



Finnish Meteorological Institute's Services for Insurance Sector

Regional training workshop
Role of the NMHSs in support
of DRR- related activities
in the field of insurance

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Account Manager,
Customer Services



Topics

- FMI in brief
- Weather and Safety Service
- Services for Insurance Sector
 - Present Services
 - Future Services



FMI in Brief



Organization 1.1.2014





Personnell

Person Years
(Total 679)



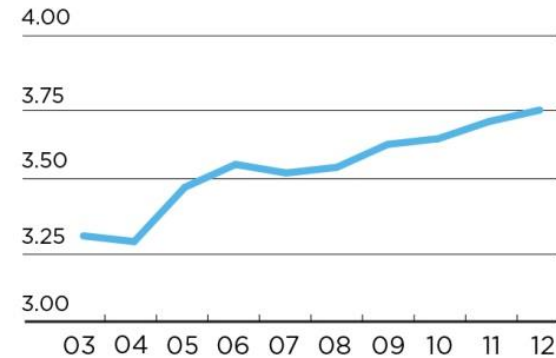
Weather and Safety	276
Research and Development	362
Administration and Director General's Office	41

Breakdown of the Personnel's Education



	%
General Education	8
Secondary Level	28
Lowest Post-Secondary	5
Lower Tertiary	8
Higher Tertiary	34
Doctoral and Licentiate's Degree	17

Job Satisfaction
Range 1-5



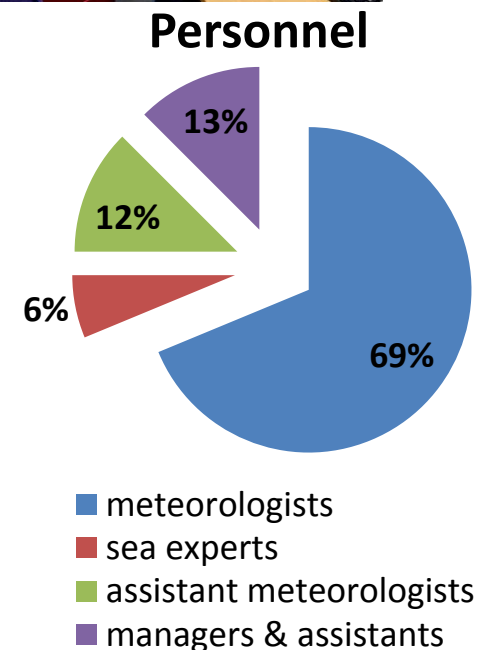
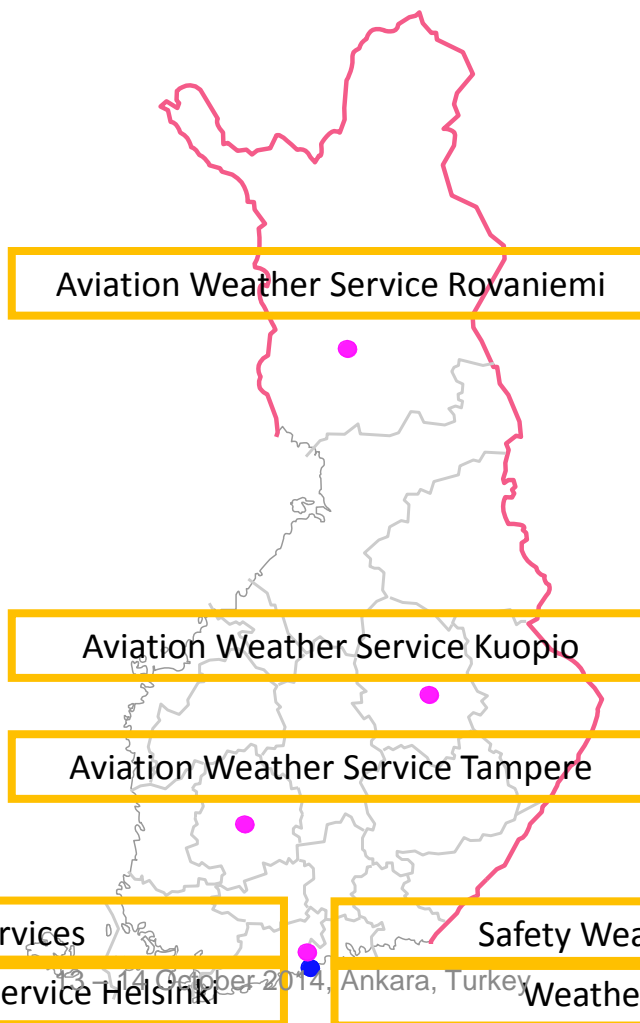
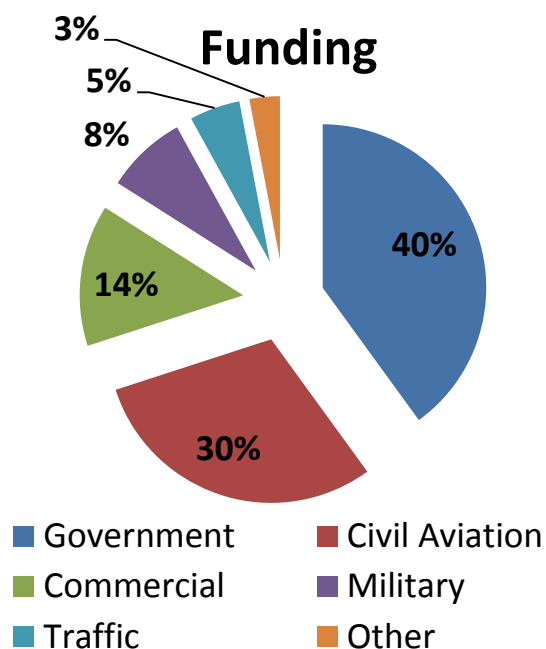


Weather & Safety Service



Weather and Safety Centre

- Weather service production for the whole society
- Operational on duty hours 150-200/day



