



UCPM Knowledge Series Workshop

Artificial Intelligence for Disaster Risk Management

Tuesday, 22 October 2024 at Room SICCO MANSOLT, Charlemagne, Rue de la Loi / Wetstraat 170

Streaming publicly at: <https://europa.eu/lxwYKHd> (only 9.00-11.30)

DG ECHO.B.3 is hosting a series of knowledge events designed to connect practitioners from across the EU and beyond to drive innovation within the **Union Civil Protection Mechanism (UCPM)**. The events will take place as part of the [Union Civil Protection Knowledge Network](#) and its **DRM Science and Planning Working Group**.

Leveraging scientific and technical partnerships inside and outside the Commission, the UCP Knowledge Network will develop a number of knowledge products (including workshops, webinars, video interviews, and knowledge notes) centred around **strategic themes** for the European civil protection community, such as: **multi-hazard approach to disaster risk management; behavioural insights for whole-of-society preparedness; artificial intelligence & machine learning; open science & open data; and climate resilience**.

The objectives of this workshop are to:

1. Present the state of the art in Artificial Intelligence & Machine Learning (AI & ML) initiatives from the EU side that are particularly relevant for disaster risk management; and
2. Discuss what does the future hold and what is needed to make the most of these technologies to advance the disaster risk management agenda.

Chair of the Meeting: Erwan Marteil, DG ECHO.B.3

9.00 – 9.15	<i>Welcoming Coffee</i>
9.15 – 9.30	Opening of the workshop , Director Hanna Jahns, DG ECHO.B
WHAT IS THE STATE OF THE ART?	
9.30 – 10.00 + 10 min Q&A	<p><u>Building the framework: The formal landscape & key initiatives</u></p> <p>The European AI Office, Martin Bailey, DG CNECT.A5</p> <p>The European AI Office is the centre of AI expertise across the EU. It plays a key role in implementing the AI Act and fostering the development and use of trustworthy AI. Its remit includes international cooperation agreements (such as AI for Public Good) and AI-based solutions for international development to strengthen European Union capabilities for disaster management.</p> <p>UN Focus Group on AI for Natural Disaster Management, Andrea Toreti, DG JRC.E1</p> <p>The Commission representative to the UN Focus Group will introduce its background and outcomes, such as the standardization roadmap. The collaborative initiative launched in 2021 and was led by the International</p>

	<p>Telecommunication Union in partnership with WMO and UNEP. Its work is continued by the new Global Initiative on Resilience to Natural Hazards through AI Solutions.</p> <p><u>Destination Earth digital twin</u>, Stephan Siemen, ECMWF</p> <p>Destination Earth (DestinE) is a flagship initiative of the European Commission to develop a digital model of the Earth to model, monitor and simulate natural phenomena, hazards, and the related human activities. It is intended to unlock the potential of a digital twin at a level that represents a real breakthrough in terms of accuracy, local detail, access-to-information speed, and interactivity.</p>
<p>10.10 – 10.40 + 10 min Q&A</p>	<p style="text-align: center;"><u>Integrating AI & ML into action: Examples of use cases</u></p> <p>AI and ML tools for <u>Disaster Risk Management</u>, Michele Ronco, DG JRC.E1</p> <p>An overview of AI and ML advancements revolutionizing DRM and how these enhance drought risk evaluations, predict food crises, and bolster wildfire response systems. Also, AI/ML applications in event extraction, social media analysis, damage assessment, and news-based causal mapping, all contributing to a robust DRM 2.0 framework that aids decision-makers in both prevention and response efforts.</p> <p><u>MedEWSA Horizon Europe project</u>, Elena Xoplaki, Justus Liebig University Giessen</p> <p>The ‘MEDiterranean and pan-European forecast and Early Warning System Against natural hazards’ project’s objective is to reduce the vulnerability of local communities to hazards and create a suite of comprehensive AI-based products for innovative forecasting and impact assessment. This includes the use of AI to handle the multi-hazard complexity and generate explainable, effective, and applicable forecasts.</p> <p><u>MEDEA Knowledge for Action in Prevention & Preparedness project</u>, Francesco Focacci, Università eCampus & Francesco Pistolesi, University of Pisa</p> <p>The ‘Multidimensional seismic risk assessment combining structural damages and psychological consequences using explainable artificial intelligence’ project is building an AI-combined system that will estimate earthquake-related losses & damages along with their psychological consequences. The system will be available for free and will help civil protection authorities when planning mitigation strategies.</p>
<p>10.50</p>	<p>Commentary from the Analytical Team, Spyros Afentoulidis, DG ECHO.A2</p> <p>The Emergency Response Coordination Centre’s (ERCC) analytical team will comment on the different initiatives from a UCPM perspective and introduce needs from an operational viewpoint.</p>
<p>11.00 – 11.30</p>	<p><i>Coffee Break</i></p>
<p>WHAT DOES THE FUTURE HOLD?</p>	
<p>11.30 – 11.40</p>	<p>Assignment and division into breakout groups, Juha-Pekka Jäpölä, DG ECHO.B3</p>
<p>11.40 – 12.40</p>	<p>Discussion in breakout groups to draft follow-up recommendations</p> <p>1 round of discussion, each group will have the same questions, such as:</p> <ol style="list-style-type: none"> 1. How can the Commission best harness the potential of AI & ML in DRM? 2. In which area of your portfolio do you see the biggest potential impact of AI in DRM? 3. What are the expected pitfalls/challenges we should be aware of? <p>Each group leader sends their conclusions to ECHO.B3 for a workshop report. <i>Thus, please bring your laptops!</i></p>
<p>12.40 – 12.45</p>	<p>Closure of the workshop, Erwan Marteil, DG ECHO.B3</p>