Latest developments in near real time data exchange across Europe

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European Environment Agency

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1. Current data exchange

2. New developments on displaying AQ data

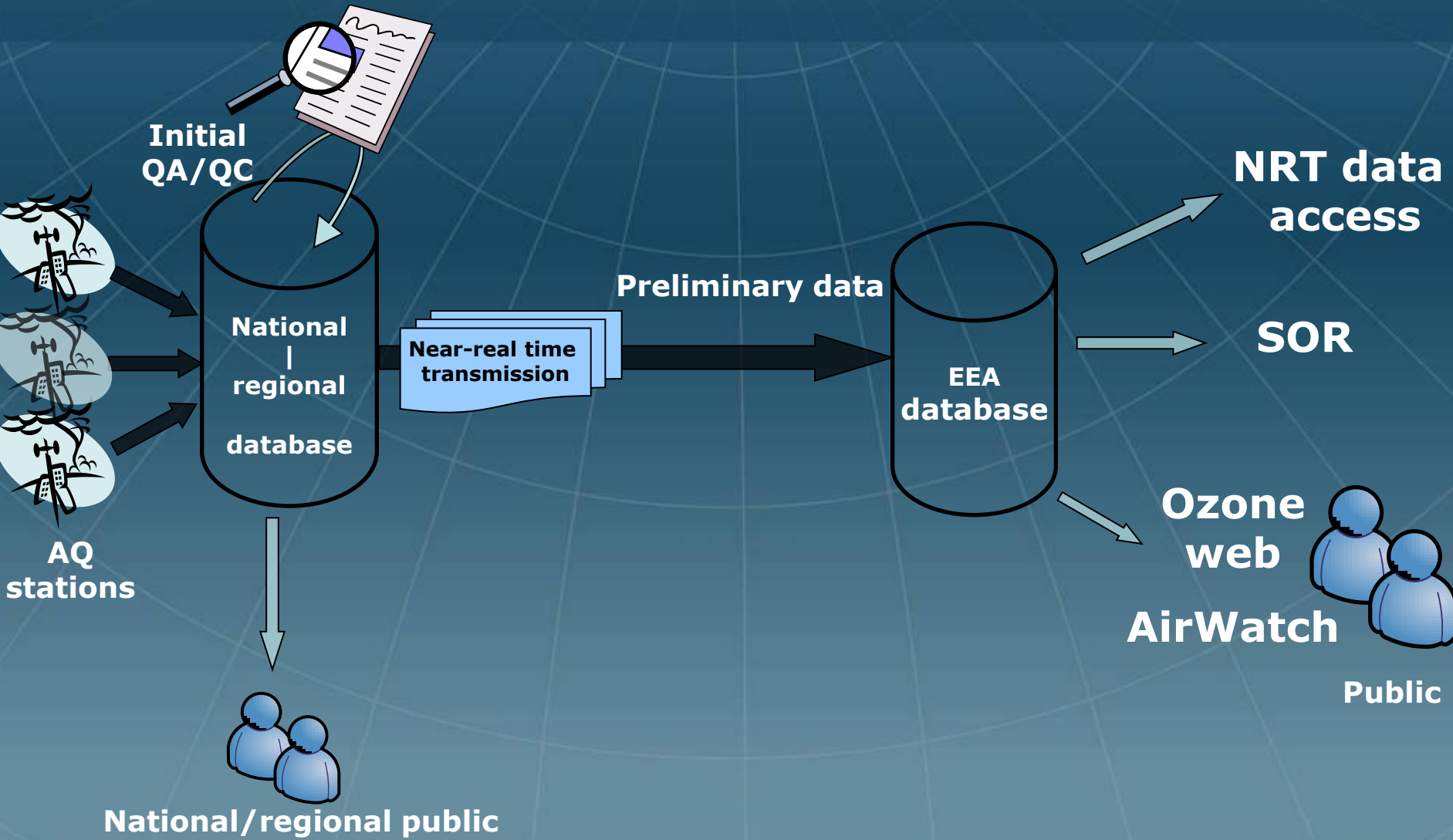3. Generating the Summer Ozone Report (SOR) from NRT ozone

Current data exchange

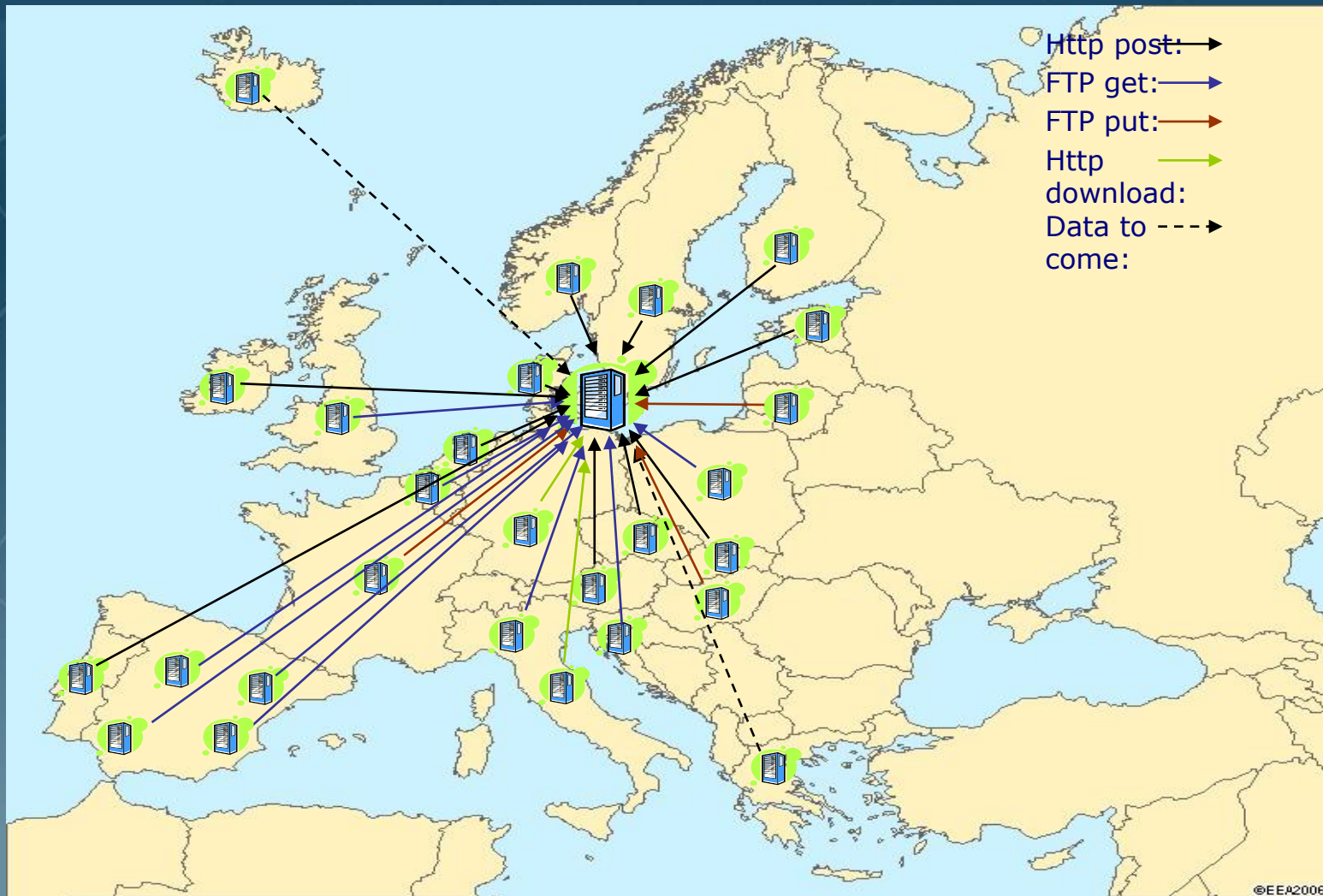EEA with assistance from ETC/ACC coordinates European database for Near Real Time data

