Maritime communication using shore base stations

Overview

Why do marine and offshore areas need a communication base station?

Marine and especially offshore areas have a constant need for identification, tracking of passing ships and communication . The existing offshore communication mainly adopts the ground communication base station or relay to cover users in offshore areas, and provide high-speed data rate and reliable communication links [19, 20].

Can a ship-to-shore communication system extend the coverage of terrestrial base stations?

In particular, dynamic environmental factors like tides, waves, and wind speed lead to substantial variations in the channel parameters over time. In response to these challenges, this paper puts forward a ship-to-shore communication system using relay ships to extend the coverage of terrestrial base stations.

Do marine communication base stations rely on satellites?

At this stage, the deployment of communication base stations makes marine communication heavily dependent on marine satellites, and the problems associated with the use of satellites for maritime communication have been studied by many scholars .

How does maritime broadband communication work?

Currently, the main approach to achieving maritime broadband communication is through accessing terrestrial base stations (BSs) and utilizing ground-based cellular networks . To extend the coverage of terrestrial networks, relay technology has been introduced, allowing vessels to access base stations via multi-hop wireless communication.

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Joint waveform design for multi-user maritime integrated ...

In this paper, we propose an integrated sensing and communication (ISAC) base station (BS) system designed for applications by multiple users in complex offshore ...

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Ship-to-Shore Communication

Automatic Identification System (AIS) The Automatic Identification System (AIS) has revolutionized maritime communication and vessel tracking. AIS is a system that allows ...

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Advancing Maritime Communication Systems for Safety and ...

Specifically, the terrestrial base station (TBS) serves near-shore users, while the low earth orbit (LEO) satellite communicates with off-shore users. We aim to improve the ...

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VDES (VHF Data Exchange System) is a next-generation maritime communication system, designed to enhance and expand the capabilities of the well-known AIS (Automatic ...

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Analysis of Maritime Wireless Communication Connectivity ...

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Modern Maritime Communications

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Common communication systems in the maritime environment.

On the shore, base stations integrated with network operations centers (NOCs) serve as shore-based relays for satellite communication, which uses geosynchronous equatorial orbit (GEO).

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Maritime communications are pivotal in facilitating the timely and precise exchange of information across vast maritime areas, serving a diverse array of maritime activities [1]. ...

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