13-14 October 2014, Ankara, Turkey

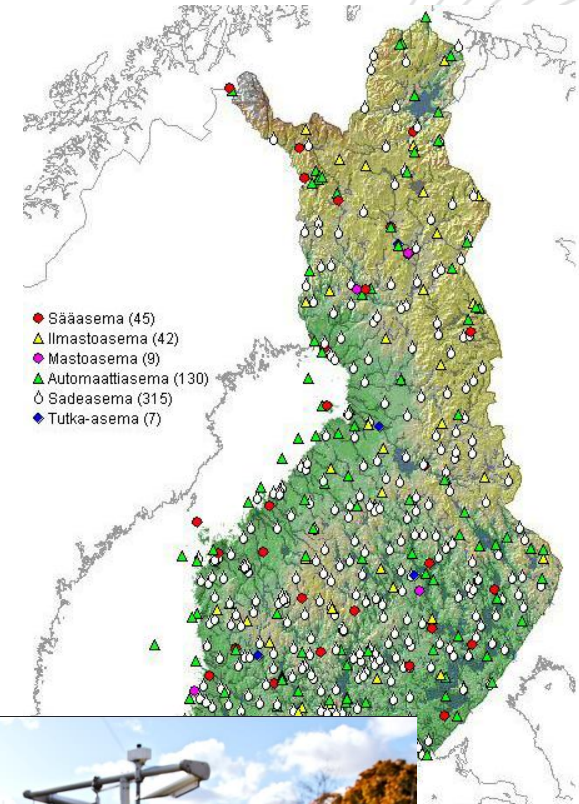
Weather Services



Observation Network

Operative stations, in total ca.	550
Sounding stations	3
Weather radars	8
Antennas for lightning location	8
Air quality stations	30
Surface observation stations	180
Rainfall measurement sites	400

Automation 95%

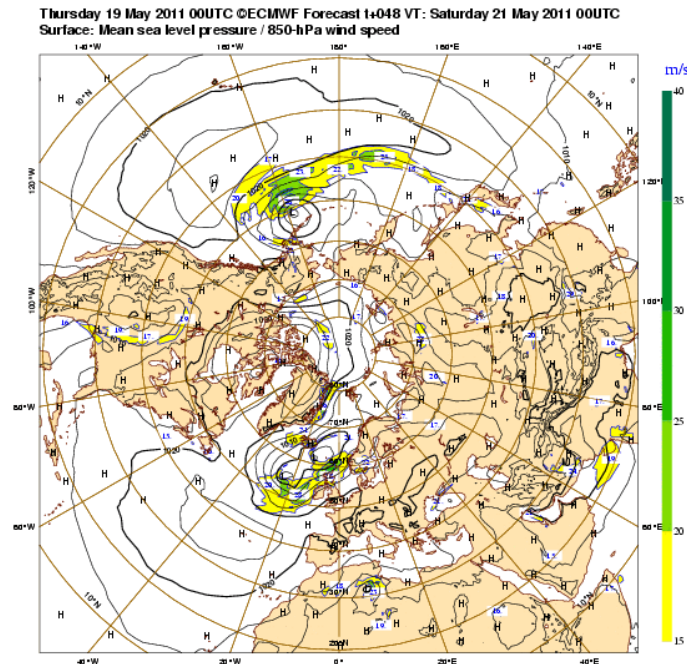




Numerical Weather Models at FMI

Global models

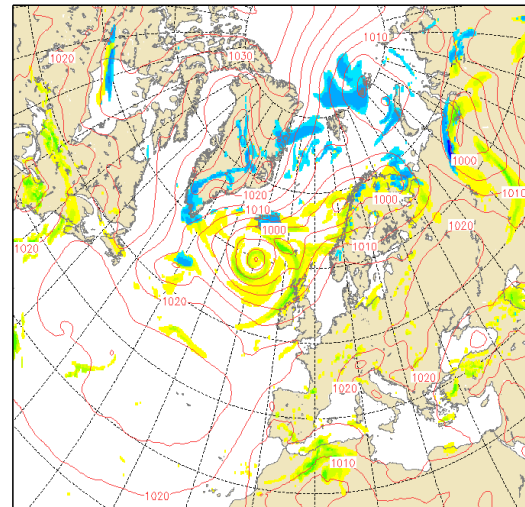
- ECMWF (~15 km)



High Resolution Limited Area Models

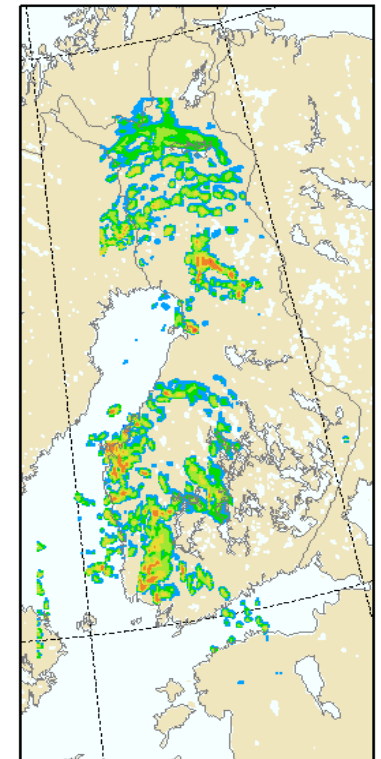
- HIRLAM RCR (~7.5km)
- HARMONIE (2.5km)

Pmsl and hourly prec. (mm) green:rain blue:snow
initial: 00Z19MAY2011 valid: 00Z20MAY2011



