

'Ozoneweb' – EEA web site on near real-time ozone data

Tim Haigh - project manager
Information Resources



<http://www.eea.europa.eu/maps/ozone/map/>

What is OzoneWeb?

- A GIS-based system for collecting, providing and visualizing near real-time ambient ozone levels across Europe.
- Also provides background information on ozone and its health impacts.
- Website aimed at use by the general public.
<http://www.eea.europa.eu/maps/ozone/map/>
- Developed 1st half 2006. Live July 2006



Background - legislation

- EC Ozone Directive (2002/3/EC)
 - Information Threshold: $180 \mu\text{g m}^{-3}$
 - Alert threshold: $240 \mu\text{g m}^{-3}$
 - Long-term health standard: $120 \mu\text{g m}^{-3}$
- When thresholds are exceeded, national authorities are to inform the public.



Functionality of website

- For general public: measured ozone levels in maps and graphs and background information about ozone and its health impacts
- Interpolated maps
- Links to data providers and others
- For air quality experts: access to underlying data for further modelling and analysis





[Home](#)

[Countries](#)

[Products](#)

[Themes](#)

[Networks](#)

[Press room](#)

[About EEA](#)

[Contact us](#)

[Welcome](#)

Map

[Comparison](#)

[About ozone](#)

[Ozone and health](#)

[Ozone and legislation](#)

[Resources](#)

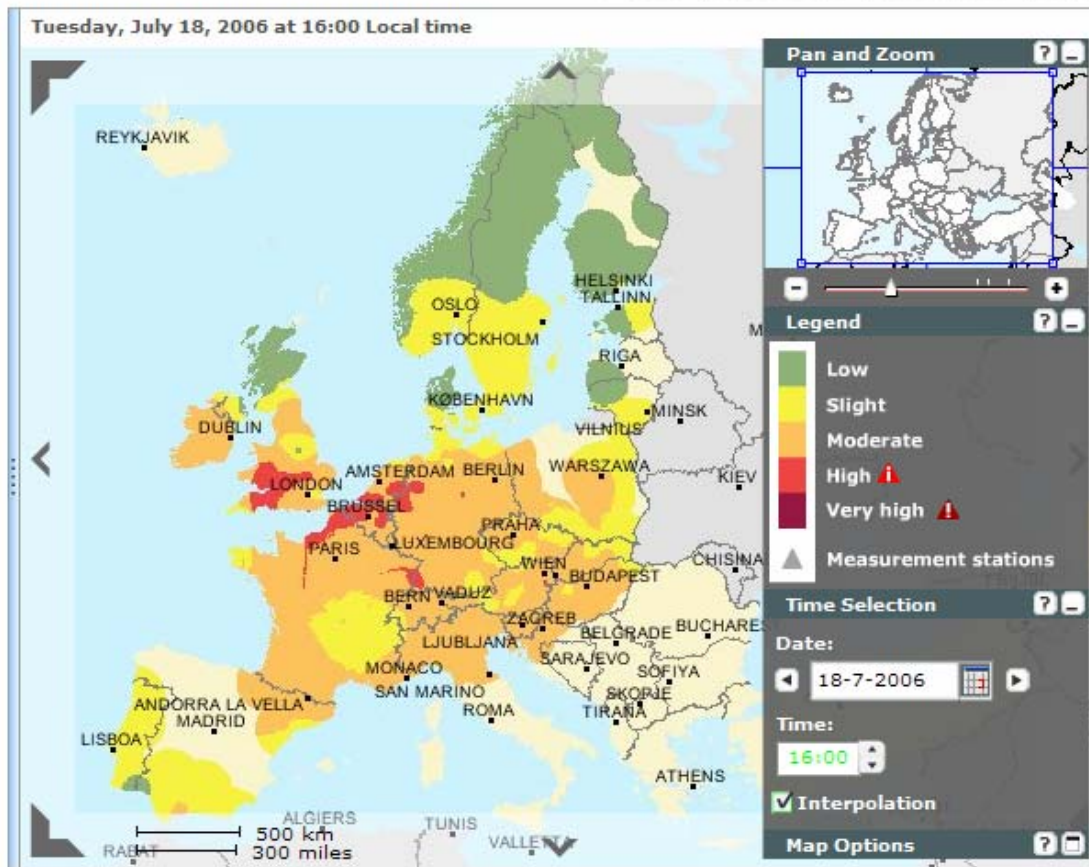
[What can I do?](#)

