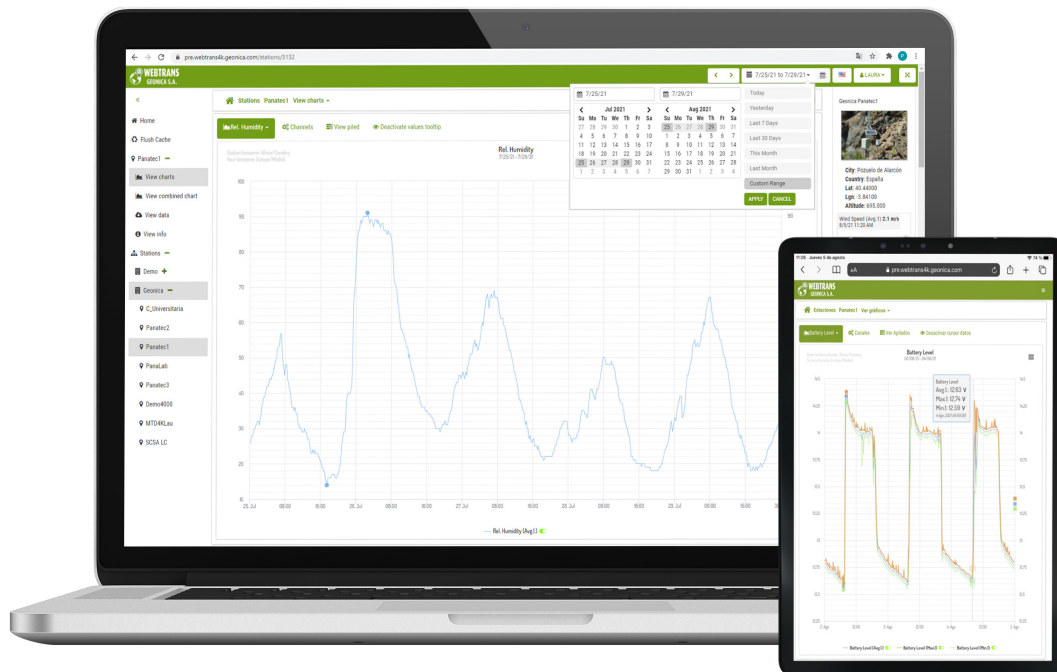


## GEO-DATAVIEW WEBTRANS-4K WEB PLATFORM - DATASHEET -

WEB PLATFORM INTEGRATED WITHIN GEONICA'S GEO-DATAVIEW SOFTWARE PACKAGE FOR THE MANAGEMENT, CONSULTATION AND MONITORING OF THE DATA COLLECTED BY THE AUTOMATIC REMOTE STATIONS METEODATA/HYDRODATA-2000/3000/4000



