

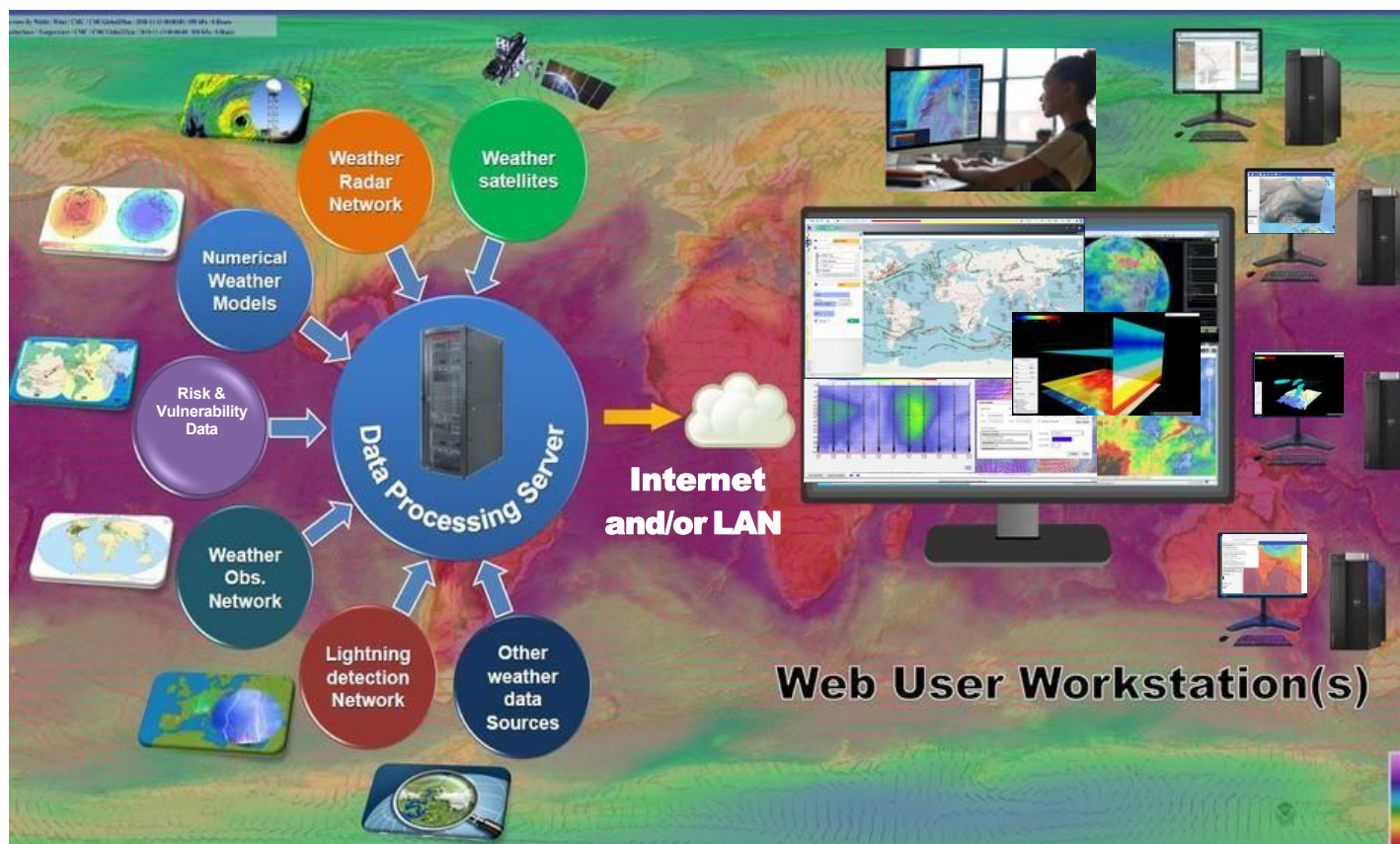
MET-WEBGIS

WEB BASED
INFORMATION
SYSTEM



INFO-ELECTRONICS SYSTEMS INC.

