

# European Construction Technology Platform

A briefing note for the Bridge Owners' Forum

## History

The European Construction technology Platform (ECTP) is one of a number of technology platforms established with the support of the European Union, which are intended to advise EU officials on the needs of their particular industrial sector. The ECTP was initially set up in late 2003 and was formally launched in Maastricht in October 2004. The first plenary meeting was held in Paris in October 2005 and was attended (*inter alia*) by Brian Bell, Network Rail and Campbell Middleton, Cambridge University.

The management of the ECTP is largely in the hands of senior staff from major European mainland contracting organisations. No finance is available from the EU to support its work.

## Mission

The ECTP intends to raise the construction sector to a higher world beating level of performance and competitiveness.

It intends to do this by:

- Analysing the major challenges that the sector faces in terms of
  - Society
  - Sustainability
  - Technological development.
- Developing research and innovation strategies.
- Mobilising the wide range of leading skills, expertise and talent available.

## Organisation

The ECTP is managed by a High Level Group and a Support Group and undertakes its work mainly through "Focus Areas", which draw their members from volunteers interested in the particular topic.

The focus areas are:

1. Cities and Buildings
2. Underground Construction
3. Quality of Life
4. Networks
5. Materials
6. Cultural Heritage.

Focus Area 4 (FA4) "Networks" is the grouping of interest to bridge owners.

In addition national technology platforms have been established to support the ECTP and the FAs in their work.

The main early deliverables are two large documents, Vision2030 and Strategic Research Agenda, supported by a road map showing how progress towards the main aspirations is expected to progress.

## **Focus Area 4**

The title of FA4 is a little misleading, since it covers most of what could be termed “civil infrastructure”; road, rail, waterway and utility distribution systems. The FA is led by Livia Pardi from Autostrade (the Italian Motorway concessionaire), who also leads the roads working group, and the rail working group is led by Banverket (the Swedish national rail infrastructure operator).

There was a meeting of FA4 held in London (hosted by UK Water) in September 2005 and a further meeting of selected participants is being held in Brussels in mid February 2006 at which it is intended to finalise the collation of ideas for the next EU research framework programme (FP7) and the road map.

The initial mission statement” document issued in December 2004 identified the following as the provisional list of future research activities for FA4:

- Management of assets (incl. life cycle management)
- Impact on the environment
- Safety and security
- Answer to increasing demands (i.e. mobility)
- Inter-modality
- Inter-operability.

## **Vision 2030**

The Vision 2030 (outlining incremental needs for 2010, 2020 and 2030) for FA4 was finalised in October 2005 and contributed to the full Strategic Research Agenda (SRA).

## **Strategic Research Agenda**

The SRA was approved by the High Level Group in December 2005 and was made available for general circulation on 23 December. It lists the following overall research priorities, which are discussed in more detail for each FA in turn:

- Meeting Client/User Requirements
  - Healthy safe and accessible indoor environment for all
  - A new image for cities
  - Mobility and supply through efficient networks
- Becoming Sustainable
  - Reduce resource consumption
  - Reduce environmental and man made impacts
  - Sustainable management of transport and utilities networks
  - A living cultural heritage for an attractive Europe
  - Improve safety and security
- Transformation of the Construction Sector
  - A new client-driven, knowledge-based construction process
  - ICT and automation
  - High added-value construction materials
  - Attractive workplaces

It is not possible to summarise here the detailed FA4 comments/aspirations listed in this document.

## **UK Involvement**

It would appear that Taylor Woodrow and Salford University are involved with the “High Level Group” and Arup with the Support Group.

Brian Bell is giving some assistance to FA4 with regard to railway interests and intends to be at the Brussels meeting mentioned above.

The UK national technology platform was launched on 30<sup>th</sup> June 2005 under the auspices of the DTI, but membership appears to be largely limited to a number of contracting organisations already involved with DTI. It seems that nobody involved from the client side with bridges was invited to the launch.

Inquiries of both DfT and HA in relation to participation the Paris plenary meeting met with a nil response.

### **Observations**

The ECTP is probably one of the most important developments relating to construction research to have emerged for many years. It will provide a direct conduit into the main decision makers in the EU and propose major topic areas to be funded in future research calls. Whilst there is no guarantee that the EU will take up all the research priorities identified it is most unlikely that areas not identified by the ECTP will feature at all. The poor UK involvement so far does not bode well for the future, since contacts are now being made that are likely to form the basis of consortia bidding for future EU funding.

Bridges fall into two of the five working groups within one of six focus areas, which in total consist of 29 working groups. The problems of highlighting bridge specific issues can thus be imagined.

