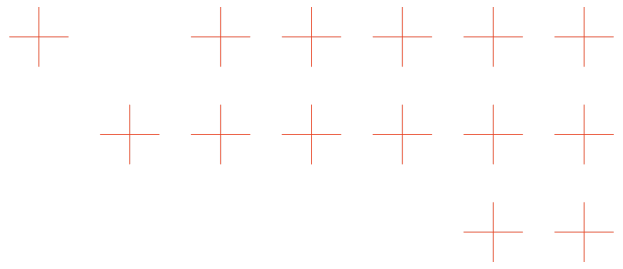


TRUSTED
EXTREMELY PRECISE
MAPPING AND PREDICTION
FOR EMERGENCY
MANAGEMENT

Deliverable 7.8: Second report on dissemination and communication activities, clustering, and standardization recommendations

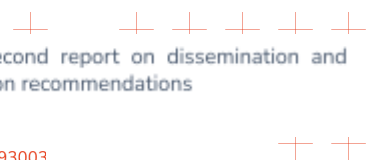


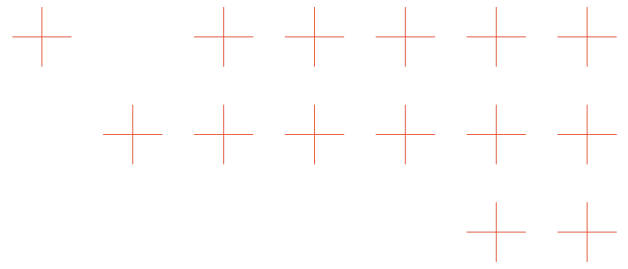


Project Information

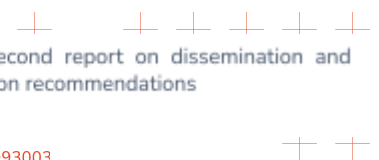
Project acronym:	TEMA
Project full title:	Trusted Extremely Precise Mapping and Prediction for Emergency Management
Call identifier:	HORIZON-CL4-2022-DATA-01
Type of action:	HORIZON Research and Innovation Actions
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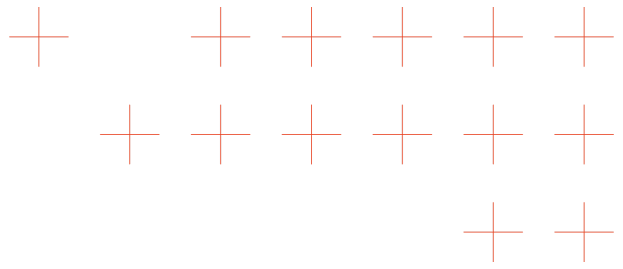
D7.8: Second report on dissemination and communication activities, clustering, and standardization recommendations	
Executive Summary:	Deliverable D7.8 is the second public report on the Horizon Europe TEMA project's dissemination, communication, clustering, and standardisation activities over months 19 - 36 (June 2024 - November 2025), providing updates for the corresponding period. It documents how the consortium implemented its outreach strategy through extensive participation in workshops, conferences, training events and pilots, an expanded portfolio of scientific publications and a strong online presence via the project website, social media channels, YouTube videos, newsletters, academic courses and blog posts. In parallel, it summarises clustering actions with related EU initiatives and networks, and details progress on TEMA's standardisation strategy.
WP:	WP7 - Dissemination and exploitation
Author(s):	See table below for a full list of authors
Editor:	Lorenzo Carnevale (UNIME)
Leading Partner:	Lisbon Council
Participating Partners:	All Partners
Version:	1.0
Status:	





Deliverable Type:	R – Document, report	Dissemination Level:	PU - public
Official Submission Date:	30.11.2025	Actual Submission Date:	28.11.2025



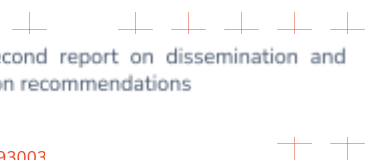


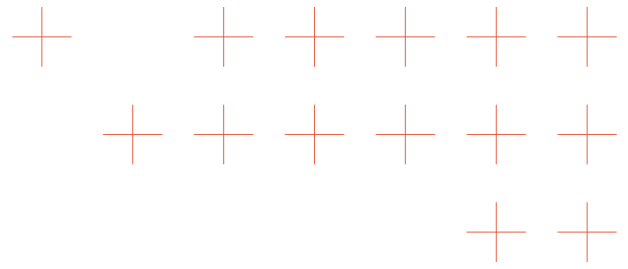
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The TEMA consortium consists of the following partners:

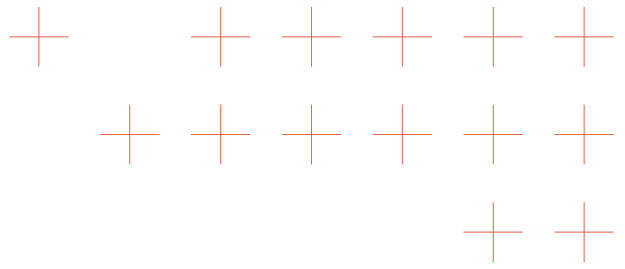
No.	Partner Organisation Name	Partner Organisation Short Name	Country
1	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	AUTH	GR
2	DEUTSCHES ZENTRUM FUR LUFT – UND RAUMFAHRT EV	DLR	DE
3	ENGINEERING - INGEGNERIA INFORMATICA SPA	ENG	IT
4	ATOS IT SOLUTIONS AND SERVICES IBERIA SL	ATOS IT	ES
4.1	ATOS SPAIN SA	ATOS SP	ES
5	UNIVERSIDAD DE SEVILLA	USE	ES
6	TECNOSYLVA SL	TSYL	ES
7	NORTHDOCKS GMBH	ND	DE
9	THE LISBON COUNCIL FOR ECONOMIC COMPETITIVENESS ASBL	LC	BE
10	LATITUDO 40 SRL	LAT40	IT
11	NELEN & SCHUURMANS TECHNOLOGY BV	NS	NL
11.1	NELEN & SCHUURMANS CONSULTANCY BV	NS C	NL
12	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	FHHI	DE
13	UNIVERSITA DEGLI STUDI DI MESSINA	UNIME	IT
14	KAJAANIN AMMATTIKORKEAKOULU OY	KAMK	FI
16	KENTRO MELETON ASFALIAS	KEMEA	GR
17	DIMOS MANTOUDIYOU - LIMNIS - AGIAS ANNAS	D.MALLIAN	GR





18	REGIONE AUTONOMA DELLA SARDEGNA*RAS	RAS	IT
19	BAYERISCHES ROTES KREUZ	BRK	DE
20	KAINUUN HYVINVOINTIALUE	KAHY	FI
21	INTERDISCIPLINARY TRANSFORMATION UNIVERSITY	IT:U	AT





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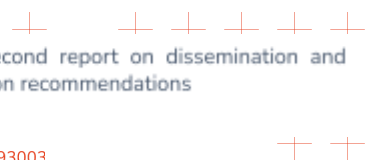
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Leila Arras	FHHI
All Partners	All project partners

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Name	Organisation
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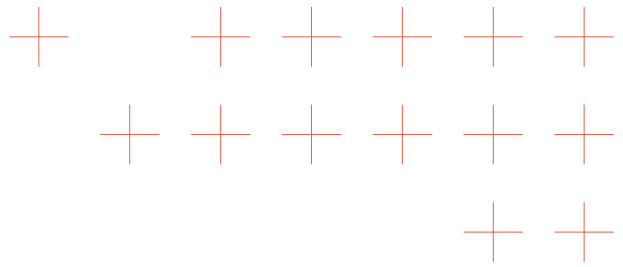


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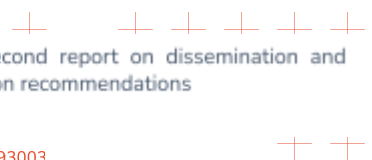
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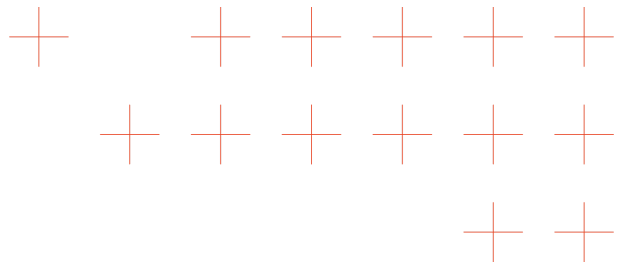
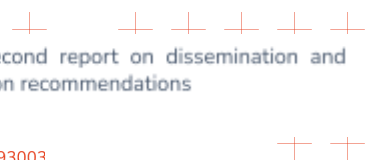


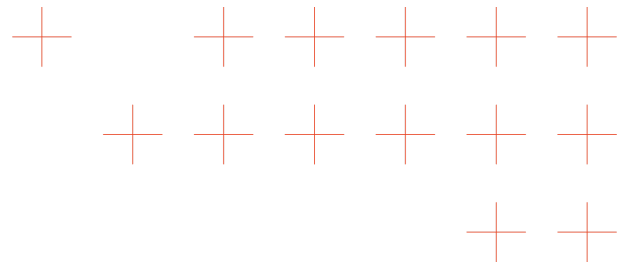
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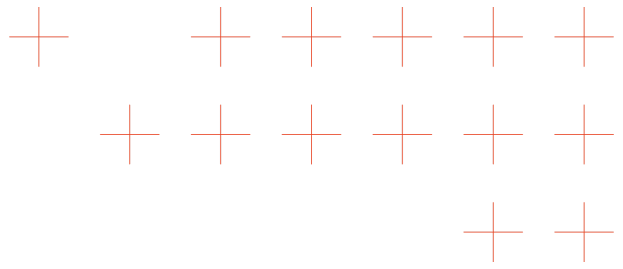




Executive Summary

This public deliverable presents a detailed report on the activities and key performance indicators (KPIs) for the Horizon Europe project TEMA, during the last 18 months (M19-M36) of the project (June 2024-November 2025). It covers the progress in implementing the project's planned activities, including outreach initiatives, stakeholder engagement, and emphasising on clustering and standardisation efforts. The report highlights significant achievements and milestones reached during the reporting period and provides an in-depth analysis of the KPIs that gauge the effectiveness of these efforts. It offers stakeholders a clear view of the project's progress, including refined outreach methods, adjusted communication tactics, and optimised stakeholder engagement strategies aligned with the project's goals and objectives. Overall, this deliverable is a valuable resource for stakeholders, offering transparency on project progress and performance metrics, thus driving TEMA towards its intended outcomes. The current version consists of an updated version of the initial report submitted in May 2024, containing corrections and updates as requested by the project reviewers during the first technical review meeting.





1. Introduction

1.1. Purpose and Scope

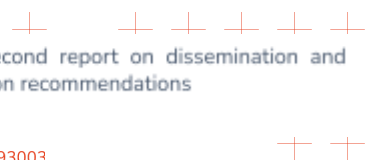
This document constitutes the second report of dissemination, communication, and standardisation activities conducted for project TEMA (Trusted Extremely Precise Mapping and prediction for emergency management) from June 2024 (M19) to November 2025 (M36). The present report describes the dissemination and communication activities that took place during the last 18 months of the project and outlines the planned activities for the remaining duration of the project. In addition, it presents the tools and activities that were undertaken to accomplish the set objectives, disseminate the project, and implement the strategy as it was set out in previous deliverables.

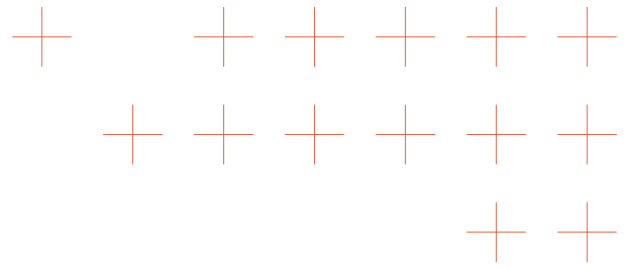
1.2. Structure of the Report

This document is structured in 5 chapters. Following this introduction, chapter 2 provides the updates on the dissemination and communication strategy of TEMA, as well as the reporting of the activities for the period M19-M36. Chapter 3 focuses on the standardisation efforts. Chapter 4 is the KPIs overview, and finally chapter 5 is the conclusions and outlook.

1.3. Relation to Previous Deliverables

This deliverable is the second version following up on D7.7 - First report on dissemination and communication activities, clustering, and standardisation recommendations, submitted in M18. It contains all dissemination and communication related updates for the M19-M36. This includes updates and optimisations of the dissemination and communication strategy, as well as the actual activities that were carried out.





2. Communication - Dissemination Activities Overview

This chapter maps the communication channels' progress for the respective reporting period. It includes metrics from the website and the social media accounts, the external activities the consortium has participated in, the newsletters, the scientific publications, and the promotion of TEMA through partners' and synergies' networks. During M19–M36, TEMA partners (notably AUTH) took several steps to promote TEMA activities internationally through invited presentations in international organizations, conferences, and universities.

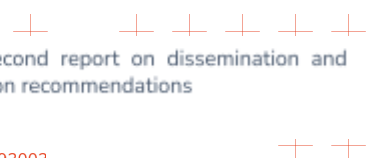
A comprehensive TEMA Dissemination Strategy was developed and implemented, which includes (among others):

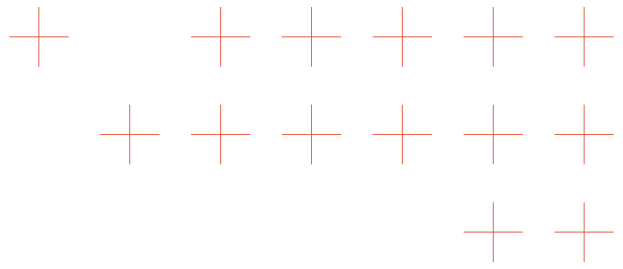
1. Participation in peer-reviewed international conferences beyond those listed in the DoA, to present TEMA results.
2. Delivery of invited lectures to disseminate TEMA outcomes.
3. Presentation of TEMA results and technologies at international exhibitions and conferences.
4. Outreach to institutions outside the EU, recognizing that natural disasters are a global phenomenon.
5. Raising awareness of big data analytics for natural disaster management worldwide.
6. Attracting young, talented researchers to Europe.

2.1. TEMA Workshops

TEMA is committed to hold at least 4 workshops throughout the project. In M1-M18, 5 workshops were held, already achieving the KPI. During this period, two more workshops were successfully delivered in Greece: one in Eratyra, Kozani, on 10 May 2025, and another in the Municipality of Mantoudi–Limni–Agia Anna on 29 August 2025.

The workshop “**Artificial Intelligence, Environment and Natural Disasters**” was held in Eratyra, Kozani, Greece, on 10 May 2025. This regional event, initiated by the TEMA Project, was organized by the Region of Western Macedonia and attracted over 170 participants, achieving significant success and visibility.





The regional interest in combating natural disasters was substantial. During the event, valuable contacts were established with the Hellenic Fire Service, which presented ENGAGE, a successful software package developed for resource coordination and management in emergency situations.

The Region of Western Macedonia organized the workshop under the auspices of the Ministry of Digital Governance, in collaboration with the Western Macedonia Model Forest, the Institute of Civil Protection of the Region of Western Macedonia, and the Local Community of Eratyra, Kozani. The event took place at the Cultural Center of the Local Community of Eratyra, Municipality of Voio, Regional Unit of Kozani.

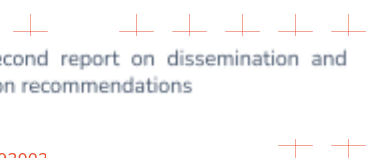
The workshop aimed to present and discuss applications of Artificial Intelligence (AI) in the prevention, detection, and management of natural disasters. It showcased state-of-the-art tools and strategies for environmental protection, while also highlighting recent advances in disaster prevention and response.

As one of the first events of its kind in Greece for local government, the workshop sought to raise awareness and inform the public about technological innovations related to the environment and natural disasters. The Region of Western Macedonia, with its strong industrial background, is well positioned to develop national expertise in this vital field as it transitions toward the post-lignite era.

The event featured speakers from academia, research institutions, and civil protection authorities. The Horizon Europe research project TEMA (<https://tema-project.eu/>), which focuses on big data analysis of natural disasters, contributed to the workshop with two scientific presentations. These presentations explored the relationship between AI and the environment and demonstrated its application in the prediction, analysis, management, and documentation of natural disasters such as wildfires and floods.

Website:

<https://www.pdm.gov.gr/enimerosi-politon/imerida-techniti-noimosyni-perivallon-fysikes-katastrofes/>



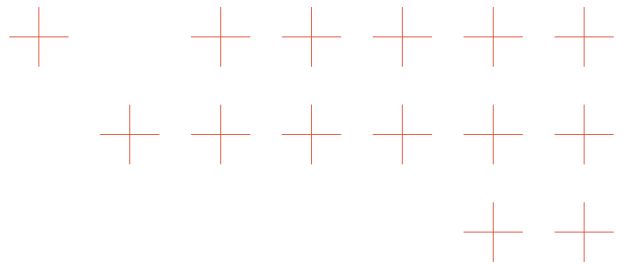


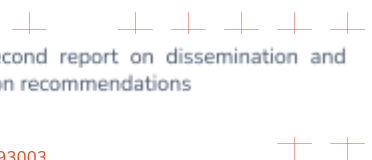
Figure 1 - Workshop “AI, Environment and Natural Disasters”, Eratyra Kozanis, Greece.

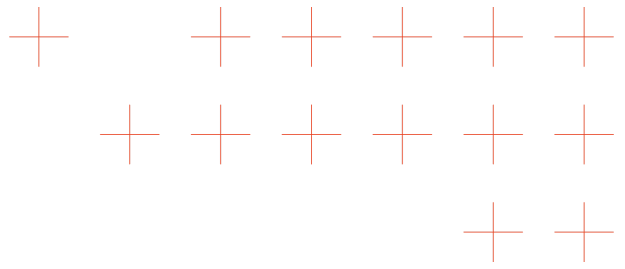
Within this framework, the Municipality of Mantoudi–Limni–Agia Anna organized the workshop “Artificial Intelligence, Big Data, and Natural Disaster Management” on Friday, 29 August 2025, at the Municipal Hall of Mantoudi, Evia.

Climate change and the intensity with which it manifests itself have begun to affect municipalities across Greece in multifaceted and increasingly severe ways. Its impacts extend to the natural environment, with far-reaching consequences for the social and economic life of citizens. This represents an unprecedented challenge — not a theoretical scenario for the future, but a reality to which we must rapidly adapt. Municipalities stand at the forefront of efforts to address and adapt to the climate crisis. Civil protection constitutes a crucial pillar for both the prevention and the management of the adverse consequences of extreme events, encompassing actions across prevention, response, and recovery phases.

Municipalities have an institutional obligation to protect local communities through initiatives that strengthen their resilience to extreme phenomena and enhance their capacity for recovery following natural disasters.

The effects of the climate crisis are already visible: extreme weather events, floods, prolonged heatwaves, droughts, and widespread wildfires threaten and degrade the natural environment and, consequently, the quality of life of citizens. Addressing these challenges requires immediate action, collective responsibility, and innovative solutions.



