



IN THIS ISSUE

SILVANUS WINS THE GOLD MEDAL AT THE IPITEX 2023 IN BANGKOK, THAILAND

SILVANUS POSTER PROMOTIONAL CAMPAIGNS

REPORTS FROM PILOT EXERCISES IN CROATIA AND SLOVAKIA

SUBMITTED DELIVERABLES IN MARCH 2023

SILVANUS BCO VIDEO - A HOLISTIC DIGITAL SOLUTION TO WILDFIRE MANAGEMENT

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



EUFireProjects United Joint Dissemination Workshop

The EU Fire Projects United online Joint Dissemination Workshop, organised by [Firelogue](#), has had a wide range of wildfire-related projects presented (Firelogue, TREEADS, FIRE-RES, SAFERS, FirEURisk, FIRE-IN, Pyrolife, FIREADAPT), with a focus on the results and challenges for the projects that have entered their second year, along with the introduction of new projects. The workshop was attended by a high number of interested parties in the field of wildfire prevention. The SILVANUS presentation focused on a short summary of the main results for the first year of the project, focusing primarily on presenting the user products and announcing the pilot implementation trial period, taking place between April and September 2023 (roughly between month 18 and month 24 of the project).



SILVANUS wins the Gold Medal at the IPITEX 2023 in Bangkok, Thailand

The SILVANUS consortium has received the Gold Medal and the IFIA Best Invention Award for the Integrated Technological and Information Platform at the IPITEx 2023 (International Intellectual Property, Invention, Innovation and Technology Exhibition, organised by the National Research Council of Thailand) in Bangkok, Thailand, on Thailand Inventors' Day 2023.

The exhibition was an Innovation Event organised by the International Federation of Inventors' Association. The project was presented during the exhibition by SILVANUS partner Main School of Fire Service (SGSP), with an emphasis on SGSP's scope of work. SGSP was represented by prof. dr. Michał Szota, and the award was handed by the IFIA President Alireza Rastegar.

The exhibition featured more than 1,500 inventions from 30 countries, and this was a wonderful opportunity to show the results of the project to a wide pool of stakeholders!



The SILVANUS Biweekly Poster Educational Campaign is Launched on Social Media

Citizen engagement is a vital branch in the development of our platform!

SILVANUS team is introducing the citizen engagement educational campaign that will focus on sharing and disseminating key messages of the project, along with the general guidelines for extreme wildfire prevention and suppression.

Throughout 2023 and beyond, SILVANUS will share a series of posters with successive displays on a biweekly basis (not including special event dates) where the key messages for citizens and stakeholders will be summarized.

Stakeholder outreach is a crucial component of the project, since the SILVANUS platform aims to be as user-friendly and accessible as possible to a wide pool of stakeholders and citizens.

Below are some of the examples, see more on SILVANUS social media accounts ([LinkedIn](#), [Twitter](#), [Instagram](#)).

OPERATES IN ALL EU MEMBER STATES!

EMERGENCY? Call 112

112

Free of charge from mobile phone, even without a SIM card
Provision of caller location

Connects you with:

- Police
- Fire Service
- Emergency Medical Services
- Coast Guard

SILVANUS

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

PROTECT THE FOREST, IT'S THE AIR THAT YOU BREATHE!

FORESTS ARE A KEY SOURCE OF QUALITY AIR, PRODUCING OXYGEN AND ABSORBING CARBON DIOXIDE. A SINGLE TREE CAN PRODUCE IN A DAY THE OXYGEN SUPPLY TO SUSTAIN 2-10 PEOPLE.

SILVANUS

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

Poster Promotional Campaign in the City of Rijeka, Croatia

The SILVANUS promotional poster exhibition, organised by SILVANUS partner Hrvatska vatrogasna zajednica (Croatian Firefighting Association), and sponsored by the City of Rijeka, took place between the 3rd and 12th of April on the main pedestrian street of Korzo in Rijeka, Croatia.

