# Case Study: Ensuring Seamless Maritime Radiocommunications

## Thuraya Push-To-Talk Extends Radio Coverage for Yachts at Sea

### Background

Luxury yachts are equipped with different types of radios for vessel-to-vessel and vessel-to-shore communications, enabling crew to navigate safely, contact onshore support and send distress signals during emergencies. This case study examines the shortcomings of communications on a VIP customer's fleet of yachts due to limited radio coverage, and how Thuraya resolved them effectively.

### The Challenge

The digital radios on the customer's yachts were programmed to operate in analog mode on all channels. Over 6 frequencies/channels were available for use, and the overall communication infrastructure functioned in analog conventional mode. The first available channel was a repeater operating on Motorola MTR3000 and the rest were analog simplex in direct mode. The onboard radio systems had multiple limitations. A major shortcoming was that the repeater relied on a shore-based radio relay station, as a result of which, it was unable to extend the radio range beyond a few nautical miles off the coast. There was limited or zero coverage further out at sea, making communications between yachts extremely tedious and often impossible. Moreover, the analog conventional mode does not support advanced features such as encryption and enhanced digital voice quality, which are critical for maintaining secure and clear communications.

Sector
**Leisure**

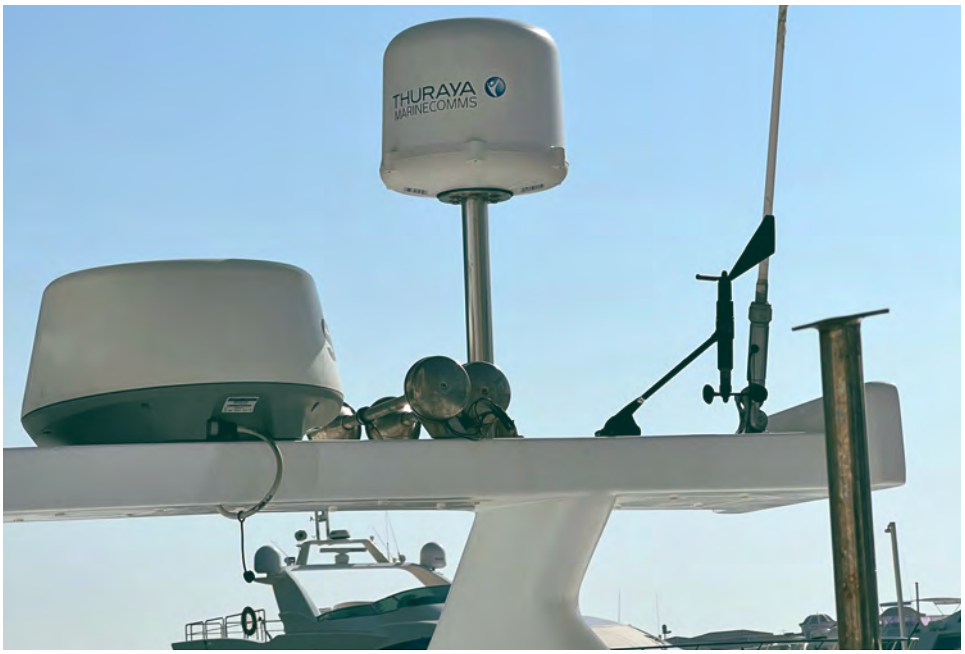
Thuraya PTT Solution
- Mobile Gateway
- Thuraya Orion IP

Deployed on
**Luxury yachts**

Geography
**The Middle East**

## The Solution

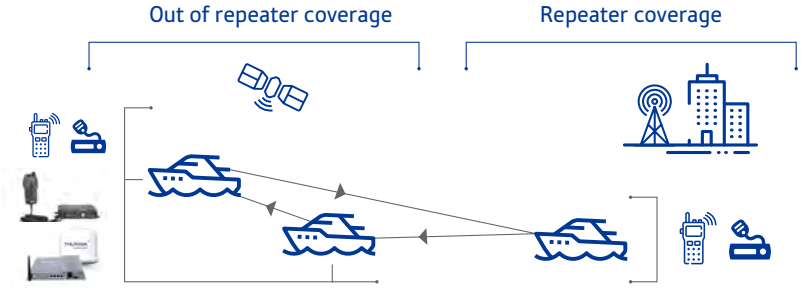
To overcome the above limitations and ensure seamless radiocommunications, Thuraya deployed its Push-To-Talk (PTT) solution on each yacht. The solution consisted of a Mobile Gateway delivering PTT capabilities and the Thuraya Orion IP maritime broadband terminal to enable communications over Thuraya's resilient satellite network. All the mobile gateways were then linked to the radio systems via E&M[1] integration on Motorola radios.




## The Role of Thuraya Satellite Infrastructure

Thuraya's satellite network is an ideal connectivity platform for yachts, as it enables seamless maritime communications with high availability and reliability. Thuraya PTT allows real-time communications between yachts, making it possible for them to contact each other and the onshore base station even when they are hundreds of nautical miles away from the shore. Additionally, the PTT solution provides advanced features such as encryption and enhanced digital voice quality, guaranteeing full customer satisfaction.

When the boats move out of repeater coverage, they can still communicate through their radio using Thuraya PTT Solution (Orion IP + Mobile Gateway). The boats that are out of repeater coverage, can talk to each other and also talk to the boat within the range of the repeater on the shore.




## Outcome

- Seamless radiocommunications at sea. Thuraya's PTT solution extended radio coverage for the customer's yachts by connecting their radio systems to a reliable and secure communication network, independent of terrestrial coverage.
- Extended radio range ensures the safety and security of passengers and crew, by allowing them to quickly seek assistance in case of emergencies.
- Thuraya PTT is a strong testament to Thuraya's standing as an innovative maritime mobility solution provider and its vital role in enhancing the communication capabilities of small-to-medium sized vessels.

E&M[1] signalling is a type of supervisory line signalling that uses DC signals on separate leads, called the "E" lead and "M" lead, traditionally used in the telecommunications industry between telephone switches.

## Benefits of Thuraya PTT Solution

- Increased coverage by combining legacy 2-way Radio, cellular and L-Band satellite
- Interoperability among different groups
- Reduces terrestrial infrastructure costs
- Compatibility with a wide range land mobile radio brands
- Seamless switching between satellite, cellular and LAN, ensuring zero loss of connectivity
- Only limited bandwidth needed for calls
- Availability at all times for critical communications
- End-to-end AES 256 bit encryption
- Delivers real-time data
- Competitive pricing