

# IMS4 ATIS / VOLMET

Automatic Terminal Information Service / Flight Weather Report

The IMS4 ATIS / VOLMET system provides arrival, departure or combined ATIS and VOLMET broadcast and datalink services for airports from regional up to major international airports.



**Fully automated and cost-effective operation**



**Analog or VoIP broadcast**



**Easy adaptation to various airport conditions and report composition rules**



**Intuitive, customizable and user-friendly interface**



**ICAO and WMO compliant**

The system can be installed as a standalone or as an integrated part of the MicroStep-MIS Automated Weather Observation System (IMS4 AWOS) with permanent access to AWOS data. The open architecture allows easy expansion from the basic single channel system (combined departure and arrival ATIS service) up to the multi-channel ATIS / VOLMET system (separate broadcasting channels for airport with multiple runways, multi-channel service for group of airports etc.).

Software configuration allows easy adaptation to specific airport conditions, national rules, and voice report composition rules.

The variety of system options includes but is not limited to:

- multiple channels and / or multiple languages;
- dual hot-failover configuration and / or redundant transmitter equipment as a guaranty of the highest possible system reliability;
- remote operator and control positions for convenient authorized access to the system;
- telephone interface for the preview of current broadcasted reports.

The IMS4 ATIS / VOLMET user interface is intuitive and easily

operated. The fully automated mode allows cost effective operation without human intervention. The semi-automated or manual mode can be also configured for specific channels, if required, with visual and audible warnings announcing new data availability and new report compilation.

### Operational and technical parameters

- Multi-channel design supporting any combination of ATIS / VOLMET services for a single airport or for a group of airports:
  - separate channels with independent configuration for arrival, departure or combined ATIS;
  - VOLMET channel(-s);
  - fully or semi-automatic or manual interactive mode of report composition selectable separately for each channel.
- preview and manual modification of report in code, text, and voice forms prior to broadcasting;
- the broadcasting of current report at each channel may be interrupted at any time manually and / or automatically upon arrival of important data;
- long-term storage of reports, data, statistics and log files including logs of raw data communication with 3<sup>rd</sup> party systems.

### Automatic data processing

The IMS4 ATIS / VOLMET fully supports METAR / SPECI, METREP, TAF, SIGMET, AIRMET, SNOWTAM codes, low level wind shear messages and other sources. The system automatically receives the codes, decompiles bulletins, recognizes and handles the validity of particular report.

The quality control of the incoming data is performed automatically and generates an audio and visual alert in case of incorrect data are received.

In the automatic mode the data are converted into the high quality voice broadcast without human intervention, in manual interactive mode a visual / audio signal alerts user to confirm / validate received data.

The additional data (not available automatically from external data sources) can be entered manually through the data entry forms.

### Speech synthesis

The IMS4 ATIS / VOLMET incorporates:

- general purpose text-to-speech engine capable of synthesis of non-standard user input (free text option) with male and female voices;

- speech concatenation synthesizer based on the prerecorded ICAO English vocabulary database with possibility of:
  - adding custom vocabulary;
  - substitution of missing word / missing phrase by general-purpose text-to-speech engine output

### Digital service

The system supports D-ATIS downlink and uplink messages in ED-89A format via TCP or RS-232 (as option).

The IMS4 ATIS / VOLMET allows choosing pre-recorded or computer synthesized broadcast for each channel separately, including the option of alternating voices (for example male / female) at each update in order to attract attention to changes in broadcast.

### Built-in message monitor

The built-in message monitor displays latest valid codes of particular type (METAR / SPECI, METREP, TAF, SIGMET, AIRMET, and SNOWTAM) for user-defined groups of airports. Clicking on the particular report on the screen the user obtains information about report source (channel, time of receiving, message bulletin) or history of reports for the particular location.

