Power your world with ComAp

POLAND

The National Stadium, Warsaw

Caterpillar gen-set 2500 kVA with ComAp controller InteliGen^{NT} – for reliable energy supply during football matches and other events.

Page **8**

InteliNano^{NT}

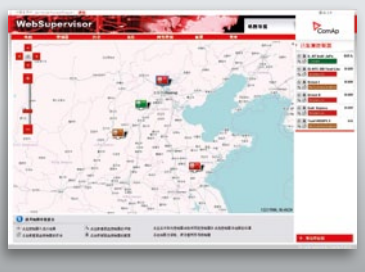
Gen-set controller

Page **9**

InteliDrive Lite DC

DC generator controller

Page **11**



WebSupervisor AirGate

Monitoring and controlling

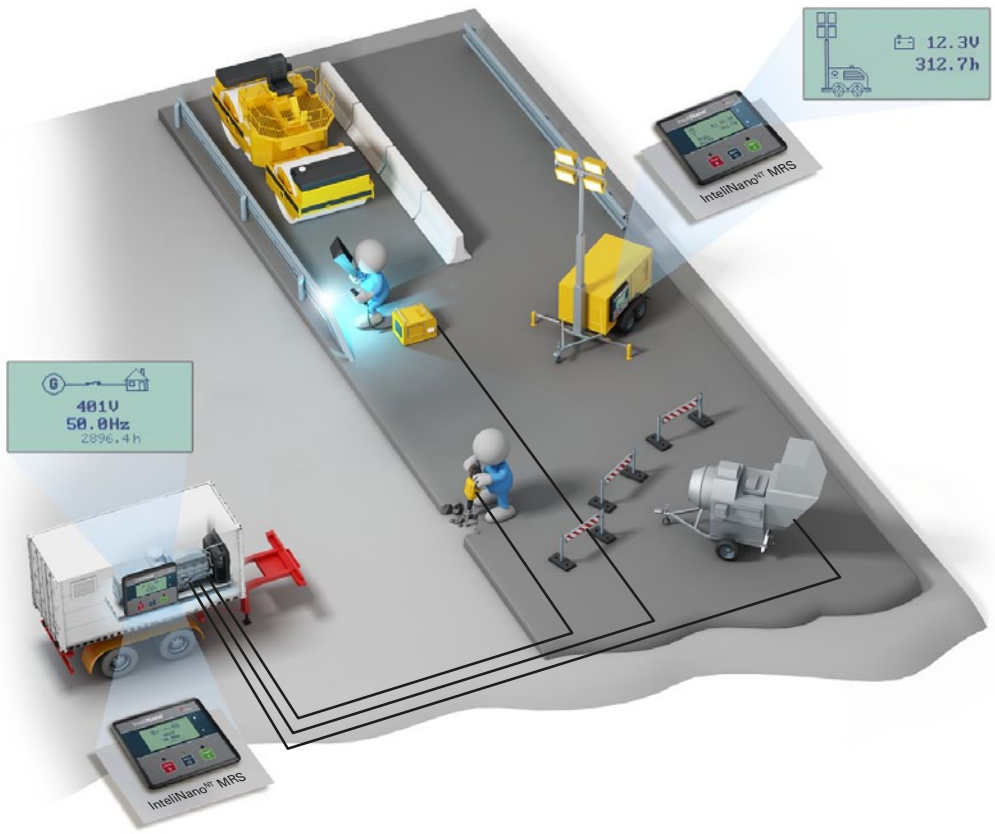
PRIME MOVER SYSTEM

Manual and remote start for gen-sets with electronic engines. InteliNano^{NT} MRS starts, controls and monitors the gen-set and controls the circuit breaker to supply the load.

The generator is protected by built in over/under voltage and frequency protection systems.

The controller communicates with the engine management unit via a CAN J1939 bus and shows engine values and alarms on a graphical LCD screen.

The controller enters sleep mode when the generator is not being used, allowing extended battery life for the unit.



STANDBY SYSTEM

– with remote communication via Internet

Stand-by gen-set with electronic engine. InteliLite^{NT} AMF 25 continuously monitors a mains supply and automatically starts an engine and switches load to a standby generator set in case of mains failure.

The service provider can monitor the gen-set operation remotely via GPRS modem.

The operator can use LiteEdit for a single gen-set view or WebSupervisor for total fleet management.

The generator is protected by a built in over/under voltage and frequency protections as well as IDMT overcurrent protection.

The controller communicates with engine management unit by a CAN J1939 bus. Engine values and alarms are visible on a graphical LCD screen in plain language – no need to learn cryptic flashing or numeric error codes.

AirGate WebSupervisor LOCATE

STANDBY SYSTEM WITH SOFT RETURN

– remote monitoring and control via Internet

Stand-by emergency gen-set accomplishes power supply to essential load during power drop.

The controller automatically starts the gen-set in case of mains failure and switches load to generator. When mains power returns, it synchronizes the generator back, softly unloads it and stops the engine.

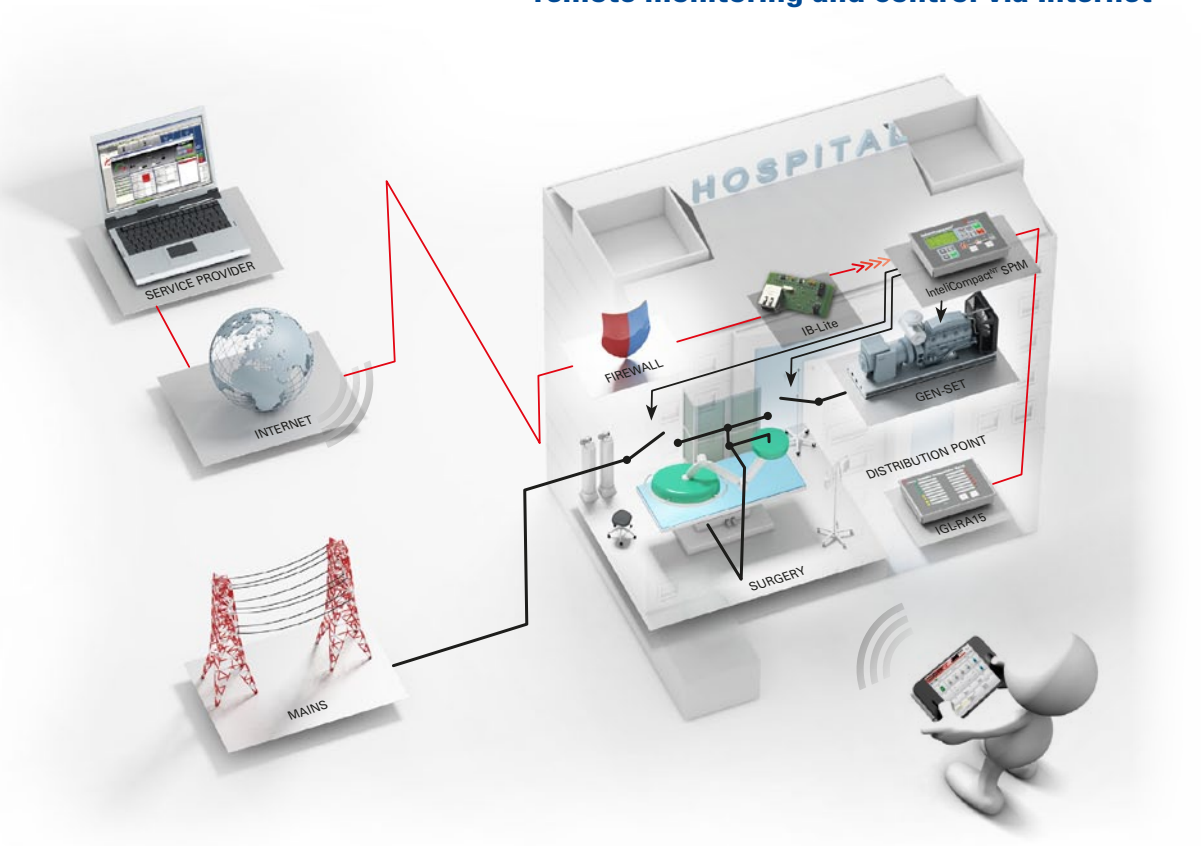
Generator automatically synchronizes to mains in Test mode. Test mode can be used to check the gen-set condition and to provide uninterrupted power supply in case of expected mains failure.