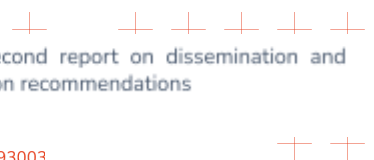


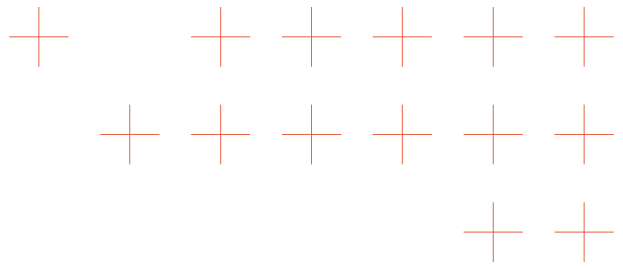
Within this context, AI emerges as a valuable ally, offering tools that can support municipal civil protection services in addressing the negative impacts of extreme events more effectively. AI has the potential to transform how municipalities manage and respond to natural disasters. Its ability to process vast amounts of heterogeneous data in real time, recognize patterns and causal relationships, identify vulnerable populations and infrastructures, generate virtual models of affected areas, and simulate disaster evolution scenarios opens new horizons in crisis management and strategic planning.

The event's program, information about the speakers, and details can be found at: <https://sites.google.com/view/workshop-temaproject>



Figure 2 - Workshop on Artificial Intelligence, Big Data and Natural Disaster Management.



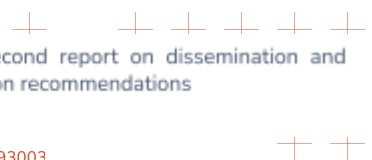


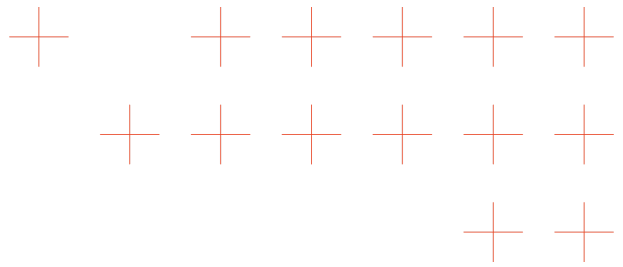
2.2. Events, Conferences, and Webinars Participation

TEMA's participation in external events serves several strategic purposes, even before final results are available. The main objective is to increase visibility, build networks, and prepare the ground for future exploitation and dissemination. By engaging with relevant stakeholders, research communities, and policymakers, TEMA ensures that its work remains aligned with real needs and emerging trends in the field of emergency management. These past 18 months, the TEMA consortium participated in twenty-one events and conferences, one exhibition, and two training events, mainly disseminating the research and technological updates, and the piloting activities.

Table 1 List of events

<p><u>Crisis Without Borders: How Can Interoperability in Emergency Management Services Better Prepare Us to Meet Disaster Resilience Goals?</u> Event FEB 2024 Organiser: EC Target audience: Specific user communities [25 people] Description: This was an experts' working session on interoperability governance in emergency services.</p>
<p><u>8th European Civil Protection Forum 2024</u> Event JUN 2024 Organiser: DG ECHO Target audience: National authorities [1000 people] Description: Following a very successful presence in the 8th European Civil Protection Forum that took place in Brussels on 4-5 June 2024, the TEMA project has joined the online community of the Union Civil Protection Knowledge Network.</p>
<p><u>EDEN Annual Conference</u> Conference JUN 2024 Organiser: EDEN Target audience: Research community [300 people] Description: TEMA prepared a concise paper and presentation on: Professional Development and the Role of Technology in the Rescue Department Rescue Department.</p>
<p><u>SEMIC community: Workshop for early-career researchers</u> Event JUN 2024 Organiser: EC Target audience: Specific user communities [50 people] Description: Participation to the workshop: "Interoperable Europe: From Vision to Reality", the latest edition of the annual <u>SEMIC conference</u></p>
<p><u>Data for policy conference 2024</u> Event JUN 2024 Organiser: Data4Policy Target audience: Research communities [50 people]</p>





Description: LC and ENG presented the overview of TEMA, focusing on the visualisation of useful data for the end-users.

[CVML Programming Short Course and Workshop on Deep Learning, Computer Vision and Big Data Analytics 2024](#)

Education & training events | AUG 2024 | Organiser: AUTH | **Target audience:** Research communities [40 people]

Description: This Summer School offers a three-day short course that delivers an in-depth exploration of programming tools and techniques for addressing a variety of computer vision and deep learning challenges. The course focuses on the fundamentals of deep learning and its applications in Natural Disaster Management. The short course consists of three parts (A, B, C), each having lectures and programming workshops with hands-on lab exercises. This course presents recent deep learning and computer vision advances as applied in Natural Disaster Management (Horizon Europe TEMA R&D project).

[Artificial Intelligence for Disaster Risk Management \(2024\)](#)

Event | OCT 2024 | Organiser: EC | **Target audience:** EU institutions [150 people]

Description: This was a workshop on artificial intelligence in disaster management attended both by EU officials and external stakeholders. TEMA was represented by LC.

[Spatial Data Science Symposium 2024](#)

Conference | OCT 2024 | Organiser: University of Vienna | **Target audience:** Research community

Description: TEMA was represented by PLUS.

[Computational Social Science Conference: innovative methods, research workflows and data stewardship](#)

Conference | OCT 2024 | Organiser: BSC, CODATA and FLC | **Target audience:** Research community [150 people]

Description: TEMA was represented by PLUS.

[KEJO main event \(closed meeting\)](#)

Event | NOV 2024 | Organiser: Emergency Academy Finland | **Target audience:** National authorities [20 people]

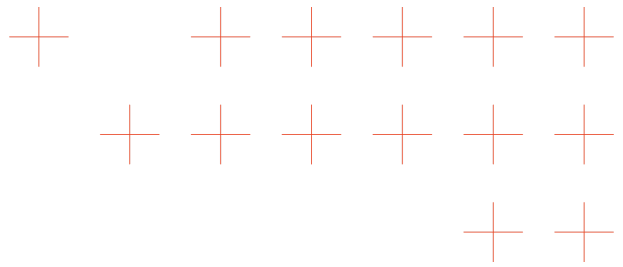
Description: TEMA application was presented to KEJO end-users nationwide.

[Short Course/Tutorial on Big Data Analytics for Natural Disaster Management](#)

Education & training events | DEC 2024 | Organiser: AUTH | **Target audience:** Research community [55 people]

Description: This short course on Big Data Analytics for Natural Disaster Management (NDM) provides a comprehensive overview and in-depth presentation of advanced technologies involved in the acquisition and analysis of Big Data for NDM. NDM can be greatly improved by





developing automated means for precise semantic mapping and phenomenon evolution predictions in real-time. Several extreme data sources can significantly help towards achieving this goal: a) autonomous devices and smart sensors at the edge, equipped with AI-capabilities; b) satellite images; c) topographical data; d) official meteorological data, predictions or warnings published in the Web; and e) geosocial media data (including text, image and video). Such heterogeneous data sources provide a prime extreme data example: a) they are diverse; b) voluminous; c) fast and frequently updated; d) complex; e) multilingual; f) have very disperse sources (satellite, drone, sensors, social media, maps); and h) have extreme values. The course consists of ten lectures, covering important topics and presenting state-of-the-art technologies in: a) Big Data acquisition using sensors, drones, satellites, the Web and social media platforms; b) Big Data analysis based on Deep Learning; c) accurate phenomena modeling; and d) analysis, forecasting and risk management for improved NDM. The presented technologies find practical application in developing an advanced NDM support system that dynamically exploits multiple data sources and AI technologies for providing an accurate assessment of an evolving crisis situation.

[33rd Money Show 2025](#)

Event | MAR 2025 | Organiser: Money Show | **Target audience:** National authorities [10 people]

Description: Technical discussions around the TEMA platform were held with relevant stakeholders. TEMA was represented by AUTH.

[German Conference on Disaster Risk Reduction](#)

Conference | MAR 2025 | Organiser: German Red Cross | **Target audience:** Specific User Communities [700 people]

Description: BRK presented the TEMA project.

[13th Disaster Management Congress](#)

Conference | APR 2025 | Organiser: Bavarian & German Red Cross | **Target audience:** Specific User Communities [500 people]

Description: BRK presented the TEMA project.

[Scaling Europe Summit](#)

Event | APR 2025 | Organiser: Lisbon Council | **Target audience:** EU institutions [150 people]

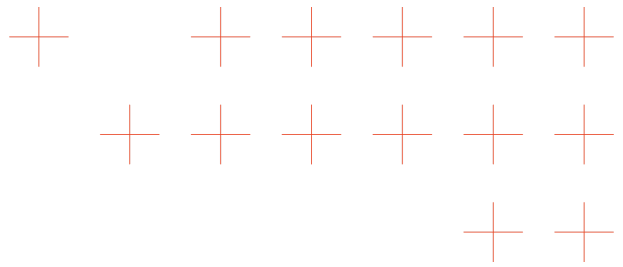
Description: LC hosted a summit on Europe's competitiveness on digital industries, where TEMA was presented.

[ITA EU MODEX 2025 exercise](#)

Exhibition | APR 2025 | Organiser: RAS | **Target audience:** National (firefighting) authorities

Description: RAS hosted a 3-days scenario-based workshop on wildfires, where ENG represented TEMA. The exercise provided a perfect opportunity for the TEMA project to showcase its innovative platform, but the team took things a step further. Rather than delivering





a standard presentation, they transformed their session into an interactive workshop, inviting participants to provide feedback on the system in real time.

[GWF 2025: ESG Summit: Geospatial Innovation for Risk Management, Business Transformation and Sustainability](#)

Conference | APR 2025 | Organiser: Geospatial World | **Target audience:** National authorities
Description: GWF is an annual gathering of geospatial professionals and leaders representing the entire ecosystem of public policies, national mapping agencies, private sector enterprises, multilateral and development organizations, scientific and academic institutions, and large end-users from government businesses and citizen services. TEMA was represented by PLUS.

[EdMedia](#)

Event | MAY 2025 | Organiser: The Association for the Advancement of Computing in Education | **Target audience:** Research community
Description: KAMK represented TEMA with a presentation of a short paper during the conference

[ISCRAM 2025](#)

Event | MAY 2025 | Organiser: Dalhousie University, Halifax NS Canada | **Target audience:** Research community [70 people]
Description: KAMK represented TEMA with a presentation on new technologies for first responders.

[TEMA press conference](#)

Press conference | JUN 25 | Organiser: TEMA project | **Target audience:** Local authorities [70 people]
Description: RAS & LC hosted a press conference to inform the local authorities about the Sardinia trial of the TEMA piloting activities. The press conference was covered by multiple media, reaching citizens. These media articles and pieces were published by: [Videolina.it](#), [Rai News](#), [L'unione Sarda](#), [Kalaritana media](#), [Cagliari today](#), [Telesardegna](#), [La nuova Sardegna](#), and [YouTG](#).

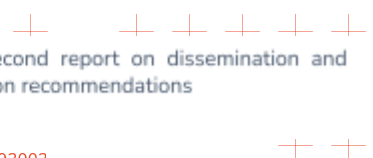
[AI for Preparedness: Building capacity for AI-powered Disaster Risk Management \(2025\)](#)

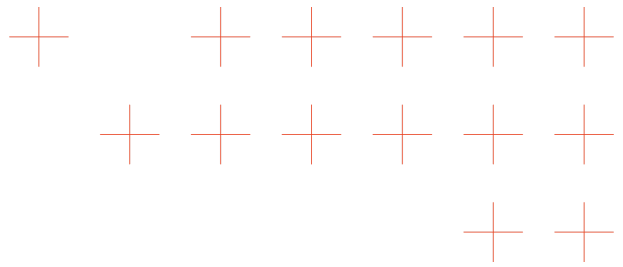
Event | JUN 25 | Organiser: EC | **Target audience:** Specific user communities [200 people]
Description: This was a workshop on artificial intelligence in disaster management attended both by EU officials and external stakeholders. TEMA was represented by LC.

[BRK-Research Day 2025](#)

Event | JUN 25 | Organiser: BRK | **Target audience:** Specific user communities [14 people]
Description: TEMA was represented by BRK.

[German Red Cross' Task Force Bonn Meeting](#)





Meeting | JUN 25 | Organiser: German Red Cross Bonn | **Target audience:** Specific user communities [39 people]

Description: TEMA was represented by BRK through the report: “Digital situation report: Results from various European and national projects (TEMA)”

[Joint Final Conference of PEERS & ONELAB: Pandemic& CBRNE Preparedness. Innovation. Standards. Situational Awareness](#)

Event | SEP 25 | Organiser: CMINE | **Target audience:** Research community [100 people]

Description: TEMA was represented by BRK.

[12° Meeting Associazione nazionale Disaster Manager](#)

Event | NOV 25 | Organiser: Associazione Nazionale Disaster Manager (AssoDima) | **Target audience:** National authorities [500 people]

Description: The TEMA solution was presented to stakeholders by ENG.

[ICIP 2025](#)

Conference | SEP 2025 | Organiser: IEEE | **Target audience:** Research community [1000 people]

Description: AUTH hosted one tutorial and one workshop.

1. [Tutorial “Big Visual Data analytics for Natural Disaster Management”](#)

AUTH presented a tutorial titled “Big Visual Data analytics for Natural Disaster Management” in IEEE International Conference on Image Processing (ICIP), Anchorage, USA, September 2025. The tutorial was made available via video to all ICIP participants. While no public information is available, a good approximation is 1000 participants.

Link to the tutorial: <https://2025.ieeeicip.org/tutorials/>

2. [Workshop organisation](#)

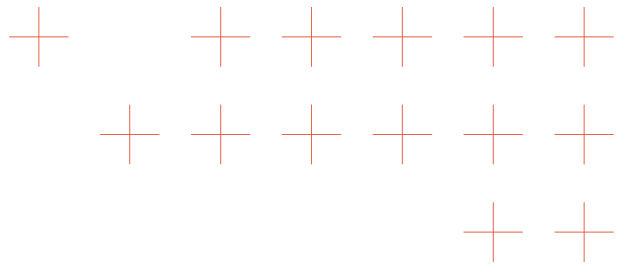
Dr. Dmitriy Shutin (DLR) and Dr. Vasileios Mygdalis (AUTH) co-organised a Satellite Workshop titled “Bridging the Gap: Advanced Data Processing for Natural Disaster Management – Integrating Visual and Non-Visual Insights”, in IEEE International Conference on Image Processing (ICIP), Anchorage, USA, September 2025. Besides the presentation of 2 TEMA conference papers (from the organisers), TEMA established new connections (that could transform to future partnerships) with scientists in emerging countries, notably the Virtual Humans Simulation Laboratory in Brazil <https://vhlab.com.br/> and Department of Computational Intelligence, School of Computing, SRM Institute of Science and Technology, Chennai, India <https://sites.google.com/view/aiforcomputervision>, which also presented papers in our workshop.

[4th IEEE International Workshop on Distributed Intelligent Systems \(DistInSys 2024\)](#)

Conference | JUN 2024 | Organiser: IEEE | **Target audience:** Public; Research Community

Description: AUTH participated representing TEMA, presenting a lecture on Decentralized DNN architectures for big data analysis.





[2nd International Conference on Artificial Intelligence, Computing Technologies, Internet of Things \(IoT\) and Data Analytics \(AICTA 2024\), Raipur, India](#)

Conference | NOV 2024 | Organiser: AICTA | **Target audience:** Public; Research Community
Description: AUTH participated representing TEMA, as a keynote lecture on Big Data Analytics for Natural Disaster Management

[Concordia University, Montral, Quebec, Canada](#)

Lecture | NOV 2024 | Organiser: Concordia University | **Target audience:** Research Community
Description: AUTH participated representing TEMA, as an invited lecture on Decentralized cloud/edge DNN architectures.

[Data innovation to the rescue: Protecting lives and making infrastructure extreme-weather proof](#)

Workshop | JAN 2025 | Organiser: mFUND DbD | **Target audience:** Public; Research Community
Description: AUTH participated representing TEMA, as a keynote lecture on Big visual data analytics for protecting humans and infrastructure during weather-related natural disasters.

[Cyber Security workshop - EESTeCh Challenge 2025](#)

Workshop | JAN 2025 | Organiser: EESTEC LC Thessaloniki | **Target audience:** Public; Research Community
Description: AUTH participated representing TEMA, as a keynote lecture on Decentralised Machine Learning.

[Aristotle University of Thessaloniki, School of Physics](#)

Lecture | MAY 2025 | Organiser: AUTH | **Target audience:** Research Community
Description: AUTH participated representing TEMA, as an invited lecture on AI, System Complexity, Life, Intelligence and Environment.

[Innovation Northern Greece 6.0: AI the day after](#)

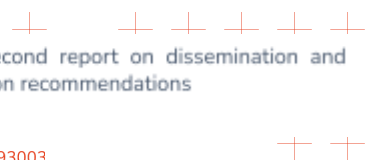
Event | MAY 25 | Organiser: NBG | **Target audience:** Public; Research Community
Description: AUTH participated representing TEMA, as an invited lecture on Research & AI.

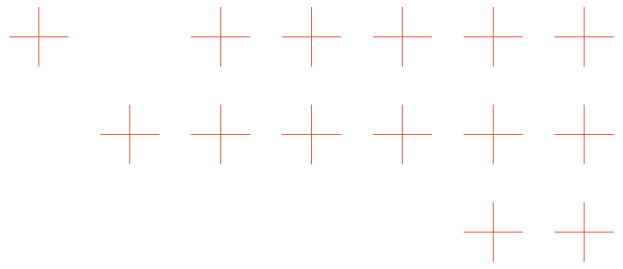
[Africa Regional Platform for Disaster Risk Reduction, Namibia](#)

Conference | OCT 2025 | Organiser: Government of the Republic of Namibia | **Target audience:** Public; Research Community
Description: AUTH participated representing TEMA, as a keynote lecture on AI and Big Data Analytics for Natural Disaster Management.

[WSEEPE2025](#)

Conference | NOV 2025 | Organiser: Synergia Summits | **Target audience:** Public; Research Community





Description: AUTH participated representing TEMA, as a keynote lecture on Big Data Analytics for Natural Disaster Management and Energy Infrastructure Inspection.

[3rd International Workshop on Urgent Computing for the Edge-Cloud Continuum \(QUICK 2025\)](#) & [25th IEEE International Symposium on Cluster, Cloud, and Internet Computing \(CCGrid 2025\)](#)

Conference | MAY 2025 | Organiser: IEEE | **Target audience:** Research community

Description: QUICK 2025 was held in Tromso, Norway in conjunction with CCGrid. TEMA was an official sponsor of that scientific workshop. Two papers related with TEMA have been presented: "Real-Time Flood Water Segmentation with Deep Neural Networks" by Anastasios Gerontopoulos, Dimitrios Papaioannou, Christos Papaioannidis and Ioannis Pitas and "Data-Driven Operational Artificial Intelligence for Computing Continuum: a Natural Disaster Management Use Case" by Serena Sebbio, Lorenzo Carnevale, Daniel Balouek-Thomert, Manish Parashar and Massimo Villari.

[Orchestrare sistemi intelligenti per la gestione dei disastri naturali](#)

Event | OCT 2025 | Organiser: MIFT | **Target audience:** Research community

Description: A talk on "Orchestrare sistemi intelligenti per la gestione dei disastri naturali" was given by Lorenzo Carnevale during the Department of Mathematics and Computer Science, Physics and Earth Sciences at the Sud Innovation Summit 2025. The talk was about research activities UNIME is carrying out in TEMA within the WP3 and WP6 ([post](#)).