The exhibition featured 10 two-sided bilingual (Croatian and English) posters, focusing on:

- The main activities and objectives of SILVANUS

- Key messages and advice for citizens in the fight against extreme wildfire

- Announcement of the citizen engagement mobile app

- Description of Croatian Firefighting Association activities in SILVANUS

The formal opening of the exhibition was led by the Mayor of Rijeka Marko Filipović (seen on the right), the Deputy Prefect of Primorje-Gorski Kotar County Vojko Braut, the Chief Firefighting Commander Slavko Tucaković, and the Primorje-Gorski Kotar County Firefighting Commander Mladen Šćulac.

Objectives of the project were discussed, along with the SILVANUS pilot exercise in the Training Centre of Šapjane.

SILVANUS wishes to thank the Croatian Firefighting Association and the City of Rijeka for this honour and opportunity to introduce SILVANUS to a large number of citizens, and to invite these stakeholders to participate in the development of our platform. The summer is coming and the region of Rijeka and Primorje-Gorski Kotar County may face new challenges in the fight against wildfire. SILVANUS hopes to significantly contribute in the mitigation and prevention of forest fire.



Poster Promotional Campaign in the City of Rijeka, Croatia

SILVANUS
EUROPEAN GREEN DEAL PROJECT FOR WILDFIRE MANAGEMENT AND CLIMATE CHANGE

**PHASE B
DETECTION AND RESPONSE ACTIVITIES**

THE FOLLOWING COMPONENTS OF THE INTEGRATED SILVANUS PLATFORM WILL EDUCATE, MONITOR, AND DEPLOY FIREFIGHTERS AND TECHNOLOGY TO PREVENT, PREDICT AND COMBAT FOREST FIRE

- DRONE-BASED SYSTEM
- GROUND ROBOTS
- WATER CANNONS
- CAMERA SURVEILLANCE
- ADVANCED FIREFIGHTING EDUCATION
- SPECIALISED COMMAND CENTRES
- SIMULATORS AND IOT SENSORS
- FIREFIGHTING FORCES

THALES | AtoS | DELL Technologies | MON | ITTI | EXUS
 International partners: CSIRO, UFR3, ASP VALOR, IST-ID, etc.
 Academic/Research Partners: NEW, etc.

QR CODE | FOLLOW US ON: SILVANUS-PROJECT.EU

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 101037247

SILVANUS

PREVENT FOREST FIRES DIRECTLY FROM YOUR PHONE

COMING SOON FROM SILVANUS

QR CODE | FOLLOW US ON: SILVANUS-PROJECT.EU

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 First SILVANUS Pilot Exercise in Croatia

SILVANUS has initiated the 2023 pilot trial period with the implementation of the Croatian pilot exercise on the 18th and 19th of April at the Training Centre of Šapjane (Municipality of Matulji), located approximately 20 kilometres from the City of Rijeka. Rijeka is Croatia's biggest seaport and its central street was the site of the SILVANUS poster promotional campaign, which took place between the 3rd and 12th of April.

The main organiser of the pilot exercise was the Croatian Firefighting Association, a member of the SILVANUS consortium, accompanied by SILVANUS partners 3MON, Catalink, ASFOR Romania, University of Applied Sciences Velika Gorica, RiniGARD, Micro Digital, and SILVANUS technical manager Krishna Chandramouli from Venaka TReLeaf.

The pilot exercise was introduced by Chief Firefighting Commander of the Croatian Firefighting Association Slavko Tucaković, the Primorje-Gorski Kotar County Firefighting Commander Mladen Ščulac, the Primorje-Gorski Kotar County Prefect Zlatko Komadina, and Head of Municipality Matulji Vedran Kinkela.

The exercise included the demonstration of edge (IoT) devices for fire detection by Catalink, the use of ground robots provided by 3MON and introduced by Simona Kalinovska, the use of Mesh in the Sky technology provided by RiniGARD to establish on-demand communication channels to transmit images/videos collected from the remote locations, and the involvement of more than a hundred firefighters from the Primorje-Gorski Kotar County and the City of Zagreb.

An exercise of wildfire suppression was executed with the help of ground and air forces, use of video surveillance, unmanned aerial vehicles (drones), ground robots, with a special emphasis on modern satellite communication systems. The purpose was to verify the operations done by firefighting forces in an open space, applying various tactical approaches with the suppression of fire, checking whether the connection systems are functioning, as well as the overview of road network and its interconnectivity.