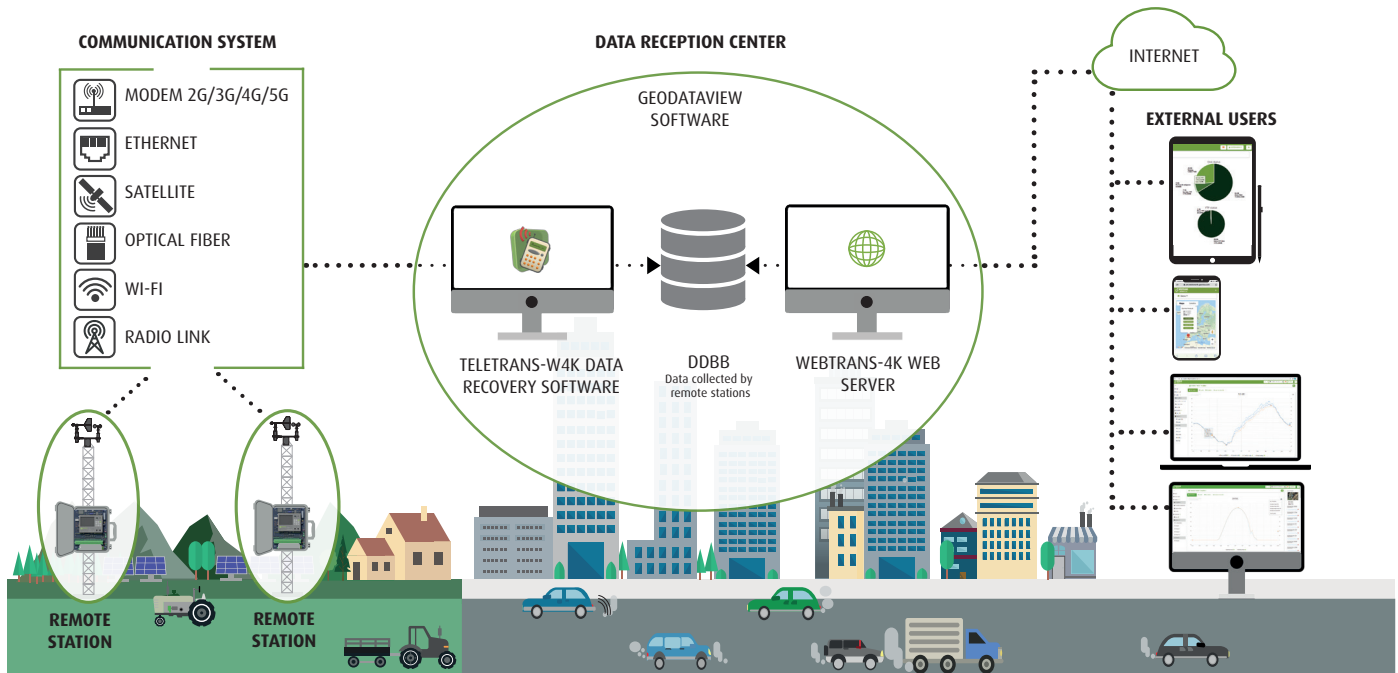
### KEY FEATURES:

- Responsive design to adapt to any device: PC, Mac, Tablet, Smartphone, etc.
- Sophisticated interactive charts for data visualization and analysis.
- Meteorological, hydrological, solar, road, etc. data available in real time.
- Interactive maps to dynamically locate each remote station and relate data and location.
- Data files and graphs download in the most widespread formats (txt, csv, pdf, Excel, etc.).
- Access to a gallery of images taken from camera connected to the remote station.
- Automatic update service (FOTA).
- Web access protected by username and password.
- Multi-language: the interface supports more than 70 languages.
- API for data integration with third-party platforms.
- Notifications sent by e-mail.

## INTRODUCTION

Remote stations collect data from different sensors connected and save this data in their internal memory. This data is then requested from a data recovery software (GEO-DataView Teletrans) and transmitted via a communications system (3G, 4G, Ethernet, Radio, etc.) to a database where it is stored. The database is often located on a server, in a center usually called a 'Data Reception Center' (DRC).

WEBTRANS-4K Web application accesses this database to display the values collected by the remote stations to the users. Designed to enhance the user experience, this data is displayed in real time, either as numerical values or through graphical representations of time series. In addition, WEBTRANS-4K allows downloading this data in various formats and visualizing the images captured by the cameras installed at the remote station.



## WEBTRANS-4K CLOUD SERVICE VS DISTRIBUTABLE WEBTRANS-4K WEB SERVER

WEBTRANS-4K is available as a service provided by GEONICA (WEBTRANS-4K Cloud Service) and as a self-installable solution (Distributable WEBTRANS-4K Web Server).






The **WEBTRANS-4K Cloud Service** is the platform assembled and managed by GEONICA, with clustered servers in the cloud. GEONICA manages the registration of new stations, user permissions, maintenance tasks, etc. The client contracts a periodically renewable service that grants access to the data of its remote stations via the Web: <https://webtrans4k.geonica.com>

**Distributable WEBTRANS-4K Web Server** is a solution for those who want to install and manage their own Web platform on their private servers.

