



European
Commission

NEANIAS - Novel Services for Emerging Atmosphere, Underwater & Space Challenges

SECTION 3



NEANIAS

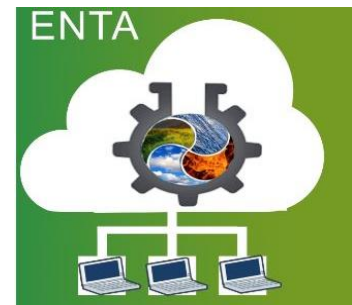
SECTION 3 – Atmospheric Research Services

Participants ENTA of ATHENA, NKUA, UBWHERE, UNMB

RESPONSIBLE FOR SECTION 3

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SECTION 3– Atmospheric Research Services

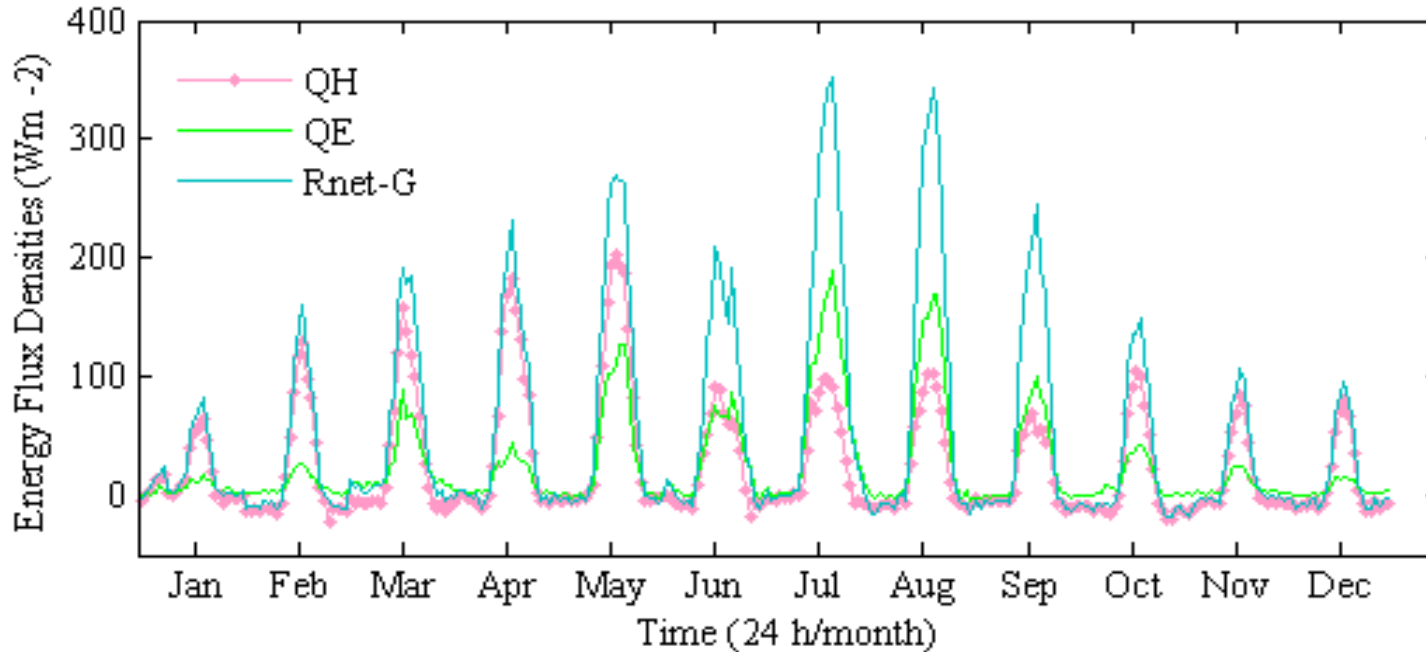
3.1 Greenhouse gases flux density monitoring service implementation

The front-end of the service consists of a simple, user-friendly interface that accepts the data and guides the user to obtain the desired flux densities, and energy balance results. It is possible by the user to upload the data from his/her own database or from any other database

