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### **SILVANUS - European Green Deal Project for Wildfire Management and Climate Change**

SILVANUS is a Horizon 2020 Green Deal project, named after the Roman deity of woods and uncultivated lands, whose main objective is to create a climate resilient forest management platform to prevent and combat forest fire. The project consortium includes a wide range of environmental, technical and social science experts from eighteen countries, spanning over four continents, who will support regional and national authorities responsible for wildfire management in their respective countries. SILVANUS experts will help authorities to efficiently monitor forest resources, to evaluate biodiversity, to generate more accurate fire risk indicators, and promote safety regulations among the local population affected by wildfire through awareness campaigns.

Immerse yourself in the world of SILVANUS!

Modern and Innovative Protector Against Wildfire,  
For the Benefit of Forests and Humankind

SILVANUS GENERAL ASSEMBLY  
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ROMANIA AND EU GREEN  
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## SILVANUS General Assembly Meeting in Bucharest, Romania

The SILVANUS team was reunited at the General Assembly Meeting in Bucharest, Romania, on the 20th and 21st of June.

The user product components – the cornerstones of the SILVANUS platform – were demonstrated to the team and continuously improved after constructive feedback.

-  Biodiversity profile mobile app
-  AR/VR training toolkit for firefighters
-  Citizen engagement mobile app
-  Fire danger risk assessment
-  Fire detection based on social sensing
-  Fire detection from IoT devices
-  Fire detection using unmanned aerial vehicles
-  Fire detection using unmanned ground vehicles

Discussions were made on the pilots that will soon be organised not only in partner EU countries, but also in Indonesia, Brazil and Australia. An important milestone for the project!



## The EU Green Week Webinar

For the EU Green Week 2023, SILVANUS was approximately in the middle point of its three-and-a-half ambitious journey to develop an integrated technological and information platform for wildfire management.

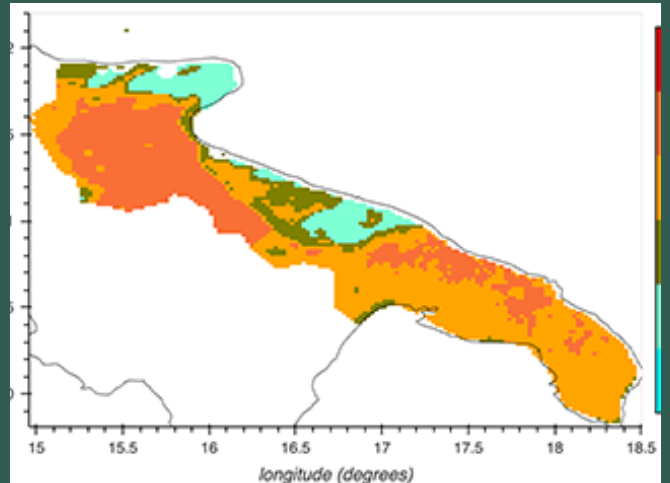
The 2-hour webinar, which took place on June 6th, showed the progress in the development of the SILVANUS platform with a detailed depiction of its technological components (user products), a report from the implementation of first two SILVANUS pilots in Croatia and Slovakia, a close look at the citizen engagement app, and a comprehensive overview of the citizen engagement programme, featuring the poster promotional campaigns. The recording of the webinar can be found on SILVANUS YouTube channel.

The event was co-organised and presented by SILVANUS partners University of Applied Sciences Velika Gorica, Croatian Firefighting Association, RiniGARD, Massive Dynamic Sweden, University of Borås, 3MON, Venaka TReLeaf and Micro Digital Ltd.

