February 2025

Geonica Presentation Systems & Solutions for Environmental Monitoring

Miguel Martínez Rodríguez
Managing Director, Geonica

GEONICA

senseca

THE COMPANY

- **GEONICA** Spanish company founded in 1974
- Designs, manufactures, installs and maintains Systems for Environmental Monitoring with Real Time Data & Alarm communication
- Core: **METEODATA** datalogger integrating sensors, communications and power supply to build Professional Automatic Weather Stations, with **GEO-DATAVIEW** Software for data collection, configuration, and management
- Focus on Systems and Turnkey Solutions
- Manufacturer, Integrator and System Engineering
- Building Measurement & Alert Networks
- Main sectors / applications:
  - Hydro-Meteorology & Early Warning Systems (EWS)
  - Solar Resource Assessment
  - Road, Railway, Airports Safety
  - Coastal & Port Safety

SECTORS, SYSTEMS & SOLUTIONS

METEOROLOGY, HYDROLOGY
AGROMETEOROLOGY

- HYDROMET
- AGROMET

EARLY WARNING SYSTEMS (EWS)
CIVIL PROTECTION

- RAINALERT
- FLASH FLOOD ALERT
- LIGHTNING ALERT
- SISMOALERT

COASTAL OCEANOGRAPHY, PORTS

- SAFE PORT
- DATAMAR

SMART CITIES

- GEOcityQUAL
- DATACAR

RENEWABLE ENERGY

- SOLAR ENERGY MEASUREMENT SYSTEM
  SEMS-PV, SEMS-2000 / 3000 / Spectral
- WINDPOWER

ROAD & RAIL TRAFFIC SAFETY
AIRPORT & HELIPORT SAFETY

- SAFE ROAD / SAFE TUNNEL / ICEFREE
- SAFE RAILWAY
- AIRPORT WEATHER
- WINDALERT

ENVIRONMENTAL MONITORING
WATER QUALITY, AIR QUALITY, NOISE

- AQUALERT
- NOISE MAPPER
- GAMMALERT
- AIRcityQUAL / GASALERT

GEONICA MAIN PRODUCTS

METEODATA Datalogger

- Data Acquisition, Logging and Transmission Unit
- **4000 CM / CP / M** + SmartBox + Extension Modules

SOFTWARE

- **GEO-DATAVIEW** Software Package
- **WEBTRANS** Internet Platform
- **GEO-DATALINK** Mobile App

GEO-DATALINK Mobile App

COMMUNICATIONS

- **5G / 4G** / 3G / GPRS, **INMARSAT BGAN** Satellite, Iridium, **AIS AtoN**
- **Ethernet, Fibre Optic, TCP/IP, MODBUS, NTCIP**

SENSORS

- **DATARAIN-4000** Electronic Weighing Precipitation Sensor
- **PTH / PTHR-4000** Smart Multisensor
  Pressure, Temperature, Relative Humidity, Solar Radiation

