

NETCOM CC WEB Remote Monitoring Centre

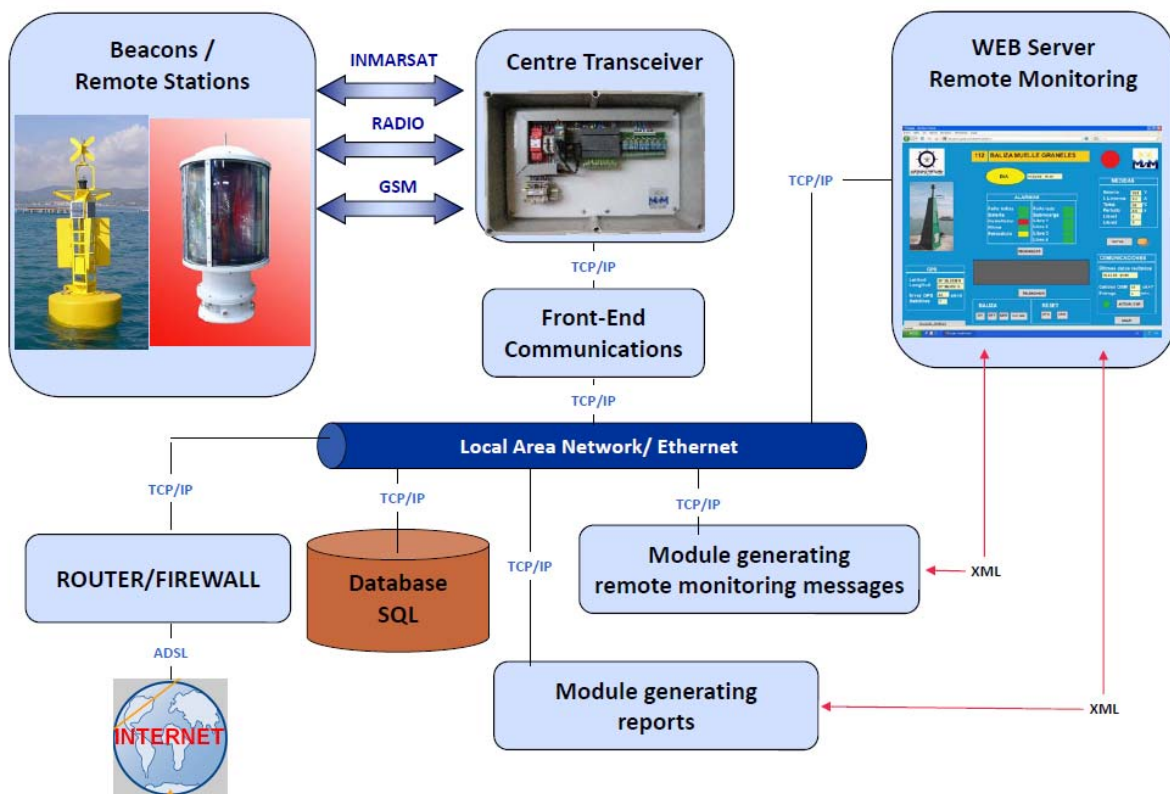
The NETCOM CC WEB is a multicentre control system that allows an easy way to obtain information and interface with the different remote stations installed on lighthouses, buoys and beacons, by displaying the information in a clear way on a computer screen.

The Web concept allows access to information, as well as action on the remote stations to any authorized user anywhere an Internet connection is available.

This control centre can be located on a server in the customer's site if desired, or a general server of shared use by several customers.

The NETCOM CC WEB is characterized by the use of new communication technologies of the highest reliability and high speed with minimal costs, such as ADSL, GPRS / GSM and Inmarsat. It also provides information using communication via VHF radio.

Given the great flexibility of the system, it allows the interconnection with AIS base stations and may generate virtual AIS Aton signals, based on signals obtained from the various beacons, buoys or lighthouses, thus offering a great service to navigation at a very low cost .



One of the main advantages of the NETCOM CC WEB system is the non-dependence to create new remote stations and their corresponding screens. In a very simple way, the client may register new stations, generating in an automatic mode every link and display. For that purpose, one can fill in a questionnaire which is located in the same application, where, besides the necessary data, one can upload a file with the image of the new station.

Optionally, the system allows the storage in databases type ORACLE, MySQL, SQL SERVER, or others.

The system provides log files and they can be configured by the user in order to obtain reports.

When required, data in XML format can be exported.

NETCOM CC WEB Remote Monitoring Centre

The NETCOM CC WEB control centre is made up of a hardware and its related software to configure the system.

HARDWARE

The system consists of the following:

- NETCOM C Information Transceiver Unit .
- PC / Server (This can be the one the client has available in its premises).
- Uninterrupted Power Supply (UPS) to protect the system.



Netcom C Information Transceiver Unit

It is an information transceiver unit for SMS/ GPRS/ ADSL/ INMARSAT/ VHF (depending on system configuration), capable of receiving and controlling up to 50 remote stations.

Housed in a box or IP 65 cabinet, it is composed of the following:

- GPS/GPRS 3-band/VHF/INMARSAT modems.
- RS232/485 serial port converter.
- Protections and connecting terminals.
- Overvoltage protector.
- GSM/VHF Antennas.

