

EASY ACCESS FROM YOUR PREFERRED DEVICE








KONGSBERG

# Vessel Insight

Vessel Insight cloud services are provided as Software as a Service (SaaS) and are accessible via your web browser. Users will be able to access dashboards from their own dedicated online domain. Dashboards run on the Vessel Insight cloud. Vessel Insight cloud is built on a set of technology components which are managed as a common cloud solution.

## Vessel Insight enables customers to:

-  Capture sensor data from vessels, using type approved vessel to cloud infrastructure
-  Securely transport data from vessel to Vessel Insight cloud storage
-  Instant insight to statuses of your fleet and vessels
-  Analyse and export vessel data
-  Access a broad range of value-added applications from the Marketplace



## Vessel-to-cloud infrastructure

Vessel Insight provides **type approved vessel-to-cloud data infrastructure** capturing and structuring data in an effective and secure way. The solution is delivered as a service, eliminating the need for large up-front investments and costly upgrades.

Vessel Insight provides instant and easy access to fleet overview, vessel specific dashboards, applications, as well as a powerful API and data analysis tools.

## Marketplace for Applications

Connecting different data sources onboard to Vessel Insight enables you to select from a range of maritime applications in our marketplace.

Browse to <https://kognifai.com/kognifai-maritime-ecosystem-applications/> to look at the available applications.

# Data Collection

## Typical Data Sources needed for different Applications

Source System	Protocol	Experience list
Automation System	Proprietary connectors Modbus TCP Modbus RTU	Kongsberg, Rolls-Royce, Wartsila, Samsung, JRCS, Ulstein, Hyundai, Terasaki, Vard, SAM Electronics
Navigation	NMEA 450 NMEA 0183	Furuno, Transas, JRC, Raytheon, Danelec, Sperry, Consilium
Fuel Oil Flow Meters	Modbus RTU NMEA 0183	Krohne, Tricor, Kral, Siemens, Hoppe, Engel
Torque Meter	Modbus RTU NMEA 0183	Kongsberg, Kyma, Hoppe, Chris Marine, VAF, Trelleborg, Mac System Solutions

### Edge Computer

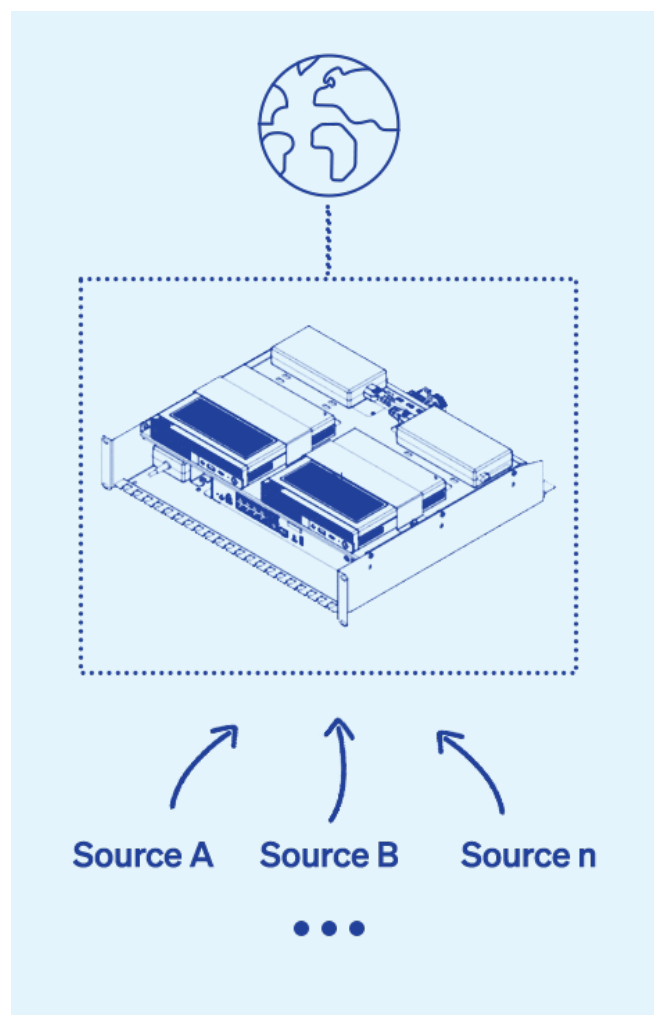
In Vessel Insight, the Edge Computer plays a key role of capturing, aggregating, compressing, and caching data from vessel control systems and sensors, and preparing it for transport over the Kongsberg Global Secure Network (GSN). This act as the role of a vessel server and data relay component.

