



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Macedonian Twinning Project Study Tour
in Finland 27-31.8.2007

Dissemination of air quality information in Finland – the national air quality portal

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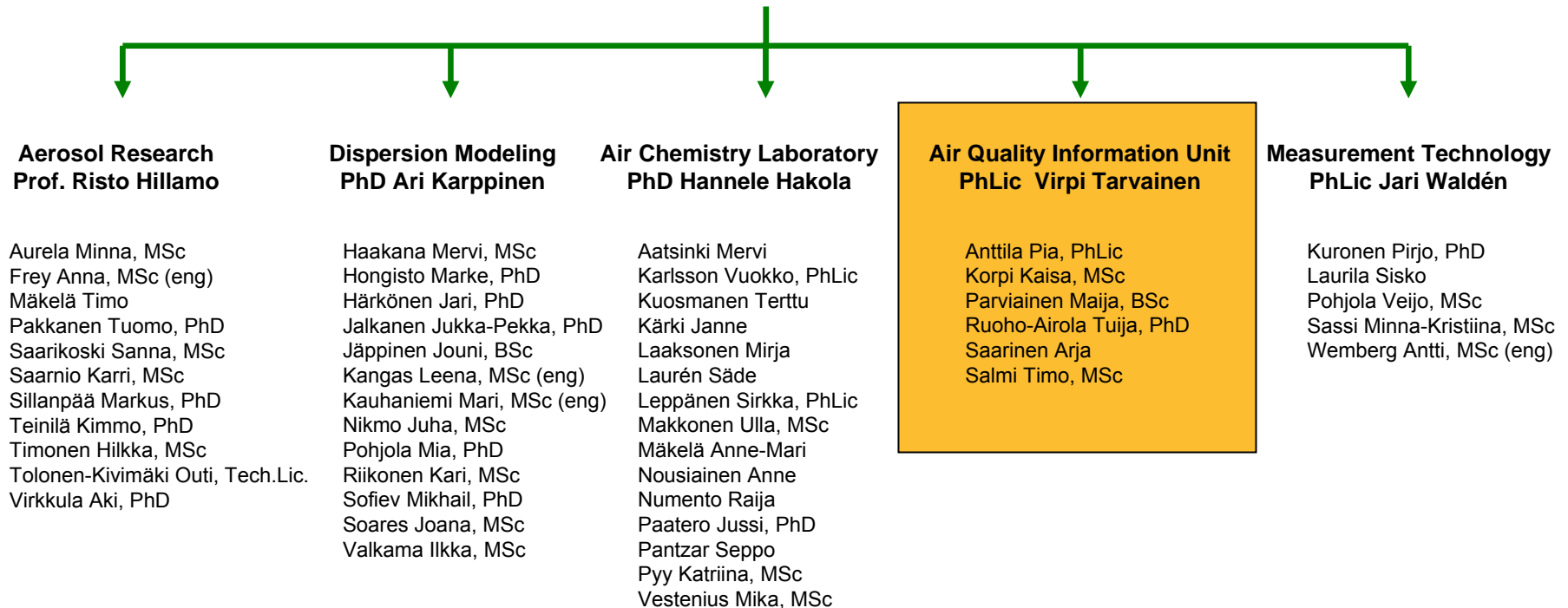
Air Quality Research

Finnish Meteorological Institute



Air Quality Research Programme

Programme Manager Prof. Jaakko Kukkonen
Secretaries Tuula Boije and Heli Raitanen



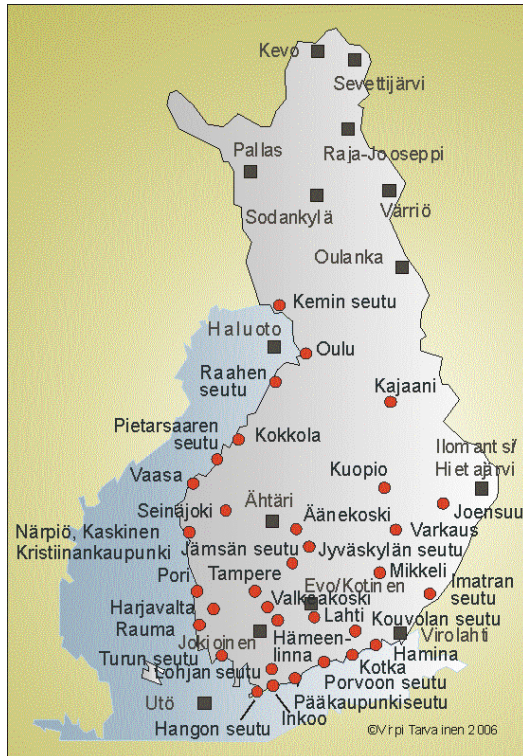


Air Quality Information Unit - main tasks

- **Air quality data management**
 - *National air quality data base*
 - *Compilation of annual statistics*
 - *Reporting, dissemination*
- **National air quality portal**
 - *New public web service*
 - *Commissioned by the Ministry of the Environment*
 - *Implementation, administration and maintenance*
- **Research**
 - *Air quality, atmospheric chemistry, climate change, environmental data analysis*
- **Air quality expert tasks**
 - *National and international*
- **Other**
 - *Air quality communication, EU WGs, coordination of measurement programmes*



Air quality monitoring in Finland – access to data



Government Decree on AQ (711/2001) 10 §
Availability of air quality information

... measured SO₂, NO₂, particle, and CO concentrations must be made available

... updated preferably on an hourly basis.

