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Workshop: The way forward for the Eurocodes implementation in the Balkans

*10th and 11th October
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Foreword

The construction sector is of strategic importance to the European Union (EU) as it delivers the buildings and transport infrastructure needed by the rest of the economy and society. It represents more than 9% of EU Gross Domestic Product (GDP) and more than 50% of fixed capital formation. It is the largest single economic activity and it is the biggest industrial employer in Europe. The sector employs directly almost 18 million people. Construction is a key element not only for the implementation of the Single Market, but also for other construction relevant EU Policies, e.g. Sustainability, Environment and Energy, since 40-45% of Europe's energy consumption stems from buildings with a further 5-10% being used in processing and transport of construction products and components.

The Eurocodes are a set of European standards (Européenne Normes - EN), which provide common rules for the design of construction works to check their strength and stability. In line with the EU's strategy for smart, sustainable and inclusive growth (EU2020), Standardization plays an important part in supporting the industrial policy for the globalization era. The improvement of the competition in EU markets through the adoption of the Eurocodes is recognized in the "Strategy for the sustainable competitiveness of the construction sector and its enterprises" – COM (2012)433, and they are distinguished as a tool for accelerating the process of convergence of different national and regional regulatory approaches.

With the publication of all the 58 Eurocodes Parts in 2007, their implementation in the European countries started in 2010 and now the process of their adoption internationally is gaining momentum. The Commission Recommendation of 11th December 2003 stresses the importance of training in the use of the Eurocodes, which should be promoted in engineering schools and as part of continuous professional development courses for engineers and technicians. It is also recommended to undertake research to facilitate the integration into the Eurocodes of the latest developments in scientific and technological knowledge.

The activities of promotion of the construction sector outside the EU are part of the JRC efforts to support the EU policies and standards for sustainable construction. In line with the Commission Recommendation of 11th December 2003, the JRC activities comprise guidance and training to the countries showing commitment to adopt and implement the Eurocodes and the European policies and tools for sustainable construction.

The present report contains information and key findings from the workshop "The way forward for the Eurocodes implementation in the Balkans". The workshop was held on 10-11 October 2018, in Tirana, Albania. It was organized by the JRC, within the framework of the JRC Enlargement and Integration Action. The organization of the workshop was supported by the General Directorate of Standardization of Albania, CEN-CENELC Management Centre and CEN/Technical Committee 250 "Structural Eurocodes".

Acknowledgements

The workshop "*The way forward for the Eurocodes implementation in the Balkans*" on 10-11 October 2018 in Tirana, Albania was organized in the framework of the JRC Enlargement and Integration Action.

We would also like to acknowledge the engagement of the participants, speakers and chairs of the workshop for having shared their experiences and inspired interesting discussions and for contributing in the present document. The support provided by the General Directorate of Standardization of Albania, CEN-CENELC Management Centre and CEN/Technical Committee 250 "Structural Eurocodes" is particularly appreciated.

Abstract

The Eurocodes are state-of-the-art, Europe-wide standards for all aspects of structural design and development of buildings, bridges and other construction works. On 10th and 11th of October 2018, the workshop **“The way forward for the Eurocodes implementation in the Balkans”** took place in Tirana, Albania. The workshop was organized by the Joint Research Centre (JRC) of the European Commission (Safety and Security of Buildings Unit) within the JRC Enlargement and Integration Action and was hosted by the General Directorate of Standardization of Albania.

Approximately 100 participants (policy-makers, National Authorities & National Standards Bodies representatives, academics and practitioners) attended this two-day Eurocodes workshop. Lecturers and participants came from 12 different EU Member States (MS) and 8 non-EU Balkans countries (Albania, Bosnia & Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Moldova, Montenegro, Serbia and Turkey).

Distinguished experts gave presentations and participated in the round table discussions including CEN-CENELEC Director for Market Perspectives and Innovation, the Immediate Past Chairman of CEN/Technical Committee 250 (CEN/TC250) “Structural Eurocodes” and many CEN/TC250 experts actively involved in the development of the Eurocodes and also currently working on the 2nd Generation of the Eurocodes.

The workshop was the first of a new series of Eurocodes dissemination and training activities in the Balkan region. It has been the culmination of JRC’s experience in organizing specialized workshops and providing scientific and technical support to the non-EU Balkan countries for the adoption and implementation of the Eurocodes in the period 2013-2016. The workshop in Tirana was an opportunity to collect and share the experience of EU Member States in the Eurocodes implementation in the national regulatory system through the presentation of case studies. Representatives from the participating Balkan countries also presented the status of the Eurocodes implementation at national level and reported on the challenges faced. The round table discussions were an excellent occasion for exchanging of views, expertise, experience and good practices.

Further, the workshop served as an opportunity for the JRC to present the concept of the Eurocodes Community of Practice in the Balkans (CoP – Eurocodes Balkans). The vision for the CoP – Eurocodes Balkans is to provide continuous support in future actions related to the Eurocodes implementation in the Balkans (e.g. mapping knowledge and identifying gaps, exchanging practical examples of structures designed with the Eurocodes, discussing developments related to the publication of the National Annexes to the Eurocodes, organizing visits and other local events, assisting with regional training activities). The idea was warmly accepted by the participants and dedication for involvement was largely expressed.

Based on the reports by the non-EU Balkan countries, it was concluded that significant and important progress has been achieved by all countries in the Balkan region in the adoption of the Eurocodes since the previous workshop in 2016. However, the implementation of the Eurocodes in the national regulatory system is still lacking in the Balkan region and further actions were identified based on good practice examples shared from the participating EU MS countries.

1 Introduction

COM (2018) 65 final¹ of February 6th 2018 stresses that one of key priorities in the enlargement process for the Western Balkan partners is to “*properly apply EU rules and standards not only in law but in practice*”. As noted in the conclusions by the President of the European Council in March 2017: “[...] *the EU remains committed and engaged at all levels to support them (i.e. the Western Balkans) in conducting EU-oriented reforms and projects.*” COM (2018) 65 final also notes that: “*The Commission will enhance its technical assistance to the Western Balkans to help them align with EU legislation and ensure its effective implementation in practice*”.

The activities related to the Eurocodes implementation in the Balkans are aligned with EU’s commitment to support the Western Balkan partners in view of democratic, political, economic and societal improvements and are contributing to the **Action Plan set in COM (2018) 65 final**². The past and future training activities support the Western Balkan countries and other non-EU countries in the Balkan region so as to build the capacities to adapt their own national legislation in the field of construction to the EU legal framework.

The interest in the Eurocodes³ adoption and implementation in the Balkan region is based on the opportunity for an advanced common standardization environment, adaptable to the local requirements of each country (i.e. geographical, geological or climatic conditions) and allowing selection of the level of safety. Moreover, adoption and implementation of the Eurocodes will help the Candidate Countries to fully implement EU acquis at the time of accession and support Potential Candidate Countries (and Horizon 2020 associated countries) to progressively align with the EU acquis.

The Joint Research Centre (JRC) of the European Commission has offered specialized workshops and provided scientific and technical support to the non-EU Balkan countries for the adoption and implementation of the Eurocodes within the JRC Enlargement and Integration Action (E&I Action) in the period 2013-2016. The focus of past activities was to assess the progress and specific needs for the adoption of the Eurocodes and other construction-related European standards in the Balkan region. Eurocodes related dissemination events and workshops carried out, within the context of the E&I Action, include the following events:

- “*Adoption of the Eurocodes in the Balkan region*”, Milan & JRC, Italy (2013)⁴,
- “*Building capacities for elaboration of NDPs and NAs in the Balkan region*”, Skopje, the former Yugoslav Republic of Macedonia (2014)⁵,
- “*Elaboration of maps for climatic and seismic actions for structural design in the Balkan region*”, Zagreb, Croatia (2015)⁶,
- “*Current status of the Eurocodes in the Balkan region*”, Skopje, the former Yugoslav Republic of Macedonia (2016) - side event to the 12th Annual Meeting of CEN&CENELEC⁷.

All countries in the Balkan region reported significant progress in the process of the Eurocodes adoption in 2016 at the workshop in Skopje. At this workshop, it was concluded that most of the non-EU countries in the region are going to use the Eurocodes as primary standards. Though several National Standards Bodies (NSBs) reported that

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Region: “A credible enlargement perspective for and enhance EU engagement with the Western Balkans” COM(2018) 65 final, 6.2.2018

² Annex to COM(2018) 65 final, 6.2.2018: Action 1 “Strengthening support to the rule of law”

³ The EN Eurocodes are a series of 10 European Standards, EN 1990 - EN 1999, providing a common approach for the design of buildings and other civil engineering works and construction products.

