



# **Adoption of the Eurocodes in Bosnia & Herzegovina**

**- Country Report -**

**Assist. Prof. Dr. Sanin Dzidic, PE, IBUS**

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# Eurocodes Adoption Status

- *BAS/TC 58, Eurocodes*
- *NMC to CEN/TC 250*
- *Established November 28, 2013*
- *Chairman: Dr. Sanin Dzidic, PE*
- *Currently 28 members from different sectors and stakeholders; designers, construction industry, universities, research institutions, government representatives...*
- *Changing the structure of committee*



# Status, December 2013

***Summary of the questionnaires filled by  
National Authority relevant representatives  
from non-EU countries in the Balkan region***

*by*

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Apostolska*

*[http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2013\\_12\\_WS\\_Balkan#Presentations](http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2013_12_WS_Balkan#Presentations)*

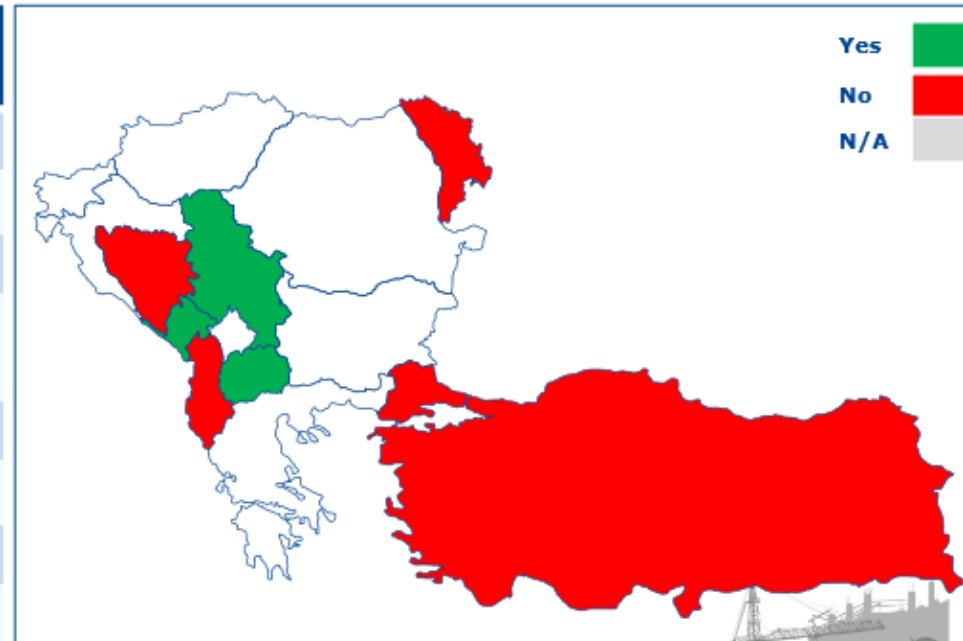


# Status, December 2013

## NATIONAL REGULATORY FRAMEWORK

### 1.1 Is there a National Action plan for adoption and implementation of the Eurocodes

Albania	Strategy report – MPPT
Bosnia and Herzegovina	No
Croatia	Eurocodes is already adopted
the former Yugoslav Republic of Macedonia	Yes
Moldova	No, initiated by MCDT
Montenegro	Yes
Turkey	No, (EC8 included in NSAP)
Serbia	Yes