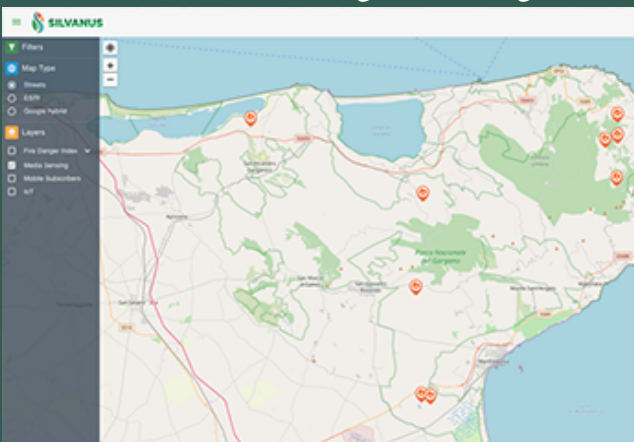
# SILVANUS User Products



Augmented Reality /  
Virtual Reality Training for Firefighters



Fire Danger Tool



Fire Detection Based on Social Sensing



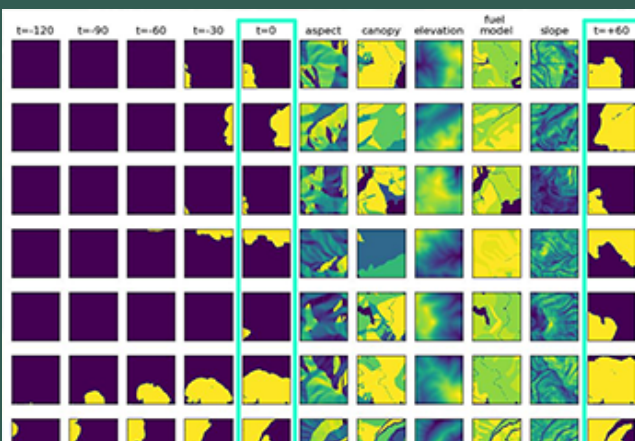
Fire Detection using IoT Devices



Fire Detection using UAVs (Drones)



Fire Detection using UGVs (Robots)



Fire Spread Forecast



Woode - Biodiversity Profile Mobile App

# SILVANUS Citizen Engagement Campaign

User Product - Citizen Engagement Mobile App



PREVENT FOREST FIRES DIRECTLY FROM YOUR PHONE



The project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 101037247



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[Silvanus-project.eu/contact/](https://silvanus-project.eu/contact/)

## Citizen Engagement Posters - Issued Biweekly on Social Media

### Step 1

Prepare an emergency kitbag, with:

- A mobile charger, torch, radio, batteries and copies of important personal documentation

### Making a family emergency plan



- Consumables, water and, if needed, baby and pet food for at least three days

- Medication for any family member that has health issues or any disability. Don't forget your doctor's contact info



### Step 2

In case you need to evacuate:

- Make arrangements for family communications
- Agree on safe meeting points in case of separation of family members

### Making a family emergency plan



- The plan has to be applicable and comprehensible.
- Don't forget to take with you the emergency kitbag, money, supplies and your pet.
- If you require further assistance, prepare a list with relative and friends contact info.

**Have in mind that phone networks might not work!**  
**Stay informed by media and social media for any official instructions**  
**Make timely decisions and act correctly and decisively!**



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101037247



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# Report from the RISE-SD Security and Defense Conference in Rhodes, Greece

As part of the high dissemination season, the SILVANUS project was presented at the RISE-SD Security and Defense 2023 Conference on May 29th and 30th.

Lovorko Marić, the SILVANUS dissemination manager, presented a general overview of the project and its current status with a particular emphasis on the implemented pilots in Croatia and Slovakia, and on the user products of the SILVANUS platform.

Nikolaos Kalapodis from the Centre for Security Studies (KEMEA) presented the EU sustainable forest management and wildfire policies and practices as part of the project's research.

Konstantinos Demestichas from the Agricultural University of Athens focused on describing the methods and technical approaches when measuring forest resilience against wildfire and climate change.