[Print](#) | [Send link](#) | [Bookmark](#) | [Help](#)

Place name/Post code:

Country:

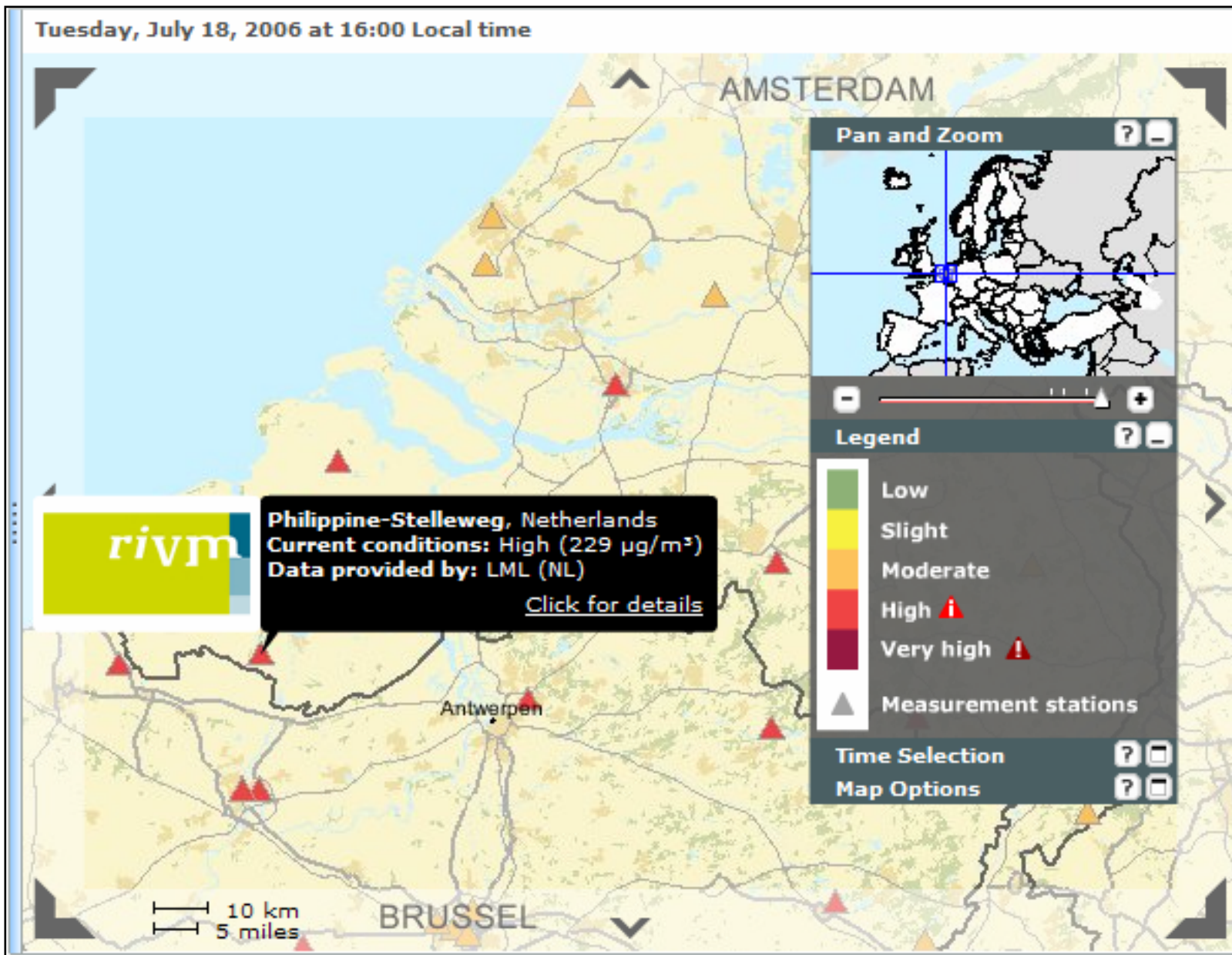
Tuesday, July 18, 2006 at 16:00 Local time



