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BURGAS STATE UNIVERSITY
„PROF. DR. ASSEN ZLATAROV“,
BULGARIA

ACTIVITIES OF BURGAS STATE UNIVERSITY (UAZ) IN SPEER-A.

Prof. dr. Irena Markovska, team manager
Assoc. prof. Nikola Todorov, team coordinator
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SPEER-A

Strengthening and Promoting Earth-quake Emergency Response and Rescue Capacity in the BSB Area

The Project is co-funded by the European Union and by national funds of the participating countries

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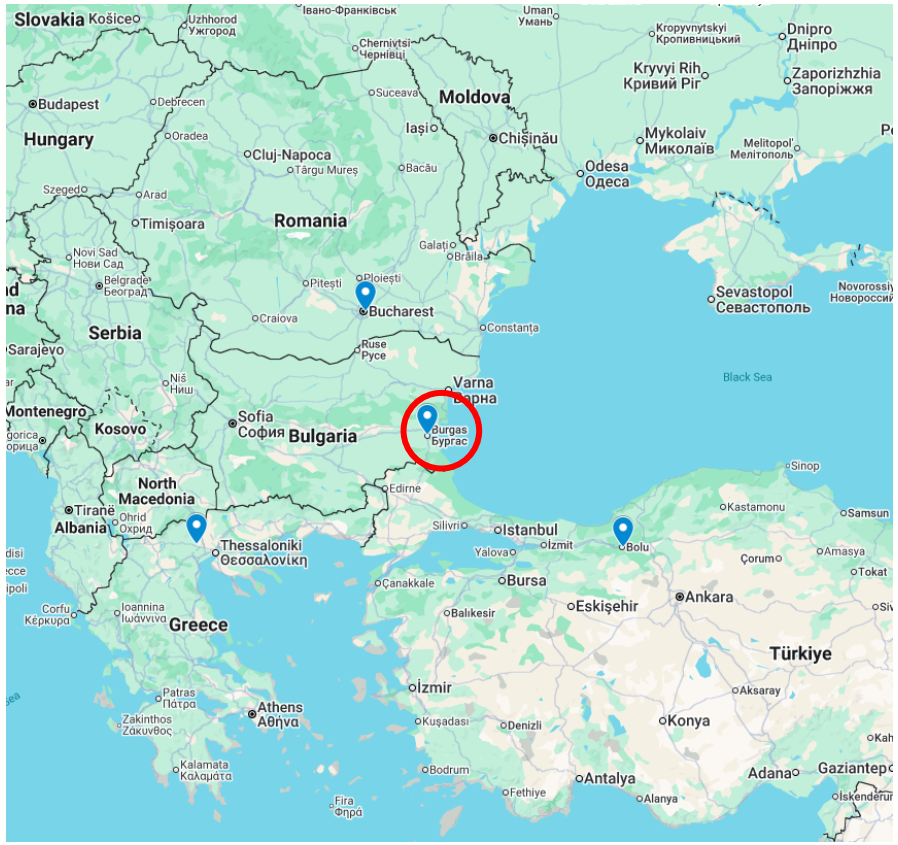

Burgas State University „Prof. Dr. Assen Zlatarov“, also known as UAZ (University Assen Zlatarov)” is located on the black Sea Coast and is the biggest state university in the South-Eastern part of Bulgaria. The institution plays a multidimensional role in the SPEER-A project, contributing expertise in disaster risk management, education, application development and transnational cooperation.

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Project meetings and communication

- UAZ is participating actively in the coordination and steering of the project.
- Participates in all online meetings.
- Organization of the 3rd progress meeting.
- Produce dissemination materials towards different groups of stakeholders:
  - decision/policy makers,
  - research community,
  - volunteers / NGOs / communal organizations,
  - students and teachers,
  - the general public.

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Risk Assessment of the Basin Area for Earthquakes

Role: “Contributor”

UAZ will support the transnational “Risk assessment of the Basin Area for Earthquakes” by:

- ✓ Providing a national assessment report for Bulgaria.
- ✓ Collaborating with Pella on the static adequacy study (online collaboration).

This input strengthens the scientific foundation of earthquake preparedness in the BSB region.

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Development of a Virtual Reality (VR) Laboratory

Role: “Contributor”

UAZ will contribute to the development and evaluation of the VR earthquake hazard platform by:

- ✓ Participation in online know-how exchange sessions with IGAR.
- ✓ Organization of one local meeting to test and evaluate the pilot VR Lab with stakeholders.

