

ERATOSTHENES Centre of
Excellence (ECoE)



ERATOSTHENES:

Excellence Research Centre for Earth Surveillance
& Space-Based Monitoring of the Environment

1st virtual EXCELSIOR International Technical Workshop

15 July 2020

Advantages and Challenges for Space related Infrastructure in Cyprus

@excelsior2020eu



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CONSORTIUM



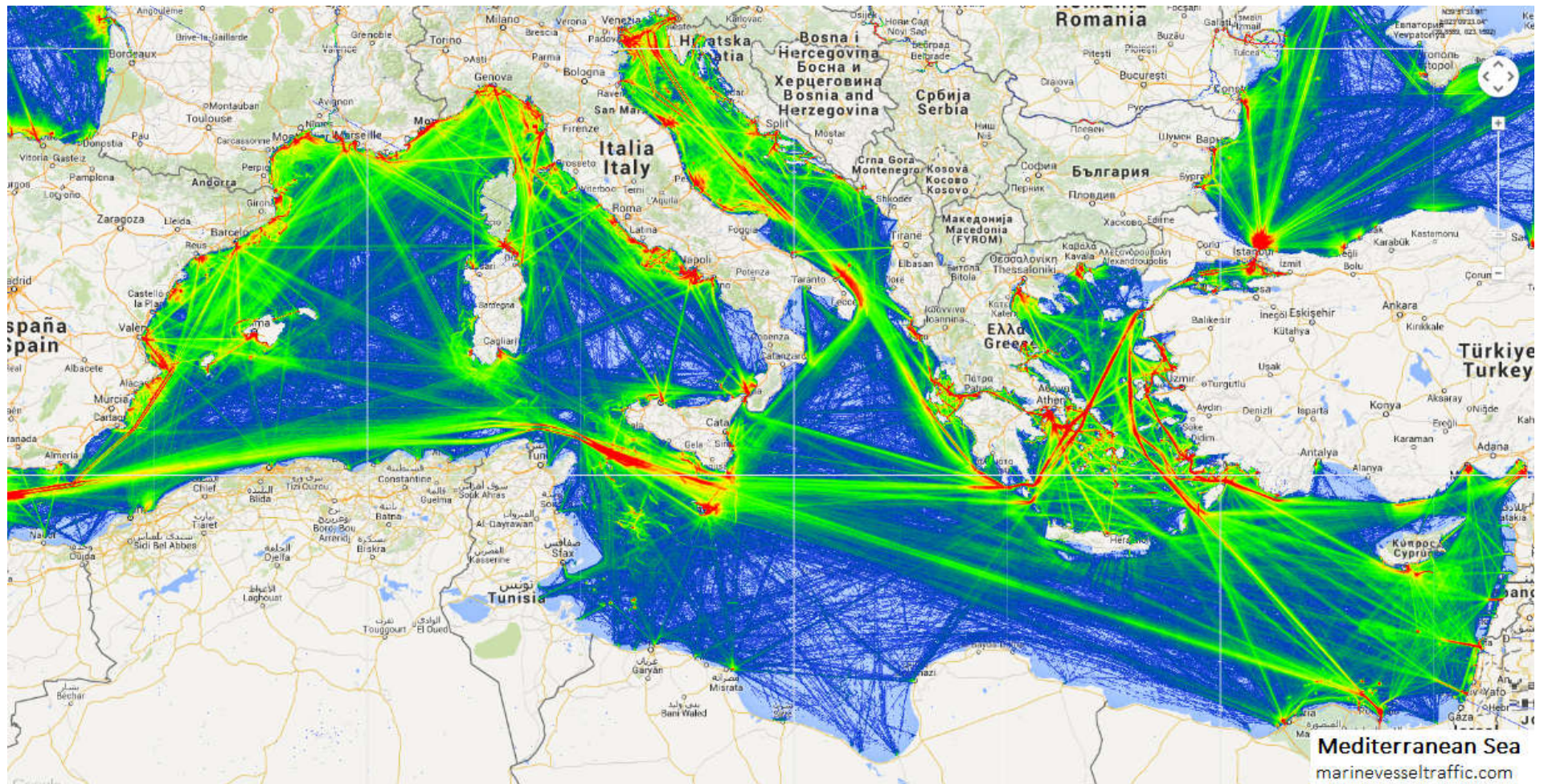
Cyprus at the periphery of European Union – in the Center of EMMENA*:

