

## NEWSLETTER

Issue #2

April 2020 - September 2020

@excelsior2020eu



## HIGHLIGHTS IN THIS ISSUE



### Arrival of the PollyXT lidar from Leipzig to Limassol

10 years after first lidar observations in Limassol, we welcomed PollyXT next generation.

**EXCELSIOR**  
ERATOSTHENES Centre of Excellence

ERATOSTHENES: EXcellence Research Centre for Earth SurveLLance and Space-Based Monitoring Of the EnviRnment

**1<sup>st</sup> virtual EXCELSIOR International Technical Workshop**

REGISTRATION  
<https://excelsior2020.eu/>

15 JULY 2020  
WEDNESDAY  
8:00-16:30 CEST

Space Operations and Environmental Monitoring in Cyprus

CONSORTIUM  
Cyprus University of Technology, DLR, TROPUS, DEC

### EXCELSIOR First International Virtual Workshop

The 'EXCELSIOR' H2020 Teaming Project Consortium and the ERATOSTHENES Centre of Excellence (ECoE) organised the First Virtual International Workshop on 'Space Operations and Environmental Monitoring in Cyprus'.



### Meet the Board of Directors of the ERATOSTHENES CENTRE OF EXCELLENCE (ECoE)

Announcement of the composition of the first Board of Directors of ECeE which consists of seven members

Visit Eratosthenes CoE website:  
[www.eratosthenes.org.cy](http://www.eratosthenes.org.cy)



# Arrival of the PollyXT lidar from TROPOS (Leipzig) to ECoE (Limassol)



The advanced system PollyXT of the ERATOSTHENES Center of Excellence has arrived and has been installed at the premises of the Cyprus University of Technology (CUT). The system is a national research infrastructure for the study of the atmosphere as well as the flagship of the research equipment of the Department of Environment and Climate of the ERATOSTHENES CoE.

The equipment is a state-of-the-art remote sensing system with laser radiation (PollyXT lidar) and emits a visible beam (green beam of light) from the ground vertically up into the atmosphere. The laser beam is used to continuously record the vertical structure of the atmosphere, atmospheric parameters and suspended particles, such as desert dust, volcanic ash, smoke particles, which often affect air quality in the region of Cyprus. The retrieved information allows the 3D observation of the atmosphere, providing important information about the vertical extent and temporal evolution of the various atmospheric phenomena. The data are available in real time through the website of the PollyNET network.

The device was funded by the Federal Ministry of Education and Research (BMBF) via the PoliCyTa project.



# EXCELSIOR First International Virtual Workshop

The 'EXCELSIOR' H2020 Teaming Project Consortium and the ERATOSTHENES Centre of Excellence (ECoE) organised the First Virtual International Workshop on 'Space Operations and Environmental Monitoring in Cyprus'. This Workshop was a part of the annual workshops, with the participation of all national, East Mediterranean, Middle-East and North Africa (EMMENA) and international stakeholders and addressing all the different activities of the ECoE, i.e., infrastructure, research, education and innovation through entrepreneurship. This workshop was planned and initially scheduled to coincide with the Annual International Conference on Remote Sensing and Geo-information of Environment/RSCy2020, however due to COVID-19 this workshop had been postponed. Eventually, the workshop took place virtually on the 15<sup>th</sup> of July 2020 through the ZOOM platform. The workshop attracted up to 210 unique viewers and 105 concurrent views.

## Main aim and objectives

- Our aim for the series of all the proposed annual workshops is to interact with existing and new stakeholders, strengthening the regional links, invest in the continuous interaction with the strategic user segments of ECoE and sustaining long-lasting relationships and partnerships in the region.
- The main aim of the First Virtual International workshop was to familiarise the participants with the plans and prospects of EXCELSIOR. Specifically, the workshop focused on demonstrating the EXCELSIOR infrastructure for space operations, monitoring and environmental research and how these can be used for the projects and challenges in the Eastern Mediterranean.

Final agenda: <https://cutt.ly/IgHywGt>

Watch the workshop online via Youtube: <https://cutt.ly/AgHyoZh>





# Meet the Board of Directors of the ERATOSTHENES CENTRE OF EXCELLENCE

A new legal entity has been established with the following name: **'ERATOSTHENES CENTRE OF EXCELLENCE'**. The ECoE is **completely autonomous** in its decision making, as it is managed by its own **Board of Directors (BoD)**, which is composed of **seven (7) members**.

Website of the new entity: [www.eratosthenes.org.cy](http://www.eratosthenes.org.cy)



**Associate Professor Evangelos AKYLAS**  
*Cyprus University of Technology (Chairman)*



**Mr Marios DEMETRIADES**  
*Managing Director of the MD Mindset Capital Ltd; Former Minister of Communications and Works (Member)*



**Mrs Vasiliki ANASTASIADOU**  
*Former Minister of Communications and Works (Member)*



**Mrs Barbara RYAN**  
*Former Secretariat Director of GEO (Group on Earth Observations) (Member)*



**Dr Rosa LASAPONARA**  
*CNR, Italy (Member)*



**Dr Nektarios CHRYSOULAKIS**  
*Director of Research, Foundation for Research and Technology (FORTH), Greece (Member)*



**Mr Christos STYLIANIDES**  
*Former European Commissioner (Member)*



**Dr Evangelos Akylas** specializes in the fields of Fluid Mechanics and Mathematical Modeling. Currently, he is an Associate Professor in the Department of Civil Engineering of the Cyprus University of Technology, where he teaches physics, hydrology, hydraulics and fluid mechanics. His principal research field is theoretical fluid mechanics, with emphasis on both analytical and numerical studies of fluxes in laminar and turbulent flows. He is also active in the field of subsurface hydrology, with emphasis in groundwater flow, aquifer depletion/seawater intrusion and aquifer recharge problems, as well as in experimental and computational studies of water quality and transport phenomena in reservoirs. The study of these challenging flow problems has resulted in publications in a wide range of different research areas (from meteorology to hydraulics and to fundamental fluid mechanics), whilst the attained expertise has led to scientific contributions to numerous research projects. His published work, as an author or co-author, includes 40 papers in refereed international journals and more than 70 papers in edited volumes, refereed conference proceedings and conference presentations, as well as 17 technical reports. He also acts as a reviewer, on a systematic basis, for several journals in the field of fluid mechanics and hydrology. From 2020, Dr Akylas is the Chair of the Board of Directors (BOD) of the ERATOSTHENES Centre of Excellence (ECoE) as a part of the upgrade of the existing Eratosthenes Research Group, operating within the Department of Civil Engineering and Geomatics, through the EXCELSIOR Project.

**How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence?**

Being the Chair of the Board of Directors (BOD) of the ERATOSTHENES Centre of Excellence (ECoE) is a huge honor and opportunity for me. I believe that my scientific background as well as the knowledge and experience that I have acquired through as a chair at the Department of Civil Engineering and Geomatics of the Cyprus University of Technology will be of great importance for the Board of Directors of the ERATOSTHENES Centre of Excellence. I will provide my guidance and help throughout the project so it can run smoothly.

**How important is space and earth observation for the EMMENA region?**

Establishing such initiatives especially for our region in the Eastern Mediterranean, Middle East and North Africa are crucial, since space and earth observations are important for linking global knowledge with regional, national, local and community information. This is particularly important for climate and meteorological information smaller countries, which can benefit from information that they could not generate separately.

**What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

The ERATOSTHENES Centre of Excellence can be a cornerstone for the region along with its contribution to space sciences and technologies, innovative research, protection of the environment, spreading of information and creating new job opportunities. The capabilities and potential of the ERATOSTHENES Centre of Excellence are limitless and can be of immense significance for Cyprus!



**Marios Demetriades** is currently running MD Mindset Capital, involved in significant projects in the infrastructure space and various investments related projects. He is also a Board member in various high profile companies in Cyprus and abroad and an Entrepreneur invested in several startups. Over the years, he has acquired significant experience in Capital Markets as an Investment Professional, as well as the real economy, through his tenure as a Minister covering a large part of the Cyprus economy. During his term as a Minister, he completed the privatization of the largest commercial port and opened up the Aviation sector resulting in more than 40% increase in traffic. He also promoted heavily the Cyprus shipping sector.

Marios Demetriades holds a BSc degree and is a qualified Chartered Accountant and a CFA Charterholder. He started his career with BDO Stoy Hayward in London before moving to EY in Cyprus.

After that, he spent 15 years working for Laiki Investments and Piraeus Bank Cyprus running their asset management departments. In March 2014, he became the Minister of Transport, Communications, and Works for Cyprus, a position he kept until the end of the term of the government in February 2018.

**How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence?**

I can contribute to the project through my capacity as an ex Minister of Transport, Communications and Works responsible for the Space industry in Cyprus and through my capacity as a Board Member for several companies.

My experience as ex Minister allows me to provide my guidance to the Executive Team of the project at a policy level whereas my experience as Board Member to ensure that the project is ran with the necessary level of Corporate Governance.

**How important is space and earth observation for the EMMENA region?**

Space and Earth observation is extremely important for the EMMENA region. Earth observation is used for an increasing number of areas such as environmental monitoring, meteorology and map making. The further development of the capabilities for the region will help to increase the usage in these areas and save significant resources for the regional governments (both in manpower and equipment) as well as provide them with the necessary information to improve the quality of life for its residents.

