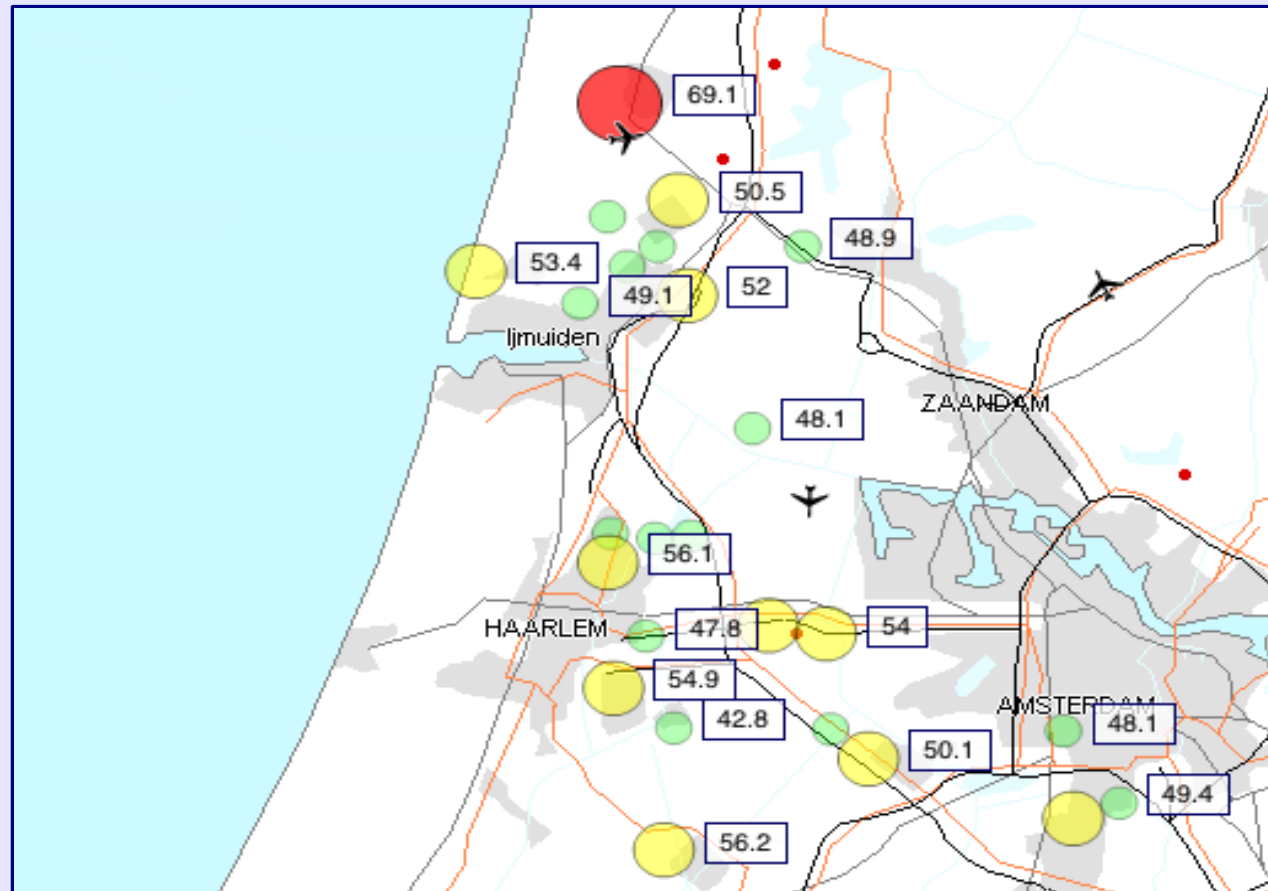


Geluidsnet: noise made transparent



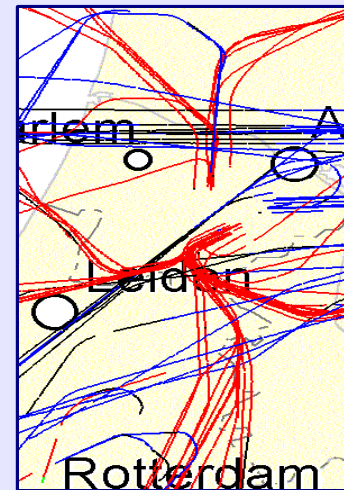
1. A short history of Geluidsnet

by René Post



2. A closer look at the system

by Jasper Koolhaas



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1. A short history of Geluidsnet

The start: pilot at airport Schiphol

The end of 2003:

- Stichting Geluidsnet (Foundation) started
- Aimed to make airplane noise transparant through the Internet

2004:

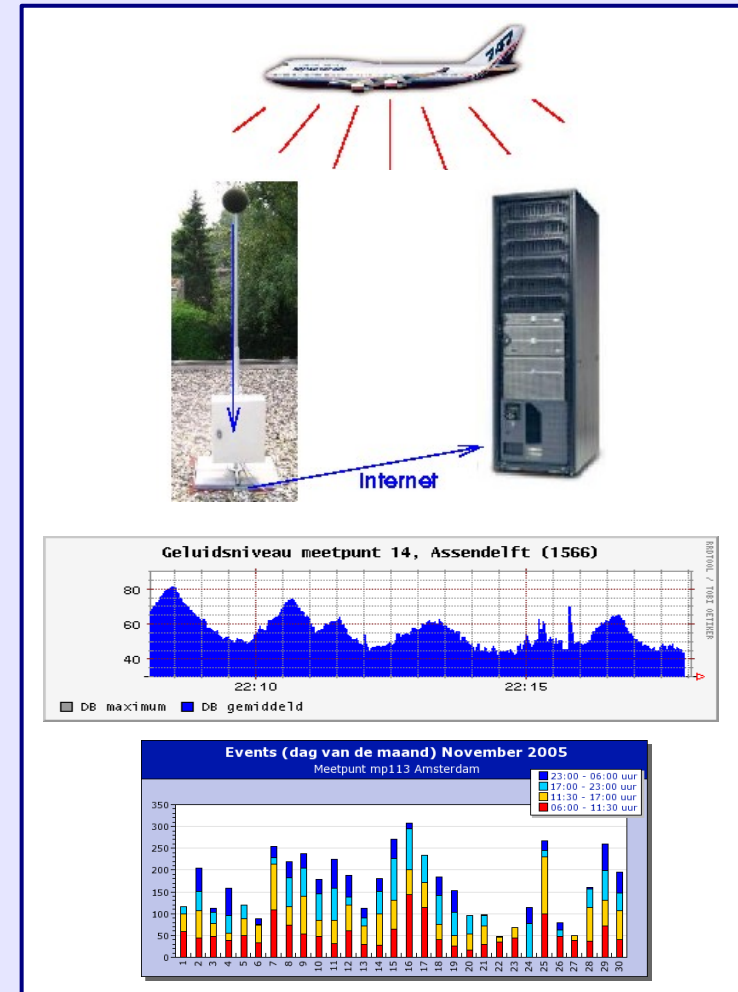
- Pilot together with TNO, Waag Society & NL KnowledgeLand
- 25 sound measuring units in the area around Schiphol
- Media & Government involvement



1. A short history of Geluidsnet

What we do: measure airplane noise

1. Microphone registers sounds
2. Embedded computer logs the data
3. Measurements to central Internet-database
4. Real-time presentation at www.geluids.net
5. More units in the same area
6. Combining the data of different units
7. Monthly Reports are being generated for customers



1. A short history of Geluidsnet

Life after the foundation

2005:

- Pilot becomes business: from a foundation to a company
- Start development new measuring unit Venture capital & DGMR



dGm^R



1. A short history of Geluidsnet

Today: creating value for our clients

- Setting the agenda of Schiphol & the Dutch government
- To calculate sound levels used to be the only way..
- But measuring is gaining territory
- Transparency is here to stay



1. A short history of Geluidsnet

Conclusions

Geluidsnet, a technical innovation?