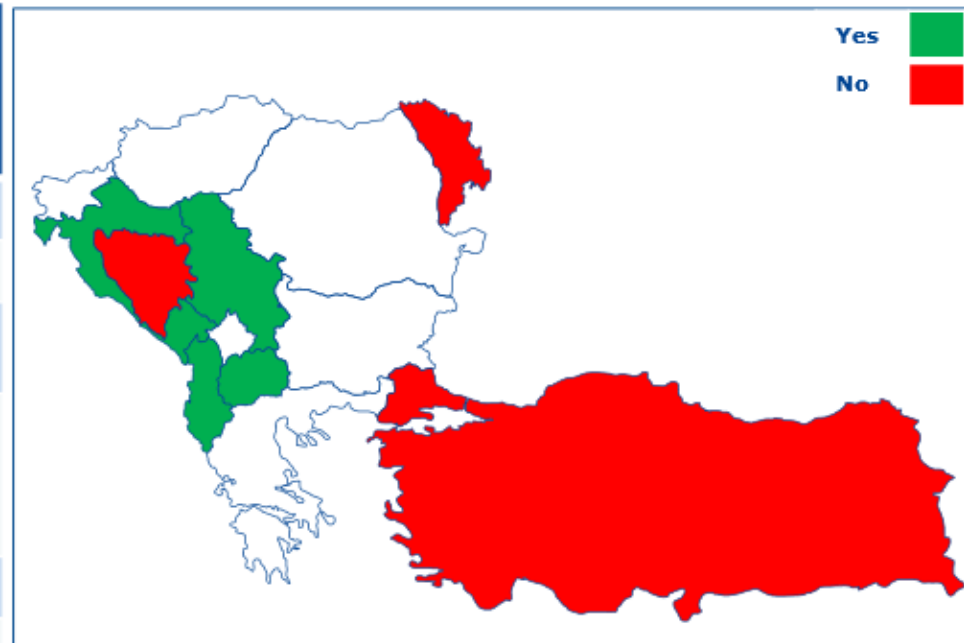


# Status, December 2013

## NATIONAL REGULATORY FRAMEWORK

**1.3 Does any relevant national institution support projects for A/I of Eurocodes? If yes, please give information and reference to any project financed by EU**

Albania	GDS (NSB)
Bosnia and Herzegovina	No
Croatia	MGIPU, HZN (NSB) & Chamber of Civil Engineers (national)
the former Yugoslav Republic of Macedonia	ISRM (NSB), Chamber of authorized architects and engineers/TAIEX, IPA and GTZ support
Moldova	No
Montenegro	Twinning project/EU-IPA
Turkey	No
Serbia	Academia and ISS (NSB)/GTZ and DIN support



# Status, December 2013

## 2.1 Is there a Technical Committee for adoption of the Eurocodes already established

Albania	<b>YES</b>	KT 250 Eurocode (2007)/Chairman - Mr F. Kadiu
Bosnia and Herzegovina	<b>NO</b>	BAS/TC 58 ( <i>to be set up</i> )
Croatia	<b>YES</b>	HZN/TO 548 Structural Eurocodes (2006)/Chairman - Mr I. Dzeba
the former Yugoslav Republic of Macedonia	<b>YES</b>	ISRM TC 40 Eurocodes and National Annexes (2012)/ Chairman - Mr T. Delipetrov; ( <i>ISRM TC 30: 2007-2012</i> )
Moldova	<b>NO</b>	
Montenegro	<b>YES</b>	ISME/TK 002 Eurocodes (2011)/Chairman - Mr R. Zejak
Turkey	<b>YES</b>	TSI – Safety of construction
Serbia	<b>YES</b>	KS U250 - 1,8 (2012)/Chairman – Mr Gj. Vuksanovic KS U250 – 3,6,9 (2006)/ Chairman – Mr Z. Markovic KS U250 – 2 (to be set up)/Chairman – Mr D. Najdanovic KS U250 – 5,6 (2011)/Chairman – Mr B. Stefanovic KS U182 Geotechnics/Chairman – Mr L. Caki