Preliminary data




Tuesday, July 18, 2006 at 16:00 Local time



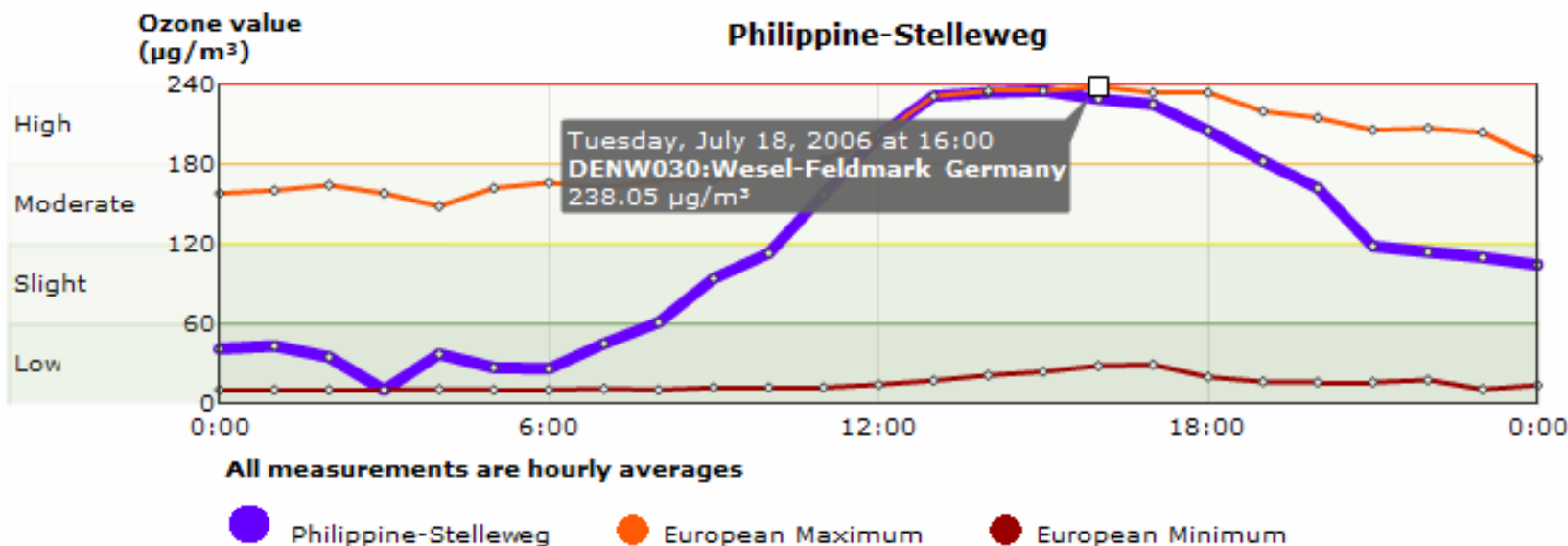
Ozone Statistics

 Print

