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The STRUCURES Project

Strategies for The impRovement of critical infrastrUCTUre
Resilience to Electromagnetic attackS

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IET Extreme Electromagnetics – 14 Jan 2013



Project Overview

- 3 year Framework 7 (EU) funded (Jul 12 – Jun 15)
- 12 partners
 - Industry: IDS, Rheinmetall, Montena, Navigate
 - Universities: York, Hannover, Twente, Hamburg, Turin, Wuppertal, Lausanne, Western Switzerland
- End users including:
 - CIGRE, Swiss Electromagnetics Research & Engineering Centre, Thales, Telecom Italia, and more....



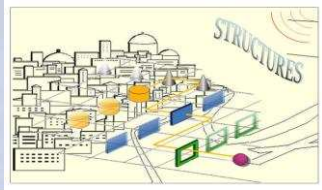
	Industry		
1	I.D.S. - INGEGNERIA DEI SISTEMI - S.P.A.	IDS	Italy
9	RHEINMETALL WAFFE MUNITION GMBH	RWM	Germany

	Universities		
2	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	EPFL	Switzerland
3	HAUTE ECOLE SPECIALISEE DE SUISSE OCCIDENTALE	HES-SO	Switzerland
4	UNIVERSITY OF YORK	UoY	United Kingdom
6	HELMUT SCHMIDT UNIVERSITAT UNIVERSITAT DER BUNDESWEHR, HAMBURG	HSU	Germany
7	GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER	LUH	Germany
8	BERGISCHE UNIVERSITAET WUPPERTAL	BUW	Germany
10	UNIVERSITEIT TWENTE	UT	Netherlands
13	POLITECNICO DI TORINO	POLITO	Italy

Implementing Team

	Research centres		
11	ISTITUTO SUPERIORE MARIO BOELLA SULLE TECNOLOGIE DELL'INFORMAZIONE E DELLE TELECOMUNICAZIONI	ISMB	Italy

	SME		
5	MONTENA TECHNOLOGY SA	Montena	Switzerland
12	NAVIGATE CONSORTIUM CONSORZIO	NAVI	Italy

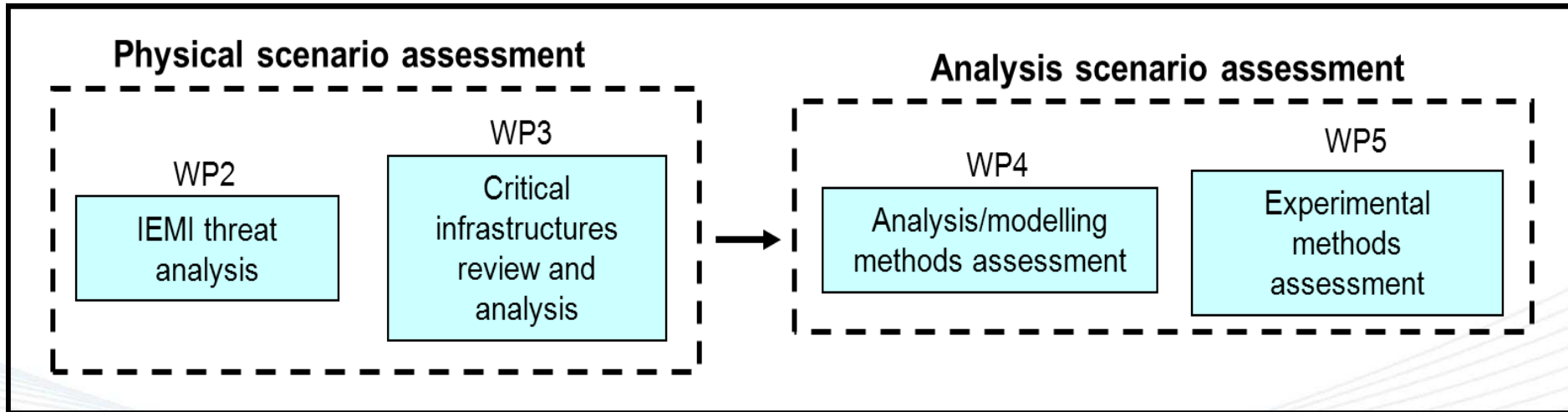


Project Aims

- Bring together existing research in IEMI
- Analysis of risks to critical infrastructure
- Protection and detection
- Guidelines for end users and policy makers
- Interaction with end users during project