13 – 14 October 2014, Ankara, Turkey

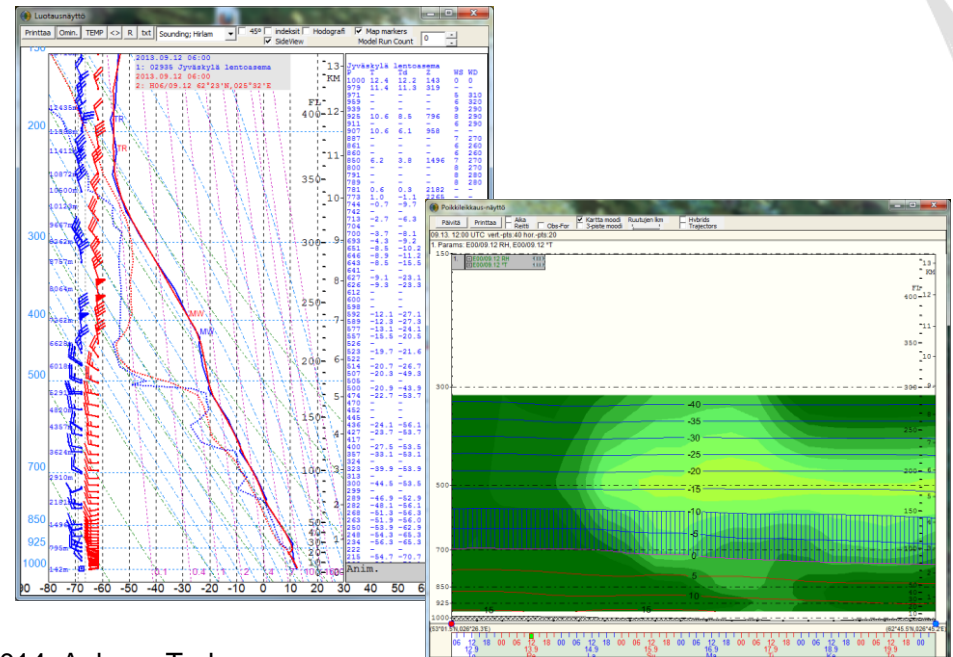
14:00 UTC (Arome_bb)





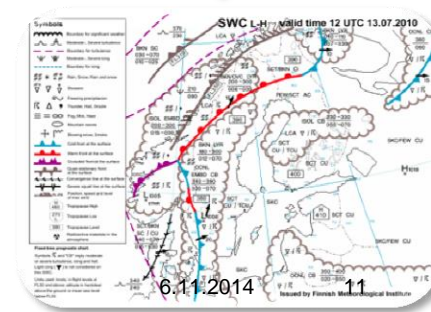
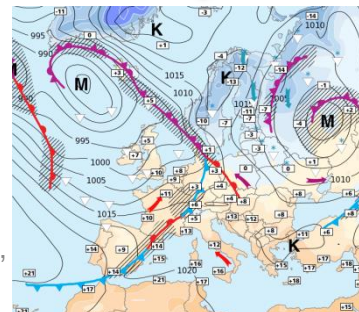
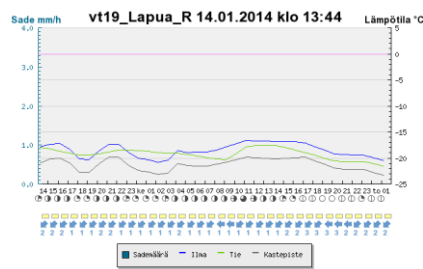
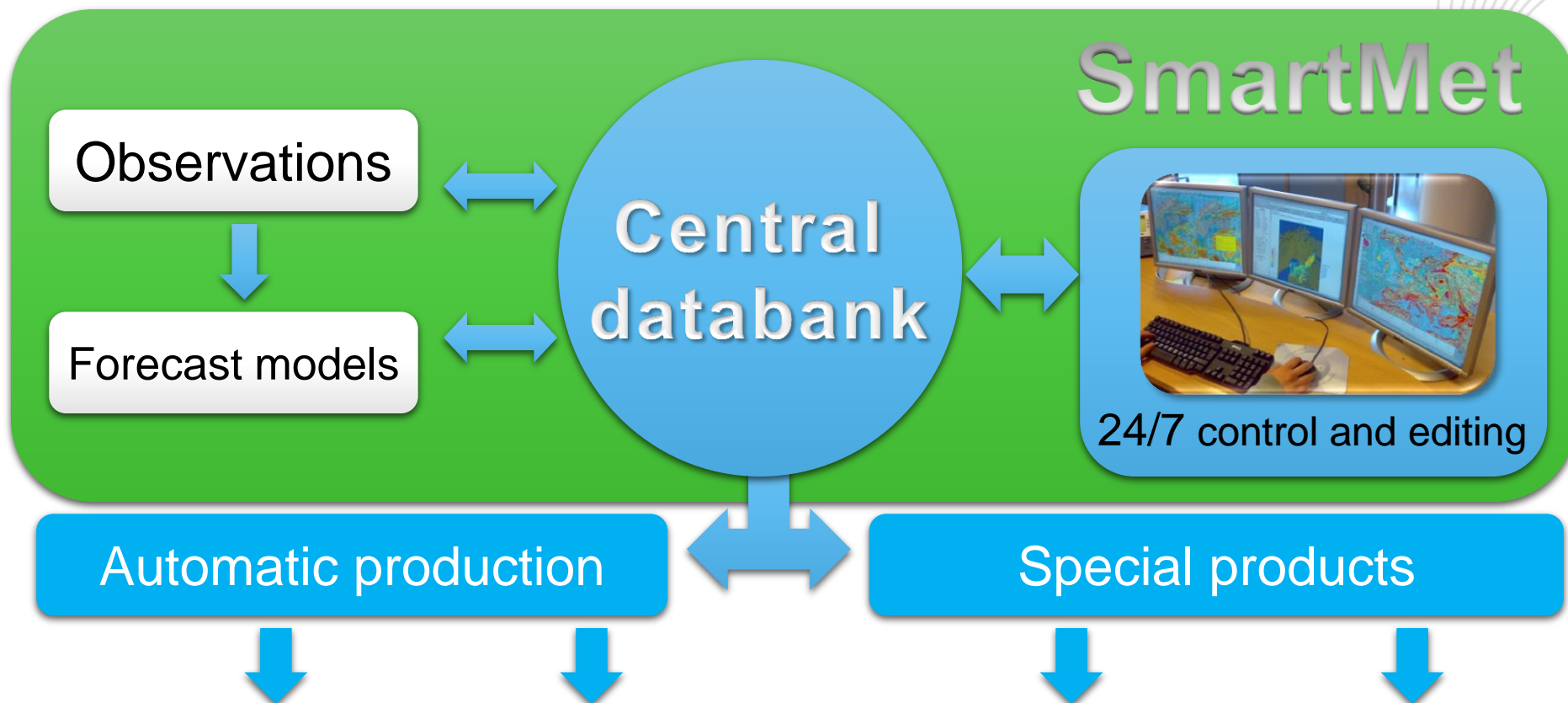
Meteorological Workstation - Smartmet

- Visualization of the data:
 - Numerical models
 - Observations, etc.
- Multiple ways for visualization
- Choosing NWP-model
- Editing the model data
- ~ Million forecaster corrected products per day generated automatically from the modified grid database





