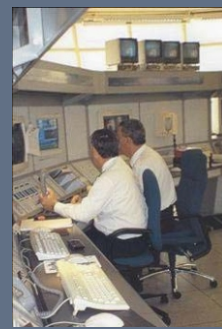


# Integrated Communication System



## PRESENTATION OF THE SYSTEM

The Integrated Communication System (ICS) was created in 2005 to cover the needs of the Spanish marine rescue services, to provide rescue and fleet tug to the crew members of the rescue boats, for a safe and proper internal and external communication.

Among the needs presented for the development of the system, the following characteristics were defined as being essential to fulfil the objective of the system:

- High level of external noise reduction
- Hands-free system operation
- "Full duplex" communication between crew members
- Integration with the communication system (radios) existing in the boat
- "Half duplex" communication through radio transmitters with the outside
- Communication through mobile phone
- Integration of the existing alarm system in the boats.

The system developed by Contromation satisfied all the required characteristics and it was tested in 3 boats throughout the year 2005. After a year of tests, the system was approved to be integrated to all the Spanish marine rescue fleet (68 boats). At this moment all the existing boats and the ones that are being constructed by this organization are equipped with our ICS.

The ICS has high accessibility and effectiveness operational characteristics and a great resistance when installed in aggressive environments (marine environments, vibrations, etc.)

Because of these characteristics, this application which was originally developed for rescue boats could easily adapt itself to other similar applications in other civilian and military areas:

- Integration of work teams (up to 8 people)
- Patrol boats
- Special services and rescue helicopters (Armed Forces and Support Services)
- Rescue task forces and security
- Emergency vehicles (Ambulances, Rescue)
- Police motorcycles
- Security and support equipments



## CHARACTERISTICS

This system allows to completely integrate external (GMDSS) with internal established among crew members communications in the boat. By means of specific procedures units, three radio stations (or two radio stations and a mobile phone) as well as the crew members (nowadays for a maximum of eight crew members) remain connected to the system.

This way, the commanding officer may keep full-duplex communication with his crew members when they are at their actual workplace at the vessel bridge and, at the very same time, he may keep half-duplex communication with the external radio stations (or full-duplex communication in the case of a mobile phone or our new version with Bluetooth).

Communication with crew members is also kept even if they disconnect from the system or while moving along the vessel (UP TO 1500 m), becoming then, half-duplex connection.

The commanding officer always keeps control of the external communication flow (including the communication with crew members out of their bridge posts) by means of PTT switches, deciding if the rest of the crew can listen to his external communications or not.

Everyone aboard is equipped with a Personal Protective Equipment (PPE) kit which protects them against the possible surrounding risks (head strokes, noises, dazzles and dizziness). Microphone selectivity and sound attenuation to 23dB provided by the headphones, allows to keep a conversation even in extremely noisy situations. The PPE is completely water-resistant and anti-corruptive.

Due to the sound attenuation system incorporated in the helmets of the PPE kit, the system also provides a luminous visual system alarm by means of LEDs which will replicate the sound system alarm at the bridge hence assuring proper supervision of sound system alarms.

## APPLICATIONS

Integration of communications in difficult and risking situations for air-naval operations.

- Sea rescue
  - Tugging operations
  - Coast guarding
  - Patrolling and rescue teams
  - Teams working in mobile units
  - Rescue manoeuvres
  - Coordination of operational teams from a control station
  - State safety patrols



## ADVANTAGES

- Ergonomic increase (hand's free) and additional safety operations
- Improved workplace hazard prevention (strokes, noise pollution, decrease of rescue time delay)
- Reduction of operational stress in difficult situations
- Reduction of operational mistakes and misunderstandings within the team
- Reduction of crew tiredness
- Minimum required maintenance
- Equipment resistant to marine environment