In a few simple steps, 'distributable WEBTRANS-4K' can be installed and run on a virtual machine on the customer's own computer or in the client's cloud. This solution allows to customize the Web URL, the visual interface, etc. to be adapted to the specific requirements and needs of any company or organization.

Both types of distributions are considered within Geo-DataView software package, that is a set of applications for the management and visualization of the data collected by the datalogger series METEODATA/HYDRODATA-4000. GEONICA supplies different editions in order to cover the different clients needs. Each edition includes specific services and applications.



	Geo-DataLink App 	Webtrans-4K Cloud Service 	Data contract (SIM GEONICA) 	Teletrans-W4K Software 	Distributable Web Server Webtrans-4K 
GEO-DataView BASIC	✓		Optional		
GEO-DataView ADVANCED	✓	✓			
GEO-DataView PREMIUM	✓	✓	✓		
GEO-DataView PRO	✓		Optional	✓	
GEO-DataView ENTERPRISE	✓		Optional	✓	✓

## FRONT-END VS BACK-END

WEBTRANS-4K has two discernible blocks:

- **Front-End:** Block containing all operations related to accessing information of the remote stations.
- **Back-End:** Block reserved for users with specific access levels (advanced users, administrators, etc.). It allows the configuration of the entire Website: interface colors, notification mail, active remote stations, user management, etc.

## WEBTRANS-4K API

To integrate the data collected by the remote stations into other platforms or third-party developments, WEBTRANS-4K integrates a REST API that allows programmers to access available data, in XML or JSON formats, via http requests.

Each API query is key-protected and it has a limited validity period.

## QUERY OPERATIONS (FRONT-END)

### • PROTECTED LOG-IN

All information collected by the remote stations and available on WEBTRANS-4K has a private nature. To guarantee this level of security, the access to the platform is protected by a credentials system (username and password). The Web administrator of each organization manages the different user accounts and their access levels.

### • STATION INFORMATION

From this function, the user can read all the details about each remote station: name, unique identifier, model, geolocation information and reference image (usually a photograph of the remote station installed in its location). Additionally, this window informs the user of some specific configurations for data and graphics.

### • REMOTE STATIONS LOCATED ON A MAP

As main screen, all the remote stations enabled in the Web are positioned on a map according to their geolocation.

This visualization mode also allows loading the latest data collected by the different remote stations. In this way, all the latest information is visible on a single screen.

### • EXPORT AND DOWNLOAD

Export and download options are available for both graphs and tables of numerical values.

