JRC activities in support to the Eurocodes implementation

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Eurocodes implementation in the EU

Some first comments ...

* The Eurocodes are used in different regulatory systems in EU.

* The Eurocodes contribute to harmonization of levels of safety, construction practices and markets.

* The NDPs offer each country the possibility to adapt the standards to local conditions and needs.

Publication of National Standards on the Eurocodes in percentage of all Parts (2015 status)
But why the JRC?
(in support of the Eurocodes implementation ...)

- Commission Recommendation (2003/887/EC) to the Member States on the implementation and use of the Eurocodes

  ✓ Adopt and Implement the Eurocodes
  ✓ ...
  ✓ Support and undertake research to facilitate the integration into the Eurocodes of the latest developments in scientific and technological knowledge, [...] in cooperation with the Joint Research Centre, thus ensuring an on-going increased level of protection of buildings and civil works, ... “
### JRC Support to policies and standards for construction

**Work programme for Administrative Arrangements between DG JRC and DG GROW**

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Eurocodes JRC IT tools

The Eurocodes Website

- General info
- Events & News
- Archive of all training events
- Publications database
- Examples of structures designed with the Eurocodes

http://eurocodes.jrc.ec.europa.eu
Eurocodes JRC IT tools

The Eurocodes Publications Database

- Searchable database with more than 500 publications in 16 languages

- What you can find ...
  - Reports with worked examples
  - Lectures/presentations
  - Promotion material
  - Background documents
  - Pre-normative material on 2nd generation Eurocodes
Eurocodes JRC IT tools

The Eurocodes Centralised Helpdesk

- Link between users of the Eurocodes, National Standards Bodies and CEN/TC250
- Allows National Contact Points to submit questions received at national level
- Queries are answered by CEN/TC250 and its Subcommittees
The Eurocodes NDPs Database

by 19 September 2018

NDPs uploaded: 27529 (70.5%)

18 countries with more than 75% NDPs uploaded

% calculated on published NAs
The Eurocodes ND Ps Database

- Bosnia and Herzegovina has uploaded 256 NDPs
- Turkey has uploaded 32 NDPs
- Albania & Serbia are invited to register!

➢ Consider the advantages of open access view

(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.
Harmonized use of the Eurocodes

Partnership of JRC with the EU MS on the NDPs Database

Reliability of structural members designed with the Eurocodes
NDPs selected by EU/EFTA Member States

State of harmonized use of the Eurocodes

“The way forward for the Eurocodes implementation in the Balkans”, 10-11 October 2018, Tirana
Robustness-based design

• Objective of activities:

Formulating a *prospect for robustness-based design and repair guidelines* relevant for practicing engineers is of immediate importance for the evolution of the Eurocodes towards more performance-based design for robustness. *In parallel needs for national implementation will be analysed.*

✓ **2018-2021**: Set-up and coordination of expert group on robustness-based design

✓ **2021**: Technical report on the findings
Towards the programme for the 2G Eurocodes

Find all reports at the JRC Eurocodes website

http://eurocodes.jrc.ec.europa.eu

“The way forward for the Eurocodes implementation in the Balkans”, 10-11 October 2018, Tirana
Research and Standardization needs

- Bridging the gap between Research and Standardization...

1st documents on the 2G Eurocodes

Download from:
Adaptation of structural design to climate change

Experts Group:

• pilot studies on the trends of evolution of different climatic actions
• interface between the research, work of CEN on Mandates M/515 (Eurocodes) and M/526 (important infrastructures), and relevant policy DGs.

- produced a pilot study on the evolution of the snow load on structures (example of Italy) and justified the need of new European snow load design map.
Adaptation of structural design to climate change

**ONGOING WORK:**

**Climate change and thermal actions on structures**

- **thermal design maps** considering the worst case scenario and a mean scenario of CC (*case study of Italy*)

- Implications of the updated thermal actions and humidity on the **corrosion of structures** (*case of Europe*)

Expected variation in $T_{\text{max}}$ characteristic value as provided by ensemble mean of simulations (2056-2085 vs 1971-2000, RCP8.5)
Standardisation needs for design of underground structures

- Partnership of JRC with DG MOVE, International Associations, CEN/TC250, Industry, Research Institutions, National Authorities

First conclusions of the experts group:

- The Eurocodes are already used in tunnel design

- Eventual new standards for design of tunnels shall be in consistence with the Eurocodes, delineating how to complete and/or restrict their use for tunnels
Training and dissemination in the EU

2003
Commission Recommendation on the implementation and use of Eurocodes for construction works

2005
Start of the JRC training on the Eurocodes with pilot events

2007
All Eurocode Parts published by CEN

2008
General training on the use of Eurocodes in EU and awareness raising

2010 and beyond
Eurocodes training with practical worked examples

Workshop on the use of Eurocodes in the Euro-Mediterranean area

JRC Report: Strategy for training and promotion in EU

"The way forward for the Eurocodes implementation in the Balkans", 10-11 October 2018, Tirana
Training and promotion in third countries