The conference also featured a very special SILVANUS booth, with promotional video footage from the Croatian and Slovak pilots, the presentation of the citizen engagement app, along with dissemination material such as posters, flyers, and the roll-up banner. Two scientific papers were submitted within the conference.



# RISE-SD - Wildfire Management Innovation and Policies Workshop



At the RISE-SD Conference, SILVANUS was featured at the Wildfire Management Innovation and Policies workshop, consisting of three panels and moderated by George Eftychidis from Satways Ltd and Claudia Berchtold, the coordinator of CSA Project Firelogue.



Georgios Sakkas from Center for Security Studies (KEMEA) discussed the outputs of SILVANUS at two of the panels. The first panel focused on the holistic approach and integrated management of landscape wildfires. The aim was to provide a better understanding of the concepts and terms related to wildfire management used by both national authorities and the European Commission. The other panel focused on the science and technology contribution to wildfire management, where innovative solutions – such as the SILVANUS platform – were discussed.



The second panel focused on the Directorate-General for European Civil Protection and Humanitarian Aid Operations Wildfire Prevention Action Plan, and it featured Andrea Majlingova from Technical University in Zvolen as part of the SILVANUS team, along with an appearance by Cristina Brailescu from DG-ECHO. The actions of the plan were discussed to use scientific know-how and research to explore new areas of wildfire prevention.

The panel featured an appearance and contributions from Nicolas Faivre from European Research Executive Agency (REA).

# SILVANUS Educational Activities in Italy and Croatia

## Awareness-raising Programme for Students in Apulia Region, Italy

SILVANUS project is continuing with its educational campaigns on the field!

Consortium partner ASSET Puglia – Regional Strategic Agency for Sustainable Development in Apulia Region has undertaken an educational awareness-raising programme in Italy for the prevention, control, and recovery from forest fires.

The ASSET working group, together with the Civil Protection volunteers conducted lectures together with practical activities, aimed at learning:

- 📖 The guidelines of the SILVANUS project
- 🌳 The pilot area of the National Park Gargano (one of 12 SILVANUS pilot areas) together with its characteristic climatic and environmental factors
- 🔥 Fuel models and the basic concepts of forecasting, preventing and actively fighting forest fires
- 👁️ The production of a good practice guide to avoid, spot and fight them correctly.

Education for the prevention of wildfires to a wide pool of citizens, with an emphasis on students, is a crucial component of the project.



## Educational Exhibition Opening in Varaždin, Croatia

SILVANUS consortium partner Croatian Firefighting Association has opened a poster, video and equipment exhibition on the objectives and outputs of the project on Saturday, August 19th 2023, at the Croatian Firefighting Museum in the town of Varaždin, Croatia. This was organised at the time of Špancirfest 2023, an annual cultural festival in Varaždin that receives hundreds of thousands of visitors each year.

The organisation of the exhibition was implemented by Vedran Runjić, the curator of the Croatian Firefighting Museum. The opening of the exhibition was, among others, attended by the honorary president of the Varaždin County Firefighting Association Zvonko Biškup and the County Firefighting Secretary Zvonko Videc, the City of Varaždin Firefighting Commander Ivica Labaš, and the Varaždin Firefighting Volunteer Society President Radovan Martinec. SILVANUS was introduced by Lovorko Marić from Micro Digital Ltd., the project's dissemination manager.

The exhibition features posters on SILVANUS objectives and outputs, the promotional video and the news and interview coverage from the Croatian pilot exercise that took at place at the Training Centre of Šapjane in April this year. It will be open until the end of 2023.



# SILVANUS Educational Activities in Slovakia and Greece

## Forest Pedagogy Workshop in Zvolen, Slovakia

The forest pedagogy workshop was organised at the Technical University of Zvolen, Slovakia, on February 2nd, 2023, in organisation of National Forest Centre, Centre for Knowledge Transfer and Forest Pedagogy.

