

**EURO-MEDITERRANEAN MAJOR
HAZARDS AGREEMENT (EUR-OPA)**



Strasbourg, 16 January 2006
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OPEN PARTIAL AGREEMENT ON THE PREVENTION OF, PROTECTION AGAINST, AND
ORGANISATION OF RELIEF IN MAJOR NATURAL AND TECHNOLOGICAL DISASTERS

**INTERNATIONAL CONFERENCE
"EARTHQUAKE ENGINEERING IN
21ST CENTURY, EE-21C"
Skopje, Ohrid, 27 August - 1 September 2005**



European Center on Vulnerability of Industrial and Lifeline Systems

**Institute of Earthquake Engineering and Engineering Seismology
University "Ss. Cyril and Methodius", Skopje, Republic Macedonia**

International Conference Earthquake Engineering in 21st Century (EE-21C)
Skopje/Ohrid, 27th August-1st September 2005

1.1 Introduction

The International Conference "Earthquake Engineering in 21st Century, EE-21C", (Skopje/Ohrid, 27th August – 3rd September 2005) has been organized to mark the 40th anniversary of the Institute of Earthquake Engineering and Engineering Seismology, University "Ss. Cyril and Methodius", Skopje.

The scope of the conference did cover wide aspects of conventional earthquake engineering as well as expanded to fields of emerging problems in domains of disaster prevention, mitigation, preparedness, early warning and disaster monitoring.

The General objectives of EE-21C were to mobilize the experiences and achievements of different countries in the field of seismic risk reduction and earthquake disaster prevention as well as promote:

- understanding of earthquake disaster reduction as an essential element of government policy and a major priority in regional, national and international development;
- exchange and transfer of the state-of-the-art knowledge and up-to-date technology in different earthquake engineering and engineering seismology disciplines
- strengthening of international and multidisciplinary cooperation in the field of seismic risk reduction
- establishment of partnerships between the scientific community, government and public.

The objectives and thematic framework of EE-21C were in full conformity with the Conclusions and the outcome document of the UN/ISDR World Conference on Disaster Reduction (Kobe 2005) "Building the resilience of nations and communities to disasters: Hyogo Framework for action 2005–2015"

The EE-21C did:

- feature the state-of-the-art keynote presentations, special presentations on recent earthquakes, Special Theme Sessions, and oral and poster presentations within thematic framework defined by the Conference Programme (Annex A.1), and
- intend to set up the basis for common interest and potential cooperation in the field of integration of the existing relevant sources of data methodologies, and tools that will be compatible with the concept of sharing the common core of expertise, monitoring observation, data processing, early disaster warning and forecast services

indispensable for decentralized (national) data use for disaster prevention, mitigation, preparedness and management.

The EE-21C Programme (Annex A.1) consisted of the following Plenary, Technical and selected Special Theme Sessions:

Plenary sessions

- Keynote state-of-the-art presentations related to fields covered by foreseen Technical Sessions
- Strategic presentations by UN agencies (ISDR, UNESCO), UNU, WHO, OECD, EUR-OPA MHA, NATO and others

Technical Sessions:

Session 1: Lessons from Past Earthquakes

Session 2: Strong Ground Motion, Engineering Seismology, Earthquake Hazard and Risk Assessment

Session 3: Geotechnical Earthquake Engineering, Dynamic Properties and Response of Soil Deposits

Session 4: Structural Modeling, Analysis, Design and Seismic Safety

Session 5: Innovative Techniques for Reducing Seismic Impact (Structural Control Technology, Smart Materials and Smart Structures, Health Monitoring)

Session 6: Retrofit of Structures

Session 7: Societal, Economic and Planning Aspects

Session 8: Technologies and Trends for Disaster Monitoring and Reduction

Special Theme Sessions on:

- Protection of Educational and Healthcare facilities and of historic monuments and cultural heritage
- Special Theme Sessions on selected completed or ongoing European milestone projects

1.2 Organizational aspects

The principle organizer of EE-21C was the Institute of Earthquake Engineering and Engineering Seismology, one of the founders of ECILS-Skopje. The national Patron of the Conference was Prof. Ljupco Jordanovski, the President of the Parliament of Republic of Macedonia. His Excellency, Mr. Kofi Annan, UN Secretary General has been invited to provide principle patronage and to participate the Conference, however, he was represented by UN envoy Mr. Sálvano Briceño, Director of ISDR.