Report from the 2nd SILVANUS Pilot Exercise in Slovakia



The SILVANUS trial period continued with the implementation of the pilot in Slovakia, in the mountainous Pol'ana region in Central Slovakia. The goal of the Slovak pilot was to demonstrate early detection of fire and smoke, followed by the quick and efficient deployment of firefighters, fire trucks, drones, robots, and helicopters until the fire was extinguished, as a trial demonstration in the development of the SILVANUS platform.

SILVANUS partners TUZVO, 3MON, UISAV, FRS MB, PLAMEN, ITTI, ASFOR, SGSP, THALES, EXUS, EDP and VTG worked closely on the implementation of the pilot, which was initiated with the demonstration of a fire and its subsequent systematic detection. The information about the fire (location, link to camera footage) was sent to the operation centre. This followed with a deployment of drones from the Slovak Academy of Sciences, after which firefighters (under the Slovak Ministry of Interior) and the M17 helicopter (provided by the Slovak Ministry of Defence) were navigated and monitored.



Ground robots supplied by 3MON assisted in the transfer of heavy materials and equipment, putting out the fire with a water gun in a complex and hard-to-reach terrain under adverse weather conditions. The robot demonstrated five or six water spray methods. The uniqueness of the robot operation was in the ability to generate multiple types of water flow to counteract the spread of wildfire. A Bambi bucket was attached to the M17 helicopter and was used to deploy large quantities of water to the most active wildfire spots.



With the successful implementation of the 2nd SILVANUS pilot and its integration of technologies with the deployment of forces, important data was accumulated for the development of the SILVANUS platform.

Report on Submitted Deliverables in March 2023

In March 2023, SILVANUS submitted 8 new Deliverables, 6 of which are publically available on the SILVANUS website.

Deliverable 3.2 - Planning and Delivery of Training Activities - Phase 1 is dedicated to specific activities of training and preparation for wildfire response. The document presents the joint work of the SILVANUS partners regarding the planning and delivery of training activities at this stage of the project implementation. Within the Deliverable, a uniform approach is proposed to describe the specific activities for planning and preparing the wildfire response, based on surveys for collecting relevant data and information about: i) training objectives and scope, ii) training forms and methods and iii) training materials. A particular section is dedicated within the Deliverable to the innovative approaches and tools for implementing the training activities in SILVANUS, which presents the integration of AR/VR content to meet the professional training requirements of end-users.

Deliverable 3.3 - First Release of Citizen Engagement Methodology acts as complementary documentation to the demonstration of the first release of the Citizen Engagement App (CEA), a vital component of the SILVANUS platform. Furthermore, this report aims to present an outline of the Citizen Engagement Programme (CEP) as a whole to render the context in which the CEA is being developed. Therefore, the report covers the most relevant aspects of the overall CEP, starting with a presentation of the citizen engagement methodology, including a literature review covering conceptual foundation and citizen engagement practices in emergencies and wildfires, a citizen engagement framework, and preliminary related needs and requirements.



