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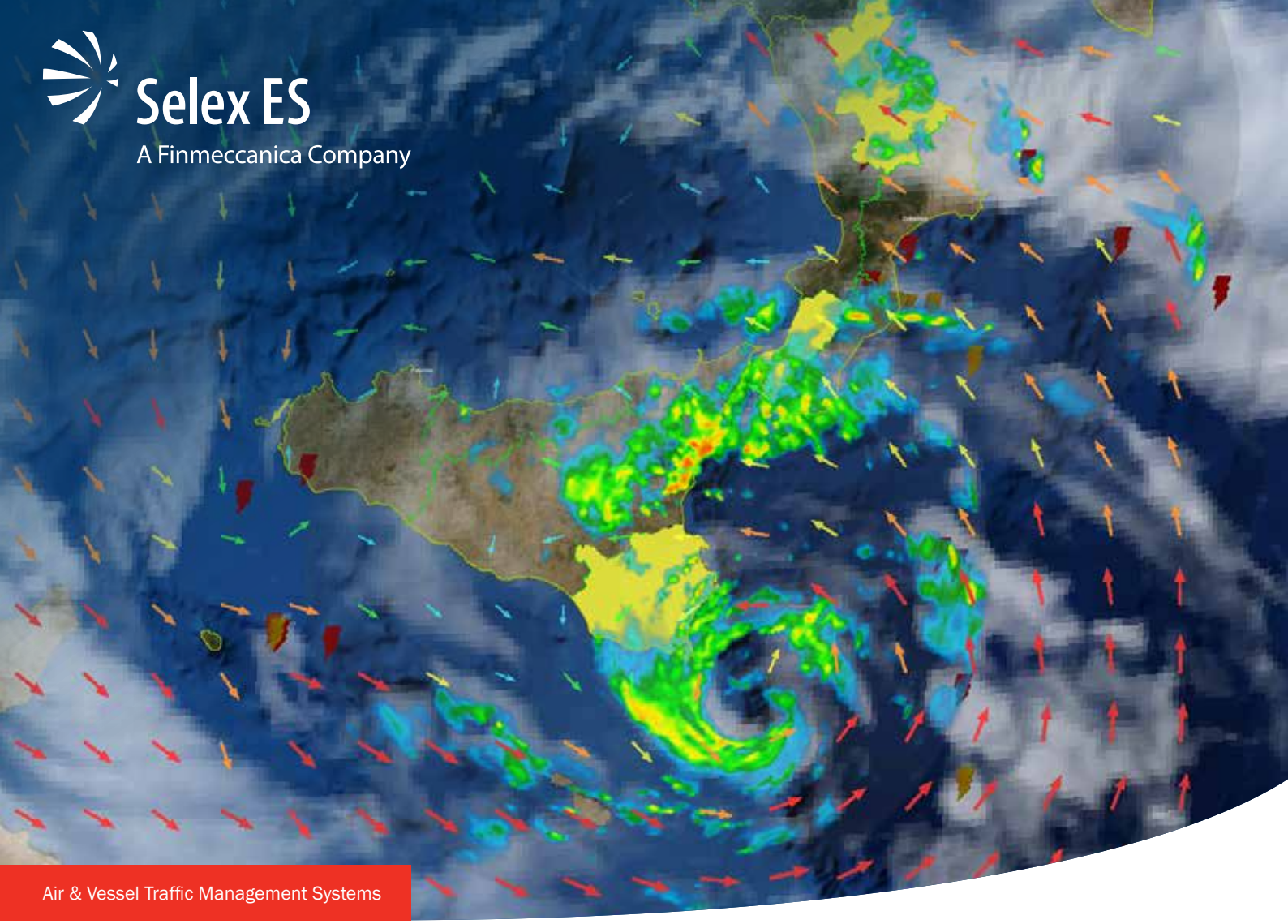


Air & Vessel Traffic Management Systems

DATAMET
METEOROLOGICAL SENSOR MANAGEMENT SYSTEM

Designed and developed following continuous collaboration with the Civil Protection Operation and Research Centres, DATAMET is a comprehensive state-of-the-art software suite for the support of hydro-meteorological early warning systems at both regional and national levels.

Modern meteorological centres obtain information from a wide variety of multi-technology sources. This vast amount of data (often used as primary inputs for Nowcasting and Numerical Weather Prediction models) requires a tailored ICT infrastructure in order to interpret, validate and exploit the acquired data to maximum benefit.

