



## **AEOLIAN: A new Augmented Reality mobile application to enhance disaster training and response to evolving hazards**

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Disaster risk is expected to amplify in the forthcoming years considering the recent climatic projections that highlight that the frequency of shifting weather events is expected to increase posing a significant threat to the resilience of critical assets and societal functions [1]. The increasing trend of extreme weather events and natural hazards highlight the urgency of societies to adapt to current and future evolving hazards. Emerging technologies can play a significant role towards the preparedness and response of societies to disaster risks; however, the vast majority of existing solutions are customised to the needs of citizen protection authorities and do not enable interaction with citizens to bridge the risk perception action gap.

This work presents AEOLIAN AR mobile application which focuses on actively engaging both citizens and citizen protection authorities (CPAs) to enhance their risk perception but also response actions during an emerging crisis. AEOLIAN is a new crowdsourcing solution which is following a co-creation design process, through various development iteration phases with main end users [2]. The solution places at the centre both relevant authorities and vulnerable citizens, in an effort to deliver functionalities focused on knowledge generation and exchange among target users. This involves the dissemination of early warnings and real-time bi-directional interaction and exchange of crowdsourcing information between experts and vulnerable communities in case of evolving hazards, allowing for precautionary actions to be employed in areas of concern. It is coupled by Augmented Reality (AR) technology, which seamlessly blends real environments and virtual objects [3], to enrich the knowledge of citizens by providing an immersive storytelling of 'disaster tales' to inform users about historical hazardous events that have occurred in their region. Gamified disaster risk training modules also aim to empower participation and learning for climatic and anthropogenic related risks. AEOLIAN has the potential to improve understanding and risk communication between CPAs and citizens towards building disaster resilient societies.

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