PC/Server

This part of the system will manage all software applications that formed the control centre, as well as store all information and data from the different remote stations. In case the client has its own server, the minimum requirements are:

- Intel Xeon Processor.
- Microsoft Windows Server 2003/2008.
- 2 nos. Hard Disk of 300GB (One as a mirror of the other, to ensure the protection of the information).
- 4GB RAM.

SOFTWARE

The applications needed and supplied with the system are the following:

- Front-End Program (for communications with the Transceiver Unit). This application allows configuration control of the connected modems to the NETCOM C unit.
- Driver Database (SQL). It registers and save data in a SQL database, for its further consultation and use by the remaining modules. It manages the creation of new remote stations and users.
- Kernel WEB Application for network access, including users authentication (different privilege levels), control of information between modules.
- GIS Map of the area (electronic chart with dynamic positioning). It allows a geo-referenced mapping positioning the various lighthouses, beacons and buoys' locations. (in this case, their position in the screen will change with the real movement according to the GPS positioning).
- Individualized screen for each station (basic License for 50 remote stations). This software allows that, by clicking on an icon of a remote station shown on the Gis Map screen, an individual display screen appears containing all the specific information regarding such remote station.



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SYSTEM SCREENS

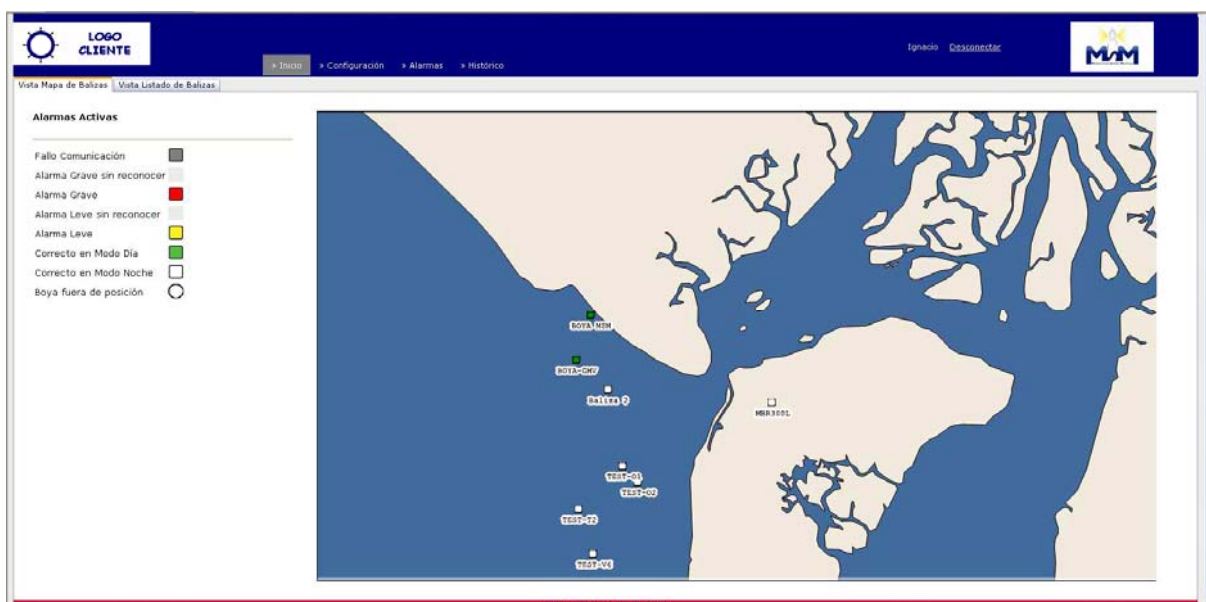
The control centre is structured by screens that allow access to current information, historical information, system setup, remote-station configuration, etc. The various screens are the following:

- Initial system start-up.
- Validating user.
- System General Display.
- Remote stations.
- Remote-station configuration.
- System general configuration.
- Total active alarms.
- Historical reports of alarms and status.

General Screen

The GENERAL screen allows access to the whole application and shows a dynamic map of the area in electronic format, with positioning of every remote station on the basis of the latest GPS data received, with a coloured flag indicating its operating status, for example:

- Green flag: Beacon in correct operation.
- Yellow flag: Low level alarm, the beacon is still operating.
- Red flag: General alarm, beacon off.



Individual screen

On the INDIVIDUAL screen, indicators, values and alarms (if any) by the signals obtained from the GSM/ INMARSAT modem installed in the remote stations (lighthouse, beacon or buoy) appear:

Indicators

- Light signal status pilot (green, yellow or red).
- Beacon status (on /off).
- Battery voltage reading.
- LED current consumption reading.
- Correct light rhythm signal.
- Other free-configuration values.

Alarms:

- LED failure alarm.
- Low-battery voltage alarm.
- Flasher failure alarm.
- Alarm on excess beacon consumption.
- Alarm on solar-panel loading failure.
- Mooring-chain breaking (for buoys, through GPS positioning).

Commands:

- Beacon general reset.
- Switching-on/off.
- Request on status report.

This screen is configurable according to the client wishes. Possibility to add other signals at customer's choice. The beacon provides free contacts (4 nos.) that can be used to monitor signals such as intrusion sensor, fire, impact, open battery box, etc.

Reports and information processing

The system brings the possibility to obtain registers and reports, so that it is possible to consult the database with all the information stored and process it as required.

