



National Institute for Research and
Development in Construction, Urban Planning
and Sustainable Spatial Development
“URBAN-INCERC”



**ECBR PROJECT: PUBLIC AWARENESS AND EDUCATION TOOLS FOR
DISASTER RISK REDUCTION AND PREPAREDNESS IN EARTHQUAKE
SITUATION, INCLUDING PEOPLE WITH DISABILITIES**

***Proposals on improved content of web site for education
on risk reduction, with Euro-Mediterranean coverage***

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- Proposals for an improved content of the website for education on seismic risk reduction, with Euro-Mediterranean coverage

CURRENT STATUS

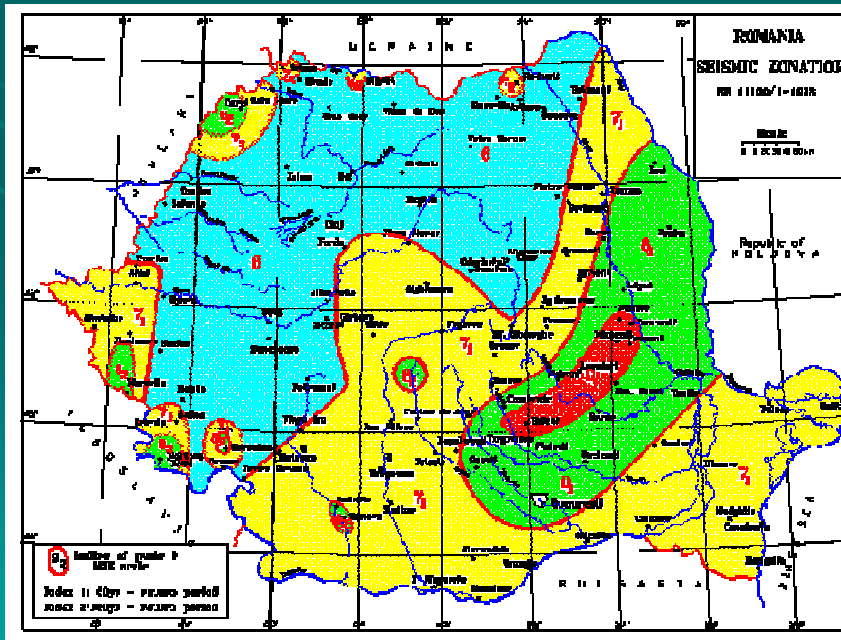
Resources

- **INFORISX** - Website for information on seismic risk in Romania
- **Brochures** for schools and colleges – all levels of pre-university education
- **Posters**
- Specific **regulatory** body in Romania
- **Institutional collaboration**
 - General Inspectorate for Emergency Situations
 - Ministry of Education and Scientific Research
- **Expertise** from past and ongoing projects

Current Status

INFORISX: Website for information on seismic risk in Romania

- In Romania strong crustal earthquakes occur at large intervals → at present about 50% of the exposed population did not witness such events → no experience on protection and behaviour



- Statistical data show that about 35% of the total population of the country, percent which includes over 66% of the urban population, is exposed to Vrancea earthquakes

Current Status

INFORISX: Website for information on seismic risk in Romania

- In Romania, **perceptible ground motions** occur frequently enough → **permanent awareness of seismic risk** in the population
- Providing **correct and systematic information** in the field, through the most efficient communication channels → key issue in the mitigation of the potential earthquake effects
- **The Internet ranks third** in Romania, with 30%, after television and radio broadcasts, **on the list of media channels** used by the public for information

Current Status

INFORISX: Website for information on seismic risk in Romania

Project developed in collaboration by

- **INCD URBAN-INCERC (project leader)**
- **Technical University of Civil Engineering Bucharest, UTCB**