Maximum daily ozone values at monitoring stations across Europe

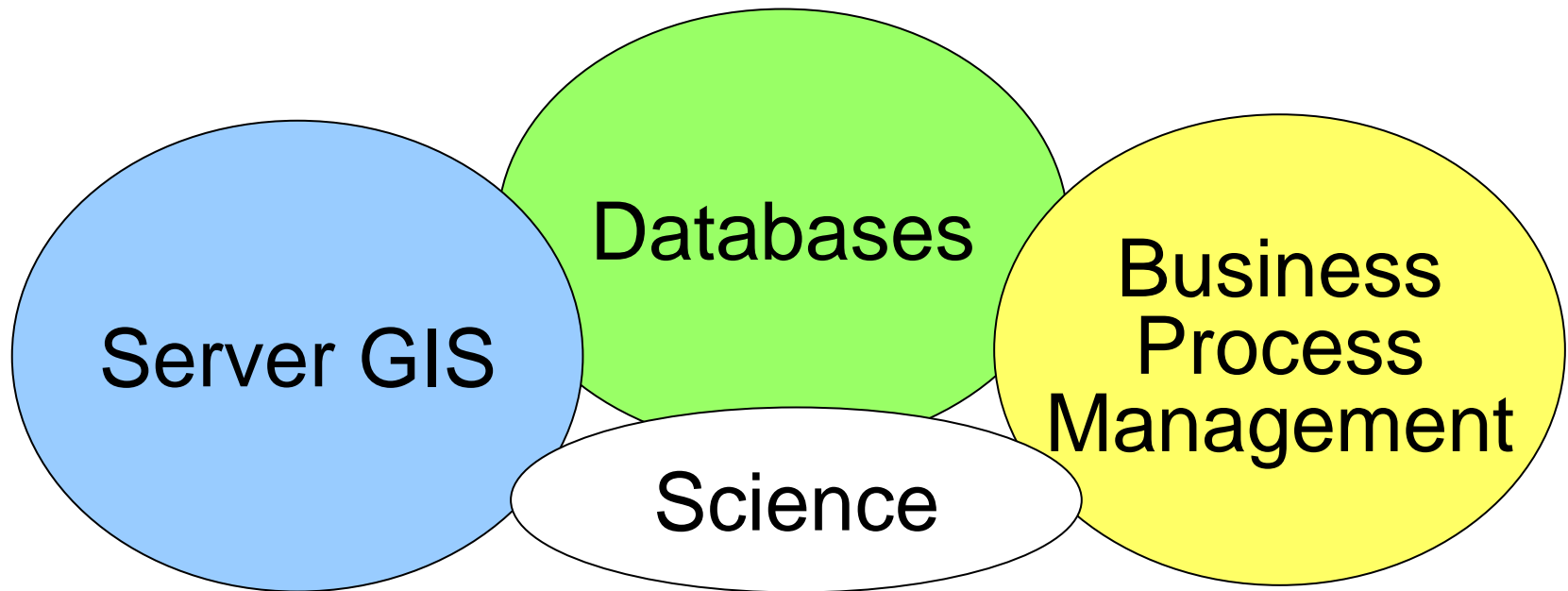
◀ 18-7-2006  ▶ Time range: 1 day 1 week 1 month ?