*Monitoring,
analysis, warning...
Decision Support System*



ABOUT WEBGIS

Supports new data sources and can be customized to your needs

APPLICATIONS

**Meteorology,
Hydrology
Environment
Disaster
Management**

FUNCTIONALITIES

Data Ingest and processing, Databasing, Visualization, Analysis Tools, Web Publishing

3D CAPABLE

**3D Globe
3D Volumetric
Cube**

About Met-WebGIS

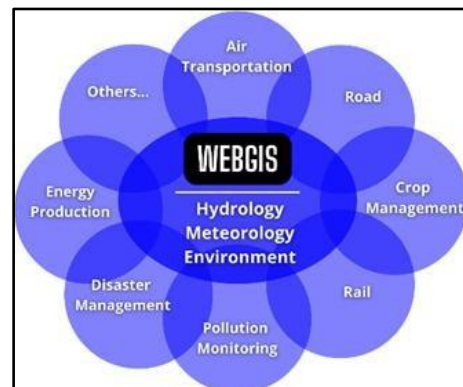
Info-Electronics Systems Inc. (IES) has developed its Met-WebGIS package to be a generic viewer and handler of geographical information-based data for Environmental applications. The package supports multiple data sources and is customizable to a variety of customer applications by integrating a wide range of functionalities for data handling, processing, rendering and display.

The Met-WebGIS package supports real-time monitoring of hydrometeorological events, disaster management, and aviation weather guidance. It also feeds into the modules for impact-based forecasting, helping users understand not just what might happen, but how it could affect people, infrastructure, and operations.

Domains of Application

The **Met-WebGIS** software has a variety of applications in meteorology, hydrology, and environment, where users need to display data from different sources and formats for weather conditions and events assessment, analysis, monitoring and tracking. The software package is also beneficial for other industries that require usage of environmental conditions, such as road, rail, marine, and air transportation, disaster management, energy production and provision, crop management, pollution monitoring and many more applications.

The Met-WebGIS software supports the visualization of the observed or forecasted information in its geographical context. It also allows the user to introduce ancillary layers of information from the available GIS database for further thematic assessment and more specialized analysis.



Generic Functionalities

The IES' WebGIS software application supports the following main functions:

Data Ingest and Processing

Allows the automatic fetch from the appropriate source at the appropriate frequency and the preprocessing of the data into uniformed types, such as vector or rasters. This operation prepares the basic information layers that will be queried, rendered, displayed and distributed.

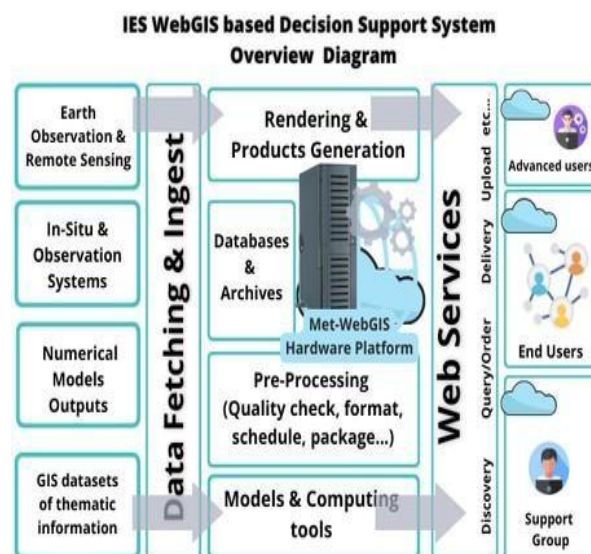
Database and Querying

Based on our long experience with geospatial and weather information databases, we designed a database structure that accommodates all information, both dynamic, in relation to the application type, as well as static GIS data that could be used as ancillary information for product generation and analysis. The Graphical User Interface for queries interacts perfectly with the database and optimizes user selections and requests for product generation.

WebGIS can provide advisories for volcanic ash and tropical cyclones. It can also provide queries for METAR, SPECI, TAF, SIGMET, and AIRMET in Alphanumeric Code (TAC) format as well as in extensible mark-up language (XML) and geography mark-up language (GML) formats, in accordance with current ICAO data exchange standards, including the ICAO Weather Information Exchange Model (IWXXM) and BUFR.

Rendering and Visualization

The rendering is based on the powerful open-source libraries and utilities using a uniform design to handle files in both vector and raster formats. Furthermore, **the WebGIS package uses the powerful Template and Favorite concept to allow users to save products customized to their preferences and selections to load them whenever required.** The product generation could then be run in a reduced number of clicks or be scheduled to be produced automatically. The adjacent figure shows the Significant Weather Chart rendering.