2.3. Scientific and Technical Dissemination

2.3.1. List of publications

During this reporting period, the partners published several publications presented at relevant scientific events, aiming to disseminate the project results. In the following table are the details of the materials published during this reporting period. The consortium managed to publish 32 papers during this 2nd reporting period, reaching 45 papers and journal articles in total. This reflects the great quality of the work that is happening in TEMA and the investment of the researchers and experts within the consortium to promote their work in the academic community. The project has already reached the KPI of 40 papers. The table below includes the publications for the period M19-M36.



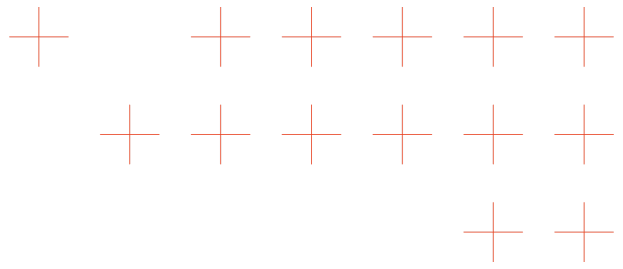
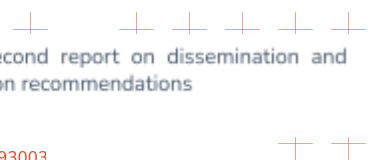
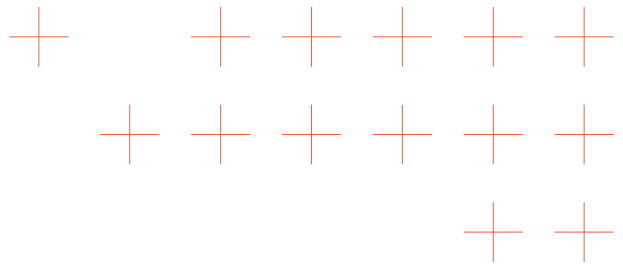


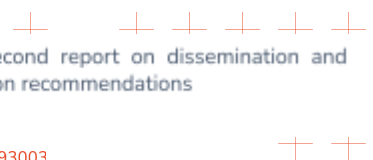
Table 2 List of publications

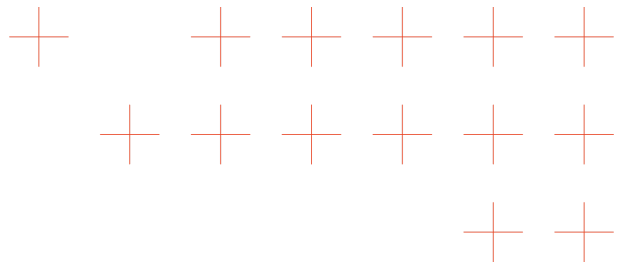
Type	Title	Author(s)	Publisher/ Conference	DOI/Link
Conference paper	Toward Scalable Damage Assessment for Rapid Disaster Response	Marc Wieland, Victor Hertel, Christian Geiss, Sandro Martinis, Konstanze Lechner	IEEE	DOI
Paper (preprint)	Tracing online flood conversations across borders: A watershed level analysis of geo-social media topics during the 2021 European flood	S. Dujardin, D. Arifi, S. Schmidt, C. Linard and B. Resch	Copernicus Publications	Link
Conference paper	Active Learning for Identifying Disaster-Related Tweets: A Comparison with Keyword Filtering and Generic Fine-Tuning	David Hanny, Sebastian Schmidt & Bernd Resch	Springer	DOI
Conference paper	Supporting the Natural Disaster Management Distributing Federated Intelligence over the Cloud-Edge Continuum: the TEMA Architecture	Lorenzo Carnevale, Antonio Filograna, Francesco Arigliano, Roberto Marino, Armando Ruggeri, Maria Fazio	ACM	DOI
Conference paper	Physics-Guided Neural Networks for Distributed Sparse Gas Source Localization Using Poisson's Equation and Green's Function Method	Victor Scott Prieto Ruiz, Dmitriy Shutin, Thomas Wiedemann, Patrick Hinsén	IEEE	DOI
Conference paper	Cramer-Rao Lower Bound for a Gas Source Localization Based on Poisson's Equation	Dmitriy Shutin; Victor Scott Prieto Ruiz; Thomas Wiedemann; Patrick Hinsén; Armin Dammann	IEEE	DOI
Conference paper	Gas Source Localization Using Physics-Guided Neural Networks	Victor Prieto Ruiz; Patrick Hinsén; Thomas Wiedemann; Dmitriy Shutin; Constantin Christof	IEEE	DOI





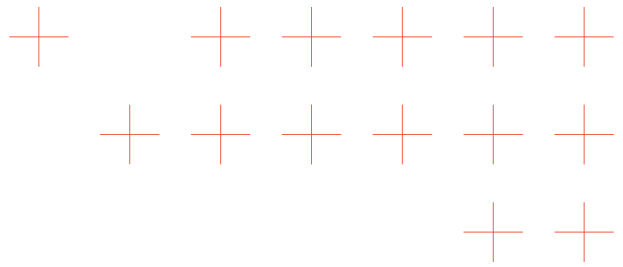
Conference paper	Comparison of Visual Place Recognition Methods for UAV Imagery	Siavrakas Michael; Vlachos Eugene; Pitas Ioannis	IEEE	DOI
Journal paper	Assessing the spatial accuracy of geocoding flood-related imagery using Vision Language Models	Sebastian Schmidt, Eleonor Díaz Fragachan, Dorian Arifi, David Hanny & Bernd Resch	Springer Nature	DOI
Journal paper	Enhancing satellite-based emergency mapping: Identifying wildfires through geo-social media analysis	Sebastian Schmidt, Monika Friedemann, David Hanny, Bernd Resch, Torsten Riedlinger, Martin Mühlbauer	Taylor & Francis	DOI
Journal paper	Legal and ethical considerations for demand-driven data collection and AI-based analysis in flood response - ScienceDirect	Carolin Gilga, Christoph Hochwarter, Luisa Knoche, Sebastian Schmidt, Gudrun Ringler, Marc Wieland, Bernd Resch, Ben Wagner	Science Direct	DOI
Other	EmoGRACE: Aspect-based emotion analysis for social media data	Christina Zorenböhmer, Sebastian Schmidt, Bernd Resch	arXiv (Cornell University)	ARK
Journal paper	Fusion of geospatial information from remote sensing and social media to prioritise rapid response actions in case of floods	Marc Wieland, Sebastian Schmidt, Bernd Resch, Andreas Abecker, Sandro Martinis	Springer Nature	DOI
Journal paper	Promoting learning in the rescue department: A community of practice perspective	Filip Sever	RELA	DOI
Other	Boosting digital governments with interoperability	Alessandro Paciaroni	JRC	DOI
Other	These Maps Are Made by Propagation: Adapting Deep Stereo Networks to Road Scenarios with Decisive Disparity Diffusion	Chuang-Wei Liu; Yikang Zhang; Qijun Chen; Ioannis Pitas; Rui Fan	ARK	DOI
Paper	Structured efficient self-attention showcased on detr-based detectors	Militsis, Nikolaos Marios; Mygdalis, Vasileios; Pitas, Ioannis	Zenodo	DOI





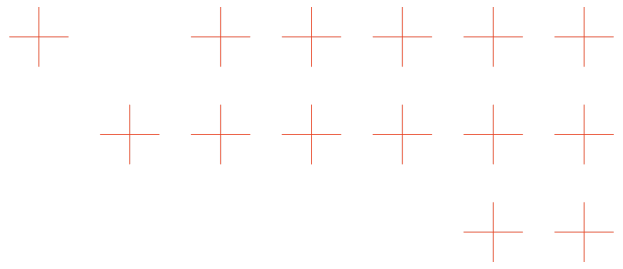
Other	Explainable AI for Time Series via Virtual Inspection Layers	Johanna Vielhaben, Sebastian Lapuschkin, Grégoire Montavon, Wojciech Samek	arXiv (Cornell University)	DOI
Conference paper	FedROS: The ROS Framework for Federated Learning on Mobile Edge Devices	Carnevale, Lorenzo; Gambito, Mark Adrian; Marino, Roberto; Saraniti, Davide; Catalfamo, Alessio; Villari, Massimo	Zenodo	Link
Conference paper	Forest Fire Image Classification Through Decentralized DNN Inference	Papaioannou, Dimitrios; Mygdalis, Vasileios; Pitas, Ioannis	IEEE	DOI
Conference paper	Trustworthy Majority Voting for Labeling and Analyzing Multi-Annotator Text Sentiment Datasets	Avgoustidis, Fotios; Bassia, Paraskevi; Pitas, Ioannis	Eusipco 2025	DOI
Journal paper (pre-print)	A Decentralized Sharding BFT Consensus Approach, for Efficient Decentralized DNN Inference Classification	Papaioannou, Dimitrios; Mygdalis, Vasileios; Pitas, Ioannis	Zenodo/ IEEE	DOI
Journal paper (preprint)	Extreme Weakly Supervised Binary Semantic Image Segmentation Via One-Pixel Supervision	Tzimas, Matthaios Dimitrios; Mygdalis, Vasileios; Papaioannidis, Christos; Pitas, Ioannis	SSRN	DOI
Conference paper	Real-Time Flood Water Segmentation with Deep Neural Networks	Gerontopoulos, Anastasios; Papaioannou, Dimitrios; Papaioannidis, Christos; Pitas, Ioannis	QUICK'25/ Zenodo	DOI
Conference paper (preprint)	Improve real-time flood segmentation by encoding and distilling foreground information	Mentesidis, Pantelis; Mygdalis, Vasileios; Pitas, Ioannis	IEEE ICIP 2025/ Zenodo	DOI
Conference paper (preprint)	Neural Architecture Search and Knowledge Distillation for Semantic Image Segmentation on Big Wildfire Datasets	Vlachos, Evgenios; Papaioannidis, Christos; Pitas, Ioannis	EUSIPCO 2025/ Zenodo	DOI
Conference paper (preprint)	Divide-and-summarize: enhancing deep neural video summarization	Charalampakis, Evangelos; Papaioannidis, Christos; Pitas, Ioannis	IEEE ICIP 2025/ Zenodo	DOI





Conference paper (preprint)	A Weighting Loss Approach for Transformer-Based Object Detection	Tzimas, Matthaios D.; Mygdalis, Vasileios; Pitas, Ioannis	IJCNN/ Zenodo	DOI
Journal article	Exploring The Role of Engagement in Learning Within a Rescue Department Community of Practice	Sever Filip	International Journal of management, knowledge and learning	DOI
Journal paper	Improving multilabel text emotion detection with emotion interrelation anchors	Giannouris, Polydoros; Mygdalis, Vasileios; Pitas, Ioannis	Science Direct	DOI
Journal paper	CCBIR: A Concept-Based System for Geospatial Image Retrieval	E. Vlachos and I. Pitas	Elsevier Information Sciences	DOI
Journal paper	Spatio-temporal invariant descriptors for skeleton-based human action recognition	K. Aouaidjia, Ch. Zhang and I.Pitas	Information Sciences	DOI
Journal paper	FCL-ViT: Task-Aware Attention Tuning for Continual Learning	A. Kaimakamidis and I.Pitas	Elsevier Pattern Recognition Letters	DOI
Journal paper	Generative representation learning in Recurrent Neural Networks for causal timeseries forecasting	G. Chatziparaskevas, I. Mademlis and I.Pitas	IEEE Transactions on Artificial Intelligence	DOI
Conference paper	UNREALFIRE: A synthetic dataset creation pipeline for annotated fire imagery in Unreal Engine	E. Spatharis, C. Papaioannidis, V. Mygdalis and I.Pitas	ICIP	Link (pending)
Conference paper	BLAZE: A dataset for wildfire and burnt area UAV image classification and segmentation	M. Siavrakas, C. Papaioannidis and I.Pitas	ICIP	Link (pending)
Conference paper	Forest Fire Segmentation Metrics and Algorithms	P.A. Dinopoulos, C. Papaioannidis, M. - D. Tzimas and I.Pitas	ICT-DM 2024	DOI
Conference paper (preprint)	Flooded house detection for natural disaster management	A. Pavlidis, C. Papaioannidis and I.Pitas	ICT-DM 2024	Link





Conference paper	Leveraging Collective Knowledge for Forest Fire Classification	A. Kaimakamidis and I.Pitas	IEEE ISCC	DOI
Conference paper	Soft ROI Pooling Distillation for Detection Transformers	NM Militsis, V. Mygdalis and I.Pitas	IEEE ICASSPW	Link
Conference paper	Private Distributed Resource Management Data: Predicting CPU Utilization with Bi-LSTM and Federated Learning	Lorenzo Carnevale, Daniel Balouek, Serena Sebbio, Manish Parashar e Massimo Villari	IEEE CCGrid 2025	DOI
Conference paper	Hierarchical Federated Learning for Natural Disaster Management	Mark Adrian Gambito, Lorenzo Carnevale, Mohammad Reza Jabbarpour, Bahman Javadi e Massimo Villari	IEEE/AMC 2024	DOI
Conference paper	Data Operational Driven AI-based Architecture for Natural Disaster Management	Sebbio, Serena, Carnevale, Lorenzo, Balouek-Thomert, Daniel, Galletta, Antonino, Parashar, Manish, Villari, Massimo	CCGrid 2024	DOI
Journal paper	DualXDA: Towards Sparse, Efficient and Explainable Data Attribution in Large AI Models	Galip Ümit Yolcu, Moritz Weckbecker, Thomas Wiegand, Wojciech Samek, Sebastian Lapuschkin	arXiv (Cornell University)	DOI

The TEMA consortium constantly submits papers to conferences and journals, to reach and exceed its KPI. At the moment, there are 5 journal papers and 3 conference papers under review.

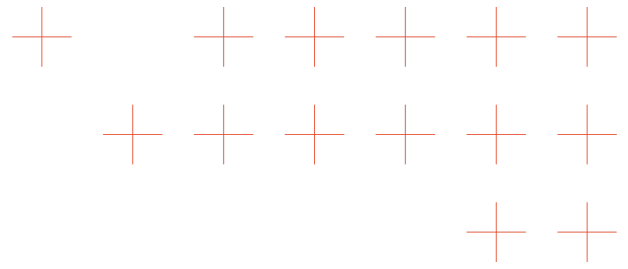
2.3.2. TEMA Special Issues

TEMA is planning on publishing three special journal issues in 2026. The project has a KPI of at least three, showing that the achievement is ensured.

1. “Advancing Visual Data Analytics for Disaster Management” at IMAGE AND VISION COMPUTING

From torrents of satellite imagery to drone video streams and citizen-generated footage, visual data now shapes how we forecast, respond to, and recover from catastrophes. This Special Issue of Image and Vision Computing journal seeks state-of-the-art research that converts these heterogeneous visual streams into trustworthy, real-time intelligence for natural- and human-made disaster management. We welcome breakthroughs in computer vision, machine learning, multimodal fusion, privacy-preserving analytics, explainability, high-performance/edge computing, and generative simulation. Join us in building a cross-disciplinary forum where novel





algorithms meet operational challenges, advancing resilience and saving lives through smarter visual data analytics.

With the increasing frequency and severity of natural and man-made disasters, effective disaster management is a global priority. Visual data from any source play a vital role in disaster preparedness, response, and recovery. Efficient and accurate analysis of this visual data is crucial for understanding disaster scale and impact, while having significant implications for broader challenges in visual data analytics.

This Special Issue on “Advancing Visual Data Analytics for Disaster Management” seeks to present cutting-edge methodologies, emerging applications, and core challenges in deriving actionable insights from visual data in disaster contexts. Emphasis is placed on advanced computer vision, machine learning, and data science methods for processing visual data streams in real-time or near-real-time, supporting disaster prediction, detection, monitoring, and assessment.

The Special Issue offers a forum for discussing challenges in visual data analytics with a primary focus on disaster management. Potential applications include, not exhaustively, flood monitoring, wildfire tracking, earthquake damage assessment, and urban disaster response. The aim is to foster collaboration across disciplines – computer vision, machine learning, data science – and identify future research directions.

Guest Editors:

1. Prof. Ioannis Pitas (Department of Informatics, Aristotle University of Thessaloniki, Greece)
2. Prof. Jose Ramiro Martinez de Dios (Robotics, Vision and Control Group, University of Seville, Spain)
3. Prof. Stefano Berretti (Media Integration and Communication Center, University of Florence, Italy)
4. Dr. Ioannis Mademlis (Department of Informatics, Aristotle University of Thessaloniki, Greece)

Visit the [Website](#):

<https://www.sciencedirect.com/special-issue/322678/advancing-visual-data-analytics-for-disaster-management>

2. *Emerging Technologies in Distributed Intelligence for Natural Disaster Management*

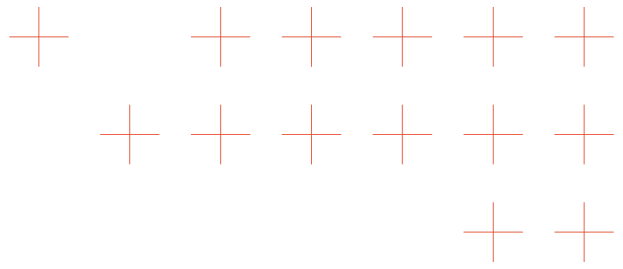
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Pending publication at ScienceDirect

Motivation and scope of the Issue: The increasing complexity and unpredictability of environmental phenomena and emergency situations demand advanced sensing, analysis, and response capabilities. Distributed intelligent systems --- networks of interconnected sensors, edge devices, and AI-powered analytics --- are transforming how we monitor natural and human-built environments and manage emergencies in real time. As climate change and urbanization intensify the frequency and impact of natural and human-induced hazards, there is a growing need for integrated, real-time sensing and decision-making frameworks for Natural Disaster Management (NDM). This special issue aims to explore the transformative role and to showcase cutting-edge research and innovative applications of distributed intelligent sensing and decision-making systems in environmental monitoring, disaster prediction and response, public safety, and critical infrastructure resilience. A particular emphasis is placed on cutting-edge developments in Distributed Artificial Intelligence, enabling decentralized and privacy-aware model training across sensor networks; Distributed Remote Sensing, integrating satellite, aerial, and in-situ data sources for real-time environmental monitoring; and Structural Monitoring systems, which ensure the safety and resilience of critical infrastructure through intelligent sensing and analytics.

We welcome contributions that present theoretical advances, system architectures, algorithmic innovations, and real-world applications that leverage distributed intelligence for resilience, sustainability, and safety in complex environments.

Contributions are invited on topics including, but not limited to:

- Real-time distributed sensing networks for environmental hazard detection (e.g., floods, wildfires, air and water quality)
- AI-driven distributed decision support for emergency response coordination
- Integration of IoT, edge computing, and 6G communications in emergency management systems
- Federated Learning for privacy-preserving data analysis and model training across distributed sensing nodes
- Distributed remote sensing architectures combining satellite, UAV (Unmanned Aerial Vehicles), mobile robots and ground sensor data for environmental awareness
- Structural Health Monitoring using intelligent sensor networks and AI for infrastructure resilience
- Case studies on distributed systems for urban resilience and smart city emergency preparedness
- Novel algorithms for anomaly detection, event prediction, and adaptive system reconfiguration in distributed sensing environments

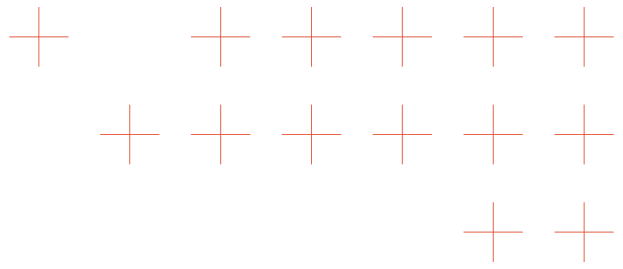
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- Ethical, privacy, and security considerations in distributed intelligent emergency systems

By bringing together interdisciplinary perspectives and state-of-the-art technologies, this issue seeks to advance the development of robust, scalable, and intelligent distributed systems that enhance situational awareness, enable timely interventions, and ultimately save lives and protect ecosystems.