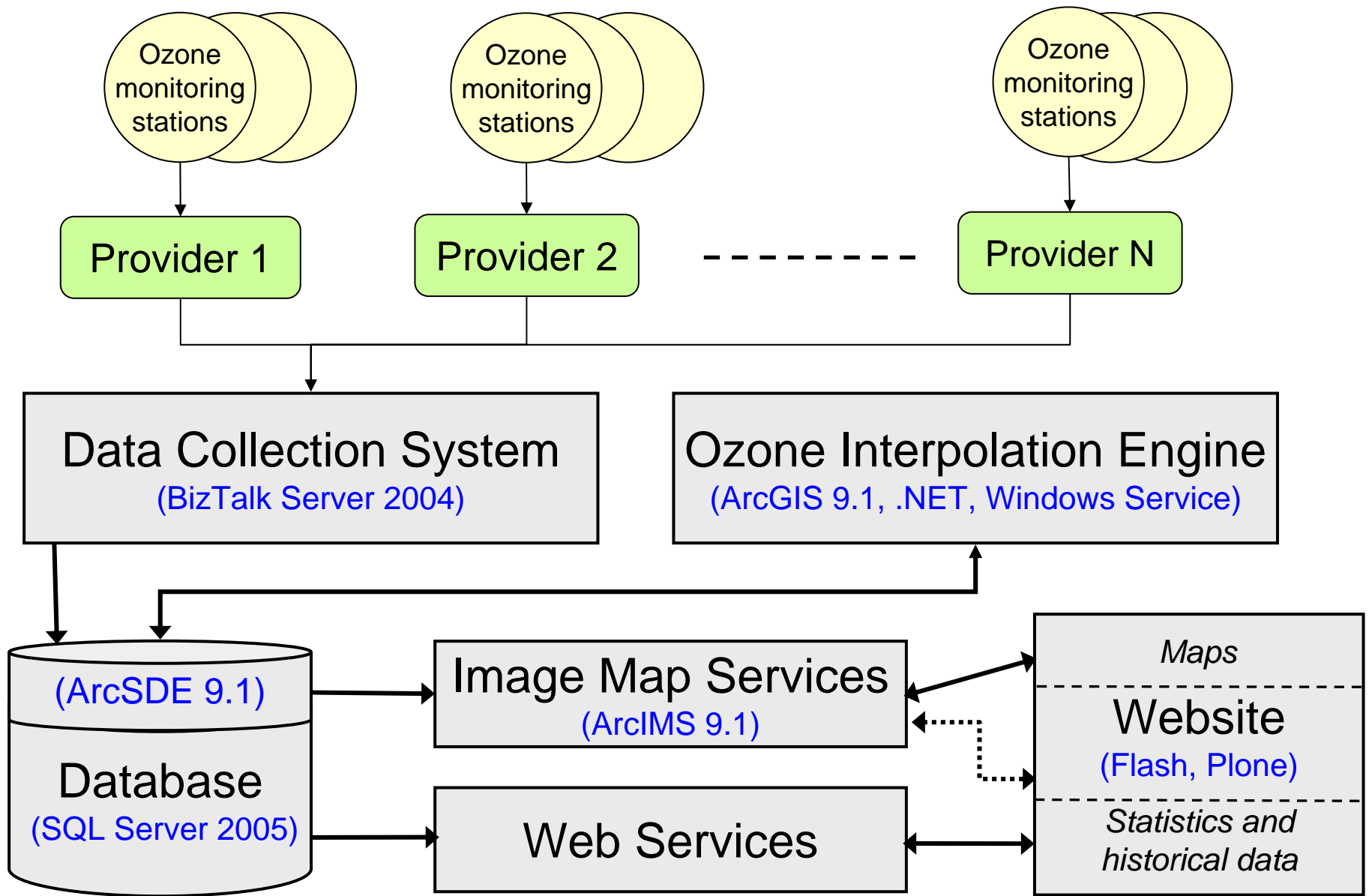
Station name	Country	Date and Time	Value in $\mu\text{g}/\text{m}^3$
 1. DENW030:Wesel-Feldmark	Germany	18-7 16:00	238.05
 2. MOERKERKE 44N012 - MOERKERKE	Belgium	18-7 14:00	235.00
 3. Philippine-Stelleweg	Netherlands	18-7 15:00	235.00
 4. Philippine-Stelleweg	Netherlands	18-7 14:00	234.00
 5. YARNER WOOD	United Kingdom	18-7 17:00	234.00
 6. YARNER WOOD	United Kingdom	18-7 18:00	234.00
 7. Philippine-Stelleweg	Netherlands	18-7 13:00	231.00
 8. YARNER WOOD	United Kingdom	18-7 16:00	230.00