ECILS-Skopje, as independent Center which one founder is IZIIS-Skopje, based on its Program for 2005 Activities /Document AE (05)-2/ joined the organization of the Conference intending to assure the transfer and exchange of knowledge, information and

expertise between the Earthquake engineering community and the EUR-OPA MHA Centers whose principal fields of expertise are in the domain of earthquake engineering, engineering seismology, emergency management, disaster relief and search and rescue planning, and related fields.

The EE-21C Conference has been organized in partnership with United Nations in Macedonia, Council of Europe EUR-OPA Major Hazard Agreement (EUR-OPA MHA), World Health Organization (WHO) and EUR-OPA's MHA European Center on Vulnerability of Industrial and Lifeline Systems, ECILS-Skopje.

The EE-21C Conference was held under the auspices of United Nations International Strategy for Disaster Reduction (UN/ISDR), the European Association of Earthquake Engineering (EAEE) and the Macedonian Association of Earthquake Engineering (MAEE).

The following International organizations and UN agencies have participated the technical part of the Conference: UN/ISDR, UN and UNDP in Macedonia, WHO-EURO and WHO-Country Office Skopje, EUR-OPA MHA, OECD/PEB Programme, United Nations University from Bonn (UNU-EHS) and UNSECO.

Official opening of EE-21C was on August 27, 2005 at premises of IZIIS-Skopje. The opening ceremony has been attended by the representatives of the President of Republic of Macedonia and the Government of Republic of Macedonia, Selected members from the Parliament of Republic of Macedonia, Special envoy of His Excellency Mr. Kofi Annan, Diplomatic Core in Macedonia, Local Government of the City of Skopje and some other earthquake affected towns, UN and other international agencies, representatives from selected international and national NGO's, international and national scientific and professional community, IZIIS staff.

On behalf of His Excellency Mr. Kofi Annan, the United Nations Secretary General, the Message to the International Conference on Earthquake Engineering in 21st Century was delivered by the UN envoy Mr. Sálvano Briceño, director, Secretariat of the International Strategy of Disaster Reduction (ISDR).

The technical part of the EE-21C was executed in accordance to the following schedule:

28 August (Sunday), 2005 -*Transfer from Skopje to Ohrid, Official opening of the Technical part of the Conference*

29 (Monday) -

- 31 August (Wednesday), 2005 -*Ohrid, Technical Sessions*

1 September (Thursday), 2005 -*Ohrid, Official Closing, Social programme.*

The conference was attended by 263 participants from 45 countries (by Alphabetic order: Albania, Algeria, Armenia, Austria, Australia, Barbados, Bhutan, Belgium, Bosnia and Herzegovina, Bulgaria, China P.R., Colombia, Denmark, Ecuador, Egypt, France, Georgia, Germany, Greece, India, Iran, Italy, Japan, Kazakhstan, Macedonia, Morocco, Mexico, Mongolia, Nepal, New Zealand, Nigeria, Norway, Peru, Romania, Russia,

Serbia and Montenegro, Slovak Republic, Slovenia, Spain, Taiwan, Thailand, Turkey, UK, USA and Yemen) and the UN Protectorate Kosovo.

The EE-21C Resolution that was unanimously adopted is presented in Annex. A.3.

Disaster Preparedness & Response Programme, WHO - Regional Office for Europe

1.3 Plenary EUR-OPA MHA Expose

The Plenary 30 minute EUR-OPA MHA expose entitled “*Towards Euro-Mediterranean Co-Operation: The Council of Europe’s EUR-OPA Major Hazards Agreement*” was presented on August 29, 2005 [Day 2, Monday; Plenary Session Pl3, Chairman: Prof. Dr. Nicholas Ambraseys] by *Mr. F. Pla Castelltort*, Administrator, Directorate of Culture and Cultural and natural Heritage EUR-OPA Major Hazards, Council of Europe.