Analysis Tools

WebGIS has a set of tools permitting the contextual analysis of the information. These tools allow the compilation of relevant layers of information derived into products, which generate a second level of information required for advanced assessment, analysis, monitoring and decision-making.

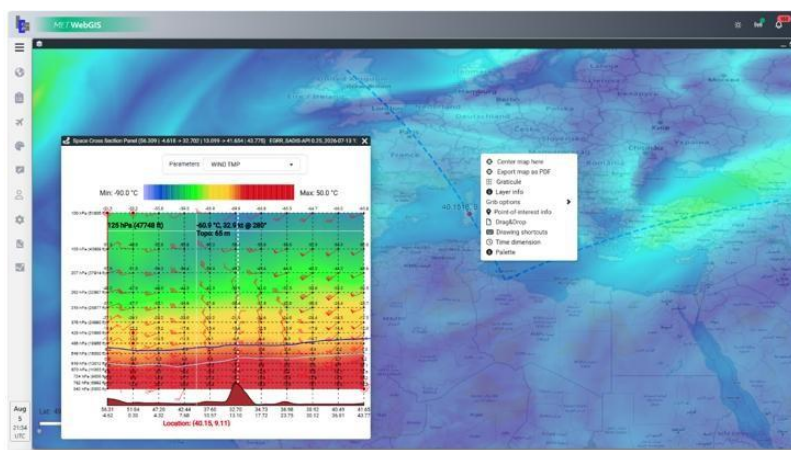
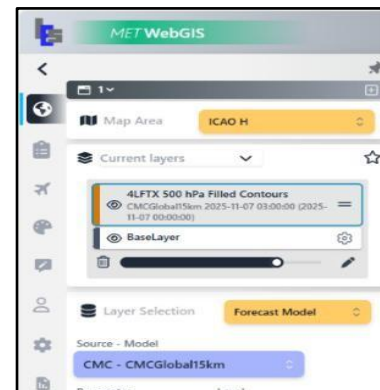
Web Publishing and Distribution

The WebGIS software is a web-based application, and all generated products are web-enabled. The Graphical User Interface runs from an ordinary browser, and access to all products is through the browser and an Internet connection with no special software on the User computer making it much easier to maintain the system.

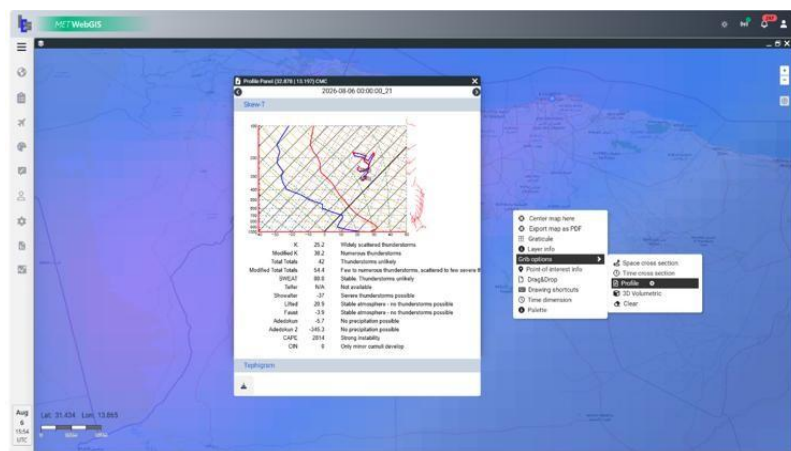
The package also offers the appropriate product rendering for publishing and distributing images, pdf reports and other possible formats, such as shape files and GML, depending on the products. The published product layout has all the relevant information for product identification and explanation, such as the data identification as well as the required legends and indexes.

Display Features

- On-demand detail level, avoiding clutter by initially presenting only important details.
- Integration of relevant data in a combined display (e.g., weather and terrain).
- Animation of rendered products showing changing weather information in time.
- Rendering of Numerical Forecasting Model outputs in gridded point value or symbol, isolines and filled contours (iso-surfaces).
- Easy-to-use quantitative and information-retrieval tools to enhance qualitative visualizations.
- The Vertical Cross Section of the atmosphere between two points is shown in the diagram above.
- Similarly, a Tephigram is shown in the second diagram below X-Section.
- Display Radar data and/or Satellite data separately or Radar data on top of Satellite data together.