SOLAR TRACKERS

- **SUNTRACKER-2000** and **3000** Two-Axis Passive or Active Tracking

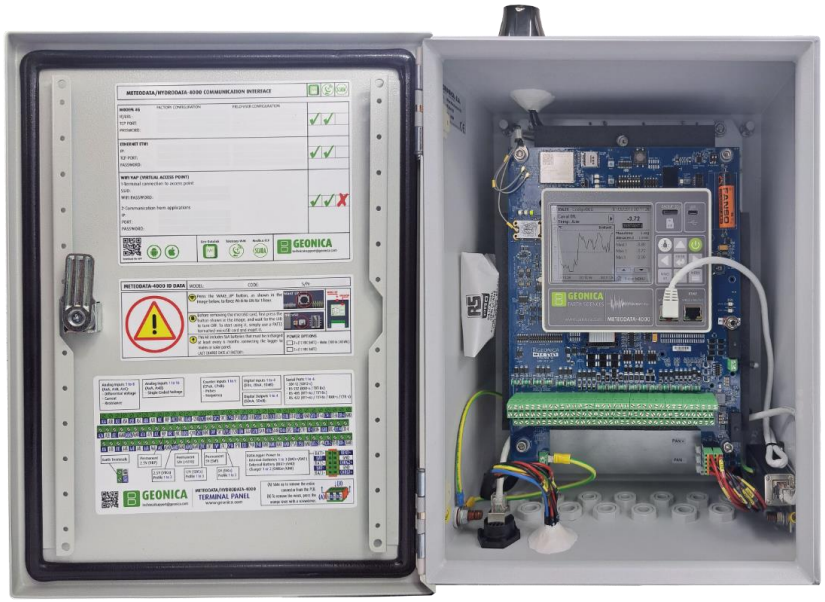
SOILING MONITORING

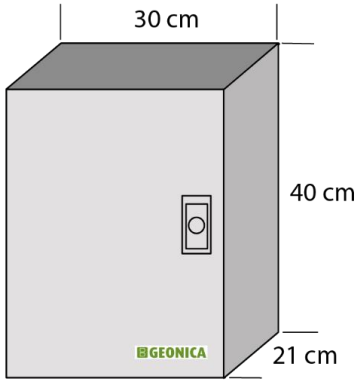
- **MDFS2** as per IEC 61724-1 Method 1 Max power reduction due to soiling
- **SPPM-PV** as per IEC 61724-1 Method 2 Short-circuit current reduction due to soiling

