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# KIOS Center of Excellence: Key Activities, Achievements and Impact

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Credentials for the presentation slides to Mrs. Christiana Koutsouli,  
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Imperial College  
London

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Funded by:



# KIOS CoE at a glance

- KIOS was established as a research unit in **2008** and upgraded to a Center of Excellence (CoE) in **2017** – Collaborates strategically with Imperial College, London
- Operates within the University of Cyprus (at the level of Faculty)
- Over **180** people at KIOS CoE
- Develops **research infrastructures** (Testbeds) to test technologies under realistic operating conditions
- Creates **synergies** with national and international industrial and governmental organizations
- Number of KIOS Alumni: **248**





# KIOS Technical Focus & Specialization

**Intelligent** monitoring, control, management and security of complex, large-scale, dynamical systems

Application Areas  Critical Infrastructure Systems



Energy &  
Power Systems



Intelligent  
Transportation  
Systems



Water Systems &  
Environmental  
Monitoring



Telecommunication  
Systems & Networks



Emergency  
Management  
Response



Healthcare  
Systems



# KIOS research and innovation activities address global challenges

- KIOS research is aligned with the EU/UN priorities
- Development of technologies and methodologies for making critical infrastructures **smarter, more efficient, greener, and more secure**



**HERE IS WHAT'S IN BIDEN'S \$2 TRILLION DOLLAR INFRASTRUCTURE PLAN**

- \$115 BILLION** FOR FIXING ROADS AND BRIDGES, INCLUDING 20,000 MILES OF HIGHWAYS AND ROUNDS, THE 10 MOST "ECONOMICALLY SIGNIFICANT" BRIDGES IN THE U.S. AS WELL AS 10,000 SMALLER BRIDGES
- \$180 BILLION** FOR TECHNOLOGY, CLIMATE SCIENCE, AND R&D
- \$174 BILLION** ON ELECTRIC VEHICLES, INCLUDING 500,000 CHARGING STATIONS AND REPLACING BUS FLEETS. IT WOULD ALSO OFFER TAX INCENTIVES AND REBATES FOR ELECTRIC CARS.
- \$111 BILLION** FOR WATER INFRASTRUCTURE, TO REPLACE LEAD WATER LINES, AND IMPROVE STORMWATER AND WASTEWATER SYSTEMS
- \$100 BILLION** TO UPGRADE POWER INFRASTRUCTURE, INCLUDING THE ELECTRIC GRID
- \$16 BILLION** TO PLUG OLD OIL AND GAS WELLS AND CLEAN UP ABANDONED MINES

# Developing a critical mass of excellent researchers in the area of ICT



- KIOS provides **career opportunities** for young aspiring researchers
- Emphasis on **Artificial Intelligence, Machine Learning, Data Analysis, Automation and Robotics**
- Scholarships, training & development, undergraduate research opportunities program, internships



*By 2025, **85 million jobs** will be displaced and **97 million new professional positions** will be created*

# Education & Training Activities at KIOS CoE



- MSc Program in Intelligent Critical Infrastructure Systems
- PhD Program
- Researchers' Training Program – Graduate Training School, Distinguished Lecture Series, Technical and Soft Skill Trainings
- Undergraduate Research Opportunities Program – UROP
- Internship Program (BSc and MSc students)
- Mobility activities with other Universities and Organizations