The data exchange started with O3 but has been extended to other pollutants
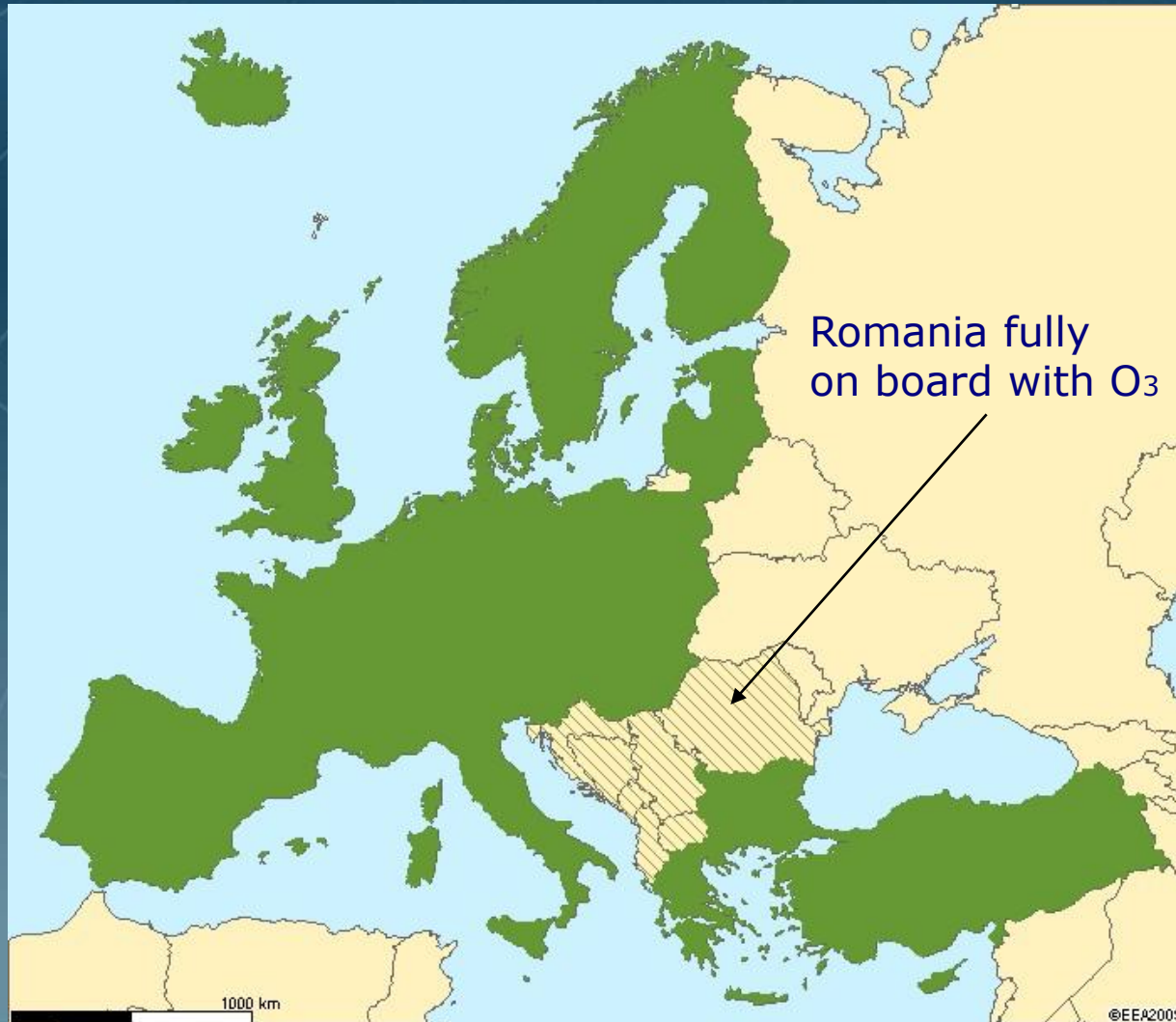
Geographical coverage -> most of EU

European Environment Agency

Near-real time air quality data flow

Initial QA/QC

AQ stations

National | regional database

Near-real time transmission

National/regional public

Preliminary data

EEA database

NRT data access

SOR

Ozone web

AirWatch

Public

European Environment Agency

Current data exchange – *illustration*

Http post:
FTP get:
FTP put:
Http download:
Data to come:

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O$_3$ near-real time data provision (850 stations)

