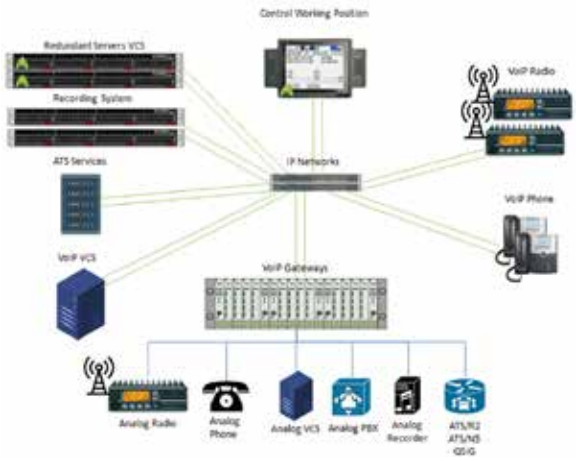
VCS ULISES V5000i



ULISES V5000i is a native VCS IP system, designed and manufactured by Amper with state-of-the-art technology, which complies with and evolves according to EUROCAE ED-136, ED-137B/C and ED-138 regulations, standing out for its performance in latency, redundancy and voice quality.

ULISES V5000i has redundancy of radio sets (M+N) and 1+1 for a single frequency: through intelligent management, the system achieves redundancy. Best Signal Selection, CLIMAX and BTS (Best Transmitter Selection) for radios distributed in different sites.

ULISES V5000i have extremely high availability (99.999%) with hardware redundancy, hot-pluggable mechanisms, decentralized radio server communication, the system has a fail-safe architecture, providing equipment with no single point of failure that could cause the system to go down.

User-friendly operator position: including telephone, radio and direct-line panels, the operator interface (HMI) allows highly efficient operation and simple personalization.

Its interoperability has been verified through different ETSI and FAA plug tests, and validated by Eurocontrol's VOTER tool interoperability tests.
It´s tailor-made configuration, can be implemented anywhere, from small airports or centers to the highest capacity centers, allowing economically efficient investment in each case.

CONTROLLER WORKING POSITION

ULISES V5000i CWP provide intuitive user interface in witch is divided into multiple functional areas user-friendly, including general information area, radio panel, telephony panel and hotline panel operator position allowing highly efficient operation and simple personalization.

ULISES V5000i CWP is based in ED-136 standard including the follow features within of Air-Ground and Ground-Ground communications:

Air-Ground features: Interoperability following ED-137B/C, Multi-frequency/Multi-sites features (BSS, CLIMAX, Best Transmitter Selection, Cross Coupling), 1+1 and N+M Radio Management, HF with SELCAL (Speaker HF dedicated), Radio Communications Short Time Recording (60min), PTT Carrier Detection, Priority PTT, Multi Radio Pages.

Ground-Ground features: Interoperability following ED-137B/C and ED139, ATS EUROCONTROL Routings, Calls/Intercom Short Time Recording (60min), Conference Calls, Hold, Priority ATS/R2 Calls, Call Listening, Intrusion Call, Call Capture, Call Forwarding, Presence Proxy.
Highest availability due that the communications service(radio and telephony) is installed at several Operators CWPs, allowing uninterrupted operation of the system without servers or others VCS equipment's.

ULISES V5000i CWP can record using 4 audio channels with the Interface Audio Operator card and can also use VoIP recording following ED137-C.

General Information Panel with Calendar, date and time, Presence of JACKS and SPLIT control, Telephony Information button, BRIEFING button, Message Window, Brightness Control and RING Volume Control, Page Control Area.

ULISES V5000i CWP is integrated into a PC COTS platform, screen size from 8" to 15", redundant Ethernet interfaces, capacitive touch screen, brightness suitable for ATC environments (up to 1000 nits), integrated or separate speakers and microphones, wide range of controlled audio equipment (Headset, Handset, Microphone, Bluetooth Wireless) flush-mounted in 19" console/rack size or arm mounting.

