




ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DISASTER RESILIENT SOCIETY

Securing the society against disasters is one of the central elements of the functioning of any society. There is barely any societal sector which is not to some extent concerned by disasters and related resilience and security issues.



The research of the University of Bologna addresses concomitant technological issues and social problems and it covers:

Prevention and mitigation of adverse events resulting from natural processes

- Large-scale wireless sensor networks for disasters prevention and monitoring
- Methodologies for the assessment and mitigation of seismic risk at urban scale
- Hydrological modelling and estimation of the impact of climate change on water related hazards
- Landslide modeling and risk mitigation
- Novel methods for the use of high and medium-resolution satellite imagery in damage mapping after disasters
- Geomatics in support of emergency response
- Tsunamis, earthquakes, natural hazards assessment and mitigation

Prevention of human-made accidents and technological disasters

- Wireless sensor networks for chemical, biological, radiological and nuclear defense
- Novel radiation sensors, wearable large area detectors
- Diagnostic technologies and portable devices with the potential to diagnose CBRN
- Airborne radiocontamination assessment and modeling
- Nano-biotechnology for the detection of substances components of explosives
- Quantitative Risk Assessment of NaTech accidents
- Cascading events triggered by technological accidents

Civil Protection, Emergency Management and Mitigation

- Wireless communication systems to support public safety and rescue operations
- Robotic platform to support search and rescue activities
- Human factors, psychological and social dimensions: risk and crisis communication; community resilience to disasters and extreme events; psychological and behavioral dimensions of safety
- International and EU legal framework related to crisis management

HIGHLIGHT

Relevant EU funded projects

H2020 - **BRIGAD** Bridging the Gap for Innovations in Disaster resilience (2016-2020); FP7 - **SPARTACUS** Satellite Based Asset Tracking for Supporting Emergency Management in Crisis Operations (2013-2017); FP7 - **EDEN** End-user driven DEmo for cbrNe (2013-2016); FP7 - **iNTeg-Risk** Early Recognition, Monitoring and Integrated Management of Emerging, New Technology Related Risks (2008-2013); FP7 - **THESEUS** Innovative technologies for safer European coasts in a changing climate (2009-2013); FP7 - **BESECU** Human behaviour in crisis situations: A cross cultural investigation to tailor security-related communication (2008 – 2011).