Romania fully on board with O$_3$

1000 km

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European Environment Agency

PM$_{10}$ near-real time data provision (650 stations)
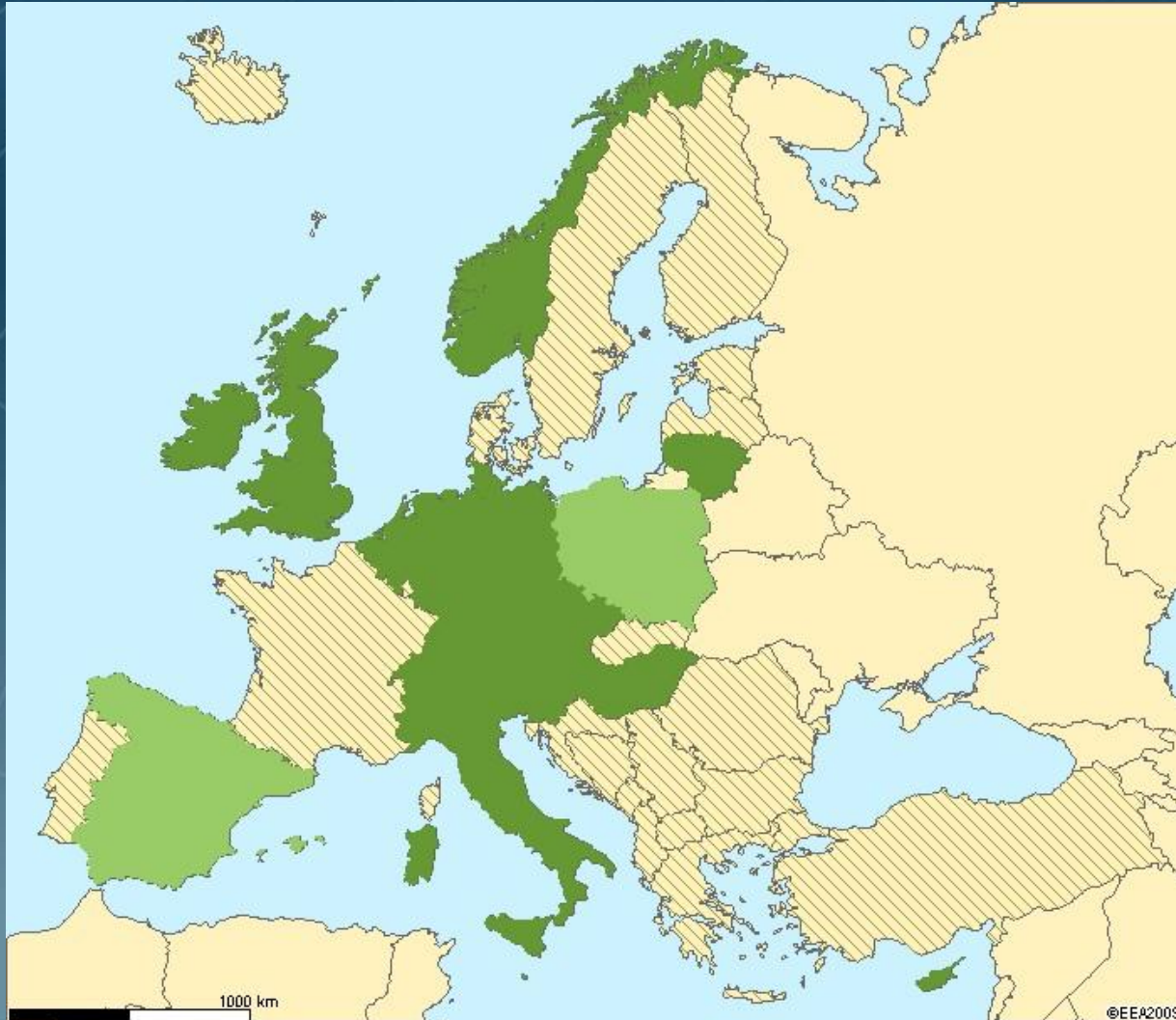
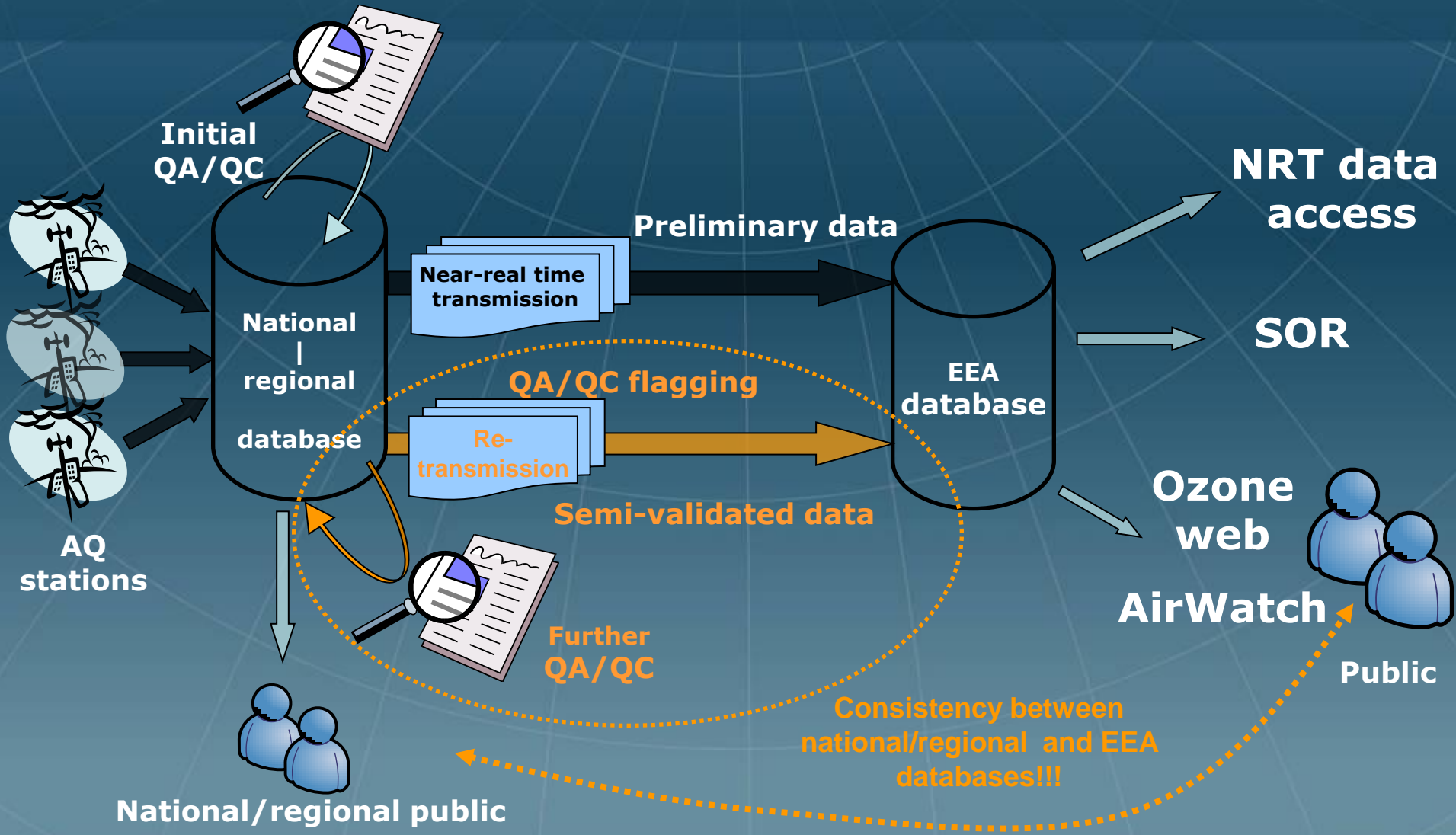# NO$_2$ near-real time data provision (250 stations)
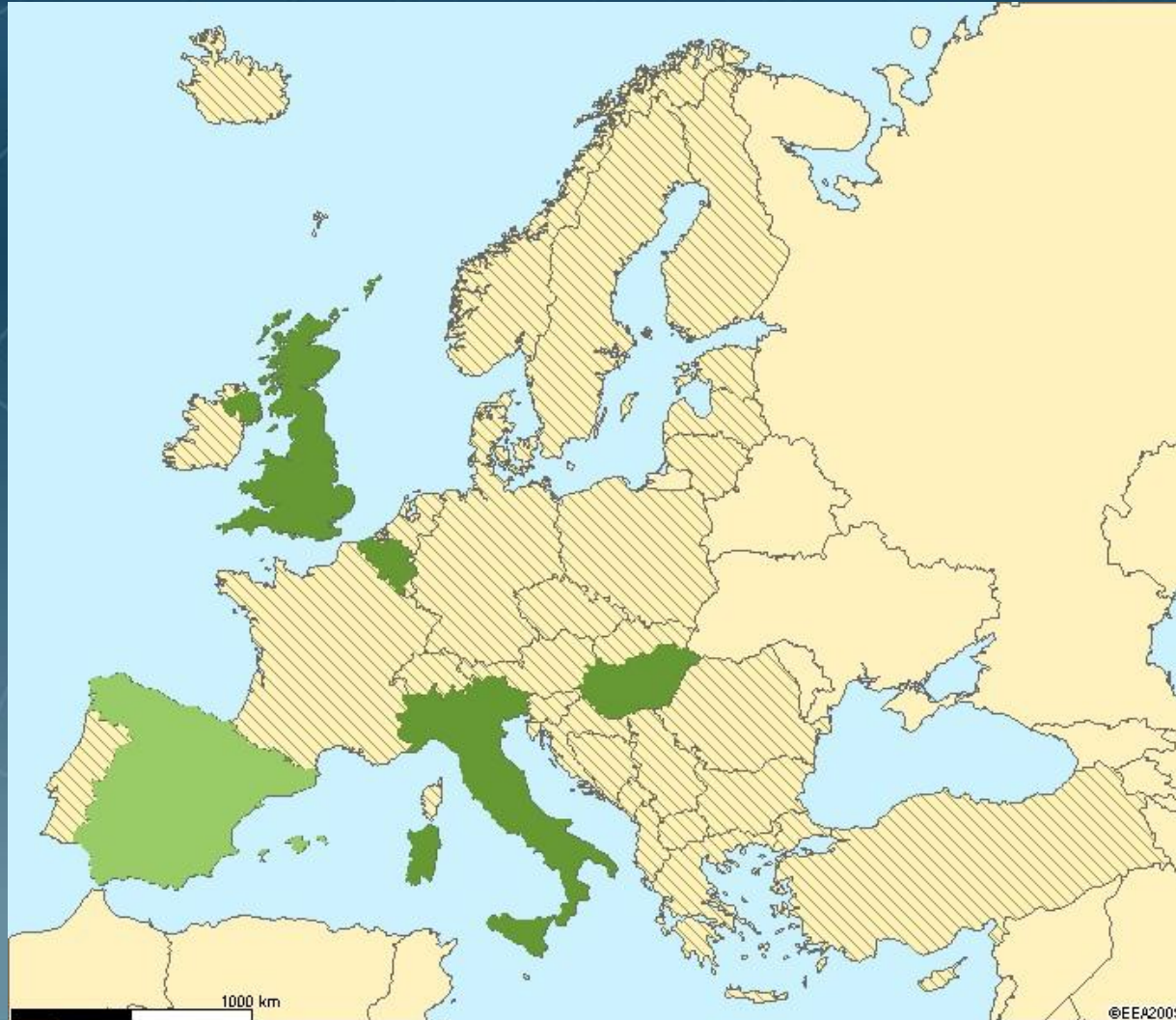
Consolidation of NRT AQ data exchange

1. Re-transmission of NRT AQ data
2. Full coverage of ozone data provision

    - geographical coverage

    - station consistency bet. Official reporting & NRT

3. Generating the Summer Ozone Report (SOR) from NRT ozone

4. Extending NRT from ozone to NO_2-NO_x, PM_{10}, $PM_{2.5}$, SO_2 and other parameters

European Environment Agency

Near-real time air quality data flow

Initial QA/QC

AQ stations

National | regional database

Near-real time transmission

Preliminary data

QA/QC flagging

Re-transmission

Semi-validated data

Further QA/QC

EEA database

NRT data access

SOR

Ozone web

AirWatch

Public

National/regional public

Consistency between national/regional and EEA databases!!!