GUEST EDITORS

- Roberto Marino, Ph.D. - University of Messina, roberto.marino@unime.it
- Lorenzo Carnevale, Ph.D. - University of Messina, lorenzo.carnevale@unime.it
- Daniel Balouek, Ph.D. - Inria, Nantes, daniel.balouek@inria.fr
- Manish Parashar, Ph.D. - University of Utah, manish.parashar@utah.edu
 - Submission portal opens: December 1st, 2025
 - Deadline for paper submission: February 27th, 2026
 - Latest acceptance deadline for all papers: May 31th, 2026

Visit the Official SI page:

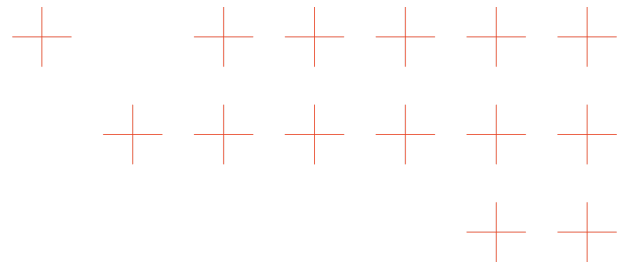
<https://www.sciencedirect.com/special-issue/327640/emerging-technologies-in-distributed-intelligence-for-natural-disaster-management>

3. Opportunities and Challenges in Explainable Artificial Intelligence (XAI)

Artificial intelligence has seen a shift in focus toward designing and deploying intelligent systems that are interpretable and explainable with the rise of a new field: explainable artificial intelligence (XAI). This has been echoed in the research literature and the press, attracting scholars worldwide and a lay audience. Initially devoted to the design of post hoc methods for explainability, essentially combining machine and deep learning models with explanations, it is now expanding its boundaries to ante hoc methods for producing self-interpretable models. Along with this, neuro-symbolic approaches for reasoning have been employed in conjunction with machine learning to improve modeling accuracy and precision by incorporating self-explainability and justifiability. Scholars have also shifted the focus onto the structure of explanations, since the ultimate users of interactive technologies are humans, linking artificial intelligence and computer sciences to psychology, human-computer interaction, philosophy, and sociology.

This multi- and interdisciplinary topic brings together academics and scholars from different disciplines, including computer science, psychology, philosophy, and social science, to mention a few, as well as industry practitioners interested in the technical, practical, social, and ethical





aspects of the explanation of the models emerging from the discipline of artificial intelligence (AI). In particular, XAI can help to solve some of the problems of AI, as highlighted in the Regulation of the European Parliament and The Council (AI ACT), laying down harmonized rules on artificial intelligence and amending certain union legislative acts.

Explainable artificial intelligence is certainly gaining momentum. Therefore, this Special Issue calls for contributions to this new fascinating area of research, seeking articles that are devoted to the theoretical foundation of XAI, its historical perspectives, and the design of explanations and interactive human-centered intelligent systems with knowledge representation principles and automated learning capabilities, not only for experts but for a lay audience as well. Invited topics include, but are not limited to, the following:

- Technical methods for XAI
- Ethical considerations for XAI
- Algorithmic transparency and actionability
- Social examinations of XAI
- Legal and administrative considerations within XAI
- Safety and security approaches for XAI
- Applications of XAI-based systems

Topic Editors

- Dr. Luca Longo
- Dr. Mario Brcic
- Dr. Sebastian Lapuschkin

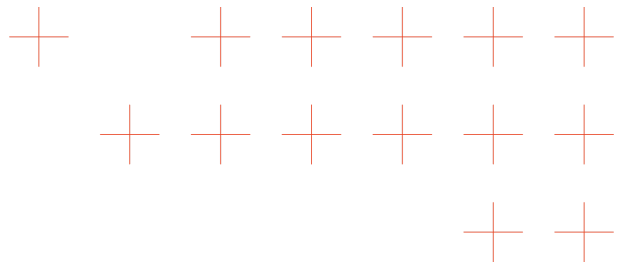
Visit the website: <https://www.mdpi.com/topics/TEYLN2388R>

2.4. Website, Social Media and Online Performance

2.4.1. TEMA Website

The TEMA official website (<https://tema-project.eu/>) was created early in the project as the central hub for dissemination and communication. It consolidates results, supports knowledge exchange, and shares experiences and best practices. Continuously updated, it provides current information, materials, and news on project outcomes. The site is constantly optimised as the project progresses. Serving as the most comprehensive information channel, it plays a key role in the





dissemination strategy and often acts as the destination for content shared across social media platforms.

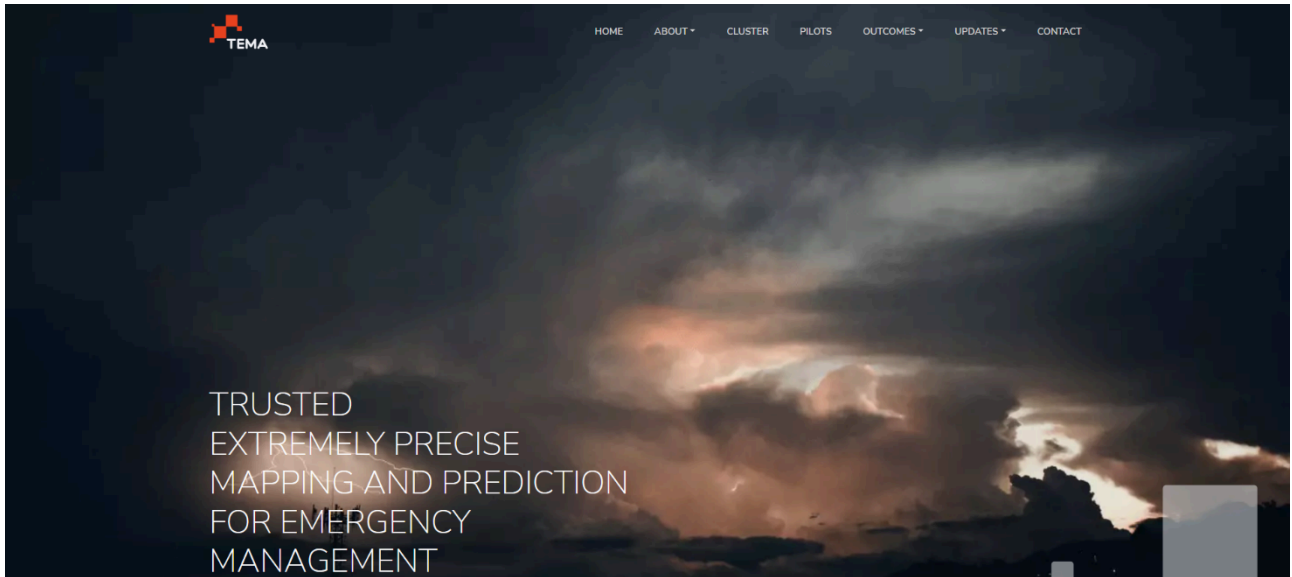


Figure 3 - TEMA Website Homepage

The performance of the website is constantly monitored to ensure the website remains relevant and the team has a clear view of its outreach. Through [Matomo](#), an open-source web analytics platform, compliant with GDPR requirements, the project maps the traffic and tracks the number of visitors, as well as other relevant metrics over the last year of the project. In the figures below, the results from this reporting period, from M19 to M36, are presented:



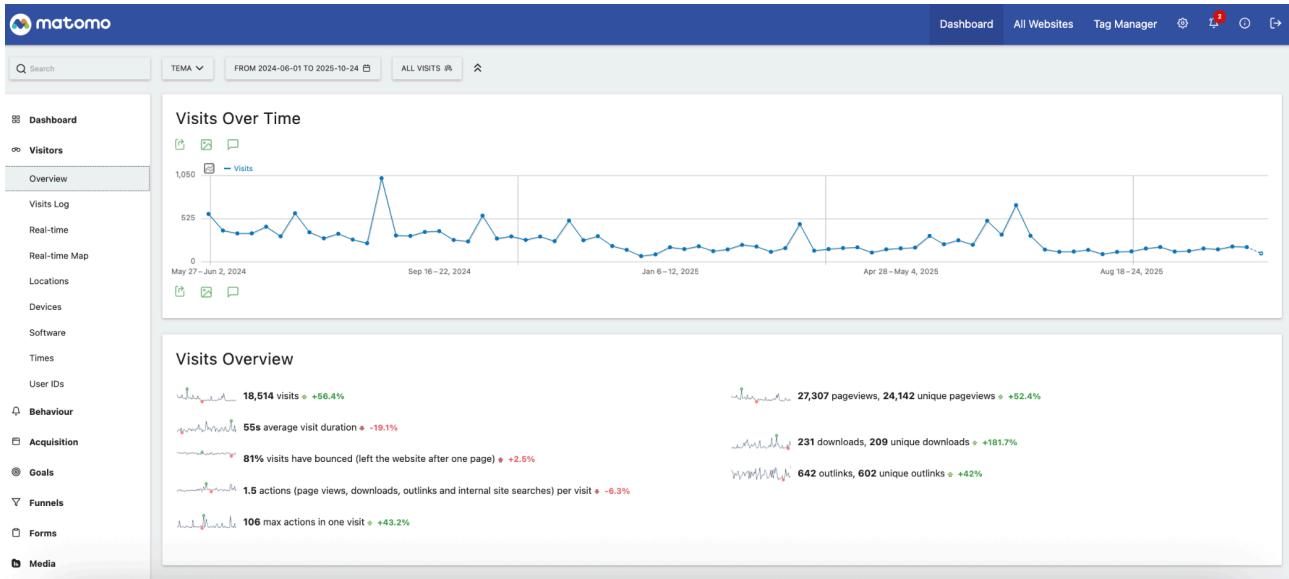
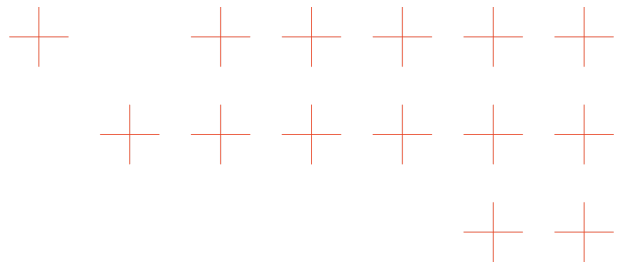


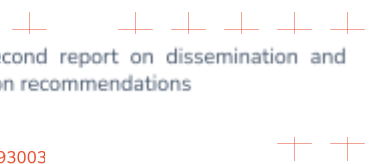
Figure 4 - TEMA website metrics

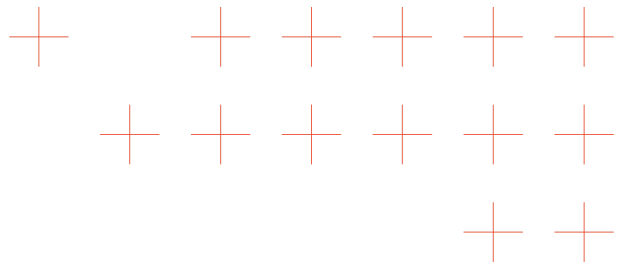
To obtain an overview of our users' behaviour, the first category is User Acquisition. Figure 2 presents the traffic and users' behaviour for the current reporting period. The following numbers are presented: 18514 visits, with more than 24000 unique page views, and an average duration of 1m, 1.5 action per visitor, and more than 300 downloads of the project material. Regarding the visits on the website, their rate presented stable, showing a steady interest in the TEMA project. In addition, the KPI of 15000 views has already been surpassed, indicating one more achieved KPI in the second year of the project.

2.4.2. Social media

TEMA maintains an active presence on LinkedIn, Mastodon, BlueSky, X, and YouTube, ensuring wide visibility and targeted outreach. As outlined in the dissemination and communication strategy, using multiple channels enables the project to reach diverse audiences, support scientific dissemination, and enhance overall impact. All profiles are consistently branded with the project logo and linked through the website footer, ensuring easy access and recognisability. Beyond sharing updates and project results, social media serves as a key reference point, promoting events, engaging with EU projects, policymakers, and stakeholders, and strengthening communication throughout the reporting period (M19–M36). In total, the social media accounts of TEMA have 645 followers, missing only 155 followers to achieve the KPI of 800 followers in total. The URLs of TEMA's social media accounts can be found below:

- LinkedIn: <https://www.linkedin.com/company/tema-project/>





- X: https://x.com/temaproject_eu
- Mastodon: https://mastodon.social/@temaproject_eu
- BlueSky: <https://bsky.app/profile/temaeu.bsky.social>
- YouTube: <https://www.youtube.com/@tema-project>

2.4.2.1. LinkedIn

LinkedIn is the most effective social network in terms of disseminating professional information. The TEMA page in LinkedIn is mainly used to connect with the scientific and technical community of the project, as well as the relevant industry partners. The news items on the website are replicated as posts and articles (depending on the content) on the LinkedIn page to attract more visitors to the website. The follower base on this channel currently stands at 482 people, of which 246 were gained during the last 18 months, from June 2024 until November 2025.

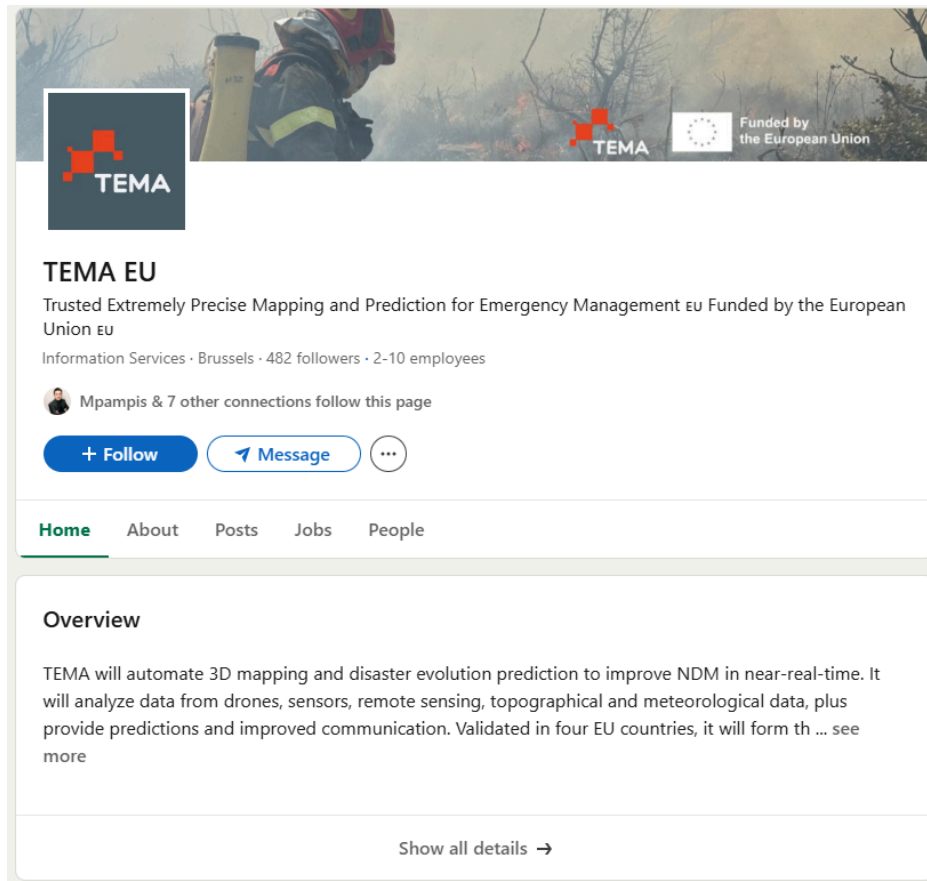
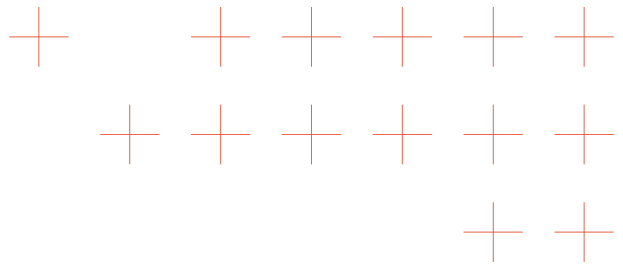


Figure 5 - TEMA account on LinkedIn





The traffic generated on this social network occurred mostly organically, with only one sponsored advertisement. During the last year, the page gained almost 25000 impressions (figure 4).

