World Data Centre for Aerosol Status Report 2012

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Items Covered

- WDCA Status: Key numbers and figures
- Improved web-interface
- Status of WDCA relocation
- GAWSIS – WDCA comparison, increasing coverage:
  - Stations that reported previously
  - Stations that never reported
- Improved instructions for data submission
- Aerosol vocabulary for WIS, defining CF-names
- Outlook: distributed WDCA, WIS compliance and other features by collaboration with EU project ACTRIS

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Status of Ongoing Data Collection, Key Numbers

Regular reporting:

	2007	2009	2010	2011
Stations ever reported	27	45	60	61
Stations reported that year	13	37	44	28
Station / inst. comb. ever	61	136	136	
Station / inst. comb. that year	22	112	64	

Near-real-time reporting:

	2009	2010	2011	2012
Stations reported	6	23	35	45
Station / inst. combinations	11	36	53	72

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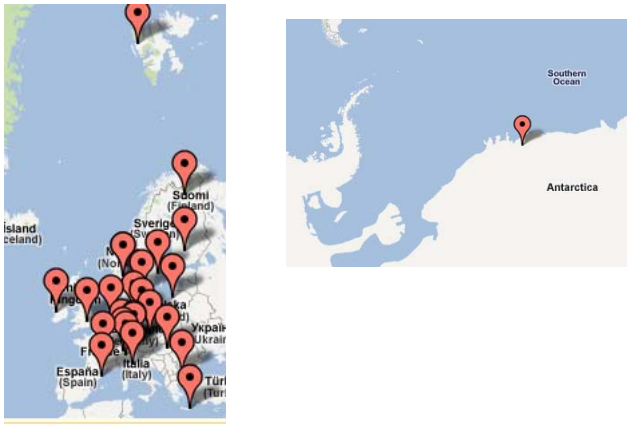
Reginal Coverage by Parameter, Regular Subm.

AOD

Size Distribution



Scattering Coeff.

Absorption Coeff., incl. BC

- Improved coverage in Europe by collaboration with national monitoring programmes (Germany, Belgium).

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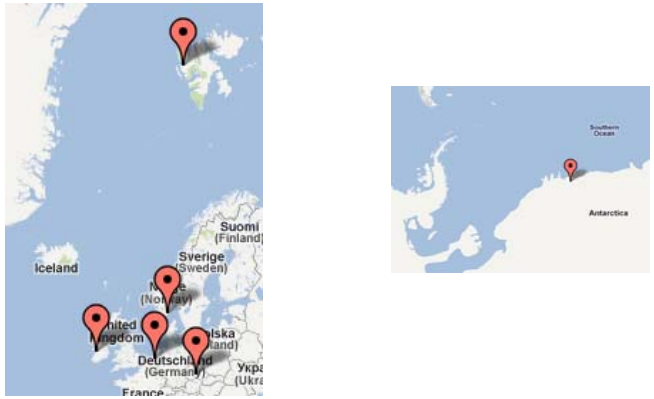
Reginal Coverage by Parameter, NRT Submissions

AOD

Size Distribution



Scattering Coeff.

Absorption Coeff.