Status of the gen-set is displayed in the distribution point.

InteliMonitor is used for remote monitoring and control; connected via IB-Lite.

History file with performance log stored in InteliCompact^{NT} SPtM allows easy backtracking and problem solving.

Seamless communication with engine's electronic injection control unit, all important values and alarms are visible on screen of InteliCompact^{NT} and stored to the history file in plain language.



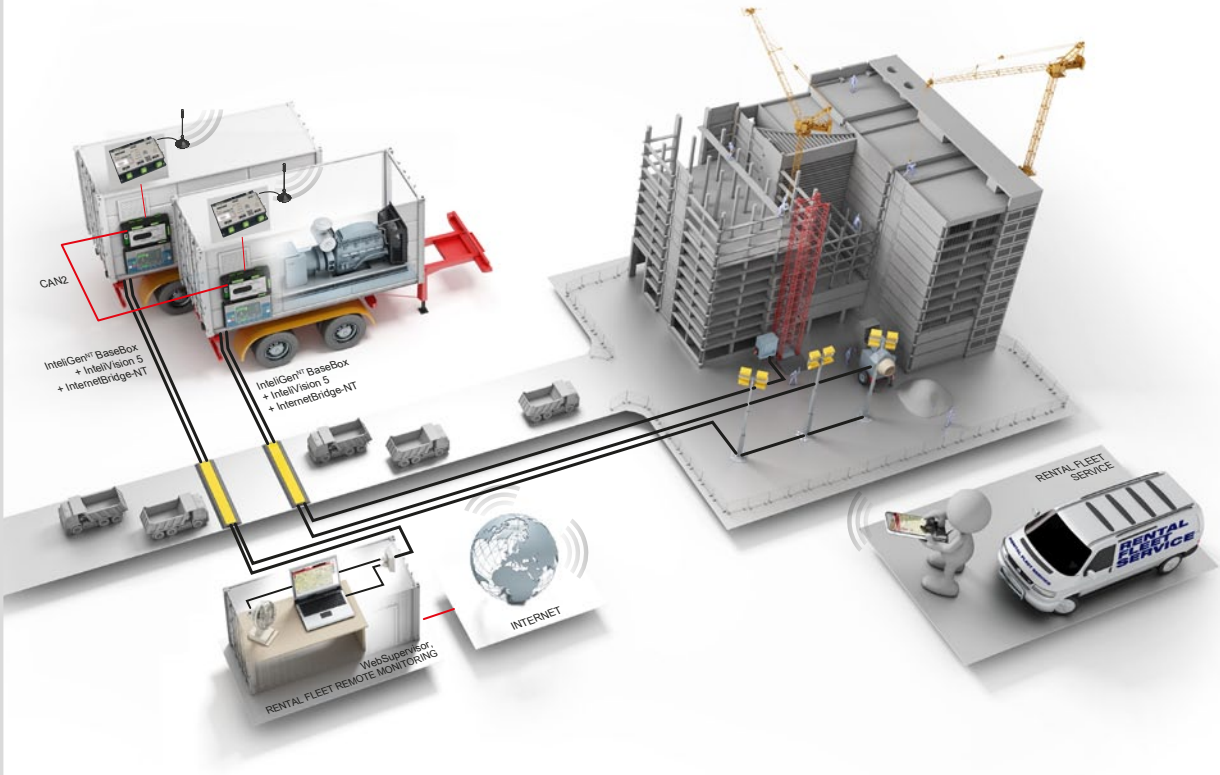
AirGate WebSupervisor LOCATE

RENTAL SETS

Containerized rental gen-sets are deployed as temporary and mobile power generation units providing essential energy for subsystems and construction machinery on building projects or civil engineering applications where mains power is not available or has been manually disconnected.

The application shows rental gen-sets fitted with the latest remote communication module InternetBridge-NT which enables the central control facility and mobile service engineers to efficiently monitor, control and supervise equipment wherever it is located. By using the supportive web based software applications such as WebSupervisor, rental operators can significantly improve operational control.

Each gen-set can be used in Stand-by, Single parallel to mains and Multiple parallel modes according to the position of Mode selector switch.



AirGate WebSupervisor LOCATE

COMBINED HEAT AND POWER (CHP)

– cogeneration

CHP (also known as cogeneration) is the most efficient way of using fossil or renewable fuel.

It provides output of power (3 phase electricity) and heat (hot water), which is recovered from the cooling system and flue gases.

The overall power and heat consumption of the application can be covered by the CHP system. Export of energy or heat is also possible.

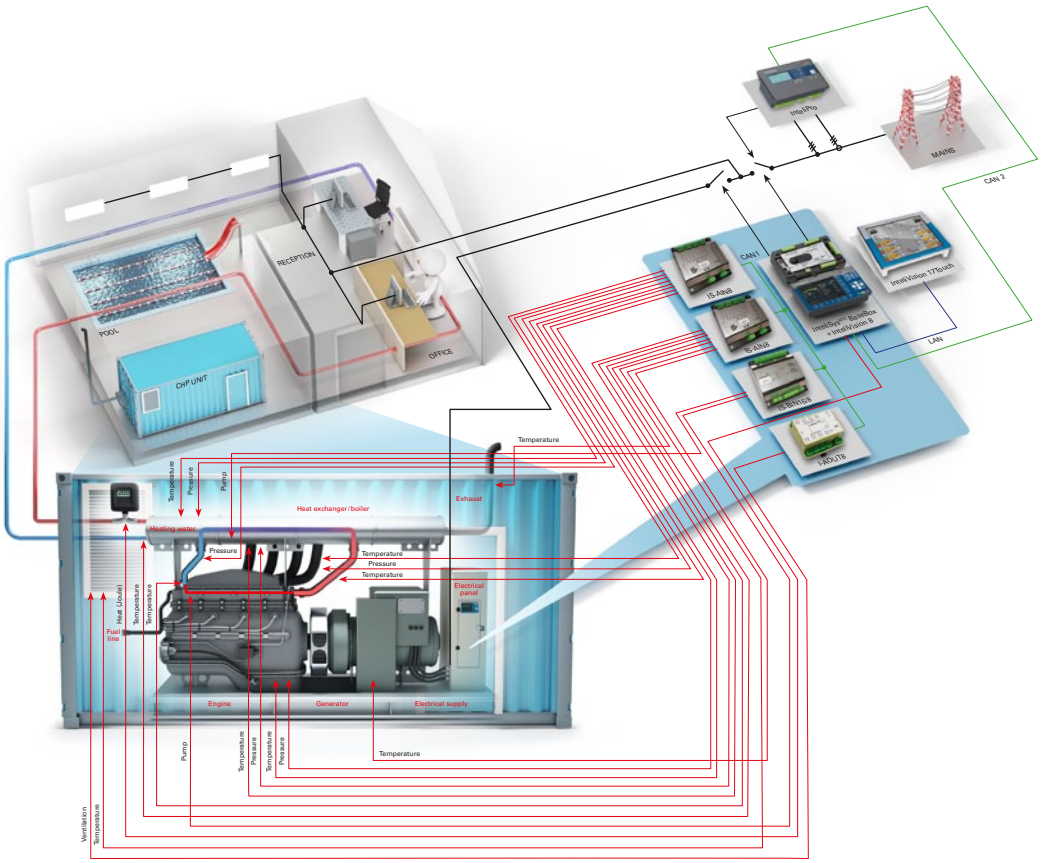
All analog and binary signals both from the engine and from the auxiliary systems are measured by InteliSys^{NTC} BaseBox and its accessory modules.

Complete control of auxiliary technologies is done by built-in PLC module.

All data measured from auxiliary equipment are stored in a history file.

Remote control and monitoring is available.

Only the most important Analog Inputs/Outputs and Binary Inputs/Outputs connections are drawn.



AirGate WebSupervisor LOCATE

START-UP SYNCHRO GENSETS

Application for faster start-up sequence of multiple generators.

No need to synchronize generators by standard way and wait until all of them are synchronized on the same bus.

Suitable for standby applications.

Eliminates possible blackout time.

Ideal for systems running on UPS.

System available at full capacity in 8-10 seconds from start command.