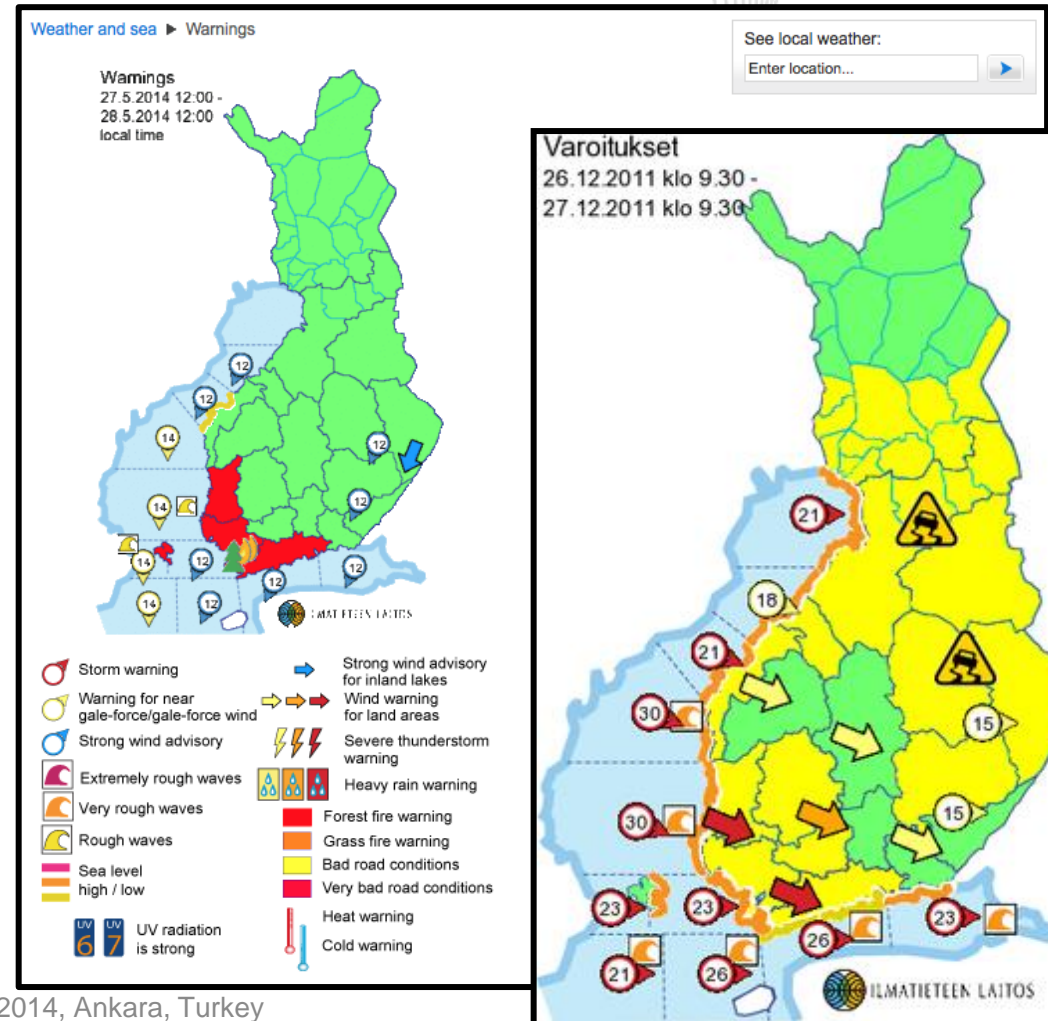
WEATHER SERVICE PRODUCTION SYSTEM





24/7 Warning Services

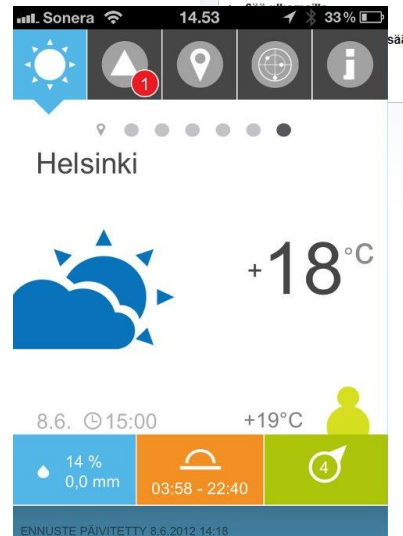
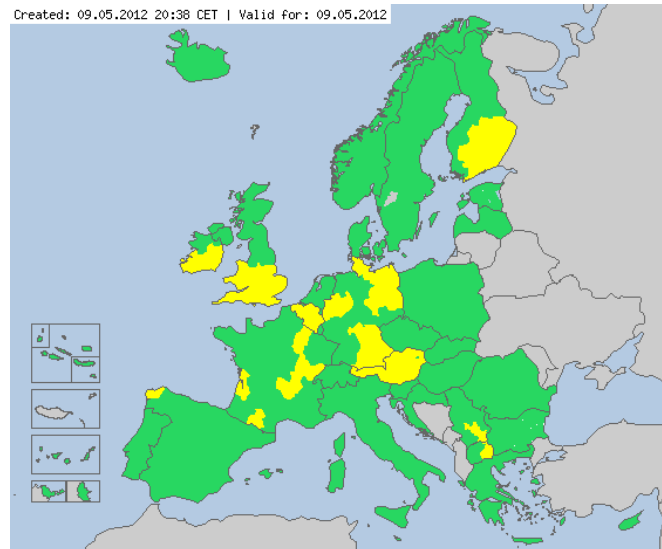
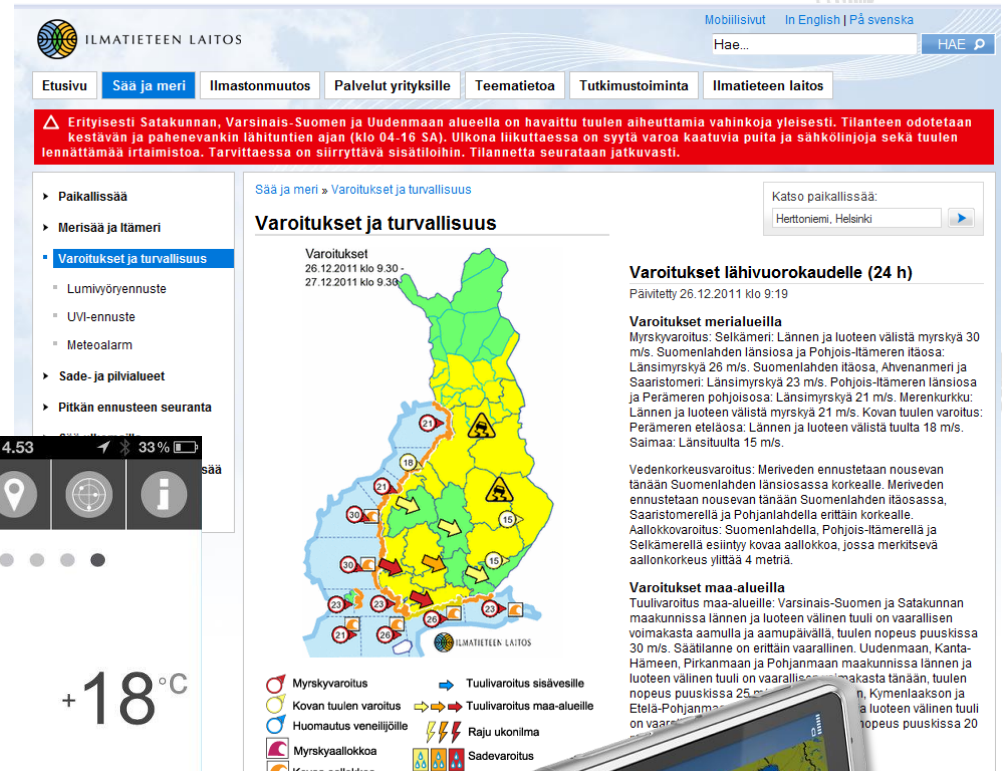
- 2013: 28 days of very bad road conditions
- Red and orange colored warnings cause significant harm
- Tapani storm caused nearly 6000 alerts for Emergency Response Centre 26.-28.12.2011
- First information about coming storm from the FMI 22.12., pre-warnings and VAARA-announcement 23.12.
- Electricity outages and fallen trees caused danger for e.g. road and rail traffic





