ZONITH

Case Story:
Super Yacht - Increasing Security & Communications

Managing and distributing multiple alarms via TETRA, GPS tracking tender boats and streamlining steward call communication
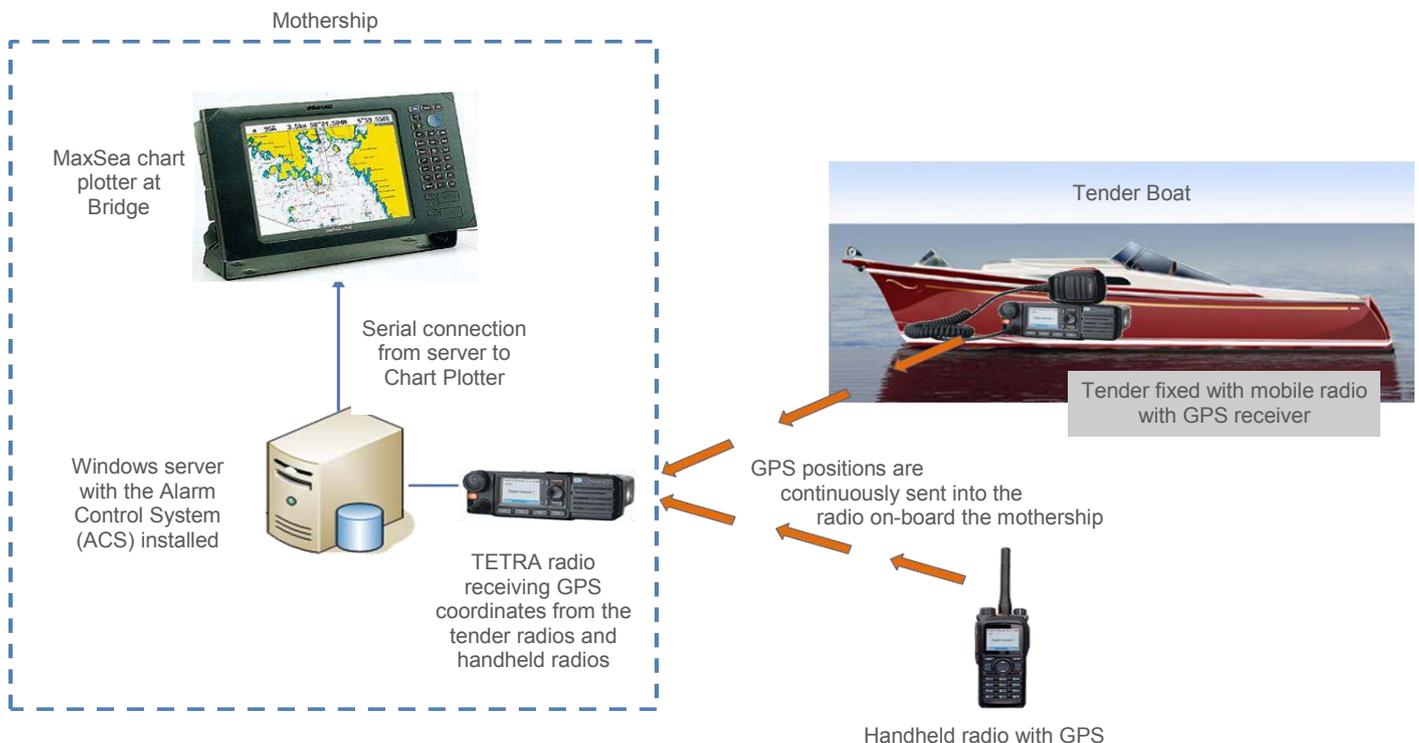
Due to the size and mechanical complexity of super yachts, it can be difficult to communicate with, and ensure the safety of, staff on-board both the mother ship and tender boats. Furthermore, ensuring mechanical alarms are raised, received and sent to the appropriate staff members is critical when out on the open seas.