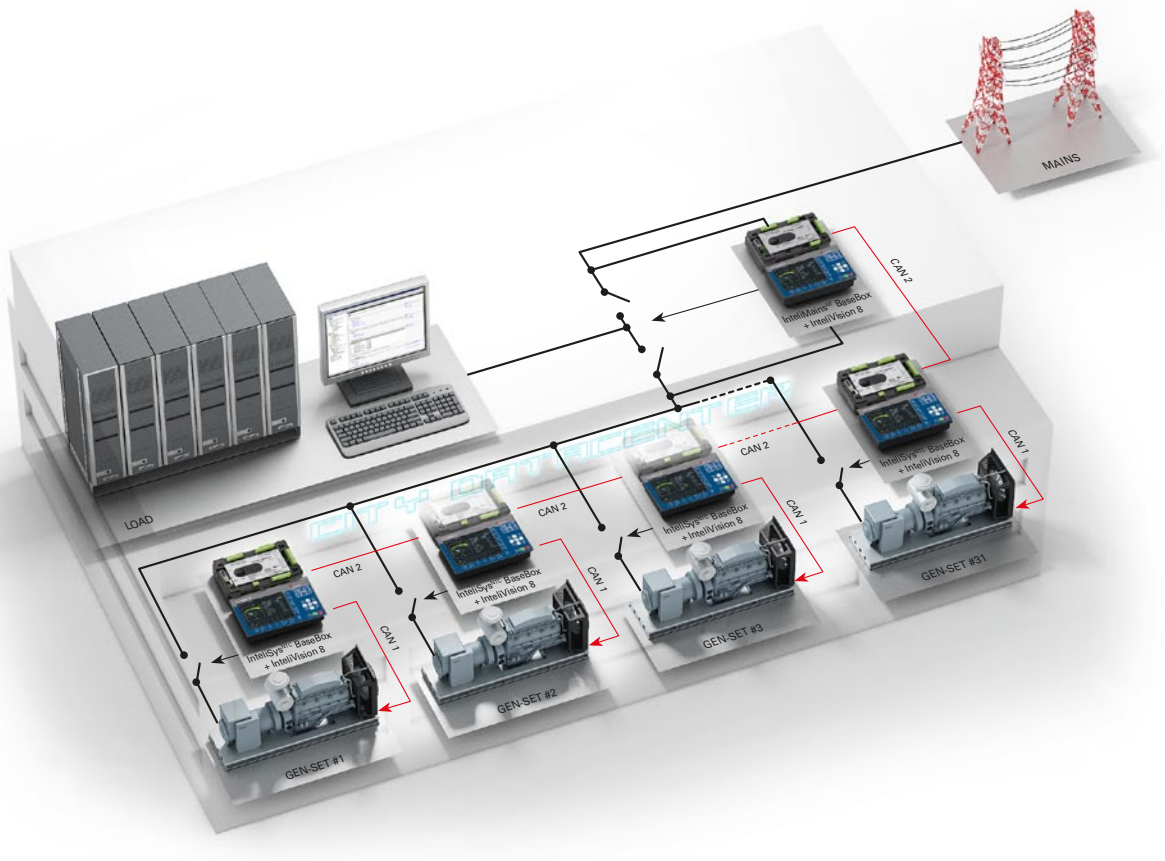
Start-up time remains constant even if the number of generators is increased to 10, 20 or 31.

To avoid delaying availability of the system due to slow-starting generators or other problems, any engines that fail to reach running speed within a specified time are “rejected” from the scheme and, if able, are left to perform traditional synchronizing after the majority of sets have become available.

Traditional synchronizing is available to allow for slow-starting generators.

Automatic switching to traditional synchronizing in case insufficient sets are available to meet load’s requirements.

The soft magnetizing of feed transformers – solves the problem where grid supply is not capable of supplying the inrush and decreases the overall cost of the installation.



AirGate WebSupervisor LOCATE

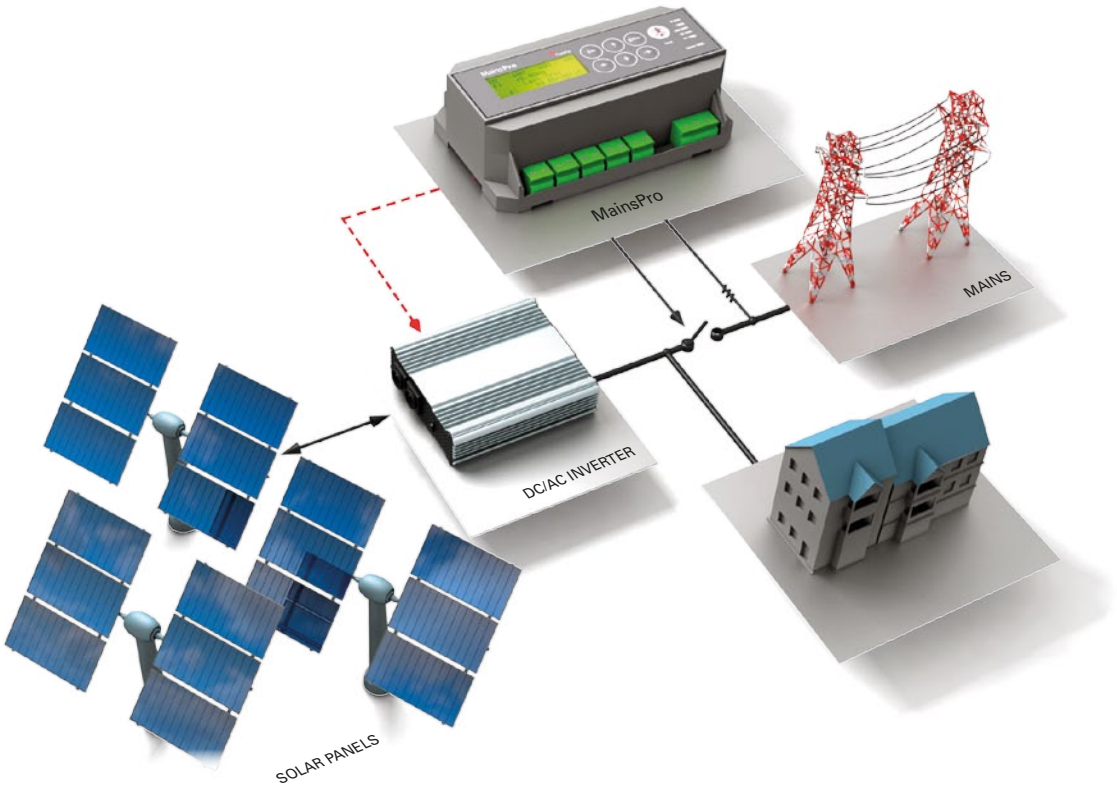
MAINS PROTECTION FOR SOLAR SYSTEM

Solar panels are becoming an increasingly cost effective option for generating and supplying electricity for commercial applications and residential buildings.

In both cases, operating the supply in parallel to the mains requires protection that meets the local utility supply standards.

ComAp mains protections suit this energy source well, being easy to install and intuitive to use.

With users infrequently on site or lacking technical knowledge, practical features such as automatic reset, remote information and reliable monitoring of basic functions help deliver a trouble-free operation.



SHIP POWER MANAGEMENT SYSTEM

Two auxiliary generators and one shaft generator deliver electricity for the systems of the ship. Generators are controlled by GeCon software in MINT configuration.