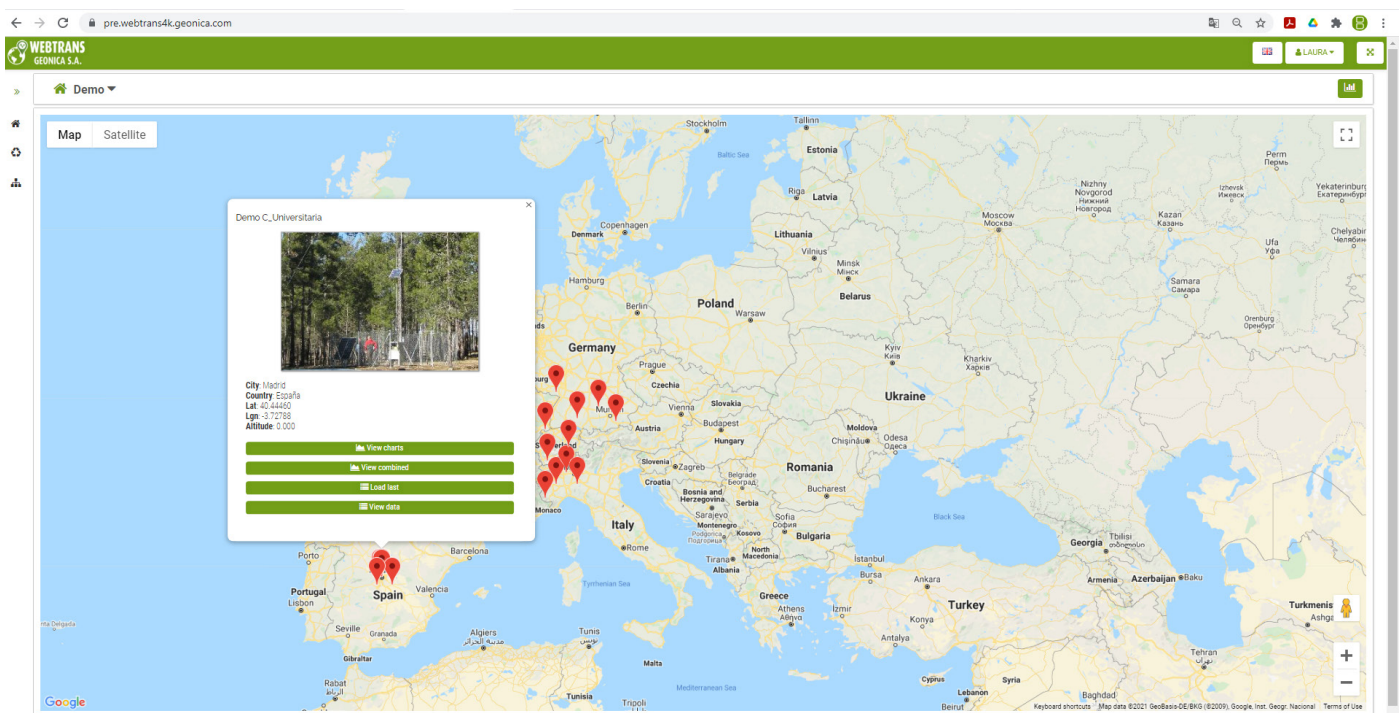
The export of numerical values is optimized by a background task that queues the requests ensuring the correct download, even when performed concurrently from multiple users at the same time. When WEBTRANS-4K completes the process, it sends the user an email containing a download link that is available for a certain (configurable) period of time.

### • PHOTO GALLERY

WEBTRANS-4K allows to enable and configure an FTP service hosted in the same Web server to save the images taken by the remote stations that have a camera connected. In this way, users accessing the 'Gallery' function available in the Web can see all the images taken by the camera(s) connected to each remote station, sorted by date and time.

### • LAST RECEIVED DATA MODULE

Regardless of the view selected by the user to access the information of the stations, the Web displays a lateral module with all the latest data collected by each station. This menu can be dynamically displayed or hidden using a button.



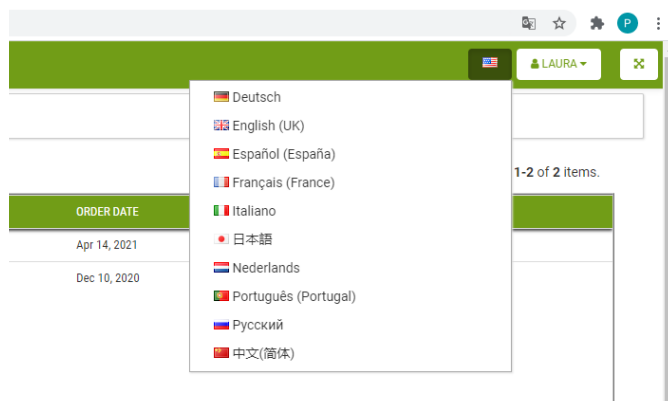


### DATA VISUALIZATION ON GRAPHS

WEBTRANS-4K has a great graphical power that allows the visualization of large historical data series on interactive, intuitive and multi-touch compatible graphs.

