Overwatch
more than a map

NOVEMBER 2024 | ISSUE 4

OVERWATCH B-DAY!

As we celebrate the project’s anniversary, we are thrilled to announce that it is now entering its third year of development.

This year, we will finalize the components of the overwatch system, integrate all technological modules together, and officially begin the end-user training phase. To mark this milestone, we will also be hosting field demonstrations in Portugal and Poland, where end-users will interact with the system in real-world scenarios, providing invaluable feedback on usability and performance. Additionally, this year will see increased focus on leveraging project outcomes and organizing feedback workshops to ensure continuous improvement of the system.

We look forward to the exciting developments ahead and to sharing the progress with all of you!

REVIEW MEETING

On May 16thand 17th, the Mid-Term Review meeting of the OVERWATCH project took place inTurin.

During themeeting, we reviewed the actions taken, received feedback from our reviewers,and planned future activities related to the#OVERWATCHproject.

There weretwo specific moments when Robotto.ai and Hololight presented and demonstrated live thefunctioning (and #advancements) of some of the technologiesinvolved in the project:#augmentedreality (#AR) and #drones.

ROBOTTO - Drone Video

Our partner, Robotto.ai, is currently working on developing a #drone for the #OVERWATCHproject.

This drone is designed as part of the OVERWATCH system, is designed to be able to fly over WILDFIRES and FLOODS. The drone has a sensors package which consists of a thermal camera, RGB camera, and LiDAR data. By fusing RGB, thermal, and LiDAR data, we are able to generate real-time maps on the drone, with our onboard computer capabilities we are generating, maps, that are been used for dynamically changing the flight paths in case of a WILDFIRE, usually, the region on top of it becomes extremely dangerous and we are using object collision where the region on top of a WILDFIRE is marked as a forbidden zone.

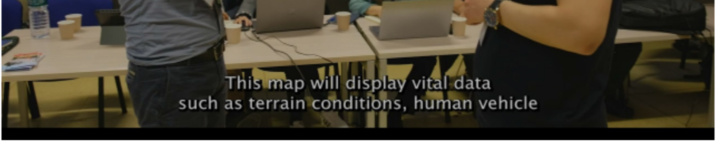
Our system can dynamically change the flight path and fly around the WILDFIRES. This drone, with all the sensor package, can fly for three hours and can map both WILDFIRES and FLOODS. While all the data is being sent in real-time to the OVERWATCH geospatial repository, the system has two fallback systems, the primary one is using LTE connectivity directly on the drone, sending tiles of images and updating the maps on the dashboard and a fallback system in case of low LTE coverage the data is being sent over radio, which then is forwarded to the ground control station that has internet connectivity and the data is being transmitted directly to the geospatial repository.

HOLOLIGHT - Augmented Reality Video

Our partner, **Hololight**, is currently working on developing an **augmented reality system for the OVERWATCH project**. Imagine bringing virtual elements into the real world, seamlessly enriching our environment with additional information.

This technology will deliver a **dynamic AR holographic map** designed for crisis management professionals. This map will display vital data such as terrain conditions, human vehicle and drone assets, and other key disaster management information in real-time.

It will speed up decision-making and enable team collaboration, all in a portable, lightweight, and easy-to-install system, **revolutionizing how crisis response is handled**.


This map will display vital data
such as terrain conditions, human vehicle

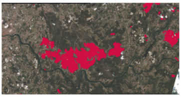
WILDFIRE IN PORTUGAL

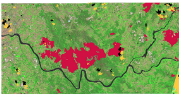
OVERWATCH RAPIDMAPPING system
🔴 WILDFIRE IN #PORTUGAL | 15 Sept 2024

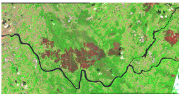
On 15 September 2024, a wildfire started in the municipalities of Oliveira de Azemeis, Sever do Vouga, and Albergaria-a-Velha, in the Aveiro region, Portugal. The #fire expanded rapidly due to the high temperature and strong winds. The northern part of the country was hit hard by several large fires, with many ignitions currently facing 115 ongoing fires, of which 28 are considered significant, involving 5,300 operational personnel, 1,625 ground assets, and 26 aerial assets. The #EuropeanCommission mobilised 8 #firefighting planes.