Power Management System (PMS) can work in three basic operational modes:

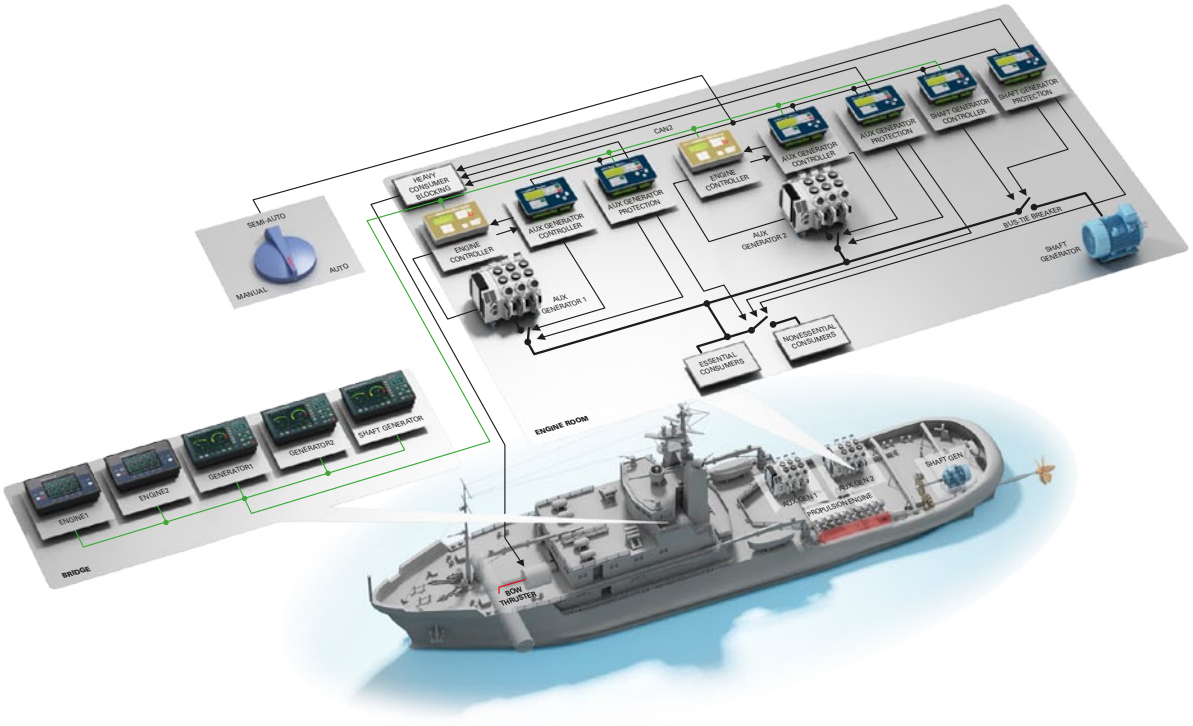
- MANUAL – complete manual control
- SEMI-AUTO – synchronizing and load-sharing is automatic; genset start/stop and load transfer between aux and shaft generators in manual
- AUTO – complete automatic control

PMS continuously evaluates load reserve on the bus and blocks start of the bow thruster if the load reserve is insufficient.

PMS automatically trips the non-essential consumers, if the power system is overloaded.

PMS can control up to 10 independent circuits of non-essential consumers.

Freely programmable built-in PLC functions can be used to create specific settings of behaviour by customer.



IRRIGATION PUMP SYSTEM

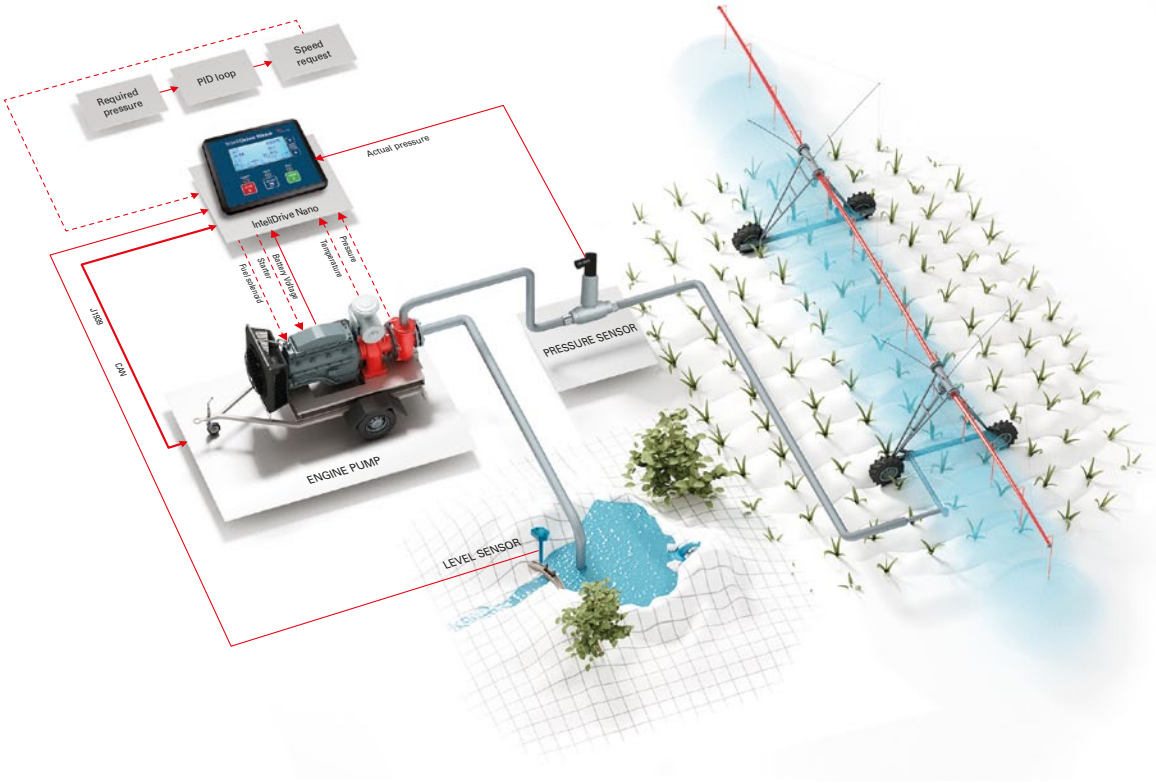
InteliDrive Nano makes complete control, monitoring and protection of the engine and pump driven by combustion engine.

InteliDrive Nano automatically starts the engine depends on external condition – e.g. level sensor – i.e. just in time when irrigation is needed for plants.

InteliDrive Nano senses water pressure and gently controls the engine RPM to keep water pressure constant to deliver water quantity independent on pipe system and number of nozzles in Automatic mode.

The engine start stop and RPM adjusting can be provided from InteliDrive Nano panel in Manual mode.

Engine speed control is managed by CAN-J1939 or analog interface.



IRRIGATION PUMP SYSTEM

– with remote communication via Internet

An irrigation pump is driven by a combustion engine.

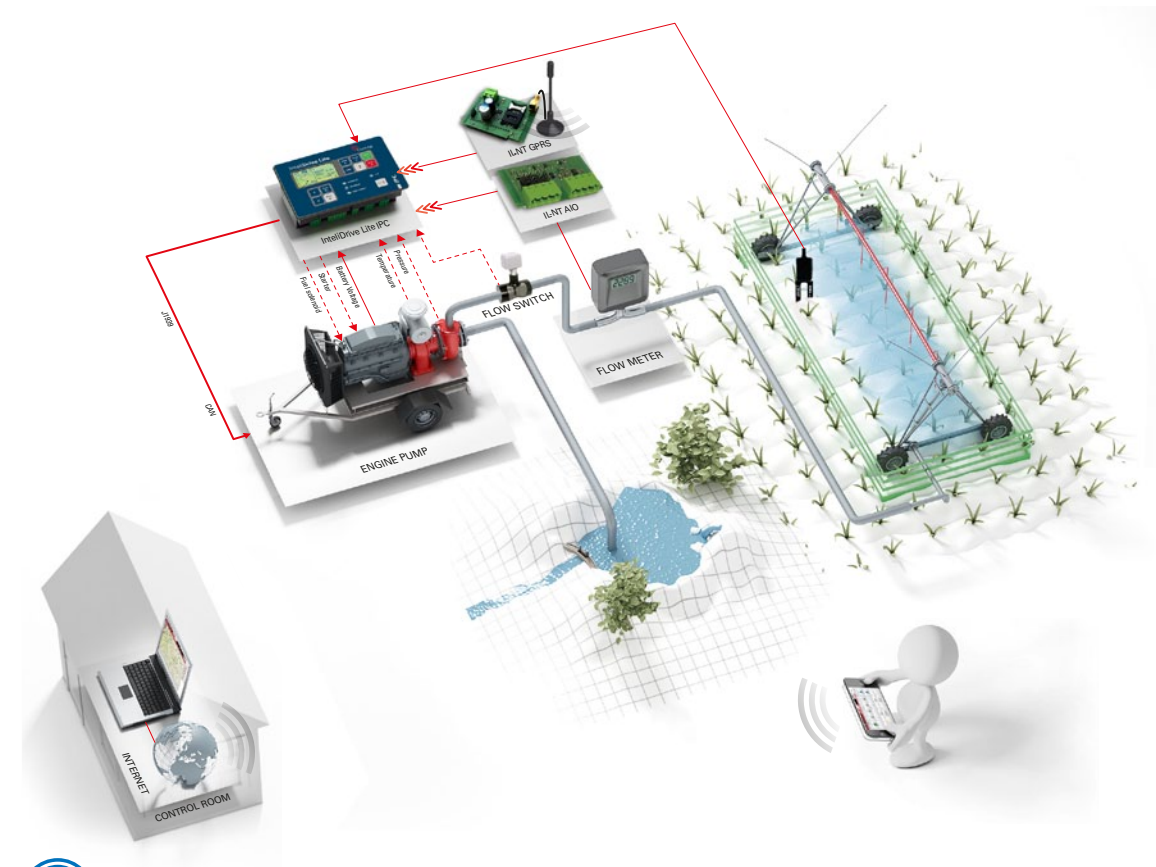
InteliDrive Lite IPC makes complete controls, monitoring and protection of the engine.