The expose has been focused on strategic Agreement's issues, presenting its involvement in disaster reduction issues in EUR-OPA MHA region, some crucial policy aspects in general and other specific in particular details.

1.4 Technical Interventions by Invited Participants

Technical interventions, with allocated time of 15 minutes, have been put on the EE-21C programme of Thematic or Special Sessions. They have been made either by members of invited EUR-OPA MHA Centers or by appointed representatives selected from relevant Academic and professional community, experts and national/local government officials and decision makers.

While all EUR-OPA Centers whose activities are primarily focused on geosciences and related risks have been invited to participate the EE-21C Conference, the dominant interest has been shown by Centers from earthquake threatened countries, or countries that recently have been affected by damaging to catastrophic earthquake.

Invited participants made the following outstanding contributions in Keynote, Thematic Session 2, 3, 4, 5, 6, 7 and 8, and Special Theme Sessions STS-1 and STS-2 (Annex A.2):

KEYNOTE EXPOSE:

P. Gulkan, I. Kazaz & A. Yakut CAVEATS IN NONLINEAR RESPONSE ASSESSMENT OF SHORT-PERIOD STRUCTURES

Thematic Session 2: STRONG GROUND MOTION, ENGINEERING SEISMOLOGY, EARTHQUAKE HAZARD AND RISK ASSESSMENT

Lungu, D.M. & Calarasu, E.A.

SOME ASPECTS REGARDING SEISMIC MICROZONATION OF THE CITY OF BUCHAREST

Lungu, D.M., Arion, C. & Vacareanu, R.

SEISMIC PROFILE OF CITY OF BUCHAREST: BUILDINGS
VULNERABILITY AND SEISMIC RISK MITIGATION

Lungu, D.M., Demetriu, S., Craifaleanu, I. & Aldea, A.

SEISMIC PROFILE OF THE CITY OF BUCHAREST: SEISMIC HAZARD AND MICROZONATION
OF SITE EFFECTS

Trendafiloski, G.S. & Milutinovic, Z.V.

GIS-ORIENTED METHOD FOR ELABORATION OF PROBABILISTIC EARTHQUAKE
SCENARIOS

Thematic Session 3: GEOTECHNICAL EARTHQUAKE ENGINEERING, DYNAMIC PROPERTIES AND RESPONSE OF SOIL DEPOSITS

*Birouk, A., Toto, E., Kasmi, M., Hafid, M., El Mouraouah, A., Iben-Brahim, A., Benamimi, M., Haida, S.,
Zouine, E., Kaabouben, F., Talhaou, A., Khairi, Z. & Stitou, Y.*

SITE EFFECTS ASSESSMENT USING H/V METHOD: APPLICATION TO URBAN EXPANSION OF
AL HOCEIMA CITY IN NORTHEAST MOROCCO

Thematic Session 4: STRUCTURAL MODELING, ANALYSIS, DESIGN AND SEISMIC SAFETY

*Birouk, A., El Hammoumi, A., Iben Brahim, A., Toto, E., El Mouraouah, A., Kerroum, M., Kasmi, M. &
Messaoud, A.*

BUILDINGS SEISMIC VULNERABILITY
ASSESSMENT IN URBAN AREAS IN MOROCCO

Bonev, Z., Ganchev, S., Blagov, D. & Zerszour, A.

FACTOR EVALUATION ACCOUNTING FOR THE ELASTIC FOUNDATION

Bonev, Z. & Strashimirov, A.

PUSHOVER ANALYSIS OF COMPLEX 3-D STRUCTURES

Khlghatyan, Z. & Baldryan, A.

PRELIMINARY VULNERABILITY ASSESSMENT METHOD
OF RESIDENTIAL STONE BUILDINGS

Mehani, Y.