# Status, December 2013

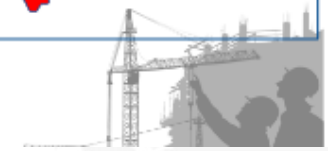
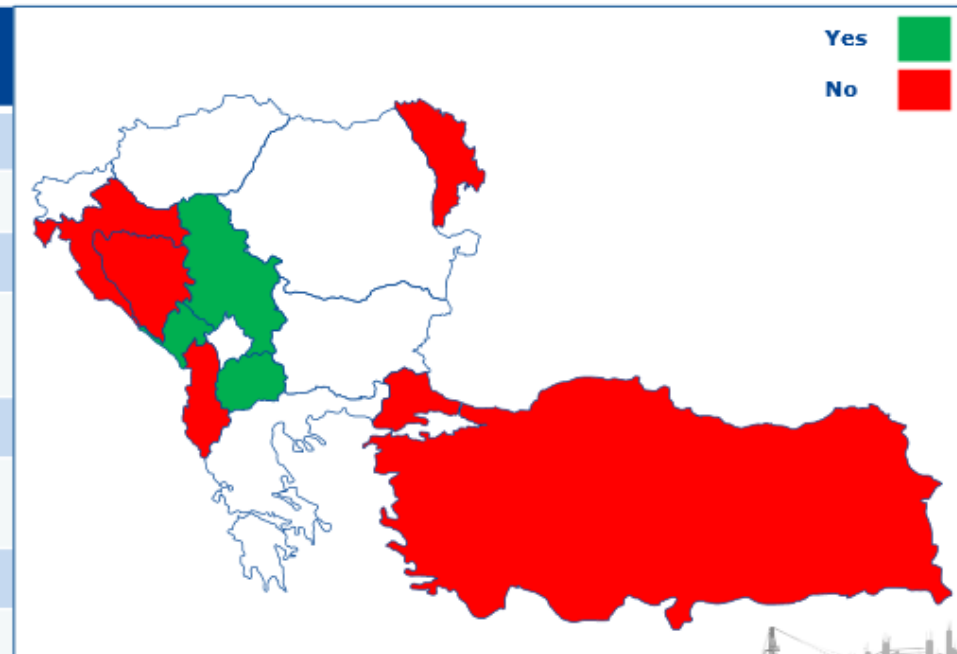
## 2.2 Please assess the progress of translation of each Eurocode/priorities



