World of Marine & Offshore

ComAp

CONTROL TECHNOLOGY FOR SEA AND OCEAN

Welcome to ComAp Marine products – an integrated range of control solutions for all onboard ship engines and generators that harness our extensive experience of generator, engine and process management using CAN based (Controller Area Network) technology.

ComAp units are build according to a common principle – using the latest technology to give our customers highly flexible controllers, with increased reliability and perfect price to performance ratio. All controllers incorporate tried and tested features that give users outstanding monitoring of engine or generator and help make commissioning and troubleshooting easier.

Our controllers periodically record all important measured values, (speed, temperatures, pressures or currents, voltages and power) into a non-volatile internal memory. This event and performance log file is an invaluable tool as it also makes a record whenever the engine or generator changes its operational status and when measured values exceed their normal operational levels.

The controllers are easily integrated into the ship's control system via Modbus or Modbus/TCP communication protocols and feature a flexible user configurable I/O structure that enables each customer the ability to tailor to their exact needs as well as form special algorithms.

ComAp control units are type approved by all major classification societies and as part of the newly requested norm IEC 60255 have undertaken several thousand individual tests – providing confidence and reliability that the system will perform in all possible circumstances.

Jaroslav Kourek
Drive Division Director

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ComAp

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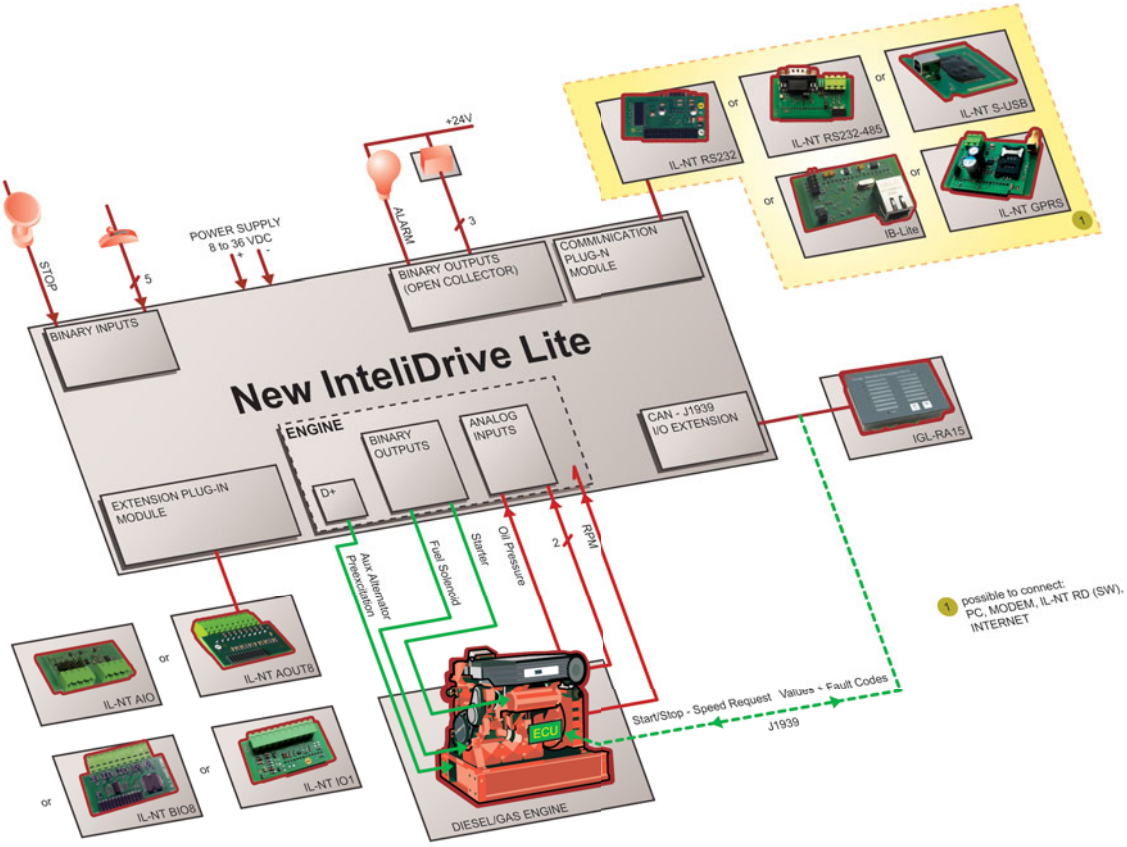
New InteliDrive Lite

ENGINE CONTROLLER FOR GENERAL PURPOSES

The New InteliDrive Lite is a cost effective sophisticated engine controller, which features outstanding control, monitoring and protection for both mechanical and electronic diesel / gas engines, all in one unit. The extended product family offers a range of engine-specific versions suitable for land-based and marine Tier 4 applications.

It can communicate via standard and proprietary CAN J1939 communication protocols to a wide range of constant-speed and variable-speed engines, including Caterpillar, Cummins, Detroit Diesel, Deutz, GM, Isuzu, Iveco, John Deere, MAN, MTU, Perkins, Scania, Sisu, Volvo Penta and many others. The controller comes with LiteEdit PC software enabling the user to easily configure the inputs and outputs to suit individual requirements.

Like all ComAp engine controllers, New InteliDrive Lite features a powerful back-lit graphic display providing vital information in an easy to understand format. A real-time clock, coupled with event and performance history logging, is priceless when it comes to troubleshooting. Remote control and monitoring is possible via analog/GSM/GPRS modem or Internet. The ability for internal values from the New InteliDrive Lite to be displayed on analog gauges gives users the flexibility to create highly-customized instrumentation with ease.



Benefits

- Integrated solution – less wiring and components
- Available Remote Display panel – economical solution for remote control
- Analog gauge (VDO, Datcon and others) outputs – operator friendly
- History log – easy troubleshooting
- Less engineering and programming
- Perfect price/performance ratio
- Pressure regulation loop and Load limitation
- Smooth engine speed control

Features

- Engine control, monitoring and protection
- Support of engines equipped with Electronic Control Unit (ECU) – J1939 or Cummins Modbus interface
- 7 configurable binary inputs
- 7 configurable binary outputs
- 7 configurable analog inputs (3 resistive, 4 voltage) + 2 not configurable voltage inputs
- VDO type analog gauges outputs – 8 configurable channels
- Selectable protections alarm/shutdown
- Setpoints adjustable via controller buttons or PC
- 3 levels of password protection
- USB, RS485 or RS232/Modem/Modbus communication
- Real time clock and event history log
- Engine speed control by 3 predefined binary inputs, Speed Up/Down binary inputs or one analog input
- PLC functions: PID loop, Comparators, Timers
- Analog oil pressure, water temperature, fuel level, battery voltage, engine speed (pick-up)
- Automatic or manual start/stop of the engine
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display 128 × 64 pixels
- 4 LED indicators
- Front panel sealed to IP65
- Power supply 8–36 VDC
- Operating temperature:
  -20°C to +70 °C regular unit
  -40°C to +70 °C low temperature unit
- New InteliDrive Lite controller meets several standards (EN, UL, NFPA)

InteliDrive DCU Marine

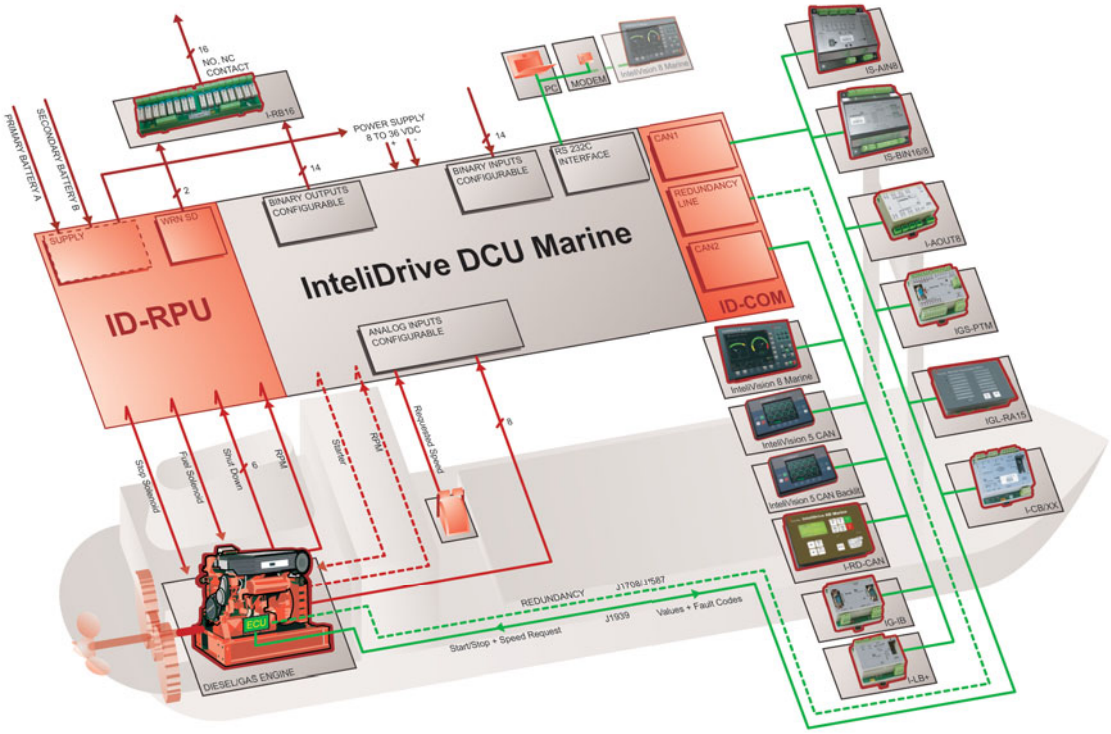
MODULAR CERTIFIED ENGINE CONTROLLER FOR MARINE APPLICATIONS

The InteliDrive DCU Marine is a marine certified engine controller designed specially to meet the demanding needs of the marine market, providing a high level of performance coupled with extensive communication capabilities and incorporating hardwired safety functions and primary/secondary power switching.