- Emotions versus facts
- Perceived control



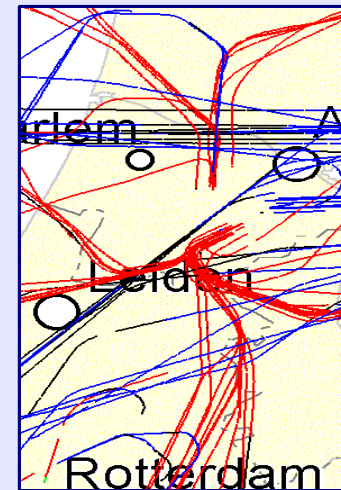
1. A short history of Geluidsnet

by René Post



2. A closer look at the system

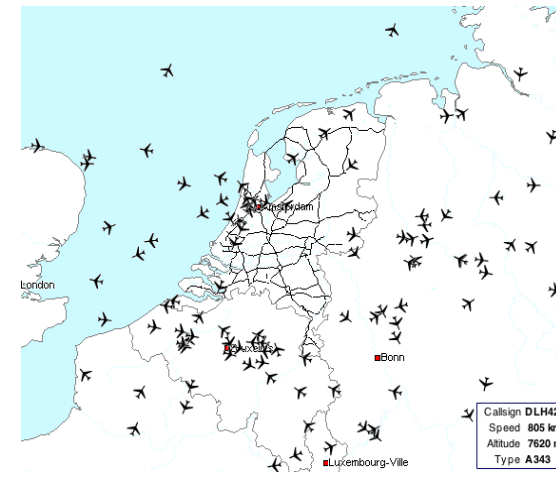
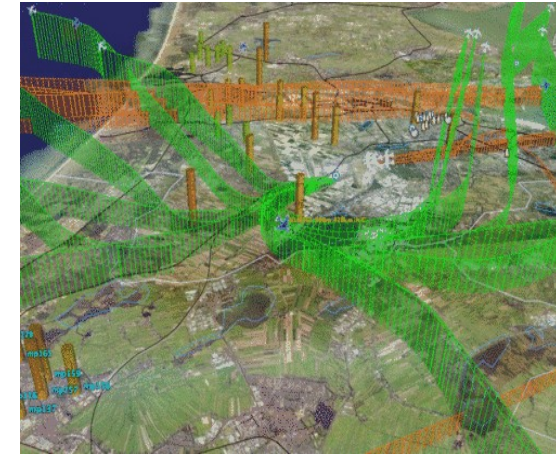
by Jasper Koolhaas



2. A closer look at the system

Internet visualisation

- Interactieve webinterface and Google Earth
- Easy to understand visualisation and usable for all
- Transparency leads to acceptance
- Combination of different measurements in one view

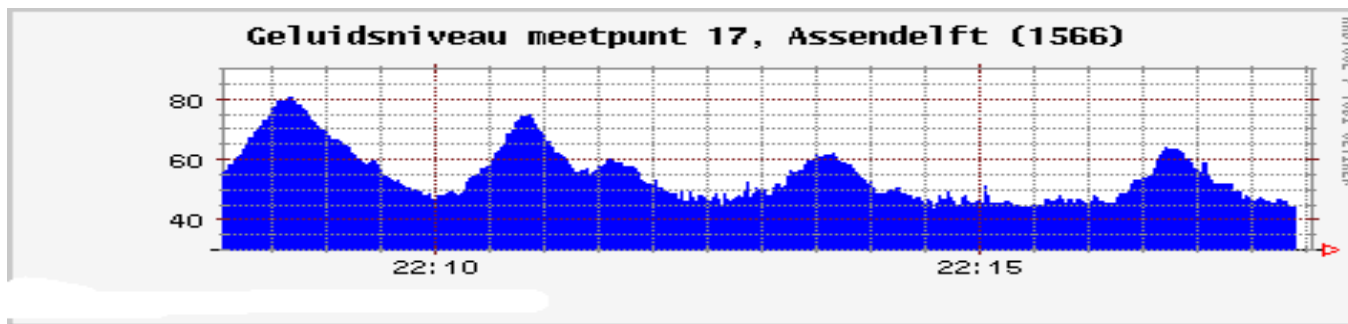
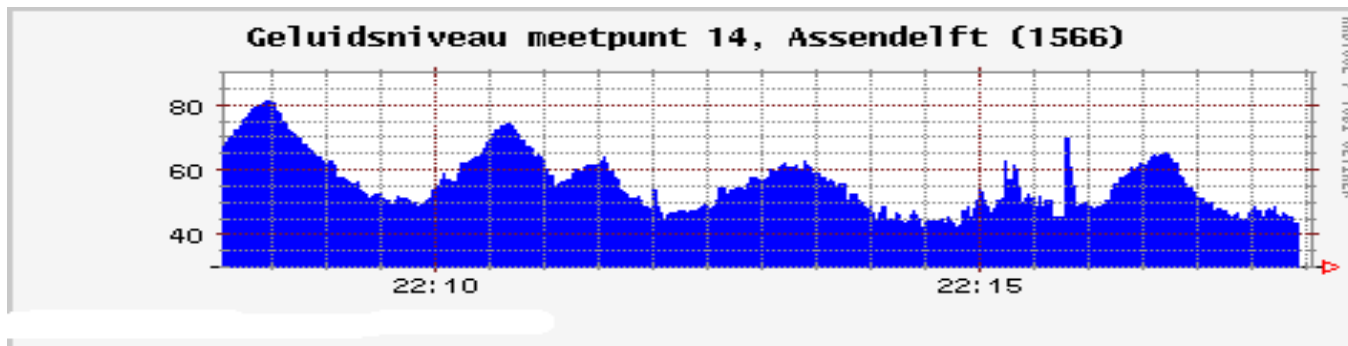