Water flow from a pump can be measured by flow-meter. InteliDrive Lite IPC controls variable speed engine, which can enable to change water flow according momentary need. Stable speed option is supported as well.

InteliDrive Lite IPC protects engine against overload via engine load limitation function based on Load information from ECU.

The system's status can be monitored and flow requirements adjusted via GPRS modem from a central supervision point via integrated and enhanced PLC logics, and the engine speed can be controlled via PID-loops.

The advanced bi-directional CAN-Bus communication helps simplify the wiring to the engine.



AirGate WebSupervisor LOCATE

GAS COMPRESSOR

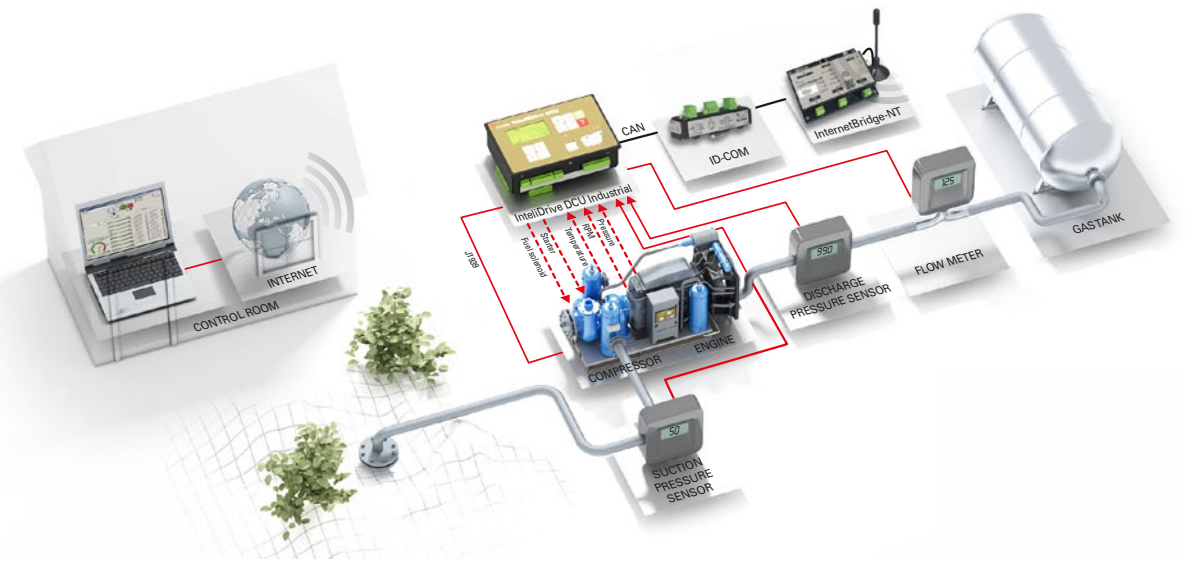
Gas compressor is driven by a combustion engine.

InteliDrive DCU Industrial makes complete control, monitoring and protection of the engine and compressor.

Sophisticated control algorithm using build-in PLC modules accomplishes optimal running conditions for the compressor.

Speed of the engine is determined according to the suction and discharge pressures of the compressor.

Additional unload and by-pass valves are controlled by InteliDrive DCU Industrial in dependence on both suction and discharge pressures.



AirGate WebSupervisor LOCATE

BI-FUEL/DUAL FUEL WITH PARALLELING GENSETS

InteliBifuel does not interfere with the existing gen-set / engine controller therefore the functionality of the current application remains the same after Bi-fuel conversion.

The InteliBifuel conversion application is suitable for any type of gen-set/engine mode of operation (island, synchronization, paralleling).

Financial savings are achieved via the substitution of up to 80% of the existing engines diesel consumption with gas (extended operating times without refuelling are also realized).

InteliBifuel controllers offer fuel flexibility and seamless transition between diesel and Bi-fuel operation modes as required (e.g. in case that gas is not available).

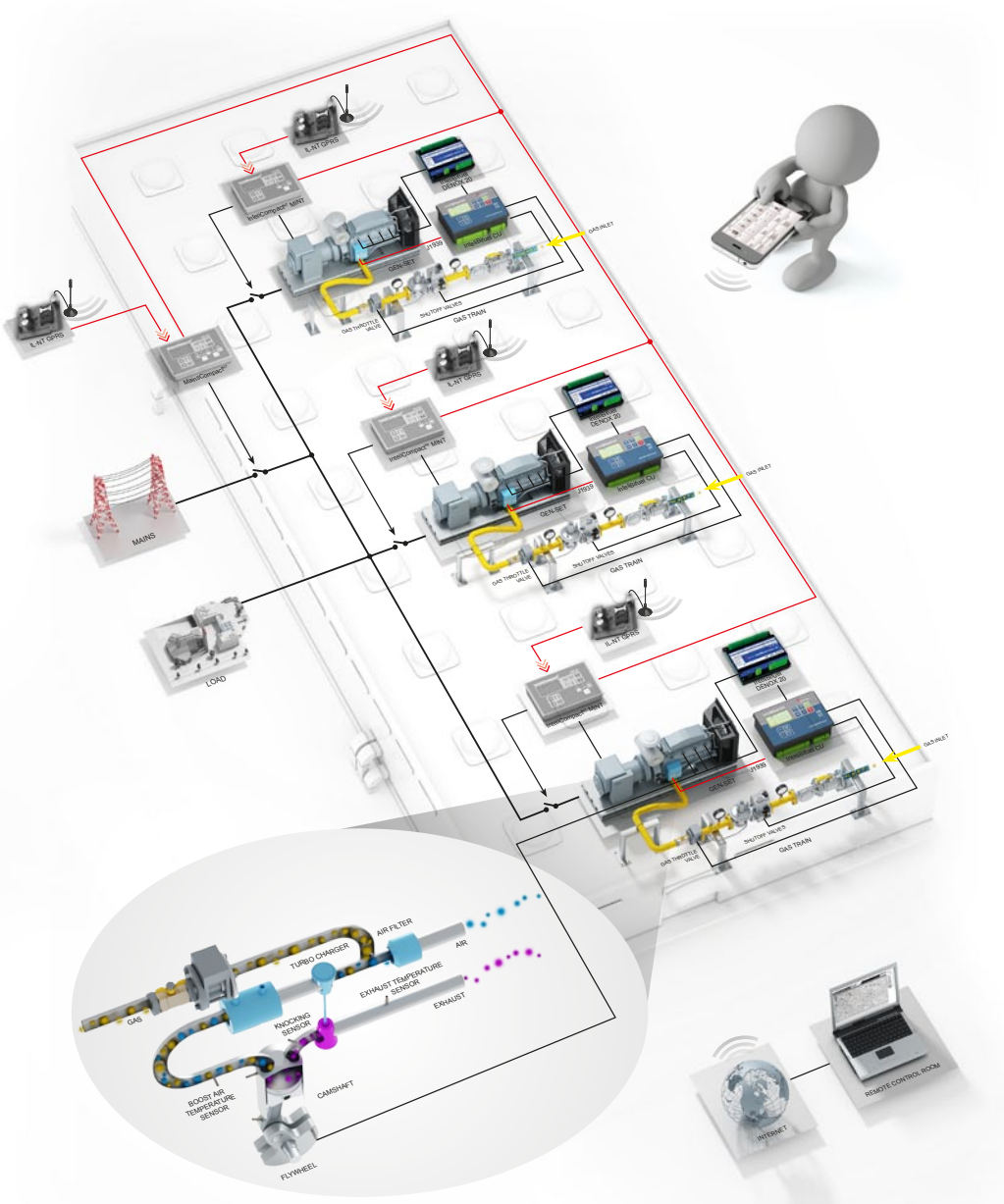
Various types of gases can be used as the substitute fuel: natural gas, well gas, landfill gas, coal gas, propane gas, biogas etc.