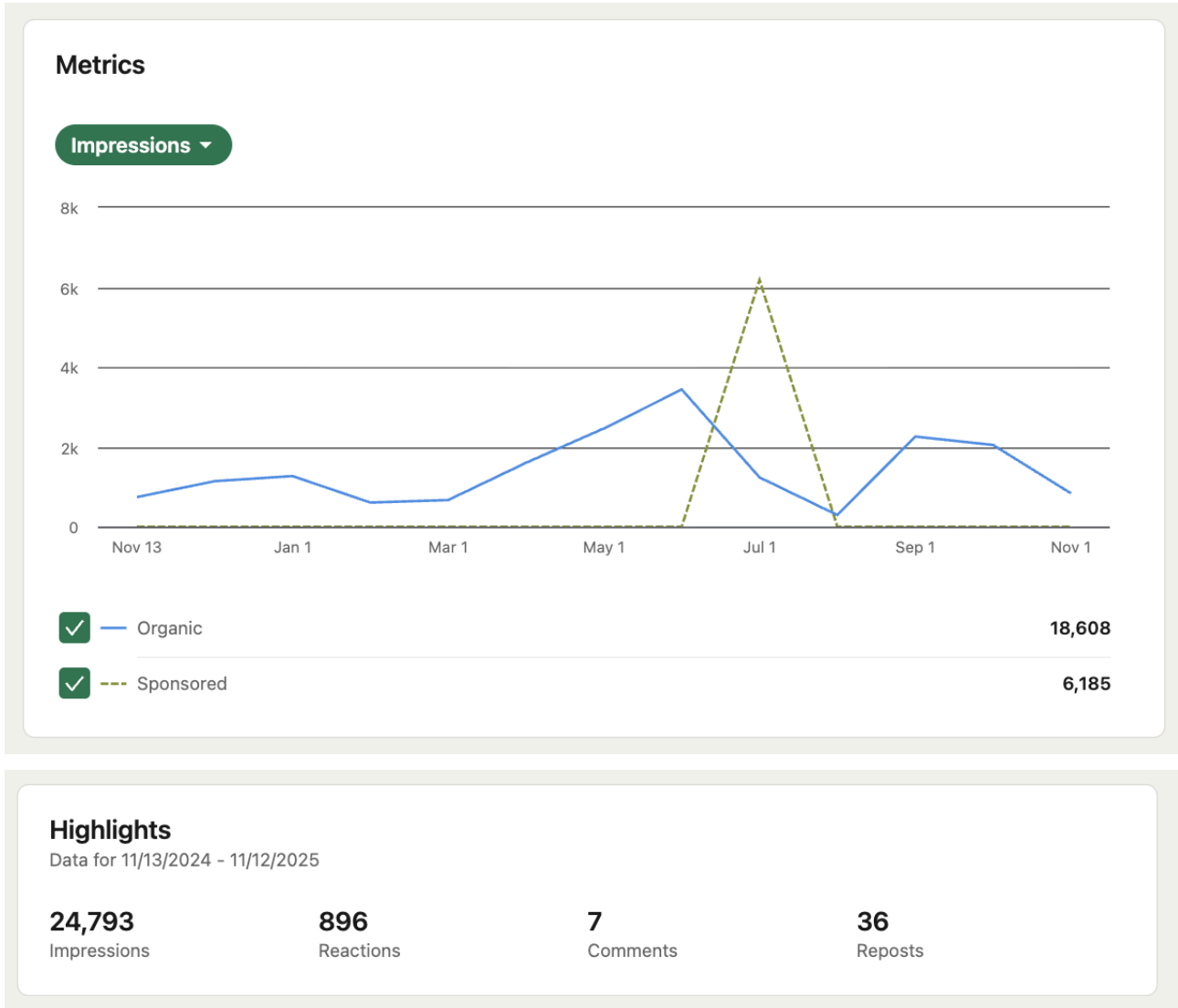
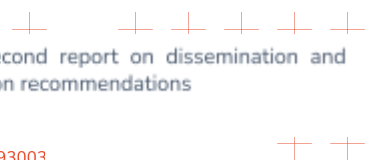
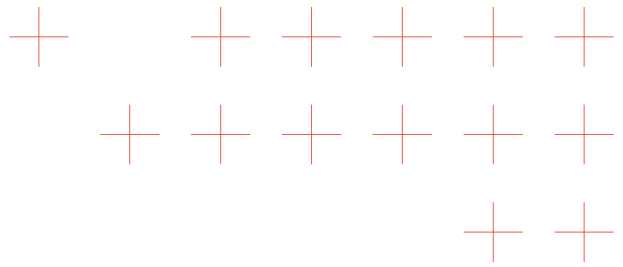


Figure 6 - Engagement rate

Target industries that showed an interest in the TEMA project during this period include research services and higher education, as well as IT services and consulting and software development. Overall, it's clear that the targeted industries are aligned with the target personas identified in the communication funnel and can comprise relevant stakeholders for the project.





Follower demographics

Industry ▾

Research Services · 52 (10.7%)

Higher Education · 47 (9.6%)

IT Services and IT Consulting · 36 (7.4%)

Software Development · 25 (5.1%)

Government Administration · 21 (4.3%)

Think Tanks · 17 (3.5%)

Technology, Information and Internet · 14 (2.9%)

Business Consulting and Services · 14 (2.9%)

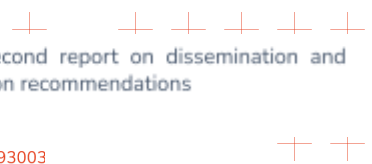
Environmental Services · 14 (2.9%)

Public Safety · 13 (2.7%)

Figure 7 - Industry overview of TEMA LinkedIn visitors

2.4.2.2. X

The project's X account has a total of 71 followers, marking a decrease from the 99 in the last period. This decrease reflects the fake accounts that X allows, which constantly follow and unfollow the page. Following the acquisition of Twitter by Elon Musk in 2022 and its rebranding to X in 2023, the platform has undergone significant structural and policy changes that have reduced its overall credibility, user engagement, and relevance for professional and scientific dissemination (Özturan et al., 2025). These external factors limit X's effectiveness as a communication channel. For this reason, close monitoring is required, but greater emphasis should be placed on other platforms—such as LinkedIn, Mastodon, BlueSky and YouTube—that currently provide more stable and impactful opportunities for outreach and engagement with TEMA's target audiences.



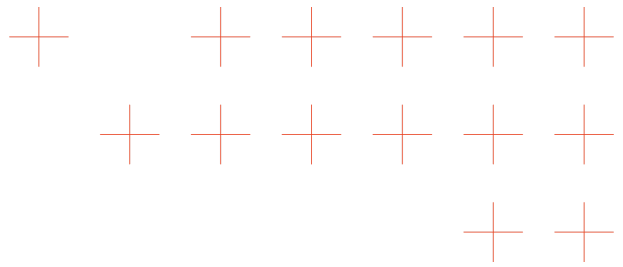
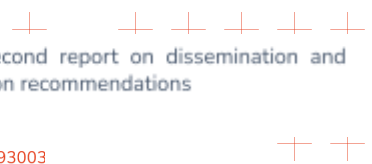


Figure 8 - TEMA Account on X

Unfortunately, it is impossible to obtain insight data and metrics from X, which, since Elon Musk's acquisition, has implemented API costs.

2.4.2.3. Mastodon

As a response to the continuous degradation of X, the communication management team searched for an alternative. This alternative was Mastodon, an open-source microblogging platform composed of multiple servers, or “instances,” each managed independently with its own moderation rules. Unlike mainstream platforms, it is decentralised, ad-free, and free of algorithms.



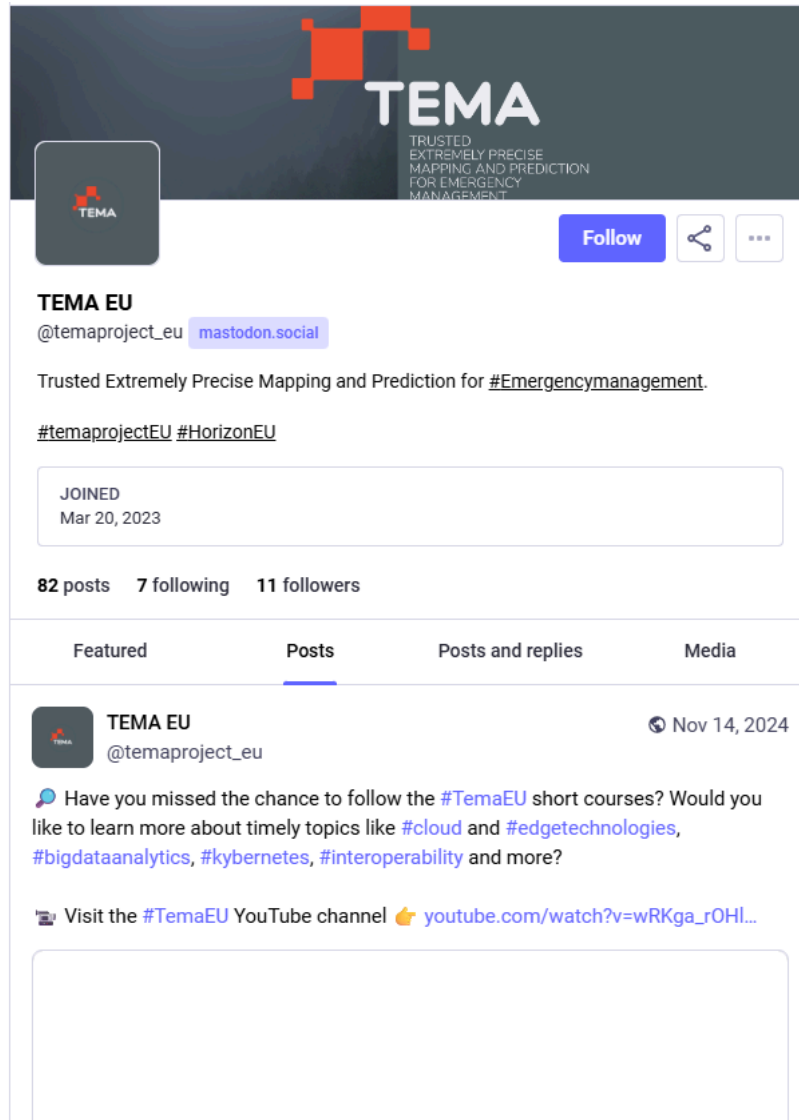
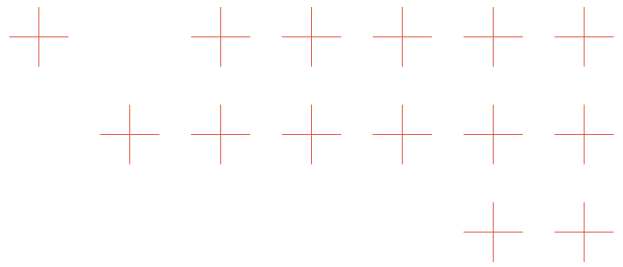


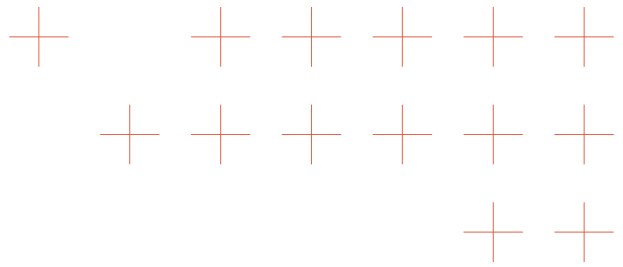
Figure 9 - TEMA Account on Mastodon

By M36, TEMA’s presence on Mastodon counted 82 posts and 11 followers. Even though the project put effort into incorporating this social media platform in its armoury, interaction didn’t grow, as Mastodont is still a niche social network. This regression of the platforms has allowed LinkedIn to become the main channel for disseminating the project.

2.4.2.4. BlueSky

In addition to Mastodon, the communication team tried one more new social media platform, BlueSky. The profile was created only recently so no traffic or metrics can be provided yet.





However, this is an exploratory move, to see if BlueSky has any potential as a communication tool for TEMA. It will be used until the end of the project.



Figure 10 - TEMA account on BlueSky

2.4.2.5. YouTube

During this reporting period, 34 new YouTube videos were published, focusing on the TEMA applications and the piloting activities. These videos serve as valuable resources for individuals interested in learning more about the project's goals, activities, and the technologies being developed. They offer a glimpse into the innovative solutions and research being conducted within the TEMA project, ultimately contributing to the advancement of emergency management policies. The promotion of the videos has been executed through the project's website and social media channels, offering seamless access directly from these platforms. The channel has a total of 41 subscribers, but the videos have 2646 views, showing the effectiveness of the material to reach its audience. The end goal, is to achieve 5000 views in total. To reach this KPI, further dissemination of the existing and new videos is planned, specially focusing on the academic content. The table below includes the links directing the reader to the videos.



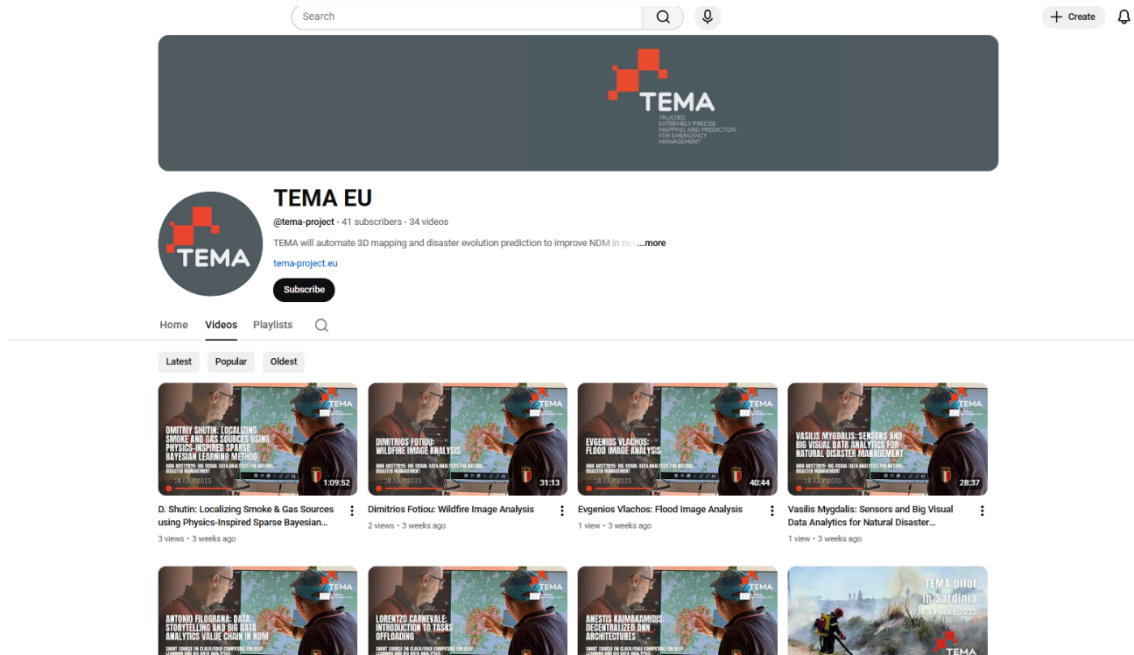
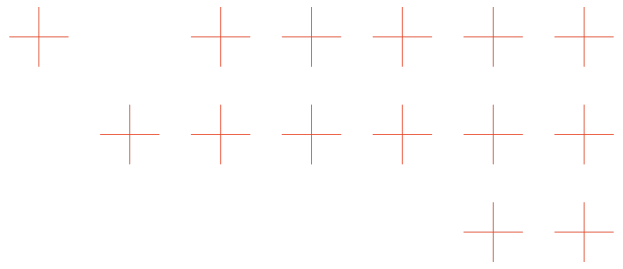
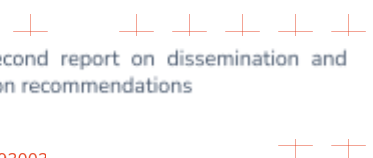
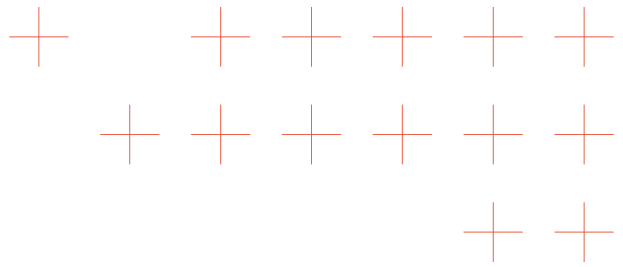


Figure 11 - TEMA YouTube channel

The list below contains the 31 videos that were published during this reporting period.

- [Ioannis Pitas: Sensors and Big Data Analytics for NDM](#)
- [Nikolaos Militsis: Drone imaging for NDMs](#)
- [Panagiotis Katsaros: Maestro: Forecasting and Risk Management in Forest Fires via IoT Technologies](#)
- [Jose Ramiro Martinez De Dios: Forest Fire Monitoring and Measuring with Multiple Cooperating Drones](#)
- [Giovanni Giacco: Deep Learning for Post Earthquake Safety Evaluation of Masonry Buildings](#)
- [Antonio Filograna: Data Storytelling and Big Data value chain in Natural Disaster Management](#)
- [Resch Bernd: Multimodal Analysis of Geo social Media Data for Improved Disaster Management](#)
- [K. Larnier, J. Coves, G. Stephan & L. Dumas: Flash flood modeling](#)
- [Lorenzo Carnevale: Introduction to Cloud/Edge computing](#)
- [Evangelos Spatharis: Simulation of forest fires and floods \(demo presentation\)](#)
- [Lorenzo Carnevale: Introduction to Containers with Docker](#)
- [Mirco Palese: Introduction to Apache Airflow Workflow Automation with DAGs and Tasks](#)



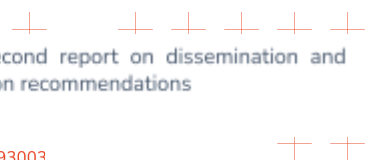


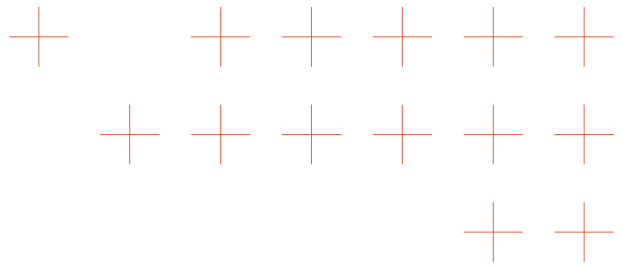
- [Antonio Filograna & Matteo Basile: Interoperability with JSON-LD & NGSI-LD via Orion Context Broker](#)
- [Lorenzo Carnevale: Introduction to Kubernetes](#)
- [Evangelos Spatharis: Simulation of forest fires and floods](#)
- [Ioannis Pitas: Sensing and Big Data Analytics for NDM](#)
- [Evgenios Vlachos: Flood region segmentation on drone images](#)
- [Francesca D'Agresti: Data Storytelling and Big Data value chain in Natural Disaster Management](#)
- [Vasileios Mygdalis: Privacy protection in Natural Disaster Management](#)
- [Resch Bernd: Multimodal Analysis of Geo-social Media Data for Improved Disaster Management](#)
- [Pauline Delporte: Improve flash flood modeling in urban areas](#)
- [Nikolaos Militsis: Drone imaging for NDM](#)
- [Matthaios Dimitrios Tzimas: Forest fire detection and fireburnt region segmentation on drone images](#)
- [Wildfire Simulation in Sardinia: TEMA Project in Action](#)
- [Anestis Kaimakamidis: Decentralized DNN Architectures](#)
- [Lorenzo Carnevale: Introduction to Tasks Offloading](#)
- [Antonio Filograna: Data Storytelling and Big Data Analytics Value Chain in NDM](#)
- [Vasilis Mygdalis: Sensors and Big Visual Data Analytics for Natural Disaster Management](#)
- [Evgenios Vlachos: Flood Image Analysis](#)
- [Dimitrios Fotiou: Wildfire Image Analysis](#)
- [D. Shutin: Localizing Smoke & Gas Sources using Physics-Inspired Sparse Bayesian Learning Method](#)

2.4.3. Academic content

Within the TEMA framework, four courses have been delivered (online and on-site), attracting a significant number of more than 1500 views on the TEMA YouTube channel and the [AIIA channel](#). During this reporting period, two new lectures were published. These courses are designed to equip professionals and researchers with the latest skills in big data analytics, cloud and edge computing, and artificial intelligence for natural disaster management. These on-demand playlists cover key concepts, tools, and real-world applications, recorded during live sessions with leading experts in the field. The content is available both on the TEMA website on the page "[Academic Contents](#)", as well as on the TEMA YouTube channel.

Particularly, during the AIDA AICET2025 Symposium and Summer School (14–18 July 2025, Thessaloniki, Greece), two short courses were delivered under TEMA, and TEMA also provided





technical sponsorship to the event. The [AIDA AICET2025](#) was a great success, attracting approximately 300 registrants (126 paying and the rest free ones). The AIDA AICET2025 was featured:

- 18 top-tier keynote and invited lectures,
- 32 excellent tutorials/short courses/special sessions covering the latest advances in AI and Machine Learning, with distinguished speakers from leading universities in the USA and Europe (many having 50K+ and several having more than 100K+ citations).

