DTC Maritime Mesh
Reliable video, audio and data transfer in maritime environments
DTC Maritime Mesh

High capacity wireless Mesh

Revolutionising communications between vessels at sea, DTC’s Maritime Mesh offers wireless IP Mesh connectivity which can be used for the secure and seamless exchange of video, data, voice and general network traffic.

Interconnectivity for maritime operations

Communicating across the sea is difficult. It’s a challenge for anyone operating in maritime environments without an existing fixed communications infrastructure. Existing communications links even if they exist are highly expensive, unreliable or insecure.

DTC’s Mesh offering is a true game changer in maritime communications, offering IP connectivity with secure, seamless exchange of data with the additional capability to stream live HD video and audio. This is achieved by utilising COFDM RF technology to create a self-healing, self-forming IP network which can operate anywhere in the world independent of existing communications infrastructure.

In-use applications for DTC Mesh within the maritime environment include merchant shipping, military forces, rescue organisations, industrial vessels and mining and energy companies.

DTC’s Maritime Mesh can connect maritime assets together in a seamless network with the use of a high speed, high capacity digital communication channel. The Mesh equipment comes in a compact size that can be fixed to external structures or body-worn and is designed to withstand the elements utilising IP67 rated enclosures and grade materials. The traffic accepted over the transparent IP link includes composite and HD videos and audio, VoIP, generic IP data, GPS data and RS232/485 data.

All information can be transmitted in real time, creating more cohesion between remote teams as they work together seamlessly.

Key features and benefits

- Fluid self-healing Mesh optimised for mobile applications
- Excellent range and NLOS capability
- Up to 16 nodes on a single frequency network
- Up to 25Mbps throughput
- Each node can act as a source of video, audio and generic IP data as well as a repeater
- No central control node in the network as each node is equal
- Ability to seamlessly link different Mesh networks over third party bearers
- Transparent IP network allows connection of any general IP device
- Auto adaptive modulation maintains connectivity in mobile applications
- Range of power outputs, mounting options and environmental housings to suit operational marine environments
- Optional end to end AES encryption

Extended range

DTC Mesh nodes are available in 100mW, 2W and 5W variants which allows maritime assets to stay connected to the network over long distances. Each node acts as a repeater meaning that the range of the network can easily be extended by adding another node.

Network extension

DTC’s Mesh system is capable of extending the IP network by integrating other IP bearers such as 4G and satellite communication. This combines line-of-sight and non-line-of-sight (NLOS) systems seamlessly to deliver data over a transparent IP network.

Cost-effectiveness and flexibility

By utilising an RF network recurring communications costs are reduced while the benefits of utilising multiple IP bearers or connecting to existing IP communications platforms introduces flexibility into any operation. DTC’s Maritime Mesh is a cost-reducing way to transport vital video, audio and data communications information in a dynamic OR maritime environment.

Real time streaming

Capable of transmitting live high quality video, audio and data across the network with minimal delay.
**Applications**

**Military boarding parties and communications**

End to end control of maritime boarding operations with connectivity between mother ship, boarding vessel and boarding personnel. Video, audio, positional and sensor data from body-worn nodes on the boarding party can be relayed in real time back to the command and control centre to inform decision making. The excellent NLOS properties of COFDM mean that the RF signal is able to penetrate all levels of a vessel and relay the signal out using each man as a repeater node.

**Coast guard and rescue**

Coast guard and rescue service assets connect together on ad-hoc basis for a seamless transmission of mission critical positional, sensor and video data. Ship to Ship and Ship to Shore connectivity can be achieved in order to keep both front line and command elements informed of the operational picture. Bodyworn applications can also be used by boarding personnel for safety and remote assistance/expert applications.
**Harbour traffic control and port safety**

A port wide Mesh infrastructure combining fixed and mobile nodes. This enables the port authorities to communicate with and monitor positional and sensor data from mobile port assets such as tugs, pilot boats and security patrols as well as receive data and imagery from security systems and cameras. This brings together all critical elements of operations and security required to run a port facility on a private, secure network.

**Autonomous vessels and sensor platforms**

Mesh technology is utilised for the command, control and monitoring of autonomous marine vehicles and sensor platforms. Self-forming networking allows for information retrieval from remote sensor platforms by air assets and also the protection of maritime borders by integrating the mesh network with other sensor platforms.
**Industrial applications**

A mesh network deployed in an industrial maritime situation can be utilised to improve operational efficiency, command and control, security and safety within the working environment. Elements of a fixed and mobile infrastructure can used to display operational/security video and positional data, as an audio communications system and as remote expert facility to aid in fault diagnosis.

**Height of Eye**

Range in the maritime environment at higher frequencies is constrained to ‘Line of Sight’. Therefore the transmit and receive antenna have to see each other above the horizon.

DTC will support the evaluation of range potential versus available height of antennas with each installation. If range extension is required, DTC Mesh radios offer relay capability.
This brochure on DTC’s innovative Maritime Mesh technology is part of a series of brochures of our core products: Video, Mesh, Broadcast, Audio, Tracking, Search and Rescue, City Wide Infrastructures.

**DTCs Mesh portfolio extends the boundaries of modern IP infrastructure in challenging Maritime environments.**

**Maritime Mesh**

With its fluid, self-healing mesh system and long range, non-line-of-sight capabilities, DTC’s Maritime Mesh overcomes the challenges facing maritime communications. With superior performance and secure IP connectivity and seamless data transfer, Maritime Mesh is changing the game in interconnectivity for maritime operations.

For further information on DTC Maritime Mesh or any other of our range of solutions contact your Sales Account Manager or one of our Regional Sales Offices, or email solent.info@domotactical.com