The controller is easily integrated into the ship's control system and takes onboard the full communication capability with electronic engines. ComAp developed this capability for their market leading gen-set controllers through the use of J1939 and redundant J1587 communication buses.

This engine specific approach enables InteliDrive DCU Marine to communicate fully with the engine's Electronic Control Unit (ECU), delivering a greater range of values and most importantly delivering all diagnostic information in intelligible plain text, instead of potentially misleading cryptic codes or flashing lights.

The unit provides users with a highly flexible solution, featuring configurable inputs and outputs, allowing the controller to be customized to a particular application or requirement without complicated programming.



Benefits

- Integrated solution with hardwired safety functions – less wiring and components
- Full communication support of engines with ECU – simpler wiring, access to information from ECU via Modbus
- Event driven History record, easy backtracking and problem solving
- Integrated analog and digital PLC functions enable easy implementation of customer specific functions and algorithms
- Load sharing for propulsion engines – better utilization of power of installed engines
- Slave panel available – economical solution of remote control
- Integrated clutch control – less wiring and components
- Many types of communication – easy supervision and servicing
- Type approval from 10 major certification societies such as ABS, DNV, GL, LR, RINA and others

Features

- Engine control, monitoring and protection
- 14 binary inputs and outputs, 8 analog inputs
- RS232/Modem/Modbus/Internet communication
- Redundant module ID-RPU with hardwired safety functions activated in backup mode
- Switching between primary and secondary battery (with ID-RPU module)
- Automatic switchover to backup mode in case of detection of main unit failure
- Internal – configurable PLC functions
- Graphical screen with icons and bar graphs
- Event and time driven history record for backtracking
- Different engine application support: Auxiliary, Emergency/Harbour, Propulsion
- Clutch control for propulsion engines
- Symmetrical load sharing for propulsion engines with J1939 (via CAN bus)
- Marine certified extension modules for expandable number of Inputs/Outputs (connected via CAN bus)
- Slave panels for remote control available
- Inputs/Outputs configuration
- Configurable list of values that are read from J1939 bus
- Support of redundant J1587 communication bus
- Direct speed/load control via J1939 or J1587 buses
- Diagnostic information from J1939 or J1587 displayed in plain intelligible text
- Configurable Modbus and Modbus TCP support for easy integration into the ship's control system

InteliGen^{NT} Marine

HIGH-END MARINE CERTIFIED GEN-SET CONTROLLER

InteliGen^{NT} Marine is a marine certified comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. Compact construction is optimized for these purposes and various HW modifications allow customers to select the optimum type for a particular application.

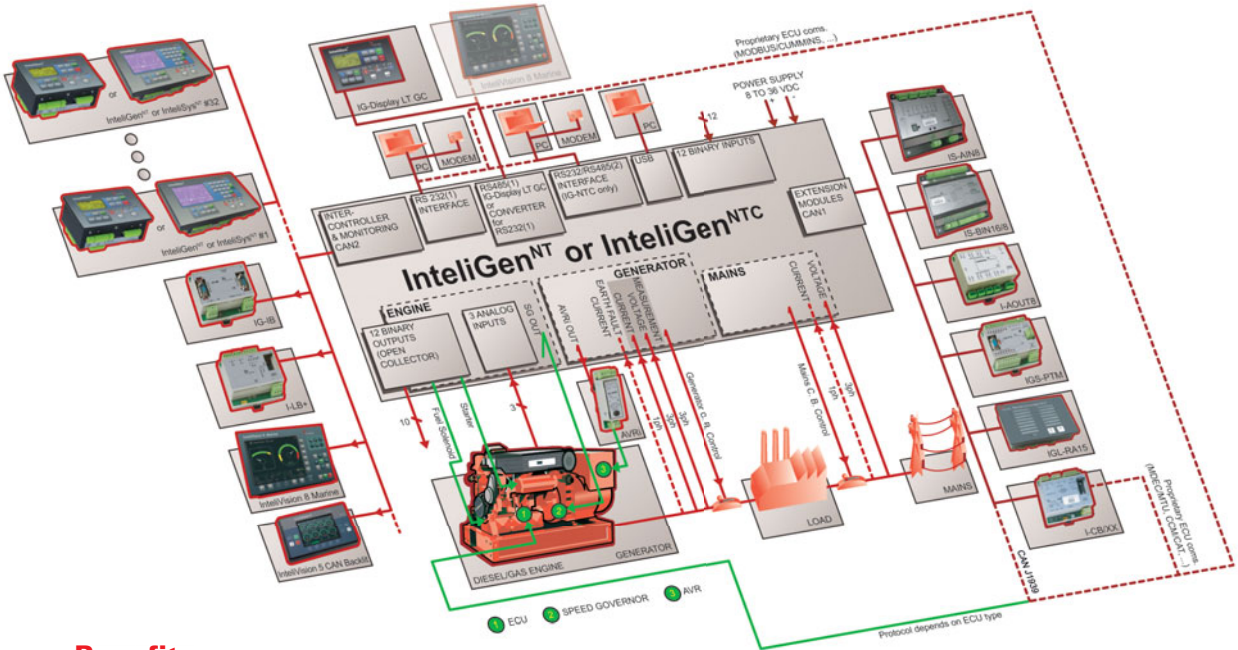
Special firmware for split control concept with standalone engine and generator controllers is available, see IG-NT/IS-NT GeCon.

A built-in synchronizer and digital isochronous load sharer allow a total integrated solution for gen-sets in standby, island parallel or mains parallel. Native co-operation of up to 32 gen-sets is a standard feature.

InteliGen^{NT} Marine supports many standard ECU types and is specially designed to easily integrate new ones.

A powerful graphic display with user-friendly controls allows any user whatever their ability to find the information they need.

ComAp is able to offer customized firmware solutions.



Benefits

- Support of engines with ECU (Electronic Control Unit)
- Excellent configurability to match customers' needs exactly
- Complete integrated gen-set solution and signal sharing via CAN bus – minimum external components needed
- Integrated analog and digital PLC functions enable easy implementation of customer specific functions and algorithms
- Many communication options – easy remote supervising and servicing
- Perfect price / performance ratio
- Gen-set performance log for easy problem tracing
- Type approval from major certification societies such as ABS, DNV, GL, RINA and others

Features

- Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
- AMF function
- Automatic synchronizing and power control (via speed governor or ECU)
- Baseload, Import / Export
- Peak shaving
- Voltage and PF control (AVR)
- Generator measurement: U, I, Hz, kW, kVAr, kVA, PF, kWh, kVAhr
- Mains measurement: U, I, Hz, kW, kVAr, PF
- Inputs and outputs configurable for various customer needs
- Controller redundancy
- RS232 / RS485 interface with Modbus support; Analog / GSM / ISDN / CDMA modem support; SMS messages; ECU Modbus interface
- Marine certified extension modules for expandable number of Inputs/Outputs (connected via CAN bus)
- Event-based history (up to 500 records) with customer-selectable list of stored values; RTC; statistic values
- Integrated PLC programmable functions
- Interface to remote display unit (IG-Display LT GC or InteliVision 8 Marine)
- Dimensions 180 × 120 mm (front panel)
- Sealed to IP65
- Selectable measurement ranges for AC voltages and currents – 120 / 277 V, 0–1 / 0–5 A
- Secondary isolated RS232 / RS485 interface
- USB 2.0 slave interface

InteliSys^{NT} Marine

PREMIUM MARINE CERTIFIED GEN–SET CONTROLLER

InteliSys^{NT} Marine is a marine certified expandable controller for both single and multiple gen-sets operating in standby or parallel modes, especially complex applications.

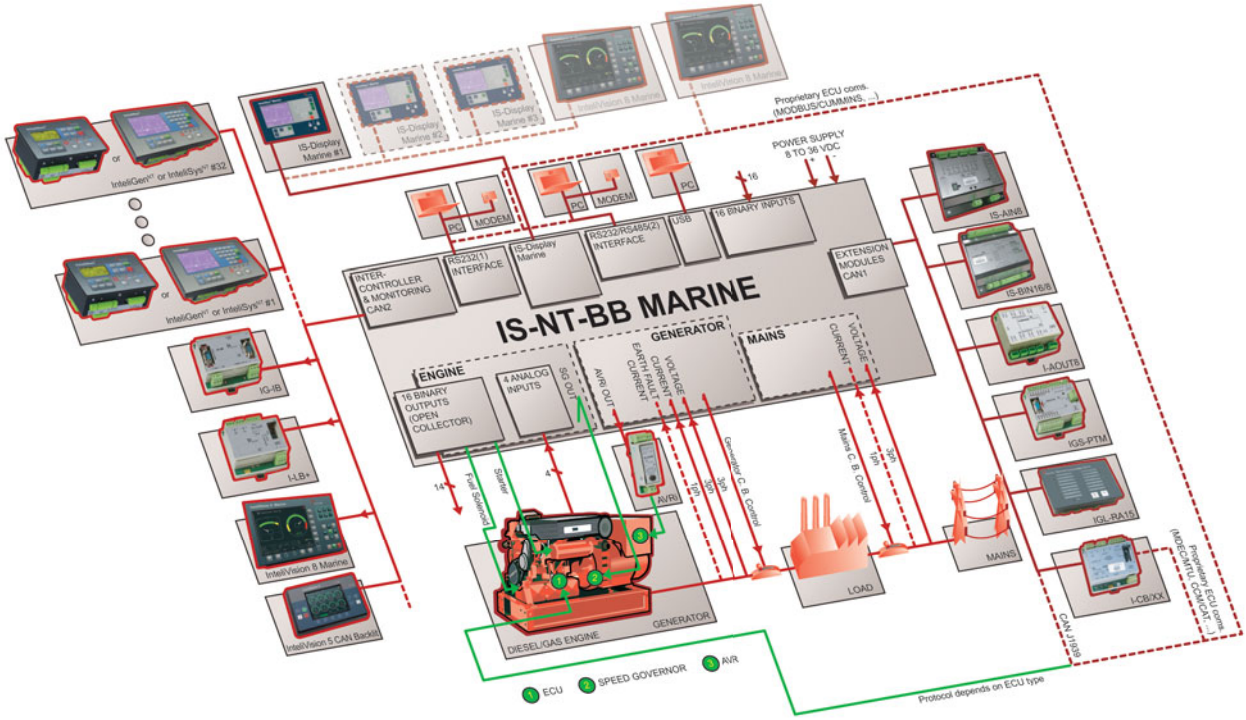
Special firmware for split control concept with standalone engine and generator controllers is available, see IG-NT/IS-NT GeCon.