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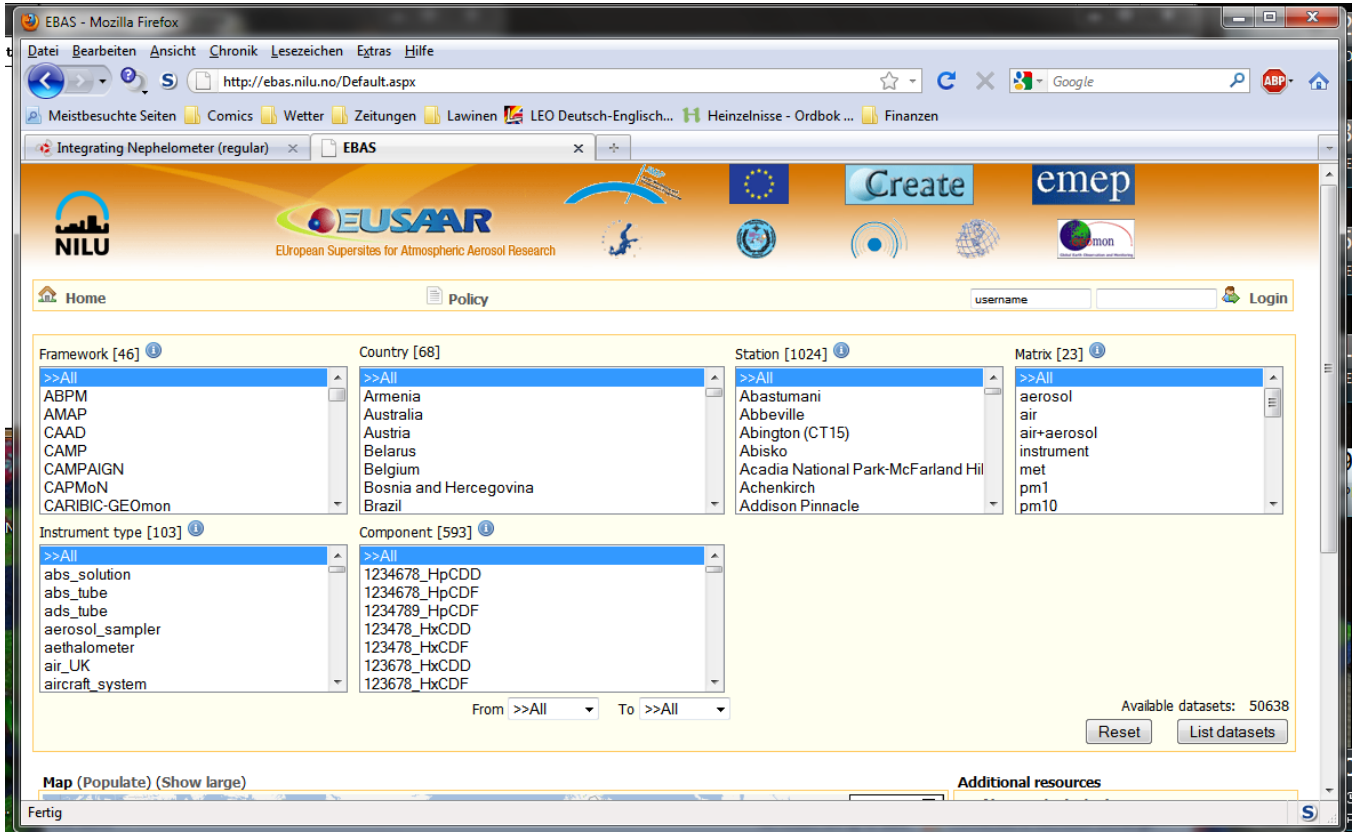
Improved Web-Interface

- Improved performance
- Improvements in work-flow (automatic focus of selection boxes, content og login box, …)
- Search result page easier to read (datasets grouped).
- Complete rework of database is in progress.



Status of WDCA Relocation

Main issues:

- conversion of archive from ambient to STP conditions:
  - NOAA (43% of JRC-WDCA holdings) has volunteered to do conversion itself by resubmitting in new format, applying today's QA, 31% finished.
  - Contacted remaining submitters, limited success, will convert assuming station average pressure and 293.15K station temperature (19% of JRC-WDCA holdings).
- Taking into account QA aspects based on recent research, submitters agreed to revisit legacy data.
- Remaining issues with only 9 of 59 (15%) station / instrument combinations .

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GAWSIS / WDCA comparison

- Comparison of aerosol parameters / instruments claimed to exist in GAWSIS and reported to WDCA.
- SAG and GAW secretariat split work of contacting reported PIs about whereabouts of missing datasets.
- Resulted in additional direct contacts and submissions especially from South-East Asia, Africa, and South America.
- WDCA is tracking submissions of over 500 station / instrument combinations.

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Detailed Guidelines for Data Submission

- WDCA asks providers to format data themselves:
  - to avoid errors.
  - scientific standard of data provider
  - work load at data centre
- Encourage submissions in EBAS NASA-Ames format, while accepting NARSTO submissions:
  - simplicity of format
  - reduce format confusion
  - keep threshold for data reporting low.
- Support of 3 data reporting paths:
  - Regular, annual data reporting
  - Advanced, traceable data reporting
  - Near-Real-Time data reporting
- WDCA homepage gives templates for 8 instrument classes, 5 for advanced reporting, 4 in near-real-time.

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Aerosol Vocabulary in WIS – CF convention

Why CF-convention?

- Good description of syntax and naming philosophy, review of proposals
- Each variable name to be defined in by text
- Applicable also to other WDCs

even though:

- Administered by self-organised community
- Our variables would need to be defined.
- SAG has reduced control over naming process.

Example of aerosol variable proposed:

volume_spherical_backscattering_coefficient_in_air_due_to_aerosol

The volume spherical backscattering coefficient is the fractional change of radiative flux per unit path length due to redirection of an incident light beam into the rearward hemisphere relative to the incident beam by a component in the reference volume. It is distinct from the backscattering coefficient which isn't integrated over the rearward hemisphere. "Aerosol" without further qualification such as dry or ambient means that the aerosol humidity state is neither dry nor ambient and stated in the data. To specify the relative humidity at which the property applies, provide scalar coordinate variable with the standard name of "relative_humidity". The specification of a physical process by the phrase "due_to_" process means that the quantity named is a single term in a sum of terms which together compose the general quantity named by omitting the phrase. A coordinate variable of radiation_wavelength or radiation_frequency needs to be specified to indicate that the property applies at specific wavelengths or frequencies.