D3.2 Planning and delivery of training activities – Phase 1



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



D3.3 First release of citizen engagement methodology



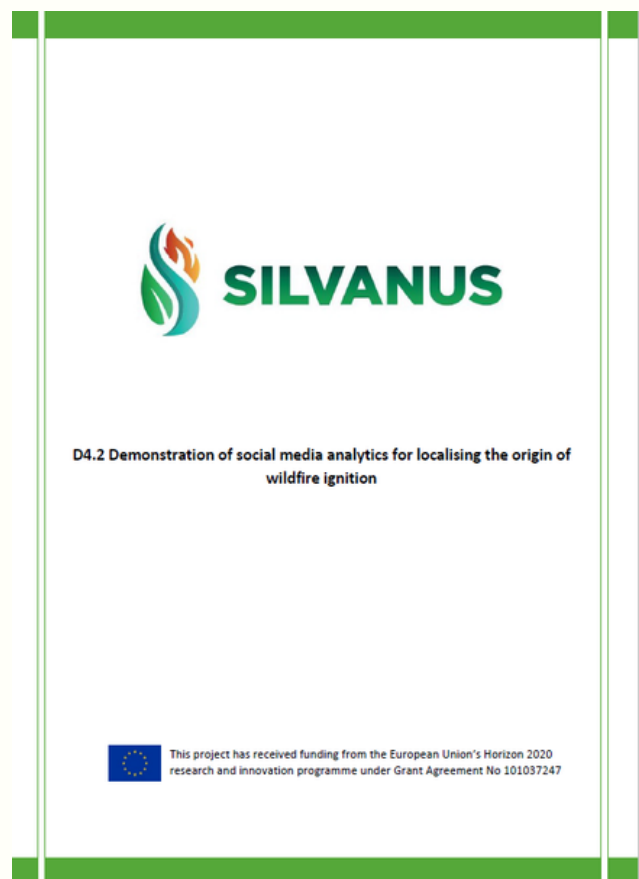
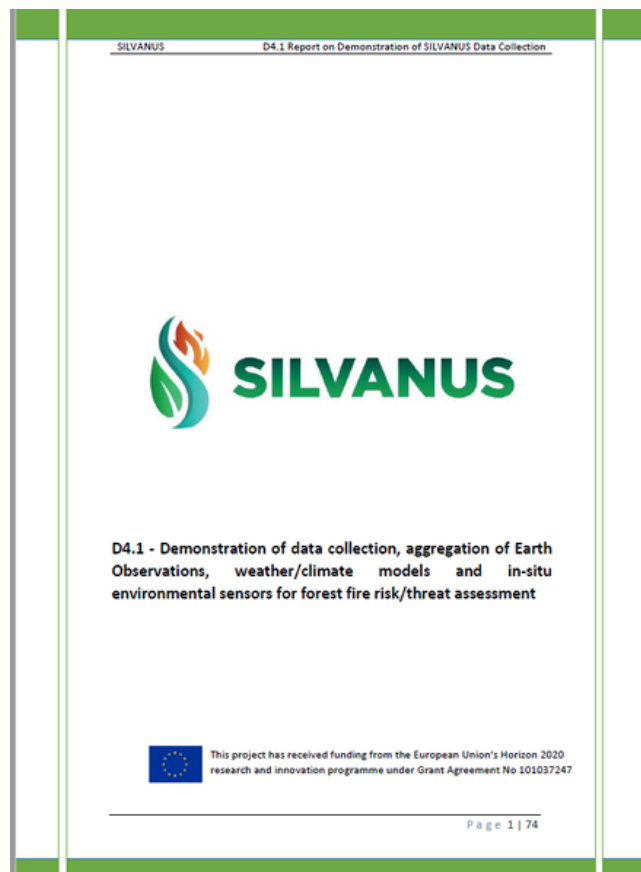
This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 101037247

Report on Submitted Deliverables in March 2023

Deliverable 4.1 - Demonstration of SILVANUS data collection reports the implementation and demonstration of the systems - interfaces, methods, and tools - to collect and aggregate data from heterogenous sources (Earth Observations, Weather and Climate Modes, in-situ devices) and subsequent pre-processing capabilities to detect fire and to quantify the forest fire risk/threat assessment. It also outlines the integration of those systems with the SILVANUS Platform in order to provide data to the SILVANUS downstream application and services.

The datasets collected and produced in SILVANUS are related to heterogeneous sources providing different data formats and different ways to access data. It is important to define ingestion procedures that allow services and applications to easily retrieve data necessary for analysis and processing to detect fire and quantify the fire risk.

Deliverable 4.2 - Demonstration of social media analytics for localising the origin of wildfire ignition focuses on social media sensing and concept extraction, introducing the Social Media Sensing Framework, the implementation of Social Media Crawlers, the Social Media Analysis Toolkit, and the visualisation of fire events, in order to explain and depict how social media sensing has become an essential tool for monitoring and responding to a wide range of real-world events, including natural disasters such as fires. With the help of advanced algorithms and machine learning, researchers and emergency responders can collect and analyze vast amounts of social media data in real-time, providing crucial insights into the location, spread, and impact of fires.