METEODATA-4000 Main Board with HMI-4000 Graphical Display

METEODATA M / CM / CP

METEODATA-4016M
METALLIC IP66 CABINET



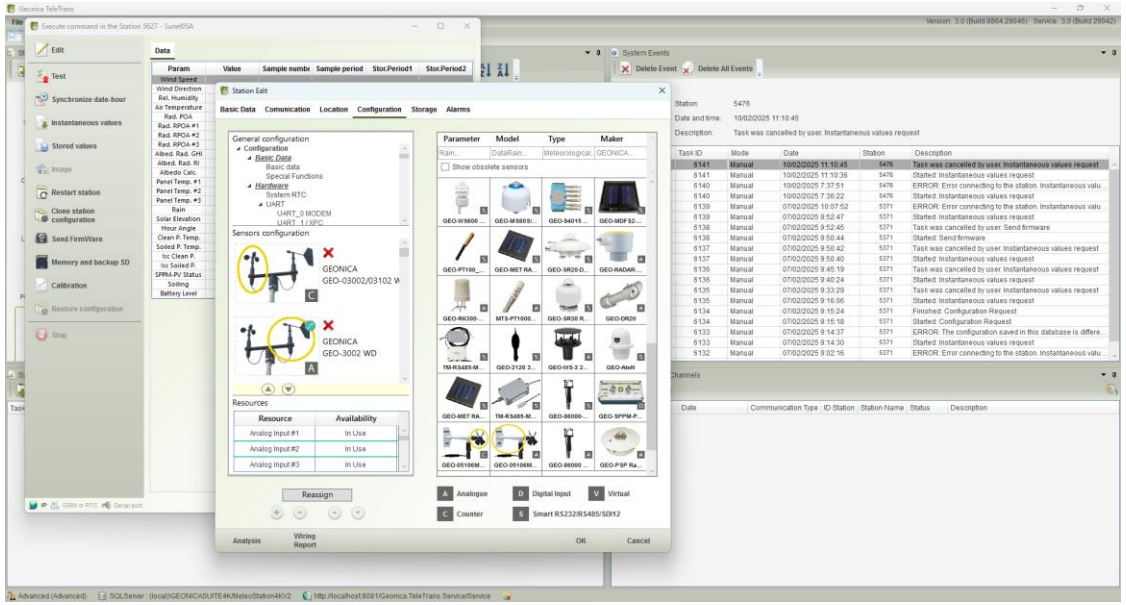


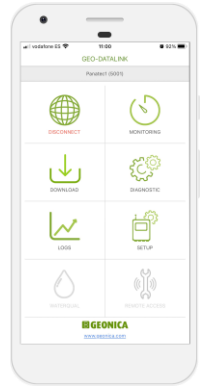
METEODATA-4016CM
COMPACT METALLIC
IP66 CABINET

METEODATA-4016CP
COMPACT POLYPROPYLENE
IP67 CABINET
34 x 29.5 x 15.2 cm

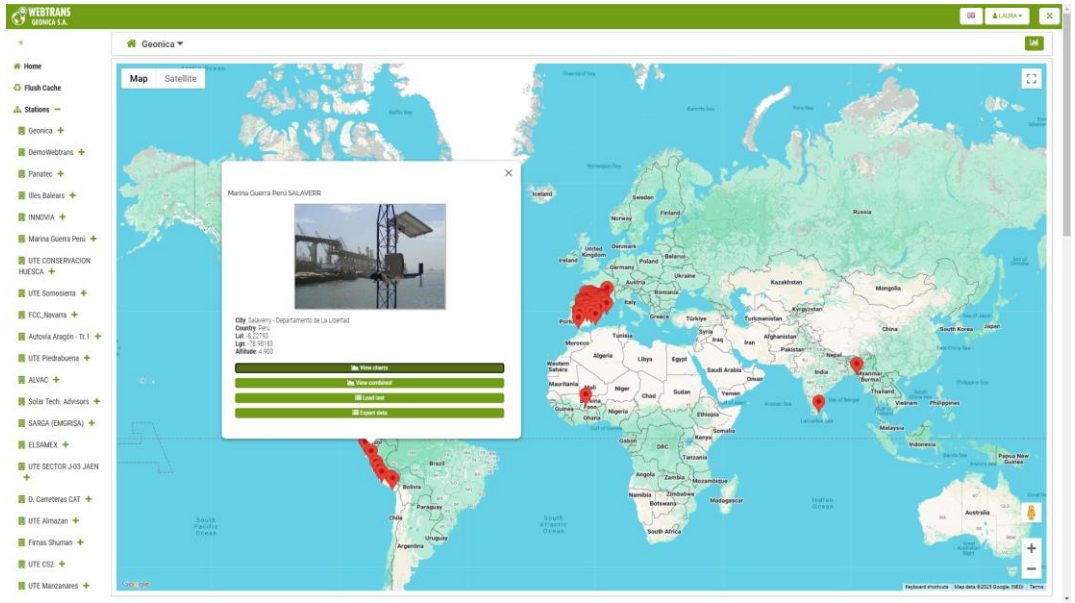
GEO-DATAVIEW Software & WEBTRANS Internet

GEO-DATAVIEW package of applications for management and data collection of **METEODATA** Stations from Data Receiving Centre for data storage, processing, presentation & monitoring.