2. A closer look at the system

Event detection

Network approach, correlate multiple measuring units:

- Peaks at adjacent measuring units have a 15 second time difference
- Distance between measuring units 1300m → source moves at 312km/h
- Correlate with flightpath data

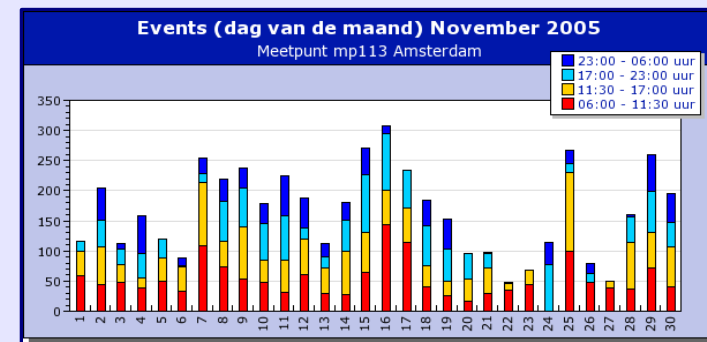


2. A closer look at the system

Reports

Annual and monthly report with:

- Events and Noise levels
- Lden, Lday, Lnight
- Per hour, day and month
- Clickable for more detail view:



Transparent detail view with all events:

- Per event information about SEL, peak and flight information
- Manual check possible with recorded mp3 events
- Accuracy circa 90%
- Reports are available in a web interface.

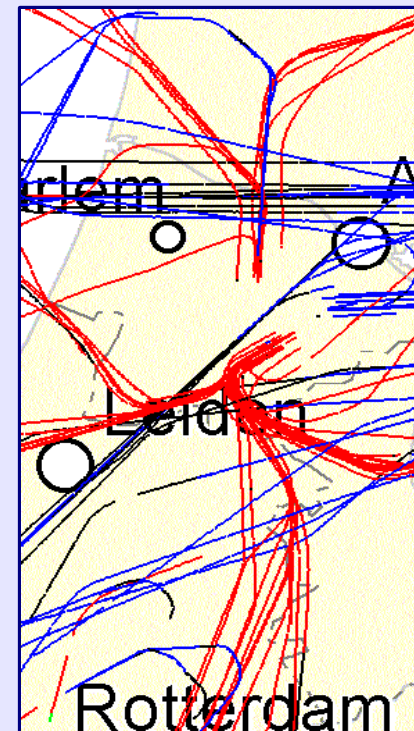
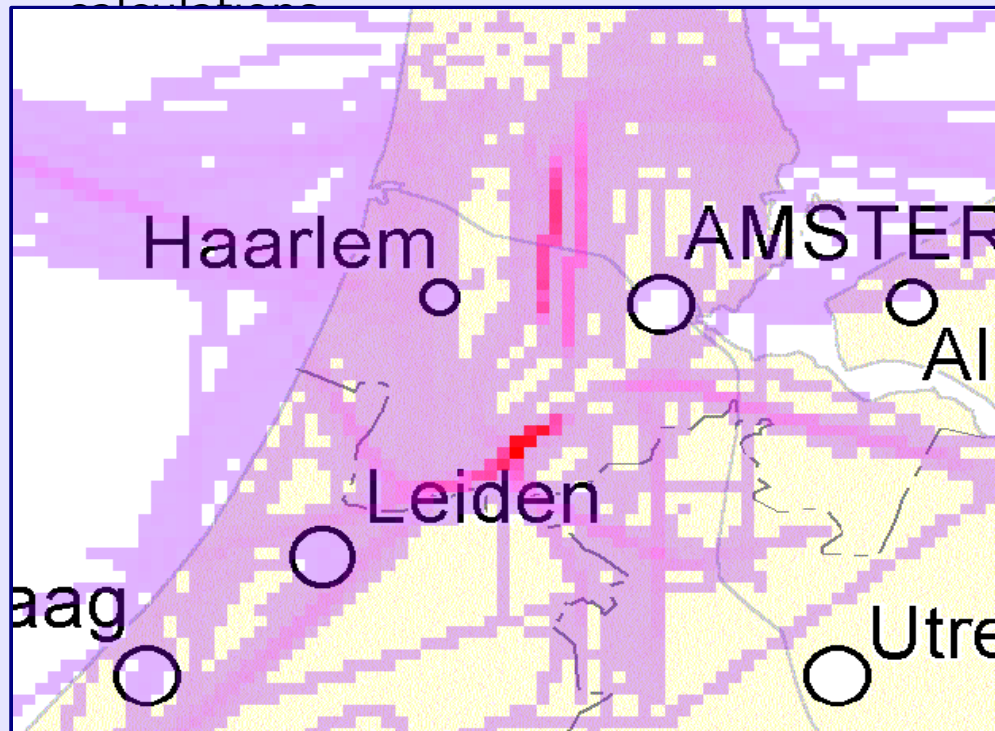
2006-10-15 06:01:41	99.2%	58	4661	62.1	56.4	NWA42 (N808NW) A333 (Airbus A330-323E) Northwest Airlines, 2.1km	kaart g'earth	MP3	VLIEGTUIG
2006-10-15 06:10:03	99.9%	83	4662	70.1	59.3	NWA33 (N858NW) (AIRBUS A330-223) NORTHWEST AIRLINES INC, 0.9km	kaart g'earth		
2006-10-15 06:11:56	16.3%	17	4663	51.4	50.1			MP3	GEEN VL.
2006-10-15 06:23:07	95.7%	146	4664	62.0	55.4			MP3	
2006-10-15 06:25:24	99.9%	84	4665	71.2	59.8	CPA271 (B-HXF) A343 (Airbus A340-313X) Cathay Pacific Airways, 0.9km	kaart g'earth		
2006-10-15 06:35:13	91.5%	70	4666	70.4	61.6				GEEN VL.