SEISMIC VULNERABILITY STUDY OF A STRATEGIC
EXISTING BUILDING WITH THE RPA 99/VERSION 2003

Terzic, V., Sendova, V. & Milutinovic, Z.V.

VULNERABILITY OF PLAIN MASONRY STRUCTURES WITH FLEXIBLE FLOORS

Timchenko, I. [Presented by Chachava, N.]

ACCURACY OF STRUCTURAL MODELING AND SEISMIC SAFETY

Trendafiloski, G.S., Pupavac, N.P. & Milutinovic, Z.V.

SPATIAL AND TEMPORAL TRANSLATION OF VULNERABILITY
MODELS FOR REINFORCED CONCRETE BUILDINGS

Uçkan, E., Tüzün, C., Önem, G. & Erdik, M.

EARTHQUAKE RESPONSE OF A 1:4 SCALED MASS
ECCENTRIC THREE STORY STEEL STRUCTURE
SEISMICALLY ISOLATED BY FPS TYPE SLIDING ISOLATION
SYSTEM

**Thematic Session 5: INNOVATIVE TECHNIQUES FOR REDUCING SEISMIC IMPACT
(STRUCTURAL CONTROL TECHNOLOGY, SMART MATERIALS
AND SMART STRUCTURES, HEALTH MONITORING)**

Khlgatyan, Z., Gasparyan, G. & Namalyan, G.
ON THE APPLICATION OF MULTI MASS DYNAMIC
VIBRATION DAMPERS FOR SEISMIC PROTECTION OF
BUILDINGS

Khlgatyan, Z. & Khachatryan, A.F.
SEISMIC CALCULATIONS AND THE DYNAMIC EXPERIMENTS OF LRB ISOLATORS OF THE
NEW TERMINAL OF YEREVAN “ZVARTNOTS”
INTERNATIONAL AIRPORT

Thematic Session 6: RETROFIT OF STRUCTURES

Chachava, N., Lekveishvili, M. & Timchenko, I.
RECONSTRUCTION AS A TOOL OF SEISMIC
RISK MITIGATION IN HISTORICAL CITIES

Thematic Session 7: SOCIETAL, ECONOMIC AND PLANNING ASPECTS

Milutinovic, Z.V., Trendafiloski, G.S. & Olumceva, T.R.
EARTHQUAKE RISK SCENARIOS FOR THE CITY OF
BITOLA, MACEDONIA: RISK-UE APPROACH

Stanojevska, B.D, Penov, R., Milutinovic, Z.V., Trendafiloski, G.S. & Olumceva, T.R.
IMPLEMENTATION OF IDNDR/RADIUS PROJECT IN THE CITY OF
SKOPJE, REPUBLIC OF MACEDONIA

**Thematic Session 8: TECHNOLOGIES AND TRENDS FOR
DISASTER MONITORING AND
REDUCTION**

Atanasov, K. & Todorcevski, T.
PROTECTION AND RESCUE STRATEGY OF REPUBLIC OF MACEDONIA

Special Theme Session STS-1: HEALTH CARE FACILITIES SAFE FROM DISASTERS

Milutinovic, Z.
HEALTH CARE SYSTEMS - POST DISASTER EXPECTATIONS AND REALITY

Yüzügüllü, Ö., Uçkan, E. & Tüzün, C.
AN OVERVIEW OF SEISMIC SAFETY OF HOSPITALS IN TURKEY

Belazougui, M., Farsi, M.N. & Mehani, Y.
VULNERABILITY OF HEALTH FACILITIES IN ALGERIA: CASE
STUDIES OF THENIA HOSPITAL AND MUSTAPHA ALGIERS
HOSPITAL

Khlgatyan, Z.

PROBLEM OF SEISMIC RISK ASSESSMENT AND
REDUCTION FOR MEDICAL FACILITIES IN ARMENIA

Trendafiloski, S.G. & Milutinovic, Z.V. & Olumceva, T.R.