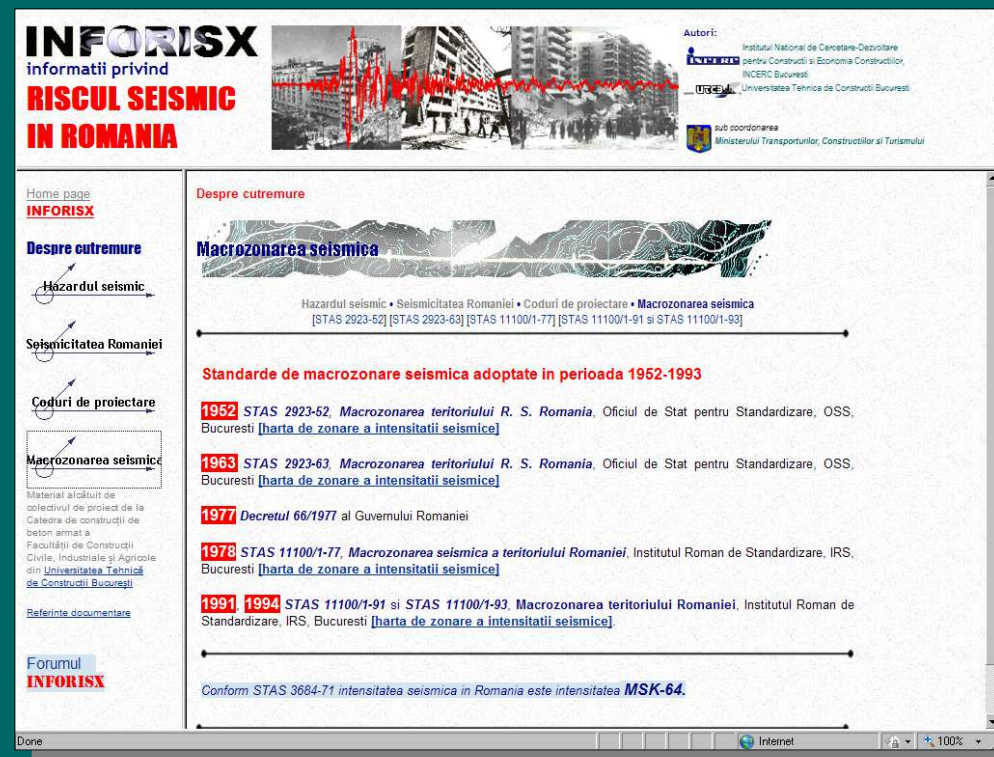
URL: <http://inforisx.incerc2004.ro/>

Current Status

INFORISX: Website for information on seismic risk in Romania

The website is organized in 3 main sections:

- About Earthquakes
- Seismic Data
- Seismic Protection





INFORISX

About Earthquakes

Seismicity of Romania

- Main seismic sources that affect the country, with particular attention to the Vrancea subcrustal source
- Brief information on the destructive Vrancea earthquakes of 1977 and 1940
- Two earthquake catalogues





INFORISX

About Earthquakes

Seismic Design Codes

- information on the evolution of seismic design codes in Romania, from the provisional instructions issued in 1941 until the present codes

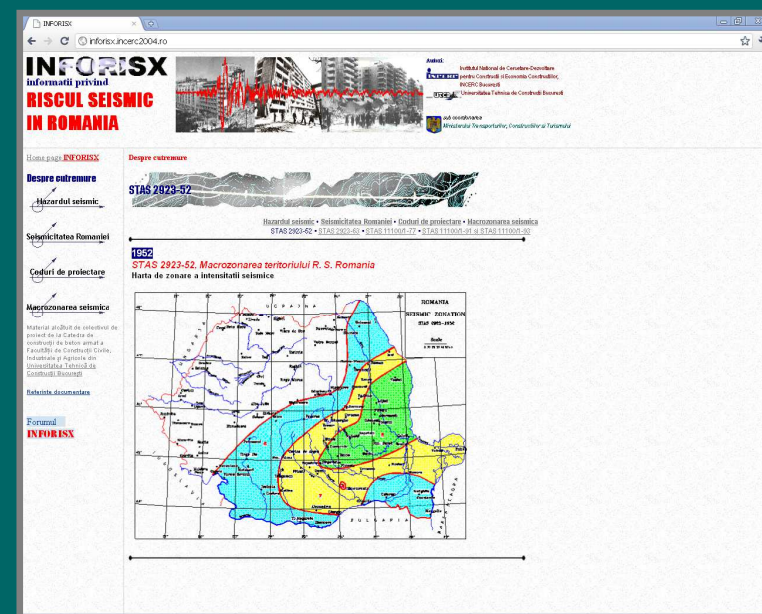


INFORISX

About Earthquakes

Seismic Macrozonation

- list of consecutive standards concerning the macrozonation of Romania
- The evolution of macrozonation is traced back to 1952, the year of the enforcement of the first regulation in the field
- For each standard, macrozonation maps are given