**What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

Cyprus is located at a strategic position and is ideal for earth observation. The project comes at an important point of time as Cyprus is moving towards becoming a full member of the European Space Agency (ESA) and earth observation has been identified as one of the three areas European projects by ESA.

Our vision would be for the EXCELSIOR Project to help develop the ERATOSTHENES Centre of Excellence as one of the leading Digital Innovation Hubs in the area of Earth Observation in the region.





**Vassiliki Anastasiadou** was born in Nicosia in 1958. She studied Law at the National and Kapodistrian University of Athens and holds a post graduate studies Degree in European Law (LLM in European Union Law) from the University of Leicester. She began her career as a trainee advocate and successfully acquired the License of a Registered Practicing Advocate. In 1983, she was appointed as Secretary to Parliamentary Committees, in the Parliamentary Committees Service of the House of Representatives, gradually rising through all the ranks of the Service to become its Chief Secretary. In 1999, in addition to her duties as Chief Secretary, she was assigned to coordinate the provisional Department of the House commissioned to harmonize Cyprus legislation with the *acquis Communautaire*. In 2002, she was appointed as Director of the newly established European Affairs Service of the House, continuing to work for the successful completion of the harmonization process of Cyprus' legislation with the *acquis Communautaire* until Cyprus' accession to the European Union. In 2007, she was appointed as Director of the Parliamentary Committees Service and in July 2013 Secretary General of the House of Representatives. As Director of the Parliamentary Committees Service, she was involved in the promotion, coordination and implementation of the legislative work and parliamentary control, as well as in the administration of the Service involved in the implementation of this work. From the position of the Secretary General of the Parliament, in addition to the above, she worked for the promotion of Parliamentary Diplomacy, the successful implementation of the overall parliamentary work, as well as the support of all the activities of the House and its President. She was the administrative head of the staff of the House of Representatives. Mrs Anastasiadou, appointed by the President of the Republic of Cyprus, Mr. Nicos Anastasiades, assumed office as Minister of Transport, Communications and Works on the 1<sup>st</sup> of March 2018 until the 1<sup>st</sup> of December 2019. Since March 2020 she has been appointed by the Board of Directors of the Technical University of Cyprus as a member of the Board of Directors of the ERATOSTHENES Excellence Research Centre for Earth Surveillance and Space-Based Monitoring of the Environment. Since 1<sup>st</sup> June 2020 she has been appointed as an external member of the Council of the University of Cyprus upon selection by the Senate. She is the Chairperson of the Personnel and Regulation Committees.

**How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence?**

I believe that the knowledge and experience that I have acquired through administrating the House of Representatives and organizing its functions as well as by my occupation with the portfolio of the Ministry of Transport, Communications and Works, in which, space was included, will be useful and constructive for my participation in the Board of Directors of the ERATOSTHENES Centre of Excellence . I am particularly thrilled by the idea of serving on the same board with so many distinguished colleagues with whom I will join efforts in order to serve collectively the aims and objectives of the Centre.

**How important is space and earth observation for the EMMENA region?**

The region of east Mediterranean is a sensitive and distressed area on a political as well as military level and additionally it has the complexity of dealing with a huge immigration problem. I therefore believe that space and earth observation in this region can add a positive and peaceful dimension, that will contribute to the development of our region, by directing science and culture towards a more balanced, healthy and sustainable orientation.

**What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

In relation to my previous comment Excelsior can be a blessing for the region and a means that can contribute a lot to the peaceful sciences of space, research, technology and innovation, protection of the environment, spreading of information and creating new jobs. The capabilities and potential of the ERATOSTHENES Centre of Excellence are not limited only on a local level. They can contribute so that Cyprus is benefited from the European and global scientific research and experience, based on the principles of reciprocity, meritocracy and epistemology.



Under **Barbara J. Ryan's** leadership, millions of satellite images and other Earth observation data have been made available to the general public at no charge, allowing scientists, planners and policy makers to make better-informed decisions on problems that transcend political boundaries. Her work addresses critical issues in agriculture, biodiversity, climate change, disaster planning, energy, health and water. Barbara Ryan's career began in 1974 when she joined the United States Geological Survey (USGS), the nation's largest natural resource science and civilian mapping agency. She advanced steadily in the USGS, earning master's degrees in geography from the University of Denver and in civil engineering from Stanford University. As associate director for geography at the USGS, she was responsible for the agency's remote sensing, geography and civilian mapping programmes, including the Landsat satellites. From 2008 to 2012, she was Director of the World Meteorological Organisation (WMO) Space Programme, and from 2012 to 2018, Ryan was the Secretariat Director of the intergovernmental Group on Earth Observations (GEO) in Geneva, Switzerland. Ryan has served as chair of the international

Committee on Earth Observation Satellites (CEOS). She has been awarded an honorary doctorate of science degree from her alma mater, SUNY Cortland. She has been named an Honorary Fellow of the American Geographical Society, in 2017 she was one of 10 global Leaders to be named to the Geospatial World Forum's Hall of Fame, and in 2019 she was awarded the Department of Interior and NASA's Pecora Award. She serves on several Boards and Advisory Committees including the Ecological Sequestration Trust, the International Centre for Earth Simulation (ICES), the International Symposium for Remote Sensing of Environment (ISRSE), and the Jane Goodall Institute. She also serves as a Policy Advisor to the World Geospatial Industry Council (WGIC).

**How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence ?**

I am hoping to contribute to the Board by providing advice and other connections with the international Earth observation and geospatial communities, gained largely over the last 40+ years with the U.S. Geological Survey (USGS), the World Meteorological Organisation (WMO), the Group on Earth Observations (GEO), and most recently with the World Geospatial Industry Council (WGIC).

**How important is space and earth observation for the EMMENA region?**

Extremely important. The capabilities that now exist from Earth observation satellites and other air-borne sensors are amazing, and provide access to real time, or near real time data in ways that we have not seen before.

**What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

I am optimistic that this project will become a key component, if not the centerpiece, of the fabric of integrated Earth observations in the Region.





**Dr. Rosa Lasaponara** has more than 25 years of experience in the field Earth Observation from satellite/airborne/ground based on passive (optical, multi-hyperspectral data) and active (radar, LIDAR) sensors. Her main research interests are focused on modelling, data processing, integration, and interpretation of big Earth Observation for natural/anthropogenic risk estimation, monitoring and mitigation, with particular reference to risk management and post events damage estimation (fire monitoring and post fire monitoring), Landscape analysis and environmental degradation (urban sprawl, desertification, pollution), paleo-environmental investigations and archaeological studies.

She authored or co-authored of more than 350 peer-reviewed papers (210 in JRC journals, book etc.), editor of NHESS, academic Editor of RS and guest editor for several international journals Remote Sensing (2020, 2019, 207, 2013), IJRS, JAG, Ecological Modeling, Journal of Archaeological science, Archaeological Prospection, Journal of

Cultural Heritage, Sensor, Sustainability.

She has been and currently is the scientific coordinator of several research projects at national and international level (more than 45 projects, funded by the EC (European Community, as H2020), ESA (European Space Agency), ASI (Italian Space Agency), MAECI (Ministero degli affari esteri e cooperazione Internazionale, progetti di grande rilevanza), CNR, DPC (department of protezione civile). She currently is the LPI of SER\_FORFIRE ERA4CS (Integrated services and approaches for Assessing effects of climate change and extreme events for fire and post fire risk prevention ([http://www.ipi-climate.eu/nl/25223459-SERV\\_FORFIRE.html](http://www.ipi-climate.eu/nl/25223459-SERV_FORFIRE.html)), PI for IMAA of ATHENA twin project H2020 and for ArTeK and Space\_To\_Tree funded by ESA in cooperation with ASI.

### **How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence?**

I am particularly proud and honored to be **a member of the Board of Directors of the ERATOSTHENES Centre of Excellence**, because with the partners we can share ideas, vision and expertise. My specific contribution can be support and facilitate an interdisciplinary and trans-disciplinary vision of the EO research and operational applications. In the last 25 years, my team (- Argon lab at the CNR-IMAA -jointly with the ISPC –CNR) conducted EO-based multi-trans and inter-disciplinary research contributing to the development of novel concepts and approaches between and across diverse disciplines. This multi-trans and inter-disciplinary vision suitably enabled us to develop and set up EO-based research and operational applications in several continents from Europe to China, from South America to North Africa, focusing on diverse research domains as: natural and cultural heritage, risk, climate change, change detection, land degradation.

### **How important is space and earth observation for the EMMENA region?**

In the EMMENA region, Earth Observation can contribute significantly in supporting the development of science, society and economy, and particularly, of the Space Economy also by exploring new ways of partnering with a mix of crowdfunding projects, private, not-for-profit, and public actors to achieve new socio-economic goals.

Space is a strategic sector for the future economy and one of the four pillars of the Space2030 Agenda, which outlines the contribution of space to the Sustainable Development Goals of the United Nations. Earth observation data, combined with in-situ data and other sets of non-satellite based data, has become an essential operational instrument to monitor the evolutions of the environment and measure progress towards the goals set by the Green Deal and the UN 2030 Agenda for Sustainable Development.