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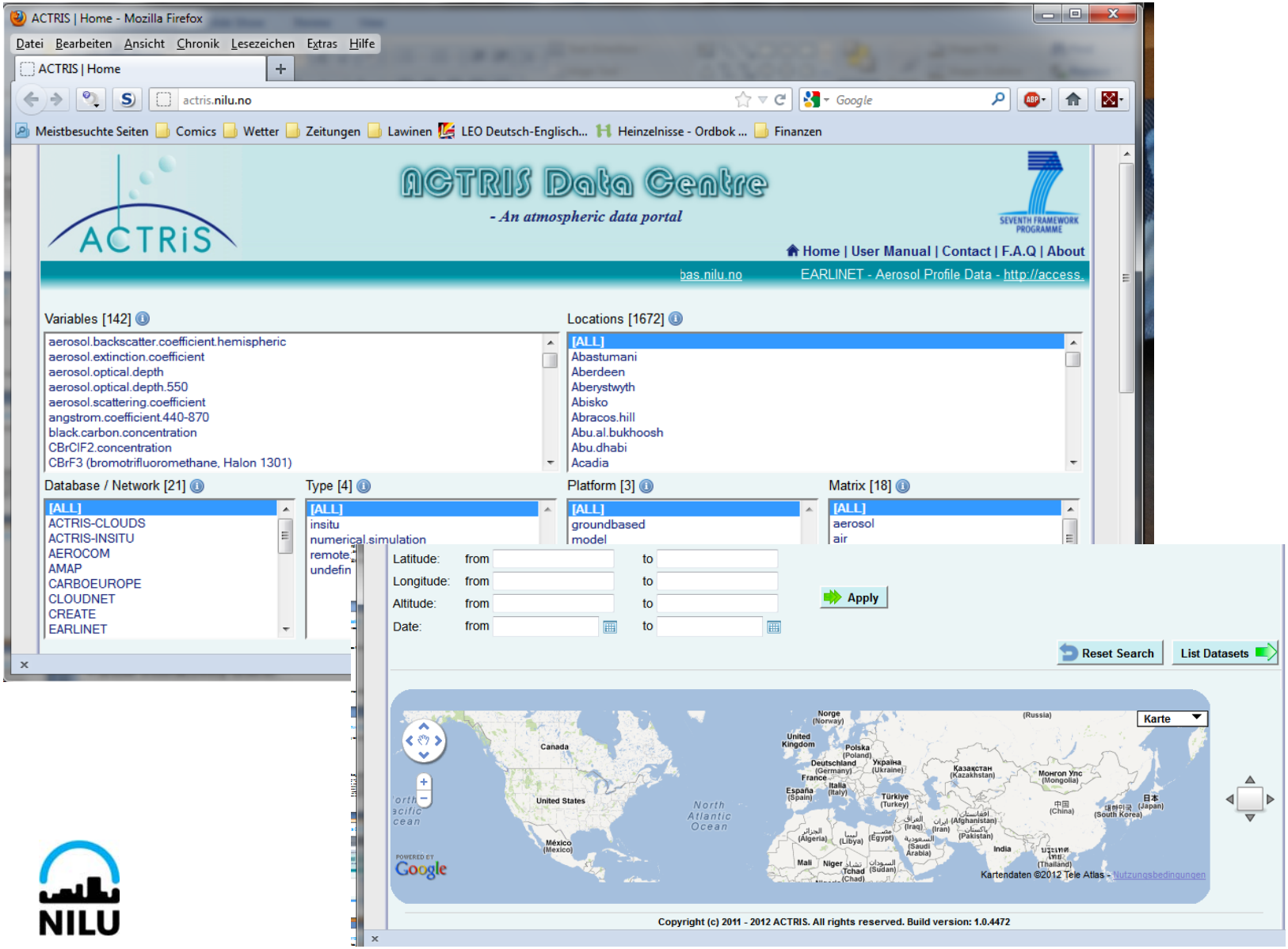
Outlook: Portal for Distributed Data Centre through ACTRIS



Outlook: Further Improvements Through ACTRIS

- **First order QA (automatic)**: check for boundaries, outliers and sudden changes on import (both, NRT and regular)
- **Second order QA**: check for consistency between observations (closure).
- Connection to WIS.
- Issue tracker for user requests (http://mantis.nilu.no)
- Service tools for model (Aerocom) users.
- Improvements to web-interface (display new metadata items, metadata display possibility in search result list, display of uncertainties in plots, data level searchable).

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