Gobal Observation of Forest and Land Cover Dynamics		T	Cyprus University of Technology	
Ind-Cover / Land-Use Change Program	n MEDRII	<b>\</b> ″		
Mediterranean Regional Information Networ	k (MedRIN), 20 <sup>th</sup> Mar	ch 2019		
Prof. Diofantos Hadjimitsis Vice Rector of Academic Affairs Department of Civil Engineering and Cyprus University of Technology	Geomatics			

## ACTIVITIES and FACILITIES of the LAB





### ERATOSTHENES RESEARCH CENTRE REMOTE SENSING AND GEO-ENVIROMENT LAB

More info can be found in

#### www.cyprusremotesensing.com





#### Mediterranean Regional Information Network (MedRIN)

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## RESEARCH AND FUNDING

#### Funding

- ✓ Participation to more than 55 projects from since 2007
- ✓ Total budget more than 55 million euros.
  7,7 million where allocated to CUT
- ✓ Coordination of more than 20 funded research projects

#### Research

- ✓ 30 active researchers coming form different backgrounds such as engineers; physics; earth scientist; chemists etc working in 6 different thematic research areas of the Lab
- ✓ Provide 120 job positions since 2007
- ✓ Academics from various departments
- ✓ More than 85 dissertations/ final year projects
- ✓ Phd Supervision (more than 20 since 2007)



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The Research Group

#### Global Observation of Forest and Land Cover Dynamics LCLUC Land-Cover / Land-Use Change Program

GOFC-GO







The research group includes Civil Engineers, Geologists **Environmental Scientist, IT specialists** Archaeologists, Physicists, Chemists, Surveyor Engineers / **Geomatics, Architects** 

# Ideal place

#### Calibration/validation of satellite observations

sea

200

# More than 78 % cloud free images (>18/24 cloud free Landsat images per year)

Landsat 5/7/8 from 2000 to 2017 [database of USGS]

# WATER

#### OPERPICUS Europe's eyes on Earth



Water Management – Water quality – Oceanography – Marine

## Water Quality



Land-Cover / Land-Use Change Program

Synoptic coverage and continuous monitoring of coastal waters to detect at any time any pollution event achieving in the immediate and sustainable management of water resources

**Smart Buoy** 

Secchi Disk & Turbidity Meter



Data collected from the smart buoy was used for furthermore calibration of the retrieved algorithm due to high frequency of measurements collected







714.3

792.9

871.4

635.7

Wavelength (nm)

557.1



Global Observation of Forest and Land Cover Dynamics

Low altitude system

(helium air balloon)

Problematic spot of

Safety ropes

LCLUC

Program

## Bathymetry mapping









Bathymetry mapping using multispectral and SAR remote sensing data-SIMONA





 Satellite assets
 Integration for Maritime situatiON Awareness.
 Demonstration project under ARTES-20 schema in partnership with Engineerin Srl (I).















•••





#### $\circ$ spectroradiometers

**Field Spectroscopy** 

**Space technologies** 

Scattering (PS)

Image processing of remote sensing data using different models for each crop type for retrieval of critical parameters

o Albedo

o LAI

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# CLIMATE GHANGE-URBAN

# Atmospheric processes – climate – weather – Air quality

•Data Date: February 25, 2006 •Sensor(s): Terra – MODIS Jeff Schmaltz, MODIS Rapid Response Team, NASA/GSFC







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Land-Cover / Land-Use Chang Program

## CLIMATE CHANGE

# **Local-Coastal Circulation**





# Ground Truth CAL/VAL activities



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EDUCATION

- ✓ MSc in Earth Surveillance and Space-Monitoring of the Environment
- ✓ Doctoral Training Program
- ✓ COPERNICUS Academy







*CopHub.AC > main innovations* 

- Reinforce the R&I capacities of
- **Copernicus Academies and channel** their outputs within an improved format of research briefs
  - ✓ 'Universal' in terms of themes, all existing Copernicus thematic fields are represented by partners
- Benchmark area for new application areas and new technologies

Inform industry, educational networks, authorities and the citizen about **Copernicus and its societal benefits** 

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		Global Observation of Forest
		NASA L C. L 20 C.
• •		Land-Cover / Land-Use Change Program
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