### **What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

- Develop advanced and innovative capacities and services to monitor, analyse, predict and mitigate the impact of the human activity on natural resources (soil, air, water...).
- Contribute significantly to the objectives of the European Green Deal
- Focus on the integration of space technologies with new emerging technologies
- Maximise the potential of Earth Observation – for economy, science and society –
- Provide support, expertise, the quality-assured data required to underpin mass market and business applications, cutting-edge science,
- Facilitate the development of effective and efficient policy and operational decision making,
- Inspiring and supporting the next generation of innovators and job creators



**Christos Stylianides** is the former European Commissioner for Humanitarian Aid and Crisis Management (2014-2019). On October 24th, 2014 he was appointed by the European Council EU Ebola Coordinator and served until the end of the term of the Juncker Commission. He is currently Visiting Professor in Practice at the Department of Health Policy of the London School of Economics (LSE), Faculty Member at the University of Nicosia Medical School and Visiting International Professor at Ruhr Universität Bochum (RUB) Research School and Special Advisor, European Commission (to Vice President Margaritis Schinas) on Education in Emergencies, migration and inclusion. He was elected Member of the European Parliament in the May 2014 European elections where he served until October 31st 2014. He was twice appointed Government Spokesperson of the Republic of Cyprus (in 2013-2014 and in 1998-1999). During the

period 2006-2013 he served as a Member of the Cyprus House of Representatives (elected in 2006 and 2011). During his tenure he served as Deputy-Chair of the Committee on Foreign and European Affairs (2011-2013) and member of the Committee on European Affairs, the Committee of Internal Affairs and the Committee of Employment and Social Affairs (2006-2011). Between 2006-2011 he was a member of the OSCE Parliamentary Assembly and he was elected Member of its Bureau in 2012. Christos Stylianides was named “Global Champion for Education in Emergencies” by Education Cannot Wait (ECW) and “Political Champion for Education in Emergencies” by the Malala Foundation. He received a number of honorary awards including the Golden Decoration of Honour by the Federal Agency for Technical Relief (THW) of the Federal Republic of Germany, the “Their Inspiration Award” by the Their World and the Global Business Coalition for Education, the Gernika Prize for Peace and Reconciliation, the “Andreas Yannopoulos” Award by the Smile of the Child in Greece, the “Yannos Kranidiotis Award” for his contribution to the European project, the “Democracy Award” by “Politia” (Cyprus). He also received the Highest Honorary Recognition by the Eastern Macedonia and Thrace Institute of Technology (Greece) and Honorary Recognition by the “Elpida” Foundation (Greece). He is also Member of the Board of Trustees of “Friends of Europe”, a Council Member of the European Council on Foreign Relations (ECFR), a Member of the High-Level Steering Group (HLSG) of the Education Outcomes Fund (EOF) for Africa and The Middle East and a Member of the Board of Directors of the Eratosthenes Centre of Excellence.



**Dr. Nektarios Chrysoulakis** is a Director of Research at FORTH and Head of the Remote Sensing Lab (<http://rslab.gr>), operating Flux Tower Infrastructures in the city of Heraklion ([http://www.rslab.gr/heraklion\\_eddy.html](http://www.rslab.gr/heraklion_eddy.html)). He holds a BSc in Physics, a MSc in Environmental Physics and PhD in Remote Sensing from the University of Athens. He has been involved in R&D projects funded by the European Union, the European Space Agency and the Ministries of Environment, Development, Culture and Education. His main research interests include climate change and urbanization, urban climate, urban energy balance, urban resilience, urban planning and metabolism, natural and technological hazards, surface temperature and albedo, environmental monitoring and change detection. Dr. Chrysoulakis is cPI of the European Research Council (ERC) Synergy project urbisphere (<http://urbisphere.eu>), focusing on coupling dynamic cities and climate. He is the coordinator of the H2020-Space project CURE (<http://cure-copernicus.eu>), focusing on Copernicus services exploitation in the domain of urban resilience. He has coordinated the projects URBANFLUXES (H2020), SEN4RUS (ERA.Net-RUS Plus), BRIDGE (FP7) GEOURBAN (FP7). He has also participated projects ECOPotential (H2020), THINKNATURE (H2020), IGIC (LIFE) and FLIRE (LIFE). Dr. Chrysoulakis is a Visiting Professor at the Department of Physics of the University of Crete, teaching the course “Principles and Applications of Satellite Remote Sensing”; and at the CIHEAM-MAICh, teaching the course “Remote sensing of Urban Environments”. He is involved in GEO Climate Change Working Group, as well as in GEO Programme Board Urban Resilience Subgroup. He has more than 250 publications in peer review journals and conference proceedings.

**How do you see your contribution, being a member of the Board of Directors of the ERATOSTHENES Centre of Excellence?**

Beyond my involvement in high level decision making, as a member of the Board of Directors, my contribution will also focus on ECoE activities related to the global challenges of urbanization and climate change. Currently, there is a fundamental disconnect between the approaches employed in climate and urban system science to study dynamic connections and interlinkages between climate and cities. The development of EO-based methods to quantify these interlinkages constitutes a main research direction in my Lab at FORTH (<http://rslab.gr>), in the frame of the European Research Council (ERC) Synergy project urbisphere (<http://urbisphere.eu>). The impact of this research is expected high, therefore my contribution to the ECoE will capitalize on the new knowledge to be produced by urbisphere, as well as on my experience in other relevant H2020 projects, to support ECoE involvement in the European Research Area, through the Horizon Europe Framework Programme, as well as in European Space Agency projects in the above domains.

**How important is space and earth observation for the EMMENA region?**

A major scientific challenge, related to climate change and global warming, is to identify the anthropogenic contribution to global/regional climate forcing (i.e. emissions of energy, carbon and pollutants, including aerosols). There is a strong demand for EO monitoring to provide data to evaluate the extent of pollution and climate change, especially in the EMMENA region. Mitigation and adaptation actions, that enhance the resilience of EMMENA region, need to be based on a sound understanding and quantification of the local and regional drivers of transformations and vulnerability in the context of climate change, as defined in the United Nations Sustainable Development Goals. Therefore, EO infrastructures delivering timely and robust environmental information for the EMMENA region are very important; and Cyprus’s unique geostrategic position gives ECoE the opportunity to exploit its EO infrastructure in providing valuable EO-based services in EMMENA region.

**What is your vision for the strategic development of the ERATOSTHENES Centre of Excellence in Cyprus?**

I fully support the idea of establishing a world-class Digital Innovation Hub for Earth Observation and Geospatial Information. This will increase excellence and contribution to science and applications by focusing on innovative exploitation of space methods and data, in the broader context of environmental sustainability. In the long term, it will enhance Cyprus industry’s potential to take advantage of emerging market opportunities and capacity to establish leadership in the field of EO for environment and security, by stimulating a wider exploitation of ECoE in developing downstream services at National, EMMENA and global levels.



## EXCELSIOR'S DETAILS



**Funded under H2020**

**Pillar: Spreading excellence and widening participation**

**Work Programme Year: H2020-2018-2019**

**Work Programme Part: Spreading Excellence and Widening Participation**

**Call: H2020-WIDESPREAD-2018-01**

**Topic: WIDESPREAD-01-2018-2019-Teaming Phase 2**

**Type of action: CSA (Coordination and support action)**

**Project grant agreement No. 857510**

**Proposal acronym: EXCELSIOR**

**Total Budget: >38.000.000€ (15M€ EU & 15M€ CY-Republic of Cyprus+ 8M€ Cyprus University of Technology )**

**Duration: 7 years from EU+ 8 years Republic of Cyprus**

**Start: 01 October 2019 End: 31 September 2026**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 857510.



This project has received funding from the Government of the Republic of Cyprus through the Directorate General for the European Programmes, Coordination and Development.

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# LATEST NEWS

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# LATEST NEWS

## WebGIS service to trace the origins of COVID-19

1<sup>st</sup> of April 2020, online

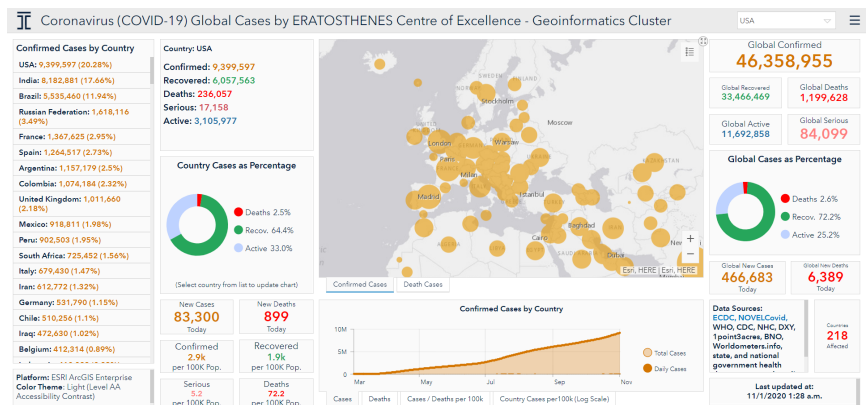
The Eratosthenes Centre of Excellence and the EXCELSIOR Project have launched a WebGIS platform to trace the origins of COVID-19 pandemic. The main objective of the ERATOSTHENES COVID-19 WebGIS Platform was to illustrate the spread of the COVID-19 pandemic, disseminate useful statistical figures to the Governing Departments and Authorities and inform the public.



