

MMS Management System

// **MMS** is the multi-platform software developed by SITTI for the configuration, administration, maintenance, supervision of the MULTIFONO® Voice Communication Switching systems (VCS) and gateways. The software environment provided by MMS is an integrated platform that allows users to graphically interact with their systems in an easy, intuitive and friendly way. MMS (acronym for MULTIFONO® Management System) is independent of the operating system (Windows, Linux, etc.) and utilizes web-based protocols and features.



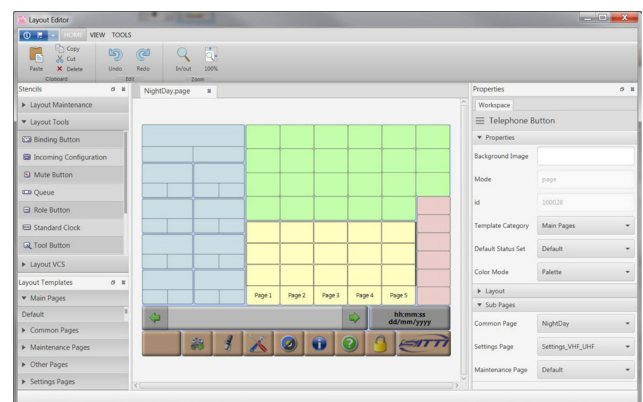
Configuration, Maintenance and Alarms Management

The MMS software is the result of the many years of successful presence in the VCS systems market. In designing, developing and expanding this powerful tool, SITTI took into consideration the requirements, suggestions, questions, wishes, hints coming from hundreds of Customers served along the many decades of its leading position in the Air Traffic Control field.

Voice Communication Switching (VCS) systems by SITTI are very flexible and powerful devices that need a sophisticated, yet easy-to-use, integrated software interface to allow users to access and parameterize all provided features. SITTI MULTIFONO® VCS systems and gateways rely upon the MMS software platform for their configuration, maintenance and alarms management.

- **System Configuration** - System setup and configuration changes, such as modules technical parameters, communication lines and frequency settings, role definition, CWP credentials (e.g. LDAP), operators keyboard layout, system protection against unauthorized operations, etc.
- **Alarms Management** - Collection, recording, display and analysis of SNMP system alarms and operational messages.
- **Events Logging** - A special attention is paid to event description messages: all significant events in the system are recorded to allow following playback for post-processing analysis.

The MMS software is made of modular applications that integrate to provide a tailored service to the customer. Users are guided throughout all their activities by intuitive self-explaining graphical tools, thus contributing in preventing errors. Automatic self check procedures prevent mistakes and data inconsistency.



Open Interface to other Management Systems

MMS is meant to be used both as a stand-alone application to provide full coverage of all aspects related to the configuration and monitoring of the system(s) it has under its control. However, it is often required that a VCS management system is connected to higher level management systems, which to receive commands from or to send notifications to.

This is for instance the case when a third party management system is used to coordinate operational scenario changes involving different systems (e.g. radar surveillance, message switching, radio clusters, etc). MMS comes along with specific builtin interfacing features that allow easy integration, either through standard (SNMP) or legacy protocols.

The possible need for implementation of new protocols will only affect the interface software application used by MMS to communicate with other management systems, without any impact on the other running applications.

// Design Principles

MMS is based on an advanced innovative architecture aimed at proving Customers with a set of powerful tools to allow full control of SITTI equipment, in any operational situation.

Scalability - Capability of managing systems of different sizes without any need for recompilation and/or upgrade, ranging from small airfield towers to large ACC centres.

Redundancy & Reliability - Main/standby configuration, so that possible failures do not cause loss of data. Automatic local and remote data backup procedures are provided, too.

Modularity - Separate integrated applications co-operate to give the user the best supervision and management tools.

Multi-user environment - Several operators with different access levels can work together for system configuration and alarms handling. Integration with Active Directory or LDAP servers with EAL certificate is configurable.

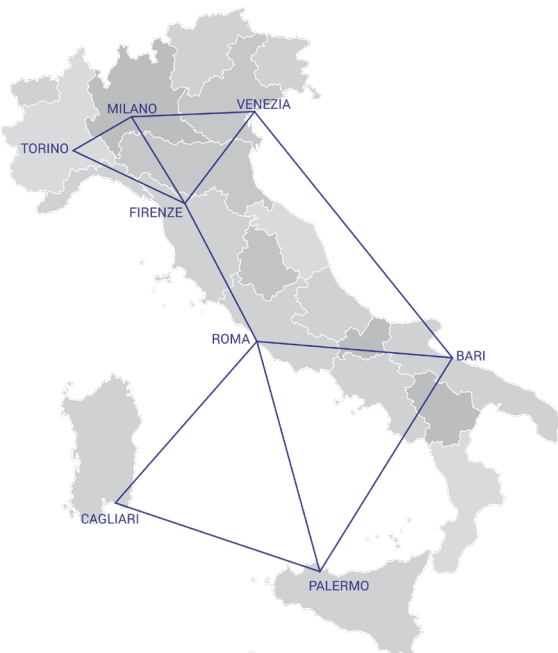
Multi-configuration system - Independent parallel configurations (operational scenarios) can be activated at any time to rapidly cope with changing environmental conditions.

Friendliness - Large use of icons, drawings, pictures, images, menus, help texts, reduce the possibility of errors to the lowest level possible.

Automatic error check - Automatic error checking procedures are constantly in execution to prevent the system to enter unstable conditions that may jeopardize full operations.

Networking

Although VCS systems can be installed as standalone machines, most frequently they are part of large regions or nationwide networks that share resources, so that operators at one site may access resources made available at other sites. MMS includes facilities that allow making resources selectively visible to other sites, in order to give access to local devices and features to authorized remote operators only and to optimize the network load.



Remote Access

Thanks to the use of standard protocols (SNMP), webbased interfaces and its flexible and modular architecture, MMS is also used as a centralized management system for region- and nationwide networks, thus allowing remote access to customer maintenance staff or remote assistance by SITTI support engineers.