⁴ http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2013_12_WS_Balkan

⁵ http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2014_11_WS_Balkan

⁶ http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2015_10_WS_Balkan

⁷ http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2016_06_WS_Balkan

the Eurocodes were adopted as standards in 2016, they were still used in parallel with existing national codes as none of the non-EU Balkan countries had implemented the Eurocodes in the national regulatory framework. The Balkan countries stated that they are aware about the needs for harmonization of their national legislation and standardization framework for construction with the EU legislation. However, they faced challenges, as there was (and continues to be) a lack of relevant institutional support for the implementation of the Eurocodes in the national legislation and standardization framework.

As a continuation of the support provided to the Balkan counties, the workshop "The way forward for the Eurocodes implementation in the Balkans" was organized in order to assist the non-EU countries in the Balkan region to respond to the challenges faced and facilitate the process of the Eurocodes implementation in the national regulatory framework.

2 Workshop objectives

The workshop “The way forward for the Eurocodes implementation in the Balkans” aimed at further assisting the adoption and implementation of the Eurocodes in the non-EU countries in the Balkan region. The workshop was a two-day training event with a two-fold aim: (a) facilitate the implementation of the Eurocodes in the national regulatory framework in the Balkan region, and (b) present the concept on a Community of Practice related to implementation of Eurocodes in the Balkan region. The workshop provided the necessary technical assistance in support of the Eurocodes introduction into the national regulatory environment, which is a basic step in their full implementation.

In particular, the workshop presentations and the round table discussion sessions served the following objectives:

- Assess the level of commitment of the National Authorities of the non-EU Balkans countries in adopting the Eurocodes;
- Assess the level of harmonization of national policy/legislation with EU regulatory framework;
- Identify challenges and impediments for the Eurocodes implementation at national regulatory framework level and discuss possible actions;
- Assess the progress of definition of Nationally Determined Parameters (NDPs)⁸ and identify needs for (possible) review of already defined NDPs;
- Facilitate regional cooperation in the Eurocodes implementation;
- Present case studies of EU countries that have successfully implemented the Eurocodes in the national regulatory framework;
- Facilitate exchange of views, knowledge and information between EU experts and representatives of non-EU countries in the Balkan region.

Additionally, the proposal for the establishment of a regional platform to enhance collaboration within the non-EU Balkan countries on the adoption and implementation of the Eurocodes was first presented to the participants. It is envisaged that this platform – i.e. the Community of Practice (CoP) related to Eurocodes and the Balkan region will provide continuous support in future actions related to Eurocodes implementation in the Balkans. The CoP will be engaged in activities related to the Eurocodes and the Balkans (i.e. map knowledge and identify gaps, exchange practical examples of structures designed with the Eurocodes, discuss developments related to the NDPs and National Annexes publication, organize visits and other local events, assist with regional training activities). The CoP will also assist in process of the Eurocodes maintenance and updating once they will be adopted. An e-forum (or platform) will foster the dissemination of information and activities related to the CoP and facilitate the collaboration among its members – it is foreseen that this platform can be hosted at the JRC Eurocodes website (<http://eurocodes.jrc.ec.europa.eu/home>). The CoP members will also have plenary meetings, i.e. occasions to meet, exchange ideas and pave the way for future work. JRC would be monitoring and assisting the CoP with its activities.

⁸ The Eurocodes recognise the responsibility of regulatory authorities in each Member State and have safeguarded their right to determine values related to regulatory safety matters at a national level where these continue to vary from State to State. Thus, the Eurocodes provide for National Choices full sets of recommended values, classes, symbols and alternative methods to be used as **Nationally Determined Parameters** (NDPs). More information at: <https://eurocodes.jrc.ec.europa.eu/showpage.php?id=32>.

3 Workshop programme

The workshop lasted two full days and comprised presentations of EU MS case studies as examples in the successful implementation of the Eurocodes in the national regulatory system and supported sharing the EU Member States experience and best practice for non-EU Balkan countries. Representatives of the non-EU Balkans countries also reported on the status of the Eurocodes implementation in these countries, focusing on the progress made and the problems faces. The event provided an opportunity to build on the experience, initiatives and difficulties concerning the implementation of the European standards and policies for construction in the Balkan Region. The workshop was concluded with a round-table discussion, where the future steps were discussed.

The programme of the workshop was composed of the following parts:

- Presentations of non-EU Balkan countries about status of implementation of the Eurocodes (standards and legislation); discussion on their specific problems and needs;
- Lectures delivered by experts from the European Commission, CEN-CENELEC and EU member states with recommendations on the way forward for the implementation of Eurocodes in the national regulatory framework;
- Presentation of case studies sharing EU MS experience and serving as best practice examples for non-EU Balkan countries;
- Round table discussions regarding implementation of the Eurocodes in the Balkan region, especially their implementation in the national regulatory framework – conclusions and recommendations for the way forward.

The workshop programme is shown in Annex 1.

4 Workshop presentations

Following the programme of the Workshop (see Annex 1), the different presentations given by the speakers are summarized in the current section.

4.1 Session 1A: Welcome and Introductory presentations.

4.1.1 Welcome addresses.

The opening of the workshop was made by Ashok Ganesh (CEN-CENELC, Director for Market Perspectives and Innovation) who explained in brief the European standardization system and stressed the importance of the Eurocodes implementation for the construction industry in general. A welcome address was addressed to the participants by Riza Hasanaj (General Directorate of Standardization of Albania, General Director), followed by Silvia Dimova (JRC, European Commission) who presented the scope and objectives of the workshop.

The full presentations are available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_Welcome_address_by_CEN_CENELC.pdf

and

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/2_Welcome_adress_by_JRC.pdf

4.1.2 Towards the Second Generation of the Eurocodes.

Paolo Formichi - Chairman of CEN/TC250/SC10; University of Pisa

The Eurocodes enable the design of buildings and civil engineering works and comprise 10 Standards in 58 parts. When they were published, prior to 2007, the first generation of the Eurocodes were the most comprehensive and technically advanced suite of standards for structural and geotechnical design in the world. In May 2010, the European Commission initiated, in cooperation with CEN, the process of further evolution of the Eurocode system, incorporating both new and revised Eurocodes, and leading to the publication of the second generation of EN Eurocodes. The work programme, set up by CEN as a reply to the EC mandate M/515⁹, was then focused on ensuring the standards remain fully up to date through embracing new methods, new materials, and new regulatory and market requirements. Furthermore, the mandate M/515 focuses on further harmonisation and a major effort to improve the ease of use of the suite of standards for practical users.

The presentation focused on the key aspects of the mandate M/515 and related work being developed by experts under the Commission's mandate, towards the second generation of the Eurocodes, highlighting the benefits in terms of ease-of-use and reduction of Nationally Determined Parameters (NDPs).

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/3_Eurocodes_2G.pdf

⁹ European Commission, 2012, Mandate for amending existing Eurocodes and extending the scope of Structural Eurocodes (M/515 EN)

4.2 Session 1B: Process for the implementation of the Eurocodes in the national regulatory framework: guidance and best practice. Presentation of EU MS Case studies.

4.2.1 EU MS Case Study 1: Bulgaria.

Iren Dabijeva - Bulgarian Institute for Standardization, Managing Director

European standards for structural design of building and engineering works – the Eurocodes, are fully implemented in Bulgaria by the legal act “Ordinance for structural design of building works through European design system” from 29 December 2011”. The Bulgarian Institute for Standardization (BDS) together with the Ministry of Regional Development and Public Works covered a very long way during over 10 years to implement all parts of Eurocodes system translated in Bulgarian and to develop all National Annexes.

The National technical committee BDS/TC 56 “Design of building structures” is mirror to CEN/TC 250 and is responsible for the translation of Eurocodes and the elaboration of National Annexes. In the translation process, the most prominent national experts in structural design and building praxis were attracted. BDS undertook many measures to make the Eurocodes system accessible for structural designers in the Chamber of Engineers in the Investment Design, as well as for students and professors in Universities in Bulgaria.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_EU_MS_Case_Study_1-Bulgaria.pdf

4.2.2 EU MS Case Study 2: Belgium and Luxembourg.

Pierre Spehl - SECO, Senior Civil Engineer; Head of the Belgian Delegation for the Eurocodes

This presentations described how the National Annexes of Belgium and Luxembourg to the 58 Eurocodes Parts have been drafted and gave examples of their contents.

