

e Space environments and effects analysis section

The Space Weather Applications Pilot Project


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Content

- ESA's space weather activities
- Space Weather Applications Initiative: some background
- The pilot project
- Coordination with other entities.

Pilot Project Structure

- The pilot project will focus on developing a network of service development activities (SDAs) for space weather applications with close links to users.
- SDAs will team users and service providers. Users will play a key role in the SDAs, defining the service goals and participating in the final evaluation.
- SDAs will participate in a common Space Weather European Network (SWENET). An additional activity will be responsible for supporting and networking the SDA activities. Main tasks will include developing a data and service distribution infrastructure in consultation with the SDAs. Co-located meetings and workshops will also be organised.
- Finally, an independent benefit assessment will be carried out in order to establish the economic and other benefits of the services



Service Development Activity Goals

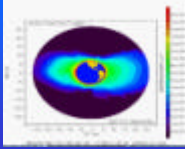
The pilot project will focus on a network of service development activities, each with strong service user participation. Each SDA will:

- Become part of a coordinated network.
- Establish requirements for a common software architecture
- Establish user requirements and develop services over a period of ~1 year
- Evaluate the user benefits and value of the resulting service over ~1 year
- Contribute to a final independent cost-benefit analysis
- Propose a business plan for continuing the service after 2 years.



SDA Activities

- Quickmaps and History of the Effects of Ionospheric Scintillations on GPS/GLONASS Signals, CLS (France).
- Daily Ionospheric Forecasting Service, BAe Systems (UK).
- Geomagnetic Indices Forecasting and Ionospheric Nowcasting Tools IFSI (Italy).
- Space Weather Impact on Precise Positioning Applications of GNSS, DLR (Germany).



SDAs....

- Ionosfera, AMSAT Italia (Italy).
- Auroras Now! FMI (Finland)
- Validation of Near-Real-Time GPS Occultation Data Products for Meteorological Services, DMI (Denmark).
- Operational Distribution Service of 2D TEC maps over Europe for Natural Hazard Studies, Noveltis (France).



More SDAs...

Geomagnetic Activity Forecast - A Service for Prospectors and Surveyors DMI (Denmark).

Real Time Forecast Service for Geomagnetically Induced Currents, IRF Lund (Sweden).

Real-Time GIC Simulator, Natural Resources Canada.

Solar Wind Monitoring and Induction Modelling for GICs BGS (UK)

SDAs...

Space Weather Operational Airline Risks Service (SOARS) MSSL-UCL (UK)

Geosynchronous Environment for Identification of Satellite Anomalies (GEISHA), ONERA (France)

A Pilot Space Weather Service Employing the Spacecraft Hazard and Anomaly Forecasting Tool (SHAFT), QinetiQ (UK)

Solar Influences Data Centre SIDC, Royal Observatory Belgium

Pilot project status

- Service Development Activities (SDAs)
 - SDA activities began on *1st April 2003*. User requirements currently being established in each case
 - First joint progress meetings taking place June-September
 - SDA activities will not cover all aspects of space weather services
 - Independently funded activities are being encouraged to join the SWENET network following signature of a coordination agreement.
- SWENET Network Support contract. ITT due for issue in mid-2003
- Benefit Evaluation contract. ITT also due for issue in 2003

Independently Funded Activities

- Service Activities not funded by ESA but willing to participate in the network on a non-exchange of funding basis.
- Currently 6 groups have agreed to participate on this basis:
 - Trieste Radio Observatory
 - CLS Solar Activity Prediction
 - IRF-Lund SAAPS Service for Prediction of Spacecraft Anomalies
 - CLRC RAL ionospheric services for Communication Users
 - Natural Resources Canada GIC Service for Pipeline Operators
 - International Service for Geomagnetic Indices
- Other activities strongly encouraged to join
- Participation through signature of collaboration agreement with ESA
- Network members benefit from increased visibility of service and support of SWENET network contractor