GEO-DATALINK
Mobile App

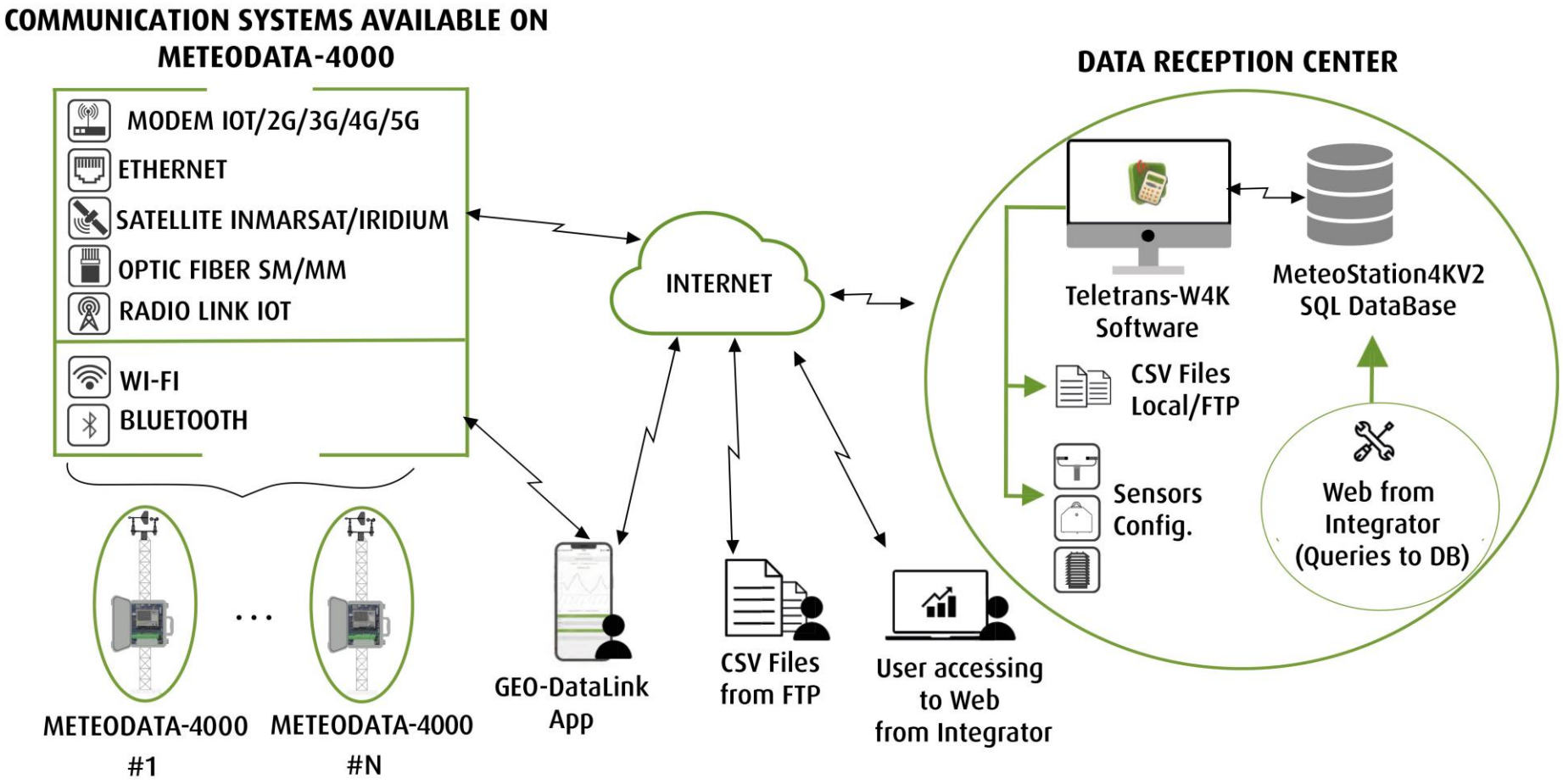


WEBTRANS Internet Platform developed by **GEONICA** to allow users with just a Web browser and from everywhere to access data from **METEODATA** stations in real-time, configure graphical presentation, and many other features.