In Belgium, 58 working groups have produced first drafts which have been translated in Flemish and French languages, submitted to a public enquiry for 6 months, revised to take account of the comments received, and published in December 2011 as NBN standards.

In Luxembourg, the 58 projects based on the Belgian National Annexes have been drafted in French language by only one Working Group of 6 experts; they have been submitted to a public enquiry for 4 months, then revised by the Working Group with the authors of comments, and finally published in December 2011 as ILNAS standards.

In addition, the presentation explained the role of the Eurocodes and their National Annexes, as National standards, within the legal and regulatory systems of the two countries and of the European Union.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/2_EU_MS_Case_Study_2-Belgium.pdf

4.2.3 EU MS Case Study 3: Czech Republic.

Jana Markova - Czech Technical University in Prague, Klokner Institute, Associate Professor

The Eurocodes were fully implemented into the system of the Czech standards for structural design in 2010 and the National Determined Parameters (NDPs) were selected. The status of the Czech National Annexes (NA) is informative, only the NDPs have normative status for the design of structures in the Czech Republic. Several original

Czech standards were revised as some technical issues were not fully covered in the Eurocodes, e.g. actions on water construction works, atmospheric icing, actions due to trams and metro on bridges, design of structures on the mining subsidence areas and assessment of existing structures.

Recently, several standards for static and dynamic testing of structures have been revised to be harmonised with the methodology given in Eurocodes. The standard for the design of plastic structures has been also under development. Standards in the Czech Republic have voluntary status, however in contracts (or when required by responsible authorities) they have commonly the normative status. The Building law No. 183/2006 Sb. is valid for buildings and for its operational applications the Directive 168/2009 where seven basic requirements for construction works are given. The law No. 13/1997 on road communications is used for highways and roads. The Ministry of Transport is the road administration office for highways, the regional offices for road class I, the municipality for road class II and III, and for local communications, it is a council. The second generation of Eurocodes is expected to be prepared for implementation in the Czech system of standards according to the availability of new Parts of the Eurocodes. The National Annexes will be developed for operational application in the Czech Republic. It is expected that existing software for structural design will be updated and new textbooks will be prepared for students in technical schools and universities in the Czech Republic.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/3_EU_MS_Case_Study_3-Czech_Republic.pdf

4.2.4 EU MS Case Study 4: France.

Jean-Armand Calgaro, Immediate Past Chairman of CEN/TC250

The use of Eurocodes is now generalized in France. The most recent legal European documents were transposed in the national system. The use of Eurocodes is not systematically imposed by the French legal documents, except in the case of fire safety and the safety against earthquakes. But the Eurocodes are a homogeneous and inseparable set, which entails the obligation to adopt (and to use) globally all of them. The common use by engineers of the Eurocodes asked for a period of adaptation of about 10 years.

In Engineering schools and universities in France, teaching is based on the Eurocodes, but, unfortunately, this teaching is mainly oriented to the design of individual members and, in some cases, the design of structures like buildings and bridges, more or less sophisticated. Yet, there are new types of works, in particular subterranean works, interfering with ground and former foundations of existing structures. In addition, the creativity of certain audacious architects does not simplify the task of the engineers. In their design companies, young engineers are in charge to solve very complex problems, without, in many cases, the help of a senior Engineer. For that reason, they should have a good competence in several Eurocodes. Consequently, the Eurocodes system should be perfectly homogeneous. The present system is rather homogeneous and it is foreseen that the new generation will have a higher degree of homogeneity, if the volume of National Annexes can be limited.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/4_EU_MS_Case_Study_4-France.pdf

4.2.5 EU MS Case Study 5: Netherlands.

Mark Lurvink - Netherlands Standardization Institute, Standardization Consultant

The presentation discussed the implementation of the EN Eurocodes in the Netherlands and the preparation of the Dutch National Annexes.

A short history of the Dutch National Standards and Regulations was presented, linked to the evolution of standards for the construction sector. The Dutch legal system and its connection to standards was explained. Following the European Commission Recommendation (2003/887/EC) on the implementation and use of the Eurocodes for construction works and products and related discussions with stakeholders, the Dutch government has decided to incorporate the Eurocodes in the 2012 Building decree without a co-existence period.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/5_EU_MS_Case_Study_5-Netherlands.pdf

4.2.6 EU MS Case Study 6: Greece.

Nikolaos Malakatas - Chairman CEN/TC250/SC1; Chairman of the Greek Eurocodes Mirror Committee

The existing regulatory system in Greece for the application of the EN Eurocodes was presented, as well as the general framework of the implementation of standards, codes of practice and technical specifications in the field of Civil Engineering Technical Works. Challenges and impediments were highlighted and possible actions considered. Reference was also made to the existing situation of NAs and NDPs and on their future evolution. Examples of structures designed according to the Eurocodes are also presented as an encouraging message for the future.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/6_EU_MS_Case_Study_6-Greece.pdf

4.2.7 EU MS Case Study 7: Croatia.

Vlasta Gacesa Moric - Croatian Standards Institute, Head of the General Standardization Department

The topic of this presentation was the experience with the adoption and implementation of Eurocodes in the Republic of Croatia. This assignment was given to Croatian technical committee HZN/TO 548, the National Mirror Committee to CEN/TC 250, and completed with full understanding and financial support by the Ministry of Construction and Physical Planning and the Croatian Chamber of Civil Engineers. All Eurocodes have been adopted and translated into Croatian. The corresponding National Annexes have been developed, published and translated into English. Their implementation was achieved by means of the Technical Regulation for Building Structures. New activities are focused on the active participation of Croatian experts in the development of the new generation of Eurocodes.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/7_EU_MS_Case_Study_7-Croatia.pdf

4.2.8 Round table discussion.

Moderator: Silvia Dimova - JRC, European Commission

The session speakers discussed with the participants the main lessons learnt from the implementation of the Eurocodes in the national regulatory framework of the countries presented as case studies.

A major conclusion derived was that there were two main approaches in the National implementation of the Eurocodes in the EU and EFTA countries: as voluntary National Standards and via a Regulatory Framework, which encompasses different amount of Parts in the different countries. The approach depends on the regulatory environment in each country. There are countries where the rules for structural design are enforced by legislative acts, i.e. National Regulations. In the different regulatory environments, the

National Regulations either refer to standards thus making the compliance with them compulsory, or introduce directly a set of design rules.

However, it was stressed that the Eurocodes have been successfully implemented in the EU and EFTA countries, irrespectively on the type of the national regulatory system via collaborative efforts of the National Authorities, National Standards Bodies and other related stakeholders. The important of training the practitioners on the use of the Eurocodes for structural design was highlighted as an important parallel action by the speakers.

4.3 Session 1C: Eurocodes in the design practice. The Eurocodes international status.

4.3.1 Designers' experience in using the Eurocodes.

Pietro Croce - Convenor of CEN/TC250 HG Bridges; University of Pisa

In the presentation, the application of Eurocodes in the design practice was illustrated and critically discussed, with special emphasis on bridge design. In the first part, some background information was given about the definition of relevant actions, also considering the ones to be taken into account during execution. The evaluation of relevant influence surfaces was shortly discussed for the most relevant and common cases (open or box cross sections, orthotropic decks) in view of the estimation of most adverse traffic effects. In the second part, some relevant design case were explained. Starting from the consideration that designers need to face a very wide variety of practical cases, ranging from the design of common bridges, characterised by short spans and common structural schemes (covering more than 95% of the applications), to medium and large span bridges, a relevant design case was illustrated. The case studie demonstrated that Eurocodes are suitable to cover all practical needs with different degrees of complexity, according to the refinement required by the specific assessment. In the worked example, some relevant fatigue assessment was discussed as well. Finally, the application of Eurocodes in case of repair, rehabilitation and seismic upgrading of an existing historical masonry bridge was discussed, stressing that Eurocodes are so flexible that they can be applied even in cases not explicitly covered.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_Designers_experience_using_Eurocodes.pdf

4.3.2 The European Construction Sector Observatory.

Karim Karaki - Pricewaterhouse Coopers, Luxembourg, Public Sector Associate

With the limited prospects of the EU domestic construction market, European companies have increasingly dedicated efforts to identifying and exploiting business opportunities abroad - often with the support of EU or Member States' policies and instruments. However, companies also face numerous challenges, whether relating to financing, local regulatory environment or standards harmonisation. This is reflected in the European Construction Sector Observatory analytical reports, which look into more depth in the internationalisation and competitiveness of the EU and EU Member States' construction sector with a view to facilitate knowledge sharing and accelerating policy learning among policy makers. This presentation hence looked at the drivers and challenges around the internationalisation process of EU construction companies, with a view to provide recommendations about how policy-makers can best facilitate such as process. By doing so, the presentation notably mentioned the role of Eurocodes and its impacts on the internationalisation process.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/2_European_Construction_Sector_Observatory.pdf

4.3.3 JRC activities in support to the Eurocodes implementation.

Adamantia Athanasopoulou - JRC, European Commission

In support of the Eurocodes implementation in the EU and other interested third countries, JRC has organized and provided support to a series of dissemination and training events within the EU but also in third countries. These training events were designed based primarily on the target audience (i.e. National Authorities and National Standards Bodies, academics, industrial organizations, engineers and practitioners) and the specific needs of the countries.