European Environment Agency

Displaying NRT AQ data

1. Ozoneweb

2. Microsoft Eye-on-Earth

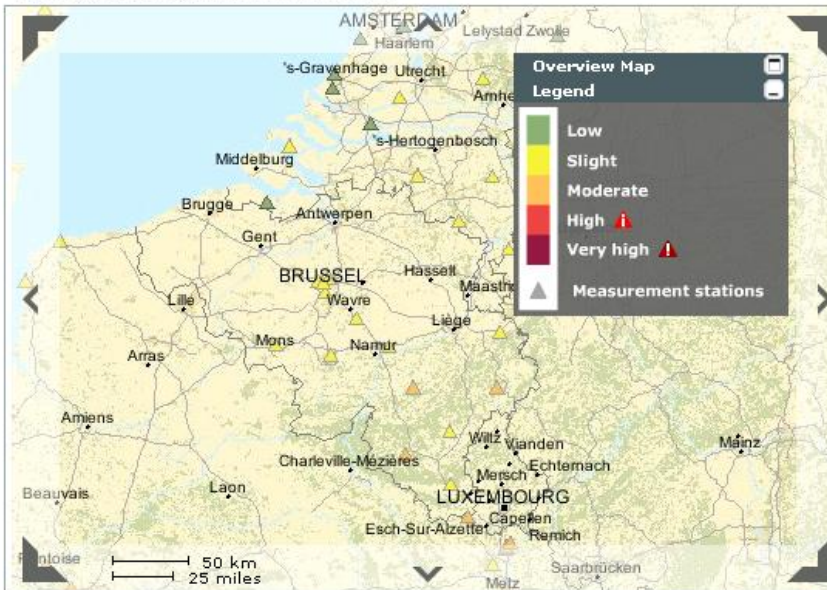3. European AQI in Google Earth (internal)

4. New ArcGis tools

European Environment Agency

Displaying NRT AQ data – "**Ozoneweb**"
http://www.eea.europa.eu/maps/ozone/map/

European Environment Agency

Displaying NRT AQ data – "**Ozoneweb**"
http://www.eea.europa.eu/maps/ozone/map/

Example: Mini map viewers…
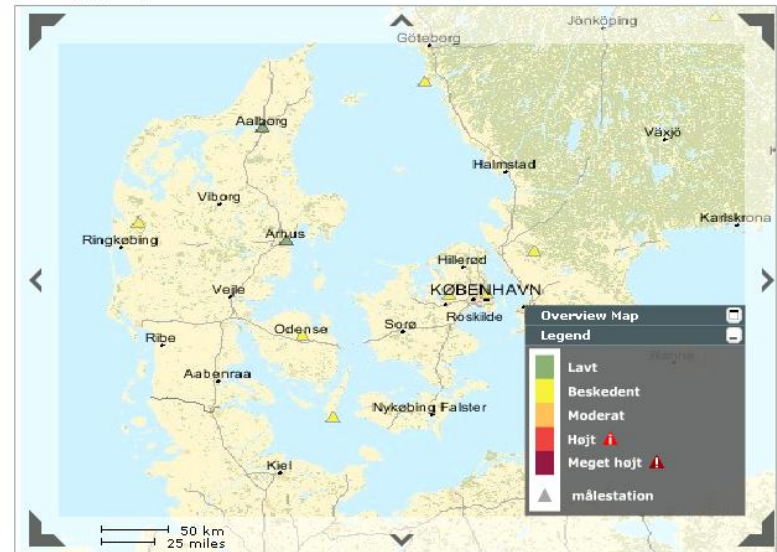
Displaying NRT AQ data – "**Ozoneweb"**
http://www.eea.europa.eu/maps/ozone/map/
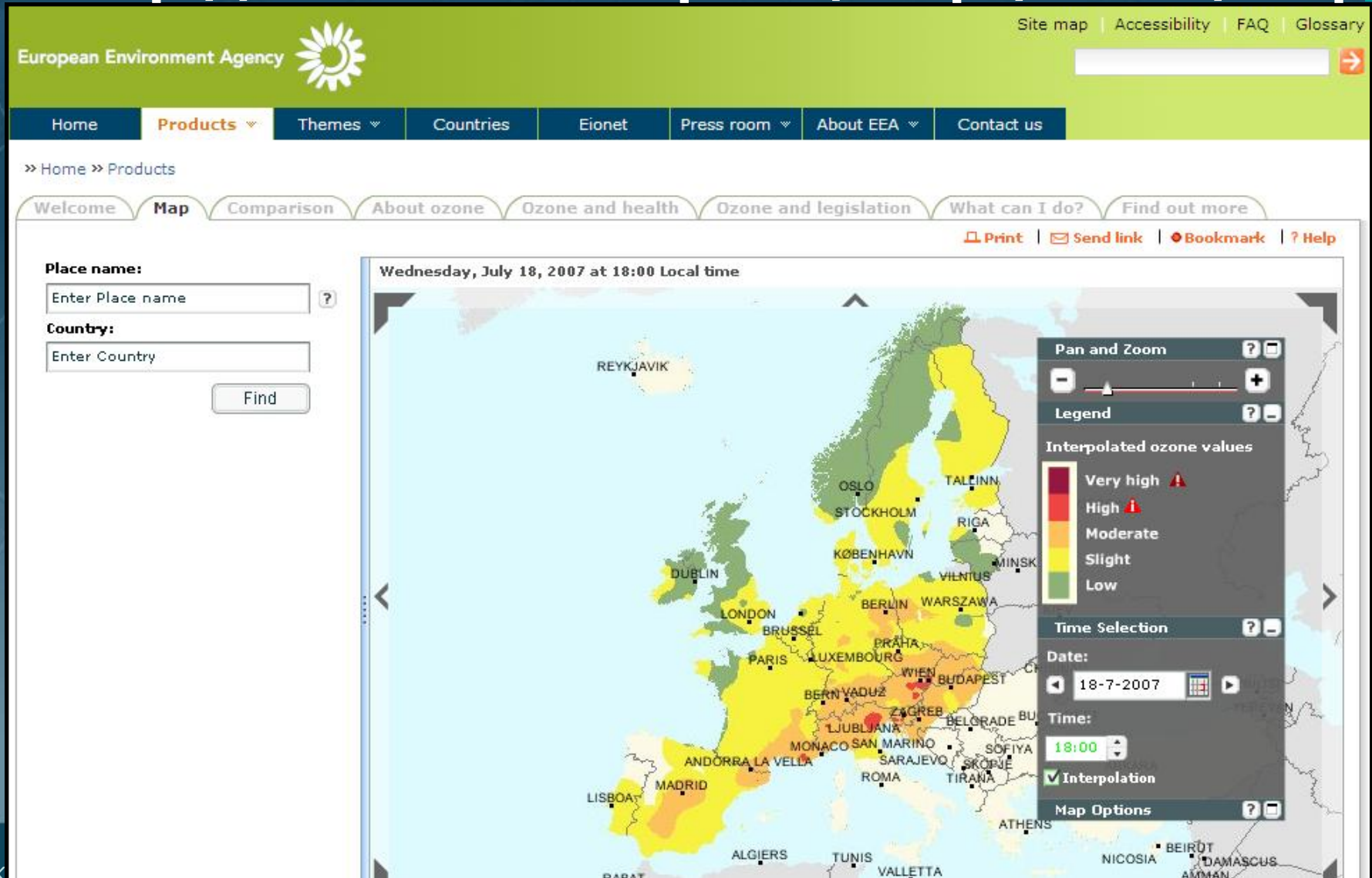
Displaying NRT AQ data – "**Ozoneweb**"