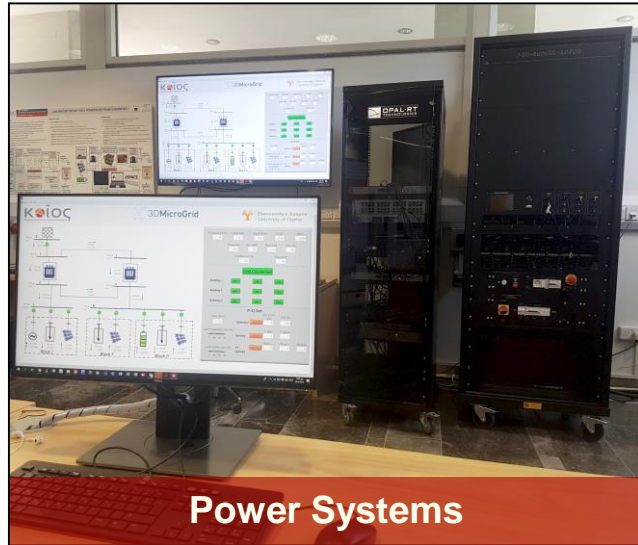


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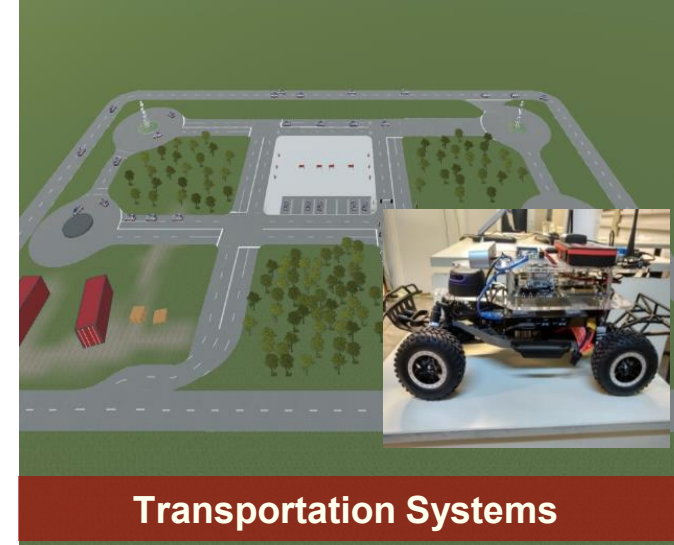
# KIOS Research Infrastructures



Power Systems



Water Security



Transportation Systems



Emergency Response



Sensors & Robotics



Control Room

# Competitive Research and Innovation Projects

- **40+** active multidisciplinary research & innovation projects, funded by EU and national funding agencies
- 298 collaborators (Cyprus, EU & Internationally)
- Projects are delivered in collaboration with CIS operators/industry and SMEs
- Contribute to global and regional challenges
- KIOS participated in **137** research projects since it was founded in 2008