Further, the website "Eurocodes: Building the Future"¹⁰ serves as platform for exchange and dissemination of training and promotional material between the Member States. A collection of training and guidance materials on the Eurocodes (books, designer's guides, manuals, etc.) is available at the Eurocodes Website Publications Database¹¹. Such tools facilitate the exchange of knowledge and good practices between the countries while fostering regional collaboration and capacity building and enhancing the connection between science, policy and common practice.

A co-ordinated approach towards the implementation and further promotion of the Eurocodes was deemed necessary, involving all major stakeholders (the Commission, Standardisation and Industrial Organisations, academics, national authorities, etc.) to achieve full implementation of the Eurocodes, supporting risk-reduction in parallel to safe and sustainable growth in the construction sector.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/3_JRC_activities_support_Eurocodes.pdf

4.4 Session 2A: Opportunities in the Balkan region.

4.4.1 Opening of JRC Research Infrastructures: Opportunities in the Balkan region.

Fabio Taucer - JRC, European Commission

The JRC hosts 58 physical research infrastructures at Ispra, Karlsruhe, Geel and Petten, of which 40 have the potential of opening to external users. Offering access to visiting researchers is part of JRC's strategy to enhance dissemination of scientific knowledge, boost competitiveness, bridge the gap between research and industry and provide training and capacity building.

In June 2017, the JRC opened at the JRC Science Hub¹² the first calls for open access, addressed to Member States and Candidate countries and countries associated to the EU Research Programme Horizon 2020. Access is offered to public and private institutions, including Small and Medium Enterprises (SMEs), following a peer-review evaluation of proposals, and charges users only the additional costs associated to such access under the condition that the generated data is openly disseminated. At present, nine (9) research infrastructures are opening access in the fields of safety and security of buildings, and nanobiotechnologies, both at Ispra, and in the field of nuclear safety and security in Geel and Karlsruhe. Overall 57 eligible proposals have been received from 21 different countries. The first two projects have already started at the research infrastructures in Ispra. During the second half of 2018 four (4) more research infrastructures will offer access in the fields of fuel cells in Petten and molecular ecology at Ispra.

The JRC is planning to issue calls towards the end of 2018 on Training and Capacity Building at JRC research infrastructures covering the travel and accommodation of users

¹⁰ <https://eurocodes.jrc.ec.europa.eu/>

¹¹ <https://eurocodes.jrc.ec.europa.eu/publications.php>

¹² <https://ec.europa.eu/jrc/en>

from Enlargement and Integration countries. In 2019, the JRC will revise its Framework by waiving the access costs and covering the costs of travel and subsistence of users visiting the JRC from the Spreading Excellence and Widening Participation RTD list of countries.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_Opening_of_JRC_RIs.pdf

4.5 Session 2B: Current status of the Eurocodes implementation in the non-EU Balkan region.

A presentation on the status of the Eurocodes implementation in the national regulatory system and identification of challenges encountered in this process was provided by each non-EU Balkan country participating at the workshop. Each country report gave answers/views of the invited participants related to the objectives of the workshop. The following issues were addressed by each country report:

- Structure of the National Mirror Technical Committee for the Eurocodes.
- Overview to the current status of elaboration of the Eurocodes and the National Annexes (NAs).
- Obstacles and advantages for the implementation of the Eurocodes in the national regulatory framework.
- Implementation (eventually) of the Eurocodes in the current design practice.
- Possible topic(s) for joint (regional) cooperation in the process of elaboration, adoption and implementation of the Eurocodes.

The following country reports were given during this session:

- Country report - Albania

Presenter: Rikard Luka, Albanian Eurocodes Mirror Committee

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_Country_Report_Albania.pdf

- Country report – Bosnia and Herzegovina

Presenter: Sanin Dzidic, International BURCH University

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/2_Country_Report_Bosnia_and_Herzegovina.pdf

- Country report – the former Yugoslav Republic of Macedonia

Presenter: Vilijam Hristovski, ISRM TC 40 Technical Secretary

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/3_Country_Report_fYROM.pdf

- Country report - Kosovo

Presenter: Merita Behluli, Eurocode Technical Committee Kosovo

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/4_Country_Report_Kosovo.pdf

- Country report - Moldova

Presenter: Socol Iurii, Institute for Standardization of Moldova

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/5_Country_Report_Moldova.pdf

— Country report - Montenegro

Presenter: Ljiljana Soskic, Institute for Standardization of Montenegro

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/6_Country_Report_Montenegro.pdf

— Country report - Serbia

Presenter: Jelena Skoković, Institute for Standardization of Serbia

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/7_Country_Report_Serbia.pdf

— Country report - Turkey

Presenter: Atila Erenler, Ministry of Environment and Urbanism & Emre Karadeniz, Turkish Standards Institution

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/8_Country_Report_Turkey.pdf

4.5.1 Status of Eurocodes implementation in the Balkan region – survey results.

Roberta Apostolska - Institute of Earthquake Eng. and Eng. Seismology, UKIM-IZIIS; University Ss Cyril and Methodius, UKIM, Professor

The presentation reported the results from the survey conducted on the recent progress in the adoption and implementation of the Eurocodes in the non-EU Balkan countries. It particularly focused on the progress made, challenges encountered for national implementation and identification of good practices. A summary was given in relation to the activities carried out previously aimed to provide scientific and technical contribution in the context of the JRC support to DG GROW¹³ for the promotion of the Eurocodes and to support Accession and Candidate Countries within the JRC Enlargement and Integration Action. For the purpose of the survey, a questionnaire was prepared consisting of two parts: part A dedicated to the status of elaboration of EN parts, NDPs and NAs in the above countries (filled-in by the National Standards Bodies representatives) and part B related to the implementation of the Eurocodes in the national regulatory framework, drivers and barriers (filled-in by the National Authorities).

A summary of the results of the survey is presented in Annex 3.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/9_Status_Eurocodes_implementation_Balkans.pdf

4.6 Session 2C: The way forward for the Eurocodes implementation in the Balkan region.

4.6.1 Views from the European Council of Engineers Chambers.

Dragoslav Sumarac - Executive Board of the European Council of Eng. Chambers, Vice-President; Serbian Chamber of Engineers, President

¹³ Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

The Serbian Chamber of Engineers, in cooperation with the European Council of Engineers Chambers (ECEC)¹⁴, organized several lectures on the application of Eurocodes as part of the Continuing Professional Development (CPD) program for its own members. The lecturers were prominent professors and recognized experts from various fields. The topics were aimed at directly presenting and familiarizing engineers with the implementation of Eurocodes in real, practical examples. Some of the topics covered are the following:

- Experience of Hungarian engineers in the preparation of Eurocodes.
- Design of concrete road bridges in Slovakia according to Eurocodes.
- ResyLab 2015 sliding symposium.
- EN 1990, Basis of structural design, EN 1991 (Eurocode 1), Actions on structures.
- Design of reinforced concrete structures according to EN 1992-1-1, Eurocode 2
- The Eurocodes in Serbia from EN 1990 to EN 1999.
- Eurocodes for the calculation of steel structures.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/1_Views_from_ECEE.pdf

4.6.2 Views from the Chamber of certified architects and certified engineers of Republic of Macedonia.

Petar Cvetanovski - Chamber of certified architects and certified engineers of Republic of Macedonia, Head of Civil Eng. Department

The presentation gave a review of the recent state of the implementation process of Eurocodes in Macedonian technical regulative system. Also, the Chamber activities in this process and expectations were expressed. General information about Chamber structure and organization was presented explaining that the department of civil engineers is the largest one with about 1000 active members. This presentation discussed the Chamber activities in relation to the professional review of the Eurocodes translations and organization of seminars on the Eurocodes implementation. The experience from those activities was discussed. The dilemma "Eurocodes as an obligation or need?" as technical regulation in non-EU countries was briefly explained. The imperative for adoption and implementation of Eurocodes, as a technical regulative, was emphasized. Also, the related provisions and activities were suggested. It was illustrated that the Macedonian Chamber has a very active role in the process of Continuing Professional Development (CPD) of the engineers in the former Yugoslav Republic of Macedonia. In that regard, the Chamber has organized, and plans to organize in future, educational seminars across the country in order to support adoption of Eurocodes.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/2_Views_from_Chamber_FYROM.pdf

4.6.3 The concept of the Eurocodes Community of Practice in the Balkan region.

Adamantia Athanasopoulou - JRC, European Commission

This presentation focused on the concept for the establishment of a regional platform to enhance collaboration within the non-EU Balkan countries on the adoption and implementation of the Eurocodes. It gave the opportunity to present to the participants the framework for a Community of Practice (CoP) related to Eurocodes and their implementation in the Balkan region and secure involvement of invited members.

