e-AWOS ENAV Automated Weather Observing System
Meteorological data always in control

» Mission:

Meteorological information is a critical factor for air traffic control. Starting from this evidence, Techno Sky has developed a meteorological standard system, adopted by ENAV at all managed airports, designed in collaboration with meteorologists and Air Traffic Control experts, for a better managing of the meteorological data during air navigation operations (arrival/departure and approach flight phases).

Operational Scenario:

The e-AWOS system nowadays allows ATC operators to automate weather observation processes at over 40 Italian airports.

The e-AWOS collects and processes meteorological parameters from field sensors or external systems and allows operators to monitor real time weather data and compile accurate meteorological reports. Using innovative technologies, the Unmanned Mode plays a crucial role in the E-AWOS evolution towards a progressive automation of the main meteorological observation processes without human intervention, including the fully automated reporting of aeronautical bulletins.

Key benefits:

- Improvement of automated operational processes, allowing ATC operators to achieve efficient and safe operations
- Independence from sensor vendors and easy integration with existing third party systems
- Easy HMI customization according to users requirements
- Reliable and flexible solution, suitable to be upgraded according to the ICAO amendments or local operational needs

Main technical features and overview:

e-AWOS provides the following features:
- Data acquisition and data validation, elaboration and quality check, according to all relevant international standards
- Seamless monitoring of the weather conditions in MET observers, ATC operators and maintenance working positions
- Facilities to compile aeronautical, statistical and synoptic meteorological reports, including METAR
- Emission of manual and automatic meteorological reports to national networks via AFTN/AMHS
- Data dispatching to external peripheral systems and aviation users
- Historical Data storage and archive consultation of meteorological data and reports
- High system availability for 24/7 operations thanks to a full redundant architecture
- Field instruments and external equipment monitoring and alerting functions in case of failure

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Client Presentation:
The **TWR/APP** client provides an innovative user-friendly HMI for ATCOs, ensuring the view of data useful for TWR and APP operations. It displays the overview of the airport meteorological condition, showing real time data from field sensors and local meteorological reports, and it allows other operations such as the activation of the low visibility procedures, the engage of the runways and the management of their operative status.

The **MET** provides an overview of real time data from field sensors and external systems for airport Weather Observers by means of numerical and graphical representations. Depending on the desired level of automation, specific templates precompiled with automatic data, help users to transmit aeronautical and synoptical weather reports with fewer manual interactions up to complete unmanned operations. A historical archive for browsing and managing meteorological data is also available.

A **MAINT** provides alarms to local technical operators and allows to easily monitor and control the overall system status: connections between components, database, sensors health, etc, aiming at resolving any occurred failure.

A web-based **TECSUP** client is also available, as part of our SNMP nagios® based solution, designed for the remote supervision of single or multiple airports systems at a centralized location.

Interfaces:

- Data acquisition from any type of source (digital or analog field sensors, EDAMS dataloggers or third party weather stations, lightning events detection systems or AGL systems, etc.)
- SNMP interface to allow external monitoring via TECSUP system (nagios® based) or any SNMP compliant NMS

Technical Specifications:

- Server redundancy with master/slave configuration using a fault tolerant cluster system (failover < 20 sec)
- Seamless network redundancy at switch and host level
- Windows based servers and workstations

Standards and Certifications:

Management System and Security Policy
- WMO No 8, No 306, No 731, No 732 guides
- 2017/373 European regulations
- ICAO Annex 3, Doc. 8896, Doc. 9328, Doc 9705 standards
- EATMN Constituents certified by DSU (Reg. (EU) 2018/1139)
- Developed according to the Software Assurance Level (SWAL) identified during the safety assessment process
- CMMI Compliant Development Cycle
- Developed according to ENAV Safety Management System and Security Policy

Support:

- Skilled Train-the-Trainers human resources for user and maintenance topics

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