water  
futures



HVDC-WISE



PathoCERT



ARTION



TRANSIT



SESAME

SECURE AND SAFE MULTI-ROBOT SYSTEMS



Smart5Grid

Demonstration of 5G solutions for  
SMART energy GRIDs of the future



ELECTRON



AIDERS



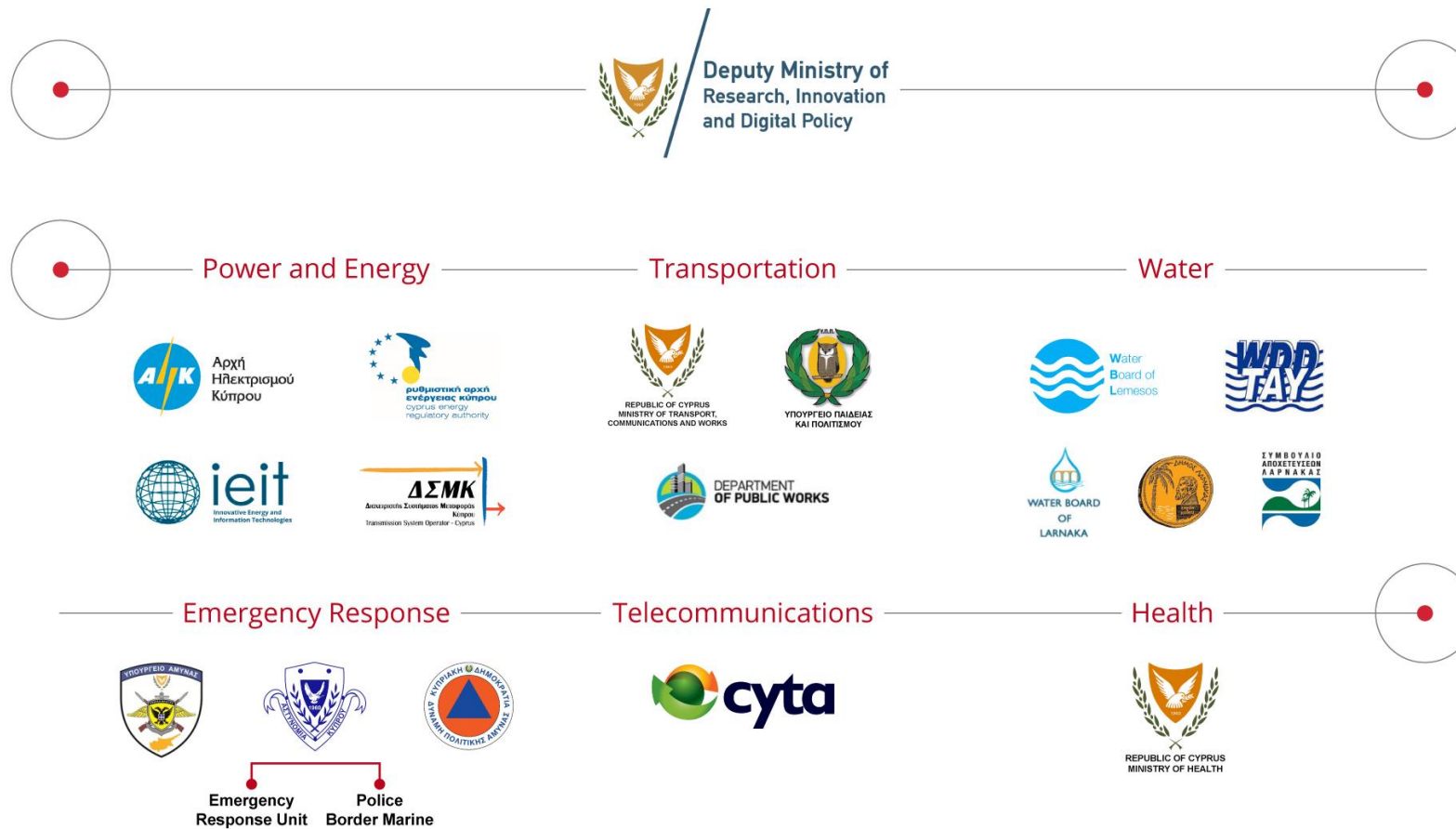
one network for Europe



EnerMan



# Innovation Hub Partners



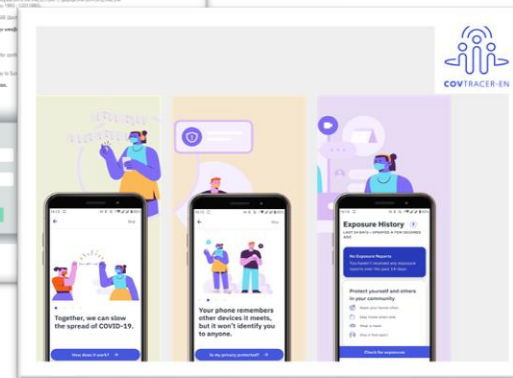
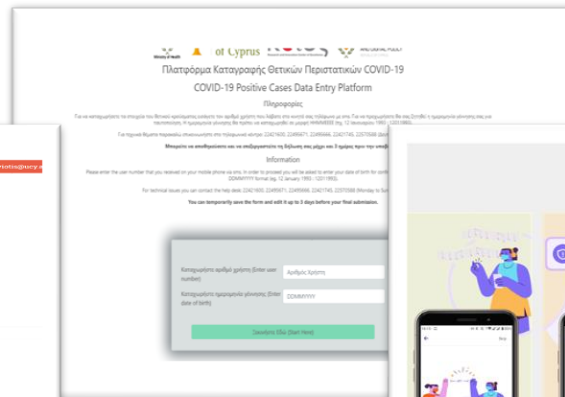
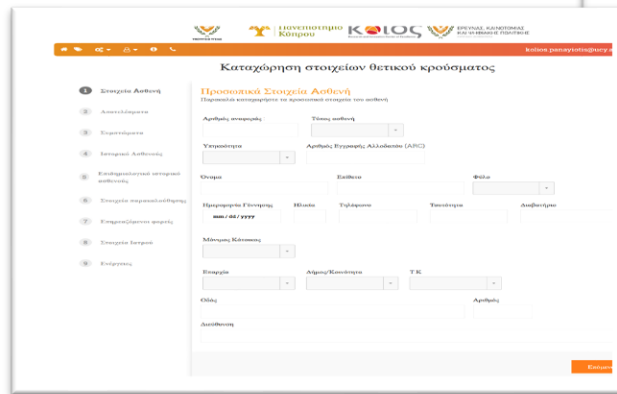
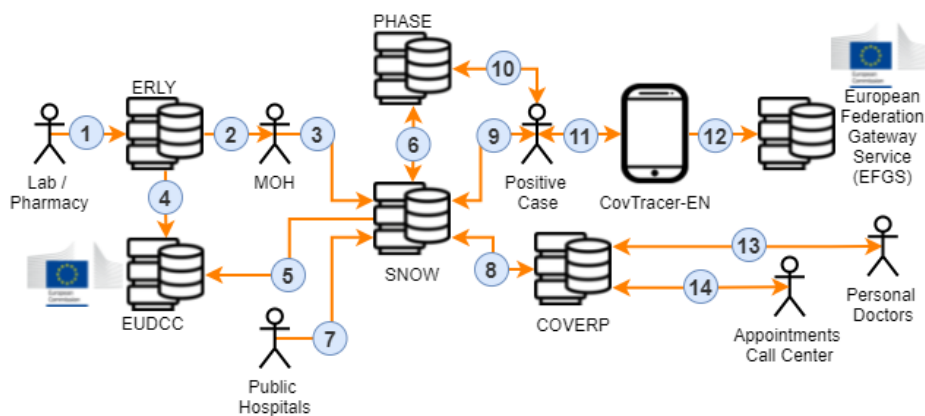
- 18 active projects in 2023
- 90% of Innovation Hub partners participate in KIOS EU funded projects
- Collaboration with Ministries for the implementation of the Recovery & Resilience Plan of Cyprus

# KIOS CoE COVID -19 Emergency Management Support Tools

- **CIPHIS:** Platform for GPs (release of recovered citizens) & Epidemiological Surveillance
- **SNOW:** Platform for management of positive cases by MoH
- **ERLY:** Platform for recording rapid test results from pharmacies
- **ERLY2:** Platform for recording rapid & PCR test results from Clinical labs and MoH Mobile Units
- **PHASE:** Public Platform for self submission of personal data/national platform to track cases
- **TCDC:** Turkish Cypriot Covid data upload for EUDCC Vaccination & Recovery certificates
- **CovTracer-EN:** Contact Tracing Exposure Notification app