Course 1: “Big Visual Data Analytics for NDM” (delivered by AUTH and DLR and German Aerospace Centre, comprising four lectures):

- “Sensors and Big Visual Data Analytics for Natural Disaster Management (NDM)” by Dr. V. Mygdalis (AUTH).
- “Wildfire Image Analysis” by Mr. D. Fotiou (AUTH).
- “Flood Image Analysis” by Mr. E. Vlachos (AUTH).
- “Localizing Smoke and Gas Sources Using Physics-Inspired Sparse Bayesian Learning” by Dr. D. Shutin (DLR).

This tutorial on Big Data Analytics for Natural Disaster Management (NDM) provides a comprehensive overview and in-depth presentation of advanced technologies involved in the acquisition and analysis of Big Data for NDM. NDM can be greatly improved by developing automated means for precise semantic mapping and phenomenon evolution predictions in real-time. Several extreme data sources can significantly help towards achieving this goal: a) autonomous devices and smart sensors at the edge, equipped with AI-capabilities; b) satellite images; c) topographical data; d) official meteorological data, predictions or warnings published in the Web; and e) geosocial media data (including text, image and video). The course focus will be on drone image analysis for Natural Disaster Management.

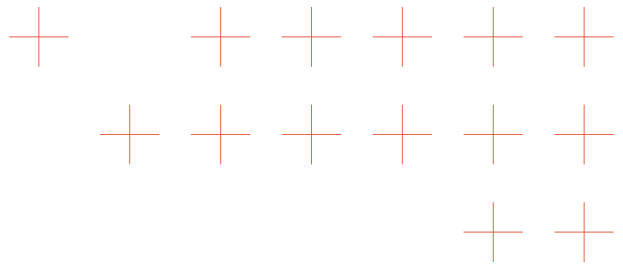
More details can be found on the course page:

<https://icarus.csd.auth.gr/big-visual-data-analytics-for-natural-disaster-management-2/>

Course 2: “Cloud/Edge Computing for Deep Learning and Big Data Analytics” (delivered by the University of Messina, comprising four lectures):

- “Cloud/Edge Computing for Deep Learning and Big Data Analytics” by Prof. M. Villari (UNIME)
- “Introduction to Tasks Offloading” by Prof. L. Carnevale (UNIME).
- “Data Storytelling and Big Data Analytics Value Chain in Natural Disaster Management” by A. Filograna (ENG).





- “Decentralized DNN Architectures” by Mr. A. Kaimakamidis (AUTH).

This short course on Cloud/Edge Computing for Deep Learning and Big Data Analytics provides a comprehensive overview and detailed presentation of advanced technologies utilized in distributed computational systems. Distributed computing plays a critical role in today’s data-driven landscape, enabling the processing of vast amounts of data efficiently and effectively across multiple nodes and locations. Through the distribution of computing tasks across systems, distributed computing amplifies scalability, reliability, and performance, proving indispensable for managing big data analytics, machine learning, and real-time processing tasks.

More details can be found on the course page:

<https://icarus.csd.auth.gr/short-course-on-cloud-edge-computing-for-deep-learning-and-big-data-analytics/>

Videos available at TEMA YouTube channel: <https://www.youtube.com/@tema-project>

Course 3: “Big Visual Data Analytics” delivered online by Aristotle University of Thessaloniki:

In December 2024, the course “Big Visual Data Analytics” delivered online by Aristotle University of Thessaloniki, attracted 55 participants. This short course on Big Data Analytics for Natural Disaster Management (NDM) provides a comprehensive overview and in-depth presentation of advanced technologies involved in the acquisition and analysis of Big Data for NDM. NDM can be greatly improved by developing automated means for precise semantic mapping and phenomenon evolution predictions in real-time. Several extreme data sources can significantly help towards achieving this goal: a) autonomous devices and smart sensors at the edge, equipped with AI-capabilities; b) satellite images; c) topographical data; d) official meteorological data, predictions or warnings published in the Web; and e) geosocial media data (including text, image and video). Such heterogeneous data sources provide a prime extreme data example: a) they are diverse; b) voluminous; c) fast and frequently updated; d) complex; e) multilingual; f) have very disperse sources (satellite, drone, sensors, social media, maps); and h) have extreme values.

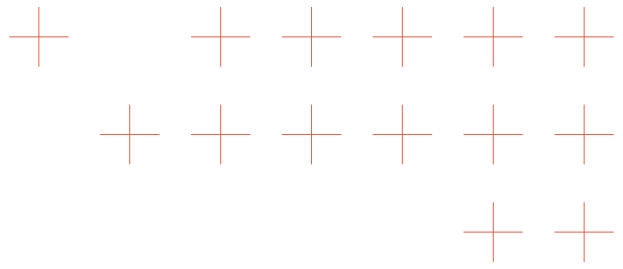
More details can be found on the course page:

<https://icarus.csd.auth.gr/short-course-on-big-data-analytics-for-natural-disaster-management/>

Videos available at TEMA YouTube channel: <https://www.youtube.com/@tema-project>

Course 4: “CVML Programming Short Course and Workshop on Deep Learning, Computer Vision and Big Data Analytics 2024” by the Aristotle University of Thessaloniki (AUTH).





In August 2024, the “CVML Programming Short Course and Workshop on Deep Learning, Computer Vision and Big Data Analytics 2024” was held at the premises of the Aristotle University of Thessaloniki (AUTH) in Thessaloniki, with 40 on-site participants.

This Summer School offered a three-day short course that delivered an in-depth exploration of programming tools and techniques for addressing a variety of computer vision and deep learning challenges. The course focused on the fundamentals of deep learning and its applications in Natural Disaster Management.

This course presented recent deep learning and computer vision advances as applied in Natural Disaster Management.

More details can be found on the course page:

<https://icarus.csd.auth.gr/cvml-programming-short-course-and-workshop-on-deep-learning-computer-vision-and-big-data-analytics-2024/>

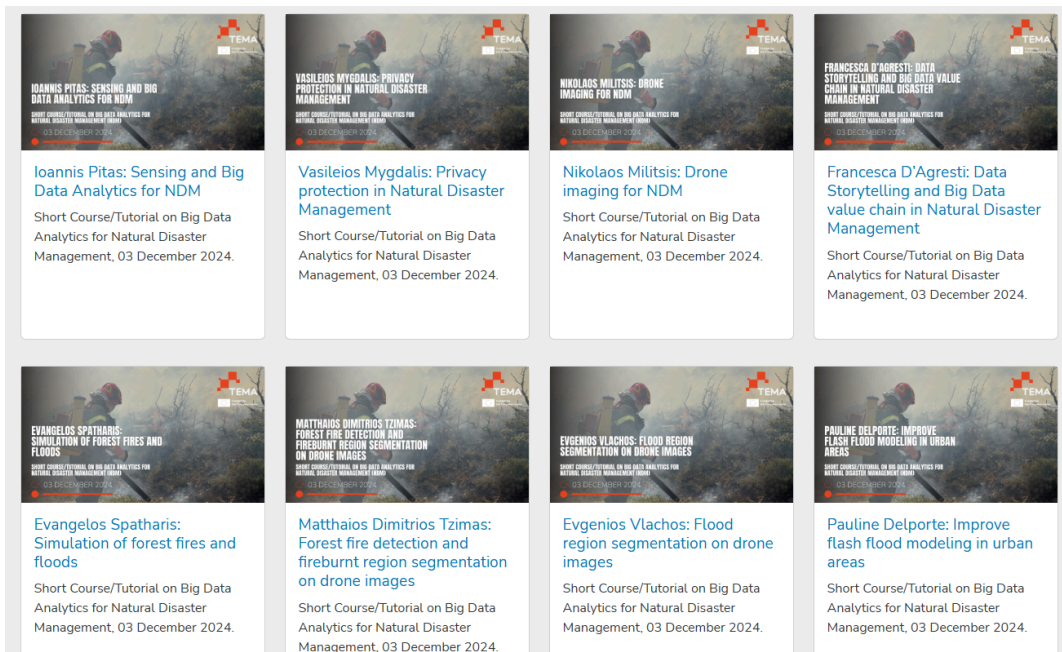
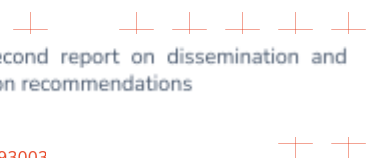
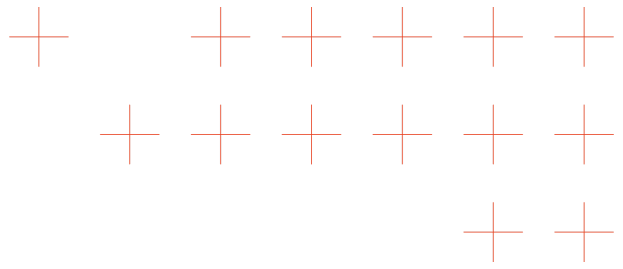


Figure 12 - TEMA academic lectures

2.4.4. Blog posts

On the project website, a dedicated section showcases a series of non-scientific blog posts authored by the TEMA consortium. These pieces aim to translate complex technical developments



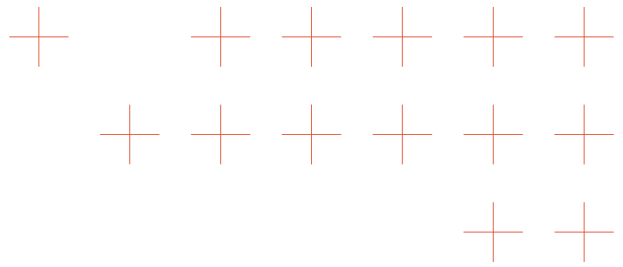


into accessible narratives, helping to communicate the project's progress, innovations, and real-world relevance to a broader audience. During this reporting period, 18 blog posts were published, reflecting the consortium's commitment to open communication and public engagement. This additional effort demonstrates TEMA's dedication to making its work understandable and valuable for diverse stakeholders, including researchers, practitioners, policymakers and the general public. The table below presents the articles released during this period.

Table 3 List of blog posts

Partner	Date	Title
DLR-DFD	Oct '24	Satellite-based Decision Support and Mapping of Floods in Central Europe in September 2024
TSYL	Nov '24	Fire behaviour modelling for operational decision-making
ATOS EVIDEN	Dec '24	Using Diffusion Models to Generate Datasets of Images Affected by Natural Disasters
NS	Feb '25	3D Water Tiles
KEMEA	Mar '25	The Importance of Natural Disaster Management Platforms for First Responders: Lessons from the EU TEMA Project
BRK	Mar '25	Drones in Search and Rescue Operations
TSYL	Apr '25	Technosylva: The Spanish Brain Fighting Wildfires in California
ENG	Oct '24	Adopting global standards for interoperable communication and coordination in NDM: Common Alert Protocol and NGS-LD
BRK	Jul '24	Coordination of Satellite Mapping in the Field During the Flood in South Germany in May and June 2024
PLUS	Dec '24	Drowning in the information flood: Identifying relevant social media posts for disaster management
LC	Dec '24	Ethics in Action: Building a Co-Design Framework for Responsible Disaster Response
FHHI	Feb '25	Reactive Model Correction: Mitigating Spurious Correlations in Natural Disaster Management
KAJ, KAMP	Feb '25	Evidence for policy and policy for evidence: European Union initiatives for national and European civil protection development
DLR	Apr '25	Multi-sensor Near-Realtime Burnt Area Monitoring of the devastating Palisades and Eaton Fires
LC	May '25	Towards a Resilient Europe: Implementing the EU Preparedness Union Strategy for Climate Disasters
FHHI	Jun '25	Concept Activation Vectors from a Statistical Learning Perspective





ATOS	Jun '25	Enhancing Disaster Image Datasets with Diffusion Models and Attention Maps
PLUS	Oct '25	Improving Disaster Management with Multimodal Information from Social Media
KEMEA	Nov '25	Transforming Natural Disaster Management with Big Data, AI, and Multi-Source Analysis

2.4.5. Newsletters

The Tema project, during its lifecycle, maintained a regular newsletter schedule, typically around one every six months, depending on project updates and needs. The newsletters were disseminated through Mailchimp, reaching a dedicated audience of 104 people. The subscribers were engaged through the online channels of TEMA, such as the website and social media. The subscription process includes a privacy policy, in accordance with GDPR.

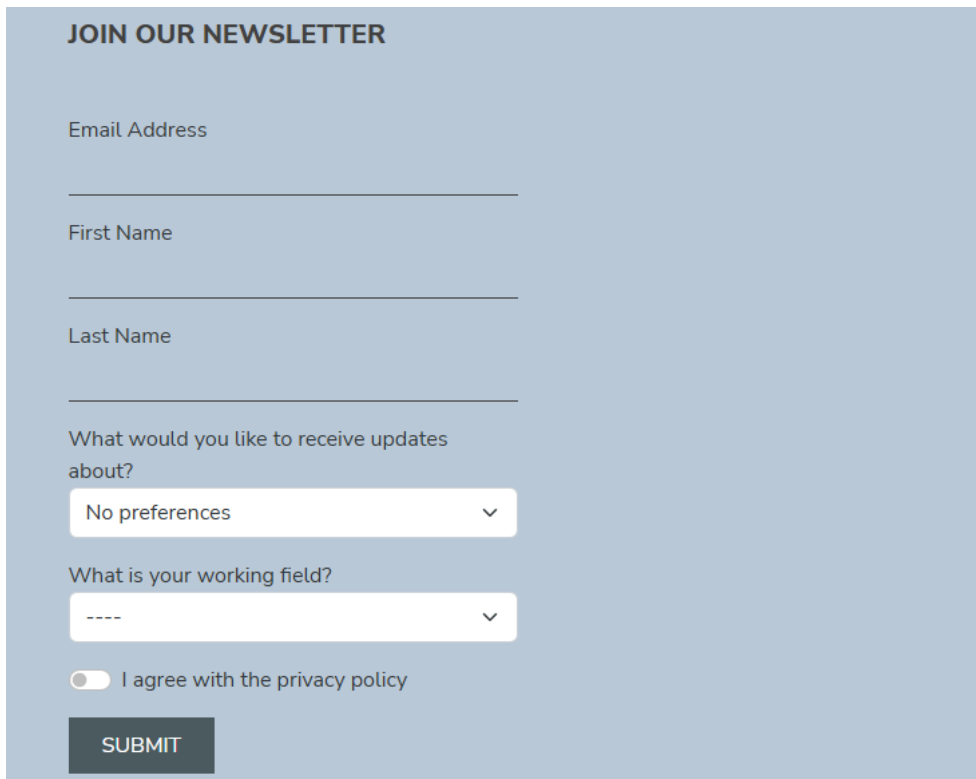
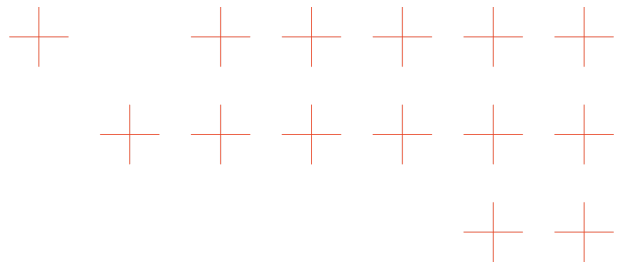


Figure 13 - Newsletter subscription form

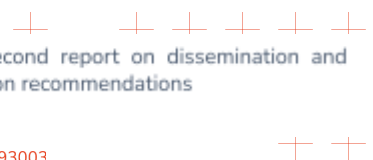
During this period, 3 newsletters were issued, with high engagement, since the newsletters, except for being sent through Mailchimp, are also published on the website as news items, and





announced on social media. The topics of these newsletters covered the presentation of the project overall, the pilots, and important technological advancements.

<p>Issue 2 December 2024</p>	<ul style="list-style-type: none"> ● A letter by the coordinator ● TEMA achievement in focus ● Pilot preparations at the two-year mark ● Project news ● Featured blog posts
<p>Issue 3 July 2025</p>	<ul style="list-style-type: none"> ● TEMA in Action: Testing Crisis Decision-Making in the Face of Climate-Driven Wildfires ● TEMA pilots in focus ● Second TEMA Pilot: Wildfire Field Trial in Sardinia ● Coming this Fall: Flood Pilots in Greece and Germany
<p>Issue 4 September 2025</p>	<ul style="list-style-type: none"> ● TEMA Insights – Research, Innovation and Impact ● TEMA achievement in focus ● Calls for papers ● Event Highlights ● Research Spotlights



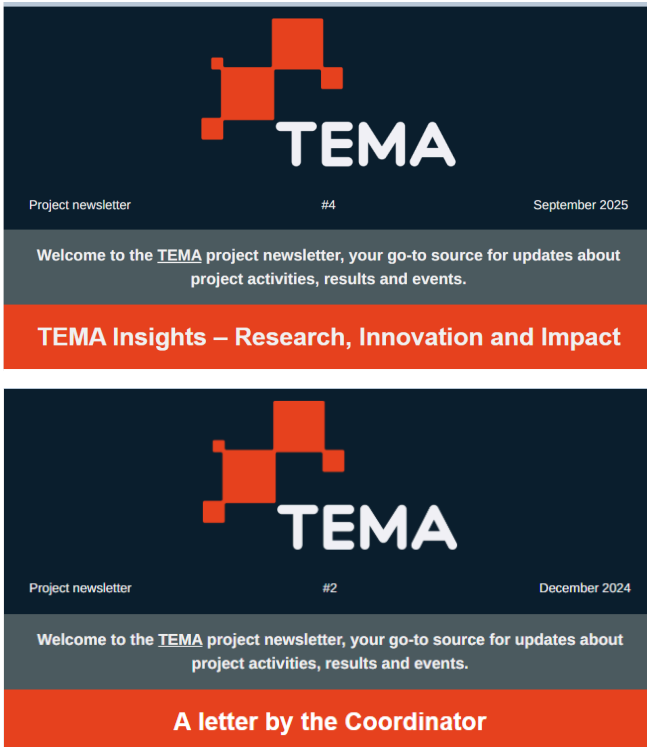
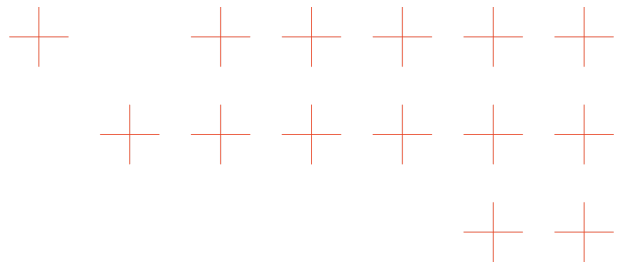


Figure 14 - TEMA newsletter

2.5. Partner Contributions and Multipliers

2.5.1. Partners' social media presence of TEMA

TEMA partners use their network and social media channels to facilitate the dissemination of the project and its activities. Partners reshare the communication material created by the communication team or produce their own, helping the project achieve prominent visibility. In total, the partners' online communication activities have generated an engagement of 12000 people. Below some examples can be found (this is an indicative, non-exhaustive list):

[TEMA's participation in the Nicosia Risk Forum](#)

LinkedIn post | DEC 24 | Publisher: KEMEA | Impressions: 1000

[Latitudo 40 Monthly Digest - December 2024](#)

Newsletter (LinkedIn) | JAN 25 | Publisher: Latitudo40 | Impressions: 988

[Paper "Enhancing satellite-based emergency mapping: Identifying wildfires through geo-social media analysis"](#)

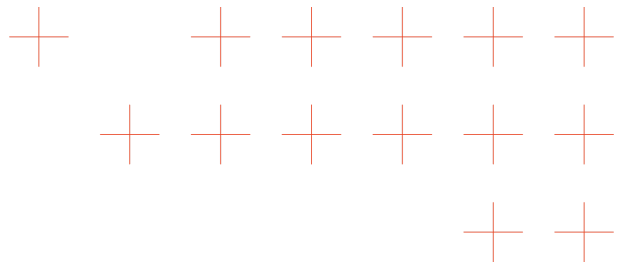
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Funded by
the European Union

Copyright © 2023 TEMA | DELIVERABLE 7.8 - Second report on dissemination and communication activities, clustering, and standardization recommendations





LinkedIn post | FEB 25 | Publisher: IT:U | Impressions: 984

[Study “Assessing the spatial accuracy of geocoding flood-related imagery using Vision Language Models”](#)

LinkedIn post | APR 25 | Publisher: IT:U | Impressions: 997

[Latitudo 40 Monthly Digest - March 2025](#)

Newsletter (LinkedIn) | APR 25 | Publisher: Latitudo40 | Impressions: 261

[Article on Multimodal GeoAI](#)

LinkedIn post | MAY 25 | Publisher: IT:U | Impressions: 965

[TEMA’s participation in the ITAMODEX2025](#)

LinkedIn post | MAY 25 | Publisher: RAS | Impressions: 74

[Joint paper of TEMA & AIFER projects](#)

LinkedIn post | JUN 25 | Publisher: IT:U | Impressions: 1568

[TEMA’s workshop during the AGIT conference](#)

LinkedIn post | JUL 25 | Publisher: IT:U | Impressions: 1672

[Social media study funded by TEMA & University of Salzburg](#)

LinkedIn post | JUL 25 | Publisher: IT:U | Impressions: 1029

[Paper on Aspect-based Emotion Analysis \(ABEA\)](#)

LinkedIn post | AUG 25 | Publisher: IT:U | Impressions: 775

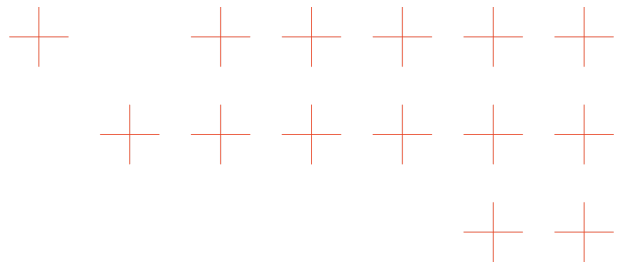
[Latitudo 40 Monthly Digest - October 2024](#)

Newsletter (LinkedIn) | NOV 25 | Publisher: Latitudo40 | Impressions: 635

2.5.2. 3rd party coverage of TEMA

Since its beginning, TEMA has promoted its coverage by media organisations throughout the European Union by sending out relevant press releases, with a focus on the countries where the pilots take place. The following is an indicative, not exhaustive list of articles and other media publications by third parties during M19-M36 of the project.