Detachable construction (consisting of IS-NT-BB MARINE and IS-Display Marine or InteliVision 8 Marine) allows easy installation with the potential for many different extension modules designed to suit individual customer requirements.

A built-in synchronizer and digital isochronous load sharer allow a total integrated solution for gen-sets in standby, island parallel or mains parallel. Native co-operation of up to 32 gen-sets is a standard feature.

InteliSys^{NT} Marine supports many standard ECU types and is specially designed to easily integrate new ones. A powerful graphic display with user-friendly controls allows any user whatever their ability to find the information they need. The display on the basic version is capable of displaying graphical languages (e.g. Chinese).

ComAp is able to offer customized firmware solutions.



Benefits

- Support of engines with ECU (Electronic Control Unit)
- Excellent configurability to match customers' needs exactly
- Complete integrated gen-set solution incorporating built-in PLC and signal sharing via CAN bus – minimum external components needed
- Many communication options – easy remote supervising and servicing
- Perfect price / performance ratio
- Gen-set performance log for easy problem tracing
- Type approval from major certification societies such as ABS, DNV, GL, RINA and others

Features

- Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
- Automatic synchronizing and power control (via speed governor or ECU)
- Baseload, Import / Export, TempByPower
- Peak shaving
- Voltage and PF control (AVR)
- Generator measurement: U, I, Hz, kW, kVAr, kVA, PF, kWh, kVAhr
- Mains measurement: U, I, Hz, kW, kVAr, PF
- Selectable measurement ranges for AC voltages and currents – 120 / 277 V, 0–1 / 0–5 A
- Inputs and outputs configurable for various customer needs
- Controller redundancy
- 2× RS232 / RS485 interface with Modbus protocol support; Analog / GSM / ISDN / CDMA modem communication support; SMS messages; ECU Modbus interface; secondary RS485 converter is isolated
- Event-based history (up to 1000 records) with customer-selectable list of stored values; RTC; statistic values
- Marine certified extension modules for expandable number of Inputs/Outputs (connected via CAN bus)
- Integrated PLC programmable functions
- Interface to remote display units (3× IS-Display Marine or InteliVision 8 Marine)
- USB 2.0 slave interface
- Dimensions 284 × 180 mm (front panel)
- Sealed to IP65

IG-NT/IS-NT GeCon

CERTIFIED GENERATOR CONTROLLER FOR MARINE APPLICATIONS

IG-NT/IS-NT GeCon is a special firmware configuration for gen-sets with standalone engine controller. Based on field proven InteliGen^{NT} Marine and InteliSys^{NT} Marine. It allows customers to select a tailored solution for their application with the option of modified options for critical applications.

Benefits

- Excellent configurability enables users to customise to the needs of their application
- Choice of communication options ensures easy remote supervising and servicing
- Optional redundant ´hot standby´controller guarantees uninterrupted generator control in case of failure of the primary controller
- Built-in PLC functions remove the need for an external PLC controller
- Perfect price/performance ratio
- Gen-set performance log for easy problem tracing
- Type approval from major certification societies such as ABS, DNV, GL, RINA and others

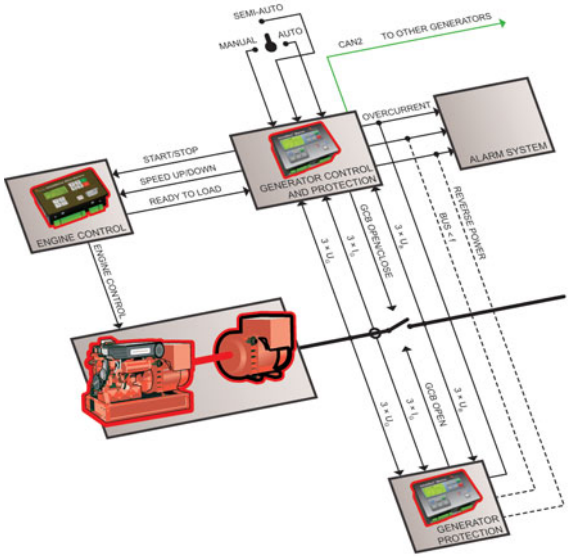
Typical applications

Generator control with independent Protection and Master controllers

Engine is controlled by independent controller. Two GeCon controllers are used to control and protect the generator. First GeCon is in PROT configuration, the second is in MINT (Master) configuration.

Generator can be operated in three basic modes:

- **MANUAL**
  - Both PROT and MINT controllers protect the generator
  - Synchronization and load control of the generator are managed manually
  - Start and Stop are manual
- **SEMI-AUTO**
  - Both PROT and MINT controllers protect the generator
  - Synchronization and digital loadsharing via CAN bus are managed by MINT controller
  - Start and Stop are manual
- **AUTO**
  - Both PROT and MINT controllers protect the generator
  - Synchronization and load control of the generator are managed manually
  - MINT controller automatically start and stop the genset in dependence on bus load, requirements to start heavy consumers, transfer the load between Auxiliary and Shaft generators etc.



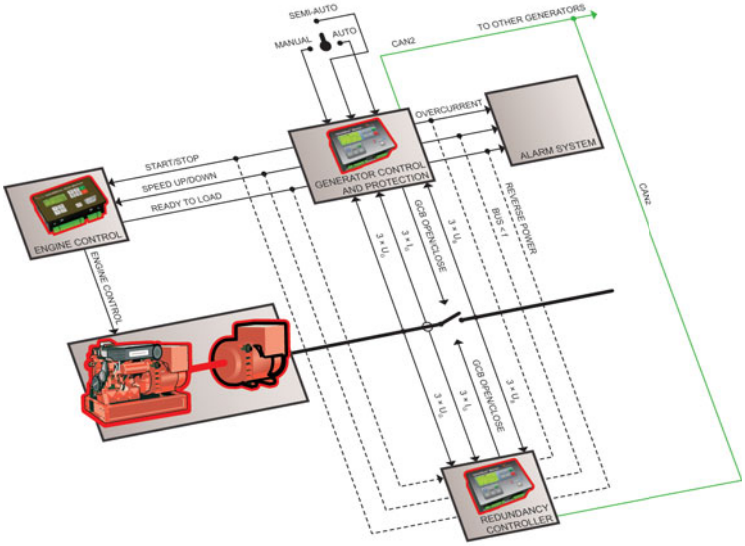
Generator control with Master and Hot standby controllers

Engine is controlled by independent controller. Two GeCon controllers are used to control and protect the generator. Both GeCon controllers are in MINT (Master) configuration. One controller provides complete control and protection of the generator. The second controller is used as ´Hot standby´, always ready to take over the control of the generator in case of failure of the master controller.

Generator can be operated in three basic modes:

- **MANUAL**
- **SEMI-AUTO**
- **AUTO**

The same way as in the installation described above. Both Master and Redundancy controllers are connected to CAN bus. The Redundant controller checks and evaluates CAN bus messages from the Master controller. It immediately takes over control of the generator in case of detection of failure of the Master controller. A short period between failure of the Master controller and take over of control by Redundancy controller, less than 300 ms, guarantees minimal disturbance of generator voltage and current.



InteliVision 5 CAN

CONTROLLER COLOUR DISPLAY UNIT WITH CAN BUS INTERFACE

InteliVision 5 CAN is the new generation display unit equipped with a galvanically isolated CAN interface to improve the reliability of data communication from the master controller, which uses the same language support. Active backlit buttons improve usability and ensure operators can access important data quickly.

The model is designed as a fully IP65 waterproof unit, 'Plug & Play' solution and displays all engine data and monitoring information in a highly visible, colourful and forward looking screen design.

The same cut-out across all ComAp's products helps InteliVision 5 CAN to be easily used as a replacement or an alternative to I-RD-CAN. Regardless of the size it can be also used as an alternative to 8" color remote display InteliVision 8 Marine.

There are two versions available:

- InteliVision 5 CAN
  - available for InteliDrive DCU Industrial, InteliDrive DCU Marine, InteliDrive Mobile, InteliDrive Mobile Logger
- InteliVision 5 CAN Backlit
  - version with backlit buttons
  - available for the same controllers as InteliVision 5 CAN and also for InteliGen^{NT} Marine and InteliSys^{NT} Marine controllers

GL OPERATING 24/7 *

** Certification is coming soon.*

InteliVision 8 Marine

CONTROLLER COLOUR DISPLAY UNIT

InteliVision 8 Marine is a new generation colour display unit for either InteliGen^{NT}, InteliSys^{NT} or InteliDrive controllers. It is designed as a simple, easy to use Plug and Play solution and has been developed from our original IS-Display.

The new InteliVision 8 Marine screen features many significant improvements such as the large high-resolution colour TFT display, which helps visibility and definition for onscreen information. The control interface has also been updated with user friendly intuitive active buttons – giving users access to more information in less time. InteliVision 8 Marine also features our unique TRENDS monitoring as a standard feature, helping you evaluate past events easily on one screen.

The InteliVision 8 Marine cut-out size is the same as the IS-Display Marine, so InteliVision 8 Marine can be easily used as a replacement for (or an alternative to) IS-Display Marine. Regardless of the size it can be also used as a replacement for (or an alternative to) IG-Display LT GC or I-RD-CAN.

InteliVision 8 Marine includes ComAp's standard communication interface using RS232/485 and CAN bus communication. Designed to be mounted in both monitoring and engine room, InteliVision 8 Marine gives complete access to all control functions when connected to InteliGen^{NT}, InteliSys^{NT} or InteliDrive controllers.

