and maintenance planning; Modernisation, reuse, recycling and disposal, and**
 - **Integrated lifetime environmental impact assessment and optimal minimisation.**

Thematic Network LIFETIME Objective

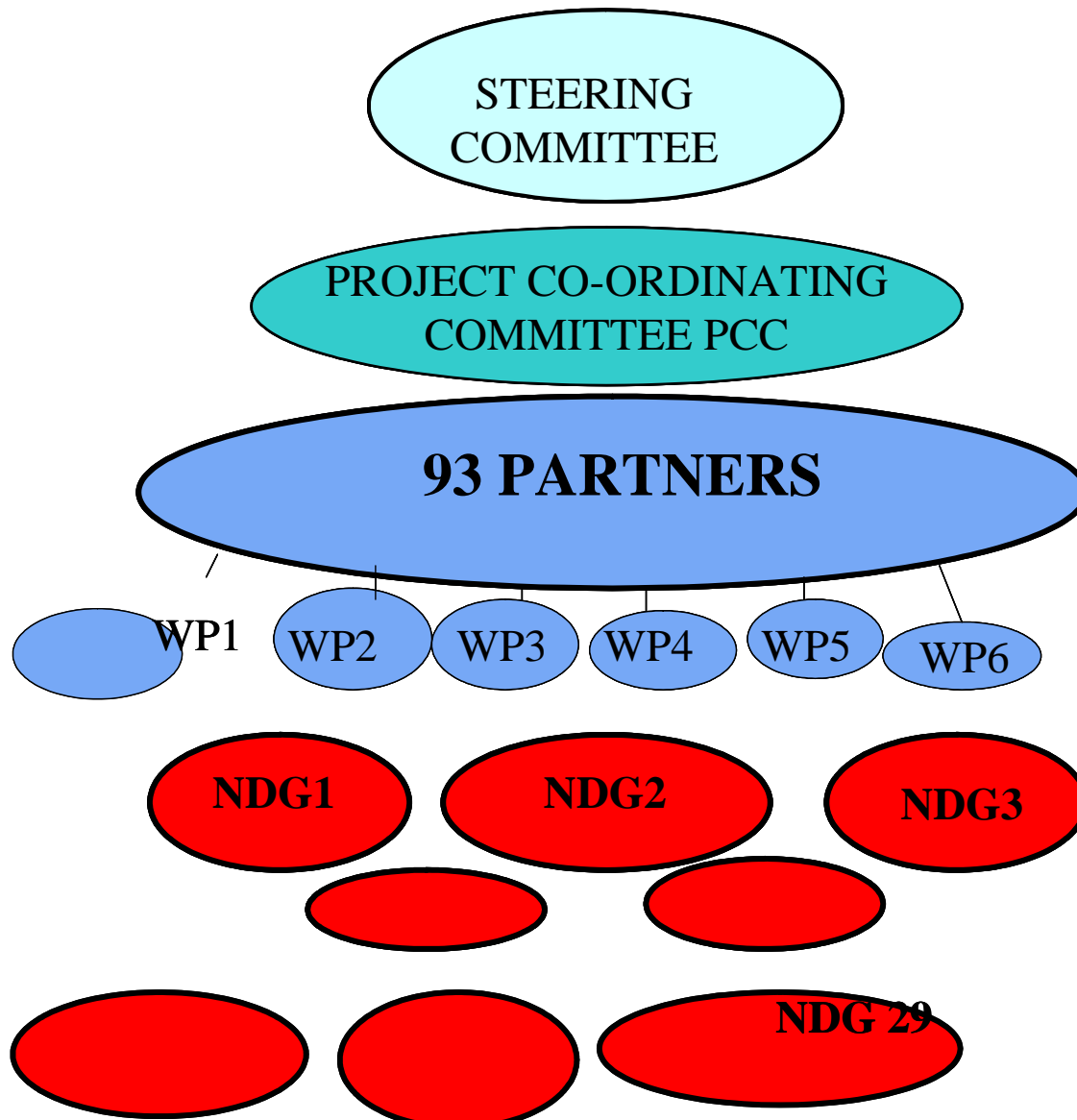
- ▼ to contribute the European and world-wide development towards a more sustainable built environment,
- ▼ focusing introducing the lifetime principles into
 - investment planning,
 - design and
 - facility management and maintenance activities
 - environmental impact assessment of
 - buildings, civil and industrial infrastructures.