Example: Near real time example of O₃ episode in 2006

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Displaying NRT AQ data – Eye on Earth

Example: NRT AQ Index in London
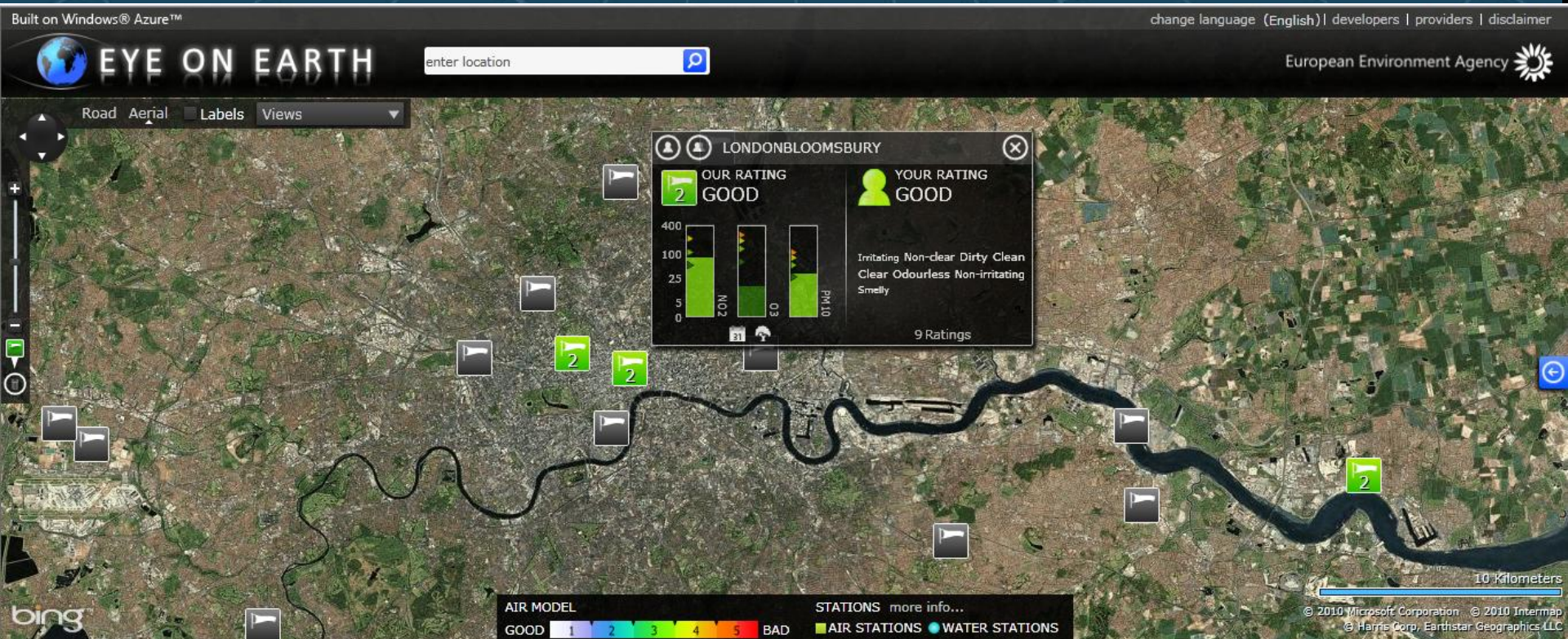
http://www.eea.europa.eu/maps/ozone/map/

