Improving safety and use of Cultural Heritage

Building Science and Technology Lab, Construction Civil Engineering and Architecture Department, Università Politecnica delle Marche

EXPERIMENTING TO ASSESS

- **Methods and techniques to collect and analyses Cultural Heritage scenarios (buildings and urban areas) conditions** in relation to Human Factor impact in normal use (in situ experiments) and emergency (real world/drills) conditions, by characterizing and monitoring both environmental (including building materials characterization)and users' quantities (e.g. behaviors, motion, choices)
- **Definition of innovative experimental-based assessment indices** for normal fruition and emergency evacuation scenario building by using shared data platform, combining environmental and human factor data


SIMULATING TO PLAN & DESIGN

- **Experimentally-based models and simulation tools for simulating complex Cultural and Building Heritage systems** by including users' behaviours and Built Environment representations / modification in users' fruition conditions for both normal use scenarios and emergency (evacuation), by sharing simulation results with stakeholders (including managers, staff, planners and users)

IMPLEMENTING TO SUPPORT

- **Building construction, intelligent devices and management solutions for increasing Building Heritage performances,** based on simulation results, stakeholders' requirements/analysis, human factor analysis, real world experiments, and aimed at limiting negative effects of human factor on the environment by providing automation systems (and Internet of Things based solutions) for both normal fruition and emergency conditions
- **Building construction, intelligent devices and management solutions for supporting users in Building Heritage fruition,** based on simulation results, stakeholders' requirements/analysis, human factor analysis, real world experiments, and aimed at promoting good users' behavioral practices and awareness, and supporting people in their choices to increase their performance levels in both normal fruition and emergency conditions
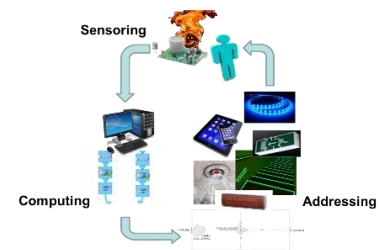
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