

## Vulnerability assessment for civil defense

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**4) Project status:** Ongoing (01.11.2005)

**5) Organizational unit:** Departement Maschinenbau und Verfahrenstechnik, Institut für Energietechnik (IET), Kröger, Wolfgang, kroeger@mavt.ethz.ch, LZ=03292

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**8) External researcher(s):** no entry

**9) Funding source(s):**

- Industry

**10) Partner organizations:** no entry

**11) Short Summary:** To assist the Swiss Federal Office for Civil Protection in defining a national strategy for the protection of critical infrastructures. The work includes the development of models and tools, including a computer based decision support system, which cope with risk and

vulnerability issues.

**12) Keywords:** Engineering Sciences

**13) Project description:**

Switzerland is exposed to various well-known or emerging risks and depends on the reliable operation of large-scale, interconnected systems; their interruption or malfunction can harm human health and economic welfare. These so-called critical infrastructures are vulnerable to an increasing set of threats including malicious attacks. Civil defence authorities confronted with such situations have to address new concepts, broaden their knowledge base and implement tools allowing them to quantitatively assess vulnerability of critical infrastructures and to better manage them.

This project aims to develop of systematic approach to vulnerability assessment and to provide methods for quantification. Further to design and implement a platform to integrate models (e.g. tunnel fire, chemical, nuclear and biological hazards and impact of accidental releases), data, knowledge, etc. and use modern GIS environment. The "desktop assistant" will become a tool enabling civil defence authorities to increase emergency preparedness and to improve disaster prevention and emergency planning programmes.

The present work is defined as a part of long-term cooperation with the Swiss Federal Office for Civil Protection, making use of work done under the auspices of IRGC, and of work done within the AIDRAM project.

**14) Popular description:**

Critical infrastructures are large-scale, interconnected technical systems essential for to the minimum operation of the economy and society. They are exposed to various traditional (e.g. natural hazards) or emerging threats (e.g. cyber attacks), and their interruption or malfunction can harm human health and economic welfare. The project assists the Swiss Federal Office for Civil Protection in defining a national strategy for the protection of these infrastructures, in addressing new concepts, and in broadening the knowledge base. The work includes the development of models and tools, including a computer based decision support system, which cope with risk and vulnerability issues (e.g. identification of threats and weak points, emergency plans).

**15) Graphics:** no entry

**16) Publications:** no entry

**17) Links to important web pages:** no entry