Phase 1

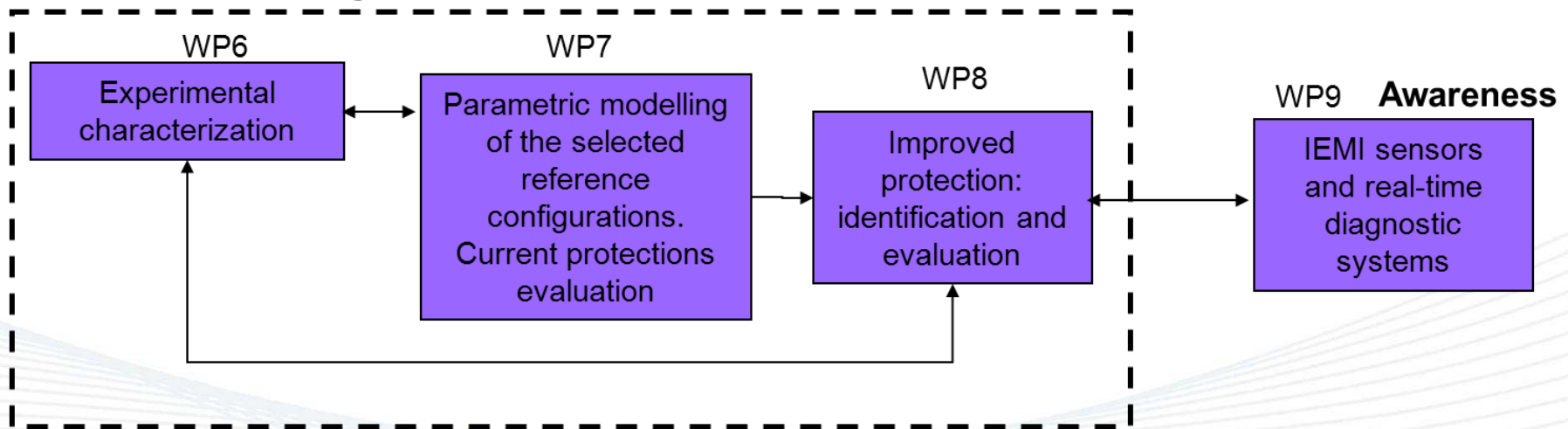


- Assessment of the scenarios of interest, from the physical point of view
- Defining Modelling and measurements issues for Phase 2.



Phase 2

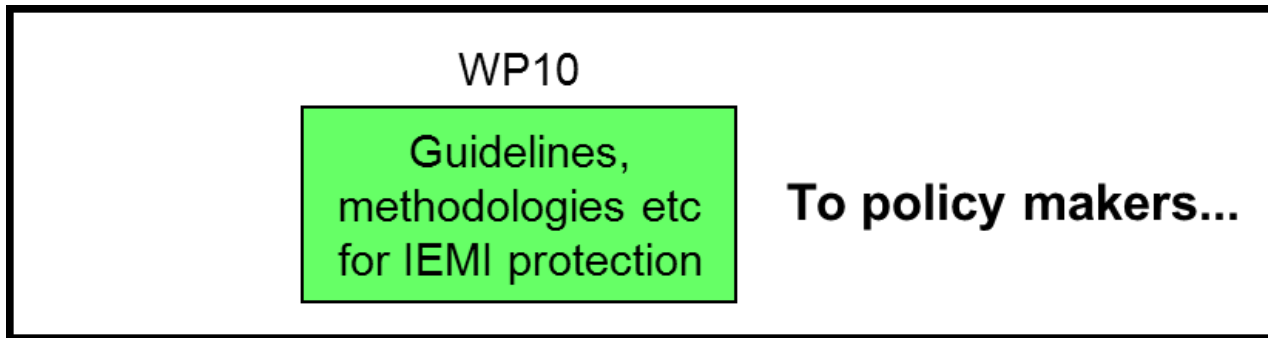
Risk investigation & protection



- Investigation of IEMI effects on the critical infrastructures, sub-systems and functions identified in Phase 1
- Identification of possible cost-effective technologies able to improve the infrastructure resilience.



Phase 3



- Pre-regulatory documentation:
comprising guidelines, methodologies, tools,
recommendations, optimal criteria etc.



End Users

Important for assuring the project is relevant.

What is expected from End Users (at different levels of participation):

- 1. Access to the project outputs (participation to dissemination events once a year – **costs will be charged to the project**)**
- 2. Support to the project requirement definition (entering the discussion about requirements during the dissemination events and, if needed, answering a questionnaire)**



End Users

3. Support to the characterization of the specific Critical Infrastructures (participation to 1 – 2 half a day meetings with the project staff)

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Resources

STRUCTURES web site: <http://www.structures-project.eu/>

Hoad, R. & Radasky, W. A. (2012). High Power Electromagnetic Disturbances to the Smart Grid and the Status of Protection Standards. , Available from:
<http://www.theiet.org/communities/electromagnetics/energy-and-power/disturbances-smart-grid.cfm>

Sabath, F. (2012). What can be learned from documented Intentional Electromagnetic Interference (IEMI) attacks?. EUROEM 2012, Available from:
<http://www.ece.unm.edu/summa/notes/AMEREM-EUROEM/EUROEM2012-final-10July2012NPA%20-SUMMA.pdf>

Genender, E.; Mleczo, M.; Döring, O.; Garbe, H. & Potthast, S. (2011). Fault tree analysis for system modeling in case of intentional EMI. Advances in Radio Science, 9 297-302 , Available from: <http://www.adv-radio-sci.net/9/297/2011/>

Hagmann, J. H.; Dickmann, S. & Potthast, S. (2011). Application and propagation of transient pulses on power supply networks. EMC Europe 2011 York, 7-12
<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6064642>

Abrams, M. (2003). Dawn of the E-bomb. IEEE Spectrum, November 24-30 , Available from:
<http://spectrum.ieee.org/biomedical/devices/the-dawn-of-the-ebomb>