Type approval from major certification society GL.

Accessories

ID-RPU – Redundant Protection Module

- Independent shutdown module mounted on the rear side of InteliDrive DCU Marine
- RPM input with hardwired overspeed protection
- Hardwired 5 shutdown channels with detection of broken wire
- Automatic switchover between primary and secondary power supply
- Outputs for Fuel and Stop solenoids with detection of broken wire

IGL-RA15 – Remote Annunciator

- Extension signaling unit connected via CAN bus
- 15 LEDs with configurable colors red-green-yellow
- Customizable labels

IS-AIN8 – Analogue Input Module

- 8 configurable analog inputs
- Accept 2/3 wire resistive, current, voltage senders, thermocouples
- Connection via CAN

IS-BIN16/8 – Binary Input/Output Module

- 16 inputs and 8 transistor outputs
- 2 pulse inputs (frequency measurement or pulse counting)
- Connection via CAN

IGS-PTM – Input/Output Module

- 8 binary and 4 analog inputs
- 8 binary and 1 analog output
- Accept resistive 2 wire, voltage 0÷100mV and current 0÷20mA senders
- Connected via CAN

ID-COM – InteliDrive Communication Module

- Interface for CAN2 Inter-controller and I-RD-CAN modules
- Interface for J1708 redundancy line
- Mounted on the rear of InteliDrive DCU Marine

I-RD-CAN – Remote Display with CAN Interface for InteliDrive DCU Marine

- Remote control panel for master controller
- The same front facia, LEDs and button handling

IG-Display LT GC – Secondary Display Module for InteliGen^{NT} Marine

- Remote control panel for master controller
- The same front facia, LEDs and button handling

InteliVision 5 Harness-2 – Cable Accessory for InteliVision 5 CAN

- 2m prefabricated cable with unassigned wires at the end

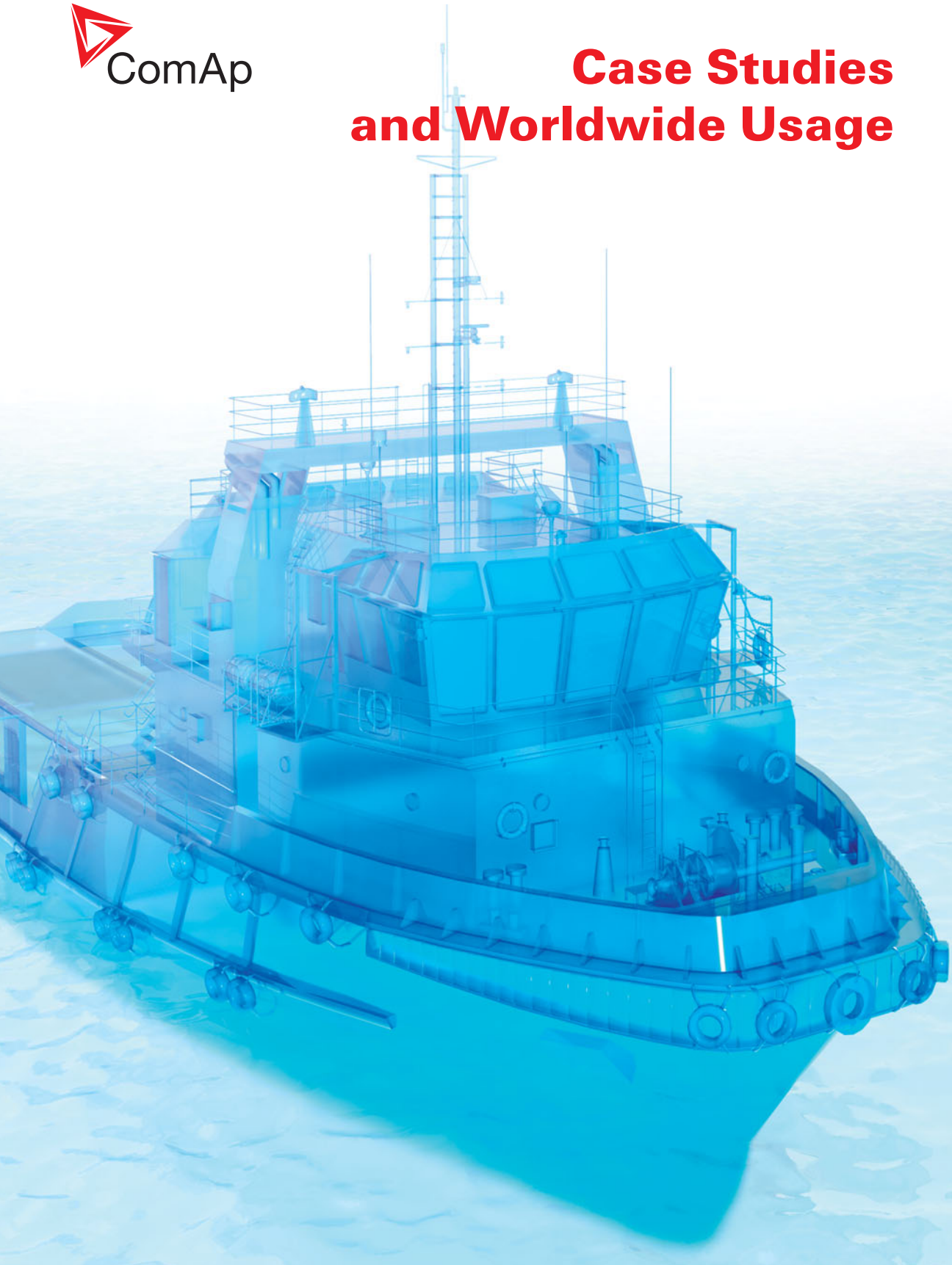
InteliVision 5 IP65 Connector – Connector Set for InteliVision 5 CAN

- Connector set containing connector body and 10 crimping pins
- Cable manufacturing requests special tools for MOLEX MX150L connector series

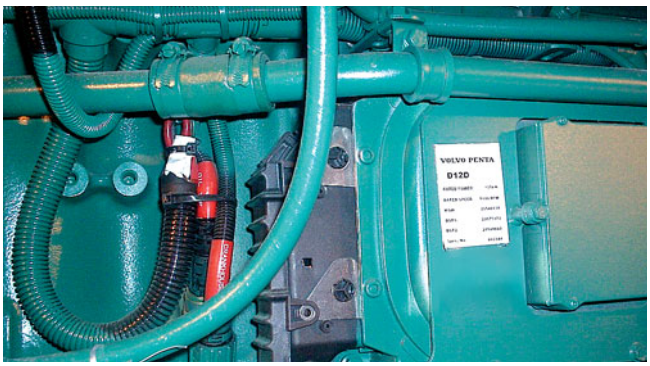
	ABS	Bureau Veritas		Lloyd's Register	DNV	GL	RINA		
ID-RPU	●	●	●	●	●	●	●	●	○
IGL-RA15	●	●	●	●	●	●	●	●	○
IS-AIN8	●	●	●	●	●	●	●	●	○
IS-BIN16/8	●	●	●	●	●	●	●	●	○
IGS-PTM	●	●	●	●	●	●	●	●	○
ID-COM	●	●	●	●	●	●	●	●	○
I-RD-CAN	●	●	●	●	●	●	●	●	○
IG-Display LT GC	●	○	○	●	●	●	●	●	●

