

## Projet FP7 - STRUCTURES

Nom du projet	Strategies for the Improvement of Critical infrastructure Resilience to Electromagnetic Attacks – STRUCTURES
Call	SEC-2011.2.2-2
Type de projet	Small or medium-scale focused research project
Rôle de la HES-SO	Participant
Chercheur impliqué	Marcos Rubinstein (HEIG-VD)
Participants	IDS – Ingegneria dei Sistemi (Italy) – Coordinateur ; Ecole Polytechnique fédérale de Lausanne (Switzerland) ; University of York (United Kingdom) ; Universiteit Twente (Netherlands) ; Montena Technology SA (Switzerland) ; Haute école spécialisée de Suisse occidentale (Switzerland) ; Helmut Schmidt Universität – Universität der Bundeswehr Hamburg (Germany) ; Gottfried Wilhelm Leibniz Universität Hannover (Germany) ; Bergische Universität Wuppertal (Germany) ; Istituto superiore Mario Boella sulle tecnologie dell'informazione e delle telecomunicazioni (Italy) ; Rheinmetall Waffe Munition GmbH (Germany) ; Navigate Consortium Consorzio (Italy).
Budget global	4.797 million euro / financement UE : 3.497 millions euro
Durée	36 mois, début le 1.7.2012
Résumé	<p>Security and quality of life in industrialized countries depend on continuous and coordinate performance of a set of infrastructures (energy systems, ICT systems, transportation etc) which can be therefore defined critical infrastructures (CI). STRUCTURES aims at analysing possible effects of electromagnetic (e.m.) attacks, and in particular of intentional e.m. interference (IEMI), on such CIs, at assessing their impact for our defence and economic security, at identifying innovative awareness and protection strategies and at providing a picture for the policy makers on the possible consequences of an electromagnetic attack. The work is organized into four main tasks, namely:</p> <ul style="list-style-type: none"> <li>- Scenario assessment (IEMI threat analysis; CIs analysis; modelling and experimental methodologies for investigation).</li> <li>- Investigation (assessment of susceptibility levels of critical systems/units; analysis and testing; innovative protection strategy identification).</li> <li>- IEMI sensors for real-time awareness of threats and implementation of active protection strategies.</li> <li>- Delivery of pre-regulatory guidelines to support people in the understanding of IEMI related risk and in planning/application of proper protection strategies.</li> </ul> <p>Existing standards such as the Business Continuity Management approach (BS25999 standard) and other standardized CIIP (Critical Information Infrastructures Protection) policies will be considered in order to properly identify critical items and to set criteria for risk acceptance. Already existing results relevant to EMC (Electro-Magnetic Compatibility), LEMP/NEMP/HEMP (Lightning/Nuclear/High altitude Electro-Magnetic Pulse) will be considered as possible starting points leading to find effective solution to IEMI problem. Topological approach, Risk Analysis</p>

and 3D modelling tools will be mainly applied for the analysis to a comprehensive set of reference configurations.

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