CyCLOPS

(INFRASTRUCTURES/1216/0050)

Cyprus Continuously Operating
Natural Hazards Monitoring & Prevention System

European Union
European Regional Development Fund

Republic of Cyprus

Structural Funds
of the European Union in Cyprus

Cyprus University of Technology

DLR

RESEARCH & INNOVATION FOUNDATION

2016-2020 RESTART SEARCH

CyCLOPS News Bulletin April 2022

«CyCLOPS at Schools» Campaign

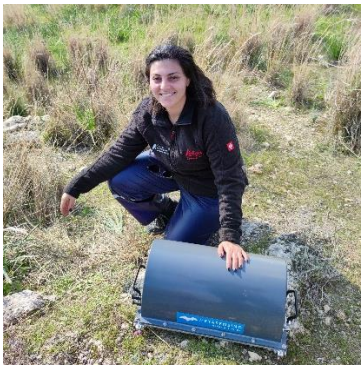
17 March 2022 – CyCLOPS team host students from **EPAL Rethymnou** through **ERASMUS+** program at our premises at the Cyprus University of Technology, in Limassol. The students had the opportunity to learn and expand their knowledge in the science of Surveying Engineering, Geomatics and Earth Observation. Additionally, students had a unique chance to visit one of our GNSS and SAR Stations in Asgata, understanding the importance of the CyCLOPS program, in general.

The project INFRASTRUCTURES/1216/0050 is co-financed by the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation

Installation of Electronic Corner Reflectors (ECR)

Over the years, passive and active reflectors are becoming indispensable parts in ground deformation monitoring using Interferometric SAR geodetic techniques. The evolution and the need for more practical and compact in size reflectors motivated the implementation of Electronic Corner Reflectors, namely ECR Transponders. ECR Transponders are compact active permanent scatterers, which are used in the estimation of physical or man-induced deformation processes. Their main advantage lies in their compact size and the fact that a sole unit accounts for both ascending and descending tracks, instead of having a traditional two opposite-facing Corner Reflectors configuration. To date, ECR transponders mainly operate in C-band and, thus, are compatible with Sentinel-1. Although experiments are in initial stage, the results seem quite promising with respect to the classic passive corner reflectors in many aspects. Two Electronic Transponders (ECRs) by Metasensing Radar Solutions have been installed by CyCLOPS team at. The stations collocated with the TROD00CYP (Choirokoitia) and CUT400CYP (Pissouri) GNSS Mobile Stations, respectively.

15 February 2022- ECR Installation at Choirokoitia Archeological Site


08 April 2022 - ECR Installation at Pissouri Village



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Publications

February 2022

1. **D. Kakoullis**, K. Fotiou, G. Melillos, and C. Danezis. Considerations and Multi-Criteria Decision Analysis for the Installation of Collocated Permanent GNSS and SAR Infrastructures for Continuous Space-based Monitoring of Natural Hazards. *Remote sensing*, 14(4):1020, 2022. doi:10.3390/rs14041020

2. **K. Fotiou**, D. Kakoullis, M. Pekri, G. Melillos, R. Brcic, M. Eineder, D. G. Hadjimitsis, and C. Danezis. Space-based Displacement Monitoring of Coastal Urban Areas: The Case of Limassol's Coastal Front. *Remote sensing*, 14(4):914, feb 2022. doi:10.3390/rs14040914

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