# Status, December 2013

## 2.3 Is there any existing regional cooperation in the process of translation of the Eurocodes?

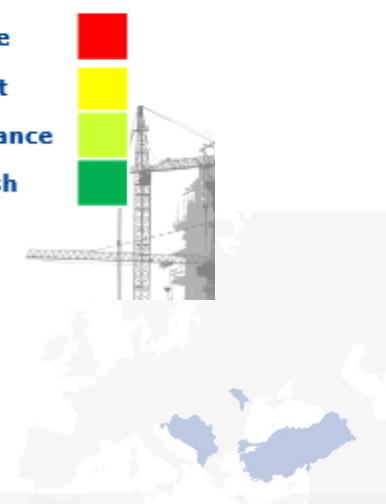
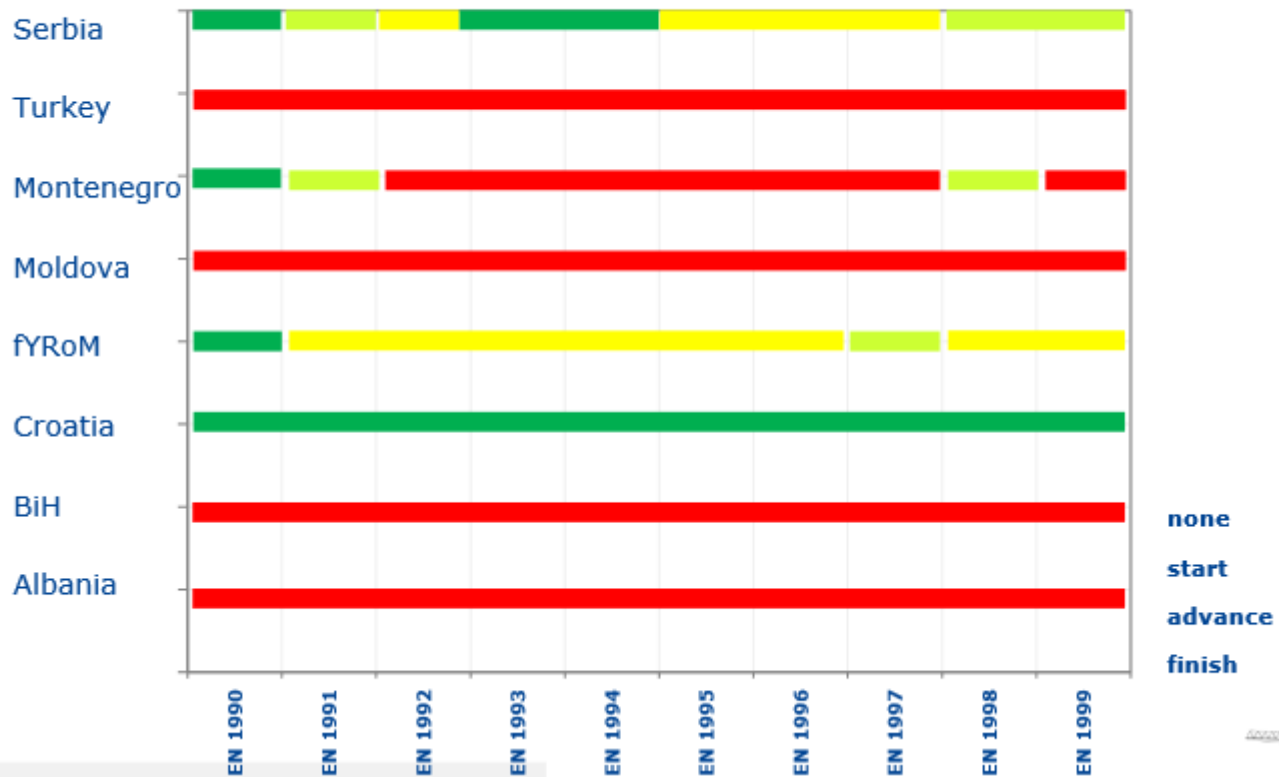
Albania	No
Bosnia and Herzegovina	No
Croatia	No
the former Yugoslav Republic of Macedonia	Yes, with the Institute for standardization of Serbia
Moldova	No
Montenegro	Yes, with the Institute for standardization of Serbia
Turkey	No
Serbia	Yes, with Institutes for Standardization of fYRoM and Montenegro (Eurocodes translated in Serbian were delivered)