¹⁴ <http://www.ecec.net/>

It is envisaged that the CoP related to Eurocodes and the Balkan region will provide continuous support in future actions related to Eurocodes implementation in the Balkans. The concept is that the CoP will be engaged in activities related to the Eurocodes and the Balkans (i.e. map knowledge and identify gaps, exchange practical examples of structures designed with the Eurocodes, discuss developments related to the NDPs elaboration and National Annexes publication, organize visits and other local events, assist with regional training activities). The CoP will also assist in process of the Eurocodes maintenance and updating once they will be adopted. An e-forum (or platform) will foster the dissemination of information and activities related to the CoP and facilitate the collaboration among its member – it is envisaged that this platform can be hosted at the JRC Eurocodes website. The CoP members will also have plenary meetings, i.e. occasions to meet, exchange ideas and pave the way for future work. JRC would be monitoring and assisting the CoP with its activities.

The full presentation is available at:

https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/presentations/3_Eurocodes_CoP_Balkans.pdf

4.6.4 Round table discussion.

Moderator: Silvia Dimova- JRC, European Commission

The session speakers discussed with the participants the challenges and needs in relation to the implementation of the Eurocodes in the regulatory framework, linking to countries examples presented on Day 1 and the current status of implementation as discussed in the country reports. The main points of the discussion are presented in Section 6: “Workshop Conclusions” of the present document.

5 Workshop material

All workshop presentations and material related to the workshop are available for download from the JRC Eurocodes website at the following link:

https://eurocodes.jrc.ec.europa.eu/showpage.php?id=2018_10_WS_Balkan.

A dedicated webpage on the workshop is available, as show in Figure 1.

Figure 1. The dedicated workshop page at the JRC Eurocodes website

The screenshot shows the JRC Eurocodes website interface. At the top, there is a navigation bar with links for 'Legal notice', 'Privacy Policy', 'Cookies', 'Contact', 'Sitemap', 'About this site', 'Links', and 'Login'. A search bar is located on the right. Below the navigation bar, the JRC logo and 'EUROCODES' are displayed. A blue banner features the Eurocodes logo and the tagline 'BUILDING THE FUTURE' alongside an image of people working at computers. The main content area is titled 'The way forward for the Eurocodes implementation in the Balkans' and includes the dates '10-11 October 2018, Tirana, Albania'. A central graphic shows the workshop title and dates, along with organizational details: 'Organized by EUROPEAN COMMISSION - Joint Research Centre', 'Supported by EUROPEAN COMMISSION - JRC Enlargement and Integration Action', 'In COMMISSION - DG GROW', 'ENEEC Management Centre', 'CENTC 250 "Structural Eurocodes"', and 'Hosted by General Directorate of Standardization of Albania'. A map of the Balkans is visible at the bottom of the graphic. To the right of the graphic, a list of links is provided: 'Objectives', 'Programme', 'Participants', 'Workshop Presentations', 'Workshop Report', and 'Contacts'. A left-hand navigation menu includes links for 'Homepage', 'About the EN Eurocodes', 'Parts', 'EU Legislation and Standardisation', 'Implementation', 'Designing with the Eurocodes', 'Maintenance', 'Further Harmonization', 'Development' (highlighted), 'Use outside EU-EFTA', 'Glossary', 'Publications', 'Events', 'JRC support to implementation and development', and 'Media News'.

A JRC Technical Report on the process for the Eurocodes implementation in the National Regulatory Framework¹⁵ will be published as a follow-up of the event. The report will be based on the material prepared for the workshop and the discussions. The report will focus on assessing the challenges non-EU Balkan countries are encountering in Eurocodes implementation in the national regulatory framework and providing recommendations for facilitating the procedure based on the EU MS case studies. The JRC report is expected to be published in the beginning of 2019 and have a global resonance, taking into account that many countries outside Europe have expressed strong interest in the Eurocodes.

¹⁵ Athanasopoupou, A; Spehl, P; Sousa, M L; Formichi, P; Dabizheva, I; Gacesa-Moric, V; Markova, J; Calgaro, J A; Malakatas, N; Lurvink, M; Croce, P; Apostolska, R; Sumarac, D; Dimova S; *The implementation of the Eurocodes in the National Regulatory Framework* (in preparation).

6 Workshop conclusions

Below are presented the most important key findings and conclusions based on the presentations and round table discussions during the workshop:

- Significant and important progress has been achieved by all non-EU countries in the Balkan region in the adoption of the Eurocodes since the workshop in Skopje in 2016.
- EU MS invited lecturers have shared the experience and good practices in the implementation of the Eurocodes in the national regulatory system in their countries; it seems that there is no single-type solution for the challenges faced by the Balkans countries as the approach is strongly linked to the regulatory system of each country and its specificities; however there are examples to be considered as good practices which could support the advancement of the implementation of the Eurocodes in the Balkans.
- There is evidence of strengthened collaboration and information sharing among the non-EU Balkan countries and support given to the countries by neighboring EU MS; such activities are important good practices that need to continue and be further elaborated in the future.
- The Eurocodes are used in the design practice in the non-EU Balkan countries and there are practitioners that are acquainted with the Eurocodes concepts and system.
- There is lack of sufficient coordination between the National Authorities and the NSBs on the implementation of the Eurocodes, even though from the standpoint of the standards adoption, a lot of work has been done. EU MS experts have suggested to set a clear timeline for the future steps and actions, clearly identify the resources needed and assess stakeholders/institutions that can support the actions in the timeline; it is also important to seek and confirm agreement on actions by all stakeholders involved.
- It was the first time in such type of Eurocodes' events targeted for the Balkan region that representatives from the Chambers of Engineers participated and it was agreed that the Chambers have an important role to play in the process of the Eurocodes implementation and provide a link with the practitioners.
- The situation with regards to the membership of the Balkan countries NSBs to CEN is not uniform for all countries as some NSBs have acquired CEN membership (the former Yugoslav Republic of Macedonia, Serbia and Turkey), others are CEN affiliated members (Albania, Bosnia and Herzegovina and Montenegro) or CEN Companion Standard Bodies (Moldova), while Kosovo has no formal status. However, there is strong will, expressed from all countries NSBs, to collaborate with CEN. NSB representatives also considered that information dissemination on the planned changes in the second generation of the Eurocodes would allow them to set-up now their NDPs in a way allowing a smooth transition to the second generation of the Eurocodes. A proposal has been formulated to address CEN-CENELEC Management Centre to provide access to TC250 works and activities for countries not being CEN members or affiliates, while the NSBs will seek resources for supporting their future participation (e.g. from industry).
- All EU MS experts stressed that the Eurocodes serve as a common language for engineers. The National Authorities should consider implementing them at the National Regulatory Framework as a system; it is important not to mix design rules from the Eurocodes with other codes/standards for the structural design of buildings and other construction works.
- Representatives from the Balkans countries suggested that a platform helping users to navigate within the Eurocodes would significantly ease the use in practice of the second generation of the Eurocodes.

References

European Commission Recommendation (2003/887/EC), on the implementation and use of the Eurocodes for construction works and structural construction products.

European Commission, 2012, Mandate for amending existing Eurocodes and extending the scope of Structural Eurocodes (M/515 EN).