This supports evidence-based decision-making for policy makers and civil protection authorities.

School educational sessions and a students' competition

Role: "Contributor"

UAZ will contribute

- to the training material development
- implementing three school educational session in primary and secondary education.

In each session 100 students will be trained at minimum.

Target groups of this activity:

- ✓ schools of the participating countries;
- ✓ universities;
- ✓ general public.

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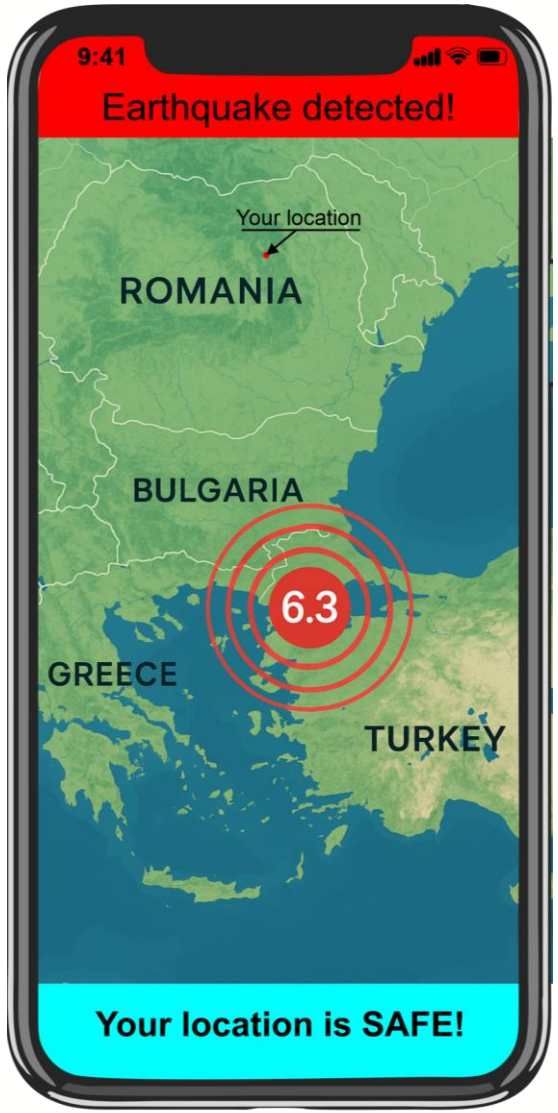
Development of a Mobile App for Earthquake Preparedness

Role: Activity Leader

This is the flagship responsibility of UAZ in the project, collaborating with IGAR to:

- ✓ Develop an original mobile application, including:
  - ➢ Emergency preparedness guides
  - ➢ Educational content for children
  - ➢ A volunteer network module
  - ➢ An offline "emergency info kit" for use without internet
- ✓ Prepare the full content in English and Romanian with original graphics.
- ✓ Conduct online collaboration with all partners.
- ✓ Produce the final evaluation report and ensure long-term sustainability of the tool.



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Development of a Mobile App for Earthquake Preparedness

A. ONLINE MODE

1. Emergency Preparedness Guides

Interactive guides for different groups:
- General public
- Children
- Teachers
- Volunteers
- People with disabilities

Featuring:
- ✓ Step-by-step instructions
- ✓ Short educational videos
- ✓ Checklists ("Prepare your home", "Prepare your family", "How to react during shaking")
- ✓ Visual icons for quick understanding (useful in multilingual regions)

2. Earthquake Micro-Learning for Children

A friendly, gamified educational module:
- Animated videos explaining earthquakes
- Quizzes with badges/rewards
- A points system encouraging learning
- Mini-games: "Find the safest spot in the house", "Pack your emergency kit", etc.

3. Volunteer Community Module

A collaborative network for citizens and trained volunteers in all partner countries. Functions:
- Volunteer registration & profile
- Training progress tracking (badges for completed modules)
- Ability to "Join a local volunteer team"
- Notifications for training events or workshops
- Messaging or announcement board from civil protection authorities

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Development of a Mobile App for Earthquake Preparedness

A. ONLINE MODE

4. Push Notifications for Early Instructions

Not an early-warning system, but an *informational* one. Examples:

- "Aftershocks likely — avoid damaged buildings."
- "Stay away from waterfront areas."
- "Local authorities issued updated instructions."

These notifications can be triggered manually by administrators in each partner country.