Cloud Service or Application

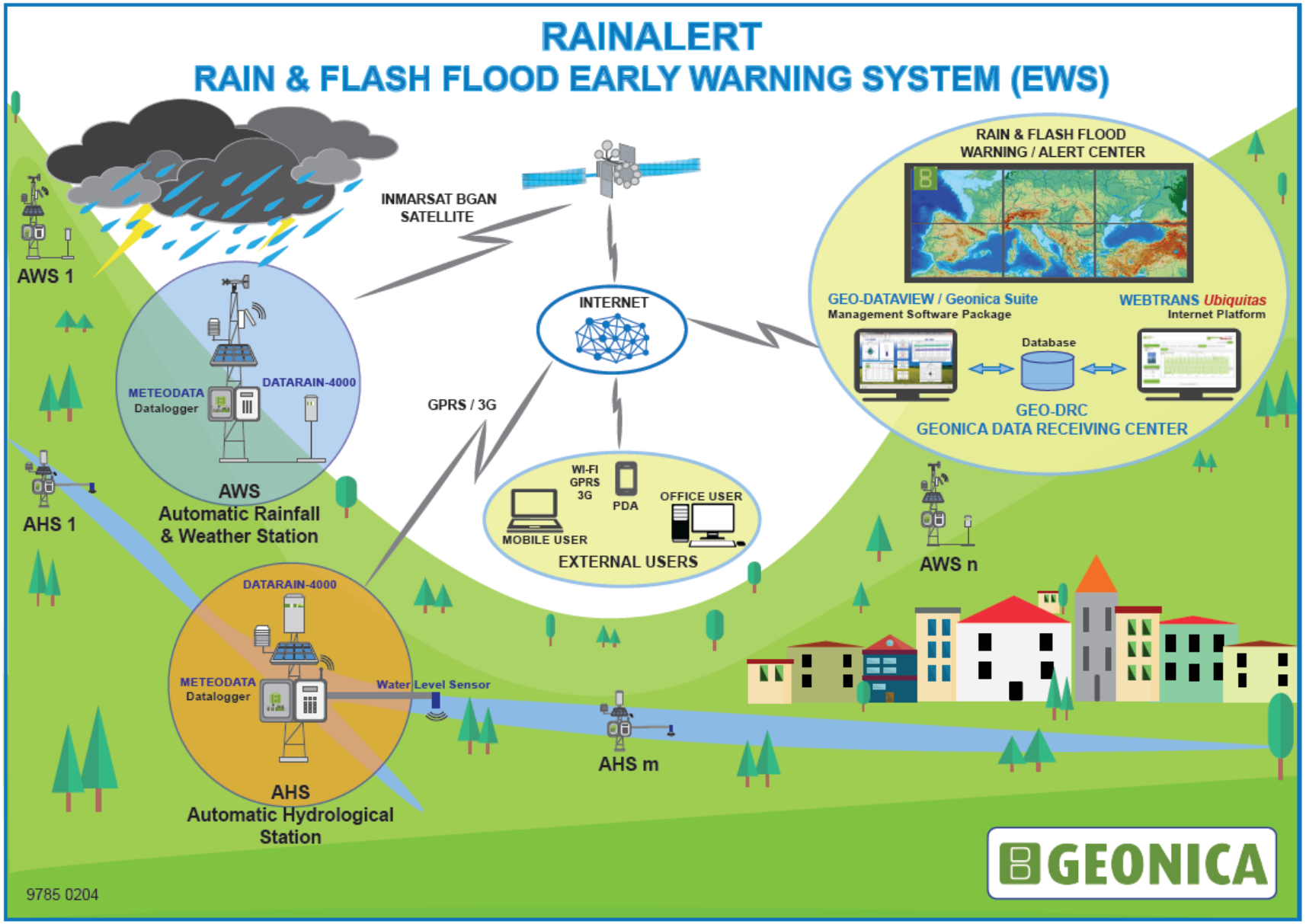
System & Network Architecture

METEODATA-4000 Automatic Weather Stations (AWS)
GEO-DATAVIEW Software

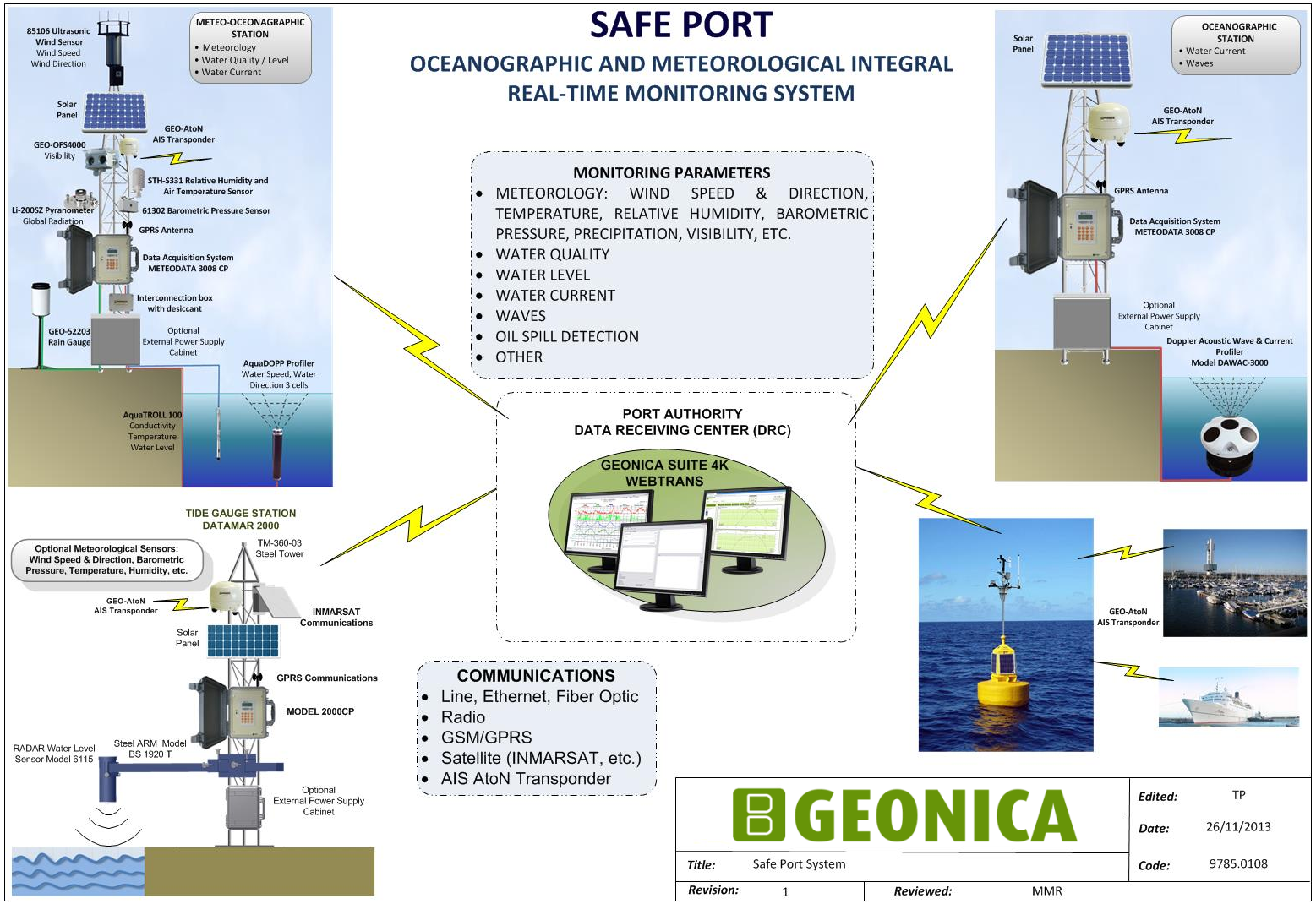


Early Warning Systems EWS

BTD-200
Thunderstorm
Detector



SAFE PORT & DATAMAR Systems

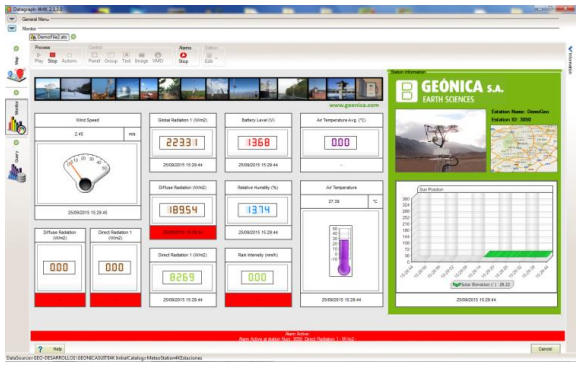


For Ports and Coast sector, we offer our **SAFE PORT** System which transmits the information to the Port Authorities, and to ships by means of **AIS AtoN** Transponder, 4G / 3G / GPRS, **INMARSAT** satellite, and other communication systems.

DATAMAR System allows for an advanced RADAR Tide & Wave Monitoring Network.

SAFE ROAD & TUNNEL

GEONICA's SAFE ROAD System is a **RWIS** (Road Weather Information System) essential to support **MDSS** (Maintenance Decision Support System) specially for Road Maintenance in Winter.



SAFE ROAD supports the following functions:

- Data collecting & recording by means of real-time monitoring and event detection
- Tools to show the information and to allow risk evaluation based on data analysis by Authorities
- Broadcast notices and alerts