Zonith were approached during the design phase of this super yacht to provide a proven safety and communication system, integrating various on-board systems and infrastructure.

Requirements:

► A steward call system to streamline communication between the client and the 17 crew members on-board
► Manage and dispatch all alarms from the security system and machinery.
► Track tender boats via GPS

Working with the yacht management team and 3rd party integrators, ZONITH deployed a software suite capable of handling onboard alarms, sending tasks and receiving acknowledgement to/from stewards and GPS tracking tender boats and crew via the TETRA network.

Mothership

MaxSea chart plotter at Bridge

Serial connection from server to Chart Plotter

Windows server with the Alarm Control System (ACS) installed

TETRA radio receiving GPS coordinates from the tender radios and handheld radios

Tender Boat

Tender fixed with mobile radio with GPS receiver

GPS positions are continuously sent into the radio on-board the mothership

Handheld radio with GPS

GPS tender boat tracking solution deployed on this Super Yacht

The Solution

Alarm Handling

Zonith installed the Alarm Control System (ACS) to handle various alarms, including existing security systems and technical machinery alarms. Zonith integrated with a security system that included various on-board sensors and automatic doors, acting as an intrusion/trespassing solution. When an intruder is detected, a relay is triggered and the ACS receives the alarm through a Moxa I/O listener. A message is then automatically dispatched to security on their MTP3250 TETRA radios with the alarm type and location of the intrusion. Likewise, any alarms raised from the Manned Machinery Alarm Space (MMAS) system follow the same process but are dispatched to specific on-board engineers instead of security. All alarms/notifications on-board the vessel can be dispatched via TETRA, GSM network (Pico cell network when at sea), or Polycom DECT handsets. They are dispatched immediately and simultaneously and can be categorised by:
- Criticality ('high' raised immediately, 'low' raised in working hours) and;
- Competency of recipients (i.e. Engineers receive machinery alarms)
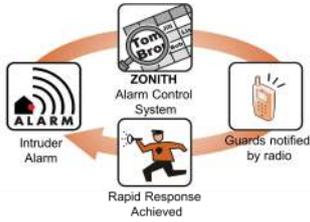
Steward Call

Zonith provided this yacht with a Steward Call system allowing the client to call crew to their location via their CISCO phones or Crestron touch display screens. In the first scenario, the client can dial a number (or press a short key) and they will receive a call back when the message has been sent to the crew. In this case the request (with location information) is sent to a number of the crew and once one acknowledges and takes responsibility for the task, all others will receive a text to acknowledge it has been taken care of. The second scenario works much the same way but is controlled from the Crestron touch-screen display. The client has button options for specific requests, which will be received by the crew with the location the request was raised from. The crew on-board are bundled into groups to receive task specific requests (i.e. Chefs for food and waiters for drinks).
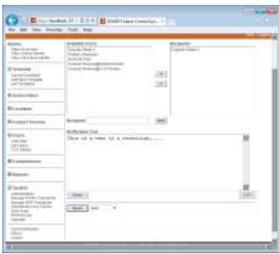
GPS Tender Boat and Crew Tracking

The tender boats and crew are tracked via GPS using a fixed TETRA radio on-board the tender communicating with the radio network on the mother ship. The radios are setup to pass GPS positions to the GPS collector via the DIPM TETRA network. GPS data is converted to TLL NMEA-0183 sentences and sent to/displayed on a MaxSea chart plotter at the Bridge. The radios can be given a unique ID to identify which tender is where, delivering accurate Lat-Long positions of the tender's current or last known location.

Manned Machinery Alarm Space (MMAS)

LAN

Moxa I/O Listener

DECT Dispatch

Polycom DECT KWS300/6000

Security System

Moxa I/O Listener

DIPM TETRA Dispatch

TETRA Switch

CISCO Phones

LAN

Command Line Listener

GSM Dispatch

Private GSM Network

ZONITH Alarm Control System

GPS Collector

GPS Positioning Displayed on MaxSea Plotter

Crestron Touch Screens