The platform is available at:

<http://tiny.cc/53qysz>,

<http://tiny.cc/73qysz>

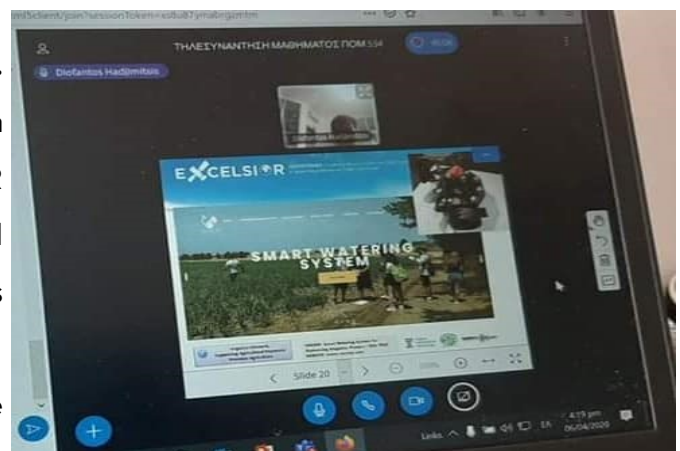


## Presentation to the MSc students

6<sup>th</sup> of April 2020, online

The Coordinator of the EXCELSIOR Project Prof. Diofantos Hadjimitsis presented earth observation applications that are applied within the EXCELSIOR Project to the students of the Civil Engineering and Sustainable Design MSc course of the Cyprus University of Technology.

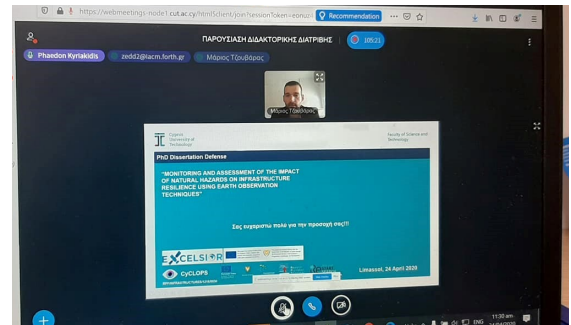
Due to COVID-19 protection measures, the presentation took part online.





## PhD presentation of Marios Tzouvaras 24<sup>th</sup> of April 2020, online

Marios Tzouvaras, Associate Researcher at the Eratosthenes Centre of Excellence presented his PhD with topic “Monitoring and assessment of the impact of natural hazards on the infrastructure resilience using earth observation techniques”. His PhD was conducted under the supervision of Prof Diofantos Hadjimitsis, Prof. Andreas Andreou and Prof. Evangelos Akylas.



### Recent MDPI publications:

<https://doi.org/10.3390/geosciences10060236>

<https://doi.org/10.3390/rs12101560>

## Co-organizing the ICOMOS-CYPRUS seminar 24<sup>th</sup> of April 2020, online

In the context of the World Day of Monuments and Sites, ICOMOS Cyprus, organized a webinar on "Digital Cultural Heritage: Technologies and Challenges". The seminar was held in collaboration with ICOMOS Cyprus with ETEK, the headquarters of UNESCO in Digital Cultural Heritage, the Cyprus University of Technology, the EXCELSIOR program, etc. The EXCELSIOR Project was presented extensively from the Dr Kyriacos Themistocleous (CUT & Eratosthenes CoE), project manager of the EXCELSIOR H2020 Teaming Project.

### More information is available at:

<https://excelsior2020.eu/event/international-day-for-monuments-and-sites-webinar-organized-by-icomos-cyprus-24-04-2020/>



## Presentation at the EGU 2020

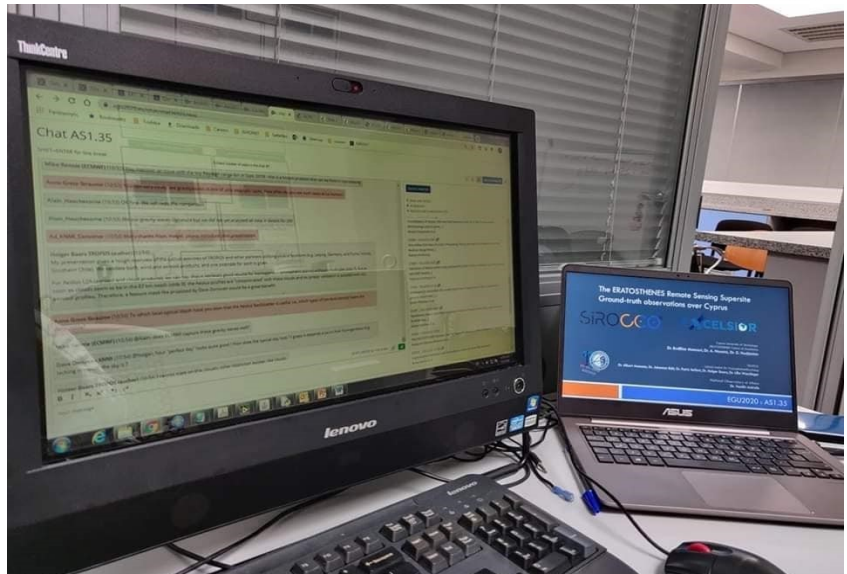


4<sup>th</sup> - 8<sup>th</sup> of May 2020, online

Dr Rodanthi Mamouri and Dr Silas Michaelides, presented at the EGU 2020.

Dr Mamouri gave a presentation on the ERATOSTHENES Remote Sensing Supersite: Ground-truth observations over Cyprus.

Dr Michaelides participated as an author and as a convener at the assembly. He was a convener in the session on Precipitation: Measurement, Climatology, Remote Sensing and Modelling, and he gave a presentation with title: "The "Excelsior" H2020 Widespread Teaming Phase 2 Project:



ERATOSTHENES: EXcellence Research Centre for Earth SurveiLlance and Space-Based Monitoring Of the EnviRonment" and the poster paper 'Cyprus enters the space arena with "Excelsior " H2020 Teaming project and the ERATOSTHENES Centre of Excellence: "Why Cyprus? Why Excelsior? What are the needs and opportunities?". Several other papers from other funded projects of the group have been presented as well.

**More information is available at:**

<https://meetingorganizer.copernicus.org/EGU2020/EGU2020-21836.html>

<https://meetingorganizer.copernicus.org/EGU2020/EGU2020-21801.html>

## Participation at the Copernicus Academy video conference

20<sup>th</sup> of May 2020, online

Prof. Diofantos Hadjimitsis the Coordinator of the Excelsior H2020 presented the "EXCELSIOR" project and the ERATOSTHENES Centre of Excellence during the Copernicus Academy Monthly video conference meeting which was organised on the 20th of May 2020.

During the video meeting, there was an attendance of more than 55 participants. Mr. Mettas and Dr. Tzouvaras from ERATOSTHENES Centre of Excellence also joined also meeting.

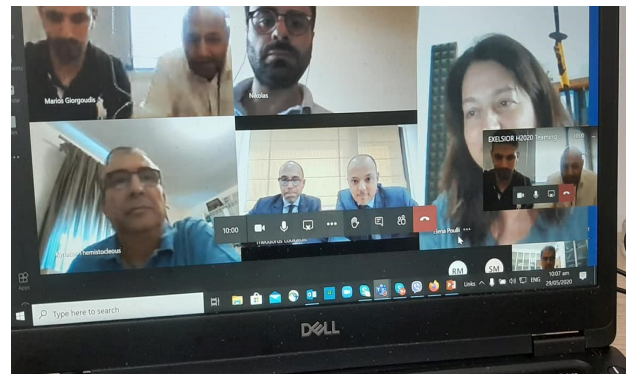




## Presentation to the Chief Scientist

29<sup>th</sup> of May 2020, online

The EXCELSIOR Project and the up to date activities of the Eratosthenes Centre of Excellence were presented to the Chief Scientist Dr Nikolas Mastrogiannopoulos and the General Director Mr Theodoros Loukaides from the Research and Innovation Foundation (RIF) of Cyprus. The meeting was coordinated by Christos Aspris, Marios Giorgoudes and was supported by Dr Leda Skoufari and Elena Poulli.

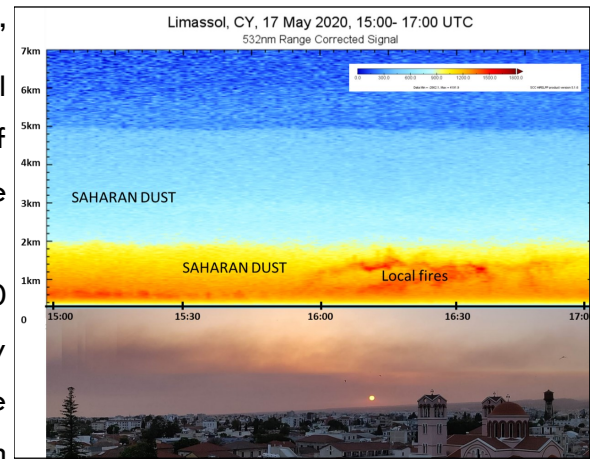


## Participation at the Pan-European COVID-19 ACTRIS-EARLINET campaign

30<sup>th</sup> of May 2020, Limassol

Cyprus University of Technology and ERATOSTHENES' Atmospheric Remote Sensing Unit of the Department of Civil Engineering and Geomatics and the Eratosthenes Centre of Excellence/EXCELSIOR H2020 Teaming participated at the Pan-European COVID19 ACTRIS-EARLINET campaign.