### **Further information**

Most of the documents referred to above are available on the public area of the ECTP web site, [www.ectp.org](http://www.ectp.org)

# Appendix

Copy of presentation made at launch of UK National Technology Platform

**National Technology Platform  
Launch event**  
London, June 30<sup>th</sup>, 2008

**EUROPEAN CONSTRUCTION  
TECHNOLOGY PLATFORM.**  
An excellent opportunity for the  
construction sector

Jesús Rodríguez  
DRAGADOS  
President of ENCORD  
Chairman of Support Group (ECTP)  
[www.ectp.org](http://www.ectp.org)

**The Construction sector (I)**

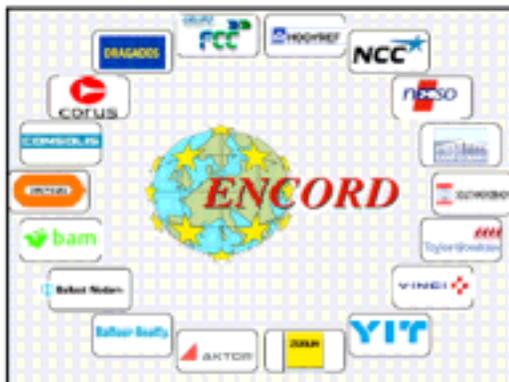
- The construction sector contributes **10% GDP** and 50% gross fixed capital formation (GFCF).
- Construction is *strategically important* providing the buildings and infrastructure on which all other industries and public bodies depend.
- Construction employs **more people** than any other industrial sector

**The Construction sector (II)**

- The sector has a key influence on **sustainability** (extracts more raw materials than any other sector, 50% of all energy consumption in Europe).
- Construction has great potential for **productivity increases** particularly in relation to process improvement, re-engineering and better use of ICT.
- Education and training** is a key factor to ensure efficient and effective dissemination of innovations.

**ECTP**

- ECTP is an initiative to mobilise the construction sector, **to be changed through R&D&I**, in order to satisfy the needs of the society
- A **industrial driven** platform with the **industrial commitment** and the contribution of all the stakeholders, in order to reach the **3% GDP on research** (1/3 public; 2/3 industry)

**Stages and Deliverables**

**Stage 1: getting together**

- Terms of Reference (ToR)
- Vision 2020

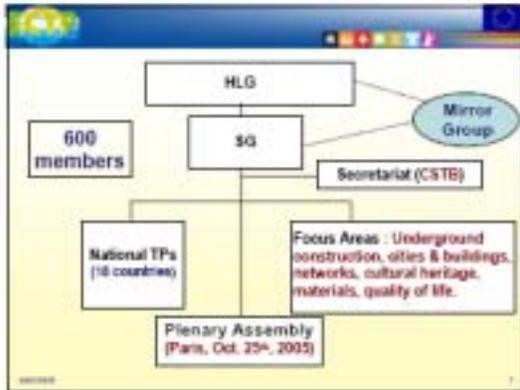
**Stage 2: define SRA**

- Inputs to FP7 drafts
- SRA

**Stage 3: implement the SRA**

- Open calls
- Specific mechanisms (JTI)





### HIGH LEVEL GROUP (13 countries)

**Construction companies:** Hochtief, FCC, Bouygues, Soletanche-Bachy, NCC, Neos, Vinci, Besix, Züblin, Dragados, Bam, T. Woodrow  
**Suppliers:** Herrenknecht, Consolis, Saint-Gobain, Corus, Lafarge, Lohja Rudus, EdF  
**Designers:** Arup, Arcadis, Egis, Ian Ritchie  
**Operators:** Autostrade ...  
**Financial organizations:** European Investment Bank ...  
**Researchers:** Salford Univ, Czech Technical Univ., Vitiuus Univ, TNO, CSTB, BAM, VTT, ZAG.  
**Clients:** Danish Broadcasting Coop., GERG, Dutch Building Agency  
**User organisations:** EDF, AGE, Eurocities

### SUPPORT GROUP (12 countries)

**Construction companies:** Bouygues, NCC, Dragados, Neos, Soletanche Bachy, FCC, Vinci.  
**Suppliers:** Saint-Gobain, Corus, Heidelberg, Leonardo, EdF  
**Designers:** Arup, Evata  
**Operators:** Autostrade  
**Researchers:** CSTB, DBUR, BBRI, DWW  
**End users/clients:** EDF, ASM, Deltaneth, Erabuilt (Tekes)  
**Link with Ecoredi**  
**European Commission:** DG Research, DG Enterprise, DG Environment, .....