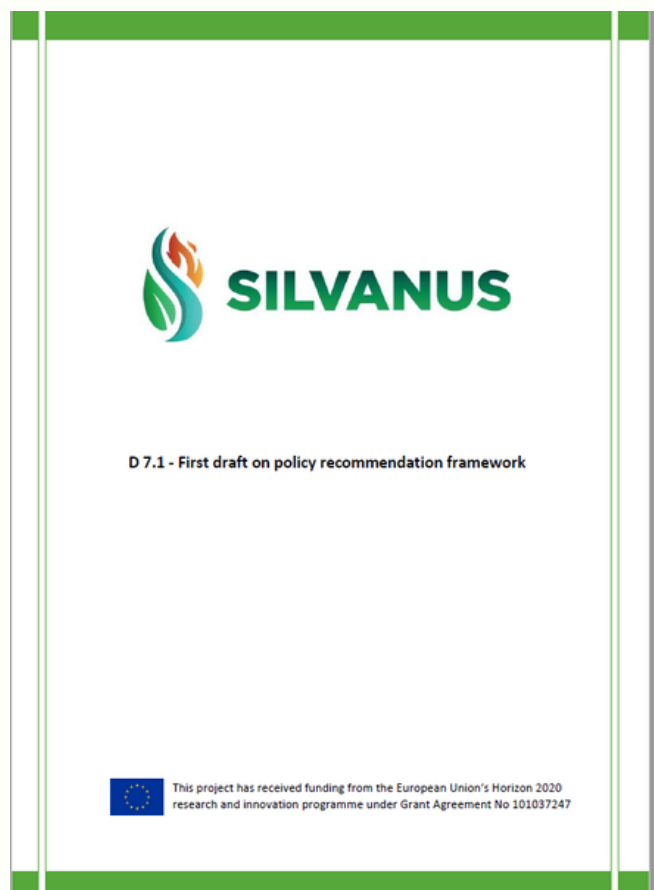
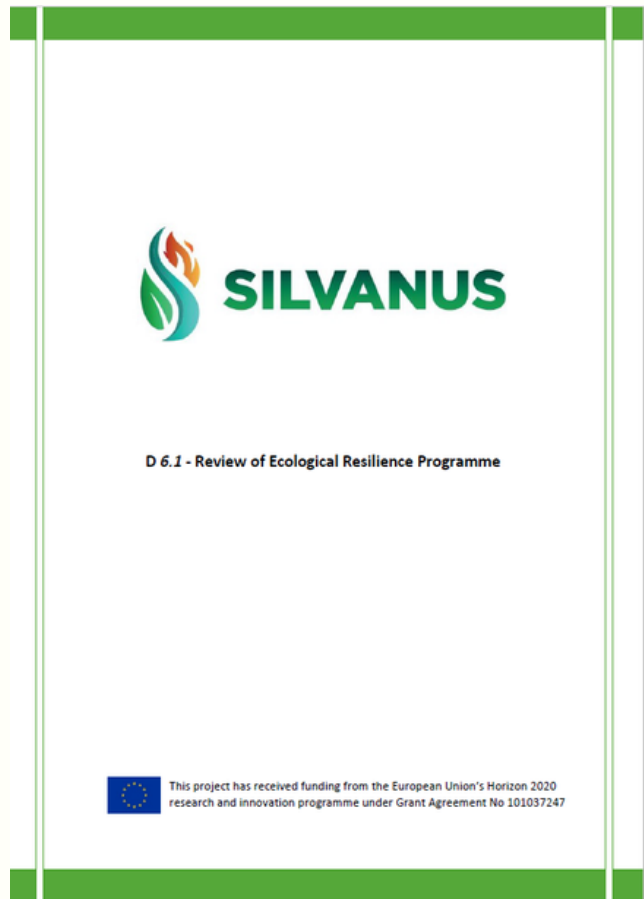


Report on Submitted Deliverables in March 2023

Deliverable 6.1 - Review of Ecological Resilience Programme - the purpose of this Deliverable is to review ecological resilience program across 8 EU member states and 3 non-EU regions. Pilot partners contributes to this deliverable are Gargano Park and Tepilora Park (Italy), Sterea Ellada (Greece), Cova da Beira (Portugal), Podpol'anie (Slovakia), and Sebangau National Park (Indonesia). The goals of the ecological resilience programs are the return to initial forest condition, including the biodiversity state.