Possible emission reductions of CO_2, NO_x, SO_x and PM can be expected compared to original 100% diesel operation.

The InteliBifuel solution is a fully automatic solution which is mainly concerned with engine safety, gas is dynamically adjusted and optimised via a gas throttle valve.

All parts and parameters of the Bi-fuel solution are monitored and accessible from a single point.

Excellent remote monitoring features.



AirGate WebSupervisor LOCATE

Controllers for single gen-sets applications

InteliNano^{NT} MRS
InteliNano^{NT} AMF

InteliNano^{NT} is a cost effective generator set controller which offers outstanding protection, monitoring and control for small and middle size generator sets and light towers. There are two versions available – MRS (Manual Remote Start) and AMF (Auto Mains Failure).

InteliLite^{NT} MRS
InteliLite^{NT} AMF

InteliLite^{NT} is a generator set controller which offers outstanding protection, monitoring and control for middle and large size generator sets. The controller offers many extension and communication features via external modules. There are two versions available – MRS (Manual Remote Start) and AMF (Auto Mains Failure).

Controllers for parallel gen-sets applications

InteliCompact^{NT} SPtM
InteliCompact^{NT} MINT

InteliCompact^{NT} SPtM and MINT models are integrated controllers for gen-sets operating in both standby and parallel modes. The controllers feature easy to use functionality, configuration and installation and benefit from a built-in synchronizer and digital isochronous load sharer.

InteliGen^{NT}

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

InteliGen^{NTC} BaseBox

InteliGen^{NTC} BaseBox is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. The detachable modular construction allows easy installation with the potential for many different extension modules designed to suit individual customer requirements.

InteliSys^{NTC} BaseBox

InteliSys^{NTC} BaseBox is an expandable controller for both single and multiple gen-sets operating in standby or parallel modes, especially in cogeneration (CHP) and other complex applications.

MainsCompact^{NT}
InteliMains^{NT} BaseBox

MainsCompact^{NT} and InteliMains^{NT} BaseBox are designed for multiple (up to 31) gen-sets operating in parallel to mains. MainsCompact^{NT} works together with InteliCompact^{NT} MINT; InteliMains^{NT} BaseBox with both InteliGen^{NT} and InteliSys^{NT} product lines.

InteliGen^{NT} Marine
InteliSys^{NT} Marine

InteliGen^{NT} Marine and InteliSys^{NT} Marine are marine certified comprehensive controllers for both single and multiple gen-sets operating in standby or parallel modes (InteliSys^{NT} Marine especially for complex applications).

Controllers for various power generation applications

InteliATS^{NT} STD
InteliATS^{NT} PWR

InteliATS^{NT} STD and PWR models are controllers designed to monitor the AC mains supply for under/over voltage, under/over frequency and voltage unbalance.

InteliGen^{NT} GeCon
InteliSys^{NT} GeCon

InteliGen^{NT} GeCon and InteliSys^{NT} Gecon provide comprehensive generator protection and control for single or multiple gen-sets equipped with an independent engine controller in landbased and marine applications.

InteliGen^{NT} BaseBox 400Hz

InteliGen^{NT} BaseBox 400Hz is a comprehensive controller designed for aircraft ground power gen-sets operating at 400 Hz frequency.

Nonstandard applications

Both products lines of InteliGen^{NT} and InteliSys^{NT} provide solution for nonstandard applications such as Power Station Controller, Start-up synchro gensets or application with Asynchronous generator for CHP via loading of a special ComAp software into the standard controller.

Mains protections

MainsPro

MainsPro is a protection relay for parallel to the mains applications, including generator sets, cogeneration, micro turbines or renewable energy sources such as photovoltaic plants, small hydro power plants or wind turbines.

InteliPro

InteliPro is a highly flexible interconnection/mains decoupling protective relay. It is applicable for G59/2, IEEE 1547 requirements, and with extensive protective functions, it meets the strictest utility interconnection requirements and can be used in wide ranges of distributed generation application such as Photovoltaic, Wind, Fuel Cell, Bio Mass, Combined Heat and Power, etc.

Controllers for advanced engine driven applications

InteliDrive DCU Industrial

The InteliDrive DCU Industrial is a highly flexible sophisticated engine controller, which features outstanding control, monitoring and protection for both mechanical and electronic diesel/gas engines as well as peripheral equipment.

InteliDrive DCU Marine

The InteliDrive DCU Marine is an 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.

Controllers for tough engine driven applications

InteliDrive Mobile

The InteliDrive Mobile is a highly flexible sophisticated mobile electronic controller, which features outstanding control, monitoring and protection for diesel and gas engines as well as driven technology. The controller offers range of specific functions suitable also for mobile applications as hydraulic system control, communication with sensors and operational devices control.

InteliDrive Mobile Logger

The InteliDrive Mobile Logger is a highly flexible sophisticated data logger, which features outstanding, monitoring and history tracking for diesel engines as well as peripheral equipment.

Controllers for basic engine driven applications

InteliDrive Nano

The InteliDrive Nano is a cost effective engine controller, which features outstanding control, monitoring and protection for electronic and conventional diesel/gas engines. The controller is suitable for pumps, compressors, etc.

New InteliDrive Lite

The New InteliDrive Lite is a cost effective and sophisticated all in one 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.

InteliDrive Lite DC

InteliDrive Lite DC controller is intended to control the DC generators which recharge the batteries of a standalone electric devices supplied by the DC current.

InteliDrive Lite EM

The InteliDrive Lite EM is an integrated control solution for Single or Three phase AC electric motors. It allows operation of the motor either manually, remotely or automatically

InteliDrive Lite FPC

InteliDrive Lite FPC is designed for diesel driven fire pumps applications based on NFPA 20 standard. Manual operation allows the pump to be started (two battery system) for test, whilst automatic operation provides starting by remote system pressure switch.

Bifuel products

InteliBifuel 2
InteliBifuel 20

InteliBifuel 2 and InteliBifuel 20 are control system packages which will enable 4 stroke diesel engines, generating sets or pumps to operate on Bi-fuel/dual-fuel (a mixture of 2 fuels at the same time).

Colour Displays

InteliVision 5
New Generation 5,7" Colour Display Unit

InteliVision 8
8" Colour Detachable Display Unit

InteliVision 5 RD
New Generation 5,7" Remote Colour Display Unit

InteliVision 8 Marine
Marine Approved 8" Colour Detachable Display Unit

InteliVision 5 CAN
New Generation 5,7" Colour Display Unit with CAN Bus Interface

InteliVision 17Touch
Colour Touch 17" Display

InteliVision 5 CAN Backlit
New Generation 5,7" Colour Display Unit with CAN Bus Interface and Backlit Buttons

ScreenEditor
PC tool, which allows you to personalise the interface on your InteliVision 5 and InteliVision 8 colour displays, part of GenConfig and DriveConfig.

