

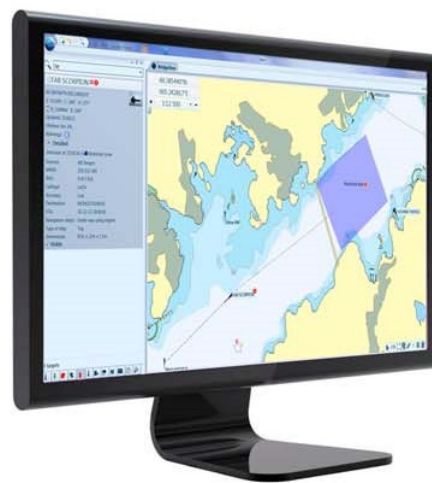


**SEA** SOFTWARE &  
HI-END SOLUTIONS  
**SURVEILLANCE**

# Integrated Surveillance Solutions for offshore oil and gas installations



- Vessel Traffic Management Systems
- Oil Spill Monitoring Systems
- ATEX radar domes
- High performance radar antennas

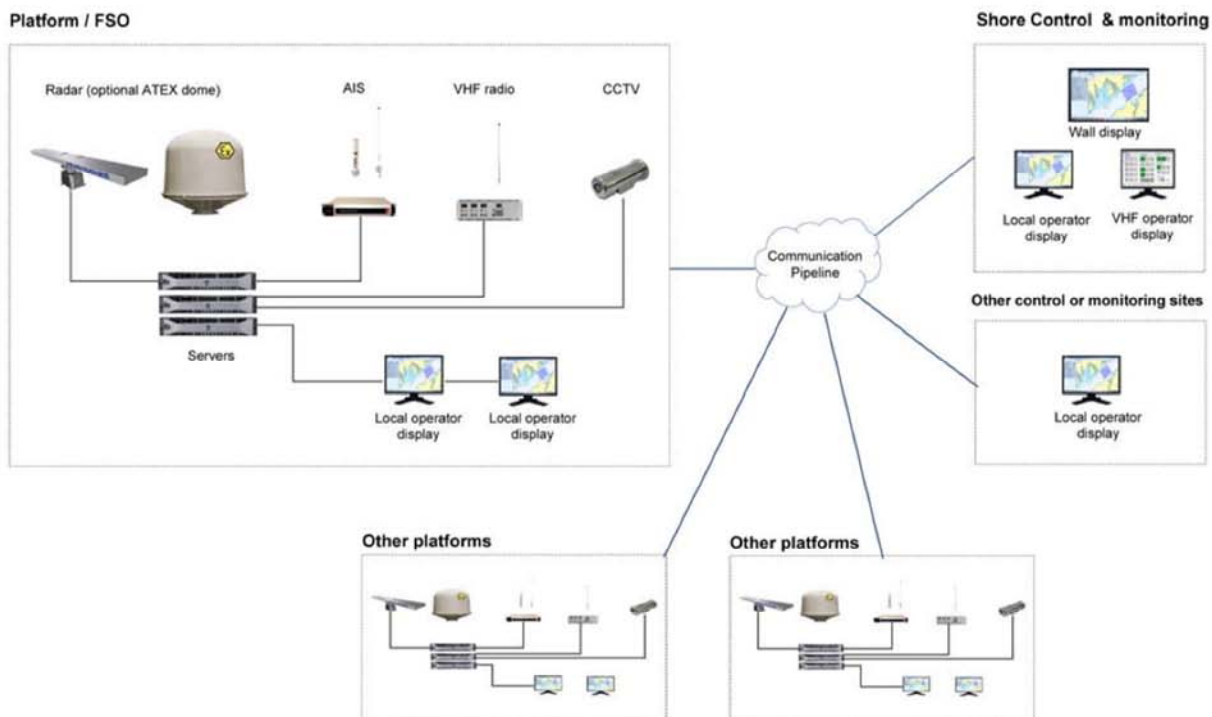


# iVTMS — Vessel Traffic Management System

iVTMS is an integrated Vessel Traffic Management System designed for the safety and security of offshore oil and gas installations, particularly platforms and floating storage vessels. It reduces the security risk posed by marine traffic, rogue vessels and small target threats.

The system is based on open architecture with a modular and scalable design, using a centralised server with sensors and operator displays connected by the internet. It allows automatic monitoring of multiple offshore sites using radars, AIS, weather sensors and cameras as well as remotely controlled VHF radio to form a complete control and monitoring system that is compliant with IALA standards.