The ERATOSTHENES Centre of Excellence—'Excelsior' H2020 Teaming Project & Cyprus University of Technology participated actively in the EARLINET/ACTRIS intensive campaign, using the EARLINET lidar and the AERONET sun



photometer of the Cyprus University of Technology. The campaign was organized as part of the ACTRIS initiative for studying the changes in the atmosphere during the COVID-19 lockdown.

## Participation at the Teaming Club online meeting

3<sup>rd</sup> of June 2020, online

Members of the EXCELSIOR Project joined the Teaming Club online meeting. This was the first Teaming club meeting of the second generation H2020 Teaming Projects. The EXCELSIOR team is looking forward to a strong collaboration with all teaming projects of the Club. Prof. Diofantos Hadjimitsis presented the EXCELSIOR H2020 Project.





## Kick-off meeting of the IEEE-SA 4<sup>th</sup> of June, online

The EXCELSIOR team members Prof Hadjimitsis, Dr Themistocleous and Mr Christofi joined the IEEE-SA (Standard Protocol and Scheme for Measuring Soil Spectroscopy) kick-off meeting.

This Standard defines protocols and schemes for sensors and measurement methods when merging, comparing and utilizing Soil Spectral Libraries (SSLs)

from many sources, including LUCAS SSL, GEO-CRADLE SSL, BRAZILIAN SSL and GLOBAL SSL, as well as monitoring their measurement scheme before performing data manipulation or quantitative analyses. Using the standard SSLs is an important stage, while utilizing Hyperspectral (HSI) data for monitoring and mapping soils.

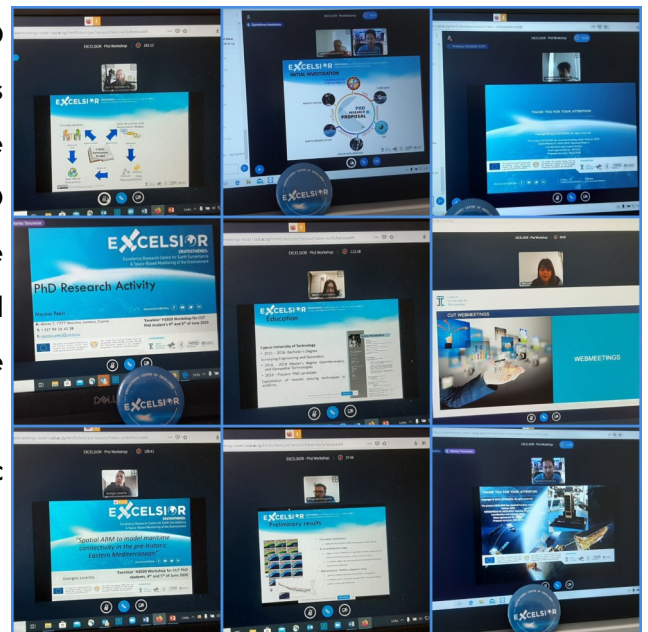


## PhD workshop

### 4<sup>th</sup> and 5<sup>th</sup> of June 2020, online

On the 4<sup>th</sup> and 5<sup>th</sup> of June 2020, all the existing 20 PhD CUT researchers presented their PhD activities as well as their PhD objectives, methodology, results and future work to the EXCELSIOR Partners. After every PhD candidate presentation, there was a discussion with the partners. This was the first two-day workshop organized by the EXCELSIOR H2020 TEAMING Project and the ERATOSTHENES Centre of Excellence.

More than 55 participants, including all strategic partners of the EXCELSIOR Project, joined the workshop.



## Collaboration with AUTH, i-BEC and Interbalkan Environmental Centre

11<sup>th</sup> of June 2020, online

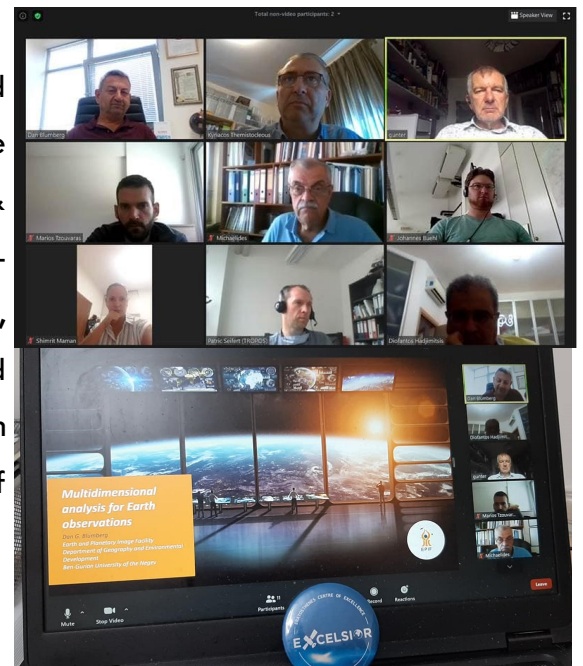
As a part of the commitment that was received from 95 organisations, universities and industrial partners, EXCELSIOR members had an online meeting with representatives from the Aristotle University of Thessaloniki and the Interbalkan Environmental Centre (i-BEC). The meeting was dedicated to the exploration of opportunities for the engagement of the committed organisations and stakeholders and the expansion of the ERATOSTHENES Centre of Excellence network.



## Meeting with Ben-Gurion University of the Negev

17<sup>th</sup> of June 2020, online

Members of the consortium of the EXCELSIOR Project had an online meeting with Prof. Dan G. Blumberg, Vice President for Regional and Industrial Development & Head of the Earth and Planetary Facility at the Ben-Gurion University of the Negev. Prof. Blumberg presented the Earth and Planetary Image Facility and discussed about the collaboration between the Ben-Gurion University of the Negev and the ERATOSTHENES Centre of Excellence.



Lab link:

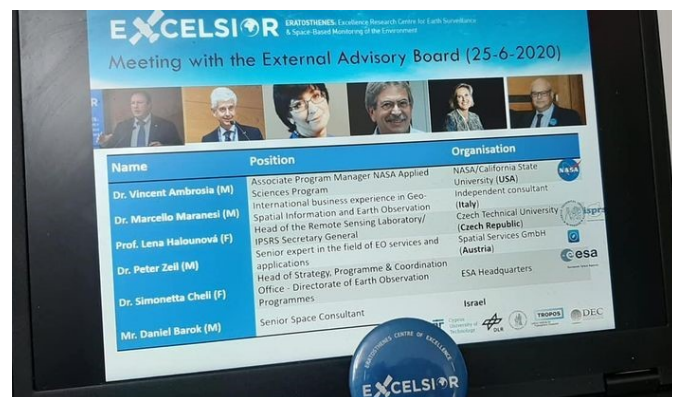
<https://in.bgu.ac.il/en/epif/Pages/Homepage1.aspx>

## Meeting with the External Advisory Board

25<sup>th</sup> of June 2020, online

On the 25<sup>th</sup> of June 2020, the EXCELSIOR consortium met on line with the members of the External Advisory Board:

- Vincent Ambrosia-NASA /USA
- Marcello Maranesi-Italy
- Lena Halounova-Czech Technical University/ Czech Republic
- Peter Zeil-Spatial Services/Austria
- Simonetta Cheli/ESA
- Daniel Barok/Israel

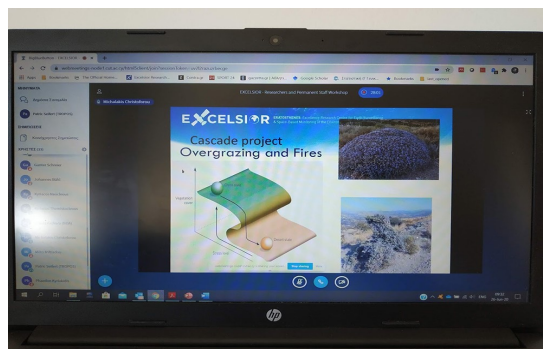




## Researchers and Permanent Staff Workshop

25<sup>th</sup> of June 2020, online

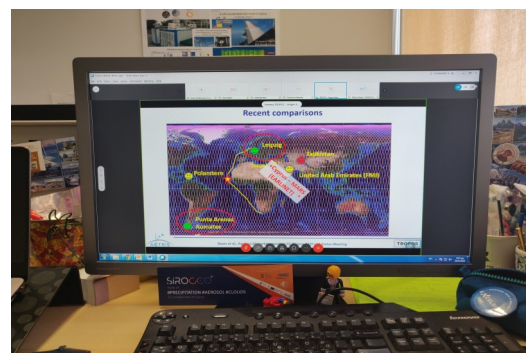
On the 26<sup>th</sup> of June 2020, 16 researchers and 5 permanent staff of the Cyprus University of Technology presented their profile and their research activities to the Excelsior Partners from 9.00 am to 14.00. During the workshop there was an active discussion between the participants.



