

# PRIVACY-SHIELDING AUTONOMOUS SYSTEMS FOR NATURAL DISASTER MANAGEMENT (NDM): Targeted Regulation of the use of Autonomous Systems for Natural Disaster Management Goals before the Materialization of the Privacy Harm

Georgios BOUCHAGIAR<sup>\*</sup>, Vasileios MYGDALIS<sup>\*\*</sup> & Ioannis PITAS<sup>\*\*\*</sup>

*This contribution aims to recommend a fully-fledged privacy-assessment applicable to future uses of Autonomous Systems (AS) for Natural Disaster Management (NDM) purposes. It claims that certain implementations may interfere with the right to privacy and the protection of personal data and analyses challenges stemming from (non-) compliance with the General Data Protection Regulation (GDPR). Moreover, it subjects the use of autonomous systems to the European Court of Human Rights' (ECtHR) Legality – Legitimacy – Necessity testing (LLN-check). On this basis, it proposes a targeted and ex ante privacy-assessment to address legal uncertainty, resulting from the GDPR's tech-neutrality and case law's ex post (after the harm) adjudication. The recommended scheme, ideally involving experts from various disciplines who would moreover be independent, could apply before the actual use of any AS and give a 'proceed', a 'proceed with conditions' or a 'do not proceed' decision.*

**Keywords:** personal data, privacy, autonomous systems, natural disaster management

## § 1 INTRODUCTION

Autonomous Systems ('AS') can make Natural Disaster Management ('NDM') more efficient and effective, thanks to their capacity to perform sophisticated tasks, such as

---

<sup>\*</sup> Aristotle University of Thessaloniki (AIIA Laboratory, School of Informatics), Thessaloniki, Greece. Email: georgebouchagiar@csd.auth.gr.

<sup>\*\*</sup> Aristotle University of Thessaloniki (AIIA Laboratory, School of Informatics), Thessaloniki, Greece. Email: mygdalisv@csd.auth.gr.

<sup>\*\*\*</sup> Aristotle University of Thessaloniki (AIIA Laboratory, School of Informatics), Thessaloniki, Greece. Email: pitas@csd.auth.gr. Funded by the European Commission – European Union under HORIZON EUROPE (HORIZON Research and Innovation Actions) under grant agreement 101093003 (TEMA, HORIZON-CL4-2022-DATA-01- 01). Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union – European Commission. Neither the European Commission nor the European Union can be held responsible for them.