The presentation on the correlation between forest, climate change consequences and wildfires were presented and supplemented with information on SILVANUS project objectives and technology deployed. Brief information on the Slovak pilot was provided as well, which took place in April 2023 in the Poľana Region.

The participants of the workshop were the pupils coming from 4 elementary schools in Central Slovakia: 2 schools from Zvolen, 1 from Pliesovce and 1 from Zvolenska Slatina. In total, 30 pupils attended the workshop.



TUZVO also organised a lecture "Slovak Forests and their Resilience to Wildfire". The event took place on the occasion of the International Day of Forests, on the 21st of March 2023. This "Scientific Evening for Students" was a series of lectures for TUZVO students and IFSA Slovakia (International Student Forestry Association) members on selected topic and invited lectures.

## Citizen Engagement Workshop in Thessaloniki, Greece

The results of the SILVANUS project were presented at the Citizen Engagement Workshop in Thessaloniki, Greece, in June 2023. The workshop was organised by SILVANUS partner Hellenic Rescue Team.

The objectives of the workshop were:

- 🌳 To increase knowledge and understanding of the causes, impacts, and management of forest fires
- 🔥 To raise awareness and educate the citizens about forest fires and their impacts on ecosystems, biodiversity, climate, and human communities.
- 🤝 To promote collaboration and networking among participants

SILVANUS was thus presented in Thessaloniki to civil society in conjunction with a more targeted stakeholder group, which consisted of local civil protection authorities (Municipality Civil Protection Department, Fire Service, the local Airforce Combat Wing (firefighting aircrafts), Thessaloniki Forestry, Reforestation Authority), Civil Protection Volunteer Organizations and journalists.





# High Dissemination Season

## Fire Protection 2023 Conference in Ostrava, Czech Republic

In September 2023, SILVANUS team members from Technical University of Zvolen, Slovakia, Institute of Informatics from the Slovak Academy of Sciences, 3MON and Fire Rescue Brigade of Moravian-Silesian Region had 7 presentations at the Czech Fire Protection 2023 Conference in Ostrava, Czechia, on the topics of Slovak and Czech pilot exercises, possibilities of robotics in firefighting, citizen engagement mobile app and protocol for mass communication with the public during forest fires.



## SILVANUS Presentation at the ISCRAM 2023 Conference in Omaha, USA



Members of the SILVANUS team – Zoltán Balogh and Emil Gatjal from Institute of Informatics, Slovak Academy of Sciences, and Kayvan Yousefi from University of Borås – have presented the project and three scientific papers at the ISCRAM 2023 conference in Omaha, United States of America, focusing on:

- 📡 Communication Protocol for using Nontraditional Information Sources between First Responders and Citizens during Wildfires
- 👥 Citizen Engagement in Wildfire Management: Needs, Challenges, Methods and Framework
- Coordination of Drones Swarm for Wildfire Monitoring



This was a major joint scientific publication undertaking by the SILVANUS team, featuring partners from Institute of Informatics, Slovak Academy of Sciences, University of Borås, Fincons Group, ITTI, Technical University of Zvolen, RiniGARD, Venaka TReLeaf, 3MON and Thales.

## “Security Architecture in the SILVANUS Project” Paper presented at the ENS Workshop in Benevento, Italy

SILVANUS was presented at the 6th International Workshop on Emerging Network Security (ENS 2023), co-organised by SILVANUS consortium partner Warsaw University of Technology (WUT), as part of the 18th International Conference on Availability, Reliability and Security (ARES 2023), in Benevento, Italy, in August 2023.

SILVANUS team members Natan Orzechowski, Wojciech Mazurczyk and Krzysztof Cabaj from WUT presented the paper “Security Architecture in the SILVANUS Project”, a joint SILVANUS scientific publication between Warsaw University of Technology, ITTI and Netcompany-Intrasoft.



