



THE OPEN NETWORK MANAGEMENT FOR ATC RADIO

Mission critical systems such as Air Traffic Control (ATC) ground-air-ground and ground-to-ground radio communication systems, must be kept operating and updating in order to provide Controllers with reliable technology to safely perform ATC operations.

Modern Network Management Systems, like the ONM-ATC, support the reliability of mission critical ATC radio communications systems. The Open Network Management system ONM-ATC assists problem solving, minimizes non-operational time, enables easy reconfiguration of radio equipment to meet new operational needs, and monitors system parameters and performance to maintain the required system Quality of Service (QoS).

SCALABILITY

The ONM-ATC is cost-effective for all system configurations. Access and data front-end devices can be scaled to support all network management configurations, from small airports to major systems for Area Control Centres (ACC).

Across applications, it offers an excellent costs/benefits ratio, whilst Solution for Airports meeting efficiency and safety requirements. Thanks to the discovery feature, ONM-ATC recognizes any change in the system (new radio equipment added and/or new sites) and provides the updated configuration to any ONM-ATC Client.



ONM-ATC

ONM-ATC User Interfaces

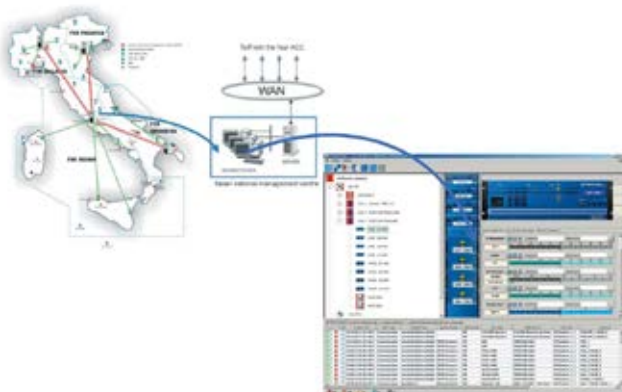
Complete monitoring and control of company's ATC system elements such as analogue and digital radio equipment or AeroMACS network elements

Acquisition of site alarms (e.g. anti-intrusion systems), on-site measurements (e.g. rack/room temperature, AC/DC voltage) and ancillaries on-site systems (e.g. UPS).

Monitoring and control of access network devices such as: multiplexers, modems, gateways, hubs and so on.

INTEROPERABILITY

The ONM-ATC can be easily configured to control a wide variety of third-party equipment and devices, Monitoring and control of these devices is integrated into the HMI. This gives the maintainer a clear and synthetic vision of the status of the network and its component elements. The SNMP v2.0 manager interface allows third-party COTS devices to be integrated, including UPS, IP switches and routers, radio stations for ground-to-ground communications (e.g. AeroMACS, TETRA). The ONM-ATC is also interoperable with third-party network management systems through its SNMP northbound interface.



BASED ON OPEN STANDARDS

ONM-ATC functional architecture has been realized according to the ITU-T M.3010 recommendations and its technology-independent Management Information Model is aligned with ITU-T M.3100 standard for a full FCAPS management of the company's devices. The ONM-ATC Client is based on WebStart technology.



The Customer doesn't pay for special software to be downloaded in the ONM-ATC Client operating position; it can simply be downloaded from the ONM-ATC Server This allows a centralized management of ONM-ATC baselines, especially in case of several Clients distributed over a wide area.



ACCESSIBILITY

System maintenance philosophy imposes operational constraints, such as the deployment of “points-of-controls” that need to be handled by maintenance personnel. The ONM-ATC does not impose any limitations on the access to remote sites. Access can be centralised or located on the remote site, or both. In all case, the same Client is used.

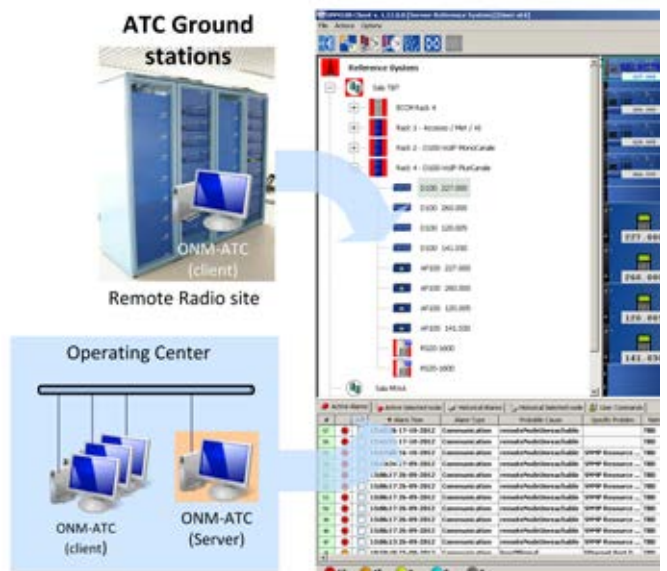
Access to the network element to be controlled is regulated by the system itself, in order to guarantee that any maintainer is aware that a colleague has had access to that device. Every operation is tracked on the event log file and is available to all maintenance personnel.



MAINTENANCE OF UNMANNED SITES

The ONM-ATC manages the following key features that allow the 100% remote handling of radio equipment and ancillaries located on those remote radio sites where the maintenance personnel cannot be present on daily basis:

- Remote software upgrading of ATC communications equipment, such as VHF/UHF and HF radios or AeroMACS network elements. In case of failure of the firmware upgrading procedure, the ONM-ATC provides the ‘fall-back’ functionality to restore the previous release of the equipment
- Total reconfiguration of all configuration parameters
- Setup and execution of testing and measurements scenarios for site/station certification.



ONM-ATC

LOOK-AND-FEEL

The ONM-ATC advanced graphical user interface, hosted in ONM-ATC Client, provides quick and easy access to network topology and network elements details, like VHF/UHF and HF radios, AeroMACS devices and third-party equipment. In-depth functions and user friendly menu commands simplify installation, configuration and fault diagnosis.

Thanks to its hierarchical level architecture, the ONM-ATC GUI provides the maintainer with the capability to quickly discover network problems and to navigate between network elements to assess the problem in detail. The HMI organisation allows maintenance personnel the facility for quick problem detection and fast problem resolution.

An advanced event logging facility gives a maintainer an updated status of events, classified according to the standard five-colour levels of criticality. Moreover, the maintainer can easily handle the events by the ACKnowledge function, which is embedded in the event log database.

In addition to the equipment management functions, ONM-ATC statistics are available to identify trends in the performances of the entire ATC radio network.

SECURE ACCESS

The ONM-ATC platform provides multiple network operators with several levels of security privileges. The customer can assign user accounts by associating user name, password and role or by suitable configuring smart card reader or finger print devices.

Maintenance personnel can be thereby performs a subset of system functions according to their profiles. The roles include Administrator, which provides access to all ONM-ATC functionalities and commands, and Operator, which provides more limited access.