ComAp

Case Studies and Worldwide Usage

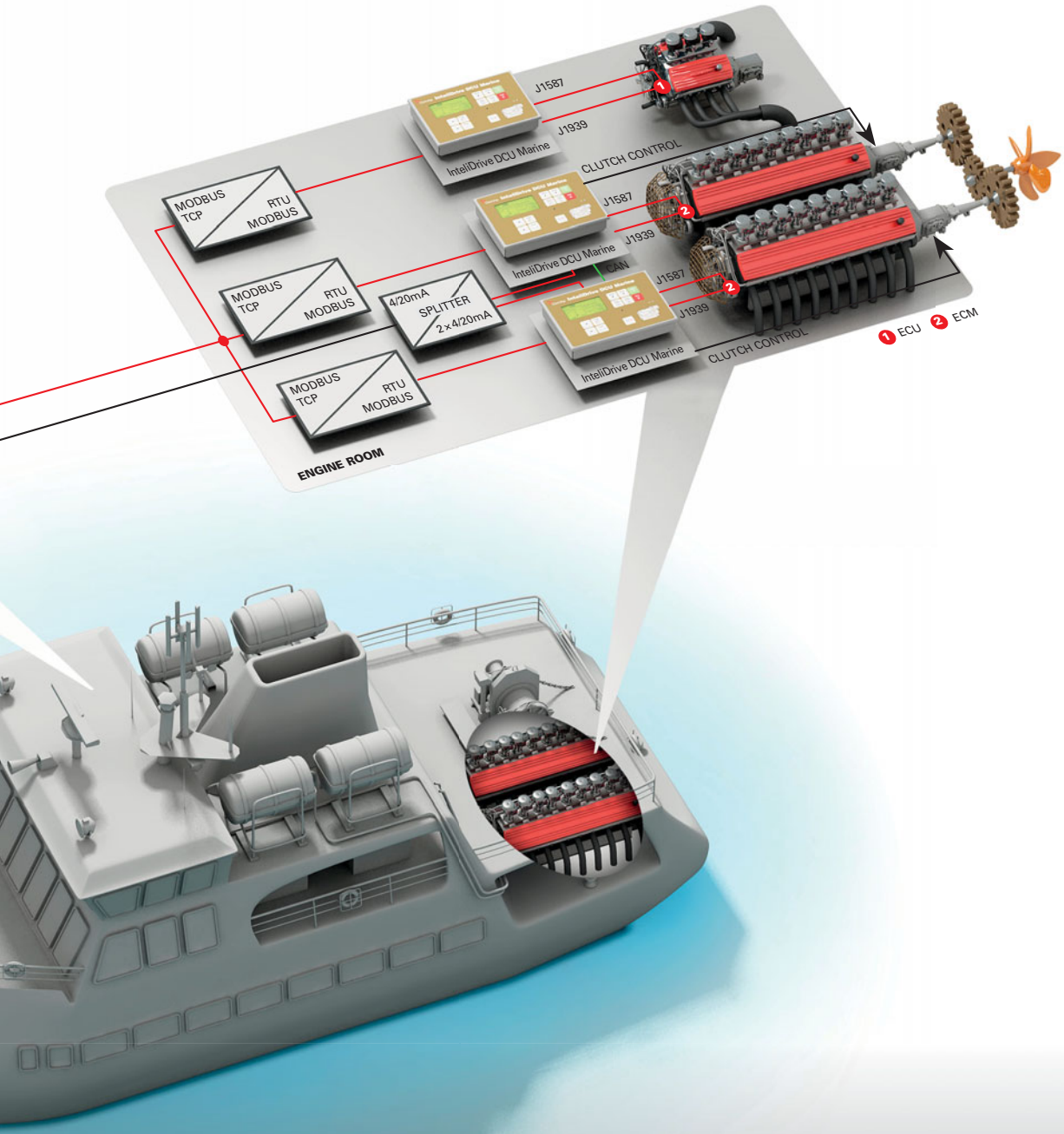


Sweden



M/S Dalarö

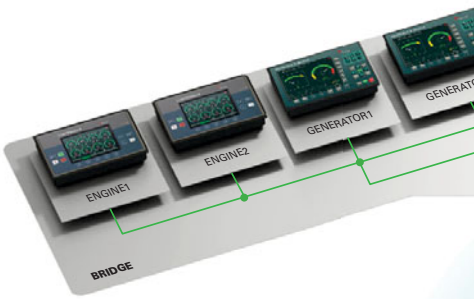
This icebreaking archipelago passenger vessel features four 450hp VOLVO PENTA D12D propulsion units that use the InteliDrive DCU Marine for total control of the engine, taking care of propulsion, load sharing, monitoring, and fault logging.



Norway


NORTHERN CORONA


SEMI-AUTO
MANUAL

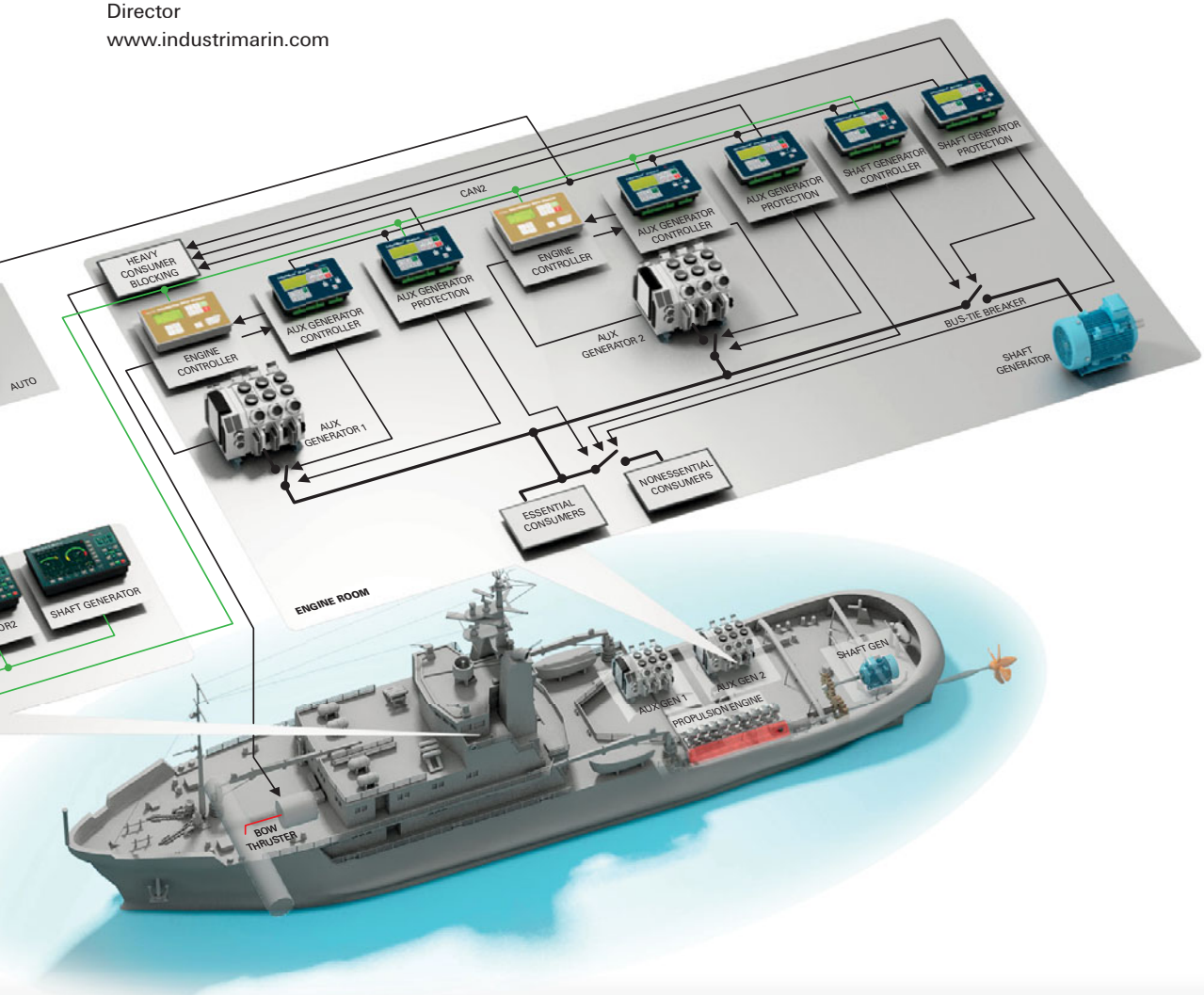

ENGINE1
ENGINE2
GENERATOR1
BRIDGE

Northern Corona

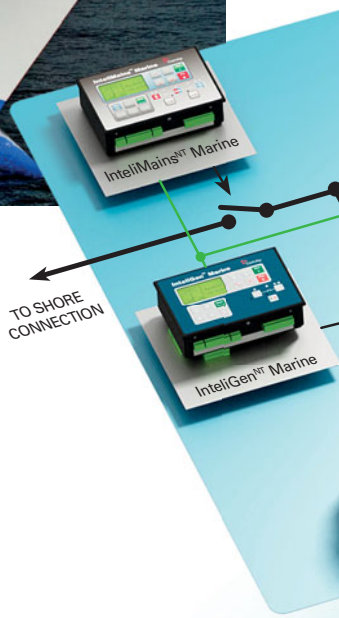
Northern Corona is a supply vessel owned by Trico Shipping AS operating in Norway and was recently upgraded with a new generator synchronizing and load sharing system supplied by Industrimarin.

They have also specified and installed the GeCon controller system for several customers' vessels for onboard generator applications as they provide a higher level of flexibility, as Bjarte explains – *"We are continually amazed at the level of flexibility this controller offers us."*

Bjarte Steen
Director
www.industrimarin.com



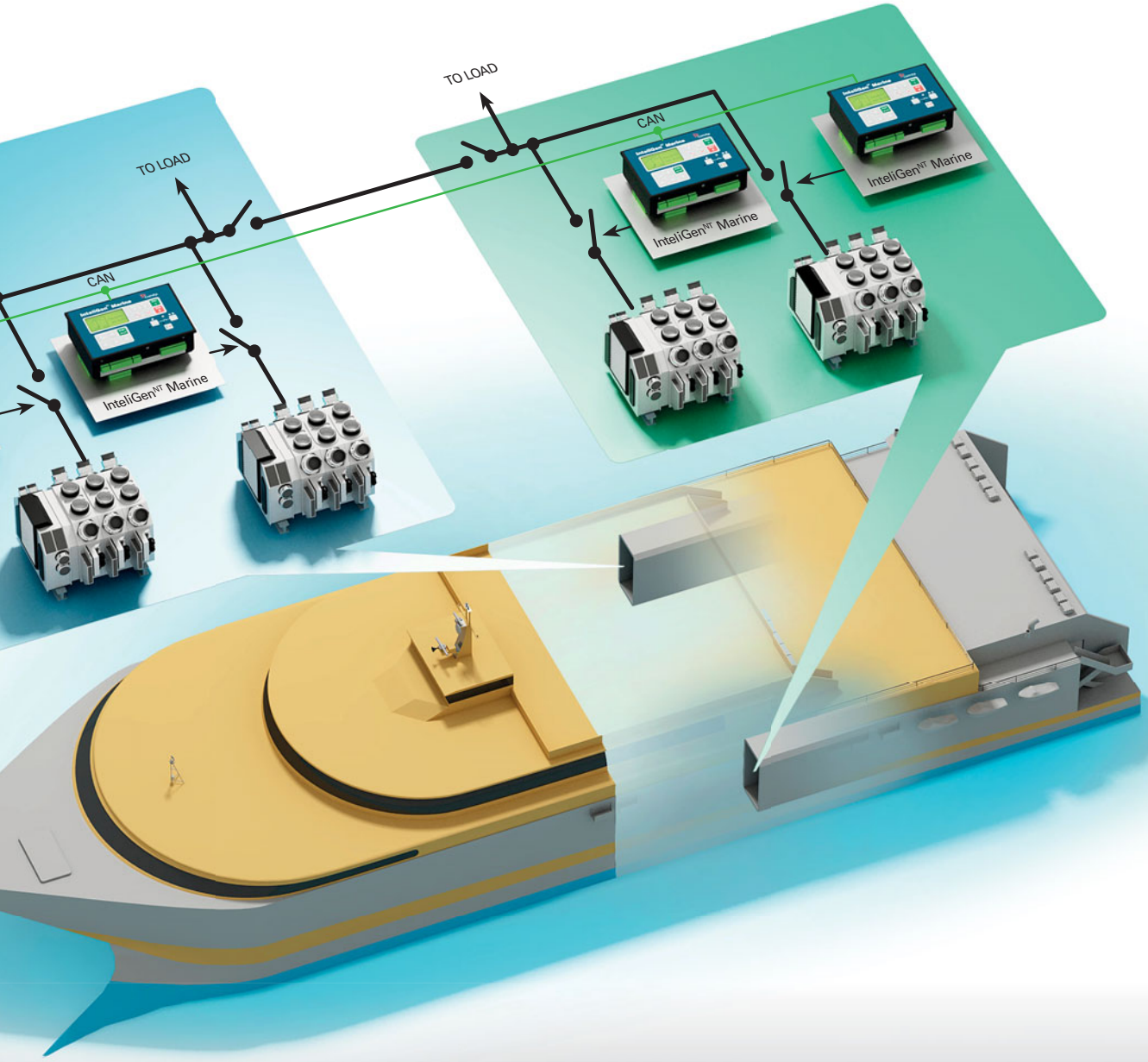
Australia



The PMS provides fully automatic operation of the generators including load dependant start and stop, automatic synchronization and load-sharing. The InteliMains^{NT} controller is used for automatic synchronization of the group of ship's generators and bumpless load transfer to the shore connection when the ship is docked at port.

