



DIRECTION FINDING FOR VESSEL TRAFFIC SERVICE

ROHDE & SCHWARZ

Make ideas real





AT A GLANCE

Monitoring marine communications is necessary for maximum safety and efficiency along coastlines, waterways, and in harbors. Radio direction finders (DF) can distinguish between vessel communications and help search-and-rescue efforts and vessel traffic services, especially in high traffic marine areas.

The R&S®DDF200M DF solution expands situational awareness for vessel traffic services and in search-and-rescue operations. The solution provides reliable and accurate bearings and vessel geolocation to marine authorities and coast guards.

KEY FACTS

- ▶ Parallel direction finding on up to 32 maritime channels with equivalent DF accuracy and sensitivity on all channels
- ▶ Quasi-simultaneous direction finding on additional channels outside the maritime frequency range, e.g. distress channels
- ▶ Seamless coverage of a wide frequency range from 118 MHz to 250 MHz (with R&S®ADD090)
- ▶ Adaptive interference cancellation (option) when VHF radiocommunications antennas are installed on the same mast as DF antennas
- ▶ Output to vessel traffic management systems via a serial interface (option) or TCP/IP interface
- ▶ Serial interface compatible with legacy R&S®DDF100M (option)

VESSEL TRAFFIC SERVICE (VTS)

Your task

More and more goods are being shipped between countries increasing vessel traffic at harbors. VTS operators must always know which ship they are talking to in dense traffic scenarios. VTS direction finding systems can use the R&S®DDF200M to identify ship transmissions in real time, even when ship automatic identification systems (AIS) are unavailable or switched off. Typically, the DF results are combined with radar results to identify the transmitting ship on the VTS operator's radar screen.

Our solution

Depending on the harbor size, one or more R&S®DDF200M DF systems should be set up in or near the harbor on high masts. All vessel traffic frequency channels used at this harbor can be measured

continuously and in parallel. The DF results are fed to the vessel traffic system and distributed to the various VTS operator consoles and displayed on radar screens. The R&S®DDF200M DF system is in the highest accuracy class recommended by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

SEARCH AND RESCUE OPERATIONS (SAR)

Your task

Private boat ownership is increasing in many countries and with it the number of vessels in distress. Radiocommunications equipment is mandatory for small private vessels and owners must be able to operate it. Unfortunately, when a vessel or ship is sinking or on fire, it can be very stressful and disorienting. Mariners in distress often forget their position or judge it incorrectly and large areas need to be scanned to find a vessel in distress, and these vessels need to be found quickly.

Automatic radiolocation systems using the R&S®DDF200M system can locate vessels in distress to within a few hundred meters with just a short transmission from a vessel's radiocommunications equipment.

Coast guards also face a growing number of hoax calls, wasting money and resources. Sometimes fake distress calls are used to divert the authorities away from criminal activity. The location information from automatic R&S®DDF200M radiolocation systems can distinguish between real and fake distress calls.

Our solution

Several R&S®DDF200M DF systems are installed along a coastline on high masts. All distress frequency channels are measured continuously and more or less simultaneously, including civil aviation distress frequency 121.5 MHz, military aviation distress frequency 243 MHz and the maritime distress channel 16 at 156.8 MHz. DF results from various stations for the same distress call are combined for triangulation. Within seconds, a location result is calculated and displayed. The superior accuracy of the R&S®DDF200M DF system means location results are typically accurate to a few hundred meters, so no time is wasted with searching. Hoax calls can be detected either by their transmitter location or the mismatch between the reported and the real transmitter locations.



Service that adds value

- ▶ Worldwide
- ▶ Local and personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability

Rohde & Schwarz

The Rohde&Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management

ISO 9001

Certified Environmental Management

ISO 14001

Rohde & Schwarz training

www.training.rohde-schwarz.com

Rohde & Schwarz customer support

www.rohde-schwarz.com/support