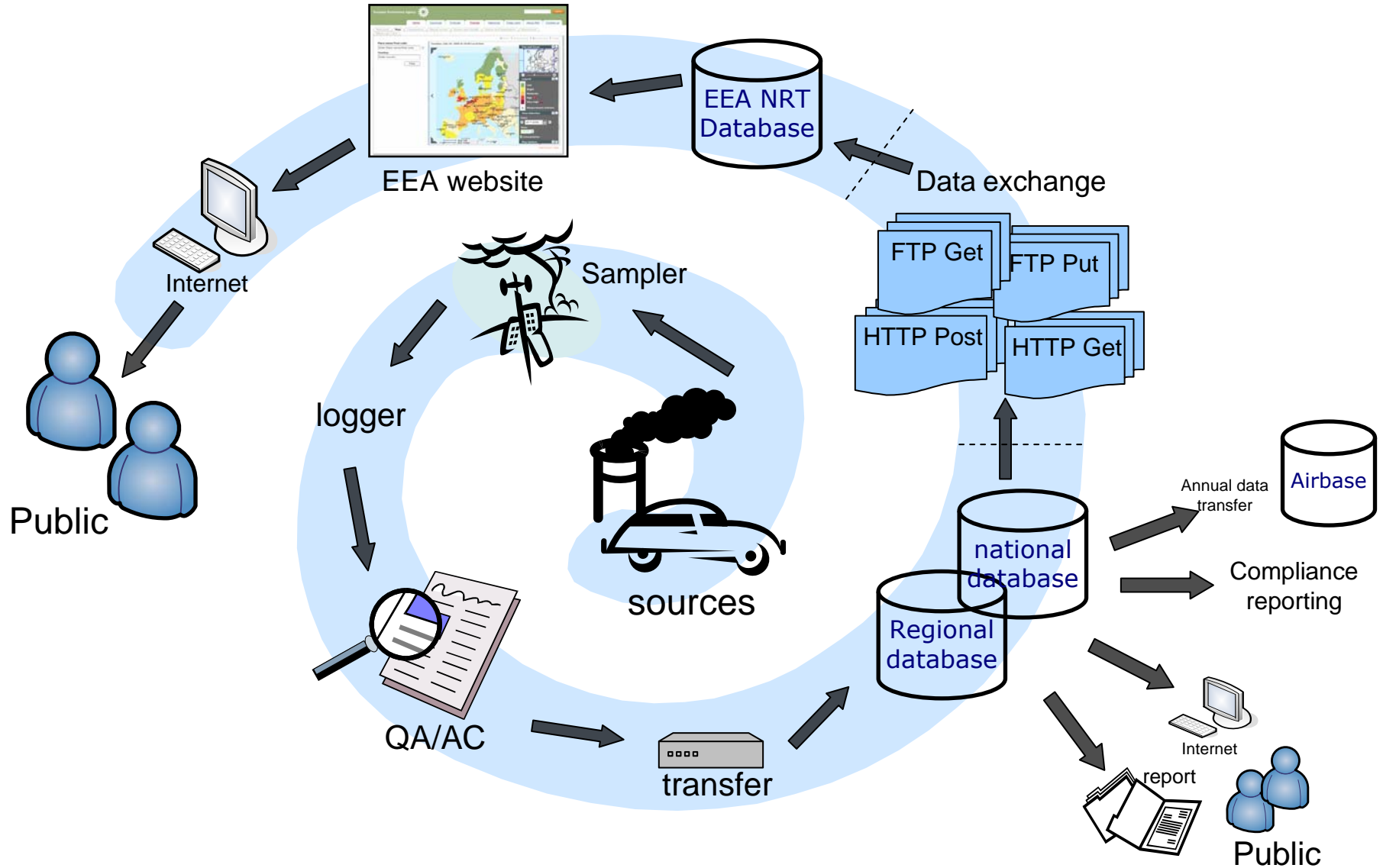
System Design

- The OzoneWeb system consists of multiple components and integrates a variety of cutting-edge technology.





Where is all the data coming from?



Ozone data providers

- → National or regional entities. One or more per country.
- 23 countries, 39 providers, over 700 measurement stations.
- Data provision is on a voluntary basis.
- Re-transmission of corrected data possible.