Benchijigua Express

The revolutionary trimaran Benchijigua Express, made by Australian shipyard Austal, serves the islands of La Gomera and La Palma and the port of Los Cristianos in the south of Tenerife. Electric power is provided by four 540kW MTU 12V 2000 M40 diesel generator sets, all of which are controlled by a Power Management System (PMS) equipped by four InteliGen^{NT} Marine controllers and one InteliMains^{NT} controller



France


VIVALDI

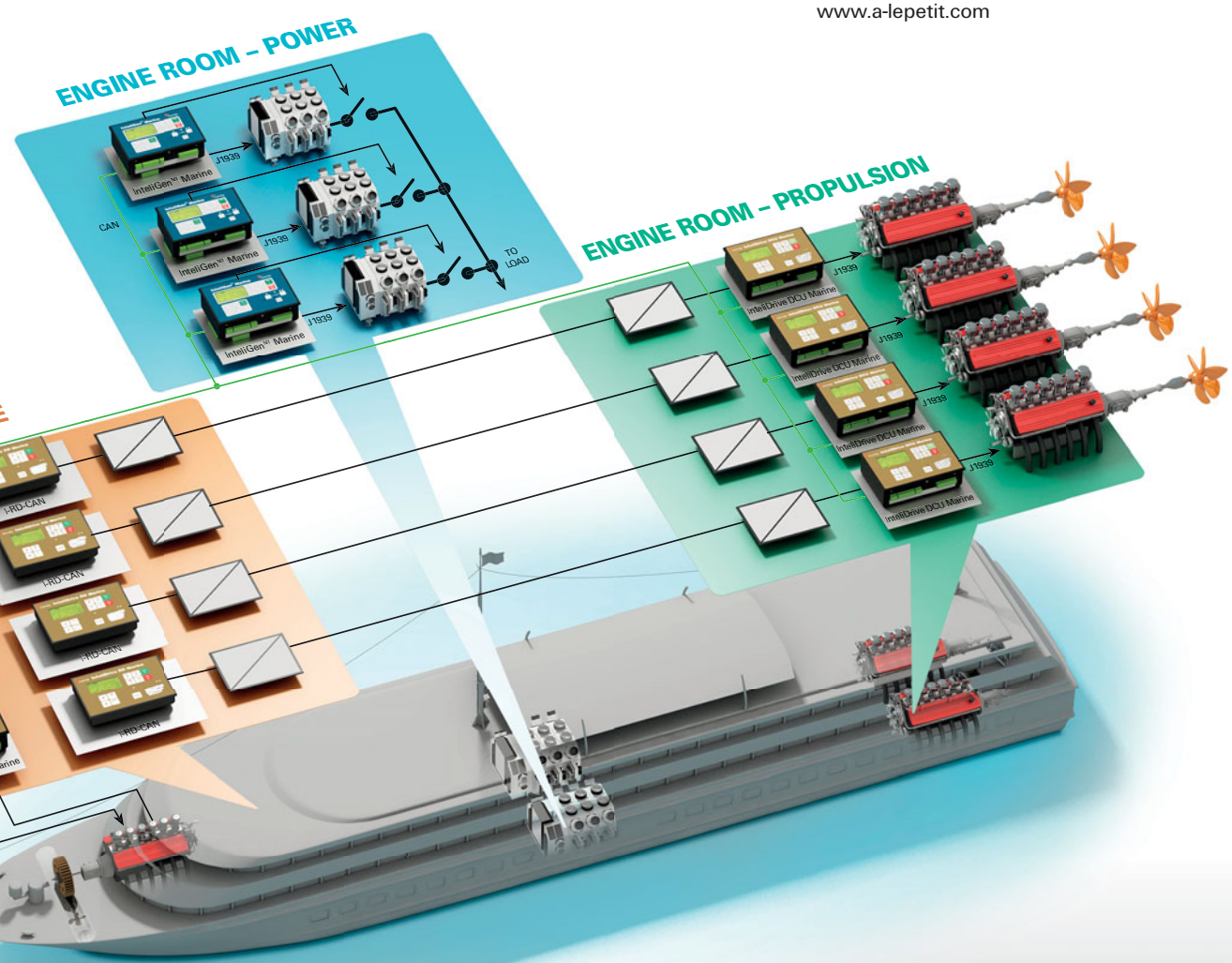

InteliGen
InteliGen


CUMMIN
BRIDGE
GSM
CAN
PC
J1939

M/S Vivaldi

"With over 10 years experience of using ComAp control products for generators and marine applications, our knowledge of the product's flexibility made this the perfect choice for the M/S Vivaldi's eight Cummins ECU engines. The control system is managed by InteliDrive DCU Marine and InteliGen^{NT} Marine; integrated as part of the CAN network using a wide range of ComAp accessories for total supervision of propulsion and power systems from the wheelhouse or remotely by GSM."

Lionel Dubois
Director
www.a-lepetit.com

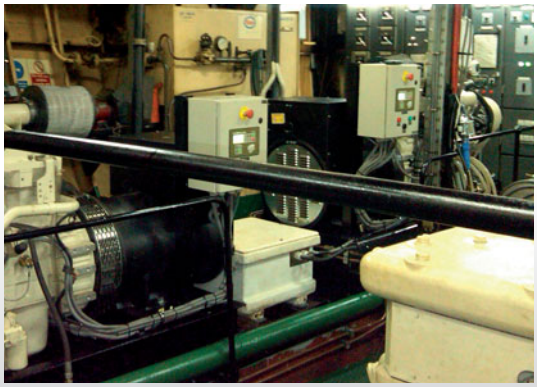


Croatia

MY Maxum 4600

The existing engine control and alarm on this MY Maxum 4600 vessel was removed and replaced with a new integrated control and protection system.

The new system utilized two InteliDrive DCU Marine controllers with IGL-RA15 remote annunciator connected to a colour InteliVison remote display on the flight bridge for control and monitoring of two Cummins propulsion engines. The InteliDrive Lite unit is providing control and protection for the gen-set engine. The system provides a complete package with the additional benefit of CAN communication, simplified wiring and remote monitoring capability through the I-LB local bridge connected to GSM modem.



Switzerland

MS Siesta

The MS Siesta is a large leisure craft operating on the beautiful and panoramic river Aare between Biel and Solothurn in Switzerland.

The vessel utilises two 70kVA generators for general duties including powering the electric bow thrusters and peak demand from the kitchen. With a need for easy programming and reliable operation two InteliGen^{NT} controllers were fitted to provide seamless and automatic synchronisation combined with the benefit of being able to start and stop either generator manually.

Denmark

Emile Robin rescue vessel

The Emile Robin rescue vessel was built in 1989 with two 383hp Scania diesel engines – each with its own propeller propulsion.

When the vessel alarm system was replaced, Nordhavn A/S was also tasked with updating the existing 20-year-old emergency management and engine control. With positive experience of using ComAp InteliDrive DCU Marine on other projects, they recommended this engine controller with InteliVision to provide the required additional functions and a comprehensive power management interface.

Turkey

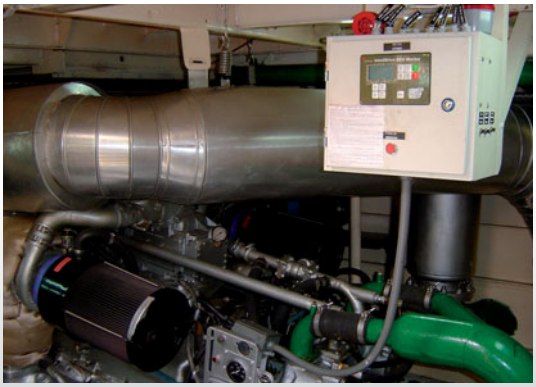
Tarpan

The tug and supply vessel Tarpan, made by Gelibolu Shipyard, operates in the Caspian Sea.

The ship has three Cummins KTA-50 acting as the main engines connected by gearbox to variable pitch propellers with port and starboard engines driving powerful fire pumps. Engines and gearboxes are controlled and protected by three InteliDrive DCU Marine controllers with remote control provided by I-RD-CAN remote displays on the Engine room and Aft bridge and by InteliVision remote display units on the Fore bridge.

Extensive use of built-in PLC functions together with flexible input/output and communication structure of InteliDrive DCU Marine has ensured a compact and economical control system.

Ecuador



LAE 27 de Febrero and Corbeta BAE Esmeraldas

The Ecuadorian Guardacostas vessels LAE 27 de Febrero and Corbeta BAE Esmeraldas both use ComAp systems for either generator management or engine control and monitoring.

The LAE 27 de Febrero features three InteliDrive DCU Marine controllers to manage three Detroit diesel engines with system accessories including I-RD-CAN for the bridge and IGL-RA15 for the control station in the engine room.