INFORISX

● Seismic Data

- scientific information and data on the strongest earthquakes that occurred in Romania since 1977
- several links to the INCERC website (seismic data, maps and information on seismic networks in Romania)
- presentation of the strong ground motion database of INCERC Bucharest, including processed data, as well as response spectra
- numerical data, information and maps for a number of more recent seismic records from significant earthquakes with $M_w \geq 5$





INFORISX

● Seismic Protection

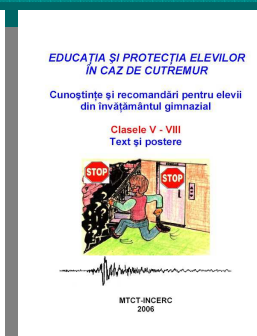
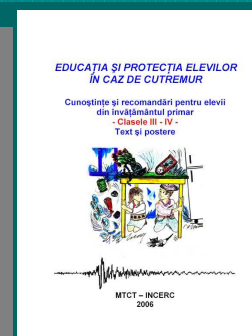
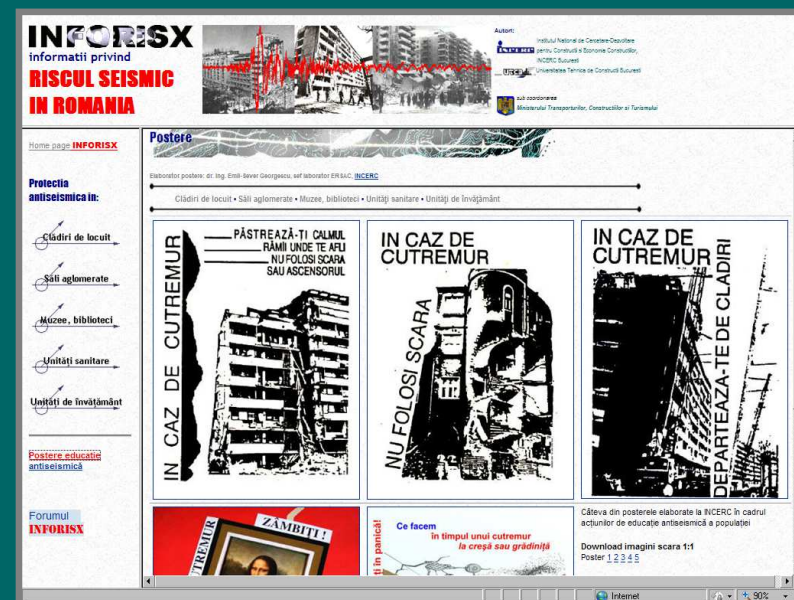
- Information for citizens, authorities and media
- The subsection is divided into chapters, according to the target audiences (dwellings, schools, museums, medical facilities, educational facilities, large indoor spaces)





INFORISX

- **Downloadable resources**
- Brochures developed by INCERC Bucharest in collaboration with the Romanian Ministry of Education and aimed for instructional use in primary, middle and high schools
- Collection of printable posters on seismic education
- **Discussion forum**



- The feedback received by the authors since INFORISX was first published online, as well as the evolutions that occurred both in the knowledge in the field and in the information presentation techniques, suggested **various possible developments and improvements of the website**

INFORISX

- Future work is planned, including the development of the English version of the website, which would ensure a larger audience of its content