🔴 Fire danger from Very High to Very extreme Danger within the area of Sever do Vouga according to the Fire Danger Forecast (#EFFIS)

LINK







Potentially affected

Event extent	Built-up	Roads	Population
111 323.6 ha	478.7 ha	3 886.8 km	14 400 No.

Damage assessment within the area of interest

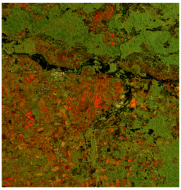
FLOOD IN POLAND

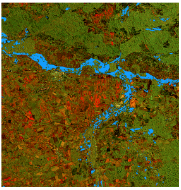
OVERWATCH RAPIDMAPPING system
🔴 #FLOOD IN SOUTHWEST #POLAND | 30 Sept 2024

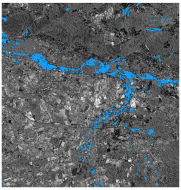
On 13 September 2024, following forecasts of heavy rainfall impacting Middle and Eastern #Europe, a significant flood warning was issued for #Polish regions near the #Czechia border. The #European Flood Awareness System (EFAS) indicated a high probability of substantial river flows, predicting flooding to commence from 14 September onwards.

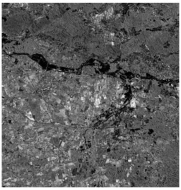
#UTC, The Polish National Centre for Coordination of Rescue Operations and Protection of Population immediately triggered #Copernicus #EMS to cover the flood event affecting the southwestern part of Poland. Copernicus EMS was requested to provide flood extent emergency mapping and monitoring. The first #radar high-resolution #satellite imagery was acquired on the 14th of September.

LINK

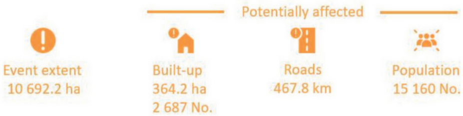








DAMAGE ASSESSMENT



NADMEX 2024

OVERWATCH partner **Robotto** attended the **Nadmex - Disaster Management Summit in Istanbul** to participate in a panel discussion on Approached and Strategies in Combating Forest Fires, on October 3.

👇 Watch the program here 👇

LINK

CBK - FLOODING POLONIA

The combined use of technologies such as satellite imagery and drones is highly effective for emergency management. The OVERWATCH project supports emergency and crisis management for floods and wildfires through the integrated use of technologies like Earth observation, drones, augmented reality, and artificial intelligence.

The CBKPAN methods of supporting emergency services developed by specialists from the Crisis Information Centre continue to help in the ongoing flood and post-flood situation in Poland.

A great example of the practical impact of the work of our scientists on the area of Polish security are the activities of soldiers of the 8. Kuyavian-Pomeranian Territorial Defense Brigade, who help the residents of Stronie Śląskie and Kłodzko.

The Imaging Reconnaissance Group (GRO), equipped with FlyEye unmanned aerial vehicles (airframes equipped with observation heads with thermal imaging sensors), are monitoring the condition of the embankments.

The method itself was developed during meetings with experts from Polish Waters organized at the turn of 2022/2023 and implemented as part of the Overwatch Project.

👇 More Info 👇

LINK

THE FIREEURISK EVENT

The FirEUrisk European Territory Demonstration Event showcases as assessment of the methods developed within the #FirEUrisk project for the European Territory, as well as the validation and the semi-operational tests conducted in the summer of 2024.

FirEUrisk aims to improve wildfire management using a unique approach that integrates society, economy, and policies into risk administration, creating an evidence-based strategy to combat wildfires.