2005: Start of the JRC – Eurocodes promotion with pilot events
2008: Strategy for Promotion (JRC Report)
2009 – 2011: ‘BSI project’ Promotion in 3rd countries
2014 – 2016 & beyond: Coordinated promotion of European standards and policies in third countries

2012 -2014 Eurocodes Promotion on the Basis of Political Drivers
(e.g. EU-Russia dialogue and E&I-Balkan Region)

"The way forward for the Eurocodes implementation in the Balkans", 10-11 October 2018, Tirana
The Eurocodes worldwide

- The Eurocodes are being introduced in several countries outside EU as an important element for improving regulatory capacity and design of important infrastructure.
Eurocodes promotion worldwide

**Highlights:**

**Armenia:** Armenia Governmental Agency ATD expressed interest in having some training courses on Eurocodes; mainly interested in EN 1998.

**Angola:** CEN signed a license agreement with the standards body of Angola to adopt all the Eurocodes.

**Vietnam** (*info received from TC250*)
- Plans to translate Eurocodes into Vietnamese
- Eurocodes are **one of the options for references** when developing the new design standard system of Vietnam in the future.

**Kenya:** The Eurocodes to become a common reference point for all construction works in Kenya by 2021 (*media news*)
Eurocodes in South East Asia
Project funded by DG DEVCO through E-READI

Objective

- **Disseminate** information about Eurocodes’ concept, philosophy and benefits of use to relevant stakeholders (*national authorities, chambers of engineers, construction industry associations, engineers*)

- **Present the experience** of ASEAN countries (Singapore, Malaysia) already using the Eurocodes in design practice

- **Exchange** of common practice

**Activities:** regional workshop (Singapore?); survey regarding all ASEAN members; national workshops and dialogue in interested ASEAN Member States; establish a community of practice in the region
Eurocodes in Central Asia
Exploring with the World Bank

2nd International Scientific and Practical Conference on Earthquake Engineering (Bishkek, Kyrgyz Republic, June 2018)

- Organized by the International Association of Experts on Earthquake Engineering (IAEE)
- Supported by the World Bank’s Global Program for Safer Schools (GPSS)
- Special session to discuss current needs for updating national building regulations in Central Asia
- JRC presentation: “International experiences in the update of building regulations and adoption of the Eurocodes”
Possibilities for strengthening the Eurocodes adoption in the region:

- Interest in translating some key dissemination and training material available in the JRC Eurocodes website
- Develop standards for seismic retrofitting and strengthening of existing reinforced concrete and masonry buildings is a priority in the region
- Necessary to strengthen regional cooperation in Central Asia in the process of updating the building codes and regulatory framework for seismic design
- Best way forward: use of common standards in the region with strong preference to the Eurocodes
Training and Promotion in the Balkans

Scope: support to the adoption and implementation of the Eurocodes in the non-EU Balkan countries

Objectives:

- ✓ Assess progress, specific needs and difficulties
- ✓ Boost and facilitate regional collaboration
- ✓ Facilitate transfer of knowledge from EU MS experts
- ✓ Increase awareness of instruments for further activities

“The way forward for the Eurocodes implementation in the Balkans”, 10-11 October 2018, Tirana
Training and Promotion in the Balkans

The report:

- Contains State-of-the-art material to elaborate maps for seismic and climatic actions for structural design
- Summarizes and shares the experience of the Balkan countries on elaboration of these maps
- Provides guidance for countries adopting the Eurocodes

Training and Promotion in the Balkans

Summer school
(host country?)

- train on the use of Eurocodes in the design practice
- focus on most common design cases (seismic design of concrete buildings)

2019 / 2020

Thematic Seminar
(JRC – Ispra)

- increase awareness of national stakeholders on the current Eurocodes
- inform on the Eurocodes 2G

2020 / 2021

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THE WAY FORWARD FOR THE EUROCODES IMPLEMENTATION IN THE BALKANS
10-11 October 2018
Tirana, Albania

Organized by:
EUROPEAN COMMISSION – Joint Research Centre

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General Directorate of Standardization of Albania
CBN – CENELEC Management Centre
CEN/TC 250 – “Structural Eurocodes”
Training and Promotion in the Balkans

Workshop follow-up report

- present the material from the workshop; goal to publish a report with international focus and use

- focus on the EU MS case studies presenting the process of Eurocodes implementation in the national regulatory framework

- discuss the challenges non-EU Balkan countries are encountering in the process of the Eurocodes implementation

- share good practices among countries
Thank you for your attention!

Stay in touch

http://eurocodes.jrc.ec.europa.eu/