LIFETIME TN Methods

"Lifetime" TN works as a co-operational process between partners by

- identifying, analysing and **benchmarking current practice**, ongoing R&D works and international and national R&D programs
- producing **state of the art reports**, including **conclusions and recommendations** for future R&D
- **identifying gaps and barriers** between best know how and research results, and their introduction into practice
- raising **awareness of all stakeholders** in the fields of building, civil and industrial infrastructures by informing them of best practices ad R&D works and results, and on the development potential
- promoting actions for development of **international and national regulations and standards** on lifetime investment planning, design, facility management and maintenance planning
- generating and running in **each participating country, engineering schools, training courses and other actions** for development of education and training for all stakeholders on lifetime principles and methods
- promoting **dissemination, experimentation and exploitation of systematic lifetime principles** and its **methodology and methods** into investment planning and decisions, design, as well as into management and maintenance planning of buildings and civil infrastructures.

ORGANISATION OF TN LIFETIME



PRODUCTION OF LIFETIME DELIVERABLES

- **Principal Contractors** will produce general **reports and models** for training and education information
- **National Dissemination Groups** will produce **information, dissemination, training and education materials**
 - for general national use, and
 - for own use of individual partner organisations
 - actions for dissemination, training and education

LIFETIME DELIVERABLES

Deliverable	Responsible WP	Due date
<p>Deliverable 1.1: Report and systematised “LIFETIME Engineering “ database of Best Practice, Best Research Results and Advanced Implementation Activities of lifetime engineering in building and civil infrastructures.</p>	WP1	<p>Draft 1: 17th Month Final: 30th Month</p>
<p>Deliverable 2.1 A report on international state-of-the-art in Lifetime Engineering and educational activities, gaps in training.</p> <p>Deliverable 2.2 A manual covering the international state-of-the-art and practice in Lifetime Environmental Impact Assessment.</p> <p>Deliverable 2.3 Recommendations for actions of all stakeholders, international and national standardisation, training and education in introducing Lifetime Engineering and Environmental Impact Assessment principles into practice.</p>	WP2	<p>Draft1: 17th Month Final: 30th Month</p> <p>Draft1: 17th Month Final: 30th Month</p> <p>Draft1: 24th Month Final: 34th Month</p>
<p>Deliverable 3.1: Generic technical model and description of lifetime engineering of buildings, civil and industrial infrastructures.</p> <p>Deliverable 3.2: National and local applied technical models and descriptions of lifetime engineering of buildings, civil and industrial infrastructures.</p> <p>Deliverable 3.3: Material on lifetime engineering for education and training of building, civil and maining</p>	WP3	<p>Delivery 3.1: Draft1: 14th Month Draft 2: 23th Month Final: 32th Month Delivery 3.2: Draft1: 22th Month Final: 32th Month Delivery 3.3:</p>

LIFETIME DELIVERABLES (cont.)

<p>Deliverable 4.1: Report on current sources, future demands and systematics of lifetime data for all stakeholders.</p>	<p>WP4</p>	<p>Draft1: 17th Month Final: 30th Month</p>
<p>Deliverable 5.1: Dissemination material, Workshop reports, generic and individual Exploitation model plans, and short reports on experimental exploitation examples and their experiences. Planning and execution of training courses.</p>	<p>WP5</p>	<p>Continuous production. First deliverables: 8th Month</p>
<p>Deliverable 6.1: Financial and managerial reports. Four issues of LIFETIME Newsletter.</p>	<p>WP6</p>	<p>Lifetime Newsletter: Each 9th Month Reports to EU Commission following Guidelines</p>

Workshops

- 1. First Workshop: Oslo, Norway 26.-27. September, 2002, OK, in connection to
 - Congress "Sustainable Building"
 - 2. Second Workshop: Kuopio, Finland, 3. December, OK, 2003 in connection to Second
 - ILCDES Symposium 2003 (<http://www.ril.fi/ilcdes2003>)
 - 3. Third Workshop: France, April 2005; in connection to 10. DBMC (Durability of Building Materials and Components) Conference
4. PC+NDG-Workshops:
- 4.1. London, May 2003
 - 4.2. Karlsruhe, October 2004

CHANGES ARE NEEDED !

- In order to reach the objectives we have to make
 - changes even into paradigm, and especially into
 - frameworks,
 - processes and
 - methods of engineering
 - in all phases of the life cycle.
- this is a **challenging change**, but it will serve also **new possibilities** and **business opportunities** for all stakeholders

Potential new business areas and gains

- **Owners** can gain **better profit** of their investments through **optimised current and future value** of the property in use and through decreased MR&R costs.
- **Owners and users** can **reduce** all kinds of **risks** in the planning lifetime span, which are caused by human, economic, ecological and cultural reasons.
- **Suppliers** (material and component suppliers and contractors) are getting new gains in savings of guarantee works, and **new business in life long management** of the facilities.
- **Users** are gaining **better productivity of works**, as well as **improved health conditions and comfort for inhabitants and workers**.