DATASETS – A1

id	Name of Dataset	Type	Source	FAIR*	Size (GBs)
1	ATHENS THERMOPOLIS	Eddy covariance	ENTA		5
2	ATHENS THERMOPOLIS	AIRCRAFT- three level VARIANCES METHOD	ENTA		1
3	VOA-Gr STATION	Eddy covariance	ENTA and at www.unitus.it		10
4	VOA-Gr STATION	Gradient method at 4 heights	ENTA		3
5	ATHENS THERMOPOLIS	Gradient method at 5 different heights	ENTA		1
6	EUROPEAN FLUXES DATABASE CLUSTER	All greenhouse gases fluxes	EUROPEAN FLUXES DATABASE CLUSTER		????
7	AMERI-FLUX database	All greenhouse gases fluxes	AMERI-FLUX database		?????
8	FFNet DB	All greenhouse gases fluxes from Japan's stations	https://www2.ffpri.affrc.go.jp/labs/flux/datalist_e.html		????

Seasonal, diurnal heat fluxes from our climate change observing station in XANTHI



Conversion of incoming solar energy into SENSIBLE (QE) and LATENT HEAT (QH) has a significant impact on local climate, as this process drives exchanges of energy and mass (e.g. water vapour or CO_2) between the surface of continents and atmosphere



SECTION3 – Atmospheric Research Services

A2 – Monitoring atmospheric perturbations and components in active tectonic regions service implementation

Lead: UNMB

Participants: ATHENA, NKUA, NOA

Prof. Alessandro Tibaldi, UNMB Italy

Data base collected up to now

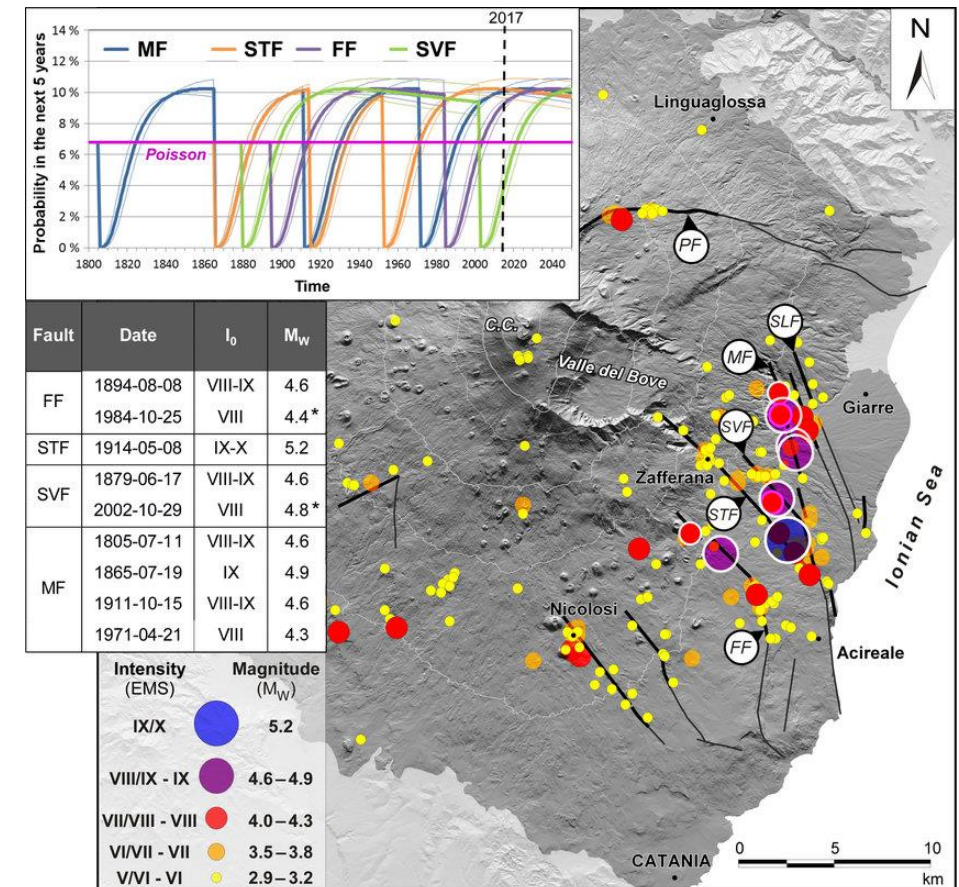
DATASETS – A2			
id	Name of Dataset	Type	Source
1	Gas radon from Mt Etna faults	Excel table of values of gas radon emitted from the faults of Etna volcano	National Institute of Geophysics and Volcanology, Italy
2	Gas and ash plumes from Etna crater	Excel table of values of various gases and ashes emitted from the summit vents of Etna	National Institute of Geophysics and Volcanology, Italy
3	Gas from Nea Kameni volcano, Greece	Excel table of values of various gases emitted from the fractures on Nea kameni volcano, Santorini	Surveys by researchers of various universities
4	Gas from Nisyros caldera, Greece	Excel table of values of various gases emitted from the fractures on Nisyros caldera	Surveys by researchers of various universities
5	Map of all Etna faults	Data base containing the georeferenced data of all faults on Mt Etna	National Institute of Geophysics and Volcanology, Italy
6	Seismicity of Mt Etna	Data base containing all foci and M of earthquakes that occurred at Mt Etna in the last tens of years	National Institute of Geophysics and Volcanology, Italy
7	Meteorological data of each site	Excel tables of meteorological data	
8	Thermal anomalies at selected volcanoes	Csv table	MODIS/MODVOLC
8	SO2 columns from satellites at various volcanoes	Csv table	Global Volcanism Program