BAE Esmeraldas uses three InteliGen^{NT} Marine units linked to IG-Displays and a LCD touch screen computer to provide automatic parallel control and synchronization of three 250 kW MTU powered Magnamax generators.

Argentina

Cabo Corrientes and Puerto Madryn

The Argentinian Coast Guard vessels GC 73 Cabo Corrientes and GC 78 Puerto Madryn are both equipped with ComAp generator and propulsion engine control and monitoring systems.

The onboard generators powered by Perkins engines use InteliGen^{NT} Marine, whilst the ship's MTU propulsion engines rely on two InteliDrive DCU Marine and additional modules to provide a control package which includes controlling engine speed and gear box. The complete system is easily managed using two full colour InteliVision and IG-Display units.

Finland

Suomenlinna II

Suomenlinnan Liikenne is a public utility jointly owned by the City of Helsinki and the State of Finland who operate a daily ferry service between Helsinki city centre and Suomenlinna Island, transporting up to 350 passengers and two cars or delivery vans on each trip.

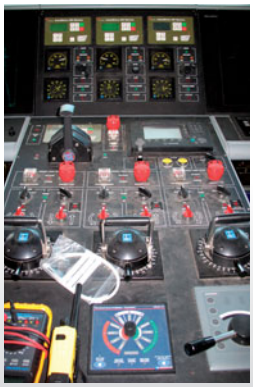
The ferry, Suomenlinna II, features three gen-sets driven by Volvo Penta TAMD 165A engines, which utilise InteliGen Marine certified classic controllers to provide a comprehensive onboard power management system.

France

La Belle de l'Adriatique

The La Belle de l'Adriatique sails along the coasts of the Croatian Islands, Montenegro, Canary Islands, the French Riviera, Italy and North Africa accommodating 200 passengers in 100 luxurious cabins.

The ship makes extensive use of ComAp products with three Cummins propulsion engines equipped with InteliDrive DCU Marine controllers, three onboard generators using InteliGen Marine controllers, together with an additional InteliDrive DCU Marine managing the engine for harbour operations and seven IGL-RA15 remote annunciators located in a dedicated technical supervision room.

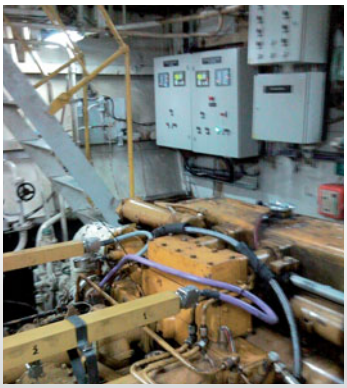


Uruguay

Eladia Isabel

Based in Uruguay, the Eladia Isabel is a catamaran ferryboat that is capable of transporting up to 1100 passengers and 120 cars.

The ship uses a wide range of integrated ComAp products to provide a complete power management system for propulsion systems, generators and bridge supervision and monitoring. Ship propulsion is provided by two CAT 3516 engines controlled by InteliDrive DCU Marine plus additional modules, InteliGen Marine units are used for automatic parallel management of the four Scania 300kVA generators and InteliMonitor PC software is used on the bridge for overall system control.



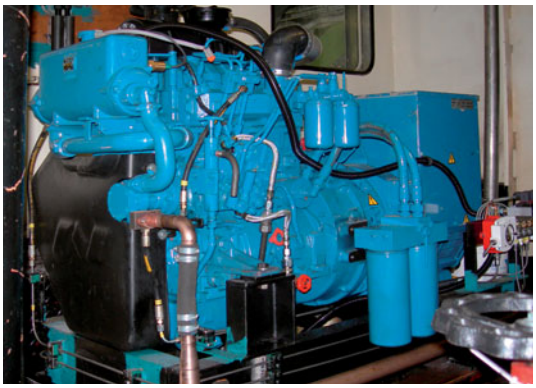
Argentina

Ferry Boats

"When we upgraded our ship Flecha de Buenos Aires we chose InteliDrive for control, monitoring and engine protection. Our experience of using InteliDrive has been very positive due its high performance, versatility and the optional extensions that this equipment has as additional tools. The controllers are easy and friendly to operate in their daily use and have been well accepted."

Raúl Tavernelli
Vice-President
and Technical Manager
www.ferrylineas.com.ar

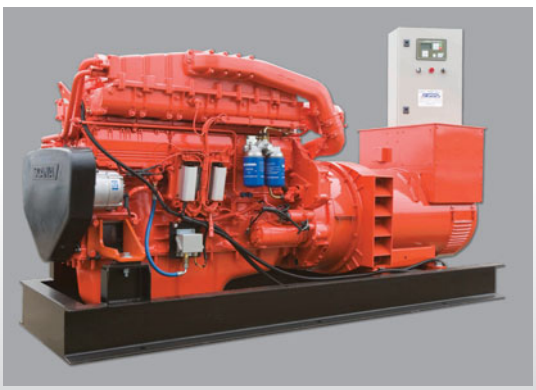
Belgium



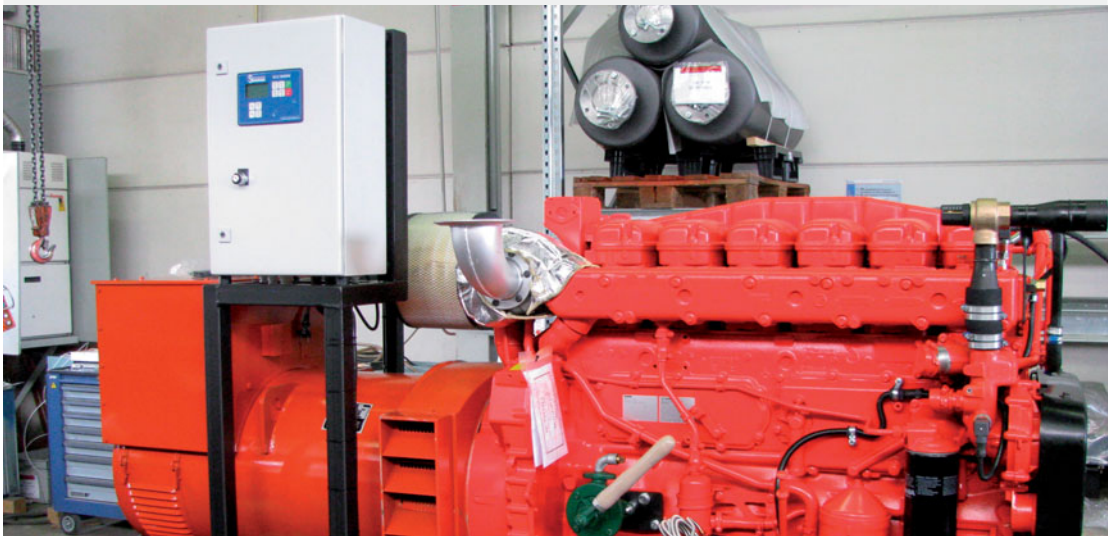
Flexible solutions

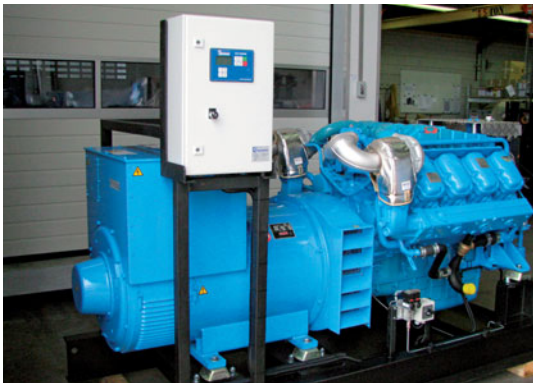
"On one major project, we are supplying pairs of Scania powered auxiliary gen-sets for a series of 70 ton tugs currently under construction with other projects involving the use of SISU engine powered gen-sets. In both cases, the ComAp InteliDrive DCU Marine controller was chosen for its flexibility of programming, outstanding reliability and compact design."

Michael De Clercq
Project Engineer
www.whstevens.be



Netherlands





ComAp DCU simplifies marine gen-set control

"At Sandfirden, we use around 250 DCU/RPU panels each year for marine based gen-set applications and about 175 DCU without RPU on gen-sets used for inland waterway duties. The new integrated DCU panels have made a significant improvement, as we no longer require huge control boxes fitted with separate PLC and relays. Now, at the heart of our control solution is the single ComAp DCU unit providing direct communication with the J1939 in combination with the built-in PLC - particularly important to us as 90% of our gen-sets are electronic Scania and Sisu engines.

Overall the ComAp system is very flexible solution and fulfils the need for easy installation across all our gen-sets whether featuring electronic or conventional engines, and with appropriate marine classification certificates makes it possible to choose DCU/RPU without reservation."

Jack Ooms
Projects Manager
www.sandfirden.nl

Venezuela

New tugboats serve Petroleos de Venezula

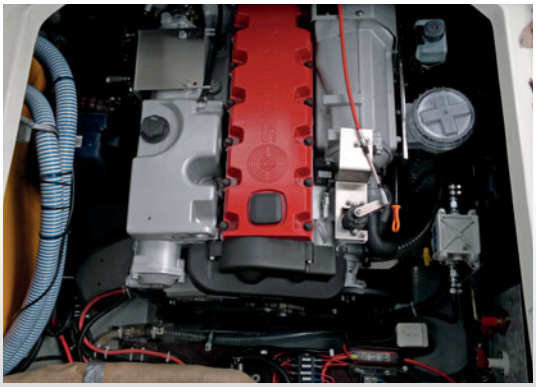
The first high-specification tugboats featuring InteliGen^{NT} Marine equipment are now in full operation providing South American oil company Petroleos de Venezula (PDVSA) with fully owned assets capable of quick response to firefighting operations and maneuvering tankers at Venezuelan oil terminals.

The tugboat switchboards utilise InteliGen^{NT} Marine controllers to supervise and monitor the onboard gen-set. Approved by majority of the leading marine classifications, InteliGen^{NT} Marine provides a range of dedicated functions including automatic synchronizing, AMF function, Baseload, Import/Export, Peak shaving and Voltage & PF control (AVR). It also provides operators with a range of communication options that allows remote monitoring and access to useful data such as performance and event-based history log.