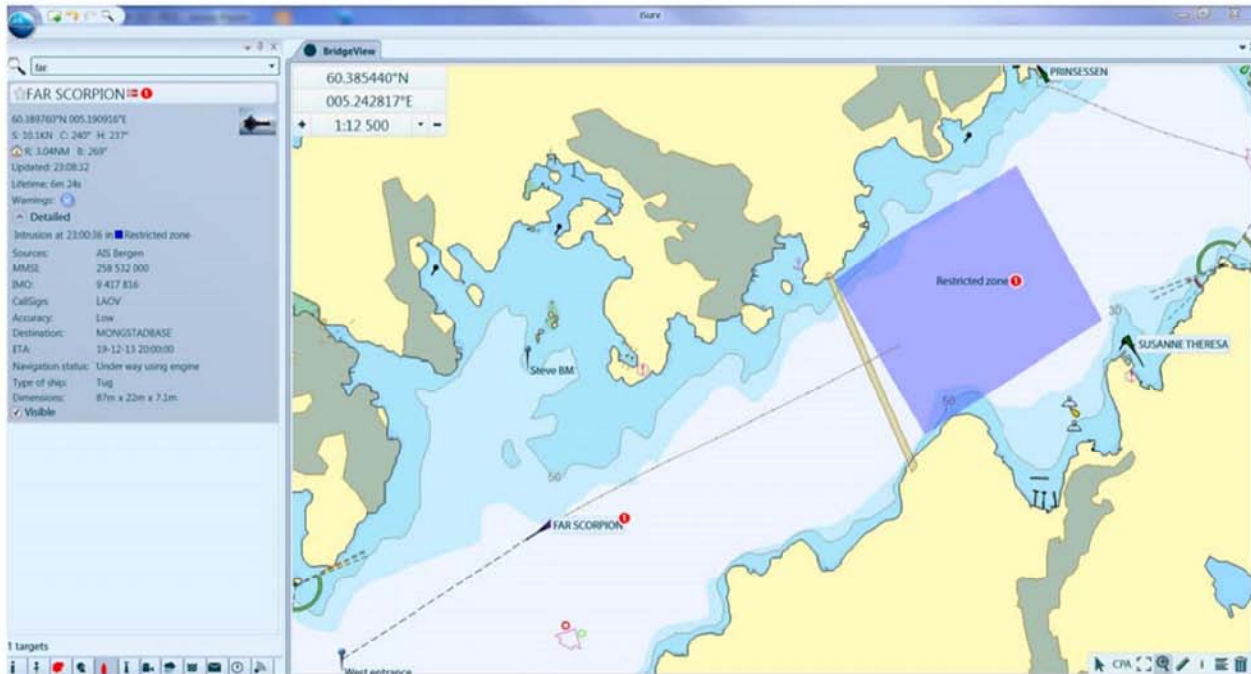
iVTMS continuously gathers information from various sensors and processes them on a central server to form a common operating picture. Operator displays can be connected to the system locally and remotely to allow setting up of alarm zones and target alert rules to provide automated monitoring around platforms and other assets. Interfaces to third party shore side Control Centres is also available.



The system comprises;

## iSurv Operator Display

The operator display presents the tracked targets from radar and AIS on an electronic chart background, the chart formats include S57 to provide ECDIS level quality. The software uses a multiple layers structure, including a layer and object editor and radar video overlay. Alarms can be configured for targets entering or leaving zones, collision indicators (closest point of approach (CPA) and time to closest point of approach (TCPA), maximum and minimum speed monitoring as well as targets drifting off anchorage points and other alarm triggers. Incidents and accidents can be analysed using the data record and playback facilities that are built in. Control Centres using proprietary systems can be connected to iVTMS through a distributed data exchange protocol



## iTracker

A high performance radar processor/ tracker uses advanced video processing for optimal target detection and clutter removal. The radar processor is installed close to or inside the radar transceiver, simplifying cabling from radar scanner to the equipment rack to only network and power cables. The Tracker is fully compliant with IALA recommendation for standard and extended VTS systems. The tracker allows remote control of the radar including start/ stop of the scanner, adjustment of pulse length, transceiver selection, receiver tuning and performance monitoring.

## iServer

The server receives information from all sensors, processes the data and stores it in a database. All traffic warning calculations are performed and a common operating picture is created. Operator displays are connected by TCP/IP protocol, so can be located anywhere where there is an internet connection. Users log into the system using username and password. iSurv supports up to 10 access levels based on their profiles on the server. iServer can be configured to work in 'hot standby' can be provided to offer redundancy where required.

## Record and Playback

All target data and radar video can be recorded and played back. It is possible to display historical playback and monitor live traffic at the same time. Playback speed is adjustable and playback can be specified for a particular target. Playback is synchronized with radar video, tracked targets and VHF recordings.

## Radar

iVTMS supports a number of different radar vendors including Sperry Marine (Northrup Grumman), Furuno, Kelvin Hughes, Raytheon and Sea Hawk radars. This provides flexibility in the choice of radar based on the performance required or integration with existing radars

## ATEX radar dome

The ATEX radar dome can be used when installing radars in potentially explosive areas (Ex Zone 1 and Ex Zone 2) of the oil platform with minimum of risk. The Ex-Radome is a system designed primarily for X-band Radar, both with respect to physical dimensions and frequency but may be used for all kinds of surveillance equipment needing an Ex-protected enclosure for harsh weather conditions. It can accommodate 4, 6 or 8ft scanners. In addition, it will protect radar equipment from strong wind and rain.



## AIS

Automatic Identification System (AIS) is a mandatory carriage requirement for all commercial vessels over 300GT. AIS provides continuous monitoring of commercial vessels in the vicinity of the Platform that not only provides the vessel position but also the vessel identification (name, call sign, IMO number) as well as the speed and heading of the vessel. AIS information supplements marine radar and provides a rich set of data to identify a vessel and provides specific details about the type of vessel, navigational status and vessel particulars. iVTMS displays the AIS targets along with the projected heading, past track positions and complete data for reference.

## iVHF radio

VHF subsystem allows onshore and offshore operators to perform VHF calls via remote radio using VHF-over-IP (VoIP) technology, which is integrated to iVTMS. All audio streams to and from VHF base station are using RTP communication protocol. Remote control of VHF base station is based on TCP protocol. All VHF conversations are recorded on central iVHF server and can be retrieved for playback.

## Man overboard

Signals received from AIS based man-overboard (MOB) devices will be displayed as a different symbol allowing the rapid alert and identification of a person falling in the sea.

## Oil Spill Detection

The iVTMS system provides integration with an oil spill detection (OSD) module. It is possible to integrate oil spill detection sensors as well as share radar for VTMS and Oil Spill information. The oil spill data is processed on the Central Server and users have remote access to the data on operator displays. Raw radar video for the OSD system and processed video overlays from the OSD system can be superimposed on iVTMS displays. iVTMS can also handle alarms and alerts from the OSD system.