HEALTH FACILITY SEISMIC VULNERABILITY EVALUATION

**Special Theme Session STS-2 on: 6EC FP PROJECT “EARTHQUAKE PROTECTION OF
HISTORICAL BUILDINGS BY REVERSIBLE MIXED TECHNOLOGIES -PROHITECH”²**

Iben-Brahim, A.

ASSESSMENT OF SEISMIC RISK MAPS AND EVALUATION OF SEISMIC
VULNERABILITY OF HISTORICAL BUILDING HERITAGE IN THE MEDITERRANEAN
AREA: 2004-2005 ACTIVITY REPORT OF PROHITECH WP3

Lungu, D.M.

DEFINITION OF METHODOLOGIES FOR SEISMIC UP-GRADING OF CONSTRUCTIONS
BASED ON BOTH STRENGTHENING OF STRUCTURAL ELEMENTS AND CONTROL OF
THE SEISMIC RESPONSE: 2004-2005 ACTIVITY REPORT OF PROHITECH WP4

EUR-OPA MHA Participants provided Chairman for Plenary Sessions 1) Opening Session PL1 (Prof. Zoran Milutinovic, ECILS-Skopje), 2) PL3 (Prof. Eduard Sulstarova) and 3) Closing Session-PL7 (Prof. Zoran Milutinovic, ECILS-Skopje and Prof. Dan Lungu, AECRIS-Bucharest), and Thematic Sessions TS-5B (Dr. Zaven Khlgatyan, appointed by ECTR-Yerevan). It is worth mentioning that Closing Session PL7, dedicated to Chairman’s Reports and Conference Declaration has been chaired by two EUR-OPA MHA invitees (Prof. Dan Lungu, Director, AECRIS-Bucharest and Prof. Shyqyri Aliaj, Director of Seismological Observatory, Tirana) and Prof. Zoran Milutinovic, Director, ECILS-Skopje.

²Under 6EC FP PROHITECH Project three EUR-OPA MHA Centers (AEGIS-Bucharest, CEPRIS-Rabat and ECILS-Skopje) effectively cooperate

1.5 Concluding Remarks

Involvement of EUR-OPA MHA in co-organization of EE-21C has assured:

- High visibility of the Agreement by presenting its continuous efforts in prevention of, protection against and organization of relief in major natural and technological disasters;
- Participation of outstanding professionals from EUR-OPA MHA earthquake threatened countries and exchange of experiences with renovated world academics and professionals;
- Outstanding contribution, by its almost two decade experience, in shaping and formulating the strategy of EE-21C Resolution along the major policies defined by Medium Term Plan 2002-2006 [AP/CAT (02) 38 rev.3], sections B.1 and B.2, item III and the outcome document of the UN/ISDR World Conference on Disaster Reduction (Kobe 2005) "Building the resilience of nations and communities to disasters: Hyogo Framework for action 2005–2015".

A handwritten signature in black ink, reading "Milutinovic Zoran." The signature is written in a cursive style with a long, sweeping underline that loops back to the left.

Prof. Dr Zoran MILUTINOVIC

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International Conference on Earthquake Engineering

"EARTHQUAKE ENGINEERING IN 21ST CENTURY, EE-21C"

27TH AUGUST -1ST SEPTEMBER 2005, SKOPJE/OHRID, REPUBLIC OF MACEDONIA

RESOLUTION

Preamble

1 Taking the opportunity of marking the 40 years since the establishment of the Institute of Earthquake Engineering and Engineering Seismology, University "Ss. Cyril and Methodius", Skopje (IZIIS-Skopje), as well as recognising the needs for updating and enhancing research and development in seismology, earthquake engineering, spatial and urban planning and other disciplines oriented to seismic risk reduction, the "Institute of Earthquake Engineering and Engineering Seismology (IZIIS)" convened a conference "Earthquake Engineering in 21st Century, EE-21C". The conference was held in Skopje and Ohrid in the period 27th August to 1st September 2005.