By default, the historical data series are displayed on easy-to-interpret line graphs. In addition, the Web supports different configurations to show the appropriate information adapted to a multitude of requirements:

- 'Data Quality' information overlapping each data series.
- Maximum, minimum and average value information accessible for each of the data series. Information of the exact timestamp of the maximum and minimum (with one-second resolution).
- Tooltip of numerical values optionally visible.
- Manual or automatic auto-scaling of the data series in the graphs.
- Specific graphic option for a proper visualization and easy Specific graphical option for a proper interpretation of data whose nature provides the information in bits or status. *Example: Pavement Condition, Present Time, etc*



### CONFIGURATION MANAGEMENT (BACK-END)

#### MULTI-LANGUAGE

The Website supports more than 70 languages, including: Spanish, English, French, German, Italian, Portuguese, Chinese, Arabic, etc. The translation module is a Web interface accessible to selected users (called 'translator users') that allows new languages to be integrated in a simple and natural way, simply by filling in a form. By default, the Web is supplied in Spanish and English.

#### SIMPLIFICATION OF PROCESSES: QUERY, START UP AND MAINTENANCE

Each of the operations involved in the design of WEBTRANS-4K have been implemented with the aim of maximizing the user experience (UX).

The process of querying data from remote stations runs naturally and intuitively, reducing the training time required to start using WEBTRANS-4K. To make easier start-up tasks, some new internal functions have been developed to allow remote stations to be automatically registered on the Web. On the other hand, WEBTRANS-4K automatically registers any change in the station configuration (new sensor connected, etc.).

WEBTRANS-4K includes several helpful processes that simplify the entire system maintenance. The most representative processes are:

- E-mail notifications when the database exceeds a certain size.
- Section to generate and restore a Web configuration backup.
- Automatic OTA (Over The Air) update with notification through the Web interface.

## TECHNICAL SPECIFICATIONS

Architecture and Programming	
Architecture	MVC Model View Controller
Programming	Last version of PHP under the Yii2 Framework C# Visual Studio Html5 CSS3
DataBase	SQL (meteorological data storage) MySQL (user HMI configuration storage)
Optimization	Cache systems applied to database queries

WEBTRANS-4K self-installable solution	
Virtualization	VMWare Virtual Platform
Virtual Machine	Linux Ubuntu (most recent version) Apache PHP 7.0.33
Configuration Software	'Ubiquitas Manager'

Web Access- Compatibilities	
Operating systems	Microsoft Windows Mac OS X Linux iOS Android NOTE: GEONICA periodically updates its applications to make them compatible with the last versions of operating systems available in the market.
Browsers	Chrome Firefox IE11 Safari
Devices/ terminals	Desktop computer, laptop, tablet, smartphone

WEBTRANS-4K Operation	
Supported map formats	Google Maps (API key required) Bing Maps (API key required) Open Street Maps (API key not required) Georeferenced image
Data export formats	Advanced CSV (database model) CSV TXT Excel
Graphic export formats	PNG JPEG PDF SVG
API	http requests REST Architecture JSON and XML data formats
User management	RBAC (Role Based Access Control)
Management of updates	OTA (Over The Air)
Graph display modes	Stacked graphics, Overlay charts, Individual charts for each channel
Available languages	More than 70 languages supported English, Spanish, French, German, Italian, Portuguese, Chinese, Arabic, etc.

Software editions					
	Geo-DataView BASIC	Geo-DataView ADVANCED	Geo-DataView PREMIUM	GEO-DataView PRO	Geo-DataView ENTERPRISE
WEBTRANS-4K Cloud Service		✓	✓		
Distributable WEBTRANS-4K Web Server					✓

REVISION	EDITED	REVIEWED	DATE	AFFECTED SECTIONS	VERSIONS
1	P.V.	L.L.	8/10/2021	New features	Not applicable



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