5. Real-Time Information Section

A country-specific hub containing:

- Links to official civil protection agencies
- Safe gathering points (static map)
- Key emergency phone numbers
- Contacts of local volunteer teams
- Short news feed with safety updates

6. Educational Resource Library

All training materials developed in the project:

- Brochures
- Posters
- Videos
- Infographics
- Manuals for citizens, teachers, volunteers, and local authorities

Searchable by keywords, languages, and categories.

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Development of a Mobile App for Earthquake Preparedness

B. OFFLINE MODE (Emergency Mode)

7. "Immediate Action Mode" – What to Do Now		8. "Offline Emergency Kit"
7.1 During the earthquake • "Drop, Cover, Hold On" animation • Rules for indoors Vs outdoors • What NOT to do	**7.3 First hours** • How to check for injuries • Avoid dangerous structures • Basic first aid • Family reunification tips	This feature helps users prepare and use an emergency kit: **Before an earthquake:** • Checklist for assembling the kit • Option to tick items already packed • Reminders to refresh food/medicine
7.2 Right after the earthquake (First 5 minutes) • Avoid elevators • Turn off gas/electricity if possible • Move carefully outdoors • Help children/elderly	**7.4 First days** • Hygiene • Water & food safety • Communication strategies • Stress management for children	**After an earthquake:** Quick access to: • First aid guide • How to purify water • What to do if trapped • How to create emergency shelter

*All in **clear icons, big text, low battery consumption layout**.*

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Development of a Mobile App for Earthquake Preparedness

C. CROSS-BORDER SUPPORT & SPECIAL FEATURES

9. Country-Specific Guidance

All sections customized (including multilingual support) for:

- Bulgaria
- Romania
- Greece
- Türkiye

That includes:

- Emergency numbers
- Local authorities
- National rules and recommendations
- Basic phrases for cross-border assistance (multilingual)

10. Accessibility Functions

To ensure inclusion for all users:

- High-contrast mode
- Text-to-speech instructions
- Large button interface
- Easy-reading mode for children & elderly
- Offline voice-guided instructions

11. Safe Family / Safe Class Groups

- Create a family group or school group
- Share safety check statuses, only voluntary tapping)
- Teachers can send instructions to students through the app

12. Training, feedback and report

- Complete lessons
- Pass quizzes
- Receive digital certificates

After exercises, trainings, or real events:

- Users can report what worked / didn’t work
- Collect data for disaster preparedness studies

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Development of a Mobile App for Earthquake Preparedness

Summary of the app

The application should become:

- ✓ **A cross-border educational platform**
- ✓ **A volunteer activation and training tool**
- ✓ **A family and community preparedness assistant**
- ✓ **An offline emergency guide**
- ✓ **A scientific dissemination channel**
- ✓ **A long-term legacy of the SPEER-A project**

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Local Living Lab workshop

UAZ will organize a **local Living Lab workshop** bringing together architects, civil protection experts, students, and stakeholders.
Their feedback contributes directly to the innovative design of an adaptable emergency living unit based on sustainability, mobility, and New European Bauhaus principles.

Our university engages in two interconnected capacity-building activities.

- First, we support the **joint training programme for search and rescue teams**.
  Second, under Activity 1.7, UAZ plays a major role in strengthening community preparedness.
  We contribute to the development of the volunteer training materials and implement **three volunteer training events**, each involving around **50 participants**.
- These sessions foster a strong network of citizens ready to support emergency response efforts.
- Recognizing the importance of early education, UAZ conducts **three school training sessions** for primary and secondary students, each training at least one hundred young participants.
- We also support the transnational students' competition by promoting earthquake-related innovation among the next generation of scientists and engineers.

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Final Scientific Conference and Closing Events

(UAZ as Activity Leader)

Finally, UAZ leads **Activity 1.9**, organizing the **transnational scientific conference** that marks the closure of the project.

This event will:

- showcase the results of the pilot actions,
- bring together the scientific community across the Black Sea Basin,
- involve media and stakeholders,
- and promote original research on earthquakes and disaster preparedness.
- In addition, our university will publish a **scientific article** in an international journal, further disseminating the outcomes of the project.

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Conclusion

In summary, Burgas State University “Prof. Dr. Assen Zlatarov” SPEER-A team is honored to participate in the project, contributing scientific expertise, technological innovation, community engagement and leadership in all activities.

We are proud to represent Bulgaria in this international initiative and to help strengthen the resilience of all Black Sea Basin countries against earthquake risks.

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Thank you
for your attention

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