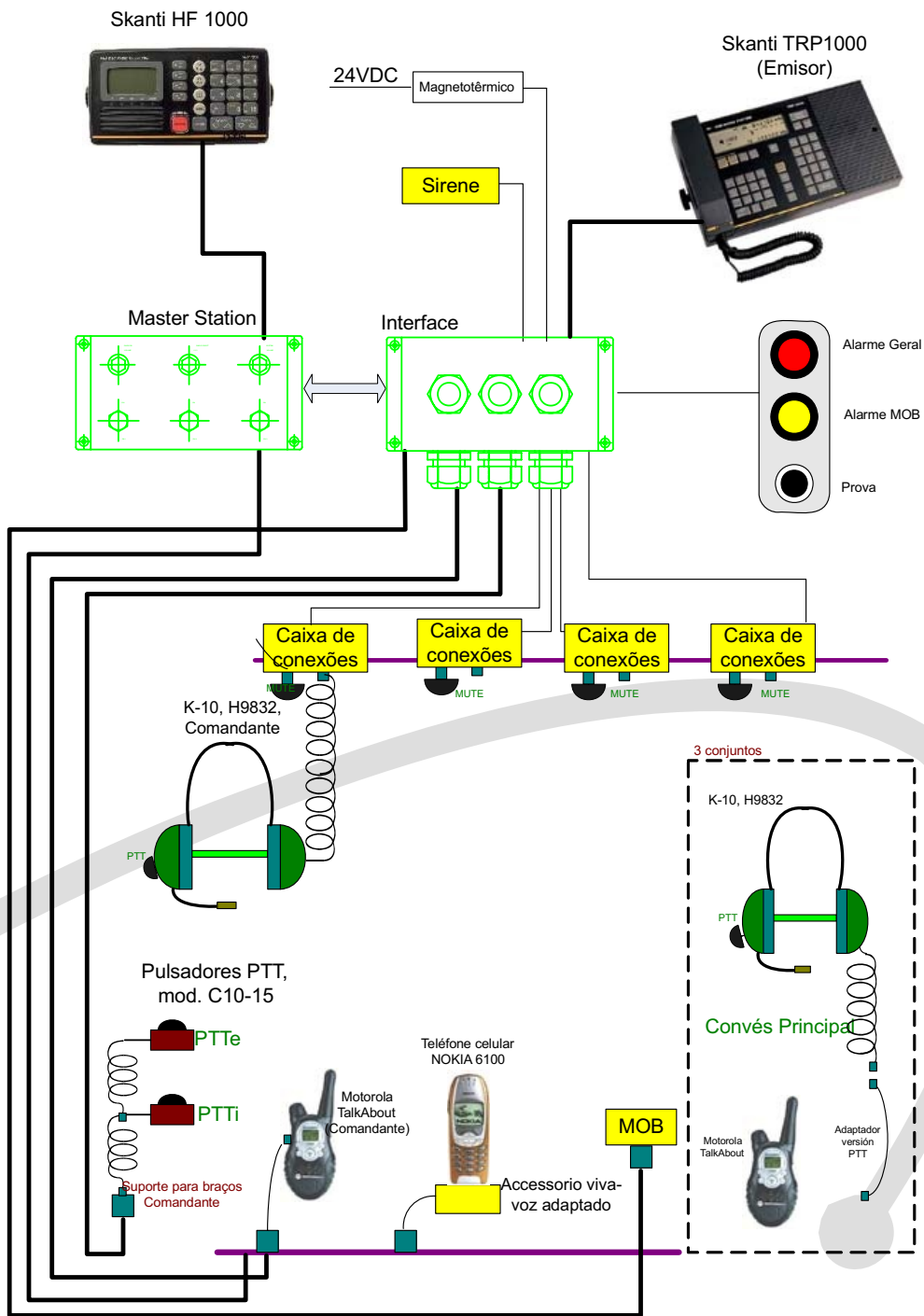
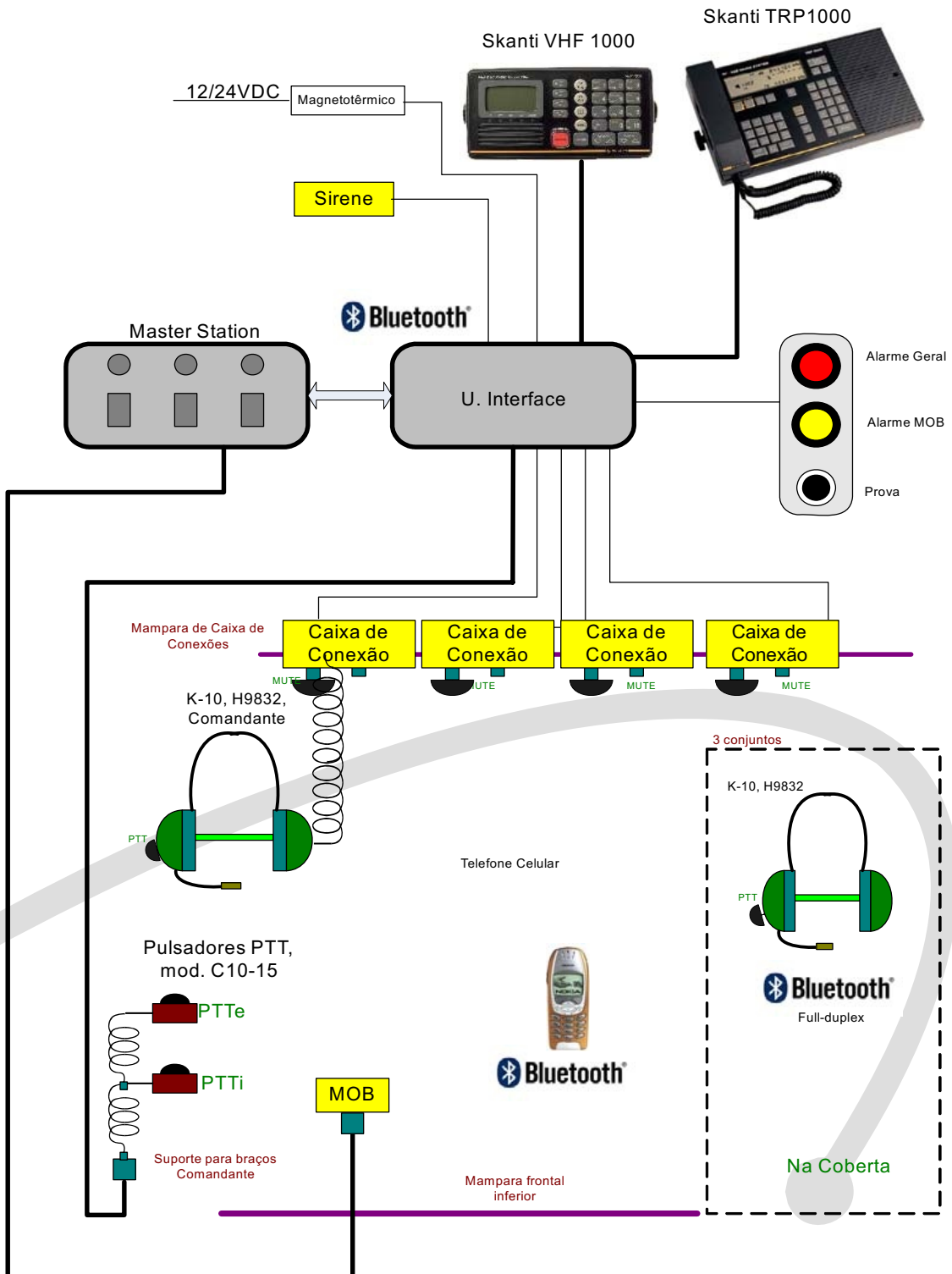


FIGURA 1 – Exemplo de Aplicação

## BLUETOOTH VERSION

- "Full-duplex" connection with the team members (up to 300m)
- Problem reduction by false connections or corrosion of connectors
- Flexibility through mobile phone to be used
- Wireless
- Special functions incorporation possibility



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