The opening ceremony of EE-21C was in Skopje on August 27, 2005 in the premises of IZIIS-Skopje. Technical sessions were held in Ohrid, in Metropol Hotel Complex in the period 28th August -September 1st, 2005.

The EE-21C Conference Programme was realized in 7 plenary, 19 parallel and 3 Special Sessions covering the following fields:

1. Lessons from Past Earthquakes
2. Strong Ground Motion, Engineering Seismology, Earthquake Hazard and Risk Assessment
3. Geotechnical Earthquake Engineering, Dynamic Properties and Response of Soil Deposits
4. Structural Modelling, Analysis, Design and Seismic Safety
5. Innovative Techniques for Reducing Seismic Impact
6. Retrofitting of Structures
7. Societal, Economic and Planning Aspects
8. Technologies and Trends for Disaster Monitoring and Reduction.

The patron of the EE-21C is Prof. Ljupco Jordanovski, the President of the Parliament of the Republic of Macedonia.

On behalf of His Excellency Mr. Kofi Annan, the United Nations Secretary General, the [Message to the International Conference on Earthquake Engineering in 21st Century](#) was delivered by the UN envoy Mr. Sálvano Briceño, director, Secretariat of the International Strategy of Disaster Reduction, at the Opening Ceremony held at Skopje on 27th August 2005.

The EE-21C Conference has been organized in partnership with United Nations in Macedonia, Council of Europe [EUR-OPA Major Hazard Agreement](#)ⁱ (EUR-OPA MHA), [World Health Organization](#)ⁱⁱ (WHO) and EUR-OPA's MHA [European Center on Vulnerability of Industrial and Lifeline Systems](#), ECILS-Skopje.

The EE-21C Conference was held under the auspices of [United Nations International Strategy for Disaster Reduction \(UN/ISDR\)](#), the [European Association of Earthquake Engineering \(EAEE\)](#) and the [Macedonian Association of Earthquake Engineering \(MAEE\)](#).

The following International organizations and UN agencies have participated the technical part of the Conference: UN/ISDR, UN and UNDP in Macedonia, WHO-EURO and WHO-Country Office Skopje, EUR-OPA MHA, OECD/PEB Programme, United Nations University from Bonn (UNU-EHS) and UNSECO.

The conference, which was attended by 263 participants from 45 countries (by Alphabetic order: Albania, Algeria, Armenia, Austria, Australia, Barbados, Bhutan, Belgium, Bosnia and Herzegovina, Bulgaria, China P.R., Colombia, Denmark, Ecuador, Egypt, France, Georgia, Germany, Greece, India, Iran, Italy, Japan, Kazakhstan, Macedonia, Morocco, Mexico, Mongolia, Nepal, New Zealand, Nigeria, Norway, Peru, Romania, Russia, Serbia and Montenegro, Slovak Republic, Slovenia, Spain, Taiwan, Thailand, Turkey, UK, USA and Yemen, and the UN Protectorate Kosovo), unanimously adopted the following:

RESOLUTION

The participants to the “Earthquake Engineering in 21st Century” Conference organised by the “Institute of Earthquake Engineering and Engineering Seismology (IZIIS)”, unanimously adopt the following resolution.

Noting:

that the 1963 Skopje earthquake was a catastrophe for the city, but also it triggered extensive solidarity, co-operation and research in seismology and earthquake engineering, particularly in Europe; and,

that the Institute of Earthquake Engineering and Engineering Seismology has been established in 1965 with substantial assistance of UN and its specialized agencies with the mandate to guide the reconstruction of Skopje following the 1963 Earthquake, to develop national and regional capability and capacity in the field of engineering seismology and earthquake engineering, and to create public awareness and risk prevention culture in Macedonia and the region;

Considering:

- the economical and political situation created by recent conflicts in this part of the Balkans and the need to integrate this region in the European Union,
- the importance of bilateral and multilateral European co-operation and renewed interaction in research and development in the area;

Welcoming and giving full consent to:

