VESSEL INSIGHT CONNECT

VESSEL INSIGHT

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

**Easy access from your preferred device**

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-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.
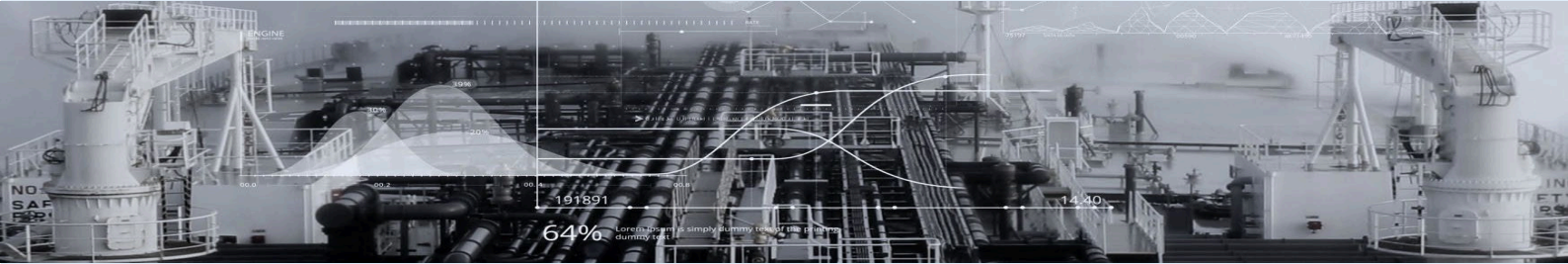
Marketplace for Applications

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-application to look at the available applications.
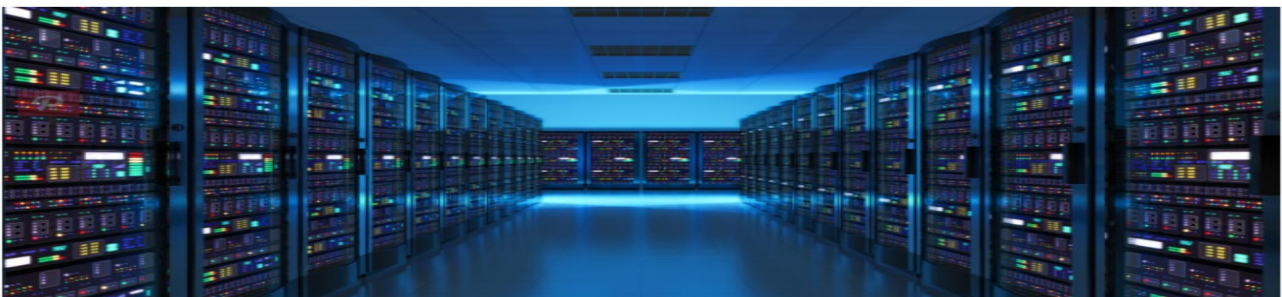
DATA COLLECTION

Typical Data Sources needed for different Applications

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

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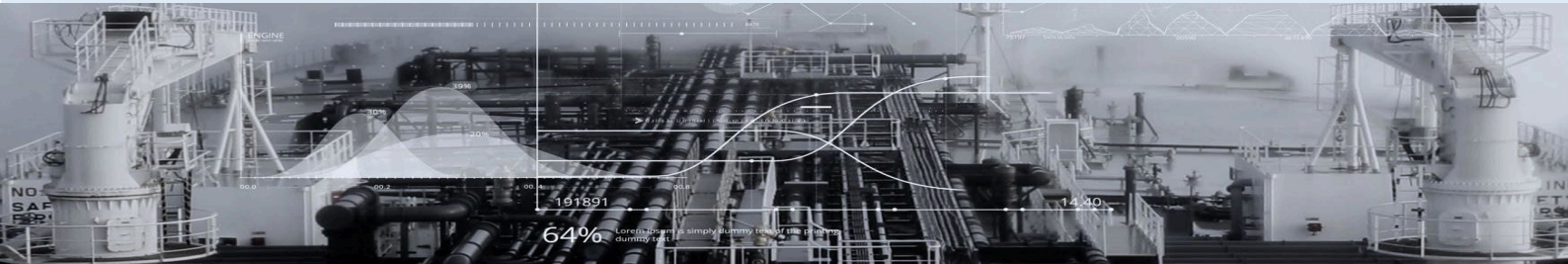
Edge Connectors. Software running on the data source converting data and allowing the Edge Gateway to interpret a specific protocol.
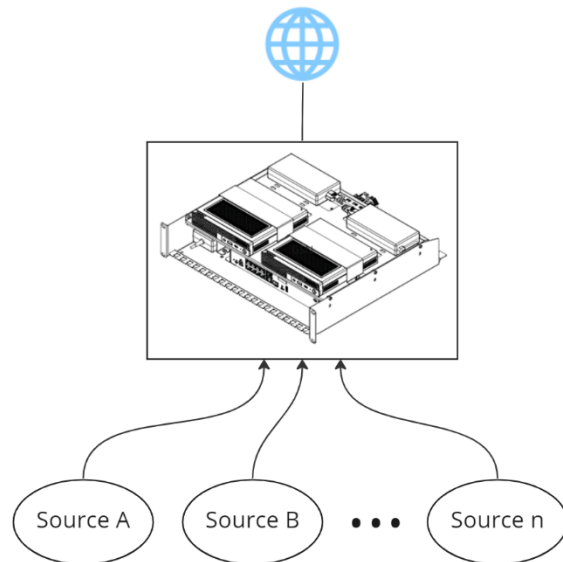
DATA TRANSFER