# Status, December 2013

## 2.4 Please assess the progress of definition of the NDPs of each Eurocode



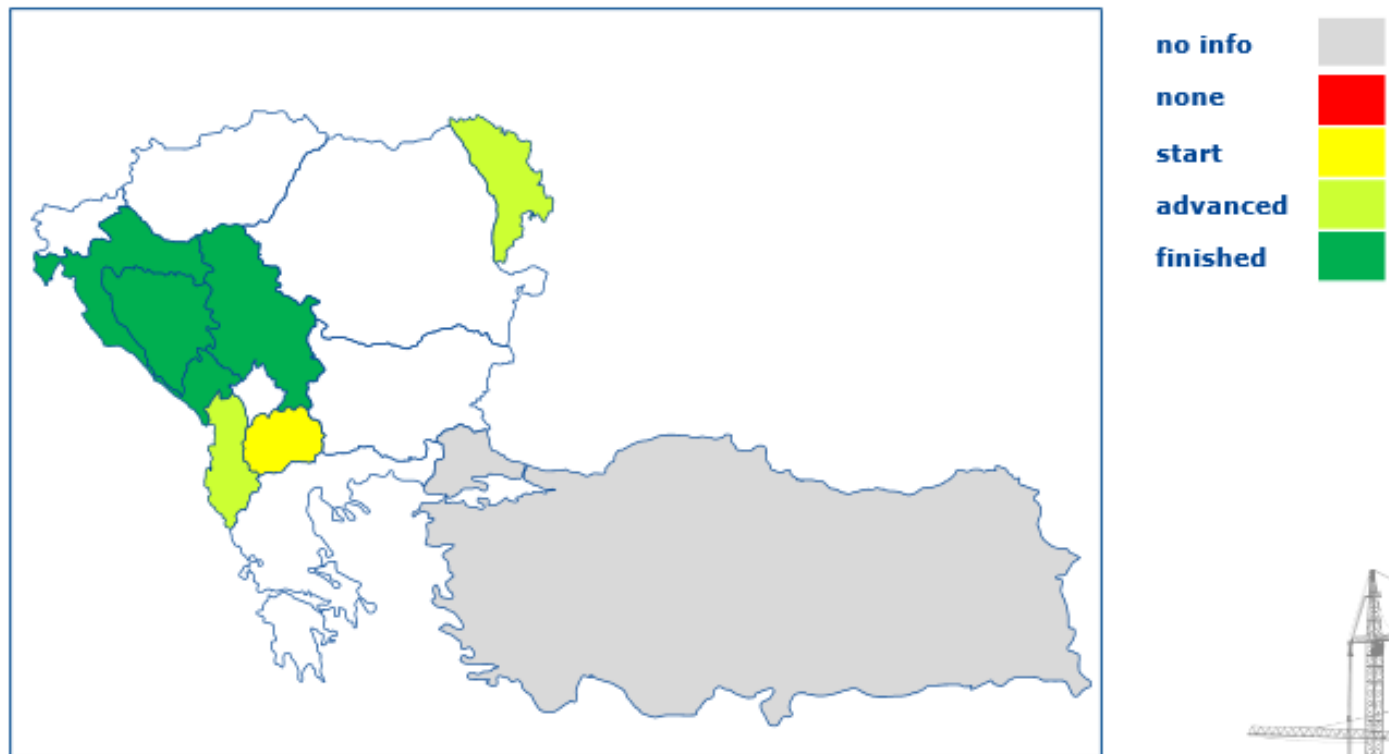
# Status, December 2013

## 3.4 Are there any training material (booklets, leaflets, guidelines etc.) available on each country national language?



# Status, December 2013

## 2.9 Please assess the progress of adoption of Eurocodes related harmonized EN standards



# Status, December 2013

## 3.1 Are the Eurocodes included in the first cycle study (Bachelor) curriculum at the Universities?



# Eurocodes Adoption Status as of October 2015

- *BAS/TC 58, Eurocodes*
- *BAS/TC 58/WG 1 - Eurocode 0 (translation)*
- *BAS/TC 58/WG 2 - Eurocode 0 (NA)*
- *BAS/TC 58/WG 3 - Eurocode 1 (NA)*
- *BAS/TC 58/WG 4 - Eurocode 8 (NA)*



# Eurocodes Adoption Status as of October 2015

## PROJECT OF DEVELOPMENT COOPERATION BETWEEN THE CZECH REPUBLIC AND BOSNIA AND HERZEGOVINA

*Support of Capacities of the Bosnian Institute for  
Standardization in the Area of Implementation of  
EUROCODES.*

***Date of commencement: 11/2014***

***Date of project completion: 12/2017***



# Eurocodes Adoption Status as of October 2015

## Summary of the Project

The project is focused on the support of capacities of the Institute for Standardisation of Bosnia and Herzegovina in the areas of implementation, translation, creation and preparation of national annexes of principles for the design of building structures – EUROCODES.



