

ENHANCING RESILIENCE AGAINST NATURAL EVENTS THROUGH ORDINARY TIMES STRATEGIES

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Abstract

Preparedness is a key issue for improving Resilience. This goal can be achieved by a continuous (i.e. operational 24/7) monitoring and a risk analysis of areas with large population densities and hosting strategic assets. Risk analysis must necessarily be “multi-hazards”, by accounting for all possible sources of external perturbations and by predicting the state of risk of critical infrastructure in the area (electrical and telecommunication networks, water and gas pipelines, roads etc.) as they provide primary services to citizens. Their unavailability and the absence of services, together with damages directly inflicted by the perturbation, would further impact on citizens.

Italy is going to produce a relevant effort in establishing a public Agency called EISAC.it (European Infrastructure Simulation and Analysis Centre, the Italian node) boosted by advanced technologies all connected to a Decision Support System called “CIPCast” able to provide a continuous monitoring and risk analysis of large areas by operationally supplying data and information to Emergency Manager prior to the event, in a way to improve the quality and the efficacy of preparedness actions. CIPCast will provide monitoring and alerting services to Critical Infrastructure Operators and Public Administration committed to Emergency Management and Risk Prevention. Unpredictable earthquake are also considered: CIPCast has a special section devoted to earthquake scenario simulation. A powerful state-of-the-art earthquake simulator enables the estimate of the seismic intensities (pga, macro-seismic intensity) after a few minutes the identification of the location, depth and magnitude of the quake. This allows to predict damages (to buildings, roads and the major critical infrastructure present in a given area) and the corresponding reduction (or loss) of associated services, thus creating a useful scenario awareness to be provided to Emergency Operators. The earthquake simulator can also be used for simulating synthetic scenario, in order to design educated Emergency Plans.

Keywords: Risk analysis, Preparedness, Critical Infrastructure protection, Resilience, earthquake simulation

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