2. A closer look at the system

Real-time flightpath data

Geluidsnet receives real-time radar data from airplanes.

- Verify event detection
- Find which particular plane caused a nuisance
- flightpaths stored in a searchable database.
- cumulative flightdensity for noise analysis or risk calculations



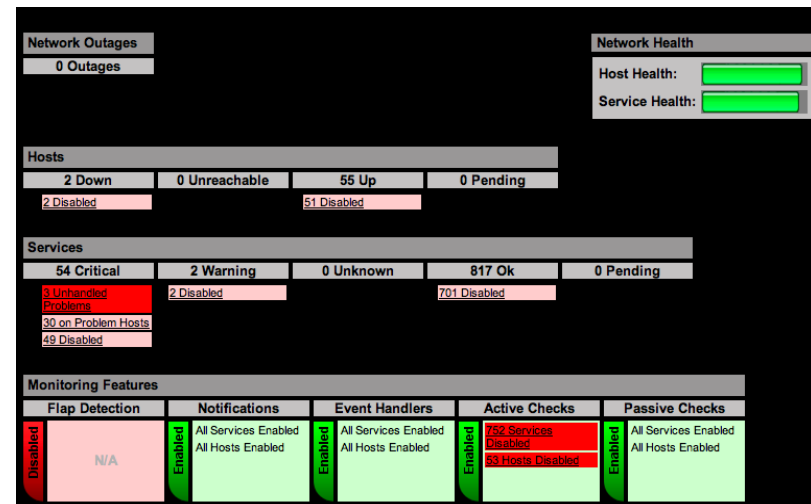
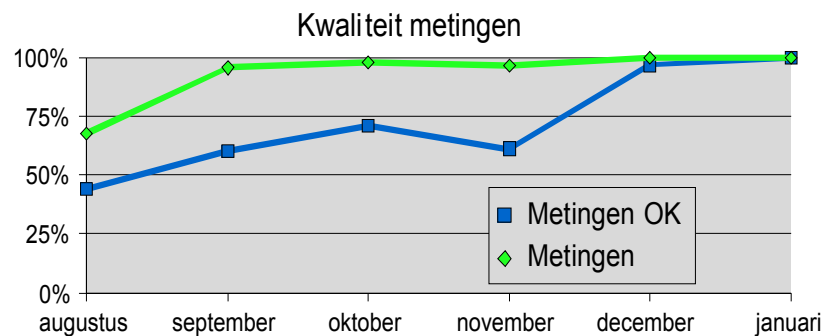
2. A closer look at the system

Quality control

Real-time connections make real-time monitoring of the quality of the measuring units possible.

- Monitoring measuring unit (energy storage capacity, netwerk, etc)
- Controle measurements (dynamics, minima, maxima, spread)
- Deviances are signalled immediately so that disruptions can be prevented.
- Monitoring hundreds of parameters

Unmanned, yet closely garded!



More information?

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Thank you for your attention!