Key topics of the event include the FirEUrisk risk framework, strategies for fire mitigation and adaptation, climate scenarios for #Europe, the impact of wildfires on ecological values, and other fire-related issues.

The Overwatch Project is excited to participate in the event to discuss how advanced technologies such as earth observation, artificial intelligence, augmented reality, and #drones can enhance #wildfire #management strategies, as we aim to contribute to a more effective and data-driven approach to fire mitigation.

👇 You can find more details on the event at this link 👇

LINK

MILTEC 2024

The #OVERWATCHProject was represented by Professor JoséBorges and Researchers Ana Romão and Daniela Fraga (from CINAMIL, AM, Portugal) at #MILTEC24.

Promoted byAFCEA Portugal and the General Staff of the ArmedForces, the International Conference "MILTEC24 – Strengthening Defense:The Role of Innovation and Emerging and Disruptive Technologies" was heldon July 11, 2024, at the Military University Institute in #Lisbon, #Portugal.

The eventwelcomed more than 150 representatives from the Portuguese Defence, Academia,and Industry sectors. Experts from DG HOME, the European Defence Agency and NATO's DIANA accelerator program also participatedin MILTEC24.

TheConference fostered productive discussions on the importance of innovation forconsolidating military and civilian purposes, whenever possible, as dual-useapplications. It promoted identifying challenges and opportunities facing thesupervisory authorities and decision-makers in the #Defense and #Security sectors, both nationally and at the#EU and #NATO levels.

Furthermore,the event allowed debates seeking to analyze the contribution to innovation,particularly in emerging and disruptive technologies, of the Armed Forcesbranches, the Defence Technological and Industrial Base, and the Academy.

Overwatch
integrated holographic management map for safety and crisis events
THE PROJECT
THE TECHNOLOGIES
Earth Observation
Augmented Reality
Drones
Artificial Intelligence

Acting
Overwatch
More than a map
Overwatch
More than a map
SCAN ME
SCAN ME

National Conference on Public Policies in Civil Protection 2024

"Knowledgeonly makes sense when shared by everyone and applied to action".

The OVERWATCH project was presented by Engineer Daniela Fraga at the 1st National Conference on Public Policies in Civil Protection 2024 which took place in Palmela, Portugal.

Theconference, hosted by the Centre for Studies and Intervention in Civil Protection (CEIPC Centro de Estudos), served as a pivotal platform anddebate forum for reflecting on the course of public policies to enhance civil protection efforts at the national and European levels.

PROTEÇÃO CIVIL 2030: QUE CAMINHO?
1ª CN
Proteção Civil
1.ª CONFERÊNCIA NACIONAL SOBRE POLÍTICAS

PÚBLICAS DE PROTEÇÃO CIVIL
16 e 17 de abril 2024 - Palmela - Cineteatro São João

1CN
Proteção Civil
Overwatch
a project with a visio
Centro de Estudos e Intervenção em Proteção Civil
15 e 17 de abril de 2024 - Cineteatro São João - Palmela

IGARSS 2024

The paper **'FMARS: Annotating Remote Sensing Images for Disaster Management using Foundation Models'**, authored byEdoardo Arnaudo, Jacopo Lungo Vaschetti, Luca Barco, Davide Lisi, Vanina Fissore, and Claudio Rossi, and presented in July at IGARSS 2024, is now available in the official conference proceedings.

👇 See here 👇

LINK

The Team

OVERWATCH consortium is composed of 10 partners across 5 different countries: Poland, Germany, Italy, Portugal and Denmark.

ithaca · Fondazione links PASSION FOR INNOVATION · iSQ · C!K Centrum Informacji Kryzysowej · CBK · ENGINEERING THE DIGITAL TRANSFORMATION COMPANY

ROBOTTO INESCTEC HOLO-LIGHT CINAMIL MILITARY ACADEMY RESEARCH CENTER Alpha Consult

Meet the partners

Follow us on the social media and stay up with the latest updates!