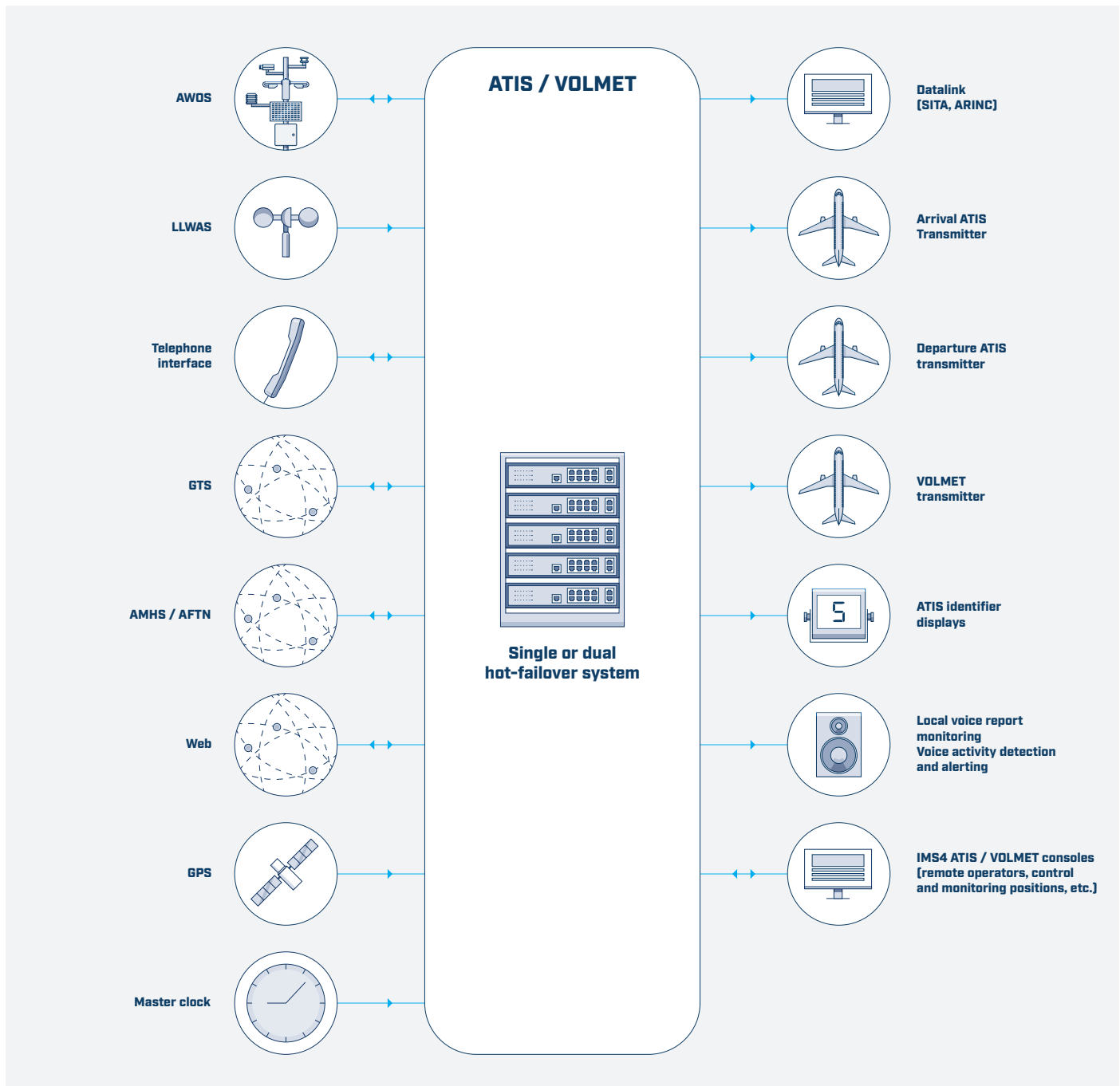
### Human-machine interface-integrated web server

The human-machine interface benefits from the latest technology improvements. The IMS4 ATIS / VOLMET system incorporates the built-in web / application server, which provides local as well as remote users with the convenient web interface customized according to the needs of particular user, thus reducing difference between local and remote operator's positions to minimum.

The built-in security mechanisms provide user-configurable tools for limiting user access to particular system modules, channels, or even write access to the particular ATIS report elements according to the permissions related to user names, user roles or IP addresses of remote users. This in combination with web interface makes IMS4 ATIS / VOLMET and ideal system serving group of several airports without compromises in security and / or authorizations.

### Modular and open system architecture

The IMS4 ATIS / VOLMET is built on the client / server architecture and uses commercial off-the-shelf components and industry proven technologies wherever possible. The system customizable and easily scalable to meet the future needs resulting from the expansion of airport operation or the regulation changes.



*Interfaces*

**System Specification**

- Multichannel design - combination of ATIS and/or VOLMET channels for one or group of airports
- Selectable fully automated or interactive operation of particular channels
- Scheduled broadcast on each channel
- Configurable for various data sources
- LAN/serial interface to AWOS (MicroStep-MIS or 3rd party)
- AFTN interface
- GTS (Global Telecommunication System of WMO) interfaces - multiple protocols as defined by WMO (asynchronous lines, TCP sockets, file exchange based and FTP file transfer channels)
- Master Clock System or built-in GPS module for time synchronization
- LAN/serial interface to low-level wind shear alert system
- Telephone interface
- Automatic receiving, processing, validity handling and text-to-voice conversion of METAR/SPECI, METREPORT, TAF, SIGMET, AIRMET, SNOWTAM

- **Audio/visual signal upon arrival of significant data**
- **Advanced report composition control (editing, verification, and preview in text, play back prior to broadcast)**
- **Manual or automatic (upon arrival of important data) interruption of broadcast at any time**
- **Airport radio broadcast**
- **Audio streaming over TCP/IP**
- **Analog or VoIP broadcast**
- **Datalink (D-ATIS)**
- **Pre-recorded human voice (male/female)**
- **General purpose text-to-speech engine (synthetic voice, male/female)**
- **User selectable alternation of voices (male/female) at each update**
- **User editable glossary of standard phrases and abbreviations**
- **User configurable pronunciation**
- **User selectable speech rate**
- **Free text option**
- **Possibility to insert user-recorded message into broadcast**
- **Modular and open architecture**
- **Multiplatform: Linux or Microsoft Windows**
- **Single server (Windows or Linux) or dual hot-failover system (Linux)**
- **Broadcast not affected by fail-over**
- **Integrated web server**
- **Remote operator positions, remote control and maintenance positions**
- **Flexible security mechanisms of permissions based on user names, roles, IP addresses**
- **XML system configuration (input channels, output channels, system parameters) with web front-end**
- **Audio/visual alerts**

## System Options

- **Transmitter equipment**
- **Multiple languages**