## Aeolus L2A working 2<sup>nd</sup> meeting

30<sup>th</sup> of June 2020, online

EXCELSIOR team member Dr Rodanthi Mamouri participated at the Aeolus L2A working 2<sup>nd</sup> meeting. During the Aeolus Cal/Val meeting the EARLINET community provide information about the status of EARLINET related activities. SIROCCO researchers participated to the meeting providing information about the Limassol lidar station CAL/VAL activities.



## EXCELSIOR mentioned in MedRIN newsletter

1<sup>st</sup> of July 2020, online

EXCELSIOR and the ERATOSTHENES Centre of Excellence are presented in the Second Newsletter of the Mediterranean Regional Information Network NASA as the big initiative in the region! Prof. Hadjimitsis explained the concept of the Digital Innovation Hub. Interview from Dr Kontoes is also presented in the newsletter.

The newsletter is available at:

<https://gofcgold.org/sites/default/files/2020-06/>

[MedRIN-NEWSLETTER-2020\\_Final3.pdf](#)



Let's introduce the big initiative in the Region: 'EXCELSIOR' project and ERATOSTHENES Centre of Excellence (ECoE)

One of the biggest upcoming projects in the region is the 'EXCELSIOR' H2020 Widespread Teaming Project that aims to establish a sustainable, viable and autonomous Centre of Excellence, the Eratosthenes Centre of Excellence (ECoE) in Cyprus with funding from the European Union, the Government of Cyprus and the Cyprus University of Technology (CUT).

The Excelsior Project: The EXCELSIOR (ERATOSTHENES: Excellence Research Centre for Earth Surveillance and Space-Based Monitoring of the Environment) is a newly granted project from the Horizon 2020 Framework for Research and Innovation of the European Union (Grant Agreement number: 857510). Through the EXCELSIOR Horizon 2020 Widespread Teaming Phase 2 project, a new, autonomous and self-sustained Centre of Excellence, the ERATOSTHENES Centre of Excellence (ECoE) will become the sole established laboratory in Cyprus for Earth observations. The total funding of the EXCELSIOR H2020 Teaming project is: 15 million Euros from EC, 15 million Euros from the Republic of Cyprus and 8 million Euros from the Cyprus University of Technology.

What is the vision?: Within the next 7 years, the ECoE will become a world-class Digital Innovation Hub (DIH) for EO and Geospatial Information becoming the reference Centre in the Eastern Mediterranean, Middle East and North Africa (EMENA).

Consortium: The Consortium of the EXCELSIOR project consists of the Cyprus University of Technology (CUT) (Coordinator), the German Aerospace Centre (DLR), the National Observatory of Athens (NOA), the German Leibniz Institute for Tropospheric Research (TROPOS) and the Department of Electronic Communications (DEC) from the Deputy Ministry of Research, Innovation and Digital Policy of the Cyprus Government.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 857510.



This project has received funding from the Government of the Republic of Cyprus through the Directorate General for the European Programmes, Coordination and Development.

[www.excelsior2020.eu](http://www.excelsior2020.eu)



Prof. Dofantos Hadjimitsis, CUT



Dr. Haris Kontoes, NOA



Mr. Gunter Schreier, DLR



Dr. Albert Ansmann, TROPOS



Mr. Georgios Komodromos, DEC

WE ARE SOCIAL



<https://gofcgold.org/> and [excelsior2020.eu/](https://excelsior2020.eu/) networks/mediterranean-regional-network



@excelsior2020



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Mediterranean Regional Information Network #MedRIN





## EXCELSIOR mentioned in the fourth issue of START's ProSus Magazine 1<sup>st</sup> of July 2020, online

EXCELSIOR and the ERATOSTHENES Centre of Excellence are mentioned in the PROSUS magazine.

The magazine features a conversation with Vincent Ambrosia, California State University - Monterey Bay and NASA (USA), Ioannis Gitas, Aristotle University of Thessaloniki (Greece) and Diofantos Hadjimitsis, Cyprus University of Technology and ERATOSTHENES Centre of Excellence (Cyprus).

The magazine is available online at:

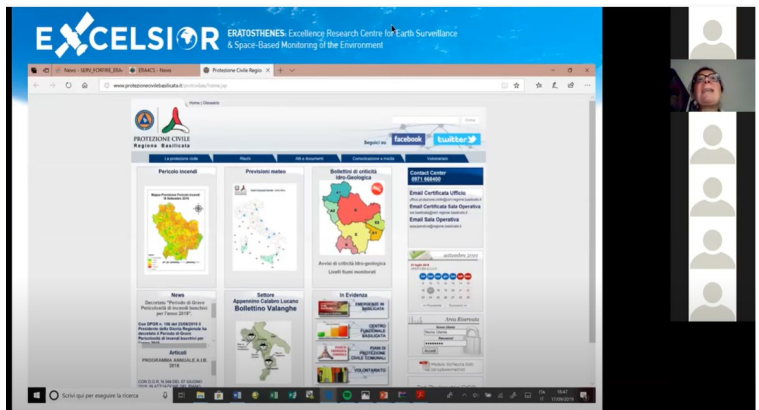
<https://start.org/prosus4>



## Virtual invited talk by Prof. Rosa Lasaponara

9<sup>th</sup> of July 2020, online

The EXCELSIOR H2020 project, the ERATOSTHENES Centre of Excellence (ECoE) and the Department of Civil Engineering and Geomatics of the Cyprus University of Technology organized a virtual invited talk by Prof. Rosa Lasaponara. Prof. Lasaponara is a researcher at IMAA-CNR and a member of the Board of Directors of the ECoE. Her talk focused



on the broader area of earth observation for cultural heritage. Cultural Heritage is one of thematic cluster research areas of the EXCELSIOR H2020 Project and the ECoE and is under the Resilient Society Department.

The virtual invited talk was coordinated by Prof. Phaedon Kyriakidis, Dean of Faculty of Engineering and Technology & Professor at the Department of Civil Engineering and Geomatics & Research Coordinator of the Eratosthenes Centre of Excellence.

The invited talk is available online via YouTube:

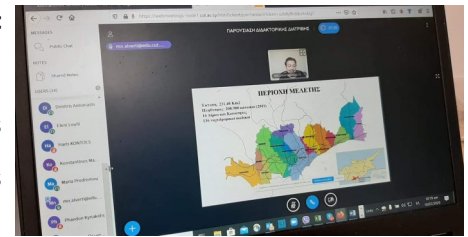
[https://www.youtube.com/watch?v=1TWui6rOPfc&feature=emb\\_title](https://www.youtube.com/watch?v=1TWui6rOPfc&feature=emb_title)

## PhD presentation of Maroula Alverti

10<sup>th</sup> of July 2020, online

Ms Maroula Alverti presented her PhD with topic “Human centric approach in local policy agenda for Euro Mediterranean smart cities”.

Her PhD was conducted under the supervision of Prof Diofantos Hadjimitsis, Prof Phaedon Kyriakidis from CUT and Prof Konstantinos Serraios from NTUA.



Publication associated with this thesis:

<https://doi.org/10.3390/smartcities3010004>

## Open positions announced

1<sup>st</sup> of August 2020, online

The ERATOSTHENES Centre of Excellence has announced three (3) positions at the rank of Senior Researcher A or B (equivalent to Professor or Associate Professor), for full-time or part-time employment and the following four positions:

1. Marketing Manager
2. Human Resources Manager
3. Accounting and Financial Officer
4. Facilities, Building Infrastructure and Procurement Officer

The positions have been published at EURAXESS portal.

More information on the positions is found under:

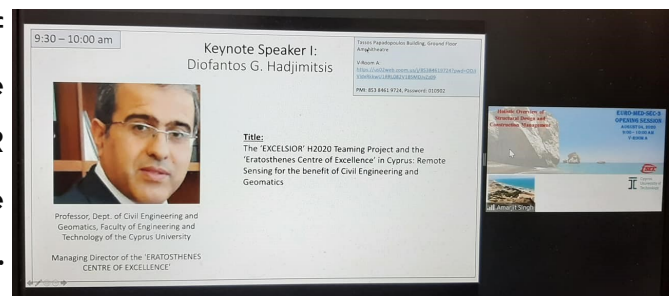
<https://cutt.ly/EgPDRax>



## Keynote Speech at the EURO-MED-SEC-3 conference

5<sup>th</sup> of August 2020, online

The Coordinator of the EXCELSIOR Project Prof Diofantos Hadjimitsis gave a keynote speech at the EURO-MED-SEC-3 conference about the EXCELSIOR H2020 Teaming project: Remote Sensing for the benefit of Civil Engineering and Geomatics. Prof. Christis Chrysostomou gave a keynote speech “Are we safe from earthquakes?” as well.



At the same conference, Mr Andreas Christofi, member of the EXCELSIOR team gave a presentation on “Assessing aging in reinforced concrete using novel remote sensing techniques”.

