baltrad+ Newsletter

July 2013

An advanced weather radar network for the Baltic Sea Region

The innovation lies in the development of an ICT network architecture allowing real-time data exchange and processing of weather radar data using common methods according to local needs in each country.

Highlights: BALTRAD+ *now,* BALTRAD+ *System,* BALTRAD QA *Workshop in Vilnius, Partners*

BALTRAD⁺ now

Time is flying and there are only six months left of the project lifetime. It is still early to measure the success of BALTRAD+ but many of the pieces are starting to fall in the right places to finally form the complete BALTRAD+ puzzle.

The remaining project time will be spent on finalizing the BALTRAD-software to enable the data exchange between all project partners. Further algorithms will also be added to the toolbox. Parallel with this we will be working with a revised BALTRAD co-operation agreement, including not only the project partners but also new members. The Co-operation agreement will form the basis for data exchange and development after the finalization of the project.

BALTRAD⁺ System

BALTRAD software was subject to profound changes and intensive development during last year. BALTRAD communication software component – BaltradDex – has undergone numerous updates and modifications. The general aim of the development was to improve software reliability and efficiency in terms of data exchange process. Based on the experience gained in the first project period, communications functionality was thoroughly revised starting with data exchange protocol and the underlying database structure through core client - server routines and object persistence layer to the look and functionality of graphical user interface.

The development was focused on the following areas:

- implementation of new communication protocol involving JSON format used for passing communication objects between the nodes;
- implementation of separate client/servlet functional pair for each type of request;
- normalization of database schema, eliminating redundancy, applying JDBC Template to application's persistence layer, introduction of transactions in application's ORM layer;
- implementation of automatic key exchange mechanism - allowing to post node's public key at the peer node just as any other type of request;
- improving local application security with Spring Security package. This solutions is used to implement role - based access to application's functionality;
- improving error detection and diagnostics, implementing user friendly messaging system and message GUI;
- modification and improvement of application's graphical user interface - improving GUI layout and functionality;

Other activities beside regular development were aimed at resolving bugs, errors and malfunctions reported by the users as well as direct user support in case of certain problems with installing, configuring and running data exchange software. BALTRAD+ technical infrastructure was used for real-time contact with users and work towards identifying and resolving the problem.

BALTRAD QA Workshop in Vilnius

The Second BALTRAD+ Quality Algorithm Workshop (QAWS) was held in Vilnius, Lithuania, on 15th to 16th May 2013. The Workshop was arranged in conjunction with the 3rd Baltrad User Forum (BUF III). We continued the work that started in the first QAWS in Norrköping in September 2012, namely R&D of the algorithms aimed for improved quality in the radar products. A rather complete list of algorithms, collated from the national wishes, and their priorities is shown on the roadmap, http://git.baltrad.eu/trac/wiki/cookbook/roadmap. The Workshop emphasized that the roadmap is a vision of the algorithms which altogether will stepwise improve the quality in the coming years. Naturally we hope to document and implement as many of them as possible. Significant QA contributions in the two Baltrad projects has been provided by DMI, IMGW, SMHI and FMI. Some of the QAs are well established but some represent the most recent scientific research and will have longer paths until operational solutions are available. It was decided that the third and final QAWS will be held in conjunction with BUF IV in Berlin in November.

Our partners

BALTRAD+ is committed to working with its partners to improve weather radar systems for end-users and recognizes the time and work that partners make in their relationship with B+. At the moment we have 13 partners in Europe :

SMHI (Swedish Meteorological and Hydrological Institute)

IMGW (Institute of Meteorology and Water Management, Poland)

STUK (Radiation and Nuclear Safety Authority)

DMI (Danish Meteorological Institute)

RHMC (Department of Hydrometeorology, Belarus)

EEA (Estonian Environment Agency, former Estonian Meteorological and Hydrological Institute)

LEGMC (Latvian Environment, Geology and Meteorology Centre)

FMI (Finnish Meteorological Institute)

Norwegian Meteorological Institute

Aalborg University (Department of Civil Engineering)

Aarhusvand (Aarhus Water A/S)

DWD (German Weather Service)

LHMS (Lithuanian Hydrometeorological Service)

These organisations are the contractual partners of the BALTRAD+ Project. But the cooperation will not end after the project is finished. To ensure sustainability we have signed the BALTRAD co-operation agreement that governs the future collaborations. Last year the UHMS (Ukrainian Hydrometeorological Centre) joined us under the frame of the co-operation agreement.

B+ continuously expands its existing partner network to strenghten the work of radar systems – ROSHYDROMET has officially applied to join the partnership but the process is not completed yet. Hopefully soon BALTRAD+ can welcome ROSHYDROMET as a new partner.

Announcements

The forth BALTRAD+ User Forum "BUF IV" will be held on 22th November in Berlin. Please consult the project website for further details.

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