EU Council Directive (90/313/EEC)
Freedom of access to Information on the Environment



National Air Quality Portal - short history

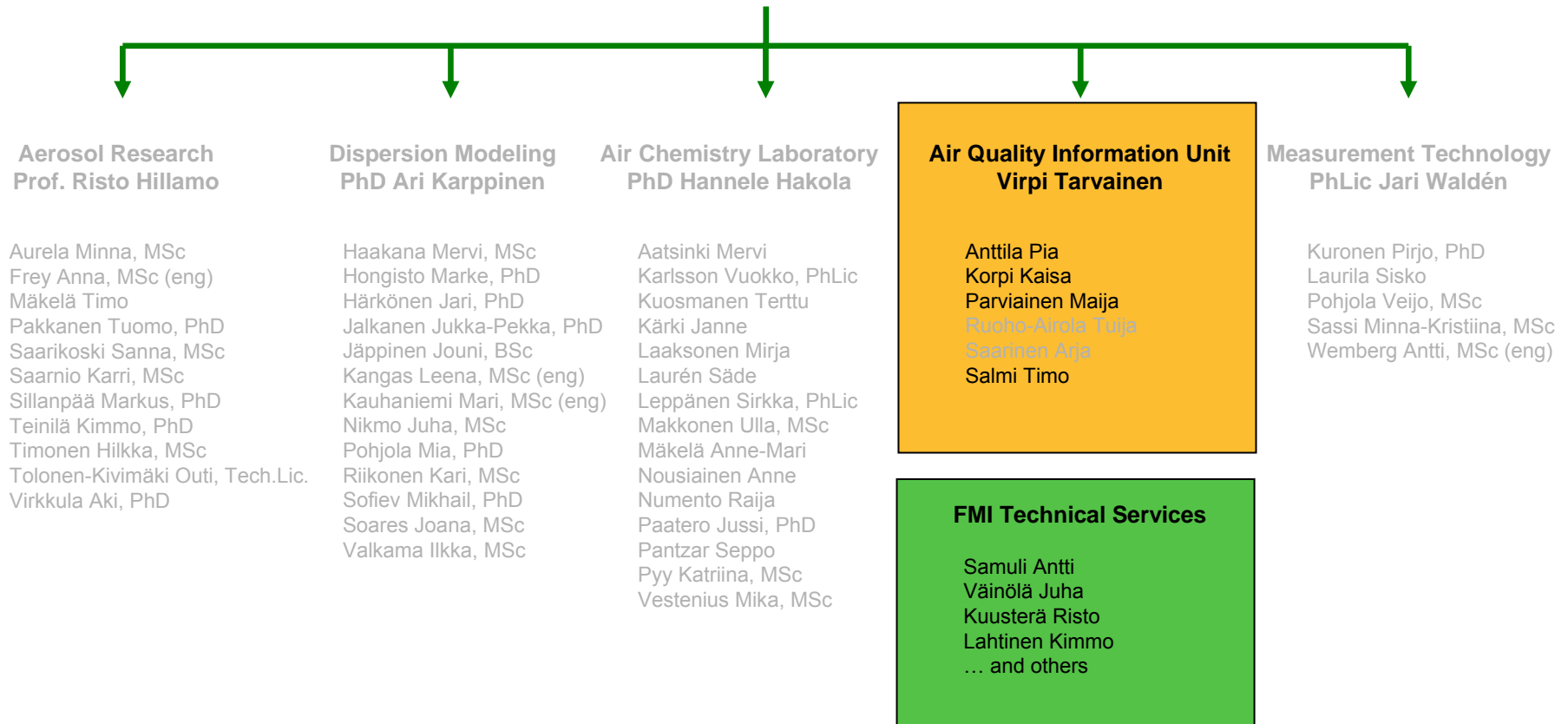
- Preliminary study 2002-2003 (FMI, 1 man-year)
- Agreement: Ministry of the Environment / FMI, 17.6.2005
 - *Part of the Finnish Environmental Information System (Environmental Protection Act 86/2000)*
 - *Implementation, maintenance, rights and contents*
- Construction phase 2005 – 2007 (FMI, 2-4 man-years / year)
 - *Portal DBs, 2005 and 2007*
 - *Management system for real-time data, 2005-2006*
 - *Management system for historical data, 2006-2007*
 - *Portal (web service), 2006-2007*
 - *User interface for data management, 2007*
- Status
 - *Web service for real time data, operational, public release May 2007*
 - *Web service for historical data, trial version, under development*
 - *User interface for data management, under development*