These data were examined in order to detect the possible correlations between:

- gas (radon) emission from faults on Mt Etna (Italy) and earthquake activity along the same faults, also considering their kinematic type;



Fissure opened on Mt Etna eastern flank.



Main active faults of Mt Etna and main historic seismic events

These data were examined in order to detect the possible correlations between:

- ash emission from volcanic craters at Nea Kameni (Santorini, Greece) and Mt Etna, and earthquake activity.



View of Nea Kameni active volcano, Santorini, Greece



Recent eruption at Mt Etna, Catania town is visible.

UBIWHERE Portugal



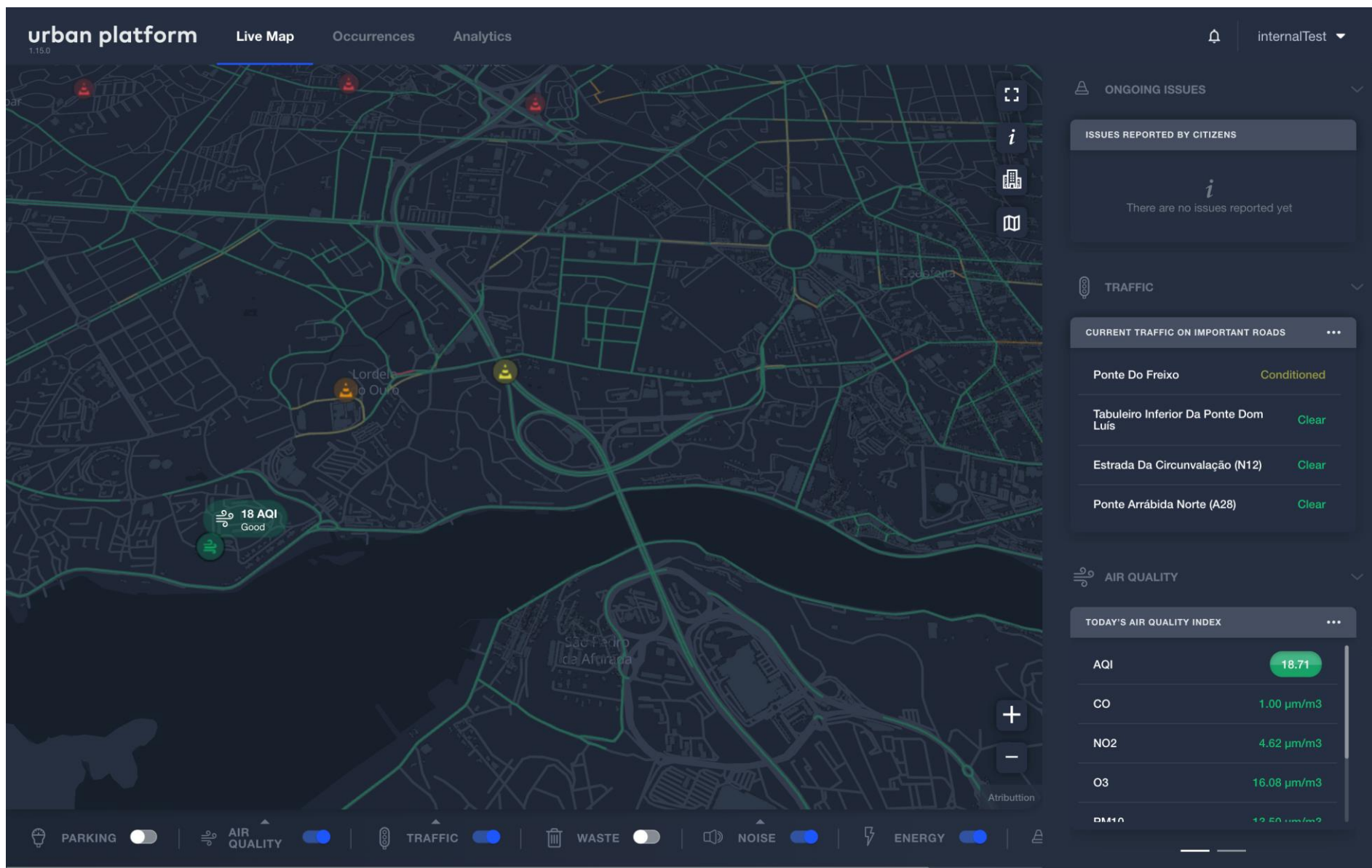
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SECTION 3. A3 Urban air quality estimation, monitoring and forecasting