# High Dissemination Season

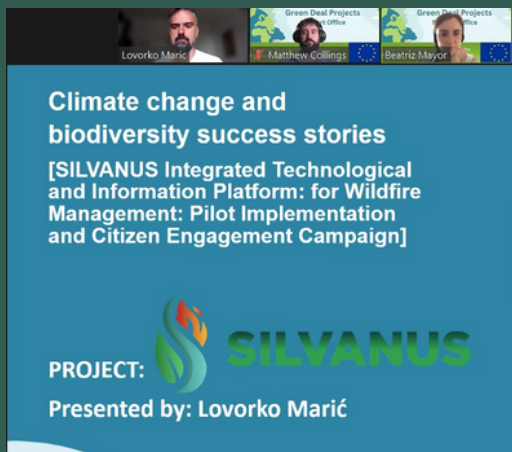
## Presentation of the Fire Detection IoT Device UP at the SpliTech Conference in Bol, Croatia

Project results were presented at the International Conference on Smart and Sustainable Technologies in Bol, Croatia. Georgia Christodoulou from Catalink Ltd presented the SILVANUS paper on the Advancement of an Integrated Technological Platform for Wildfire Management through Edge Computing, with an emphasis on the presentation of the fire detection IoT device. Atos, Venaka TReLeaf and Micro Digital Ltd. were SILVANUS consortium partners also included in the writing of the paper.



## SILVANUS presented as a Success Story at the Green Deal Projects Support Office Webinar

SILVANUS was presented as a success story at the Green Deal Projects Support Office online webinar – Presenting the Green Deal Call projects: Progress, success stories and Q&A, as part of the Network of Multipliers. Lovorko Marić presented the successful implementation of two pilots in Croatia and Slovakia, along with the accompanying educational and promotional campaigns (with a focus on the poster exhibition in Rijeka, Croatia), to a wide pool of stakeholders.



The participants included coordinators and dissemination managers of a number of Green Deal H2020 projects, who presented their own success stories. A fruitful discussion followed, finding interesting synergy points between the projects, which may lead to other initiatives that will bring benefits in the area of biodiversity and climate change. 🌳

## SILVANUS Booth at the International Fair of Thessaloniki, Greece

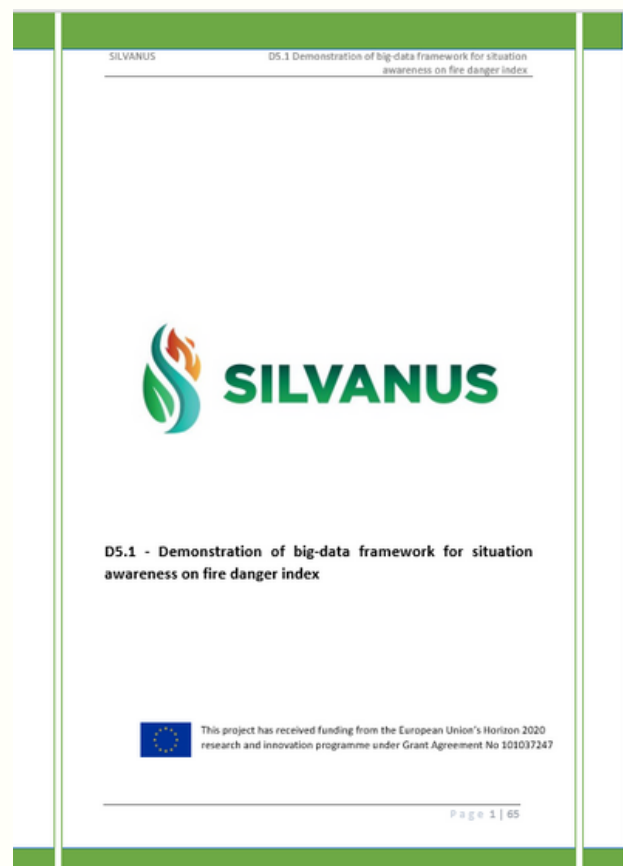
Dr. Nikolaos Kalapodis from Center for Security Studies (KEMEA) presented SILVANUS on September 10th, 2023, at the 87th International Fair of Thessaloniki, organised by TIF-HELEXPO. SILVANUS had a stand with the presentation explaining the objectives and outputs of the project. Flyers and other promotional material were also distributed at the exhibition. The fair was a place for new ideas and proposals to be presented to the market on topics of technology, innovation, environmental protection, energy, education, to over 280,000 people that visit this exhibition. A large number of stakeholders had access to the interactive presentation of SILVANUS and had become familiar with the results of the project.