"CDC (Caribbean Drydock Company) has confirmed their complete satisfaction with InteliGen^{NT} Marine's performance and the service and support providing during design, installation and commissioning and intend to continue their use of ComAp control solutions on secondary order of a further eight tugboats."

Mauricio Sierra Dupont
Director
www.dwppon.com

Finland



MS Athina

MS 'Athina' is a fully modernized 'Sea Ray 220' vessel operating on the Gulf of Finland. The boat's main propulsion is a Steyr 250hp diesel engine, achieves 37 knots top speed and is monitored using a ComAp InteliDrive DCU Marine combined with an InteliVision 5 CAN colour display.

"The ComAp controller was selected because of its compact size and the ability to combine all boat meters and alarms into a single solution. The vessel operators can monitor all engine values, fuel tank, waste tank, water tank, batteries, bilge alarms all from the same InteliDrive DCU Marine panel and utilise the integral plc functions to create a range of alarms for the benefit of the vessel operator."

Arto Rautiainen
Director
www.tapimec.fi

Norway

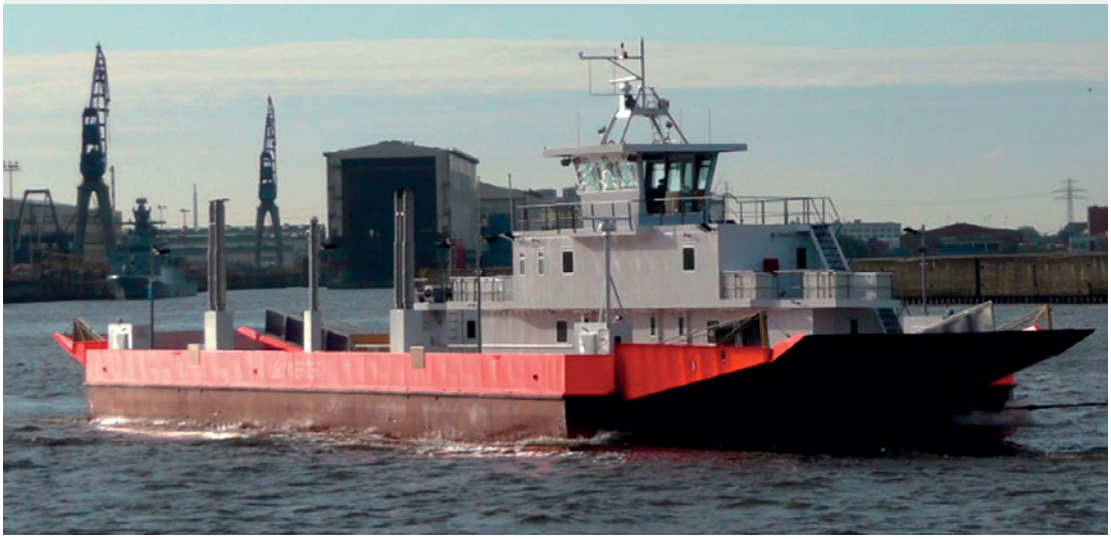
Gecon Power Boost System

The Oceanic Endeavour is owned by Volstad Maritime AS and is one of the most powerful and high-capacity seismic streamer vessels in the world. The vessel has recently installed two new propeller systems at Båt Bygg AS of Måløy. Each of the two propeller lines is driven by a Wärtsila Engine (4,5MW) and an electro motor (3,5MW) both connected to the propeller via a common gearbox.

This versatile propeller solution has the capacity to be driven individually either by the power from the engine or the electrical motor, and in addition Industrimarin has provided a Power Control Solution enabling both the engine and the electrical motor to be connected together on the common gear in a Power Boost operation Mode bringing the propeller power from each drive line up to a total capacity of 13MW. The design of the Gecon Power Boost Systems is based on the IS-NT BB Marine controller and the Gecon Marine multifunctional drive, propulsion, and generator management software for marine power applications.

Bjarte Steen
Director
www.industrimarin.com

Germany



Lemwerder 2

Operating on the Weser river, the ferry 'Lemwerder 2' uses a completely integrated ComAp system to control the four Scania DI 12 propulsion engines linked to Shottel drives and features an InteliDrive DCU Marine in the main control panel, I-RD-CAN in the engine control room linked to a series of InteliVision 8 full colour displays (one for each engine) located on the ship's bridge.

United Kingdom

Porth Dafarch

Porth Dafarch is the first in a series of South Catamaran 16m WFSV (Wind Farm Service Vessels) built for Turbine Transfers Ltd, which feature twin Scania DI16 43M 800hp main engines; Twin Disc MGX5135SC are fitted together with Ultra Dynamics UJ452 water jet units. With an operational displacement of around 35 tonnes the vessel achieves a sprint speed of 26 knots and 24 knot cruising speed.

It is equipped with ComAp control system and InteliVison colour displays.

France

Jean Bruel riverboat

The Jean Bruel riverboat uses an integrated family of ComAp products throughout the vessel to manage power, control docking procedures, activate alarms, check for leaks and close watertight doors.

The complete system features three InteliGen^{NT} Marine controllers managing onboard generator power supply and balancing loads, whilst an InteliMains^{NT} controller is used for docking at the embankment. Information provided by each controller can be viewed on the bridge using the large InteliVision screens – helping indicate the status of each system and customizable software sits alongside extendable modules like IL-B+, allowing the technical manager to monitor the systems remotely.

"Overall, we are very happy with the system supplied and have benefited from fuel savings delivered through the use of ComAp technology."

Philippe Jonard
Technical Assistant
www.h-t-f.fr

Bulgaria

Russe gas tanker

The Russe 88 m long gas tanker uses ComAp controllers to control and monitor a set of three new Volvo Penta generators selected to replace a bank of outdated power units.

Lebanon

Almhoud Transporter

The Almhoud Group specialise in the complete renovation and upgrading of existing commercial boats. This extensive process takes place in Beirut Port and typically involves the installation of new gen-sets using Volva Penta engines and ComAp controllers.

In retrofit application like these customers are looking for secure safe and reliable products as a Almhoud representative explains: *"In our long experience of using ComAp controllers in this field, when correctly installed they will never stop or fail to operate. We believe ComAp controllers are 'State of the Art', and that once used you'll never regret the experience."*

Control panel systems are built by Electro mechanical Marine Company and supported whilst in operation by Jabbour DataKom sarl.

United States of America

Dedicated solutions for marine applications

"I have been using the ComAp products and accessories for over five years with great results. Our customers are very pleased with the feature set and capabilities of the control modules and the associated software makes them simple to program and commission. The capability of the InteliDrive to communicate with other J1939 and similar units via the I-CB module is unique in the depth and range of data available and is one of the strongest selling points for my customers - as is the availability of fully integrated remote displays.

ComAp has been very focused on producing control modules that conform to all of the major agency certifications in the marine field with excellent features like 'Harbor Mode' (Shutdowns to alarms) and whenever we require any assistance during commissioning ComAp support staff have always proved invaluable."

Dave Bechtel
Director
www.bfmar.com

A global showcase

ComAp control products and systems are used in marine vessels of all sizes and types in almost every location around the world, giving reliable control and power management when operating on the sea, ocean, river or inland waterway.

Certification

Selected ComAp products are approved by all major marine classification societies

ComAp

About ComAp

About ComAp

ComAp is a dynamic international company with a solid reputation for delivering innovative electronic solutions to the power generation, industrial engine and equipment markets. By providing customers with state-of-the-art products, ComAp has built a name for delivering excellent reliability and good value.

Excellent and reliable product solutions

ComAp specializes in creating electronic control and management solutions for use in the power generation industries and drive power markets. Our portfolio of products, software and accessories is designed to support emergency power, standby power generation and engine driven applications all over the world. We also work closely with our customers to develop unique customized and turn key solutions for ordinary and extraordinary applications delivering high standards of excellence on every project.


CERTIFICATE

DEKRA

ISO 9001:2008

ComAp, spol. s r.o.

ComAp products represent some of the most reliable solutions on the market today. Every component and product undergoes the most rigorous standards during manufacture, with every stage being undertaken in accordance with international ISO 9001 certification. Our products are backed with the approvals from major Marine Certification Societies. Accreditation at the highest-level breeds confidence, and every ComAp product is supplied with an appropriate warranty and after-sales support for complete peace of mind.

Professional partnerships

ComAp's extensive global distributor network means that products are locally available in almost 100 countries, spanning every continent in the world. Through our professional and highly dedicated global distributor network we can satisfy customers' needs, however challenging.

Each ComAp distributor is carefully selected for their professionalism, product expertise and recognized quality standards and accreditation, and as such can advise customers on any matter relating to ComAp products and their applications.

People make the difference

ComAp's key strengths are flexibility, experience, knowledge and enthusiasm. This blend of values defines our personality and gives you the assurance of a truly honest and positive relationship. By supporting our people, investing in their development and encouraging creativity, our teams work hard to find new opportunities, technologies and solutions that enable us to successfully help our customers solve their problems effectively.

At ComAp, we believe passionately in the importance of continuously developing new technology along with forward thinking software and hardware to maintain the enviable position as worldwide leader in communication and control for power generation and drive power applications.

At the heart of this process is a strong desire to exceed our customers' expectations by finding outstanding solutions for them and drawing upon the company's most valuable asset – people. Over 80% of ComAp employees are graduates with specialized electronic and programming knowledge appropriate to the innovative development of market-orientated engine management systems. This unique know-how is matched by ComAp's significant investment at every stage of the research and development process, resulting in the creation of leading edge modern development facilities. ComAp consistently set high standards, reflected by our achievement in the 'Best Employers Study in the Czech Republic' (conducted by Hewitt Associates), where we were awarded first place in 2008 following our consecutive third places in both 2006 and 2007.


Image courtesy of Austal, 2011

ComAp

Manufacturer

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