# Eurocodes Adoption Status as of October 2015



## UNMZ-BAS

- translations of all parts of Eurocodes (except EN 1990) into one of the languages of BiH

<b>Year</b>	<b># pages</b>
2015	2105
2016	1723
2017	979
TOTAL $\Sigma$ 4807	

- creation of priority national annexes (except EN 1990/NA) EN 1991-1-1/NA, EN 1991-1-3/NA, EN 1991-1-4/NA, EN 1991-1-5/NA i EN 1998-1/NA





# Eurocodes Adoption Status as of October 2015

**2015** (*Working plan of BAS/TC 58 and implementation of project*)

Translation:

- **BAS EN 1990:2014** (*published*)
- **BAS EN 1991-1-1:2015** (*published*)
- **BAS EN 1991-1-2:2015** (*published*)
- **BAS EN 1991-1-3:2015** (*published*)



# Eurocodes Adoption Status as of October 2015

## Translation:

- NS/BAS EN 1991-1-4:2015 (*public enquiry 2015-12-11*)
- PN/BAS EN 1991-1-5:2015 (*stage 30.20 ballot initiated*)\*
- PN/BAS EN 1991-1-6:2015 (*stage 30.20 ballot initiated*)\*
- PN/BAS EN 1991-1-7:2015 (*stage 30.20 ballot initiated*)\*
- PR/BAS EN 1991-2:2015 (*stage 20.99 approved for PN/BAS*)\*
- PR/BAS EN 1991-3:2015 (*stage 20.99 approved for PN/BAS*)\*
- PR/BAS EN 1991-4:2015 (*stage 20.99 approved for PN/BAS*)\*

\* Stage Codes System for the development of BAS standards

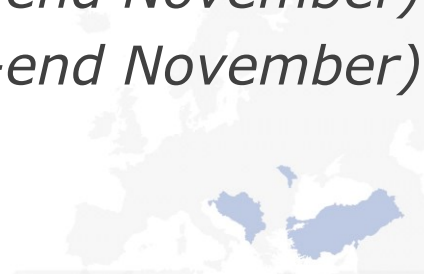


# Eurocodes Adoption Status as of October 2015



## Translation:

- PR/BAS EN 1998-1:2016 (*translated and revised*)
- PR/BAS EN 1997-1:2016 (*translated and revised*)
- PR/BAS EN 1997-2:2016 (*translated and revised*)
- PR/BAS EN 1992-1-1:2016 (*translated and revised*)
- PR/BAS EN 1992-1-2:2016 (*translated and revised-end november*)
- PR/BAS EN 1992-2:2016 (*translated and revised-end November*)
- PR/BAS EN 1992-3:2016 (*translated and revised-end November*)
- PR/BAS EN 1993-1-1:2016 (*translated and revised-end November*)
- PR/BAS EN 1993-1-2:2016 (*translated and revised-end November*)
- PR/BAS EN 1993-1-3:2016 (*translated and revised-end November*)



# Eurocodes Adoption Status as of October 2015



- Translated 2500 pages of 5100 or 49%;
- 21 parts of 58 Eurocodes or 36%



# Eurocodes Adoption Status as of October 2015



## 2015 (*Working plan of BAS/TC 58 and implementation of project*)

- Development of NA's:
  - **BAS EN 1990/NA:2015** (*published*)
  - PN/BAS EN 1991-1-1:2015 (*stage 30.20 ballot initiated*)\*
  - PR/BAS EN 1991-1-3:2015 (*stage 10.99*)\*
  - PR/BAS EN 1991-1-4:2015 (*stage 10.99*)\*
  - PR/BAS EN 1991-1-5:2015 (*stage 10.99*)\*
  - All this NA's will be translated in english



# Eurocodes Adoption Status as of October 2015



## 2015 *(Working plan of BAS/TC 58 and implementation of project)*

### ➤ **BAS EN 1990/NA:2015**

- was created by working group BAS/TC 58/WG 2
- percentage of recommended NDP's accepted in BAS EN 1990/NA:2014 is **80%**

#### Important modified NDP's

- For combination of actions expression (6.10) is used;
- Design of structural members (STR) involving geotechnical actions and the resistance of the ground:

Approach 2 is adopted for piles and anchors

Approach 3 is adopted for footings, piers, side walls, basement walls, etc.

- Serviceability criteria for deformations and vibrations for buildings are defined.