- Final Reportⁱⁱⁱ of the UN/ISDR World Conference for Disaster Reduction^{iv}, in particular to documents: 1) The Hyogo Declaration^v; and, 2) The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters^{vi};
- OECD Recommendation Concerning Guidelines on Earthquake Safety in Schools^{vii} (approved by the OECD’s Executive Committee /July 12, 2005/ and the OECD Governing Council /21 July 2005/);
- UNESCO Initiative/Proposal for the establishment of "Inter-Governmental Platform Under the Aegis of UNESCO for Cooperation on Earthquake Risk Reduction in the Balkan Region;
- Resolutions adopted at the 9th Ministerial Session of the Council of Europe's EUR-OPA Major Hazards Agreement (Île De Bendor, Bandol, France, 3 – 4 October 2002);
 - Resolution on Euro-Mediterranean Synergy,

- Resolution on Risk Prevention Culture,
 - Resolution on First-Phase Implementation of Risk Prevention Initiatives,
- Resolution of the International Conference “Skopje Earthquake 40 Years of European Earthquake Engineering, SE-40EEE” held in Skopje/Ohrid, Republic of Macedonia, August 26-29, 2003 (adopted with acclamation by 260 delegates from 32 countries);
 - Conclusions of the EUR-OPA MHA Workshop on “Safety and Emergency Management of Essential Facilities, SEMEF-2003”, Ohrid, Republic of Macedonia, June 19-21, 2003;

URGES

- the international earthquake engineering, engineering seismology, geo-sciences, planning and decision making communities,
 - to promote and enhance research in their respective fields,
 - to re-evaluate the seismic hazard, vulnerability of the building stock in the area, and associated risks with appropriate physically based methodologies,
 - to prepare ground-shaking scenarios for the earthquake-prone and rapidly developing cities and areas of the Balkans,
 - to support risk reduction measures through seismic rehabilitation of existing building stock and implementation of new technologies for building strengthening,
 - to promote integrated disaster risk management activities and actions with particular emphasises on earthquake collateral hazards (technogenic, socioeconomic, etc.)
 - to create the Balkan Task group/alliance responsible for guiding and implementing activities and actions needed for technically consistent reduction of seismic risk in the Balkan countries;
- the Governments of the countries of the region
 - to sustain as much as possible research endeavours and actions carried on in their seismology and earthquake engineering institutions,
 - to facilitate the implementation of the EC-8 and new earthquake resistant regulations for the safeguarding of life and property in the Balkan countries,
 - to ensure a proper implementation of earthquake resistant regulations in practice, with priority for schools, hospitals, cultural heritage and emergency buildings and facilities,
 - to upgrade existing and to finance installation of new strong motion and seismological networks in this part of the world;
 - to establish a network of national and European specialised centres focusing on an efficient and timely dissemination of relevant data to disaster-managing authorities in case of a major disaster in the Balkan region;
- the UNDP, other UN Agencies, European Union, Council of Europe and International Funding Agencies to financially support such research through national and international cooperation initiatives;

- the Academia Europea, Research and Academic Institutions in the Balkans (e.g. IZIIS-Skopje, Macedonia; INCERC-Bucharest, Romania; NCSRR-Bucharest, Romania; Seismological Institute, Tirana, Albania; technical Universities in the Balkan countries,), the European Training Foundation as well as European and International Institutions (e.g. ICTP in Trieste) to strengthen the research, training activities/continuing education in earthquake engineering, engineering seismology, disaster prevention and integrated risk reduction.

Participants are expressing their deep gratitude to the Organizing Committee of the International Conference "Earthquake Engineering in 21st Century" for organizing it in the beautiful UNESCO City of Ohrid that has contributed to the effectiveness and success of this event. The support of United Nations in Macedonia, UNDP, UN/ISDR, WHO, EUR-OPA MHA and the Institute of Earthquake Engineering and Engineering Seismology, IZIIS-Skopje, is recognized with appreciation.

**Skopje/Ohrid, Republic of Macedonia
August 27th-September 1st, 2005**