- Communication & Protocols (**NTCIP**), Data storage in Databases and Interfaces with other Systems: SCADAs, Nowcasting & Forecasting Applications
- Avoid risk to users of the roads and reduce economic impact of weather conditions
- **Road Sensors:** Visibility & Present Weather, Wind, Precipitation, Temperature & RH, Pressure, Pavement Status, Pavement and Subsoil Temperatures, Surface Freezing Point, Lightning, Air Quality, and more
- **Tunnel Sensors:** Opacity, Gases, Tunnel Entrance Photometer, Illuminance Photometer, Air Flux

SEMS Solar Energy Measurement System

Remote Diagnostic Monitoring and Efficiency Analysis in Real-Time

SEMS-PV & 2000-DHI for Photovoltaic Plants
MDFS2 & SPPM-PV Soiling measurement as per IEC 61724-1 Method 1 & 2, respectively
Module Temperature, Calibrated Cells

SEMS-2000/3000 for Thermosolar Plants
SUNTRACKER-2000/3000 Very low power
Passive & Active Tracking

SEMS-2000/3000 Spectral
Solar Spectrum
Aerosols (AOD), Ozone, Water Vapor

MDFS2 Soiling Unit

SUNTRACKER-2000

THANKS FOR YOUR ATTENTION

A Senseca company

www.geonica.com

Supplying Systems and providing Service to our Customers

Contact us:

info@geonica.com