- Cradle of civilisation
 - World Heritage, Archaeology
- Gateway to three continents
 - Commerce and trade
 - Conflict, claims, migration
- Environmental richness and endangerment
 - Global Environmental Change
 - Natural Risks
- Role in European Green Deal

* Eastern Mediterranean, Middle East and North Africa



Mediterranean shipping routes

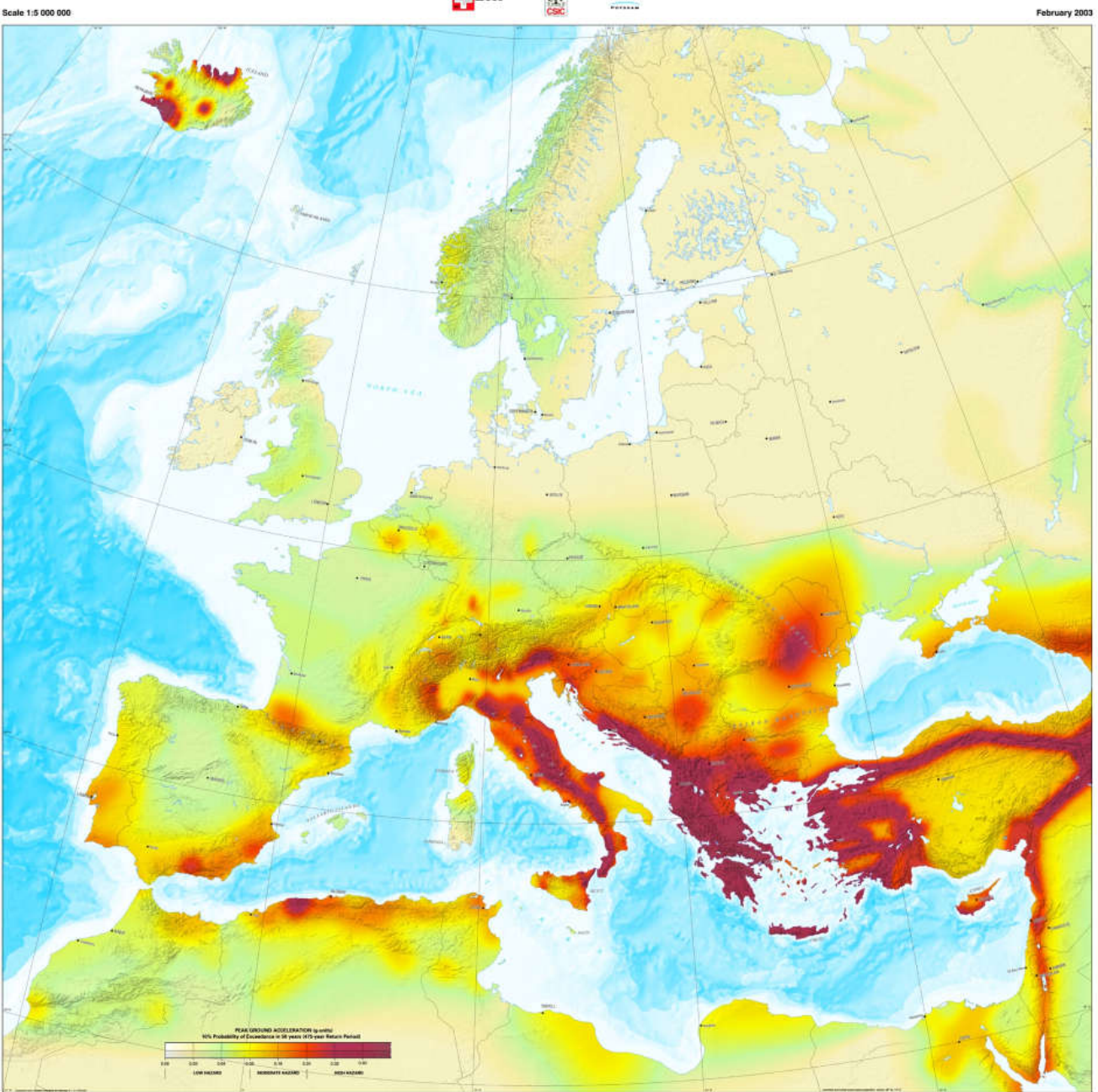


EUROPEAN-MEDITERRANEAN SEISMIC HAZARD MAP

Editors: D. Giardini, M. J. Jiménez and G. Grünthal



February 2003



Centre for Earth Surveillance
Environment

EMMENA: Endangered by seismic hazards

Disaster Scenario
This is a hypothetical scenario for the purpose of the seismic hazard assessment. It is not intended to be used for the design of structures. The assessment of seismic hazard is the first step in the process of seismic risk assessment. It is followed by the assessment of the vulnerability of structures and the estimation of the potential losses. The assessment of seismic hazard is a complex task that requires the use of a wide range of data and methods. The assessment of seismic hazard is a key component of the seismic risk assessment process. It is essential for the development of seismic risk reduction strategies. The assessment of seismic hazard is a key component of the seismic risk assessment process. It is essential for the development of seismic risk reduction strategies.

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References