## Deputy chair at GEO

7<sup>th</sup> of August 2020

The Coordinator of EXCELSIOR H2020 TEAMING and Managing Director of the ERATOSTHENES Centre of Excellence ([www.eratosthenes.org.cy](http://www.eratosthenes.org.cy)) Prof. Diofantos G. Hadjimitsis will be one of the Deputy Co-Chairs of the GEO (GROUP ON EARTH OBSERVATIONS) under Subgroup 1: Coordination of climate issues across the GEO Work Programme & Synergies with key partners (including WMO). The Co-chair is Virginia Burkett, USGS - United States.



## EXCELSIOR and ECoE at the CYBC RIK 3 RADIO

19<sup>th</sup> of August 2020, Cyprus

The chairman of the Board of Directors of the ERATOSTHENES Centre of Excellence, Dr Evangelos Akylas had an interview at the CYBC RIK 3 RADIO about the EXCELSIOR Project and the ERATOSTHENES Centre of Excellence.

The interview is accessible online at:

<http://tiny.cc/ibrysz>



## ERATOSTHENES Centre of Excellence mentioned at ISPRS

31<sup>st</sup> of August 2020, online

ERATOSTHENES Centre of Excellence was mentioned as a Copernicus EU regional hub among the Copernicus Knowledge and Innovation Hubs in a paper published at the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS).

The paper is available at:

<https://cutt.ly/3gPAUOO>





## Presentation at the online event of NCP\_WIDENET Talks

7<sup>th</sup> of September 2020, online

Prof Diofantos Hadjimitsis presented at the online event of NCP\_WIDENET Talks "European Digital Innovation Hubs & Widening Participation" about EXCELSIOR, ERATOSTHENES Centre of Excellence as a Digital Innovation Hub (DIH).

The event was organized by the NCP.WIDE.NET to bring together different actors that contribute to digital transformation of regions through DIHs. This event is available online under the following link:

<http://tiny.cc/mj71tz>



## Workshop “Strengthening the industry in Cyprus”

22<sup>nd</sup> of September 2020, Nicosia

The EXCELSIOR Project and the ERATOSTHENES Centre of Excellence have been presented at the Landmark Hotel in Nicosia in the workshop "Strengthening the industry in Cyprus" organized by the Deputy Ministry of Research and Innovation and the Ministry of Commerce and Industry in Cyprus.



# FUNDED PROJECTS

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## FUNDED PROJECTS

SIROCCO RESTART: <https://sirocco.cut.ac.cy/>



Aerosol and clouds are major drivers of the global climate. They control Earth's albedo to a large degree and are responsible for the global distribution of water. The interaction between aerosol and clouds has been identified as one component probably counteracting the warming effect of CO<sub>2</sub> emission. But the effect is insufficiently represented in state-of-the-art climate modeling and the uncertainty estimations range up to 100%. Moreover, until now only the interaction between aerosols and liquid-water clouds has been taken into account. Mülmenstedt et al. (2015) found out that the majority of precipitation on Earth is generated via the ice phase. Hence, sophisticated methods for the observation of this process have to be found for areas with a complex orography or in coastal areas, where satellite remote sensing is difficult. The SIROCCO overall objective is to provide new knowledge in the field of aerosol-cloud-precipitation interaction based on synergy of remote sensing techniques. The ultimate goal is to identify the dominant processes responsible for the formation of clouds and precipitation in the Cyprus region.

ASTARTE: <http://astarte.cut.ac.cy/>



Analysis of SAR and thermal satellite data time-series for understanding the long-term impact of land surface temperature changes on forests. The overarching aim of this project is to research the impact of Land Surface Temperature on Cypriot forests by analysing time-series of SAR and thermal data. Impacts may include forest decline that does not relate to fire events, decreased forest density (e.g. biomass and leaf area index) and alternations to timing of forest blooming initiation, duration and termination. ASTARTE also analyses the understanding of the public sector about climate change and forest threats using questionnaires and relates the statistical results of the questionnaires to the output of the research.

SOFIA: <https://www.cyric.eu/project/sofia/>



The aim of this project is to promote education and outreach in earth surveillance and space-related topics in Cyprus secondary schools. Pupils are introduced to Earth Observation satellite programmes and remote sensing techniques via the delivery of presentations and training workshops. Finally, a national competition for secondary school students will be organized.

AQ-Serve: <https://aqserve-project.com/>



AQ-SERVE will combine innovative technical developments with new scientific knowledge on the characterization and prediction of air quality in order to provide an evaluation of the health impact and risk assessment of air pollution in Cyprus. Different scenarios (abatement measures) will be tested in a coupled Air Quality/Health & Risk model with the objective to define efficient mitigation measures which can be translated to the public authorities (National Air Quality Action Plan).

PVROSION: <http://psm.ucy.ac.cy/pvrosion/>



A three-year Research Project that aims to investigate:

- ⇒ The impact of accelerated dc corrosion on critical infrastructures, such as natural gas pipelines and oil tanks that are operated near large-scale Photovoltaic plants.
- ⇒ The impact of accelerated dc corrosion on the envelope and metallic infrastructure of energy efficient buildings that benefit from Building-Applied Photovoltaic Systems (BAPVs) and Building-Integrated Photovoltaic systems (BIPVs).

ARinfuse: <https://www.arinfuse.eu/>



ARinfuse is an Erasmus+ project that aims to infuse skills in Augmented Reality for geospatial information management in the context of utility underground infrastructures, such as water, sewage, electricity, gas and fiber optics. Our overall objectives is to develop new approaches for better competitiveness and improved employment possibilities in particular at regional and local level. This objective is addressed by developing more attractive education and training programmes.



PERISCOPE: <https://uperiscope.cyi.ac.cy/>



The project “Portal for heritage buildings integration into the contemporary built environment” (PERISCOPE) aims to design and develop an innovative portal comprised of reliable and efficient technology-ready tools for the identification, classification, documentation and renovation of heritage buildings which can be exploited by a variety of stakeholders related to the conservation and retrofit of heritage buildings. The portal will integrate the state-of-the-art knowledge in the scientific fields of Building Information Modelling, remote sensing, 3D terrestrial modelling techniques and non-destructive onsite testing, provided by the leading research and academic institutions of Cyprus in these fields. The portal is targeted to multiple economical actors of Cyprus, such as public authorities (specifically to the Town Planning and Housing Department, Department of Antiquities and Municipalities) and engineers, contractors and land developers. The implementation of the project will enable the application of the BIM-enabled holistic integrated methodology on heritage buildings, with reference to their location in the contemporary

fabric of the city as well as their current structural condition.

NAVIGATOR: <http://web.cut.ac.cy/navigator/>



Copernicus Earth Observation Big Data for Cultural Heritage

The project “Portal for heritage buildings integration into the contemporary built environment” (PERISCOPE) aims to design and develop an innovative portal comprised of reliable and efficient technology-ready tools for the identification, classification, documentation and renovation of heritage buildings which can be exploited by a variety of stakeholders related to the conservation and retrofit of heritage buildings. The portal will integrate the state-of-the-art knowledge in the scientific fields of Building Information Modelling, remote sensing, 3D terrestrial modelling techniques and non-destructive onsite testing, provided by the leading research and academic institutions

of Cyprus in these fields. The portal is targeted to multiple economical actors of Cyprus, such as public authorities (specifically to the Town Planning and Housing Department, Department of Antiquities and Municipalities) and engineers, contractors and land developers. The implementation of the project will enable the application of the BIM-enabled holistic integrated methodology on heritage buildings, with reference to their location in the contemporary fabric of the city as well as their current structural condition.

CopHub: <http://www.cophub-ac.eu/>



The overall aim of the Horizon 2020 project CopHub.AC is to establish long-term Copernicus hubs to consolidate and sustain the Copernicus Academy as a knowledge and innovation platform. To fulfil this, several nodes are created – like the knowledge landscape, dedicated thematic working groups, and a roadmap to sustain the Academy. In an innovation pipeline, the project links ongoing R&D activities in Copernicus-relevant academic fields and fosters the mutual innovation process between academia and business on a high technical level. We have a clear commitment to a full thematic and geographic coverage for a Europe-wide boost in demand-driven uptake of space technology and geospatial information.

This project is being co-funded by the Republic of Cyprus and the Structural funds of the European Union in Cyprus, under the Research and Innovation Foundation grant agreement EXCELLENCE/0918/0052

## CROSS



The project entitled as Preparatory Activity for “Monitoring & Identification of arable CRops in CypruS from Space” in short CROSS, is submitted by the Cyprus University of Technology (Prime Contractor), the Cyprus Agricultural Payments Organisation (Sub-contractor 1) and Novatex Solutions (Sub-contractor 2) at the “Third Call for Outline Proposals under the Plan for European Cooperating States (PECS) in Cyprus”.

CROSS project aims to facilitate the adaptation of Sen4CAP at a national level, by the local Common Agriculture Policy (CAP) monitoring and paying agency, that participates actively in the present preparatory activity. This will be achieved through a comprehensive Literature Review on CAP monitoring best practices and how these can be applied in Cyprus, taking into account the specificities of agriculture in Cyprus, such as the soil conditions and parcel sizes. Moreover, the correlation between the National Land Parcel Identification System (LPIS) and the crop types and growth status/stages will be investigated further. An attempt will be made to identify open-source software that can be used for the specific task and any additional developments that are required to be applicable in Cyprus. All of the above will be carried out having in mind the Common Technical Specifications developed by DG-Agri and JRC in direct preparation to the CAP monitoring.

