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## Insights for Business Centric Earthquake Early Warning and Operational Forecasting Systems

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A large part of Europe is at risk of earthquake disaster events. In the last decade, earthquakes in Europe led to direct economic losses of approximately €29 billion as well as close to 19,000 fatalities. As a result of public awareness campaigns, business organisations are increasingly cognisant of earthquake risks. However, to date there is limited support available to help them systematically manage these risks. Our research supports decision makers based at European business organizations in their efforts to prepare for and respond to earthquakes. We look at how earthquake early warning (EEW) systems and earthquake operational forecasting (OEF) systems can best support business disaster risk management (DRM). We focus hereby on EEW and OEF based decision support systems for preparedness and rapid response, and also their integration with business continuity planning. Our article is based on an extensive literature review of the state of the art in OEF and EEW systems. We have validated and built on these insights through participatory action research (PAR) with potential business users of EEW and OEF systems in Europe. There is great variability in the ways in which different European businesses currently manage earthquake risk. Our research has given us insights into business users' needs and expectations of EEW and OEF systems. We have harmonized and integrated these insights towards the development of a common earthquake decision support protocol for business organisations. This protocol covers business considerations that extend beyond the prevention of fatalities and direct economic loss to long-term organisational resilience. Combining insights from facilities management, organization science and engineering, we present various considerations for the development of business centric EEW and OEF decision support systems. We outline barriers to the development and uptake of such systems and describe what opportunities they present for different stakeholders.