Giardini, D., Grünthal, G., & Jiménez, M. J. (2003). European-Mediterranean Seismic Hazard Map. European Seismological Commission, Project no. 382: SESAME. February 2003.

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Atmosphere / Air Quality / Aerosols

A satellite image of the North Atlantic Ocean. A large, diffuse, light-colored plume of aerosols is visible, extending from the African continent in the lower right towards North America in the upper left. The plume has a textured, fibrous appearance. The surrounding ocean is dark blue, and the landmasses are visible in green and brown. The title 'Atmosphere / Air Quality / Aerosols' is overlaid in white text at the top.

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

Earth Observation Application: Maritime Awareness

Maritime Safety and Security Lab Web-mapping Client | 0.2.0

UKIS DLR

SAR detected target No 23

Date	2016-03-16
Time	03:51:01
Lat	34.8664°
Lon	31.5439°
Apparent Length	228.47 m
Apparent Width	29.879 m
Heading	118.22° or 298.22°
Probability	100.0%
Maximum Intensity	3287
Radar Cross Section	1223.6
MMSI	n/a

© FMS-Neustrelitz

Available scenes

Sensor	Time
TDX	2013-09-17T16:44:40
TSX	2015-04-13T05:42:32
S1A	2015-08-09T17:08:55
S1A	2015-10-20T07:57:11
S1A	2015-10-17T18:17:48
TSX	2015-10-08T03:20:07
TSX	2015-10-20T17:24:32
TSX	2015-10-20T17:24:39
TSX	2015-10-20T17:24:53
TSX	2015-10-08T03:19:59

10 20 30 40

1 2 3 4 5 6 7 ... 17

1-10 from 166 Products

Selected scenes

Sensor	Time	
S1A	2016-03-16T03:51:01	X
S1A	2016-03-16T03:51:01	X

Available for:

