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FROM SPACE TO SAFETY: AN ANALYSIS OF END-USER EXPERIENCES WITH  
SATELLITE-BASED SERVICES FOR DISASTER RISK MANAGEMENT

**Abstract**

Europe is confronted with increasing frequency and severity of disaster risks from the effects of human-induced climate change, resulting in a growing cost on societies, threatening human lives and livelihoods. Satellite technologies offer unparalleled capacity to support throughout the disaster risk management cycle. Earth Observation, Satellite Navigation, and communications can each play an individual and synergistic role in safeguarding societies. The EU Agency for the Space Programme (EUSPA) continues to develop these capacities through programmes such as Copernicus, Galileo, GOVSATCOM and the upcoming IRIS2, connecting them with societal users, conducting a range of activities to support their uptake and the adoption of all components of the EU Space Programme.

Since 2022, Eurisy has been collaborating with EUSPA on a series of workshops entitled “Satellite-based Services for Disaster Risk Management” across different EU Member states. These workshops convene decision-makers, service providers, and end-users, facilitating dialogue on user needs and showcasing operational capabilities, tailored to countries’ specific challenges and capacities. As of January 2024, Eurisy and EUSPA have successfully held five workshops in Greece, Cyprus, Hungary, Slovakia and Belgium, with four upcoming workshops planned in 2024.

Alongside each workshop, Eurisy distributes a national survey to end-user communities. The survey seeks to understand the experiences of end-users when considering or implementing satellite-based services in their activities. In particular, the survey looks for the benefits gained and challenges faced in incorporating satellite technology in different types of actors. This data furnishes national and European perspectives of end-user experiences, allowing for quantitative comparison with open-ended questions providing additional depth.

This paper will provide an analysis of the aggregated survey alongside a use case analysis of the contributions of satellite technologies to a selection of disaster events. It will present disaster risk management in Europe from the national and EU policy and capabilities perspectives and introduce different end-user communities related to disaster risk management. Our survey analysis will be explored in terms of answering end-users (a) knowledge and awareness, (b) experiences, (c) benefits, (d) challenges, and (e) needs in utilising satellite technology in their work. We will elaborate on this via use cases of disaster events

in Europe, demonstrating how satellite-based services provided critical support to end users, measuring this via a socio-economic impact analysis. The paper will contextualise our findings within the evolving EU Space Programme, end-user engagement in the space sector, and the greater societal need for space applications in addressing escalating disaster risks.