List of abbreviations and definitions

BDS	Bulgarian Standardisation Institute
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CPD	Continuing Professional Development
EFTA	European Free Trade Association
ILNAS	Institut Luxembourgeois de la Normalisation, de l'Accréditation, de la Sécurité et qualité des produits et services
NDPs	Nationally Determined Parameters
TC250	Technical Committee 250 'Structural Eurocodes'

Annexes

Annex 1. Workshop programme

Wednesday, 10 October 2018

Welcome and introductory presentations.	
09:00 – 09:30	Registration
09:30 – 10:00	Welcome addresses and introduction <i>A. Ganesh – CEN CENELEC, Director for Market Perspectives and Innovation</i> <i>R. Hasanaj – General Directorate of Standardization of Albania</i> <i>S. Dimova - DG JRC, European Commission</i>
10:00 – 10:30	Towards the Second Generation of the Eurocodes <i>P. Formichi – Chairman of CEN/TC250/SC10; University of Pisa</i>
EU MS case studies. Good practices and guidance.	
10:30 – 11:00	EU MS Case Study 1: Bulgaria <i>I. Dabijeva – Bulgarian Institute for Standardization, Managing Director</i>
11:00 – 11:30	Coffee break
11:30 – 12:00	EU MS Case Study 2: Belgium <i>P. Spehl – SECO, Senior Civil Engineer; Head of the Belgian Delegation for the Eurocodes</i>
12:00 – 12:30	EU MS Case Study 3: Czech Republic <i>J. Markova - Czech Technical University in Prague, Klokner Institute, Associate Professor</i>
12:30 – 13:00	EU MS Case Study 4: France <i>J. A. Calgaro – Immediate Past Chairman of CEN/TC250</i>
13:00 – 14:00	Lunch break
14:00 – 14:30	EU MS Case Study 5: Netherlands <i>M. Lurvink – Netherlands Standardization Institute, Standardization Consultant</i>
14:30 – 15:00	EU MS Case Study 6: Greece <i>N. Malakatas - Chairman CEN/TC250/SC1; Chairman of the Greek Eurocodes Mirror Committee</i>
15:00 – 15:30	EU MS Case Study 7: Croatia <i>V. Gaćeša-Morić- Croatian Standards Institute, Head of the General Standardization Department</i>
15:30 – 16:00	Round table discussion
16:00 – 16:30	Coffee break
Eurocodes in the design practice. The Eurocodes international status.	
16:30 – 17:00	Designers' experience in using the Eurocodes <i>P. Croce – Convenor of CEN/TC250 HG Bridges; University of Pisa</i>
17:00 – 17:30	The European Construction Sector Observatory <i>K. Karaki - Pricewaterhouse Coopers, Luxembourg, Public Sector Associate</i>
17:30 – 17:50	JRC activities in support to the Eurocodes implementation <i>A. Athanasopoulou - DG JRC, European Commission</i>
17:50 – 18:00	Closure Day 1 <i>S. Dimova - DG JRC, European Commission</i>

Thursday, 11 October 2018

Opportunities in the Balkan region.	
09:30 – 10:00	Opening of JRC Research Infrastructures: Opportunities in the Balkan region <i>F. Taucer - DG JRC, European Commission</i>
Current status of the Eurocodes implementation in the non-EU Balkan region.	
10:00 – 11:00	Country report – Albania <i>R. Luka, Albanian Eurocodes Mirror Committee</i> Country report – Bosnia and Herzegovina <i>S. Dzidic, International BURCH University Sarajevo</i> Country report – the former Yugoslav Republic of Macedonia <i>V. Hristovski, ISRM TC 40 Technical Secretary</i> Country report – Kosovo <i>M. Behluli, Eurocode Technical Committee Kosovo</i>
11:00 – 11:30	Coffee break
11:30 – 12:30	Country report – Moldova <i>I. Socol, Institute for Standardization of Moldova</i> Country report – Montenegro <i>L. Šoškić, Institute for Standardization of Montenegro</i> Country report – Serbia <i>J. Skoković, Institute for Standardization of Serbia</i> Country report – Turkey <i>A. Erenler, Ministry of Environment and Urbanisation</i>
12:30 – 13:00	Presentation of survey on status of Eurocodes implementation in the Balkan region <i>R. Apostolska - Institute of Earthquake Eng. and Eng. Seismology, UKIM-IZIIS; University Ss Cyril and Methodius, UKIM, Professor</i>
13:00 – 14:00	Lunch break
The way forward for the Eurocodes implementation in the Balkan region.	
14:00 – 14:30	View from the European Council of Engineers Chambers <i>D. Šumarac – Executive Board of the European Council of Eng. Chambers, Vice-President; Serbian Chamber of Engineers, President</i>
14:30 – 15:00	Views from the Chamber of certified architects and certified engineers of Republic of Macedonia <i>P. Cvetanovski - Chamber of certified architects and certified engineers of Republic of Macedonia, Head of Civil Eng. Department</i>
15:00 – 15:30	The concept of the Eurocodes Community of Practice in the Balkan region <i>A. Athanasopoulou - DG JRC, European Commission</i>
15:30 – 16:00	Coffee break
16:00 – 16:45	Round table discussion
16:45 – 17:00	Conclusions and closure of the workshop <i>S. Dimova - DG JRC, European Commission</i>

The workshop leaflet is available at:

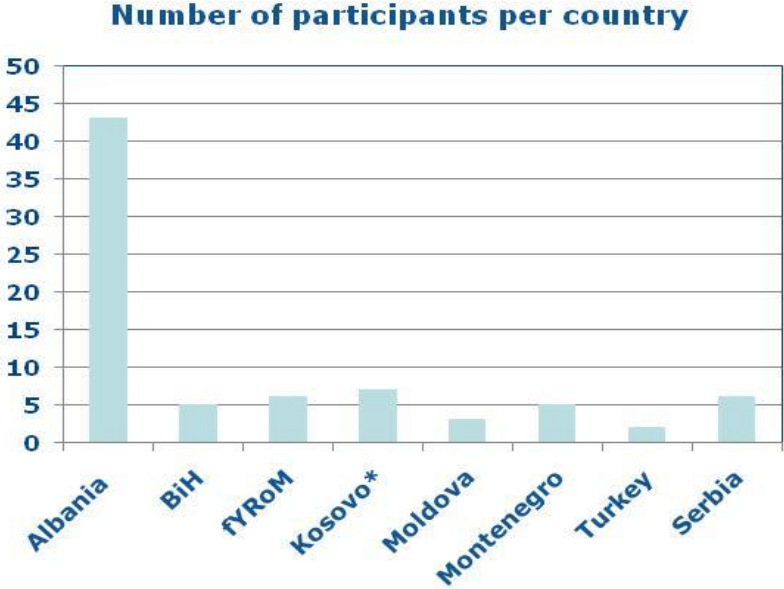
https://eurocodes.jrc.ec.europa.eu/doc/2018_10_WS_Balkan/2018_10_WS_Balkan_flyer.pdf

Annex 2. Workshop participants

Participants from non-EU countries in the Balkan region (Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo¹⁶, Moldova, Montenegro, Serbia and Turkey) attended the workshop, presented the progress in the adoption of the Eurocodes and discussed the way ahead. Participation was on invitation only by the Organizing Committee. Participants were representatives of National Authorities (NAs), National Standardisation Bodies (NSBs), Engineering Chambers, Chairmen of CEN/TC250 Mirroring Committees and members of TC250 mirroring working groups. Further, representatives from institutions that are involved in the determination of the National Annexes and the training on the Eurocodes and provide support for the Eurocodes adoption were also invited. Nominated experts from the European Commission, EU Member States, CEN Management Centre and CEN/TC250 'Structural Eurocodes' participated and gave presentations.

The total number of participants from non-EU Balkan countries was 77 (see Figure 2) wherein 35% were representatives from National Authorities (NA) and policy decision makers, 21% were from the National Standardization Bodies (NSB), 23% were professional users of standards and 21% were representatives from the institutions who are engaged in the elaboration of NDPs and training on the Eurocodes.

Figure 2. Number of participants per non-EU Balkan country



¹⁶ 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.

Annex 3. Questionnaire on the status of Eurocodes implementation in the Balkan countries

A questionnaire aimed to assess recent progress, difficulties and needs for the implementation of the Eurocodes in the national regulatory framework in the Balkan countries was distributed to the invited participants before the workshop and was analyzed and discussed at the workshop.

The questionnaire aimed at assessing the state of implementation of the Eurocodes in the national regulatory framework (NRF) and consisted of two parts, Part A and Part B. Part A was dedicated to collect information regarding:

- Translation and publication of Eurocodes;
- Progress of elaboration of NDPs and acceptance of RVs and
- Publication of NAs.

Responsibles for delivering this part were the representative from the NSB from each country.