KEY FEATURES AND BENEFITS

- Platform independent
  - Support of Linux and Windows operating systems
- Data ingestion from a wide range of sensors/systems
  - EUMETSAT MSG
  - Weather radars, in-situ sensors, lightning sensors network, NWP models, etc.
  - HSAF
- Web based interface for centralised Command and Control of the company's Weather Radar systems network
- Data fusion and support for multi-layer thematic and GIS oriented product generation at different meteorological scales (from micro up to planetary)
- Scheduling of multiple operation processing chains for the collation and display of meteorological information
- Extensive set of standard hydrological products
- Storm detection and tracking
- Data pre-processing algorithms - multiple test sequences for data quality assessment and correction
- Rain gauge management for rainfall estimation - display, plot, scatterplot, calibration
- Statistical analysis (local, regional, national)
- Surface modelling of terrain with texture mapping
- 3D visualisation - cross sections and slicing
- Warning system based on precipitation intensity, accumulation, severity index and position forecast
- Mobile App for real-time localised alert and situation report
- Graphical and numerical data export in standard formats
- Support of OPERA/ODIM, HRIT/LRIT, BUFR, HDF5, GRIB, KML, SYNOP etc.
- GIS data export through standard OGC compliant services (WMS, WFS, WCS)
- Database support: Oracle, Mysql, Postgresql/Postgis

TECHNICAL DESCRIPTION

DATAMET is composed of the following modules.

DATAMET/ACQ

This is responsible for the acquisition and interpretation of data from satellite (imagery and sounding, including EUMETCast/GEONETCast data dissemination) to weather radar (single sensor and radar network) to in-situ detected.

A modular design allows the system to easily adapt to new data formats. It applies a syntactic control of data format and a quality check (range, threshold) to avoid the processing of incorrectly formatted data that can influence the post-processing and product generation.

All the acquired data is decrypted and stored in an easily readable, open format.

DATAMET/GEN

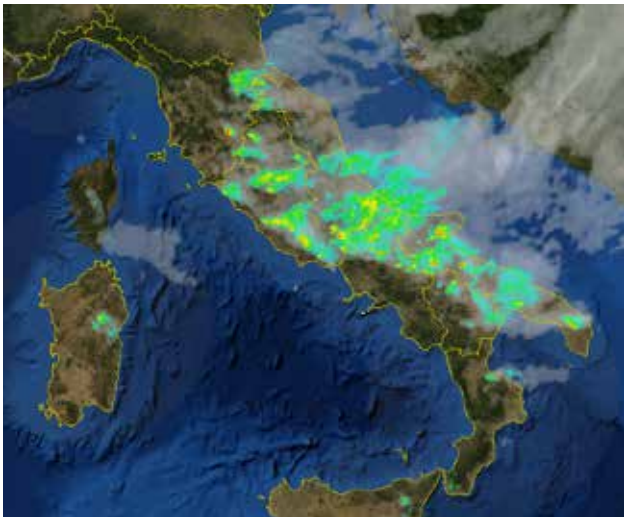
DATAMET/GEN is the application component responsible for product generation. It is able to process data from single or multiple sources such as specialised weather radar products (PPIs, echo tops, range heights, cross sections and their compositions, single and multiparametric, networked weather radar mosaic) and satellite products (e.g dust maps, cloud top, land and sea surface temperature, wildfire detection, RGB composites, etc.).

Moreover, it is able to generate and manage spatial and numerical composition of data at different geographic scale (from local to worldwide) ready for GIS applications. It allows the scheduling of multiple operational processing chains for the generation and display of meteorological information. It includes a development environment for the integration of user defined procedures and products.

DATAMET/VIS

This is a powerful tool for data analysis, allowing the visualisation and manipulation of meteorological information using 2D and 3D features of the IDL GUI.

Localized Warning



Radar Mosaic SRI textured on Satellite Cloud Tops

It includes several cartographic map projections (including 3D globe view), surface modelling and texture mapping, alpha blending for cloud transparency effect, layers underlay based on OGC WMS, image sequence animation, volume visualisation, cross sections and slicing, multi-parametric hydrometeor classification and temperatures.

DATAMET/ARCH&DISTR

This component manages the relational database (including Oracle, PostgreSQL/Potgis, MySQL) for optimal access, querying and organisation of complex meteorological and environmental data. Distribution is by FTP data transfer. This module integrates the open source GeoServer product to export data through standard OGC services.

DATAMET/C&C

The Command and Control module provides high level management of the system. It provides scheduled (local or centralised) processing, visualisation, interpretation, archiving and distribution of gathered data. All relevant operations are archived in log-files. An additional module allows direct command and control of the company's weather radar systems.

DATAMET/APP

The APP is the DATAMET mobile component, allowing registered users to receive location-specific early warning information. This is disseminated by the Centre and display maps with the current situation on smartphones and tablets screens.

CONFIGURATION

DATAMET modules are presented in predefined customised packages known as 'Licences'. Licences are available in standard versions (called "Licensed packages") or may be tailored to specific customer needs.

For more information please email **infomarketing@selex-es.com**
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