Other Resources

Specific **regulatory body** in Romania

- **Regulations for school preparedness:**
- *Order of the Ministry of Internal Affairs No. 1508 of 20 November 2006 for the development and implementation in the educational system of the **National Program for Antiseismic Education of Students**.*
- *Protocol on training in emergency situations of children, pupils and students in national pre-university and higher education institutions, by MAI (Ministry of Internal Affairs) and MEN (Ministry of National Education), No. 62170/9647/2013.*

Other Resources

- **Institutional collaboration**
 - **General Inspectorate for Emergency Situations (Ministry of Internal Affairs)**
 - **Ministry of Education and Scientific Research**
- **Expertise from past and ongoing projects**

Ongoing Collaborative Projects

- **RoEduSEIS** (Romanian Educational Seismic Network)
- **E-PreS** (Monitoring and Evaluation of Natural Hazard Preparedness at School Environment)
- **SEISMOCODE** (Lifelong E-Learning Platform for Active Implementation of the New Romanian Seismic Regulations Harmonized with European Standards)

Ongoing Collaborative Projects

- **E-PreS (Monitoring and Evaluation of Natural Hazard Preparedness at School Environment)**

Coordinator:

National and Kapodistrian University of Athens (UoA), Greece

Partners:

1. Earthquake Planning and Protection Organisation (EPPO), Greece
2. INCD-“URBAN INCERC”, Romania
3. University of Crete-National History Museum of Crete (UoC-NHMC),
4. Istituto Nazionale di Geofisica e Vulcanologia sezione di Napoli, Osservatorio Vesuviano (Vesuvius Observatory), Italy
5. Center for Educational Initiatives Association (CEI), Bulgaria

Ongoing Collaborative Projects

- **E-PreS (Monitoring and Evaluation of Natural Hazard Preparedness at School Environment)**

- Addressed to the prevention phase against natural hazards
- Main goal: design and evaluation of drills for emergency mitigation
- Main objectives:
 1. to identify, share and implement best practices and methodologies gained from previous EU projects and partners activities
 2. to create smart tools which define, simulate and evaluate all hazards emergency steps and be customized to the unique district, school, and campus
 3. to involve the collaboration of interested parties and (4) to include pupils with disabilities and special needs.