In this Deliverable, biodiversity monitoring represents in Normalised Difference Vegetation Index (NDVI) measurement in each pilot area. As a result, the rehabilitation and restoration programs conducted in the observation areas are natural regeneration, planting, and combination of both programs.

Deliverable 7.1 - First Draft on Policy Recommendation Framework - the scope of this document is to provide a comprehensive mapping of current policies and practices related to forest management, with a focus on sustainable forest management, forest resilience, post-fire forest restoration, and forest governance. It discusses EU policies related to the climate crisis, biodiversity management, wildfire policy, forest strategy and provides related key points for the next steps, in order to support the process of developing new policies or enhancing current policies related to wildfires prevention and mitigation.



SILVANUS BCO Video - A Holistic Solution to Wildfire Management



The European Broadband Competence Offices (BCOs) Network, a European Commission initiative, has produced a video about the SILVANUS Project – A Holistic Digital Solution to Wildfire Management.

The 3-minute video features interviews with the SILVANUS technical manager Krishna Chandramouli from Venaka Treleaf and project partner Despina Anastasopoulos from Netcompany-Intrasoft and includes (among other material) footage from SILVANUS pilot sites in Portugal, Australia and Croatia by SILVANUS partners Terraprima, CSIRO and Croatian Firefighting Association, along with a visual presentation of an IoT device for detecting fire, one of the components of the SILVANUS platform, by project partner Konstantinos Avgerinakis from Catalink Ltd.

The emphasis of the video is on how technology can prove to be a valuable asset to fight and prevent extreme wildfire, and how connectivity in rural and forest areas of Europe is a prerequisite for this digital solution.

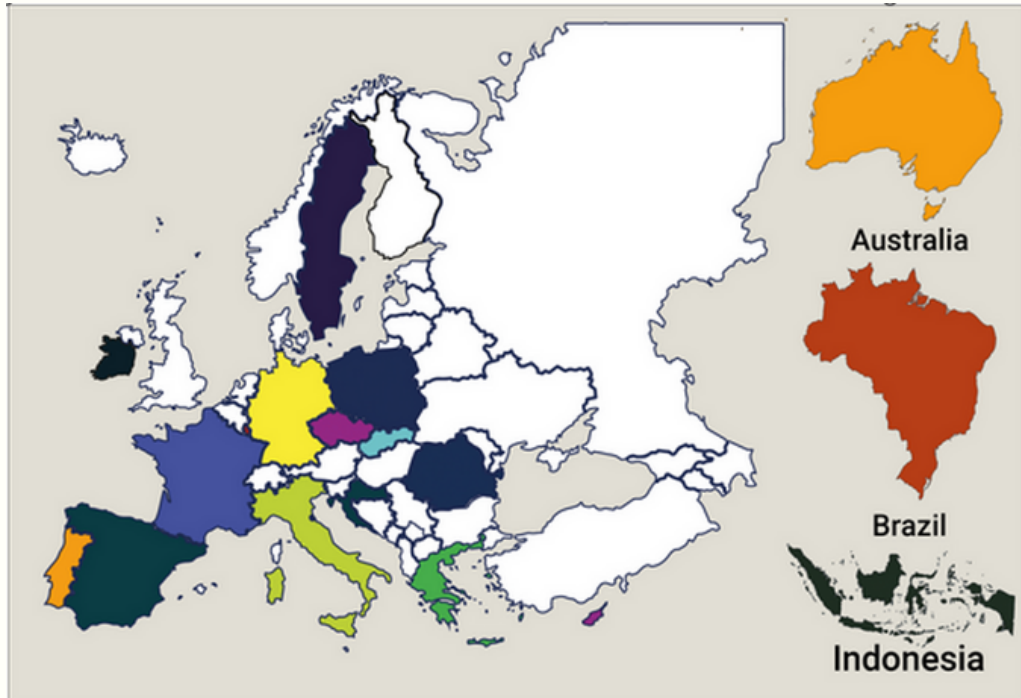
This video is part of the European Broadband Competence Offices Network's programme promoting awareness of good practices in broadband projects as well as EU broadband funding and policy.



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SME organisations



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