Distribution channels for general public

- Radio and TV
- fmi.fi: graphics, texts
- Mobile apps
- Meteoalarm since 2007
- Twitter feeds since 2009
- 24/7 media phone contact 2008



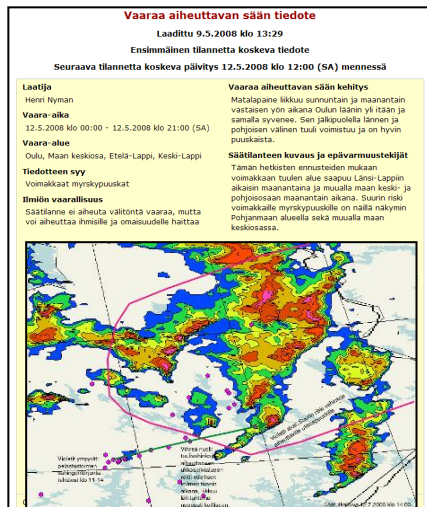
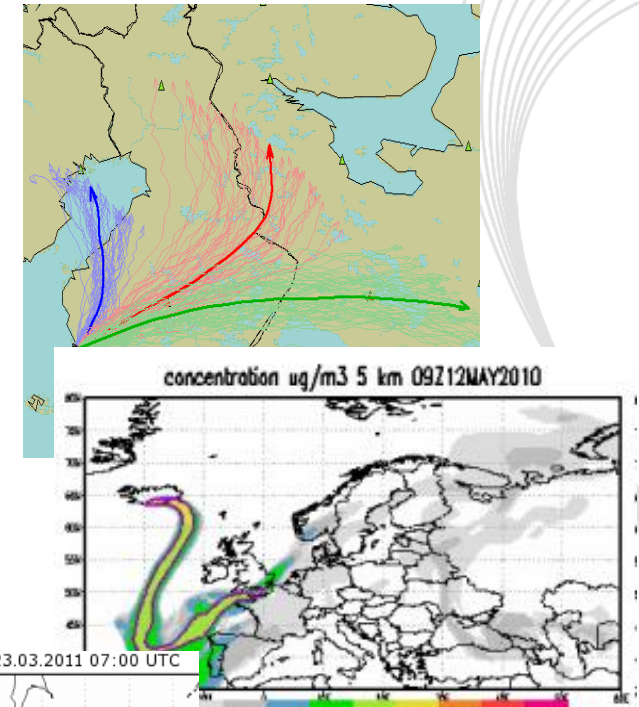
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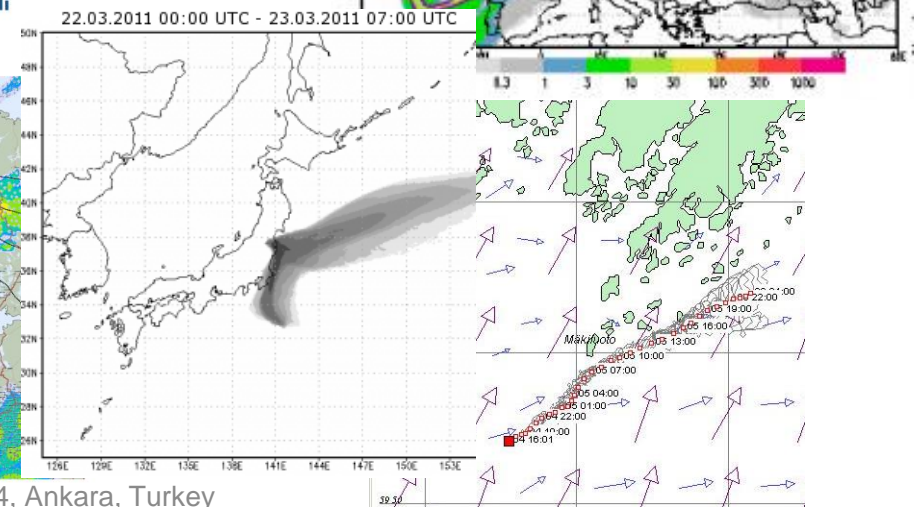


Weather Services for authorities

- Trajectories and dispersion calculations of airborne substances
- Drifting calculations for sea areas
- Severe Weather Outlooks
- Monitoring Centre for Natural disasters
- Web User Interfaces