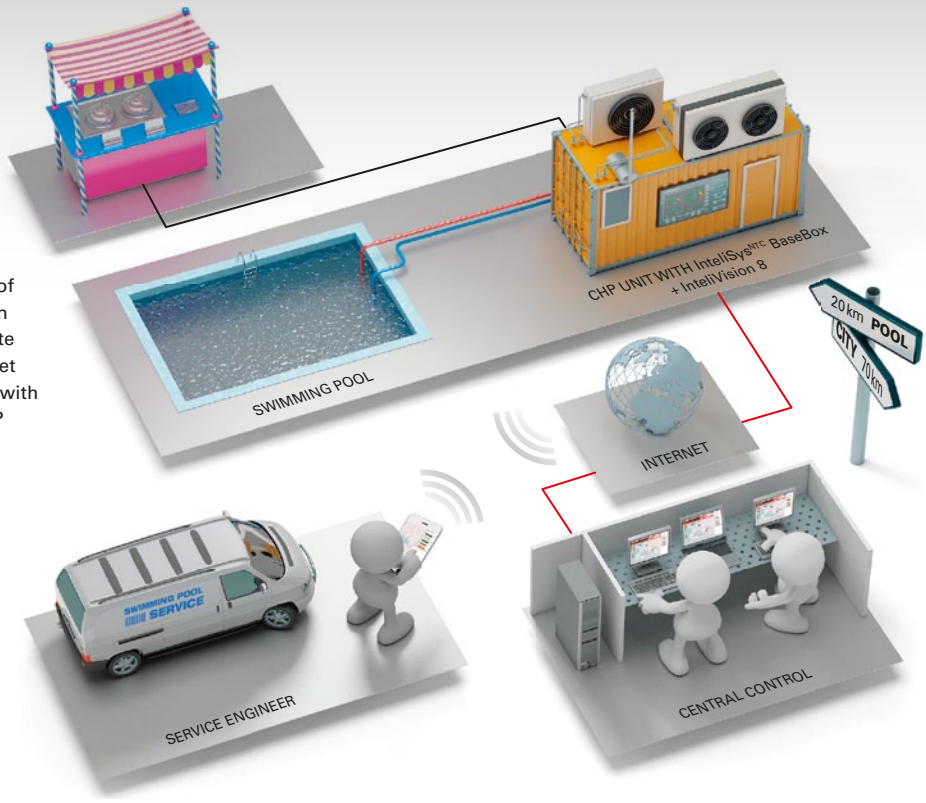
Screen Editor

"See things your way!"

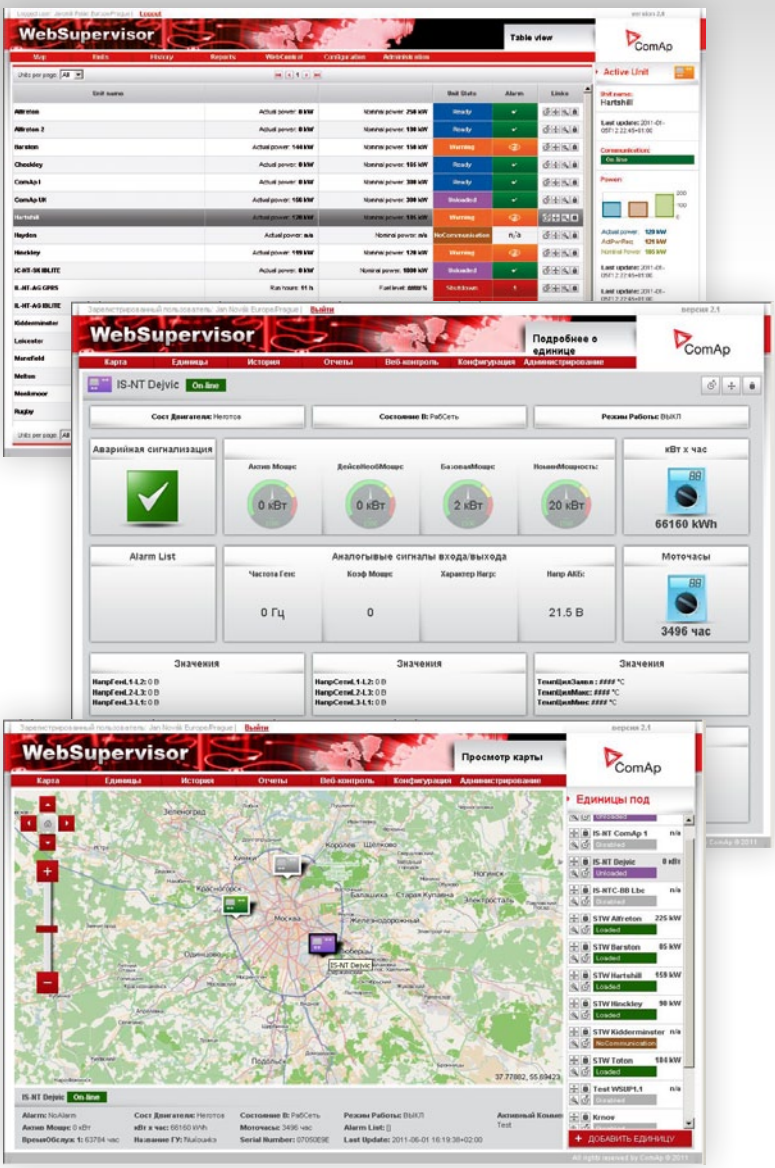
AirGate
simply connected

Modern communications made simple. ComAp's powerful 'AirGate' technology is provided in a range of our controllers and makes remote internet connection to the ComAp controller easy. Just register the AirGate enabled controller on our website and from then on let ComAp's unique system locate and maintain contact with the controller, no need to worry about VPN's, Static IP addresses or corporate firewalls, simple!

"AirGate – Simply connected."



See more on our YouTube channel!



WebSupervisor

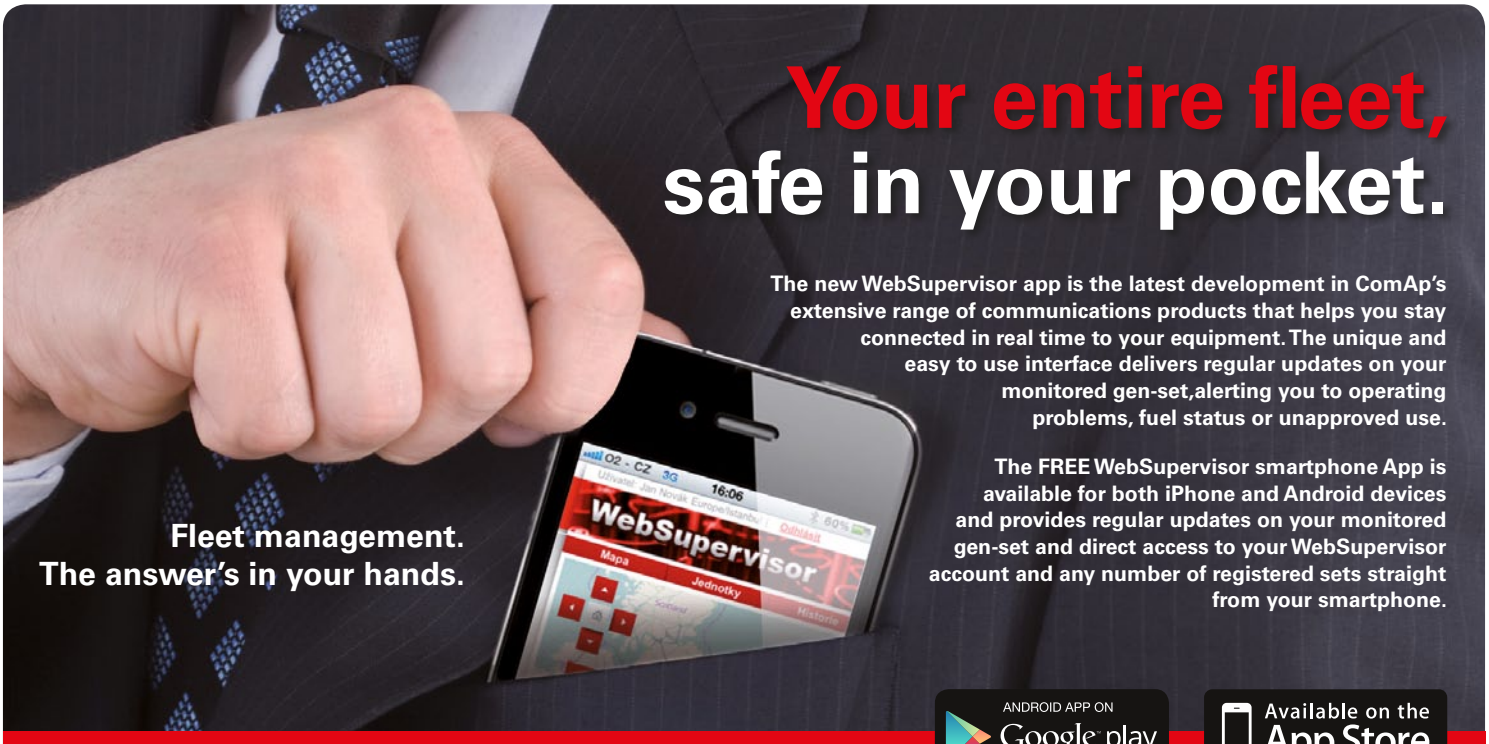
WebSupervisor is cloud-based system designed for monitoring and controlling ComAp controllers via the internet. This system offers a number of beneficial features that help optimize revenue for machinery fleets, as each piece of equipment can be individually monitored for all important operation values.

