

EMHI Hydrological Network by Vaisala

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Vaisala Automatic Hydrometeorological Stations

Countrywide real-time meteorological AWS network with twenty-six (26) stations:

- Air temperature and humidity
- Barometric pressure
- Wind speed and direction
- Precipitation (all-weather rain gauges)
- Some stations also measure: cloud height, solar radiation, snow depth
- GSM/GPRS-telemetry



Vaisala Automatic Hydrological Stations

Fourty-six (46) fully automatic real-time MAWS110 hydrological stations are installed at the most critical catchment areas.

- Water level by relative pressure sensor
- Precipitation by tipping bucket type sensor
- With some two stations also on-line water quality measurement (salinity, turbidity, water temperature, oxygen)
- Cableway based current profiler with two stations
- GSM /GPRS telemetry



Vaisala Automatic Coastal Stations

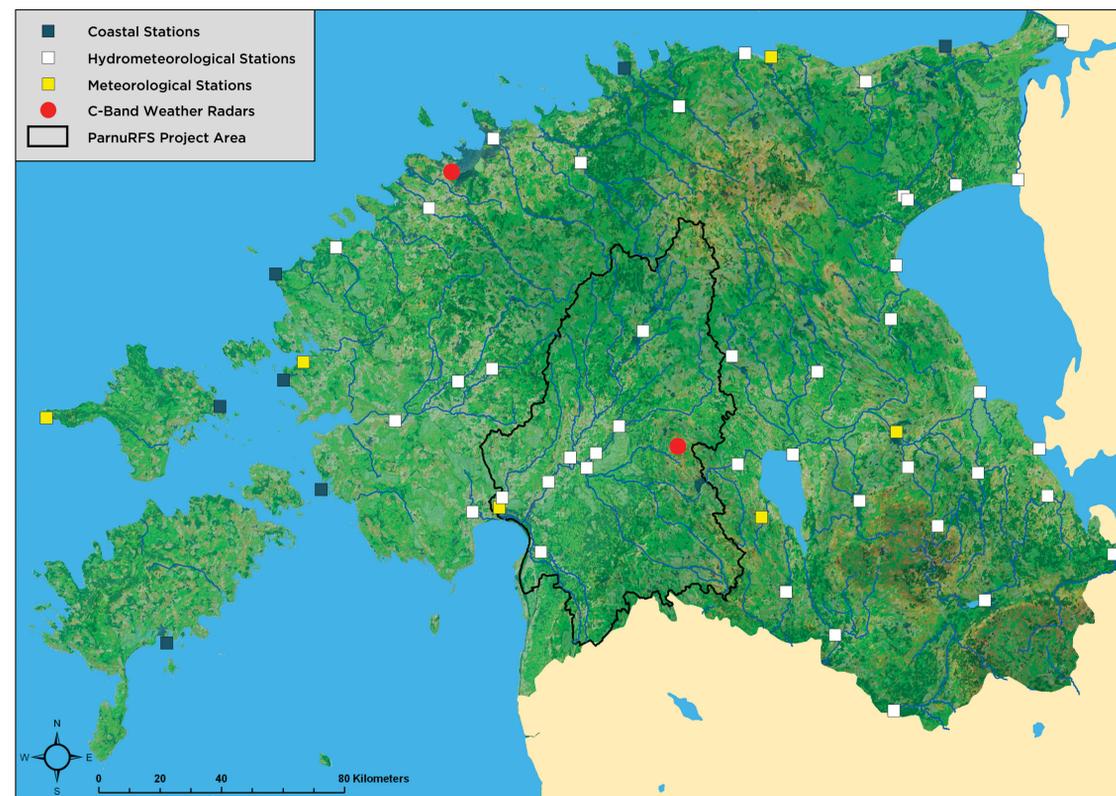
Thirteen (13) fully automatic real-time coastal MAWS301 stations are installed at harbours on the continent and on islands.

- Water level by absolute pressure sensor
- Salinity
- Some stations also have basic meteorological sensors
- GSM/GPRS telemetry



Estonian Meteorological and Hydrological Institute (EMHI) carries out activities related to national weather forecasts and hydrological forecasts, weather related warnings and environmental protection. Vaisala has delivered to EMHI a comprehensive hydro-meteorological monitoring system including some 80 real-time hydrometeorological stations with automatic data collection and data management. In addition to the stations, Vaisala has also delivered to EMHI two (2) C-band weather radars with comprehensive radar software and meteorological workstations.

Currently, Vaisala is implementing together with EMHI a hydrological information system to the Pärnu river catchment area. The system consists of a rainfall/runoff model as well as observation and forecast visualization workstations.



Vaisala Weather Radars

Two Vaisala WRM200 dual polarization radars with IRIS radar software are installed in Harkku and Surgavere. IRIS generates special products for hydrological forecasting, such as:

- CATCH – the CATCH product calculates the precipitation accumulation in subcatchment regions, such as watershed areas. It is used for hydrometeorological applications, such as estimating the total rainfall in a river basin for the purpose of flood forecasting.
- GAGE – GAGE product allows the radar hourly precipitation accumulations to be calibrated to the actual rain that is measured in gauges. The corrected precipitation products can then be used by e.g. the CATCH.



Data Management and Telemetry System

Hydrological database and data collection system by EMHI and Kisters Wiski. Standard-setting software system for the collection and processing of the hydrological data with time series management inside. The software system handles the data management process, from the data stream from the stations to the data processing and quality control.

Rainfall-Runoff Model

Implementation of HEC-HMS Rainfall-Runoff model for the Pärnu river catchment area together with EMHI. In addition to model implementation, analysis of available geospatial data, hydrogeography and historical hydrological records is included. Model output will be used for creating hydrological forecast products for various user groups.

Hydrological Workstations

Workstations to visualize the hydrological forecasts in map and graphical format and to support decision making.