### LINKS

Appropriate links are being established at SG level or F.A. levels with:

**ETPs:** ERTRAC, ERRAC, Steel, Water supply, Manufacture, Industrial safety, Forest, ...  
**FP3 Networks:** E-core, Geotechnet, ...  
**FP3 Projects:** Tunconstruct, Manubuild, I-stone...  
**Eranet:** Erabuild  
**Organisations:** Ecoredi, Encond, Elgip, Enbrl, ACE, CIB, FIB, RILEM, FIEC, Nanocem, ...

	Cities and Buildings	Underground constructions	Networks	Cultural Heritage
	NCCSO Saint-Gobain	DRAGADOS FCC	Autostrade FDHRL	VINCI CI ZMK
Quality of life (SARNS)				
Mobility				
Heidelberg U.P. Marche				

### Mirror Group

- Scope: Link between ECTP and Member States
- Members:
  - ✓ DG Research (EU)
  - ✓ Member States
  - ✓ ECTP (observers)

## NATIONAL TECHNOLOGY PLATFORMS

- Involvement of all stakeholders (SMEs...)
- Support from Member States
- Dialogue with societal players
- Contribution to ECTP deliverables
- Dissemination of ECTP deliverables
- ...

## NTP's

1. Poland		5. Denmark		15. Germany	
2. Spain		6. Greece		16. Austria	
3. Netherlands		10. Norway		17. Croatia	
4. Finland		11. Sweden		18. Lithuania	
5. United Kingdom		12. Switzerland			
6. France		13. Slovenia			
7. Belgium		14. Czech			

## New initiatives

- Focus Area on "Processes & ICT"
- Advisory Group of clients/users
- Involvement of SME



## Vision 2030

March 1<sup>st</sup>: Endorsed by HLG



## It is easy to paint a very grim picture of the near future for Europe

		
Urban sprawl	Natural hazards	Pollution

## The opportunity

Europe as the only continent in the world combining high culture and high techniques

		
Smart Soils	Vital cities	Drill robot

**ECTP** 

### Vision 2030

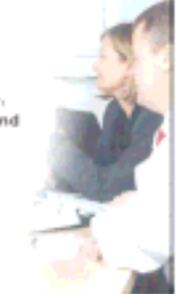
- Knowledge-an demand-driven sector.
- To satisfy the needs of clients and society.
- Providing high quality of life.
- Long-term responsibility to the mankind's environment.
- Good reputation as an attractive sector.
- Deeply involved in research and development.
- Companies well known by their competitiveness on local, regional and global levels.

ECTP 2005

**ECTP** 

### Meeting client requirements

- "Europe provides a variety of attractive, healthy, safe, accessible and useable and sustainable environments
- The construction sector is based on 'customer and user'-driven life-cycle processes ..."



ECTP 2005

**ECTP** 

### Becoming sustainable

"Europe combines 'high tech' with 'high culture', and is a natural leader in creating a sustainable built environment.

The built environment links nature and citizens in a sustainable way ..."



ECTP 2005

**ECTP** 

### Generating and implementing R&D&I

A construction sector that is open to innovation have the following characteristics:

- Long-term relationships
- Knowledge-based
- A focus on performance and costs over the life-cycle
- Widely accepted sets of performance indicators.



ECTP 2005

**ECTP** 

### Strategic Research Agenda (SRA)

June 2005: 1<sup>st</sup> draft  
November 2005: Endorsement by HLG



ECTP 2005

**ECTP** 

### Strategic Research Agenda (SRA)

The context of the European Construction Sector:

- Societal needs
- European Policies
- New opportunities for change offered by technology

Europe 2030: A vision for the future of the construction

Strategic research priorities:

- Meeting client requirements
- Becoming sustainable
- Transformation of the construction sector

Making the vision a reality

ECTP 2005

**ECTP 1. Meeting Client Requirements**

- A variety of attractive, healthy, safe, accessible, useable environments, where significant economic prosperity is underpinned by social cohesion
  - Healthy, Safe and Accessible Built environment for All
  - A New Image of Cities
  - Unlimited Underground Spaces
  - Mobility and Supply through Efficient Networks



**ECTP 2. Becoming Sustainable**

- The built environment links nature and citizens in a sustainable way
  - Reduce Resource Consumption**
    - Cost-effective and Eco-efficient Built Environment
    - Efficient and Environmentally Friendly Building Materials
  - Reduce Environmental and Anthropogenic Impacts**
    - Protecting Land and Water
    - Impact of Infrastructure on the Environment
  - Sustainable Management on European Assets**
    - Transports and Utilities: a European Asset
    - A Living Culture for an Attractive Europe
  - Improve Safety and Security**
    - Mastering Natural and Man-made Hazards
    - Safety and Security of Infrastructure Against Natural and Anthropogenic Hazards

**ECTP 3. Transformation of the Construction Sector**

- A successful knowledge- and demand- driven sector
  - A New Knowledge-Based Construction Process
  - ICT and Automation
  - High Added-value Construction Materials
  - Attractive Workplaces

**SRA contributions from NTPs**

- Sept.1: Comments from NTPs
- Sept.15: New SRA version
- Oct. 26: WG NTPs & Mirror Group meeting
- Nov. 10: Final draft
- Nov.22: HLG approval

**ECTP actions (1)**

- To improve SRA document, by ECTP and NTPs
- To complete SRA Focus Areas documents.
- To influence the European and National R&D programmes getting SRA priorities in these programmes.