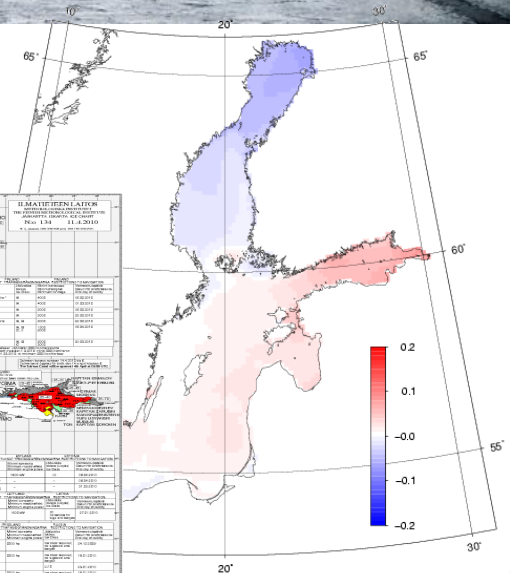
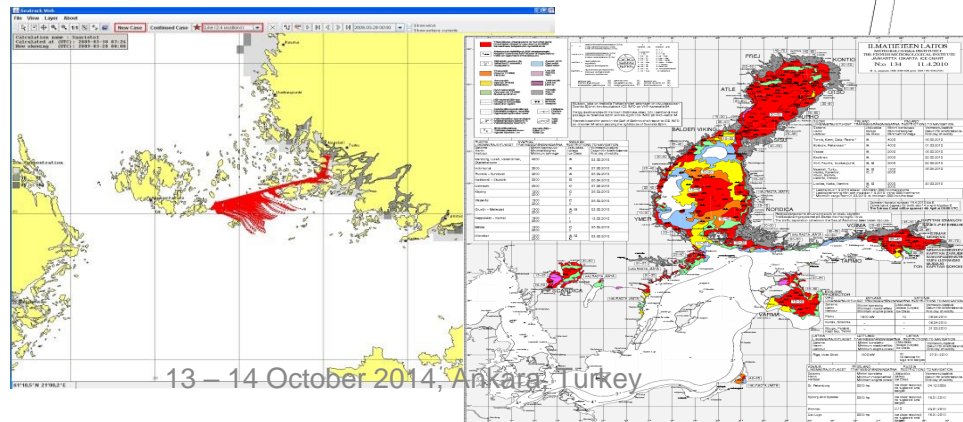
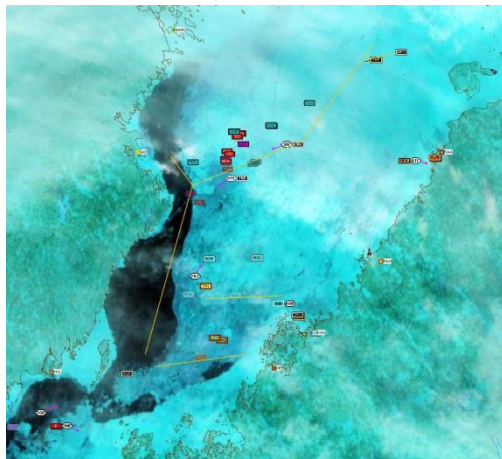
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Marine Services for shipping

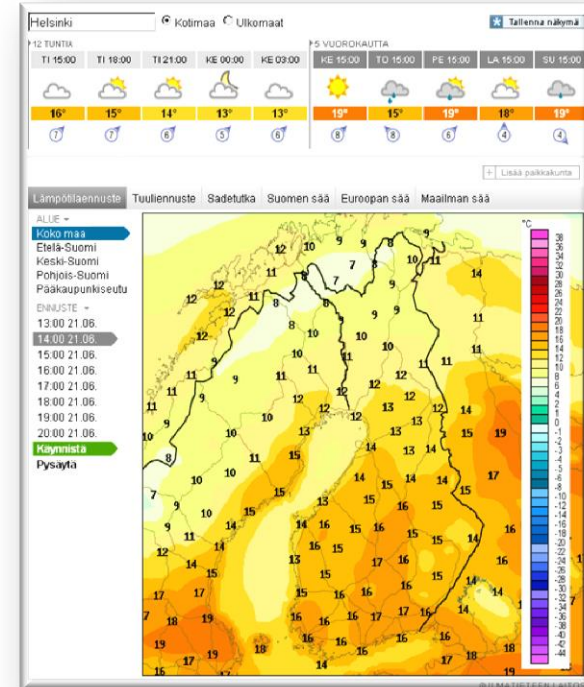
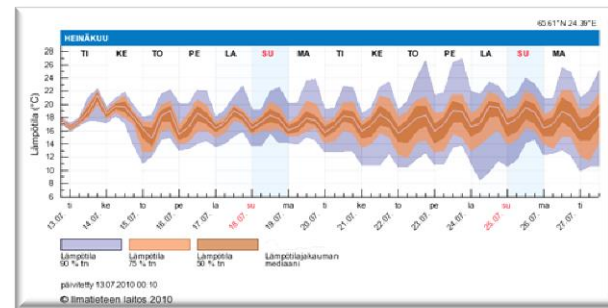
- Sea ice monitoring
- Sea level, waves, temperature forecasts/warnings
- High resolution satellite applications
- Customers: Finnish Transport Agency, Ice-breakers, general public





Commercial weather services

- Customized services
- Weather services on mobile phone
- TV, radio and www
- Newspapers
- Road and marine traffic
- Agriculture and forestry
- Industry and energy
- Insurance sector





Services for Insurance Sector



Present Services

- FMI's Climate Service provides:
 - Weather data from the past
 - Statistical data
 - Future scenarios and consultation
- Frequently asked parameters:
 - Wind speed
 - Rain fall
 - Lightning strikes
 - Snow amounts
- Insurance companies get weather related data by request
 - Phone calls (2 man months)
 - Requests via e-mail





Usual Indemnities Due to Weather

- Forest damages
- Damage to houses or vehicles
- Flooding
- Sealevel rise
- Traffic accidents during winter
- Snowload damages