[Sfida di Engineering <<Digital e Tecnologia contro le Emergenze>>](#) (in Italian)
Newspaper Article | JUL 23 | Publisher: Il Mattino | Target audience: Citizens

[Kainuun pelastuslaitos isännöi kansainvälistä harjoitusta](#) (in Finnish)
News item | JUN 25 | Publisher: Kainuu Hyvinvointialue | Target audience: Citizens

[Maxi esercitazione antincendio a Santu Lussurgiu: in campo droni, sensori e tecnologie europee](#) (in Italian)
News item | JUN 25 | Publisher: Unione Sarda | Target audience: Citizens

[Droni e sensori contro gli incendi: maxi simulazione nel Montiferru](#) (in Italian)
News item | JUN 25 | Publisher: La Nuova Sardegna | Target audience: Citizens

[In Sardegna una maxi simulazione antincendio con tecnologie avanzate](#) (in Italian)
News item | JUN 25 | Publisher: Cagliari Today | Target audience: Citizens

[Πυρκαγιά στη Σαρδηνία: Η τεχνολογία στην πρόβλεψη φυσικών καταστροφών](#) (in Greek)
News item | JUN 25 | Publisher: politik.gr | Target audience: Citizens

[ΜΑΝΤΟΥΔΙ: Ημερίδα για την Τεχνητή Νοημοσύνη και την εφαρμογή της στη Διαχείριση των Φυσικών Καταστροφών](#) (in Greek)
News item | AUG 25 | Publisher: egnomi.gr | Target audience: Citizens

[1η Πιλοτική Δοκιμή του ερευνητικού έργου ΤΕΜΑ στην Ελλάδα- Δημαρχείο Μαντουδίου 9 και 10 Οκτωβρίου 2025](#) (in Greek)
News item | OCT 25 | Publisher: Mantoudi news | Target audience: Citizens

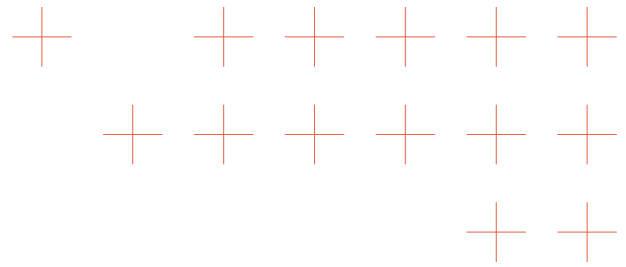
[Mappe e sensori per affrontare le emergenze](#) (in Italian)
News item | OCT 25 | Publisher: Repubblica Magazine | Target audience: Citizens, Research community

[Tecnologia e accademia: il tema trasversale che ha accompagnato UniMe al Sud Innovation Summit. Il plauso della rettrice Spatari](#) (in Italian)
News item | OCT 2025 | Publisher: Gazzetta del Sud | Target audience: Citizens, Research community

[Kreis Ahrweiler: KI-gestützte Plattform für Katastrophenmanagement getestet](#) (in German)
News item | NOV 2025 | Publisher: Blick Aktuell | Target audience: Citizens

[Plattform für Katastrophenmanagement im Ahrtal erfolgreich getestet](#) (in German)
News item | NOV 2025 | Publisher: Aktiplan Rhein-Ahr Anzeiger | Target audience: Citizens





[Innovative KI-gestützte Plattform für Katastrophenmanagement im Ahrtal erfolgreich getestet](#) (in German)

News item | NOV 2025 | Publisher: Kreis Ahrweiler | **Target audience:** Citizens

2.6. Clustering, synergies and collaboration initiatives

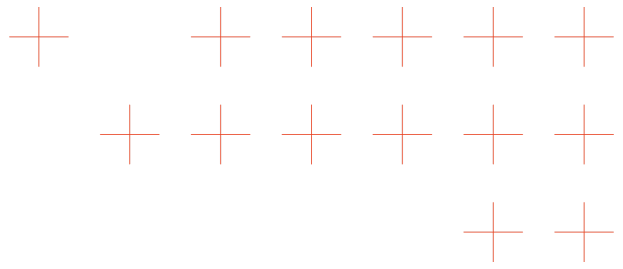
Clustering and standardisation activities are conducted under Task 7.4 – “Collaboration, Clustering Activities and Standardisation.” These efforts include a comprehensive stakeholder mapping exercise aimed at refining dissemination strategies and identifying key stakeholders for targeted engagement. Building on identified synergies with related initiatives, the task also focuses on fostering collaborative clustering and networking actions that enhance knowledge exchange and visibility. Furthermore, it involves engagement with relevant standardisation bodies to ensure that TEMA’s outcomes are fully aligned with recognised standards and best practices across the project’s thematic domains.

As mentioned in D7.7, TEMA has led the creation of the AI.BIG cluster, alongside sister projects CREDXDATA and ExtremeXP. The aim is to advance the boundaries of analytics, prediction, simulation, and visualization, in order to yield highly accurate, timely, and valuable results from data and knowledge. This is done to support decision-making, whether conducted by humans or automated systems, with the ultimate goal of saving lives or generating significant positive impact (economically, socially, environmentally) compared to traditional decision-making methods. These projects aim to revolutionize the way emergency situations are managed and equip authorities and relief organizations with advanced tools to tackle these crises effectively.

This Cluster of projects represents a groundbreaking endeavor to harness the power of AI and Big Data Analysis for emergency situations and extreme data management. Through early warning systems, damage assessment tools, social media analytics, resource management optimization, and predictive recovery planning, these projects strive to enhance preparedness, response, and recovery efforts, ultimately leading to more efficient and effective disaster management worldwide. Additional information can be found [here](#).

The TEMA consortium was committed to achieve at least 3 clustering activities throughout the project, which has been achieved and surpassed. During this period (M18-36), TEMA successfully





added one new project (Panteon) in the AI.BIG cluster, joined the Union Civil Protection Knowledge Network, participated in a joint activity in the context of the EBDVF conference, hosted workshops during the AIDA 2024 and 2025 conferences, ITA EU MODEX 2025 and NATO “BULGARIA 2025” exercises and hosted one synergy meeting.

[EBDVF 2024](#)

Event | OCT 2024

Description: TEMA and CREXDATA presented how extreme data can be harnessed to improve natural disaster management and critical action planning. Using the case studies of the two groundbreaking European projects, they showcased how advanced data analytics, real-time processing, and innovative technologies (in particular, AI-based services) can be leveraged to predict, manage, and mitigate the impact of risk events.

[Union Civil Protection Knowledge Network](#)

Synergy | JUN 2024

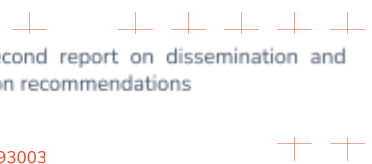
Description: TEMA was present with a booth in the 8th European Civil Protection Forum that took place in Brussels on 4-5 June 2024.

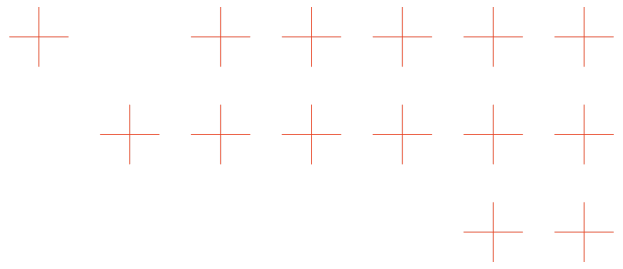
In addition, since November 2024, TEMA has been present with a [dedicated page](#) on the website of the Union Civil Protection Knowledge Network, expanding its community. Launched in December 2021, the Union Civil Protection Knowledge Network is one of the tools of the Union Civil Protection Mechanism and its community. It was set up to strengthen the efficiency and effectiveness of civil protection training and exercises, promote innovation and dialogue, and enhance cooperation between Member States’ national civil protection authorities. It's an **inclusive community** whose members can learn from each other, share their knowledge, and work together.

AIDA Symposium 2024 and 2025

Synergy | JUN 2024 & JUL 2025

Description: TEMA has supported the organisation of the “[AIDA Symposium: AI Education Beyond Borders](#)” and [AIDA Symposium and Summer School on 'AI/ML Cutting Edge Trends' \(AIDA AICET\)](#) that took place in Thessaloniki in June 2024 and July 2025 respectively. The two symposia consist of cutting-edge invited and/or open-call peerly reviewed lectures, regular/special sessions, courses and tutorials, all having tutorial/review value: a) invited lectures; b) regular open-call peerly reviewed lectures organized in regular sessions; c) special sessions





(invited and/or open-call reviewed ones); d) half-day tutorials (invited and open-call reviewed ones) and e) 1- or 2-day short courses (invited and open-call reviewed ones).

TEMA sponsored the event through the AI.BIG cluster and supported the organisation through participation of partners in multiple panels and short courses. In summer 2026, it is planned that TEMA will be present again in AIDA AICET2026.

[ITA EU MODEX 2025](#)

Collaboration | APR 2025

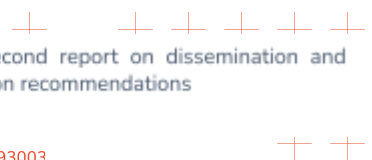
Description: From April 7-11, the ITA EU MODEX 2025 brought together Europe's elite civil protection firefighting teams in Sardinia for an EU-funded exercise that transformed the island's forests into a laboratory for tackling one of the continent's most pressing threats: catastrophic wildfires. During the exercise, TEMA was invited to present its smartdesk platform, providing a perfect opportunity for the project to showcase its innovative platform. The TEMA team (represented by RAS and ENG) took things a step further; rather than delivering a standard presentation, they transformed their session into an interactive workshop, inviting participants to provide feedback on the system in real time. This approach sparked dynamic conversations where technical specifications met boots-on-the-ground experience, yielding insights that no laboratory testing could replicate.

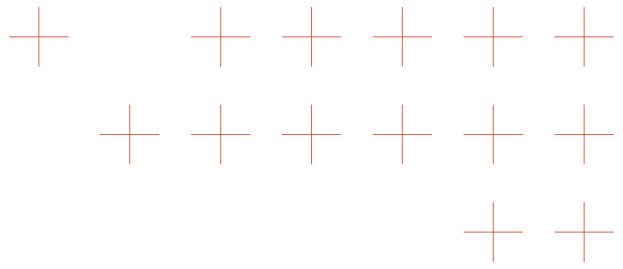
[NATO Emergency Management Exercise "BULGARIA 2025"](#)

Collaboration | SEP 2025

Description: TEMA EU project proudly participated in the 20th NATO Emergency Management Exercise "BULGARIA 2025", a milestone event marking the first NATO exercise to actively include research organizations. The NATO Emergency Management Exercise "BULGARIA 2025" was held in Montana, Bulgaria, from September 7–12, 2025, and was co-organized by NATO's Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and the Bulgarian Directorate General Fire Safety and Civil Protection. The exercise simulated a major earthquake followed by secondary emergencies, testing the disaster response capabilities of over 1,000 participants from 28 NATO Allies and 18 partner nations.

Under the TEMA project, KEMEA conducted observational research aimed at advancing Natural Disaster Management (NDM) through real-time semantic 3D mapping and AI-driven disaster prediction. The initiative focused on integrating diverse data sources including: UAV imagery, in-situ sensors, satellite data, and geosocial media, to improve situational awareness and decision making during complex emergency scenarios. During the exercise, the UAV team of KEMEA collected high resolution photos and videos across two simulated disaster events: an earthquake





response and a flood scenario. A Lessons Identified Conference will take place on 10 and 11 February 2026, where TEMA will be once again represented by KEMEA.

[Pantheon project](#)

Synergy | OCT 2025

Description: This October, TEMA welcomed a new project in the AI.BIG cluster. The Pantheon Project is a Community-Based Smart City Digital Twin Platform for Optimised DRM operations and Enhanced Community Disaster Resilience.

[AI.BIG Cluster November 2025 meeting](#)

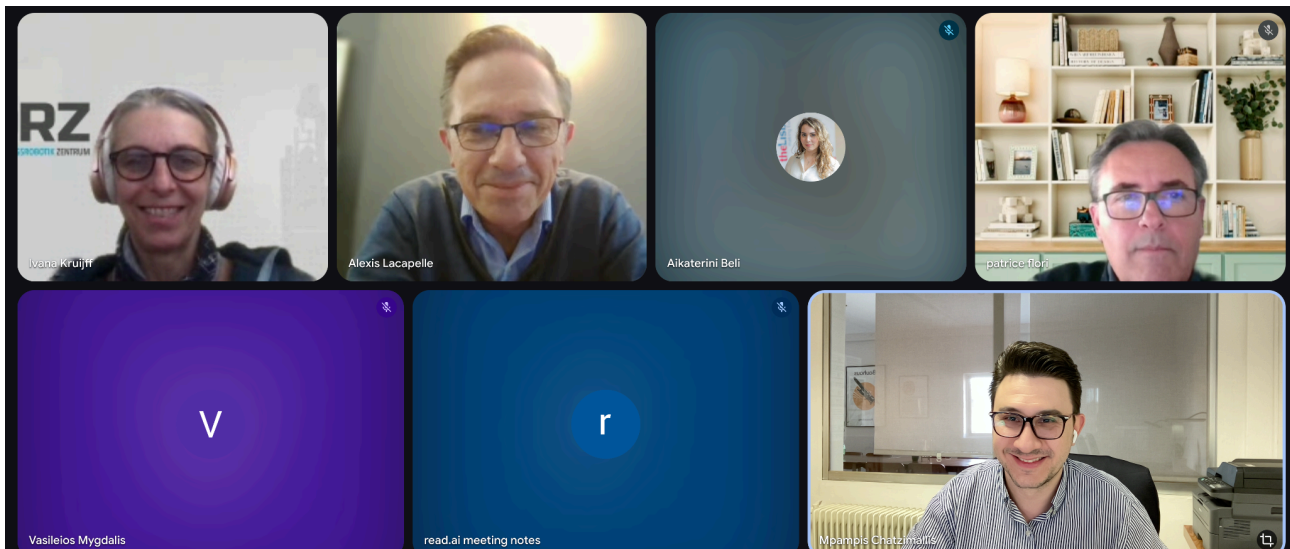
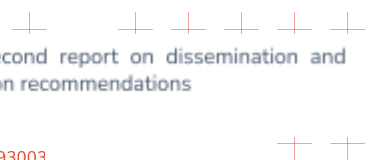
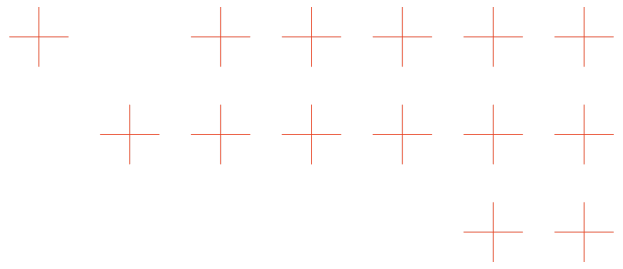


Figure 15 - AI.BIG cluster event

Event | NOV 2025

Description: On 07 November, a cluster coordination meeting was held between **TEMA**, **ExtremeXP**, **CREXDATA**, and **Pantheon** projects to explore opportunities for collaboration in the next months. The discussion focused on identifying and planning **joint dissemination activities and communication campaigns** to enhance collective outreach and visibility. Participants also exchanged views on the **exploitation potential** of their respective results, aiming to identify synergies and complementarities that could maximise impact. Additionally, the meeting addressed ways in which projects could be involved in the final events of the **partner projects approaching completion**. The overall goal is to expand the cluster by inviting more projects and initiatives in the area of emergency management.





3. Standardisation Activities

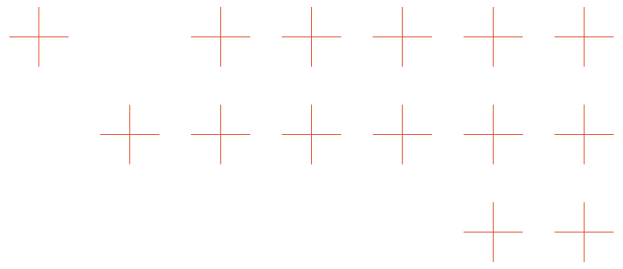
Since the first version of this deliverable, the TEMA project has progressed from a largely conceptual view of standardisation towards a more concrete and operational approach. The work has evolved from mapping relevant standards and communities to planning and initiating specific actions around data model validation, interoperability assessment and preparation of contributions to standardisation bodies. In this phase, standardisation activities are organised around two main pillars. The first pillar concerns the formalisation and potential standardisation of the Trial Action Plan (TAP) template and the associated trial evaluation procedure, which together capture how TEMA plans, conducts and assesses its trials. The second pillar focuses on the way that TEMA input and output data used for Natural Disaster Management (NDM) are structured, made interoperable and organised within the TEMA platform, so that they can be easily reused by other NDM systems and authorities. In parallel, partners have intensified the mapping and engagement with relevant standardisation and regulatory communities at European and international level, with the objective of positioning TEMA as both a user and a contributor in the evolving NDM standards landscape.

