Role of JRC in the implementation and Further Development of the Eurocodes

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Outline

1. JRC support to the Eurocodes - Framework
2. Support to the Implementation (informatics tools, …)
3. Training and International Promotion
4. Progress on Implementation (National Annexes, Legislation, …)
5. New Mandate – Future Work
6. Extension to all Basic Works Requirements (BWRs)
JRC support to the Eurocodes

1. Pre-normative and co-normative research (1994 - …)

2. Support to the Implementation and Further Development (2005 - …)
Research in support of the Eurocodes
(Tests performed at ELSA - JRC)

- Bridges Designed to EC2 and EC8: Irregularity, Non-synchronous motion, ...
- Design of Frame structures with infill masonry walls
- Composite buildings: Semi-rigid connections, ...
- Existing buildings (60–70’s): Assessment, Repair and Strengthening
- Existing bridges (60–70’s): Assessment, Strengthening and Repair
- Seismic isolation/dissipation
Support to the Implementation and Further Development (2005 - …):

1. **Administrative Arrangement** between DG ENTR and JRC: Implementation, Strategies for training and Promotion, Strategies for further Development (2005-2008)

2. **Memorandum of Understanding (MoU)**, DG ENTR - JRC: Achieve full implementation, Implement Strategies (Training, promotion, further Harmonization, Further Development, Extension to other fields, Emerging issues! (2008-2011)
THE MANAGEMENT OF THE CPD: SHARED RESPONSIBILITY

Public responsibility: policies, regulations

Private responsibility: technical specifications, attestation of conformity, CE-Marking

- **EC**
  - Draft mandates
  - Draft decisions

- **SCC**
  - Mandates
  - CEN or EOTA

- **JRC**
  - Safeguard clause

- **M S**

- **EUROCODES**
  - CE-Marking

- **MARKET**

*Courtesy of DG ENTR*

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<th>Implementation &amp; promotion</th>
<th>Harmonisation</th>
<th>Further development</th>
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<tr>
<td>Website</td>
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<td>Centralised Eurocodes Helpdesk</td>
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- Maintenance & development of e-tools
- Level 2 training
- Promotion outside EU

- Statistical and expert analysis of NDPs
- Harmonisation strategy & projects

- Methodology for extension to additional fields of structural design:
  - new materials
  - existing structures
  - robustness, ...

- Concept to incorporate sustainability aspects and other emerging aspects
Development of specific informatics tools (IT tools):

1. Database for the NDPs (NDPs database) (31/03/06)
2. Eurocodes Website (30/11/06)
3. Database for Background Documents
4. Centralized help-desk for maintenance

http://eurocodes.jrc.ec.europa.eu
Training and international promotion
Eurocodes: Background and Applications
Brussels, 18-20 February 2008
Training and promotion: future actions

- Project on **Strategy for international promotion: Participation in the meetings of the Monitoring and Steering Committee; co-operation with the contractor (BSI)**

- **Level 2/3 training Workshops**
  (introduction to single EN / design examples)
  - positive assessment of previous workshops
  - request for **technical details and examples**
  - duration of workshops: 2-3 days
  - prepare worked examples
  - **publication** will be available on website
  - planned in collaboration with TC250/SCs
Level 2/3 training workshops

The following workshops on Eurocodes were proposed:

• Eurocode 2: **Design of Reinforced Concrete Buildings**
  Programme coordination: Giuseppe Mancini (SC2)
  2 days, 2010/11

• Eurocode 8: **Seismic Design of Buildings** (RC and Steel)
  Programme coordination: Eduardo Carvalho (SC8)
  2 days, 25-26 Oct 2010, Lisbon

• **Design of Bridges** with the Eurocodes
  Programme coordination: Steve Denton (HG Bridges)
  3 days, 4-6 Oct 2010, Vienna
Workshop “Eurocodes: training for trainers”
Moscow, Russia, 2010

Organized by the Russian authorities with the support of TAIEX (EU-Russia cooperation on standardisation for construction)

Duration: 3 days, October 2010

Topics:
EN 1990 - Eurocode: Basis of structural design
EN 1991 - Eurocode 1: Actions on structures
EN 1992 - Eurocode 2: Design of concrete structures
Implementation Progress
Progress of national implementation
(ENC: 25/01/10)

• Information from 25 EU MS

• National Standards: 83%

• National Annexes: 38%

• National Annexes (EN): 18%

• Adaptation of national regulation: 2010
  - Poland: 2011 (EN 1999)
  - Latvia: 2012 (EN 1999)
Progress of national implementation
(November 2007 – January 2010)

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Progress of implementation on January 2010
(in parentheses the situation on July 2009)
NDPs database: acceptance of recommended values (19/01/10)
JRC reports in collaboration with CEN/TC250

- Classification of documents:
  - Prenormative reports
  - Background documents
  - Scientific/technical information

- Published at the request of the relevant subcommittee

- Review by CEN/TC250 and JRC

- Available on Eurocodes website

- Prenormative reports will contain a first draft of the proposed Eurocode part and could be converted to CEN Technical Specifications
Further Developments (Near Future)
New Mandate: Shaping revision/update (2015 - …)

3.2 List of projects
General: No ranking/priorities at this stage

3.2.1 New Eurocodes or Eurocode parts
a. Assess existing buildings
b. Structural Glass
c. Fibre Reinforced Polymers
d. Membrane Structures
e. Robustness

3.2.2 Development Existing Eurocodes
a. Harmonization – Reduce NDPs
b. Innovation/Design methods/Calculations
c. Sustainability/Structural Design
d. Incorporate ISO standards
e. Simplification of rules (specific/well defined)
Further developments:

- New Standards: New materials, Existing structures,
- New CPR (from Directive to Regulation)
- GOAL:
  Standards for all Basic Works Requirements (BWRs) (a complete and comprehensive set of interoperable standards)
Basic Works Requirements (BWRs) of the CPR

- BWR1 - MECHANICAL RESISTANCE AND STABILITY
- BWR2 - SAFETY IN CASE OF FIRE
- BWR3 - HYGIENE, HEALTH AND THE ENVIRONMENT
- BWR4 - SAFETY IN USE
- BWR5 - PROTECTION AGAINST NOISE
- BWR6 - ENERGY ECONOMY AND HEAT RETENTION
- BWR7 - SUSTAINABLE USE OF NATURAL RESOURCES

There is a Vision … a Dream !?
A set of Interoperable European Standards addressing all BWRs
The approach towards a set of EN standards addressing all BWRs

- Head-Standard (or Harmonized Methodology) should be developed for each BWR”

  “This Head-Standard:

  ✓ Would allow for integrated performance quantification

  ✓ Should follow a Eurocodes-type NDPs approach

  ✓ Should allow to set minimum performance requirements (Member States tuning)”
### Further development: documents to revise/draft

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Thank you for your attention

http://eurocodes.jrc.ec.europa.eu
Evaluation of Eurocode 7 - Workshop at Pavia, 12-14 April, 2010

AGREED SCHEDULE

March 2010
Withdrawal of conflicting national standards

New CPR?

Agreement Mandate(s)

Eurocode maintenance
Corrigenda, amendments
No fundamental changes

Start publication

Preparation of Eurocode evolution and further developments