7 National Emergency management support tools

Work & collaboration is still ongoing in this area



# High-impact Innovation and Entrepreneurship



- KIOS Supports the initiation of startups and growth to SMEs
- Participates in several projects led by Cyprus SMEs



**Data privacy and security**

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**Intelligent Buildings**

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**Energy efficiency and renewable energy management**

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**Emergency Response**

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**Intelligent Monitoring Solutions for Industrial Systems**



# International visibility



Visit by the Embassy of Israel in Cyprus



Visit by the President of the European Commission Ursula Von der Leyen and by the President of the Republic of Cyprus Nicos Anastasiades



Visit by the Embassy of U.S. in Cyprus

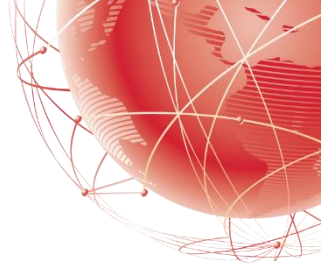


Special event organized by Buckingham Palace and hosted by HRH the Prince of Wales.



Visit by the Director-General of EU Research and Innovation





**KIOS Research and Innovation Center of Excellence**

University of Cyprus

[www.kios.ucy.ac.cy](http://www.kios.ucy.ac.cy)

*Keep in touch with us!*