3.1. Updated Standardisation Strategy

The updated standardisation strategy remains guided by the overarching objectives of interoperability, data harmonisation and compliance with international, European and domain-specific frameworks, but it is now articulated more clearly around the two pillars mentioned above. On the procedural side, the strategy aims to consolidate the TAP template developed within TEMA and the trial questionnaire evaluation guidelines into a coherent and reusable procedure. The TAP template already defines the main elements of TEMA trials, such as objectives, participating actors, timelines, communication flows, data collection requirements and success criteria. The evaluation guidelines developed by KEMEA complement this by specifying how evidence is collected during and after the trial, how indicators are calculated and how lessons learned are documented. Together, these two artefacts form a complete Trial Action Planning and Evaluation Procedure that can be described and packaged in a way that is compatible with CEN practice, with a view to a possible CEN Workshop Agreement (CWA) under the appropriate committee.

On the data side, the strategy focuses on the definition and refinement of a TEMA NDM Input Data Schema that organises the heterogeneous data used by the platform. This schema covers drone imagery, satellite products, meteorological data, sensor measurements, social media and





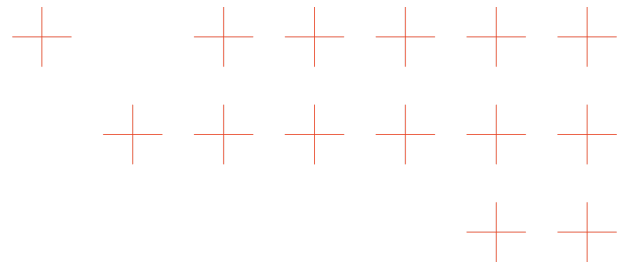
other geosocial content, public alerts, digital terrain models and static and dynamic geospatial layers. The intention is to align this schema with existing standards from OGC, ISO/TC 211, INSPIRE, W3C, OASIS, ETSI and other identified in D7.7, so that the way data can be encoded, described and accessed within TEMA follows widely accepted patterns. At the same time, the project seeks to identify specific aspects where TEMA's experience with multi-source data fusion, semantic 3D mapping, real-time analytics and AI-readiness could potentially lead to concrete proposals for extensions or refinements of existing standards in the future.

3.2. Methodology for Mapping Standardisation Communities and Engagement

To support both the procedural and data-related standardisation work, the consortium has adopted a structured methodology for mapping standardisation communities and planning engagement. The first step is to clarify, for each potential contribution, what exactly is being standardised and who the target users are. For the TAP and evaluation procedure, the main audience consists of civil protection agencies, operators of essential services and other NDM authorities that conduct field or table-top trials. For the NDM Data Schema and related interoperability mechanisms, the audience includes platform providers, geospatial data managers and technical teams in public administrations.

Based on this scoping, partners perform a desk mapping of relevant standardisation bodies and communities, including CEN and CENELEC (in particular CEN/TC 391 on societal and citizen security and CEN/CENELEC JTC 21 on AI), ETSI technical committees and oneM2M initiatives for IoT and emergency communications, OGC and ISO/TC 211 for geospatial data, W3C for web and linked data technologies, OASIS for emergency data exchange formats such as CAP and EDXL, as well as policy-oriented communities such as INSPIRE, UNDRR/DRR data groups and emerging data-space initiatives like GAIA-X and BDVA/DAIRO. Lisbon Council, together with AUTH, KEMEA, ENG and other partners, then carries out an internal prioritisation exercise to decide where TEMA has sufficient maturity, novelty and resources to make a meaningful contribution within and after the project timeframe. For each priority community, specific engagement actions are planned, ranging from participation in workshops and working groups to the preparation of position papers, use case descriptions or even a formal CEN/CWA proposal. This process is iterative: as trial results and data models evolve, the mapping and engagement plan are refined accordingly.





3.3. Progress in Data Model and Interoperability Standardisation

During this reporting period, the project has advanced significantly in making the TEMA data layer more coherent, interoperable and suitable for reuse. Work on the NDM Data Schema has begun to translate conceptual mappings into concrete structures and encodings. A first line of work focuses on metadata harmonisation, ensuring that all major TEMA datasets and streams are accompanied by consistent descriptions of origin, spatial and temporal coverage, quality, uncertainty and access conditions.

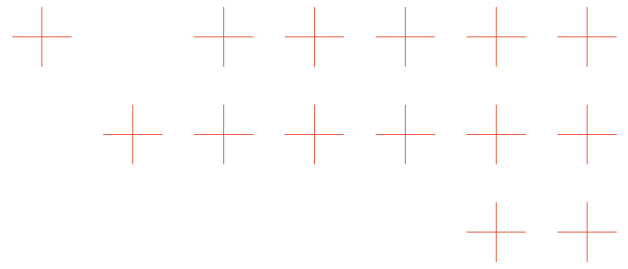
A second line of work addresses schema validation and encodings. The project is testing the representation of geospatial layers in encodings such as GeoJSON, GML and TIFF/COG, and is reviewing the use of appropriate formats and APIs for sensor streams, alerts and social-media-derived information. This validation aims to provide all the necessary support so that data produced or consumed by TEMA can be imported, visualised and processed by third-party tools that already support these standards, including systems used by national and European emergency management agencies.

A third line of work is an AI-readiness review of the data models. Here, partners investigate whether the current schema captures the features needed for training and deploying AI models in an ethical and privacy-preserving way, for example by including attributes related to data provenance, consent and anonymisation, as well as indicators that can later support explainability and uncertainty estimation.

3.4. Advancements in Operational Standardisation: TAP and Standard Operating Procedures

On the operational side, TEMA has expanded earlier work on guidelines for drone-based data collection into a broader Standard Operating Procedure framework for NDM trials, placing the Trial Action Plan template at its core. The TAP template is now treated as the central artefact that orchestrates how a trial is prepared, conducted and closed, describing the scenario, objectives, participating organisations, communication channels, technical systems to be deployed and data to be captured. Around this template, the consortium is integrating the trial evaluation guidelines developed by project partners, which include the design of questionnaires, procedures for observing and recording behaviour in the field, techniques for processing logs and other evidence, and methods for calculating performance indicators and summarising lessons learned.





By merging these elements into a coherent process description, TEMA is building a Trial Action Planning and Evaluation Procedure that can be documented in a way that is compatible with CEN Workshop practices, including clear scope, definitions, roles, inputs and outputs. The Standard Operating Procedures framework also explicitly addresses privacy, data protection and safety considerations, including compliance with EU drone regulations and national civil protection rules, as well as requirements related to geospatial accuracy and secure data handling. The ultimate goal is to position this procedure as TEMA's primary contribution to operational standardisation in NDM, with the ambition of submitting it as the basis for a CEN Workshop Agreement that could be used by other projects, authorities and operators of essential services.

3.5. Next Steps

In the next reporting period, TEMA will concentrate on consolidating and operationalising the advances described above. On the procedural side, the immediate priorities are to finalise the TAP-based SOP and evaluation procedure, to complete a systematic cross-check against existing CEN and ISO standards to avoid duplication and to define more precisely how this procedure could be framed within a CEN Workshop Agreement. This will also involve identifying and formally engaging a national standardisation body that can act as secretary and host for the CEN Workshop.

On the data side, the project will work towards stabilising the NDM Data Schema, completing interoperability testing against selected specifications (ex. (ISO, IEC), European (CEN, ETSI), and advancing the design of the TEMA approach. These activities will be accompanied by a refinement of the mapping of standardisation communities and by an internal decision on the primary targets for TAP-related and data-related contributions.

In support of both pillars, partners are in the process of preparing a TEMA White Paper on data models, interoperability and standardisation, summarising the technical approach and the proposed contributions, and to organise at least one joint standardisation-oriented event with other EU-funded projects and relevant standardisation bodies that will take place by the end of the project.. Through this combination of technical refinement, procedural consolidation and targeted engagement, TEMA aims not only to ensure that its own components are interoperable, well organised and compliant, but also to contribute tangibly to the evolution of European and international standards in Natural Disaster Management, helping to build a more unified, ethical and data-driven response ecosystem.



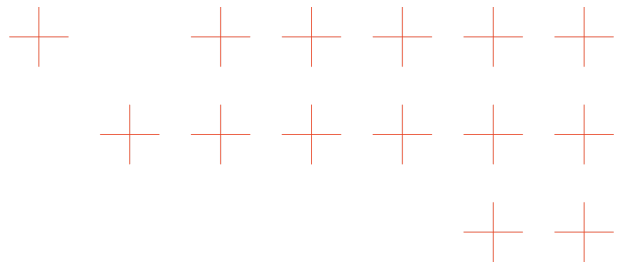
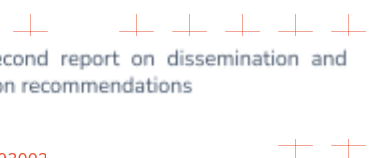
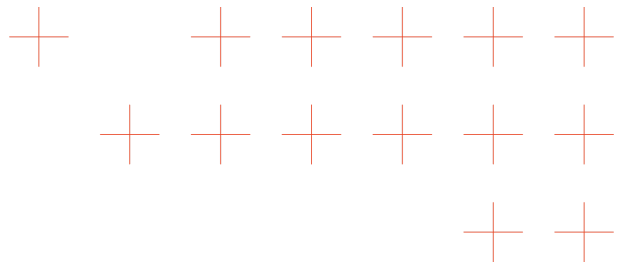


Table 4 List of Community / SDO / WG

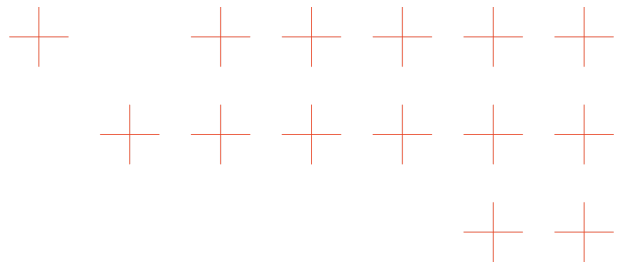
#	Community / SDO / WG	Level / Type	Why relevant for TEMA (trials, risk, resilience, data)
1	CEN/TC 391 – Societal and Citizen Security	European technical committee (CEN)	Umbrella committee for standards on crisis management, civil protection, societal security. Natural “home” for a TEMA TAP & trial methodology CEN Workshop Agreement.
2	CEN/TC 391/WG 3 – Crisis management / civil protection	Working Group (CEN/TC 391)	Focus on crisis management and civil protection procedures; directly relevant for trial design, SOPs, resilience and links to the CER Directive . CEN/TS 17091 and related guidance live here.
3	CEN/TS 17091:2018 – Crisis management – Guidance for developing a strategic capability	European Technical Specification (output of CEN/TC 391)	Not a “community”, but a key reference document . We can align the TEMA TAP + evaluation procedure with its concepts on crisis management capability, and cite it as a baseline.
4	CEN/CENELEC Sector Forum Security	Cross-sector forum (CEN-CENELEC)	Horizontal forum on security and resilience across sectors (including critical entities). Useful to position TEMA trials, CER-related work and resilience use cases and to connect to security-oriented stakeholders.
5	ISO/TC 292 – Security and resilience	International technical committee (ISO)	Global committee for security & resilience standards. Responsible for ISO 22361:2022 – Crisis management — Guidelines , which fits very well with TEMA’s crisis management and resilience angle.
8	CEN/CENELEC JTC 21 – Artificial Intelligence	European joint technical committee	Relevant for trustworthy AI aspects of TEMA (risk management, transparency, evaluation of AI components in NDM).





9	ETSI (incl. EMTEL & oneM2M-related work)	European / global SDO	ETSI EMTEL and related activities handle emergency telecommunications ; oneM2M and IoT work are relevant for sensor data, alerts and public warning systems .
10	OGC – Open Geospatial Consortium	Global geospatial SDO	Standards for maps, geospatial data and sensors . Essential for TEMA data interoperability: CityGML, SensorThings, GeoTIFF/COG, GeoPose etc.
11	INSPIRE / EU spatial data community	EU policy & technical community	Harmonised spatial data for public authorities. Important for ensuring TEMA geospatial outputs (hazard maps, assets, trials) can plug into national SDIs and cross-border systems.
12	W3C – Web & Immersive Web (WebXR)	Web standards body	Relevant for web-based visualisation, data APIs, XR interfaces used by TEMA.
13	OASIS Emergency Management TC (CAP / EDXL)	Global consortium	Standards for alerts and emergency data exchange (CAP, EDXL). Directly relevant for how we structure public alerts and situation reports.
15	AIOTI – Alliance for IoT Innovation	EU industry alliance	IoT, edge computing, digital twins – relevant for data ingestion and resilience of IoT-based NDM solutions .
16	BDVA / DAIRO	EU association / PPP	Big data, AI and data spaces. Relevant for data governance, analytics and future disaster data spaces .
17	GAIA-X & related data space communities	EU federated data infrastructure	Principles for sovereign, interoperable data sharing , relevant to cross-border NDM data exchange and CER-related information flows.
18	HOT / OpenStreetMap & Missing Maps	Open volunteer communities	Practical, bottom-up risk and exposure mapping ; useful for basemaps and community mapping around TEMA pilots.





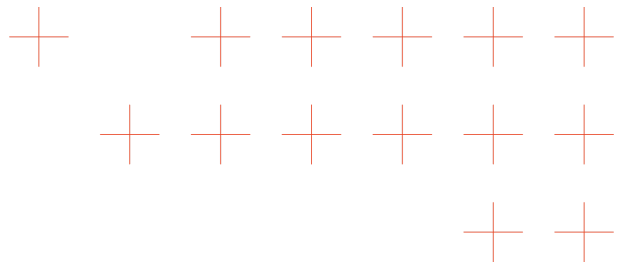
4. Key Performance Indicators and Results

To monitor and ensure the accomplishment of such objectives, the project continues to follow the Key Performance Indicators (KPIs), as set in D7.7. They are organised according to specific targets in the table below. Even though the project still has one more year to run, some of the KPIs have already been achieved, and exceeded, showing the efforts of the TEMA consortium to disseminate the valuable knowledge they are producing.

Table 5 KPIs - 2nd reporting period

Measure	Indicator	Target	Reporting period 1 (M1-M18)	Reporting period 2 (M19-M36)	Gap to target
Scientific and technical publications	Keynote talks	>10	5	6	1
	Tutorials and review articles	>4	1	0	-3
	Research articles	>40	13	31	4
	Conference tracks	>6	7	0	1
	Journal special issues	>3	0	0	-3
Website	Users	>15000	8612 unique visits	18194 unique visits	3194
Social Media	Followers	>800	LinkedIn: 219	LinkedIn: 522	-143
			X: 93	X: 72	
			Mastodon: 8	Mastodon: 11	
			-	Bluesky: 10	
			YouTube: 14	YouTube: 42	
YouTube presentation videos	Views	>5000	87 (3 videos)	2646 (34 videos)	-2354
Community	Newsletter editions	4	1	3	0
Events	Events organised with other EU projects	>3	4	4	5
	Workshops organised	4	5	4	5
Knowledge sharing	Policy briefs	1	0	0	-1
	Students enrolled to a	>20	Two courses: (26 + 66)	110	182





	TEMA-related course				
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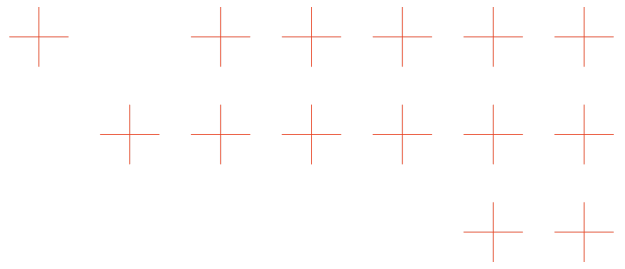
In the conclusion of the third year of the project, several KPIs have already been surpassed, while others are on their way to be completed. It is foreseen that all agreed upon KPIs will have been achieved by the end of the project.

An indicator that requires approximation is the number of views of videos. While this indicator can partially be measured with 100% accuracy (views online), there is a portion of views that remains unaccounted for when the videos are displayed on screen during certain events and expos. The number of online views in the project's YouTube channel (817 views) was combined with the online views of videos of TEMA lectures available in the YouTube channel of the Artificial Intelligence and Information Analysis Laboratory by AUTH¹ (879 views). This number was complemented with an estimate of roughly 1/3 of the number of participants at events and expos where the project videos were showcased, including but not limited to the European Civil Protection Forum 2024 (more than 750 views) and the European Big Data Value Forum 2023 (more than 215 views), resulting to a total of 965 views from events and exhibitions.

With regards to KPIs that might appear to not have been reached, it should be noted that 3 journal special issues (led by AUTH, UNIME and FHFI respectively) are currently into preparatory stages and will be published before the conclusion of TEMA, while a policy brief summarising the policy outputs of the project is planned for the final year of the project.

¹ <https://www.youtube.com/@aiialab2898>



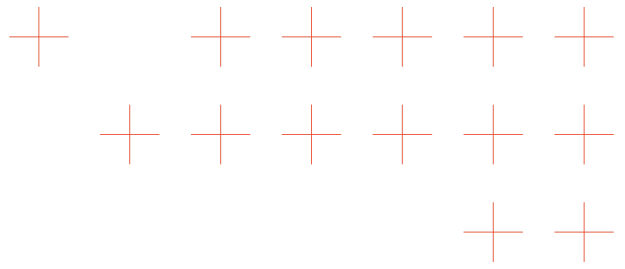


5. Conclusion

The present report on communication and dissemination activities within the Horizon Europe project **TEMA** highlights substantial progress and major accomplishments achieved during the **second reporting period (M19–M36)**. Implementation of the planned actions — including outreach, stakeholder engagement, clustering, and standardisation — has continued to evolve steadily. The milestones reached during this phase demonstrate the project’s effectiveness, as evidenced by the attainment of key performance indicators (KPIs) and other qualitative outcomes. Overall, this deliverable not only showcases the advancements achieved but also functions as a key reference point for stakeholders, ensuring transparency in the project’s evolution and performance. By providing a comprehensive overview of TEMA’s progress and direction, it strengthens stakeholder awareness, fosters active engagement, and supports coordinated efforts towards the project’s overarching goals.

In its final year, **TEMA** will focus on consolidating results and ensuring long-term visibility beyond the project’s formal duration. Efforts will centre on communicating tangible outputs—such as datasets, pilot results, and policy recommendations—while advancing exploitation and standardisation activities. The project website will evolve into a lasting **knowledge hub**, hosting open-access materials and recorded webinars to support reuse and capacity building. **Social media and newsletters** will be used intensively to promote final events, publications, and deliverables, while partners will leverage their networks to sustain outreach and visibility. A **transition plan** will be developed to maintain TEMA’s brand, online platforms, and visual identity after the project ends. Through these actions, TEMA will complete its **communication and dissemination cycle** and lay the foundation for **sustainable exploitation**, ensuring that its legacy endures within Europe’s data-driven emergency management ecosystem.





References

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