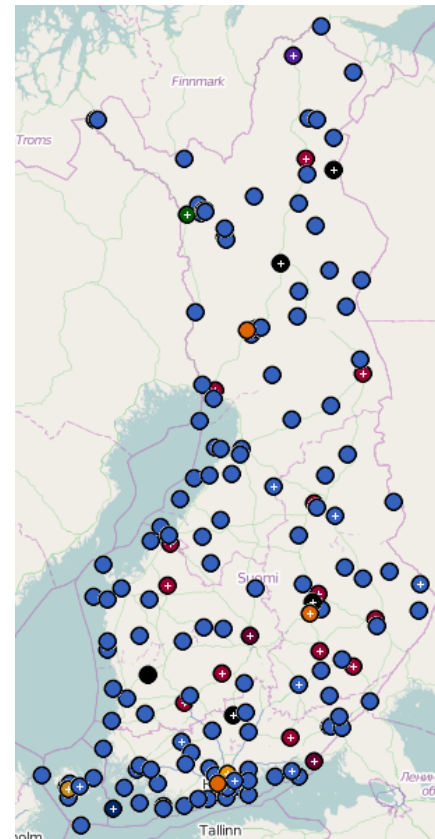


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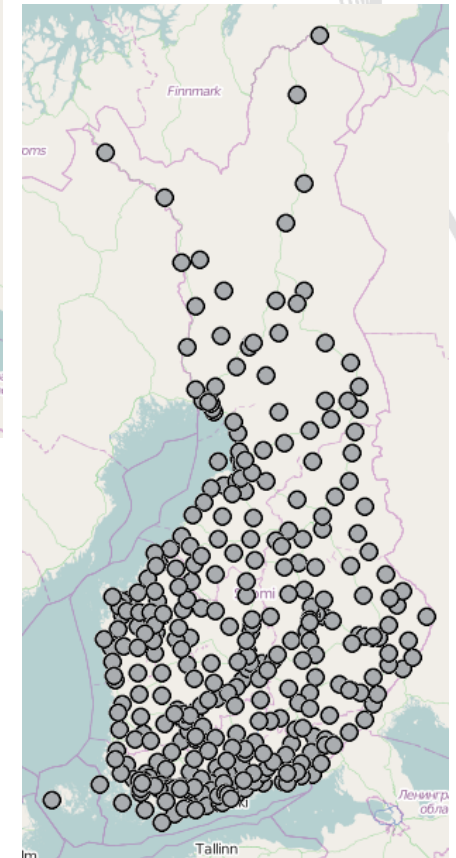


Wind

- Data from FMI's AWS – stations
- Finnish Traffic Agency's RWS –stations
- 10 min avg wind speed limit 15 - 20 m/s
- Kriging analysis can be done



FMI's AWS



FTA's RWS

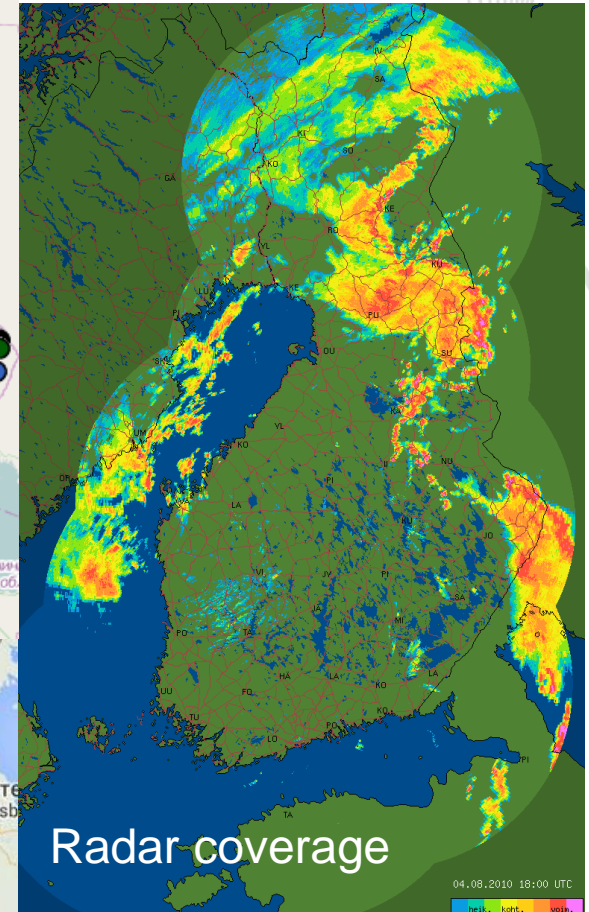
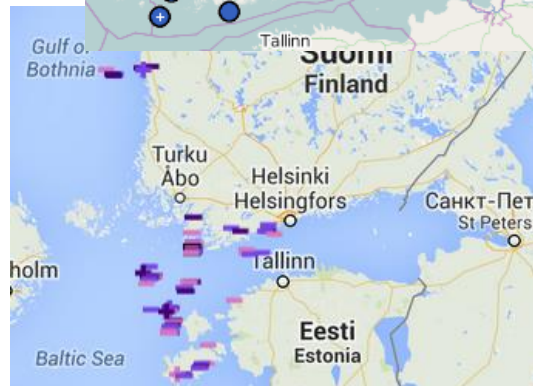
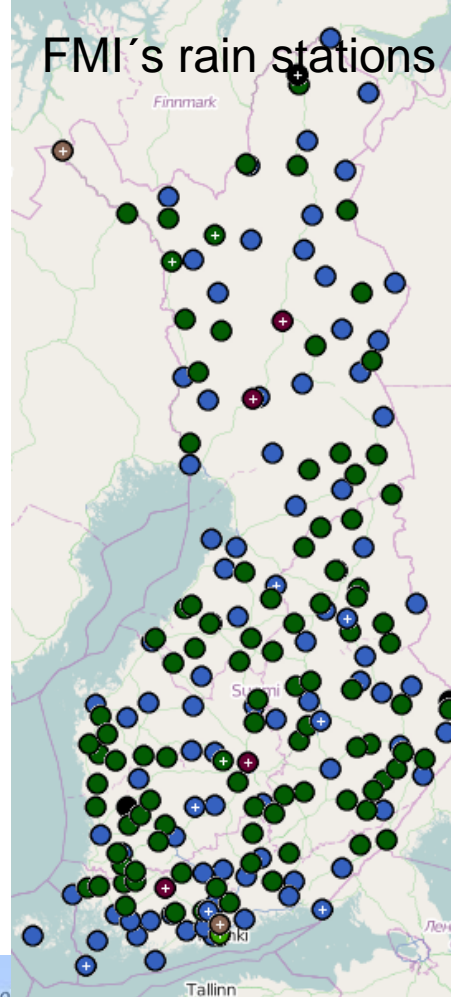


