M802IP® is SITTI field deployable VCS solution of the MULTIFONO® M800IP® VoIP family, explicitly thought for military mobile applications. It is the perfect synthesis between SITTI proven experience in Civil and Military Air Traffic Control (ATC) equipment and the particular requirements of field deployable systems for "heavy duty" environments. M802IP® is built on the extremely reliable architecture of M800IP® MULTIFONO® VOIP Voice Communication System, and it further emphasizes the characteristics of modularity, robustness and ease of deployment.

M802IP® architecture is mainly based on three building blocks:

- **Switching Unit** - M802IP® dual redundant Gigabit LAN backbone, built and managed by distributed Switching Units, connected each other via fiber optic multi-mode links. Two independent LAN switches (powered by independent AC/DC modules) are included in a single 4U-unit, available with 100BASETX or 100BASEFX LAN connections, respectively to Interface Units and Controller Working Positions (CWP).

- **Interface Unit** - Standard VOIP and/or legacy Radio/Telephone interfaces of many different kinds are provided in a single 8U-unit, powered by two independent AC/DC modules and connected to M802IP® dual redundant Gigabit backbone via two redundant 100BASETX connections. These are some of the available Interface Unit line interfaces (non exhaustive list):
  - ED137 VOIP Radio and Telephone interfaces.
  - E1 / QSIG / ISDN BRI / ISDN - PRI interfaces.
  - Analogue telephone interfaces (FXS, FXO, 4W E&M, LB, MFC-R2).
  - Analogue 4W E&M radio interfaces, with UART data interface for radio parameters management (directly from CWPs).

- **CWP** - A rugged protective case includes a complete Controller Working Position, composed by 12" resistive touch-computer, binaural headset, handset and loudspeaker. CWPs are powered by external AC/DC module and are connected to M802IP® dual redundant Gigabit backbone via two redundant 100BASEFX fiber links.
Main Features

These are some of the most important characteristics of the M802IP® field deployable system:

**Extremely Resistant** - M802IP® building blocks are very resistant to impact, shock and vibration, as well as water and dust during transfer (IP65 protection grade with front and rear cover mounted). Wide operating temperature range is granted (from -20°C to +55°C). Printed circuit boards are protected with conformal coating.

**High Redundancy** - M802IP® maintains SITTI M800IP® MULTIFONO® reliable architecture regarding dual redundant Gigabit backbone structure, as well as for Interface Units and CWPs connections to the backbone via redundant LAN copper or optic links. Interface and Switching Units Power Modules are independent and duplicated. All M800IP® MULTIFONO® line interface redundancy criteria are available on M802IP® as well, thus granting a very high availability figure (99.9999%).

**Easily Deployable and Expandable** - The wide use of snap-in MIL connectors and the reduced number of connecting cables between building blocks make M802IP® easily deployable and expandable. All M802IP® building blocks have two recessed wheels and have positive stacking, aligning at the front face.

**Wide range of line interfaces and functions** - A wide range of line interface modules are available for the Interface Unit building block, together with SITTI M800IP® MULTIFONO® standard features for radio management (Best Signal Selection, Climax, Delay Compensation, etc.)

### M802IP® Technical Information

**Digital Telephone Interfaces**
- VOIP according to EUROCAE ED137 standard
- QSIG
- E1
- nx64

**Radio Management**
- Best Signal Selection (BSS)/Multi-Site Voting
- Delay compensation
- Echo suppression
- Automatic new radio search in case of failure
- Legacy protocols from a variety of different radio manufacturers

**Radio and Telephone Remote Gateways (GVS)**
- VOIP according to EUROCAE ED137
- Multiple connections from remote VCSs
- Automatic failed radio replacement procedure
- Audio compression

### M802IP® Usage Scenarios

**Military Applications**
- Air Defence Operational Centres
- Navy/Cost-Guard Control Rooms
- Fire Brigades Operations Control
- Railways Control Rooms
- Police Control Rooms
- Civil Protection and Emergency Control Centres
- Commercial organisations
- ...wherever secure, reliable and controlled communication is required