European Environment Agency

Displaying NRT AQ data – Eye on Earth

Example: AQ user feedback

European Environment Agency
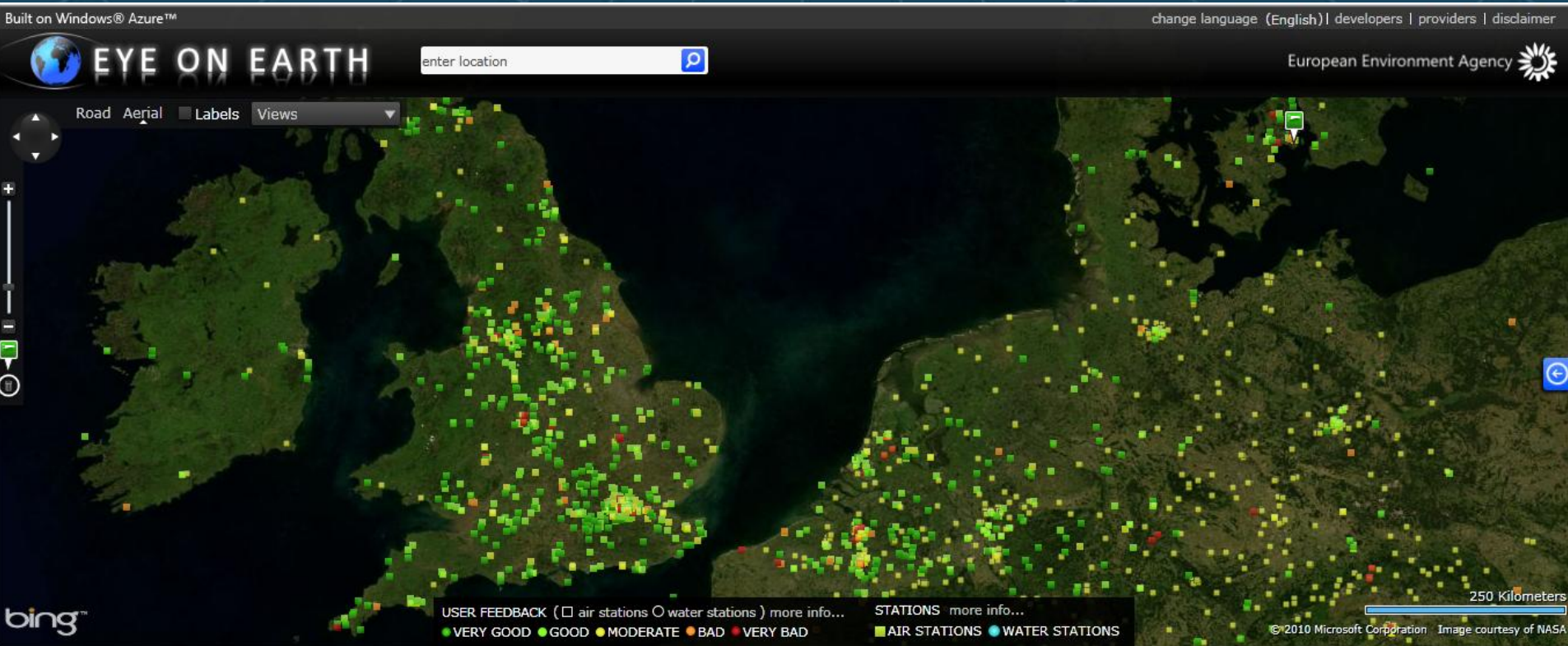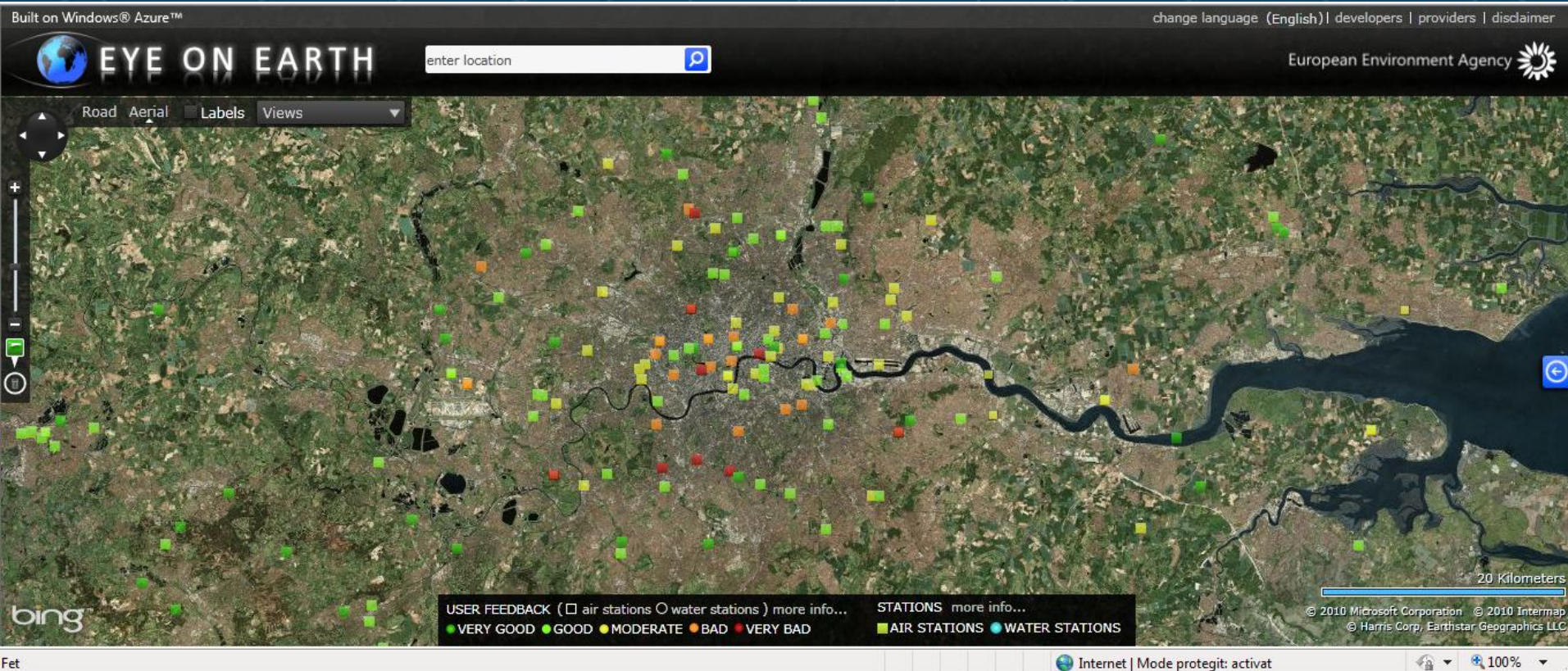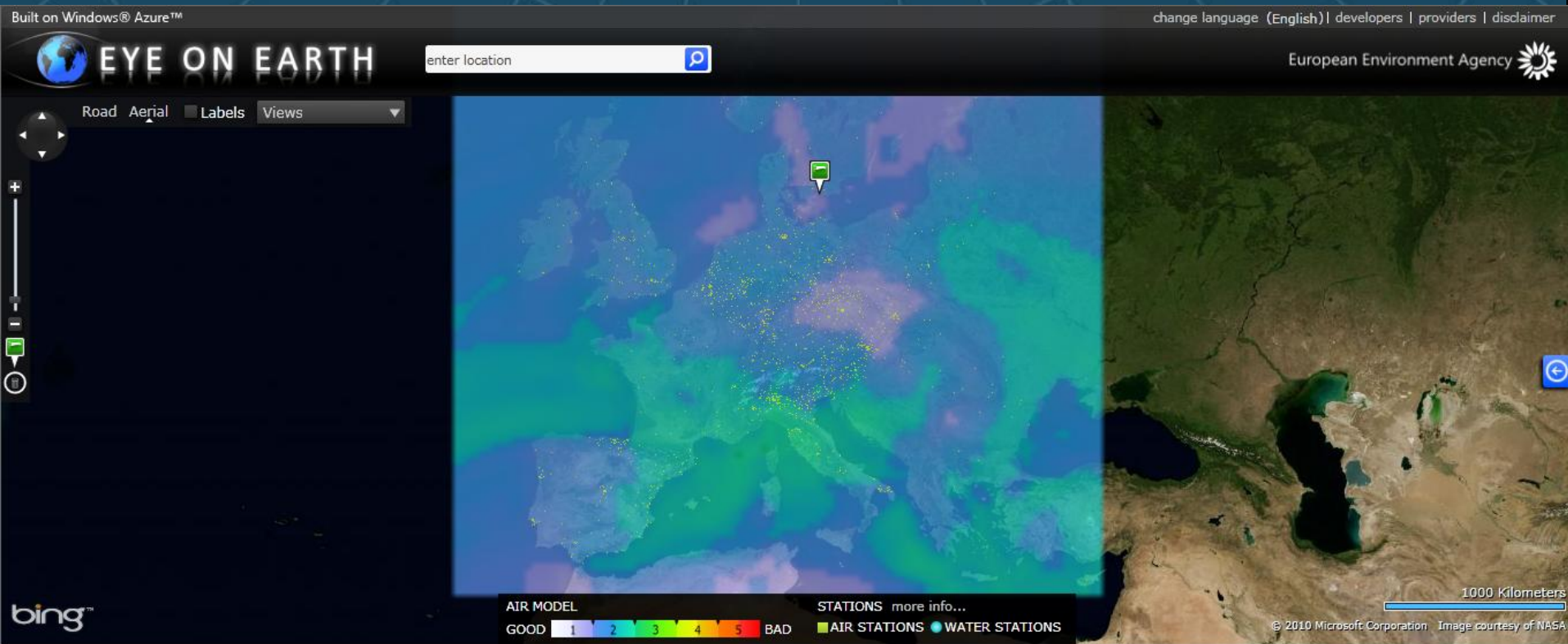
Displaying NRT AQ data – Eye on Earth