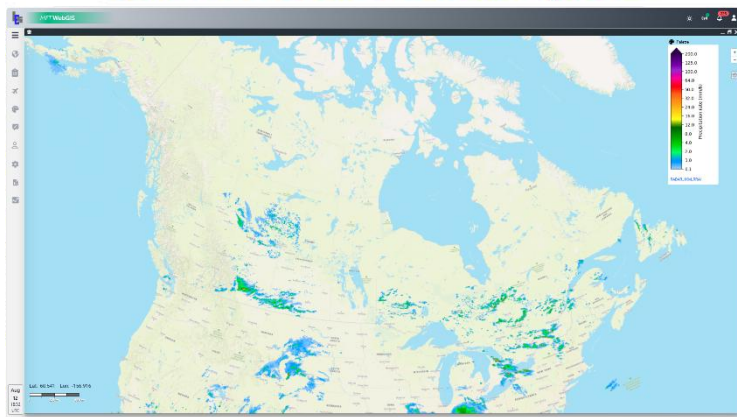


Cross-section of wind and temperature also showing freezing and -10 deg C levels

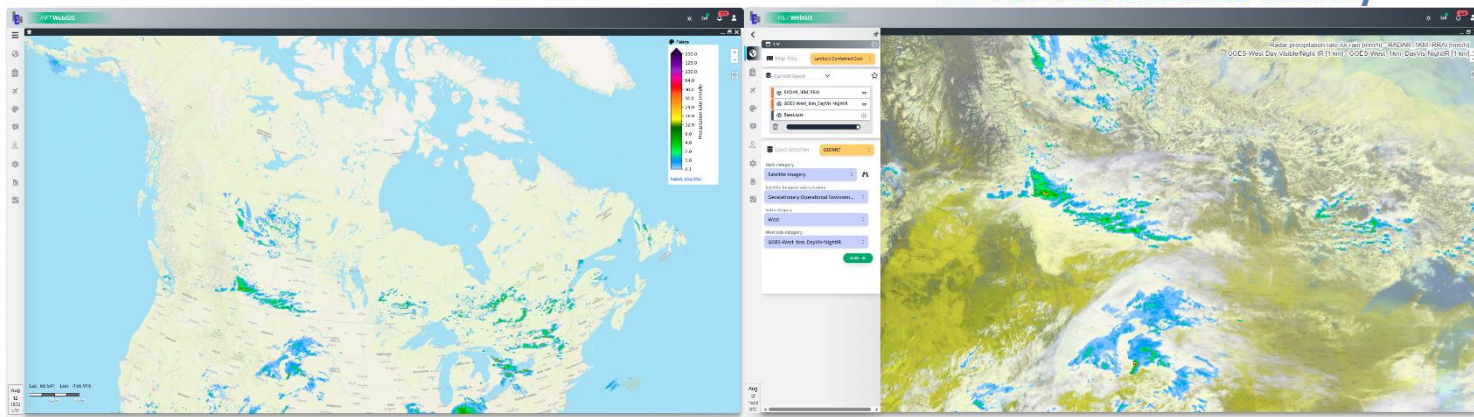


Tephigram/Skew-T diagrams generation on selected Point of interest

North America Radar composite



Radar and Satellite overlay



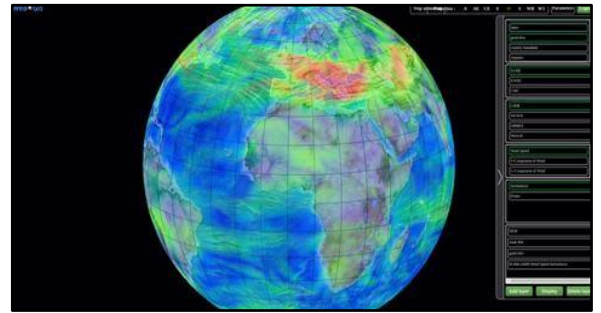
3D Capable Solutions

The Met-WebGIS has a feature menu to allow the user to generate derived products from the displayed data including GRIB data. The user can generate Thermos diagrams, space or time cross-section etc...