Part B addressed three different groups of questions:

- Eurocodes in NRFs,
- Eurocodes in public procurement and their use for the design of important/special structures, and
- Obligatory use of any EN part.

This part of the questionnaire was filled by NAs representatives.

During the second day of the workshop representatives of each country delivered the country report regarding the current state of the Eurocode implementation.

The summary of the collected questionnaires and country reports is presented in the Tables 1 and 2, below.

Table 2. Summary of the questionnaire on status of Eurocodes implementation in the Balkan countries– Part A

Country	Eurocode parts translated	Eurocode parts published as National Standards	Progress of NDPs elaboration	Acceptance of NDPs Recommended Values	National Annexes published	Comments
Albania	All, except EN1995 and EN1999	All, except EN1995 and EN1999	50%-100%	Same	0	-
Bosnia and Herzegovina	100%	100%	All in EN1990, EN1991-1-1 to EN1991-1-5 and EN1998-1	Different	8	Networking, Czech Office for standards, metrology and testing
FYROM	100%	100%	All, except climatic maps	Around 90%	All, except seismic hazard and climatic maps	-
Kosovo	In progress	100%	0	0	0	Networking with Albanian NSB
Moldova	100%	100%	All in EN1990-EN1995	90%	16	Networking with Romanian standards assoc., TU – Bucharest, Czech Office for standards, metrology and testing
Montenegro	44% (26 parts)	44% (26 parts)	n/a	Different	44% (26 parts)	Twinning with NSB from Austria
Serbia	27% (16 parts)	100%	100%, except EN1996 and EN1997	Different	80% (46 parts)	-
Turkey	44%	100%	0	0	1	TBEC (2018)

Table 3. Summary of the Questionnaire on the status of Eurocodes implementation in the Balkan countries - Part B

Country	Eurocodes implementation in the National Regulatory Framework	Eurocodes in public procurement/ certain categories of structures	Obligatory use of any Eurocode part
Albania	No	No	No
Bosnia and Herzegovina	EN 1992 and EN 1996	EN 1992 and EN 1996	BAS EN related standards
FYROM	No	No	No
Kosovo	No – (roadmap for adoption, implementation and promotion of the Eurocodes)	No (by law) - (in practice for high risked structures)	No
Moldova	No – approved NAP, 2014-2020 (Decision no. 933, dated 2014)	No	No
Montenegro	Anticipated – end of 2019 (NAP for adoption and implementation dated 2014)	No	No
Serbia	n/a	Usually for most important infrastructure projects (parallel use)	n/a
Turkey	No - the construction engineering practices in Turkey is largely governed by the provisions in the Turkish Building Earthquake Code (TBEC), enforced 01.01.2019. Some sections of the Eurocode parts and some EN standards are incorporated to TBEC, (EN1990 Annex D; EN1992-1; EN1993-1-3; EN1995 (12); EN1996-1 (11); EN15129; EN1997 (16))		

As a possible way of go ahead, the following activities have been identified based on the country reports and the related round table discussion:

- To support the creation of a Eurocodes Community of Practice for the Balkan region to boost regional collaboration in the adoption and implementation of the Eurocodes.
- To explore possibilities for organizing regional training courses supported by European Commission's JRC Enlargement and Integration Action in order to further facilitate the implementation of the Eurocodes in the Balkan region.
- To launch bilateral projects for building national capacities for adoption and implementation of the Eurocodes (positive examples – Bosnia and Herzegovina and Czech Standardization Institute, KSA and Albanian Standardization Agency, Moldova and TU Bucharest and Czech Standardization Institute).

Annex 4. Analysis of the feedback questionnaire completed by the participants

A feedback questionnaire about the workshop was distributed to the participants. Based on 67 filled questionnaires, an overall average score of 4.54/5.0 was recorded considering all questions posed. Satisfaction on the quality of the workshop, the interesting presentations and helpful round table discussions was widely expressed by the participants. Very positive feedback by lecturers and participants on the organization quality of the event was expressed to the Organizing Committee through various communication means (orally, email, etc.). Participants praised the warm and collaborative atmosphere created during the workshop and expressed the need and interest for future workshops/training events on the implementation and use of the Eurocodes.

The analysis of the feedback received from the workshop participants is presented in Figures 3-8 below.