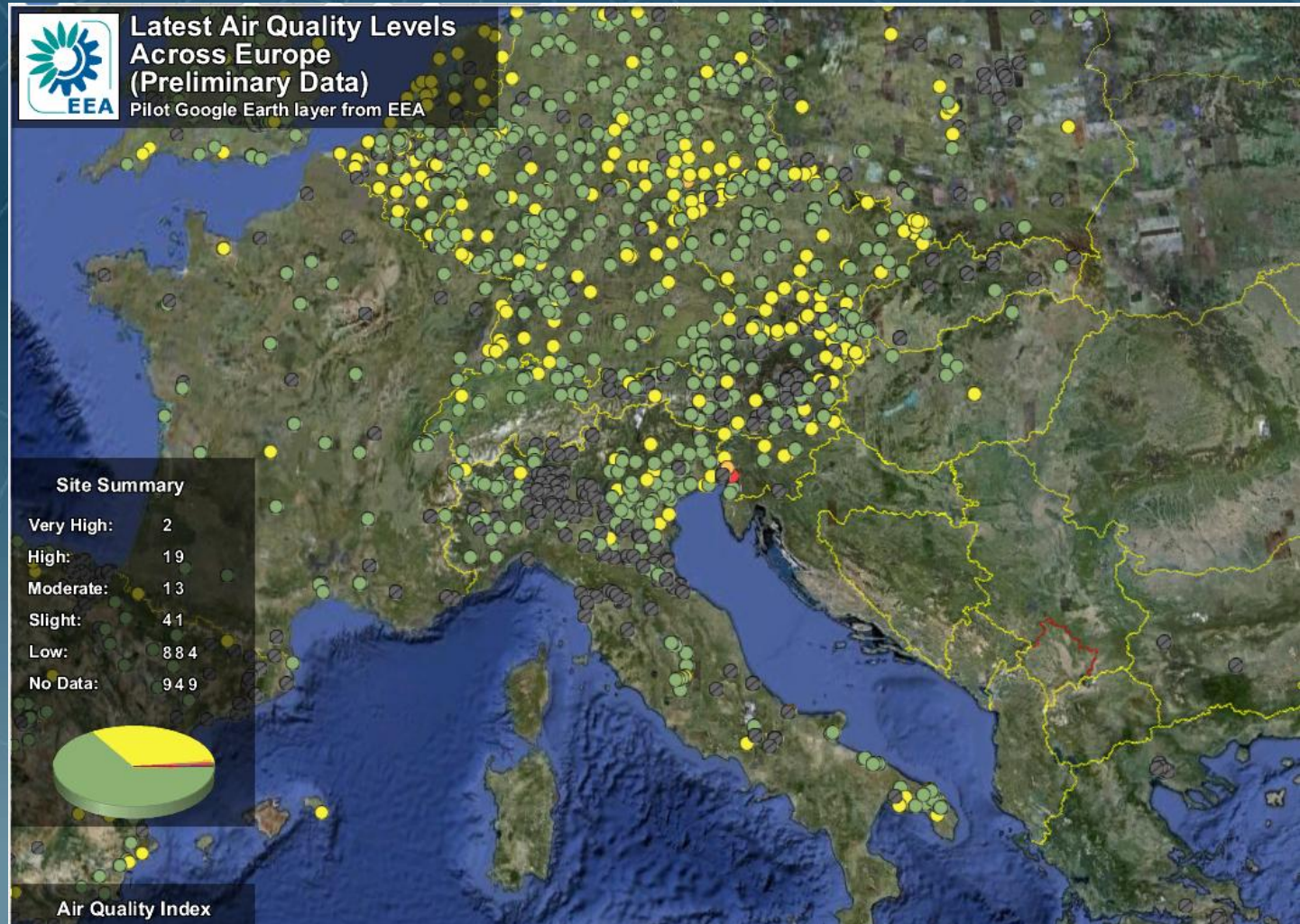Example: AQ user feedback in London

Displaying NRT AQ data – Eye on Earth

Example: AQ EU wide model

Displaying NRT AQ data – AQI in GE

Example:
Internal
ETC tool
AQI
EU wide in
Google Earth

Latest Air Quality Levels Across Europe (Preliminary Data)
Pilot Google Earth layer from EEA

Site Summary

Very High:	2
High:	19
Moderate:	13
Slight:	41
Low:	884
No Data:	949

Air Quality Index

Displaying NRT AQ data – ArcGIS

Currently, EEA is working on updating maps using ArcGIS
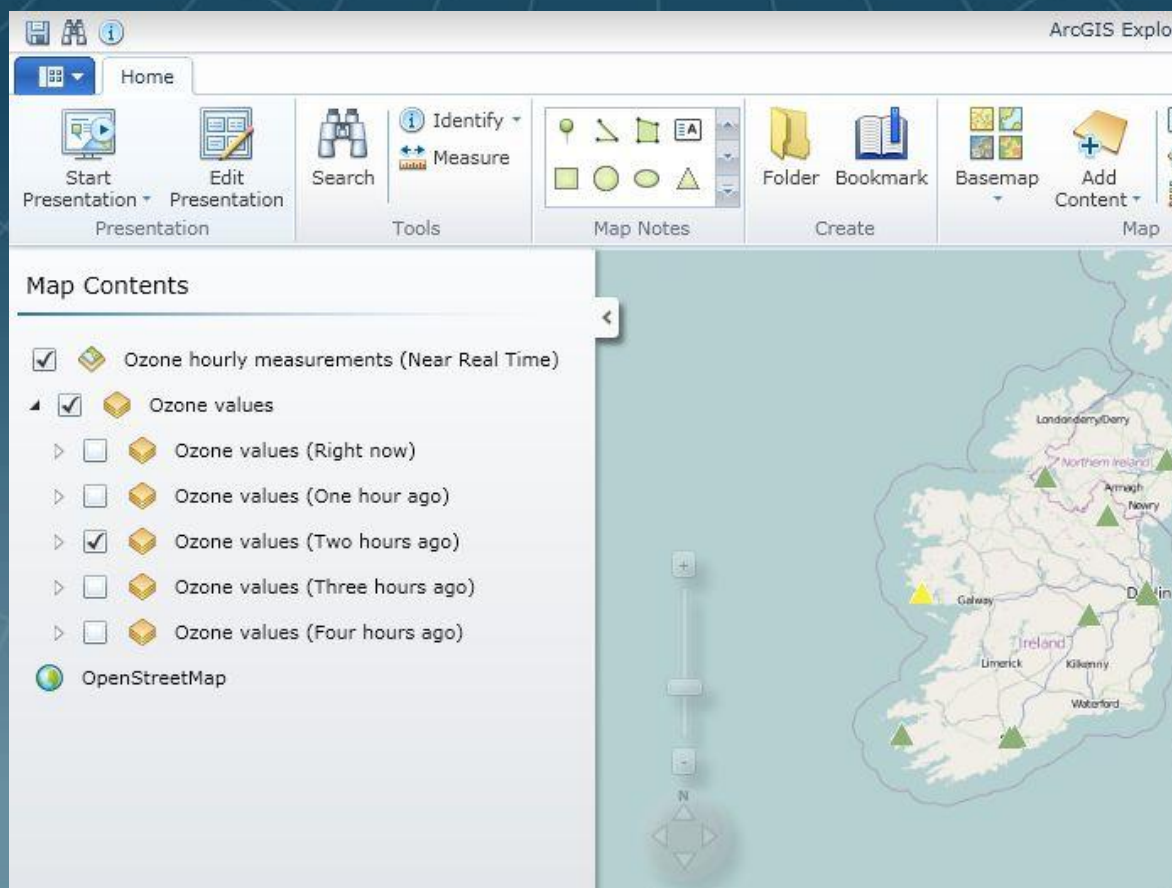
Using Near Real Time for SOR

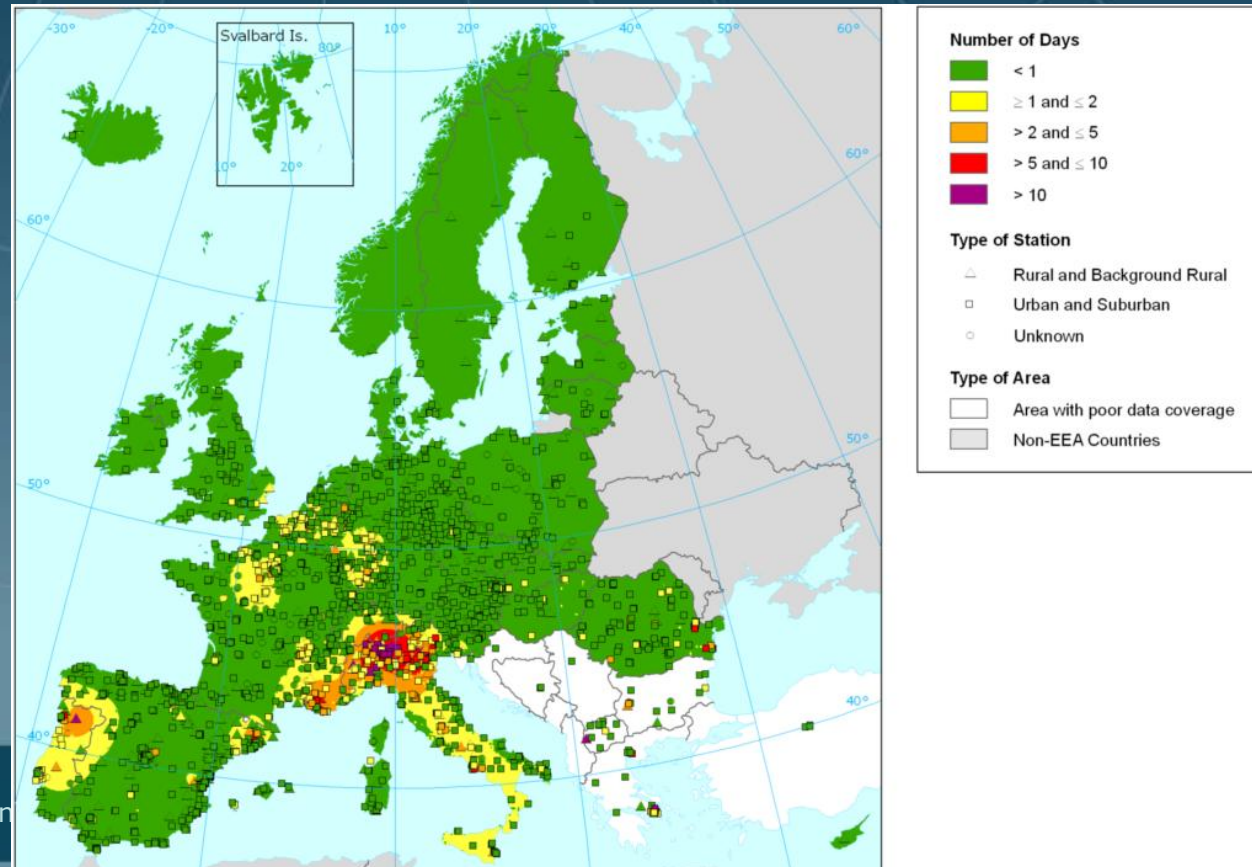1. Mandatory obligation of reporting O_3 exceedances during summer (named SOR)