service implementation

Lead UBIWHERE Participants: NOA, ATHENA, NKUA

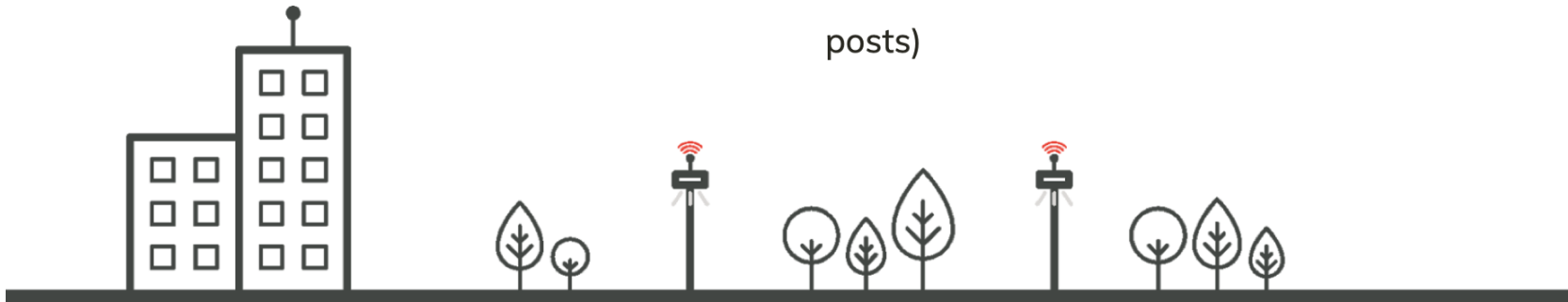
Porto, Portugal



Porto, Portugal

Sensing Stations

Discretely installed into the existing urban furniture
(such as vertical signing, street lighting or electrical
posts)



The information collected by these stations
can be used to improve urban planning,
strategy and interaction with the city
residents.

These stations communicate in real time
with Air Quality Management System
through wireless communication, and are
powered energetically by the structure in
which they are installed.





Novel EO/SC Services for
Emerging Atmosphere,
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Thank you

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