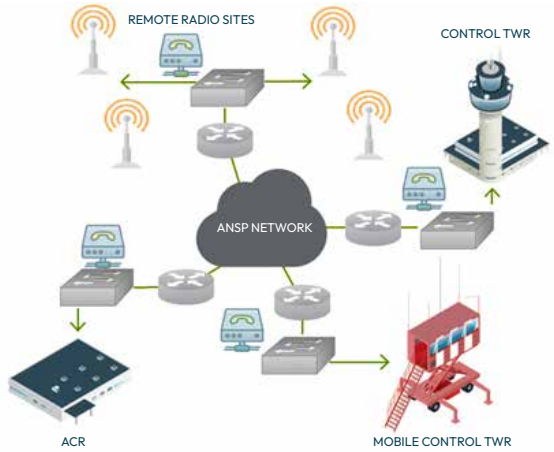
FUNCTIONAL CHARACTERISTICS

- Compliance with ED-136, ED-137B/C, ED-138 and SWAL4 standards.
- Multi-frequency/Multi-sites features (BSS, CLIMAX, Best Transmitter Selection, Cross Coupling).
- N+M and 1+1 Radio Management, HF with SELCAL (Speaker HF dedicated).
- Short Time Recording (60min) and briefing.
- CWP integrated into a PC COTS platform, mounted in 19" console/rack size or arm.
- Availability up to 99,9999% with multiple Radio Services running at CWP operators.

VoIP GATEWAYS

ULISES G5000i is responsible for converting the analogue protocol of aeronautical data and communication network elements (radio, telephony, recorder, VCS) to VoIP allowing an efficient migration, sustainable-scalable investment, reduced cost and multiple supported interfaces.
The system design meets the ED-137B/C standard, allowing interoperability with all protocols and units produced by multiple vendors. Radio, telephony, recorder, VCS interfaces are managed by a single board, facilitating the installation and configuration of a sustainable solution

Ulises G5000i reduced hardware investment due the large processing capacity of the boards that can manage from 4 to 48 analogic channels in a single 19" rack of 3U high. Inside a 3U chassis we found 3 redundant different gateways with up to 16 audio channels (E&M, ATIS, ATS/R2, ATS/N5, ATS/QSIG, ATS/R2 Transit, LCEN <Intercom Normalized>, FXO, FXS, LB, CB, Audio Tunnel, Base Band Data Tunnel).
System and maintenance configurations can be done through a local gateway web or through "VCS maintenance and configuration" system.



ATC PERFORMANCE MANAGER Distributed Mode

FUNCTIONAL CHARACTERISTICS

- Compliance with ED-136, ED-137B/C, ED-138 and SWAL4 standards.
- Availability up to 99,99% with double CPU redundancy and hot swapping cards.
- Radio Interfaces: E&M.
- Telephony Interfaces: ATS/R2, ATS/N5, ATS/QSIG, ATS/R2 Transit, LCEN <Intercom Normalized>, FXO, FXS, LB, CB.
- Other Interfaces: ATIS audio, Audio Tunnel, Base Band Data Tunnel.
- Recording System: VoIP compliance with ED-137C
- Local-remote Configurations and Management Web based. SNMP v3 protocols.
- Voice codec ITU-G711 Ley A.

CONFIGURATION AND MAINTENANCE SYSTEM

ULISES V5000i Configuration and Supervision system is a web application designed to generate and maintain the data required for the correct functioning of the ULISES V 5000-I Voice Communications System, as well as for the real-time querying of the operational status of the different elements that make up the VCS, the generation and querying of events, and calculation of event statistics.

The maintenance service provides information about entire system, including: VCS servers, cluster status, ntp system, CWP, radio services, Gateways, telephony proxy and external equipment's. At the same time the maintenance service provide real time information about last event configured as alarms present in the system and not acknowledge by maintenance staff.

The configuration service allows make user friendly VCS configurations in a few steps, providing enhance autonomy of operators to do configurations and changes. The configuration system allow: user roles with different access level to configuration, offline configurations, multiple configurations saved.