### Edge Router (known as Router and Firewall)

The Edge Router acts as a firewall and switch connecting the Edge Computer to the vessel control systems and sensors as well as the GSN. It plays a role in directing traffic as well as establishing segregated network segments to meet security requirements.

### Edge Connectors

Software running on the data source converting data and allowing the Edge Gateway to interpret a specific protocol.



# Data Transfer

## Kongsberg Global Secure Network

The global network solution consists of two groups of devices, communication hubs and node network devices. All network traffic between network devices is encrypted, and any IP-based communication link can be utilized as a communication carrier.



**K-GSN** is a key building block in KDI's Digital Platform. It is segregated, encrypted and private using digital ID with certificate, node and user management, included two-factor user authentication. The network is integrated with cloud services, such as Microsoft Azure, making it more flexible, productive, faster and cost effective.

### Data Quality View

The Data Quality application is provided to our users to monitor the vessel connectivity, data completeness and data quality per sensor on their data in the Vessel Insight system.

### Loss of Internet Connection

The Vessel Insight on-board equipment will buffer data locally on the ship in case of temporary loss of internet connection.

### Life Cycle Management

The customer connection and hosting environment are easy to deploy and maintain through benefits such as:

- Automatic configuration and deployment through Self-Service Portal
- Based on commercially available HW, standard protocols and Kongsberg templates
- Hardware management and continuous product development
- Node management can include malware protection and intrusion detection
- Marine approved HW (by DNV GL)
- Kongsberg provides third line support on hardware and software solutions
- Security updates to the latest approved version.

## Internet requirements

### Network Requirements

QoS	QoS or other type of prioritizing VPN traffic to/from the offshore installation
Maximum latency	1500 ms
Maximum Package Loss	5 %

### Bandwidth Requirement

Tags	KB/24h	KB/sec	Description
100	59400	5,5	100 tags, 1 Hz
100	59400	55	1000 tags, 1 Hz

# Technical Specifications



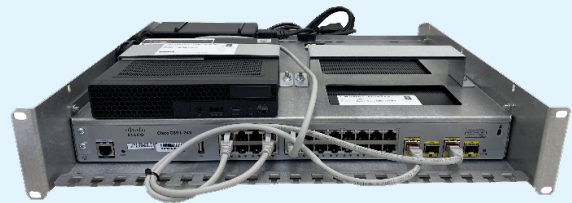
Interfaces for 3rd party equipment	No. of interfaces
Serial ports RS422/485 NMEA 0183	2
Ethernet port NMEA 450	1
Serial ports RS422/485 Modbus RTU	2
Ethernet ports Modbus TCP	6

## Proprietary interfaces to Kongsberg systems

- KONGSBERG: Acon IAS
- KONGSBERG: K-Chief 600
- KONGSBERG: K-Chief 700
- KONGSBERG: Helicon X3
- KONGSBERG: Mcon
- KONGSBERG: K-POS DP
- KONGSBERG: Towcon Winch

## Hardware Specification

- Power Voltage: 110/220 VAC
- Weight 4.4 kg
- 3U bracket for 19" rack
- Size 480 × 89 × 429 mm
- Suitable for installation in existing 19" rack



More interfaces can be added upon request by adding additional interface modules. **Installation can be done by crew or electrician** and includes **Remote commissioning** of Vessel Insight which eliminates a costly service engineer attendance.

**Remote management** of software components and configuration running on Vessel Insight Edge devices. These include Edge Gateway Software, Connectors, Interfaces, Sensor mappings and configuration.

## Classification

Currently Vessel Insight have the following approvals, click on the DNV logo on this page for further details, or view our listing in the [ABS approval finder](#).

**DNV D-INF(P) Data Collecting Infrastructure Certificate**  
**DNV Cyber Secure Essential, Security level 1 (SP1) = IEC 62443-3-3 SL1**

**ABS SMART Infrastructure: ABS Product Design Assessment (PDA)**  
**ABS CyberSafety Service Supplier Recognition and CyberSafety (PDA)**  
**IACS UR E27 – Cyber Resilience of On-Board Systems and Equipment**

**DNV CG-0339 Type Approved hardware**  
All Vessel Insight hardware is fit for marine use and compliant with applicable EMC requirements in DNV CG-0339.