AVAILABLE IN VARIOUS LANGUAGES

Interested? Try it now!

http://websupervisor.comap.cz

- Username: comaptest
- Password: comaptest



References

Peru

Toromocho mining site

"At Generadores Gamma, we have incorporated ComAp's InteliLite line of controllers, together with IL-NT GPRS modules for remote monitoring and supervision into a number of packages supplied to project Toromocho – one of the most important mining sites in Peru. From our customers monitoring centre in Lima, or from our technicians mobile phones, the gen-sets can be monitored on a 24/7 basis, providing the customer with an unprecedented level of technical support. In this respect, WebSupervisor has also become a powerful service tool offering incredible value added characteristics."

Ing. Fernando Gudiño
Plant Manager
www.gamma.com.pe

Australia

D'Vine Ripe tomato plant

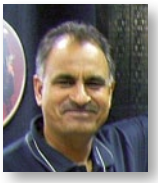
One of the largest tomato growers in the southern hemisphere – D'Vine Ripe, comissioned Power and Drive Solutions to design, supply and install a power control system that provided failsafe management for five onsite generators used to supplement mains power and provide back-up in the event of grid failure. The control package features 5× InteliSys^{NT}, 1× InteliMains^{NT}, 6× InteliVision 8 colour displays in main control panels, with 5× IS-Displays located on each engine for local control. The system also features 5× MainsPro, the new mains decoupling relay that provides statutory protection when working in parallel to the mains. The whole power application is monitored continuously to ensure no interruption to the combined supply using 3G modem linked to InteliMonitor and WebSupervisor.

Hayden Smart
Managing Director
www.pandds.com.au

Canada

Paralleling system for Oil sand camp

"When I first saw InteliVision at PowerGen, I immediately recognised its potential for our power generation systems. The large easy to read colour display and customer-friendly interactivity is precisely what our customers have been looking for. We have already installed systems with InteliVision and received very positive feedback from our customers on the units performance."



Santokh Sahota P. Eng
Engineering Manager
www.simson-maxwell.com

Mongolia

Tayan Nuur site

The powers station feeds a 10 kV substation and is then distributed around the mine. 11 units of Cummins engine powered Gensets with InteliGen^{NT}, containerized units and 3 units of MTU engines (1,6 MW each for prime) with InteliGen^{NT}, containerized units. Total DPS's capacity is 11,4 MW with Fuel system, step up transformer, switch gear, high voltage transmission line and step down transformer including distribution.

References

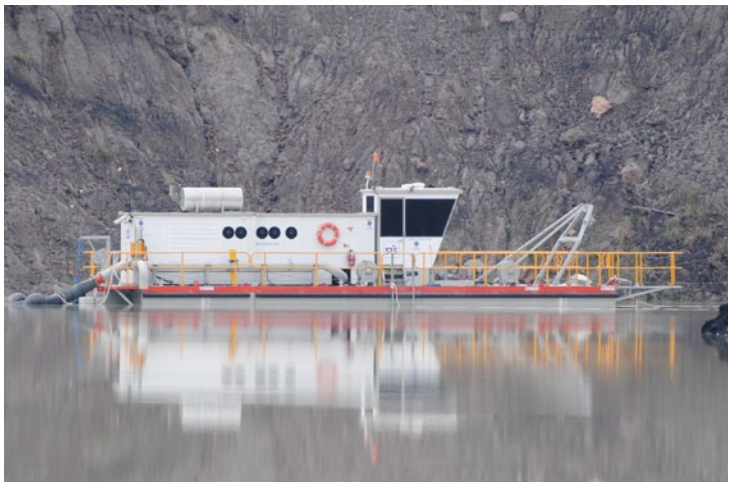
Nigeria

Pasta factory

The Dangote Group is currently the largest industrial conglomerate in West Africa and one of the largest in Africa. ComAp is proud that had the possibility to participate on many projects regarding Bi-fuel conversions on several different Dangote subsidiaries.
This particular project consisted of conversion of 4 × Caterpillar 3512B diesel engines with the new InteliBifuel controller package Recent economical development in Nigeria has significantly increased prices of diesel, therefore many customers are seeking for a different fuel that they can use with their current diesel engines. Due to high price difference between gas and diesel, the return on investment for this project was less than two months.

Indonesia

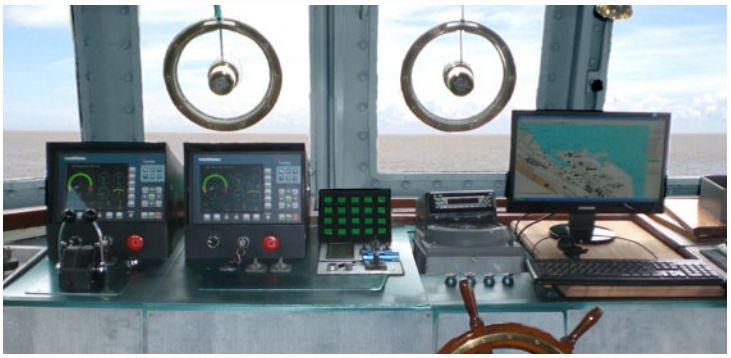
Rockcrush Dredge



The system comprises a Diesel driven dredge to process the over burden, then a network of boosters to lift the dense mass 100 meters vertically and then through 800 meters of pipe to an open channel delivering 450 dry tons per hour to a flood plain dumping area. The challenge was to provide a system capable of controlling and monitoring the entire network of infrastructure from the single operator's seat in the dredges main cabin. Power & Drive Solutions utilised InteliDrive DCU controllers to control the engines as well as ancillary equipment. The built in logic functions allowed for the entire pumping system to be controlled from the InteliDrive DCU, thus making integration to the telemetry a simple single point connection.

Argentina

Cabo Corrientes and Puerto Madryn



The system was installed by Servintel International using the new PLC Editor to configure a number of key control elements, which included the main engine speed and the gearbox clutch (both forward and reverse). The onboard generators are powered by Perkins engines use InteliGen^{NT} Marine and the complete system is easily managed using two full colour InteliVision 8 and IG-Display units.
"The new PLC Editor is a really exciting development for both for us and our customers. The great advantage is that it's easier to create and understand the programs and it offers a high level of flexibility on every project."

Alberto Carballo
Managing Director
www.servintel.com

United Kingdom

Sewage Treatment sites

"In the United Kingdom, Severn Trent Water runs a fleet of 55 generators on 35 Sewage Treatment sites, situated in an area of around 6000 sq miles. With distances of up to 185 miles between sites we require reliable remote communications to maximise our fleet availability. ComAp's remote communication capabilities have allowed us to monitor, report on, fault diagnose and fault reset our entire fleet 24/7. We currently use WebSupervisor on a large LCD screen in our main control room and are making use of the iPhone / iPad App. InteliMonitor provides a more comprehensive remote maintenance tool and the introduction of InternetBridge-NT is allowing us to explore the capabilities of AirGate and WebServer giving more flexible connection possibilities."

Ian Middleton
Generation Technician
www.stwater.co.uk

ComAp

Bringing the

ComAp is a dynamic international company with a solid reputation for delivering innovative electronic solutions to the power generation, industrial engine and equipment market.

Our vision of making the future a reality for our customers everyday is realised through a dedicated team continuously looking to improve our products, understanding customer needs, remove complexity and transform problems into world class solutions.... so we can deliver excellent reliability, outstanding performance and unbeatable value.

Global reach with local support

ComAp are recognised for delivering a high level of customer service and technical support, realised in collaboration with our network of professional and distributors, all of whom are committed to enhancing our customers' experience of ComAp products. This close family of key distributors are located in almost 100 countries, spanning every continent around the world ensuring our customers benefit from local capability coupled with global reach – wherever they are located.

future to reality

ComAp Training

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