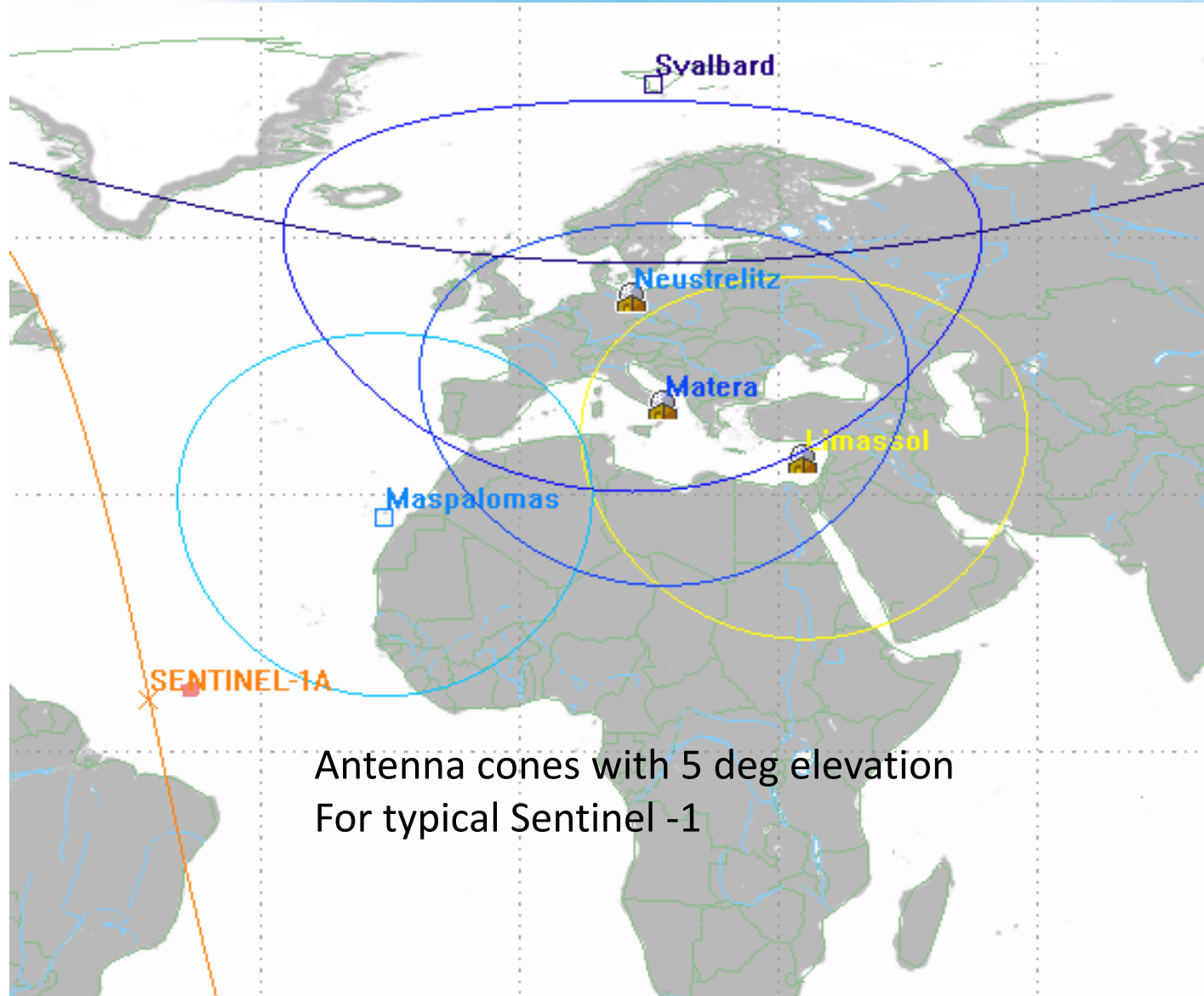
- TerraSAR-X,
- TanDEM-X
- CosmoSkyMed
- Radarsat-2
- Sentinel-1

Leaflet | © Google contributors, FMS Neustrelitz, © DLR

30 km
30 m

Image: S1A, Interferometric Wide Swath Mode 20160316, 03:51 UTC

Cyprus station in European context



Antenna cones with 5 deg elevation
For typical Sentinel -1



Optical Communication: Space-to-Ground



Space related Infrastructure in Cyprus

- Satellite to Ground Communications
 - Payload & Telecommand
 - HF bands & optical
 - Equatorial orbits of future systems
- Calibration, Validation
 - Test & Calibration Sites
 - In Situ, ground based measurements
- Earth Observation Data Hubs
 - Regional IT Platforms for Data and Services
- *„Launch & Landing Site“*

