**Summary**

In the frame of the INNOSEIS project valorization actions for 12 innovative anti-seismic systems and devices were undertaken. Information documents combined into one 450 pages Volume were produced for dissemination to all partners of the construction sector. Criteria were set on which it may be decided which of the devices are subject to CE marking in accordance with EN 15129 and which may be considered as innovative systems that require a code approval in EN 1998-1. For the latter pre-normative design recommendations were drafted that allow them to receive the status of code-approved systems. A reliability based methodological procedure to define values of behavior factors (q-factors) for building structures was established. Case studies with application examples in which the devices are employed were worked out. The case studies refer to new single-story steel buildings, new multi-story steel buildings and to interventions for seismic upgrading of existing buildings. Seminars and Workshops were organized in large parts of Europe and in non-European Mediterranean high seismicity countries to promote technologies and codes developed in Europe. A web site (http://innoseis.ntua.gr) with free access to the users was created and promoted to practice.
Publications

Conferences:

Workshops and seminars

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<th>Country</th>
<th>Place</th>
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<td>Greece</td>
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<td>9th Conference of Steel Structures</td>
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<td>Aachen</td>
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## Workshops and seminars

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<tr>
<th>Country</th>
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<tr>
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<td>Copenhagen</td>
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## List of innovative anti-seismic systems and devices

In total 12 innovative systems and devices were examined. The main characteristic of these systems is that when the design earthquake occurs only some small parts of the systems will enter the plastic zone, while the rest of the structure will remain elastic. These innovative systems and devices are listed below:

1. INERD pin connection
2. INERD U connection
3. FUSEIS beam link
4. FUSEIS pin link
5. FUSEIS bolted beam splice
6. FUSEIS welded beam splice
7. DUAREM replaceable bolted link
8. DUAREM replaceable shear panel
9. CBF with modified braces
10. SSCD Steel self-centring device
11. TRSH Triangle steel hysteretic device
12. MSSH Moon-shaped steel hysteretic device

## Analytical investigations - Objectives

- Production of informative design-oriented documents (in the form of one single Volume) in several languages and dissemination of the material, printed or electronic, to Architects, Engineers, construction companies, students and other partners of the construction sector.
- Development of a reliability-based methodological procedure to define values of behaviour factors “q”.
- Borders of application between two important European Codes, EN 1998 “Design of structures for earthquake resistance” and EN 15129 “Anti-seismic devices”.
- Preparation of case studies with application examples for buildings.
- Organization of 12 workshops and seminars within and outside Europe.
- The creation of a website where all information regarding the project as well as the documents produced are available for everyone.
Fig. 2: Case studies with application examples on new steel buildings

Fig. 3: INNOSEIS methodology to define values of behaviour factors

Fig. 4: Case studies with application examples on existing reinforced concrete buildings

Fig. 5: Creation of a website with all information and documents available
Fig. 6: Organization of 12 workshops and seminars within and outside Europe.