# Report on Submitted Deliverables in May and June 2023

In May 2023, Deliverable 8.2 within WP8 was submitted, which essentially represents the first version of the SILVANUS platform. The platform is now used in piloting, and it consists of a subset of the components described in D8.1 which is required to deliver the functionalities of the user products defined in D8.1. These user products have been selected among the full set of functionalities based on their value/usefulness according to the user requirements. It is important to note that by the end of April, the piloting of SILVANUS platform has already started in Europe.

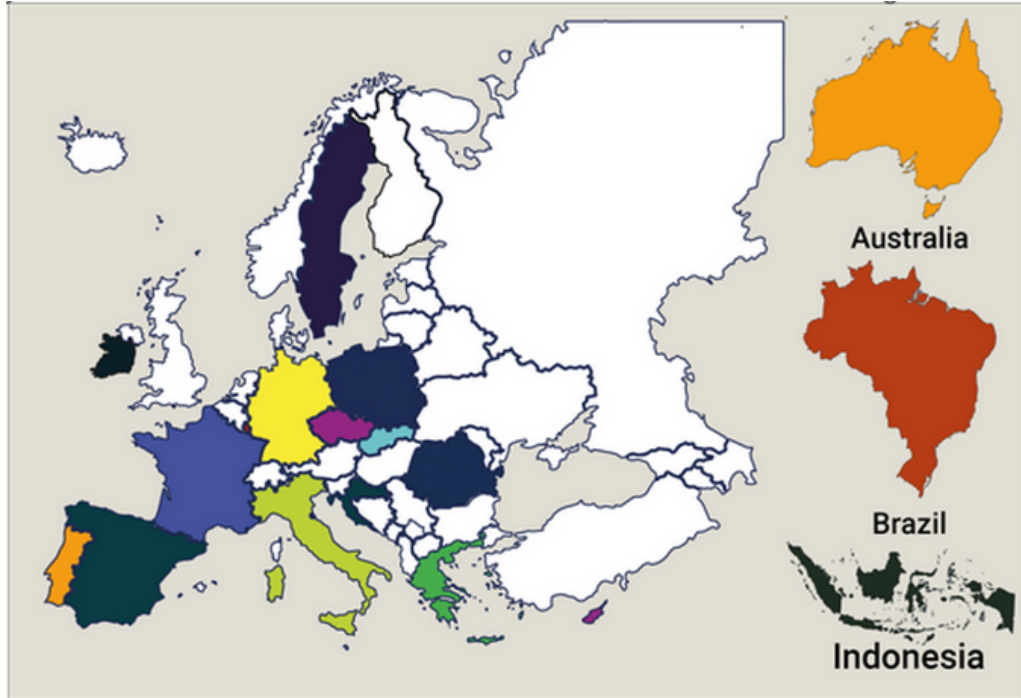
Deliverable 5.1 - Demonstration of big-data framework for situation awareness on fire danger index shows its implementation, which will serve and act as the backbone for delivering data handling capacity for all the modules of the project to be developed and integrated. D5.1 provides a detailed description of the different software components that have been developed, which are aligned to the needs of the project as validated by the stakeholders and reported in D2.1.



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### Industrial partners



### Stakeholders



### SME organisations



### International partners



### Academic/Research Partners