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 page can be used by the user to view and verify the data quality of each vessel. Currently, Data Quality is mainly determined from Data pending upload, Streaming sensors and Last connectivity.

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 trough 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

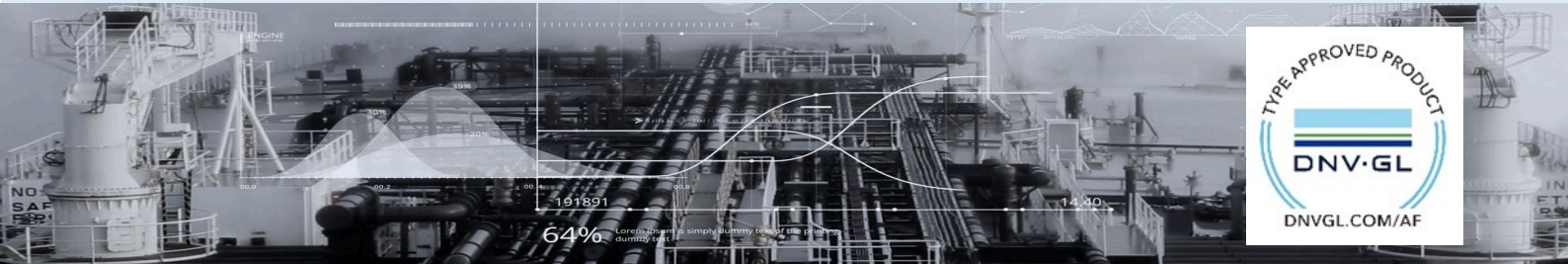| QoS	QoS or other type of prioritizing VPN traffic to/from the offshore installation
Maximum latency	1500 ms
Maximum Package Loss	5 %

Bandwidth Requirement

Tags	KB/24h	KB/sec	Description
100	59400	5,5	100 tags, 1 Hz
1000	594000	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 x 89 x 429 mm
Suitable for installation in existing 19" rack
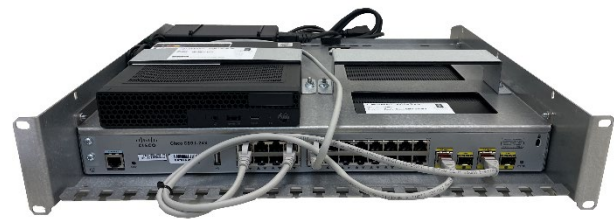
More interfaces can be added upon request by adding additional interface modules.

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.

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.

DNV D-INF(P) Data Collecting Infrastructure Certificate
Verified compliance with applicable requirements for data collection infrastructures according to Sec.1 in DNVGL-RU-SHIP-Pt6Ch11. Certified D-INF(P) according to variant 1 defined in DNVGL-CG-0564, Cyber security according to scope defined in Sec.1 in DNVGL-RU-SHIP-Pt6Ch11.

DNV Cyber Secure Essential, Security level 1 (SP1):
Verified compliance with applicable requirements according to Cyber security capabilities of systems and components, DNV-CP-0231.