# Eurocodes Adoption Status as of October 2015



## 2015 (*Working plan of BAS/TC 58 and implementation of project*)

### **PN/BAS EN 1991-1-1/NA:2015** (*stage 30.20 ballot initiated*)

- was created by working group BAS/TC 58/WG 3
- Tables 6.1 & 6.2 are replaced by Table 6.1(BAS)
- Table 6.4 is replaced by Table 6.2(BAS)
- Nationally Determined Parameters were tailored to conform to previous design practice and experience in response of executed structures in Bosnia & Herzegovina



# Eurocodes Adoption Status as of October 2015



## 2015 *(Working plan of BAS/TC 58 and implementation of project)*

PR/BAS EN 1991-1-3/NA:2015 (stage 10.99)

PR/BAS EN 1991-1-4/NA:2015 (stage 10.99)

PR/BAS EN 1991-1-5/NA:2015 (stage 10.99)

- are in the field of working group BAS/TC 58/WG 3
- process of data collecting from the hydro-meteorological institutes
- the working group BAS/TC 58/WG 3 will start with Thermal actions - PR/BAS EN 1991-1-5/NA:2015





# Eurocodes Adoption Status as of October 2015

## Specific problems and needs regarding creation of the NA's

### PR/BAS EN 1991-1-5/NA:2015

- insufficient number of stations with digital data for:
  - ✓ absolute maximum monthly temperature
  - ✓ absolute minimum monthly temperature
- zone maps of maximum/minimum shade air temperatures

### PR/BAS EN 1991-1-3/NA:2015

- insufficient number of stations with digital data:
  - ✓ for maximum height of snow
  - ✓ values of density/height of water column
- snow zone maps



# Eurocodes Adoption Status as of October 2015



## Specific problems and needs regarding creation of the NA's

PR/BAS EN 1991-1-4/NA:2015

- insufficient number of stations with digital data for wind velocities

Major disadvantages in the existing data measurements wind velocity are the following:

- ✓ location of the measuring station and the terrain around it
- ✓ measuring devices are not located at 10 m
- ✓ only the measurements at 7, 14 and 21 hour were digitized, but not at all stations



# Eurocodes Adoption Status as of October 2015



## UNMZ-BAS

### Seminar – Introduction of EUROCODES, January, 2015,

covered several topics:

- Quality Infrastructure in the Czech Republic and role of UNMZ
- Quality Infrastructure in BiH and current situation related to law, regulations and standards
- Technical standards in the CR/EU and legislation
- EUROCODES implementation in the Czech Republic in relation to standardization structure
- EUROCODES application in relation to other standardization documents and legislation in the construction industry
- Working plan and program of BAS/TC 58 EUROCODES

60 participants from different sectors and stakeholders; designers, construction industry, universities, research institutions, government representatives...



ELABORATION OF **MAPS** FOR **CLIMATIC** AND **SEISMIC** ACTIONS  
FOR STRUCTURAL DESIGN IN THE **BALKAN** REGION

27-28 October 2015, Zagreb

# Books, Handbooks, Textbooks

Vahid Hasanović – Concrete Structures



Sanin Džidić  
Fire Resistance of  
Concrete Structures

## Metalne konstrukcije 1



Autor: Davorin Hugo Lončarić

Godina: 2007

Br.strana: 511

Povez: tvrd

Format: B-5

## Drvene konstrukcije 1



Autor: Davorin Hugo Lončarić

Godina: 2007

Br.strana: 447

Povez: tvrd

Format: B-5

Davorin Hugo Lončarić – Metal Structures  
Timber Structures



# Books, Handbooks, Textbooks



Assistance in publishing and printing of books, handbooks and textbooks at languages in BiH for design of structures according to Eurocodes and delivery to practitioners and students!?



ELABORATION OF **MAPS** FOR **CLIMATIC** AND **SEISMIC** ACTIONS  
FOR STRUCTURAL DESIGN IN THE **BALKAN REGION**

27-28 October 2015, Zagreb

***Thank you for your  
attention!***

