PRESS RELEASE

“We can not prevent disasters from occurring, but we can invest to keep from such a severe impact that costs a region or a country a lot to recover”

Europe has a tool to assess the risks of natural disasters on transport infrastructure

- The tool has been created by INFRARISK, a working group involving 11 European organizations.
- The project has been developed over three years with a budget of 2.8 million euros.

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The European project INFRARISK have created a tool to assess the consequences of natural disasters on transport infrastructure critical to economic and social functioning of the European Union. This tool will provide information to improve the resilience of infrastructure and and minimize the impact of events such as earthquakes, floods or landslides.

Infrarisk decission Support Tool (IDST) as the tool is called, has been presented at a conference attended by representatives of all organizations involved in the project**. "Our IDST has developed a series of modules that incorporate the information we have about natural hazards and how they affect infrastructure,"** explains CSIC researcher, Maria Jose Jimenez, **"and in that way, infrastructure managers have information that will help them make decisions to improve their resilience and withstand the impact which may involve, for example, an earthquake."**

The tool is a computer program developed from information extracted from different case studies developed on Critical Infrastructure Ten T-Network, a network of roads and European railway, if they are damaged at some point, conditions on transport extend to the entire network. Moreover, they are taking into account cascading effects that are caused; for example, a damaged infrastructure can isolate a population.

The prototype is intended for infrastructures that exist and which will be created in the future. **"We always see the most striking images of a catastrophe but there is also an economic impact that affects everyone, so the European Union is very interested in working on the segments of European transport networks and make them more resilient, so that the impact, also economic, of these disasters could be reduced”,** points Jimenez.

In fact, only 4% of the total budget spent in Europe in response to natural disasters affecting the infrastructure is applied in prevention, the rest is invested in immediate response, emergency and reconstruction. However, as stated by the project coordinator, Eugene O'Brien **"working on prevention, analyzing what happens, for example, with a flood, and design activities such as volunteer work in disaster, could help saving 7 billion euro"**. CSIC researcher, Maria Jose Jimenez, added that **"if we know the scenario that will occur before a flood or an earthquake, managers will be able to act on the infrastructure and make decisions**

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about building, and organizational aspects, insurance and we can invest to keep from such a severe impact that costs a region or a country a lot to recover".

While natural disasters are rare in Europe, its impact on infrastructure is huge, and some of the factors that influence this impact, climate change and the progressive increase of traffic on the roads, evolve. To create new indicators to help identify at-risk infrastructure and creating the tool, Infrarisk has taken into account these circumstances and has also worked on:

- **Identification** of rare but able to cause severe impacts natural disasters.
- The development of a **methodology** of stress tests against specific natural hazards in critical infrastructure networks and working framework applicable to any system of linear infrastructure (eg. Power transmission lines).
- An integrated approach to **risk assessment,** taking into account the interdependence between infrastructure networks and cascading effects delos risks.
- **Facilitate** the implementation of algorithms for complex networks infrastructure.
- **Demonstration** of the tools provided by application to case studies.
- **Develop strategies** to share and disseminate the knowledge gained in the project.

For engineers and risk managers to know in depth the tool for its use in analysis models, they have been designed audiovisual training activities around problem identification, decision-making, the use of developed technical methods and the analysis of results.

About INFRARISK

INFRARISK is a project that has been developed by a consortium of several groups of experts in risk identification and analysis, infrastructure management, engineering and operations analysis. The consortium consists of 11 organizations: Roughan & O'Donovan (Ireland), Eidgenössische Technische Hochschule Zürich (Switzerland), Dragados (Spain), Gavin Doherty Geosolutions Limited (Ireland), National Research Council, CSIC (Spain), Probabilistic Consult Solutions and Training (Netherlands), University College London (UK), Stiftelsen (Norway), Ritchey Consulting AB (Sweden) and the University of Southampton (UK).

The project coordinator stressed the diversity of partners which has created the tool. **"We have assembled a combination of many different skills, civil engineers, computer engineers who have helped create the program, research institutes have provided a solid theoretical foundation and industrial partners that have implemented the research results, this way we had the opportunity to implement the tool."**

Infrarisk also has coordinated with other European projects in development (RAIN, STREST and INTACT), for protection against extreme risks.

Website: http://www.infrarisk-fp7.eu/
Video, Infrarisk en 3'.

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