## CyCLOPS <https://cyclops-rpf.eu/>



The Cyprus Continuously Operating Natural Hazards Monitoring and Prevention System (RPF/INFRASTRUCTURES/1216/0050), abbreviated CyCLOPS, is co-financed by the European Union Regional Fund and the Republic of Cyprus through the Research Promotion Foundation. The main objective of the project is the establishment of a novel Strategic Research Infrastructure Unit for monitoring Solid Earth processes and Geohazards in Cyprus and the broader EMENA region. CyCLOPS will deploy permanent co-located multi-sensor configurations (Tier-1 GPS/GNSS reference stations, SAR Corner Reflectors, weather stations, tiltmeters et al) throughout Cyprus to promote geohazard monitoring, critical infrastructure resilience and enhance National Geodetic and Spatial Data Infrastructure.

## RESEARCH: <https://www.re-se-arch.eu/>



The project RESEARCH (REmote SENSing techniques for ARChaeology) will test new risk assessment methodology, by examining soil erosion, land movement and land use change threatening archaeological sites. The project uses an integrated system of documentation and research in the fields of archaeology and environmental studies, combining advanced remote sensing technologies with GIS application for the mapping and the long-term monitoring of archaeological heritage. The project addresses the design and development of a multi-task thematic platform, that will be a new affordable tool for authorities in charge to CH preservation, to monitor the degradation process, to enable preventive maintenance and to reduce restoration costs.

RESEARCH receives funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie (H2020-MSCA-RISE), grant agreement No 823987.

## THAL-CHOR 2: <https://www.mspcygr2.info/>



The project is structured around the strategic cross-border cooperation of 2 'poles': the 'institutional' and the 'scientific' pole, with a central objective to harmonize Greece and Cyprus with the Maritime Spatial Planning Strategy. The cross-border cooperation of the poles with complementary responsibilities, of institutional and scientific nature, ensures the creation of strong synergies for the cohesion of the MSP of the two countries.

The project aims to investigate and map the marine and coastal space by recording the current situation. Also, it needs to enrich and update the marine databases with the development of new technologies (WebGIS). It will prepare the policy statement for the MSP of Cyprus and finally national/regional maritime spatial plans will be prepared in Cyprus and Greece.

This research is supported by the project entitled: "Cross Border Cooperation for Implementation of Maritime Spatial Planning" referred as "THAL CHOR 2" and is co funded by the European Regional Development Fund (ERDF) and by national funds of Greece and Cyprus, under the Cooperation Programme "INTERREG V A Greece Cyprus 2014 2020". The title / Acronym of the project in the Greek language: "ΔΙΑΣΥΝΟΡΙΑΚΗ ΣΥΝΕΡΓΑΣΙΑ ΓΙΑ ΕΦΑΡΜΟΓΗ ΘΑΛΑΣΣΙΟΥ ΧΩΡΟΤΑΞΙΚΟΥ ΣΧΕΔΙΑΣΜΟΥ" / "ΘΑΛ ΧΩΡ 2".

## Digital Aposphragisma (Imprint) of Hagionymous Islands



The project "Digital Aposphragisma (Imprint) of Hagionymous Islands" aims to implement traditional topographic and photogrammetric methods for documentation and management purposes, as well as the promotion of ecclesiastical cultural heritage. The project proposes the development of digital database infrastructure for storing and managing documentation data and metadata, as well as other enrichment digital tools for providing comprehensive digital and documentation cultural evidence. The "Digital Aposphragisma (Imprint) of Hagionymous Islands" project aims to develop a robust methodology for mass digitization, that requires both fast and accurate documentation and processing.

This research is supported by the project entitled: "Ecclesiastical Cultural Heritage Digitization Pilots for the Churches of Cyprus and Crete" referred to as "Digital Aposphragisma (Imprint) of Hagionymous Islands" and is co-funded by the European Regional Development Fund (ERDF) and by national funds of Greece and Cyprus, under the Cooperation Programme "INTERREG V-A Greece-Cyprus 2014-2020". The title / Acronym of the project in the Greek language is: "Πλοηγός Ψηφιοποίησης Πολιτιστικής Κληρονομιάς Εκκλησιών Κύπρου και Κρήτης" / "Ψηφιακό Αποσφράγισμα Αγιωνύμων νήσων".

**SaRoCy:** <http://sarocy.cut.ac.cy/>



Project **SaRoCy** – “**Delineating probable sea routes between Cyprus and its surrounding coastal areas at the start of the Holocene: A simulation approach**” – employs physical/oceanographic modelling and particle tracking simulation to furnish novel insights into the possible prehistoric maritime pathways between Cyprus and other Eastern Mediterranean coastal regions at the boundary between Epipaleolithic / early Neolithic (circa ~12,000 years BP), a critical period for understanding the origins of the early visitors in Cyprus in connection with the Neolithic transition. Consortium partners include the Cyprus University of Technology, the Archaeological Research Unit of the University of Cyprus, the Geological Survey Department, and Tel Aviv University in Israel.

**GeoWindSat:** <http://geowindsat.cut.ac.cy/>



Project “**Geostatistical downscaling of wind field predictions using high resolution satellite data**”, acronym **GeoWindSat**, employs satellite data and geostatistical fusion algorithms to refine the relatively coarse wind information available for offshore areas of Cyprus through numerical weather prediction models, thus contributing towards a more detailed offshore wind resource assessment for the region. Consortium partners include the Cyprus University of Technology and the Department of Geomatic Engineering at Inha University South Korea.

**MEDSAL:** <https://medsal.eu/>



The MEDSAL Project (Salinization of critical groundwater reserves in coastal Mediterranean areas: Identification, risk assessment and sustainable management with the use of integrated modelling and smart ICT tools) aims to secure the availability and quality of groundwater reserves in Mediterranean coastal areas. This will be addressed by developing innovative methods to identify sources and processes of salinization and by providing an integrated set of modeling tools that capture the dynamics and risks of salinization. MEDSAL will provide better integration of hydrogeochemical and environmental isotope data with physical-based groundwater flow and transport models and advanced geostatistics, as well as improved detection of patterns of multi-dimensional hydrogeochemical and isotope data through Artificial Intelligence and deep learning methods.

**OenoWatch**



The aim of the OenoWatch project is to study, develop, implement and pilot a holistic phytosanitary and plant protection system based on the use of unmanned aerial vehicles and a series of cutting-edge technologies, as well as to establish a Competence Center for Precision Viticulture in Cyprus. Consortium partners include the CERIDES (Center of Excellence in Risk and Decision Sciences) at the European University of Cyprus (Coordinating Institution), the Cyprus University of Technology (CUT), the consulting, services & training organisation ‘DRONINT’, the consulting, & training organisation EUROSUCCESS Consulting, the Development Agency of Lemesos, as well as the Cypriot winery Ekfraseis.



## Featured news

### IP Boosters

The EXCELSIOR as a staunch supporter of the Research and Innovation Strategy of the Republic of Cyprus is promoting the exploitation of the results of the research that is produced by our investigators. Three technologies have been funded by the EU funded IP Booster Program to be evaluated and promoted for IPR protection and future exploitation. The funded project currently examines Patent landscaping and Comprehensive IP evaluation for the three technologies.

### Key publication

Diofantos Hadjimitsis, Gunter Schreier, Haris Kontoes, Albert Ansmann, George Komodromos, Kyriacos Themistocleous, Kyriacos Neocleous, Silas Michaelides, Rodanthi Mamouri, Ioannis Papoutsis, Johannes Bühl, Egbert Schwarz, George Melillos, Stelios Tziortzis, Christos Danezis, Argyro Nisantzi, Christodoulos Mettas, Christiana Papoutsas, Marios Tzouvaras, Evagoras Evagorou, Athos Agapiou, Milto Miltiadou, Andreas Christofe, Maria Prodromou, Eleni Loulli, Anastasia Yfantidou, Maroula Alverti, Vasiliki Lysandrou, Thomaida Polydorou, Phaedon Kyriakidis, Nicholas Kyriakides, Evangelos Akylas, Andreas Anayiotos, Vincent Ambrosia, Marcello Maranesi, Peter Zeil, Lena Halounova, Daniel Barok, Simonetta Cheli, "The ERATOSTHENES Centre of Excellence (ECoE) as a digital innovation hub for Earth observation," Proc. SPIE 11418, Detection and Sensing of Mines, Explosive Objects, and Obscured Targets XXV, 114180F (24 April 2020); doi: [10.1117/12.2567070](https://doi.org/10.1117/12.2567070) Event: SPIE Defense + Commercial Sensing, 2020, Online Only, California, United States

## Coming up in the 3<sup>rd</sup> issue:

⇒ *Meet the PhD researchers of CUT/ECoE*

### Upcoming events


- ⇒ *Presentation at the CAA-GR 2020 sessions*
- ⇒ *Presentation at the CERES Earth Observation Workshop*
- ⇒ *Invited talk by Dr Nektarios Chrysoulakis with topic: "Cities and Climate Change"*

# Get in touch

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## CONSORTIUM