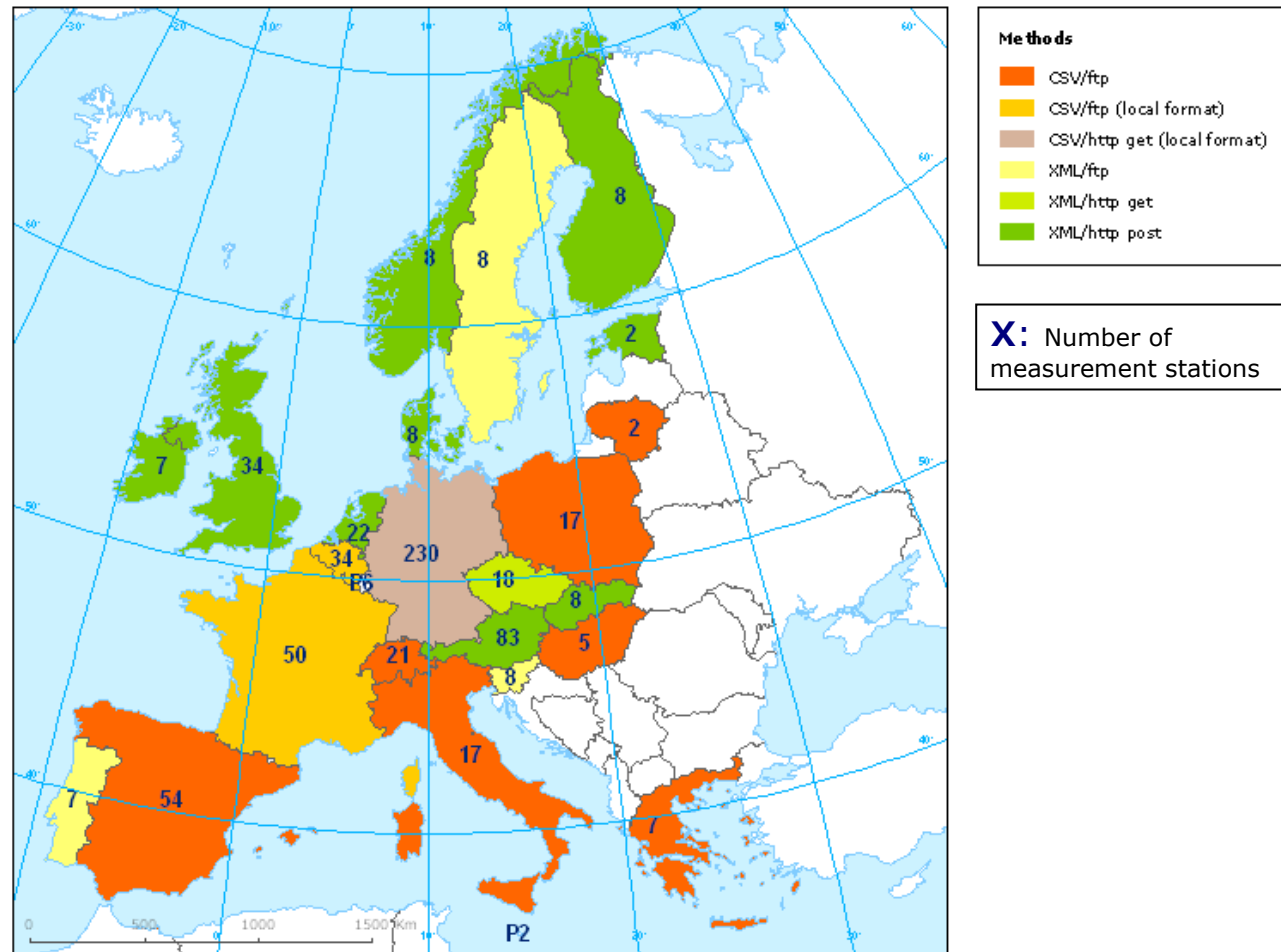


Principles of data exchange

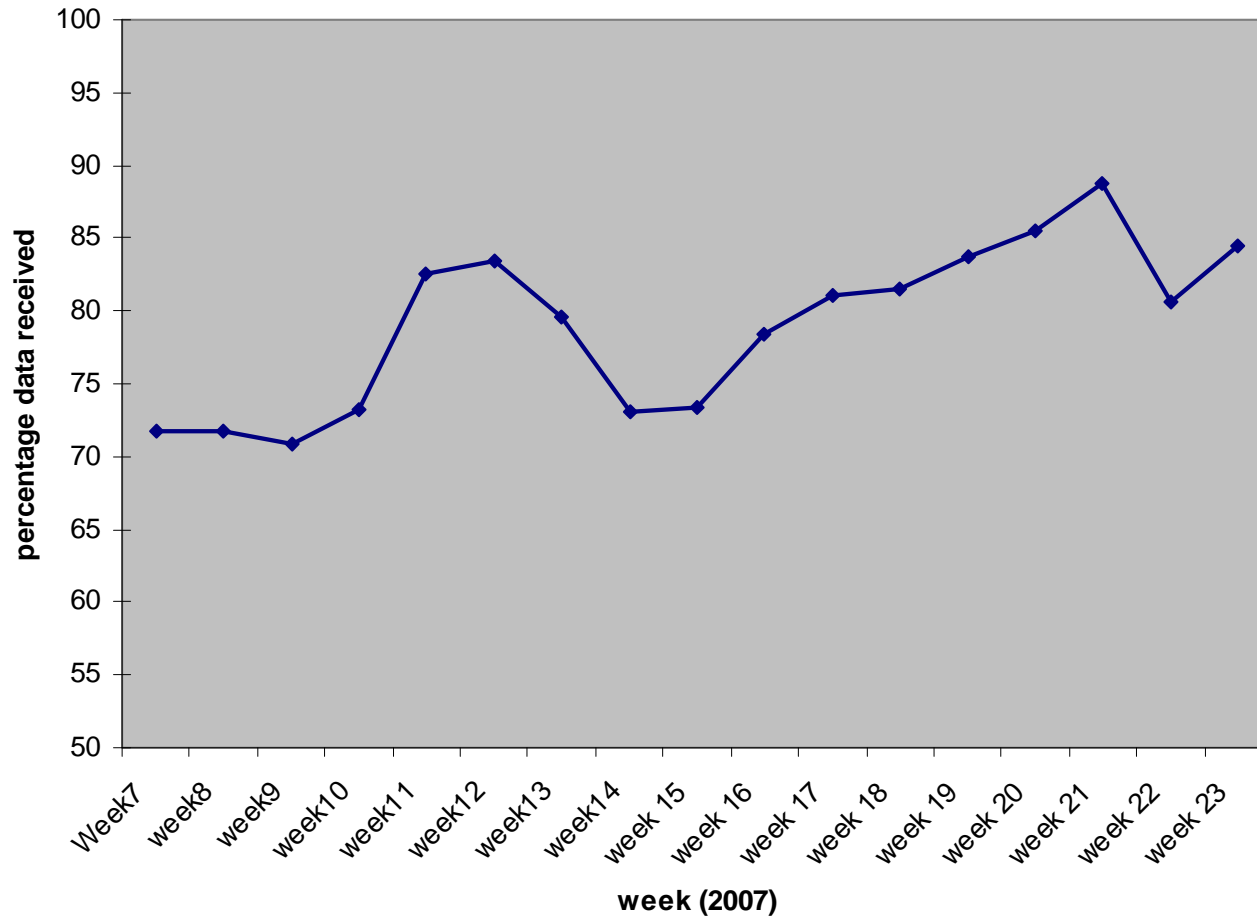
- **Control:** Data providers remain in control of the data provision and use.
- **Visibility:** Visibility should be given to the data providers (branding and their services).
- **Quality control:** Data received in real-time by EEA will be filtered to check for data outside pre-set limits and null or error values.
- **Added value services:** EEA aims to provide added value services back to the data provider organisations based on the data.



Participation in near real-time data exchange (data exchange methods and coverage)



Overview of data provision (spring 2007)



QA of data for interpolation

- Stations count
 - At least 250, from 80% of the providers
- Station density test
 - Quadrat analysis. Observed pattern of stations from which data is received is not significantly different from what is normally expected (reference pattern).
- RMSE of interpolated surface
 - Use kriging with spherical semivariogram
 - Cross validation using 10% of data against interpolation based on 90% of data. RMSE must be $< 20 \mu\text{g}/\text{m}^3$.



Next steps

- Extend the coverage to other air quality components;
- Make use of model outputs and remote sensing;
- Support provision of more sophisticated services (returns) to national and regional data providers.



Conclusions

- First European-wide system for collecting, providing and visualizing near real-time ambient ozone levels
- Increased visibility of ozone level information and the work undertaken by the data providers.
- INSPIRE pilot; create partnerships with EU member countries to serve and empower its citizens.
- Integration of GIS, database and business process management technology. Underlying ArcIMS/Flash technology is released.