Figure 3. Profile of workshop participants

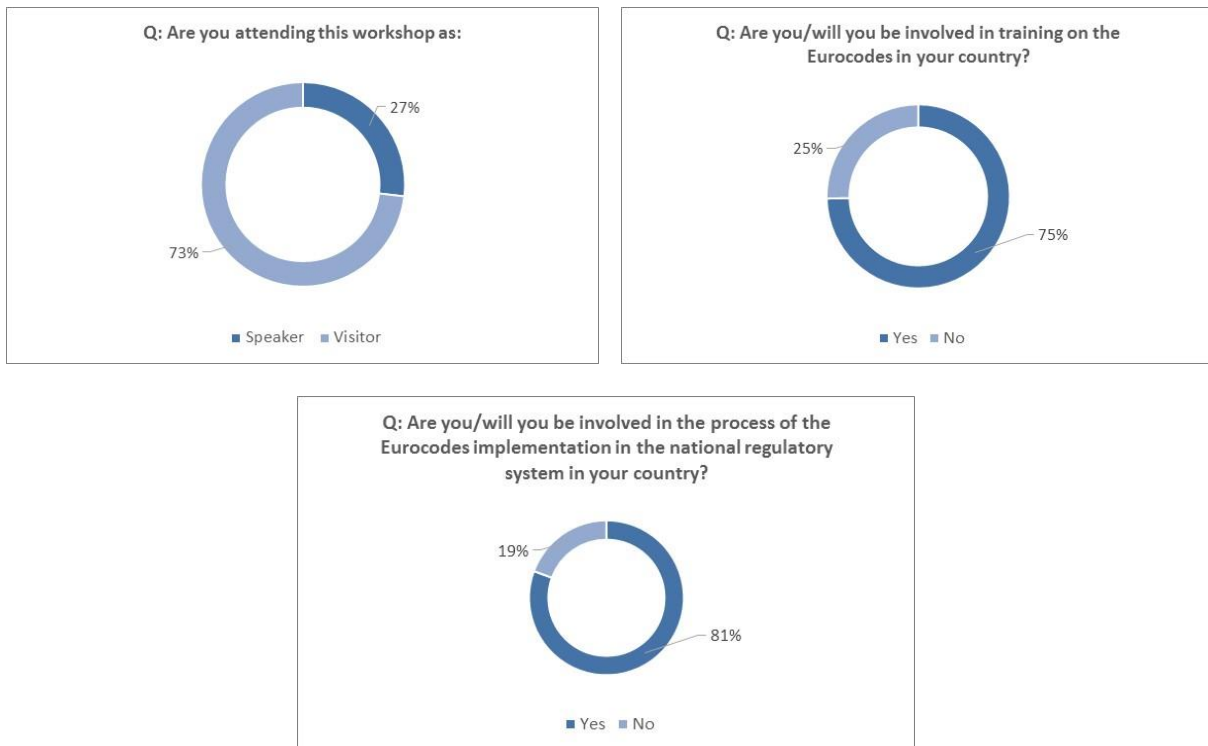


Figure 4. Feedback on the information and support provided before the workshop

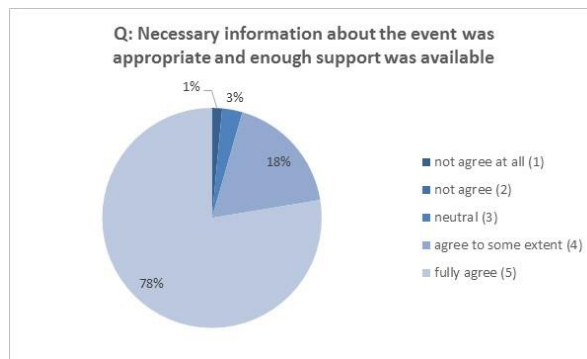


Figure 5. Feedback on the workshop programme

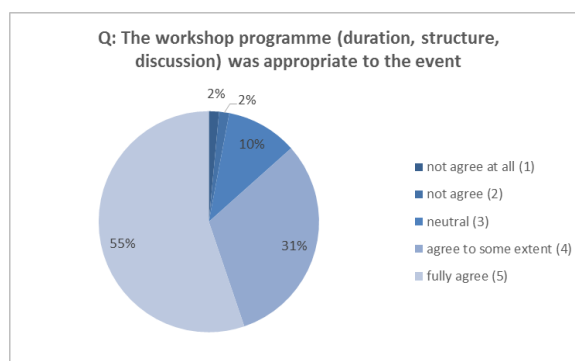


Figure 6. Feedback on the achievement of the workshop objectives

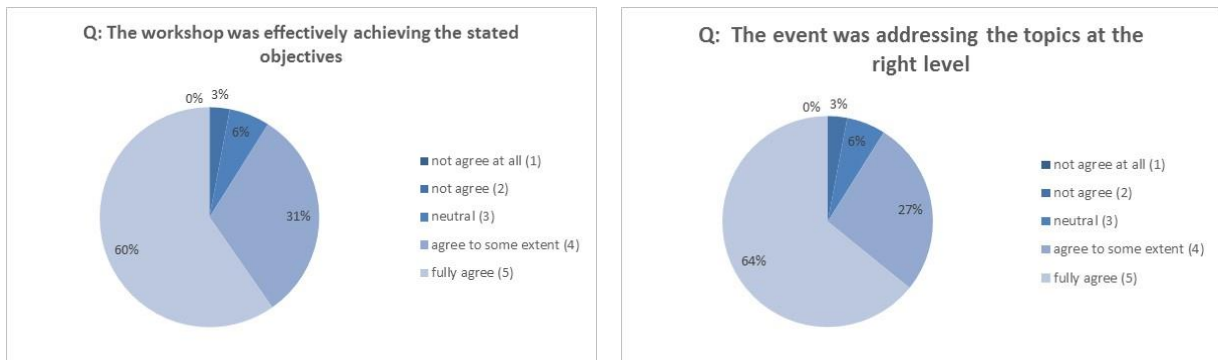


Figure 7. Feedback on the workshop presentations

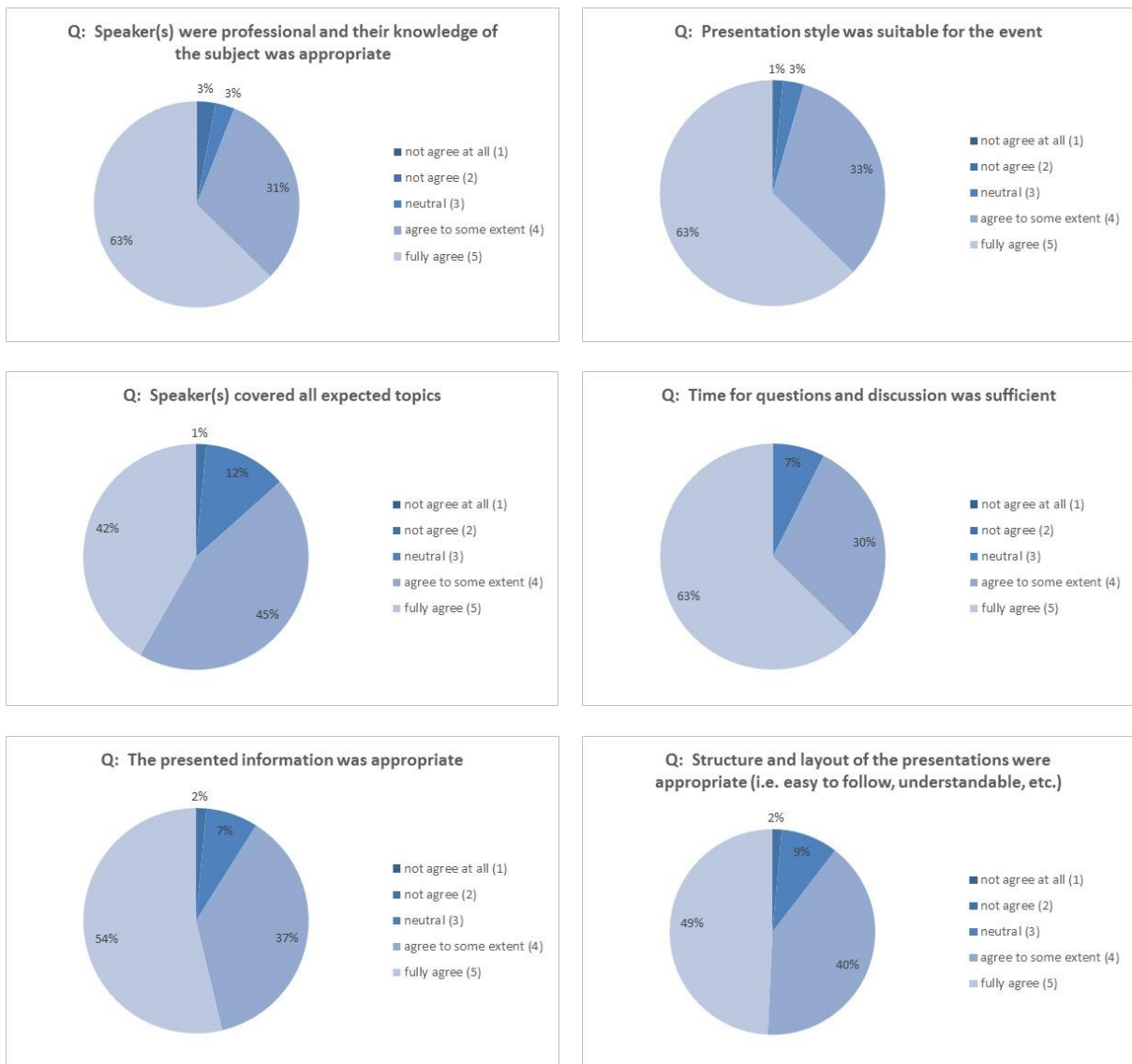
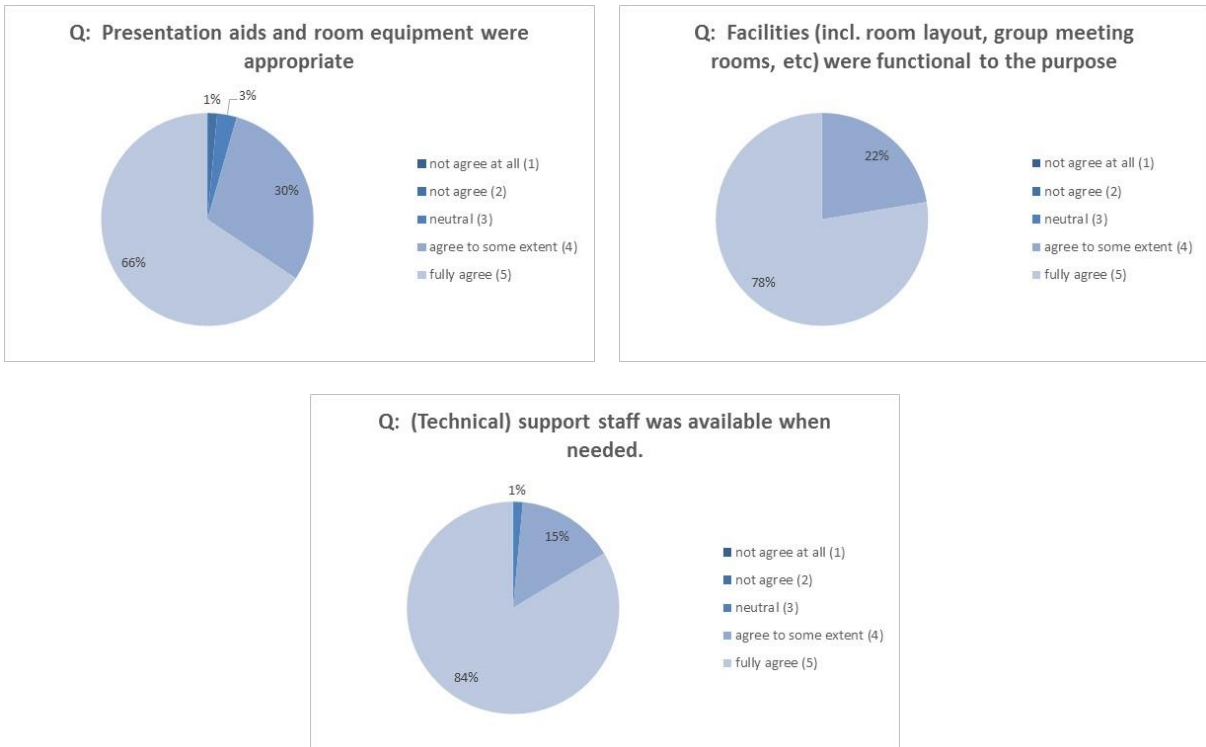


Figure 8. Feedback on the workshop facilities



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