The portal project combined the expertise of specialists across the FMI

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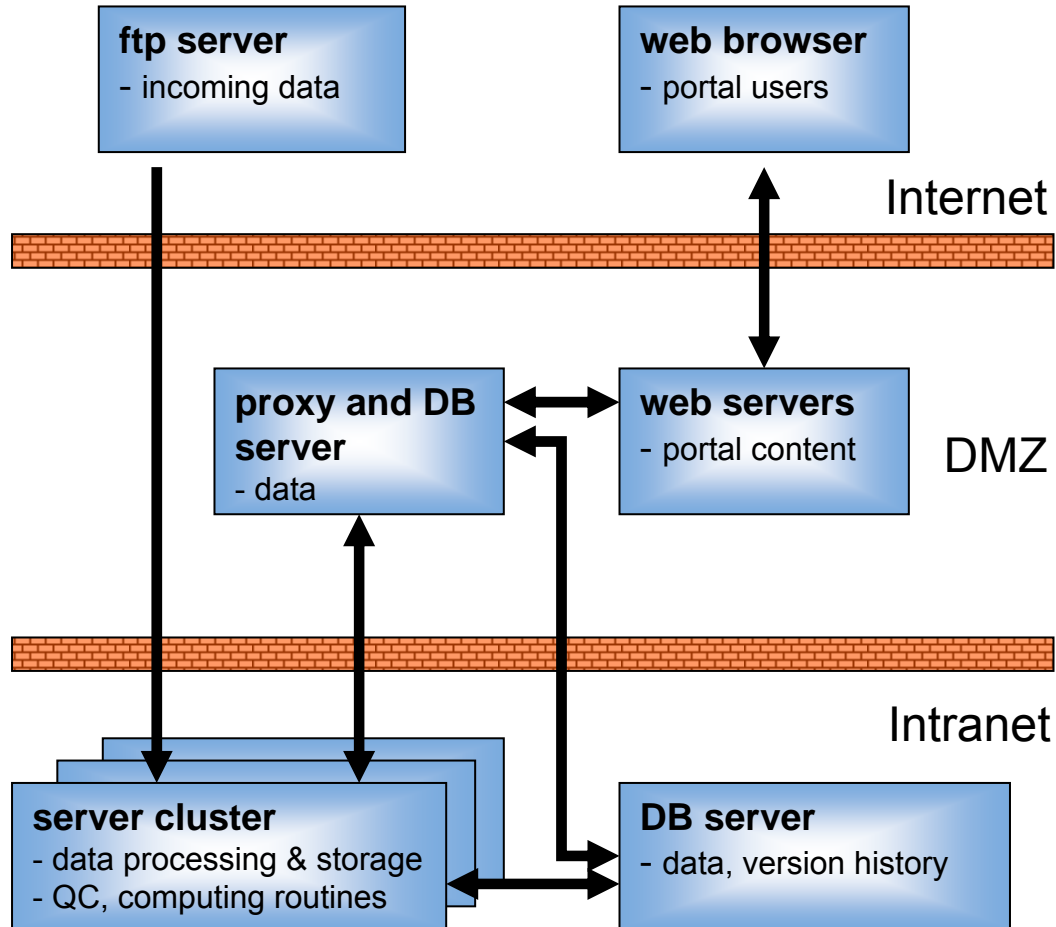


National Air Quality Portal - basic principles

- Free public web service and data management system
 - *Dissemination of environmental information*
 - *Automated data delivery from local environmental authorities*
- All available air quality information (real time and historical) for Finland
- Main language Finnish, core content also in Swedish and English
- Automated reporting
 - *National reports*
 - *EU (directives)*
 - *NILU (AMAP, EMEP, HELCOM)*
 - *Finnish Environment Institute (Integrated Monitoring)*
 - *GAW*



Air quality portal – server architecture





Air quality portal – technical solutions

- **Data delivery**
 - *Automated, hourly transmission / retrieval to FMI ftp server*
 - *Native data formats (Envidas, SyncAir, Dilta; parsed in the portal)*
 - *24/7 surveillance of data flows*
 - *Version management for changed data*
- **QC**
 - *Checks for missing, bad or suspect data*
 - *Alert service, portal management and data providers*
- **Processing**
 - *Air quality index calculated in portal*
 - *Statistics (e.g. exceedances, monthly & annual summaries)*
- **Data storage**
 - *Separate data bases for metadata (Oracle) and measurement data (Postgres)*
- **Web service**
 - *Dynamic (php) and static (html) pages*



National Air Quality Portal - content

- Real-time air quality information (hourly data)
- Validated air quality information (hourly data and statistics)
- Air quality bulletins
- Information about air pollutants and their effects
- Information about air quality legislation
- Information about measuring networks, instruments, and methods
- Information about the AQ Reference Laboratory and link to them
- Links to air quality research and other topical pages.

The screenshot shows the homepage of the National Air Quality Portal. The header includes the website name 'WWW.ILMANLAATU.FI' and navigation links. The main content area features a map of Finland with colored markers indicating air quality levels at various monitoring stations. A legend below the map shows a color scale from green (Good) to red (Very poor). Text on the page provides information about the portal's services, including real-time data and validated statistics. A news section on the left lists recent updates, such as the opening of Swedish and English pages and the release of a report on air quality monitoring.

Website: www.ilmanlaatu.fi



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