**ECTP actions (2)**

To implement SRA priorities (ROADMAP):

- What
- Who
- When
- How

**ECTP actions (3)**

- Joint Technology Initiative **Jules Verne**
- IPs and other collaborative R&D initiatives within FP7
- Eranet
- Eureka projects under **Eureka umbrella**
- Other initiatives at **National level** through **National TPs ...**
- .....

**JOINT TECHNOLOGY INITIATIVE FOR FP7**

# JULES VERNE

**New Construction products & Processes**  
for **energy efficient**  
**well connected and high quality**  
**urban spaces**



**TODAY'S SITUATION**

- 80% of population is living & working in urban areas
- Globalisation requires mobility
- Building life cycle in a city is about 100 years:
  - ✓ drastic changes are not realistic
  - ✓ retrofit and operation aspects have to be addressed



**JOINT TECHNOLOGY INITIATIVE FOR FP7**

# JULES VERNE

**New Construction products & Processes**  
for **energy efficient**  
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**urban spaces**



**Eranet**

- FP6: Erabuild, ....
- Coordinating **National R&D programmes**
- Joint calls:
  - ICT&construction: Finland, Austria, France and Sweden
  - ....
- FP7:
  - Eranet
  - Eranet Plus

**Umbrella Eureka Project con Construction**

- An initiative presented by Spanish Eureka organisation
- To be developed together with some National Construction Technology Platforms (NTPs) under the framework of ECTP
- To fit some priorities that are defined at SRA, using National R&D funds

**Eurekabuild**

**Core Group**

- ECTP: SG chairman and secretariat
- NTPs from:
  - Belgium
  - Greece
  - Poland
  - Slovenia
  - Spain
  - Sweden
  - Finland

**Plenary Assembly (Paris, Oct.25<sup>th</sup>, 2005)**

- Participation and sharing of ECTP members
- Public event to disseminate ECTP results and to get the involvement of more stakeholders

**Plenary Assembly (Paris, Oct.25<sup>th</sup>, 2005)**

**Opening session: HLG Chairman**

- Opening speeches: French Authority, DG Research, DG Enterprises, ...
- Key note invited speaker
- Presentation of ECTP: SG Chairman

**1<sup>st</sup> session: Deliverables of ECTP**

- Vision 2030
- SRA
- JTI

**Plenary Assembly (Paris, Oct.25<sup>th</sup>, 2005)**

**2<sup>nd</sup> session: Views from Focus Areas, NTPs, SMEs, clients**

- Focus Areas (two presentations)
- NTPs (two presentations)
- SMEs involvement
- Clients/users views

**Closing session**

- ECTP and FP7: DG Research
- Discussion on future actions

**Closing remarks**

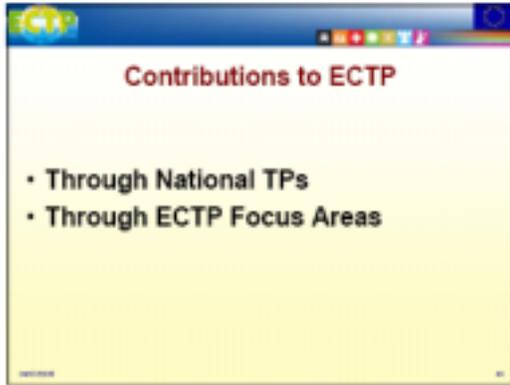
- ECTP Vision 2030 will be reached by:
  - The initiative and commitment of the **industry**
  - In collaboration with **all stakeholders**
  - With the support of the **EC and the EP**
  - With the support of **Member States**
- Actions have to be carried out at European and National and levels (FP7, Eureka, National Programmes ...)

**ECTP  
European Construction Technology Platform**

↓

Unique opportunity to introduce a new approach to develop our sector, by means of strategies on R&D&I





**Contributions to ECTP**

- Through National TPs
- Through ECTP Focus Areas

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**ECTP**

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Focus Area leaders  
(see [www.ectp.org](http://www.ectp.org))

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