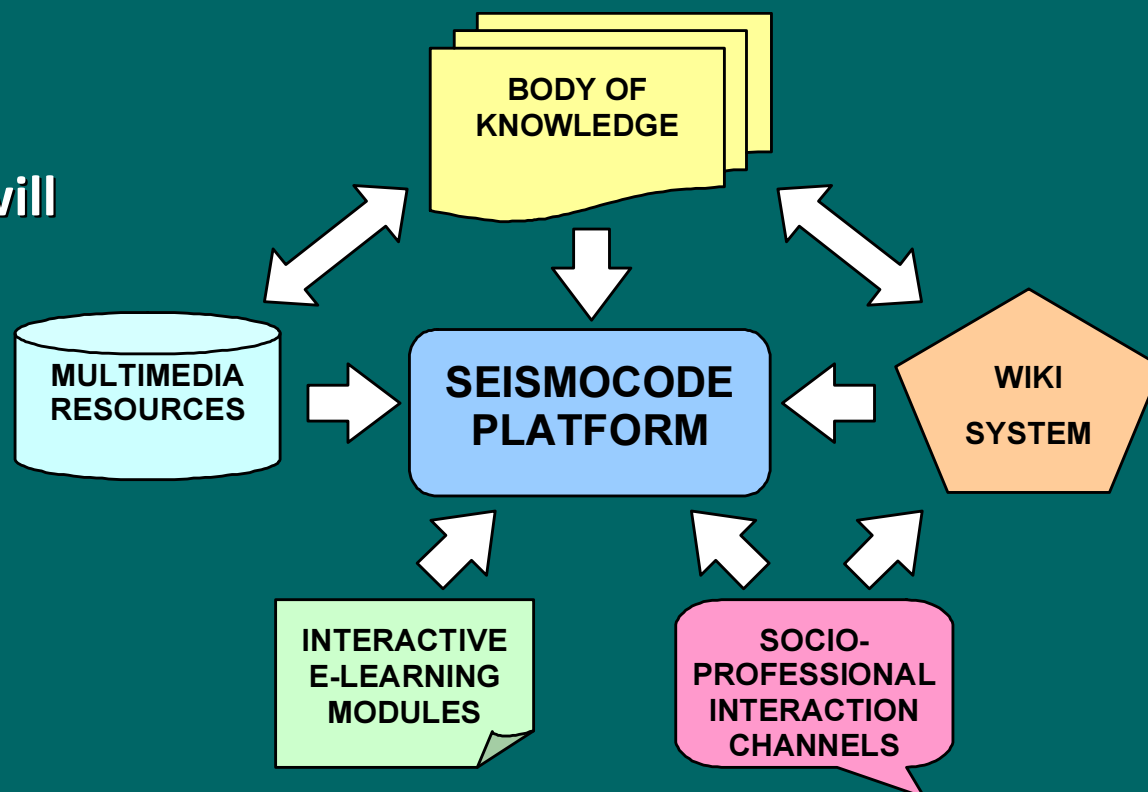


Ongoing Collaborative Projects

- **SEISMOCODE** (Lifelong E-Learning Platform for Active Implementation of the New Romanian Seismic Regulations Harmonized with European Standards)
- National collaborative project
- Coordinator: Technical University of Civil Engineering Bucharest
- Partners:
 - **INCD “URBAN-INCERC”**
 - Institute for Computers, ITC S.A.

Ongoing Collaborative Projects

- **SEISMOCODE** (Lifelong E-Learning Platform for Active Implementation of the New Romanian Seismic Regulations Harmonized with European Standards)
- The platform will support professional post-graduate and lifelong learning programs and will represent a useful teaching resource for graduate and post-graduate university programs



Proposals for an improved content of the website for education on seismic risk reduction, with Euro-Mediterranean coverage

- Upgrading to comply to present **regulations, instructions and legislation** in the field on seismic hazard mitigation in Romania
- Including **best practices** from **earthquake-prone countries** in the **Euro-Mediterranean region**
- Developing website versions accessible on **tablet or smartphone**
- Adding special sections dedicated to **people with disabilities**

Proposals for an improved content of the website for education on seismic risk reduction, with Euro-Mediterranean coverage

- Using social media channels - **Facebook, Twitter, LinkedIn** profiles/pages/groups:
 - To **disseminate** information on seismic risk
 - To provide **quick answers** to users' questions
 - To receive **users' feedback** about potential website subject coverage and improvements
 - To help better understand **users' needs** by permanent interaction
 - To provide a **continuous and up-to-date information flow** on preparedness and mitigation activities

Proposals for an improved content of the website for education on seismic risk reduction, with Euro-Mediterranean coverage

- Using social media channels - **Facebook, Twitter, LinkedIn** profiles/pages:
 - Increase public awareness for seismic risk mitigation and preparedness
 - Encourage users to take **proactive measures** for **seismic risk mitigation & preparedness** for their family, school, **workplace and community** – providing preparedness tips
 - Use social media channels for **post-disaster relief measures**
 - Instruct people on installing and using **specialized mobile applications for smartphones and tablets** for seismic risk mitigation and postdisaster relief

Proposals for an improved content of the website for education on seismic risk reduction, with Euro-Mediterranean coverage

- Using social media channels - **Facebook, Twitter, LinkedIn** profiles/pages:
 - Create a corps of **volunteer trainers** to disseminate seismic risk information by their own social media profiles
 - These volunteers will help also in case of seismic event, by **sharing rigorous and correct information**
 - They may volunteer also for **community relief measures**
 - They could participate in future **LIVING LABS** organized by ECBR for seismic risk mitigation and preparedness

**URBAN
INCD
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EUR-OPA
EUR-OPA MAJOR HAZARDS AGREEMENT
ACCORD EUR-OPA RISQUES MAJEURS



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AND EDUCATION TOOLS FOR DISASTER
RISK REDUCTION AND PREPAREDNESS
IN EARTHQUAKE SITUATION,
INCLUDING PEOPLE WITH DISABILITIES**



THANK YOU !