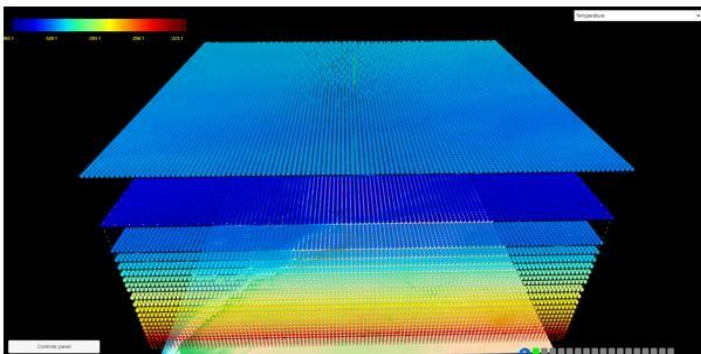
WebGIS has a feature menu to allow the user to generate derived products from the displayed data including the WAFS GRIB data. The user can generate Thermo-diagrams, space or time cross-section etc...

The **3D-Globe** module is suitable for assessing broad and global weather situations. This module allows the presentation of multi-source weather information as well as GIS thematic information on a Globe, with interactive pan and zooming on any location of the world and smart Level-of-Detail features. Globe makes it easier to use 3D navigation and manipulation over the globe.

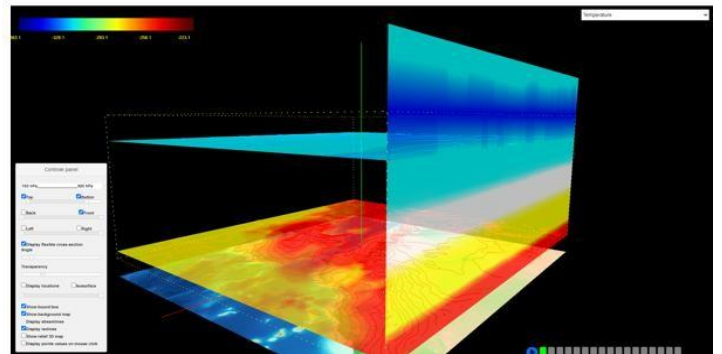
The **3D-Volumetric** module renders and interactively displays a selected column of 3D atmospheric information, with pan, zoom, rotate and pivot features, also performing surface cross-sections and animations in time, to appreciate localized, varying weather situations.



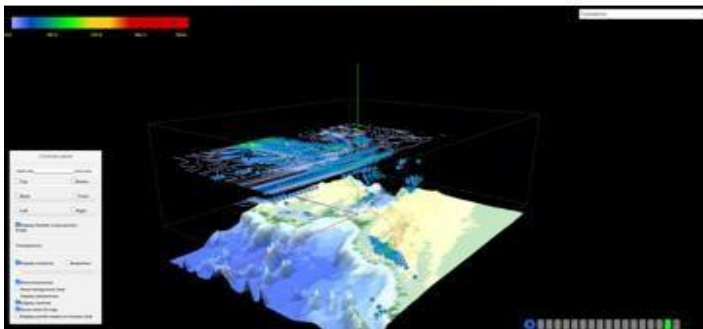
Cube of GRIB data



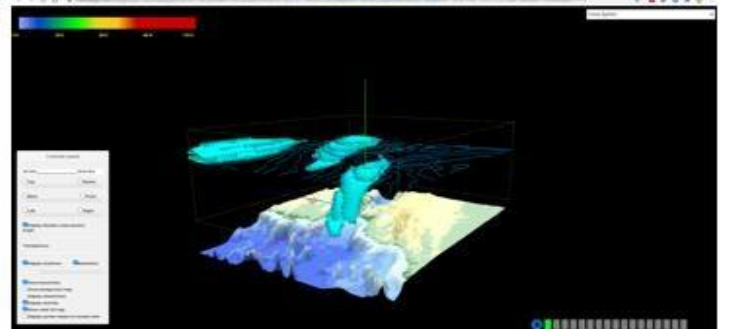
Isolines and isosurfaces rendering



Zone of turbulence derived from GRIB data



Jet illustration for aviation weather



Data Infrastructure

Clients can choose between two main deployment options:

1. **Dedicated Server:** Purchasing the system and managing the servers locally, or
2. **SaaS:** Subscribing to a monthly hosted service in the cloud (Software as a Service).



For more information, contact us at:

Email: contact@info-electronics.com | Phone: (514) 505-1996 |
www.info-electronics.com

Info-Electronics Systems Inc.

6600 Trans Canada Hwy, Suite #400, Pointe-Claire (Montréal), Québec, H9R 4S2