2. To streamline reporting process EEA has been comparing NRT reported data with officially reported exceedances on monthly basis

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Using Near Real Time for SOR

Currently, annual report is published at the end of each year...

No. of days on which O₃ conc exceeded the information threshold

NRT for SOR

UK Air Q

NRT for SOR
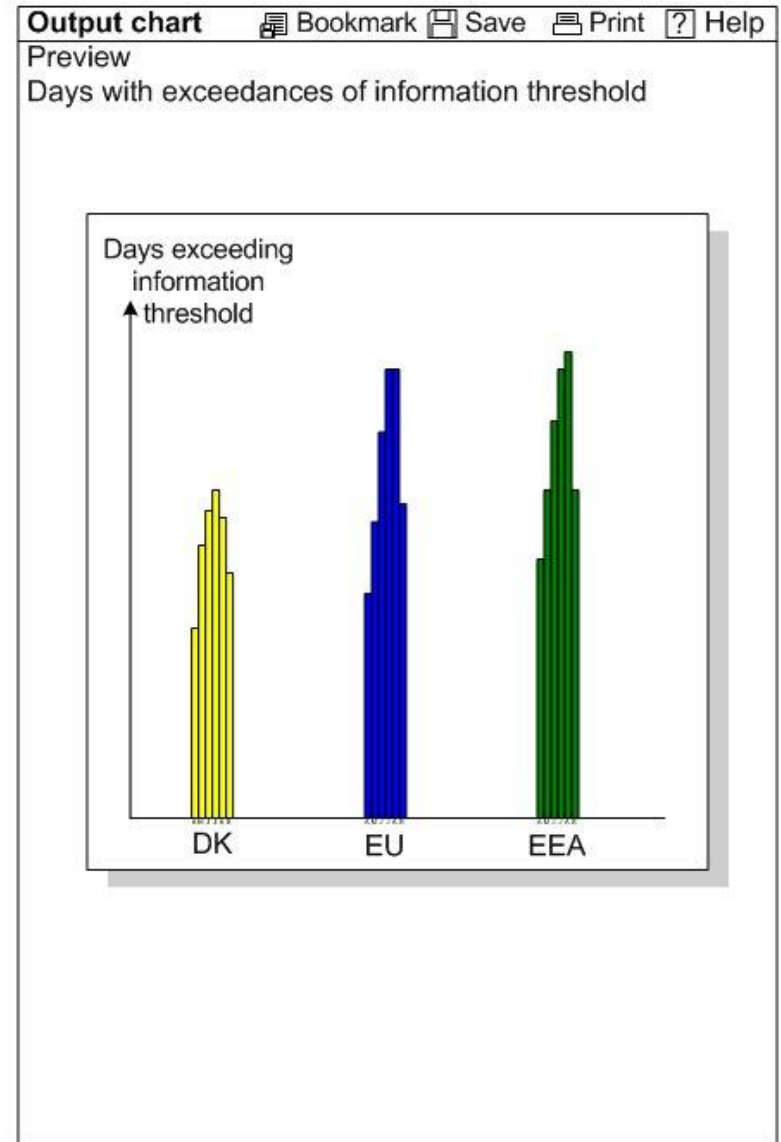
NRT vs. SOR

Differences
due to:

QA/QC in SOR

Lack of NRT data
resubmission

Country	SOR						NRT					
	No. of stations (1)	Stations with exceedance (2) [number]		No. of days with exceedance (3)		Maximum observed one-hour concentration [µg/m3]	No. of stations (1)	Stations with exceedance (2) [number]		No. of days with exceedance (3)		Maximum observed one-hour concentration [µg/m3]
Austria	118	3	0	2	0	206	112	3	0	2	0	206
Belgium	40	16	0	4	0	202	40	21	0	8	0	202
Bulgaria	15	5	1	10	1	257	2	1	0	3	0	212
Cyprus	2	0	0	0	0	< 180	2	1	1	1	1	363
Czech Republic	60	2	0	1	0	208	59	14	7	20	8	374
Denmark	7	0	0	0	0	< 180	6	0	0	0	0	< 180
Estonia	7	0	0	0	0	< 180	2	0	0	0	0	< 180
Finland	16	0	0	0	0	< 180	16	0	0	0	0	< 180
France	451	118	4	32	3	284	37	11	0	13	0	210
Germany	282	28	0	7	0	226	282	30	1	7	1	245
Greece	24	10	4	13	4	264	13	8	3	0	0	< 180
Hungary	17	4	0	4	0	193	7	1	0	1	0	183
Ireland	10	0	0	0	0	< 180	9	2	1	2	1	304
Italy	284	138	13	73	9	279	129	79	33	64	30	399
Latvia	7	0	0	0	0	< 180	1	0	0	0	0	< 180
Lithuania	14	0	0	0	0	< 180	3	0	0	0	0	< 180
Luxembourg	6	1	0	2	0	194	5	2	0	5	0	194
Malta	4	2	0	3	0	207	1	1	1	123	49	386
Netherlands	37	5	0	2	0	193	34	7	5	19	15	395
Poland	64	0	0	0	0	< 180	41	7	3	9	3	331
Portugal	52	6	2	6	2	250	14	8	2	8	2	256
Romania	98	17	1	36	1	243	0	n/a	n/a	n/a	n/a	n/a
Slovak Republic	15	2	0	2	0	199	13	1	0	1	0	199
Slovenia	12	2	0	3	0	196	8	0	0	0	0	< 180
Spain	383	29	1	36	1	274	165	28	13	41	23	393
Sweden	12	0	0	0	0	< 180	9	1	0	0	0	< 180
United Kingdom	80	4	1	2	1	258	74	6	2	0	0	< 180
EU area	2117	392	27	106	20	284	802	202	71	150	94	399
Bosnia-Hercegovina	2	0	0	0	0	< 180	0	n/a	n/a	n/a	n/a	n/a
Croatia	2	0	0	0	0	< 180	0	n/a	n/a	n/a	n/a	n/a
Iceland	2	0	0	0	0	< 180	1	0	0	0	0	< 180
Liechtenstein	1	0	0	0	0	< 180	1	0	0	0	0	< 180
Macedonia, FYR of	13	4	1	48	1	263	0	n/a	n/a	n/a	n/a	n/a
Norway	8	0	0	0	0	< 180	10	5	2	17	5	363
Serbia	1	0	0	0	0	< 180	0	n/a	n/a	n/a	n/a	n/a
Switzerland	21	3	0	17	0	230	21	3	0	17	0	220
Turkey	3	0	0	0	0	< 180	3	0	0	0	0	< 180
Whole area	2170	399	28	119	21	284	838	210	73	151	96	399

Thank you for your attention!

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