Rain

- Rain station data
- Radar based rainfall products
- Radar images every 5 minutes (8 radars)

Flashes

- Avg 140 000 flashes annually
- Btw 50 000 – 350 000/ year
- Positioning 600m





Snow

- FMI's snow depth stations
- Finnish Environment Institute is main provider of service

Road

- 1500 injured, over 50 dead 2013 during wintertime
- 100 000 indemnity cases/year
- ~280 dead yearly
- Finnish Transport Agency's observations



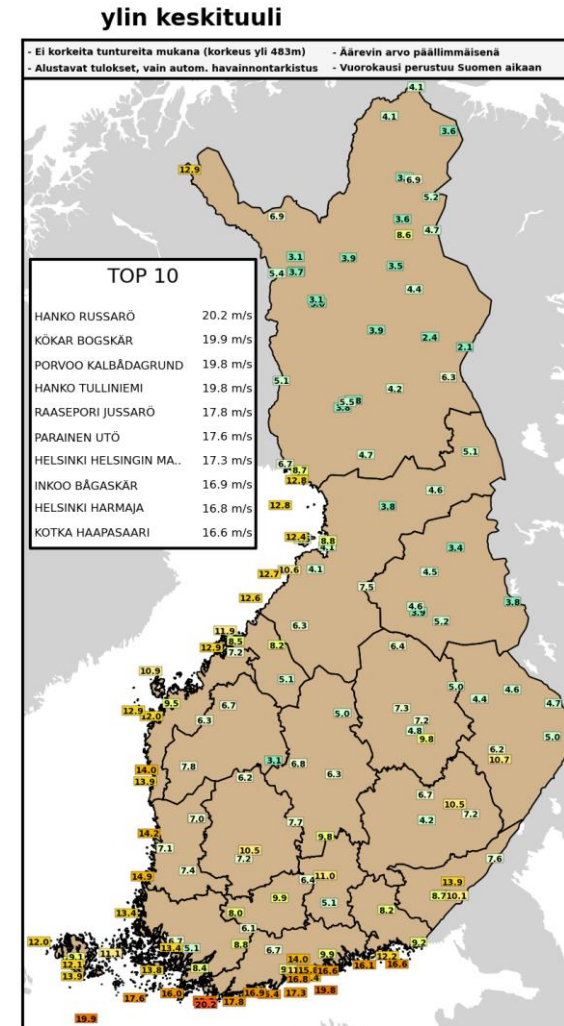


Future Services



Observation Services

- User interface for insurance companies
- Charts for threshold values
- Maximum value charts





Insurance Companies Care About Clients

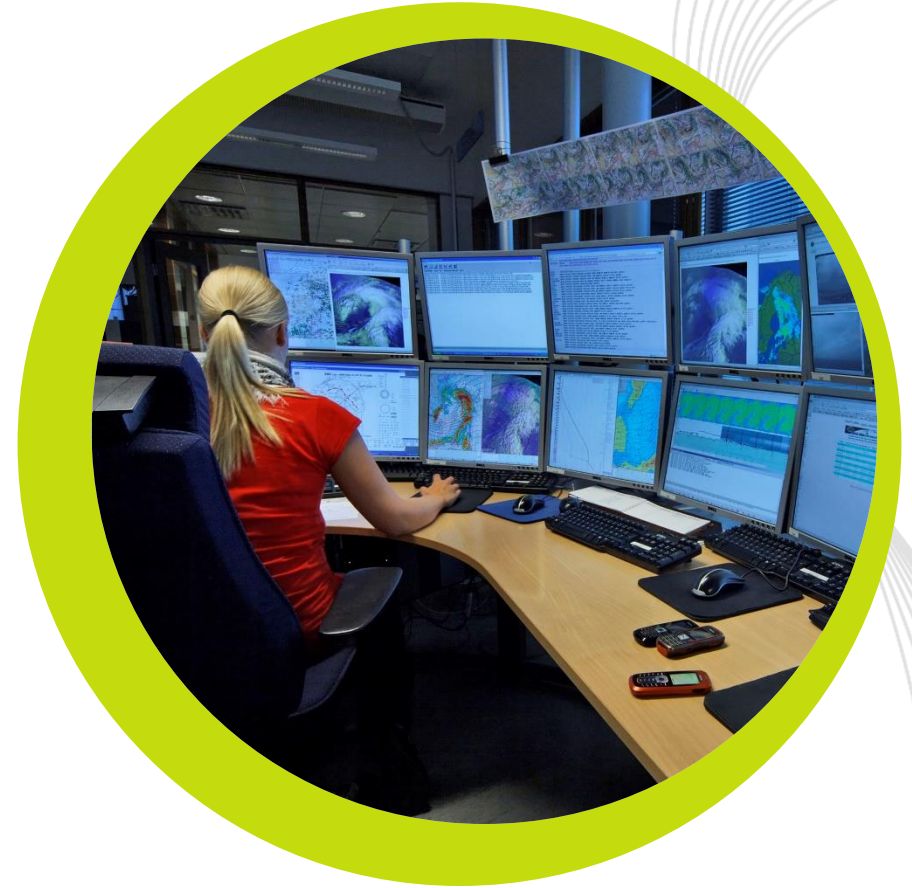
- Early warnings
- Probabilistic forecasts
- Warnings based on:
 - Placement
 - Type of insurance
 - Client level
- Client informing:
 - E-mail
 - SMS
 - Mobile Apps





Risk Management

- Climate scenarios
 - Adjusting the limit values for different weather scenarios
- Readiness
 - Early warnings for customers
 - Insurance company's personnel alarmed



Automatic Warning Services

- Based on weather forecasts and road weather forecasts
- Warnings for road users and pedestrians
- Warnings with windspeed limit
- Threshold value is reached
->Customer is alarmed



Mobile Application

- Weather and road weather observations and forecasts
- Official warnings
- Road warnings with 11 warning classes
- Utilizes users location



Thank You for Your Attention!



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