ComAp
The heart of smart control

ComAp Explanatory Dictionary

Explanation of technical terms used in documentation

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Acronym Guide

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1 Preface

The aim of this document is to provide a simple, practical and easy but accurate way to understand explanation of terms, abbreviations, and terminology used (not only) in the ComAp documentation. The purpose of this dictionary is not to replace other ComAp documentation (like Global Guide, Reference Manuals, Operator Guide, etc.).

Despite our efforts, inaccuracies may occur - please do not hesitate to provide us with your feedback to help improve this document. Thank you.

2 ComAp Explanatory Dictionary

A

Term	Category	Explanation
AC		See **Alternating current**
AC generator		Electrical generator that produces **Alternating current**,could be synchronous or asynchronous type.
Active power		**AC** power with a unity **Power factor** measured in Watts. Commonly used symbol is P.
ADN		***A**rchive **D**rive **N**ano*
AFR		***A**ir/**F**uel **R**atio* AFR is the mass ratio of air to a solid, liquid, or gaseous fuel present in a combustion process. The AFR is controlled by **Mixer**.
AFS		**AFR** algorithm for stoichiometric gas engines.
AHI	ComAp	***A**larm list + **H**istory **I**ndication*
AI(N)	ComAp	***A**nalog **I**nput*
AIC		Archive InteliCompact NT
AID		Archive ID-DCU
AIL		Archive InteliLite and InteliLite NT
AIM		Archive ID-Mobile
AIP		Archive file InteliPro
Air circuit breaker		**Circuit breaker** using air as the arc extinguishing media.
AirGate (AG)	ComAp	A technology developed by ComAp allowing connecting of controllers to the internet removing the requirement for static IP addresses.
Alarm (AL)	ComAp	Alarm list only
Alarmlist	ComAp	A screen which shows active or inactive alarms. Inactive alarms are possible remove by pressing Fault Reset Button
ALI	ComAp	***A**larm **L**ist **I**ndication*
Alternating current		Electric current with flow in both polarities (usually produced by **AC generator**).
AMF		***A**uto **M**ains **F**ailure* The gen-set is started and take over the **Load** on the indications of mains failure.
Analogue controls		Controls using variable signal (e.g. voltage, current or **PWM**) to pass information.
ANT		IG/IS-NT archive file (contains setpoints, values, history and configuration saved from the particular controller).
AOUT (AO)	ComAp	***A**nalog **Out**put*
APC	ComAp	***A**dvanced **P**arallel **C**ontroller*

Term	Category	Explanation
		Type of ComAp **CU**
API		***A**pplication **P**rogramming **I**nterface* In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building software. In general terms, it is a set of clearly defined methods of communication between various components.
APN	Acronym	***A**ccess **P**oint **N**ame*
Apparent power		The product of current and voltage in an **Alternating current** circuit which has a reactive element (Apparent power is geometric sum of **Active power** and **Reactive power**).
Application	ComAp	Application is nothing more than an **Archive** with **Configuration** containing different setpoints and some other elements (like electric protections) of configuration used in different situations.
Archive	ComAp	**Configuration** + setpoints, current operational values, history (performance log).
AS		***A**ll **S**peed* An application in ID-DCU and ID-Mobile controllers
AST		***A**rchive **S**et* A file created by InteliMonitor, contain links to archives from all active gen-sets of the site which were saved at the same time
ATS	Acronym	***A**utomatic **T**ransfer **S**witch* A device used to automatically switch a power supply from normal to emergency when a power failure occurs.
AUT	ComAp	Fully automatic **Mode of operation** of controller, based on the external signals and/or given commands.
AUTO		See **AUT**
AUX	ComAp	***Aux**iliary* Type of ComAp (marine) **CU Application**
AVR	Acronym	***A**utomatic **V**oltage **R**egulator* Device used to control the voltage of an **AC generator** by sensing the terminal voltage and varying the field current (**Voltage regulator**).
AVR droop		AVR voltage reference is reduced as VAr increases.
AVRi	ComAp	***AVR I**nterface* The IG-AVRi is ComAp extension module ensuring the voltage matching interface between controller and generator ARV with electric insulation (IC or IGS-NT only).
AWG	Acronym	***A**merican **W**ire **G**auge* AWG is a logarithmic stepped standardized wire gauge system for the diameters of round wire. The cross-sectional area of each gauge is an important factor for determining its current-carrying capacity.

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Term	Category	Explanation
Backup		Backup of **CU** (can also be e.g. redundant controller)
Backup		Backup of supply source (gen-set mode Stand-By / **AMF**)
Backup protection		A protection system which will operate when a system fault is not cleared by other **Protection**.
Base load	ComAp	Fix (basis) generator power demand in case of parallel operation of generator(s) to mains, the other power sources are adding remaining power.
-BB	ComAp	***B**ase **B**ox* A controller (**CU**) without an integrated display. Used as postfix in **CU** identification.
BBM		***B**reak **B**efore **M**ake* Operation of switch which interrupts one circuit before closing the other see MBB (**Make before break**).
BDEW	Acronym	***B**undesverband **d**er **E**nergie- und **W**asserwirtschaft* German Federation of Energy and Water publishing the technical guidelines for generating plants connected to medium voltage network - technical rules.
BF		***B**i**F**uel* An engine operation using combination of both diesel and gas
BI(N)	ComAp	***B**inary **I**nput*
BIO	ComAp	***B**inary **I**nput or **O**utput*
Black start		Refers to starting of a power system without the use of an external power source (but internal power such as dc control and start power is available). Also the procedure necessary for a recovery from a **Total shutdown** or **Partial shutdown**.
Bld		***B**aseload* A gen-set power control mode which keeps constant power supply to the load.
BMS	Acronym	***B**attery **M**anagement **S**ystem* A battery management system (BMS) is any electronic system that manages a rechargeable battery (cell or battery pack), such as by protecting the battery from operating outside its Safe Operating Area, monitoring its state, calculating secondary data, reporting that data, controlling its environment, authenticating it and/or balancing it.
BMS	Acronym	***B**uilding **M**anagement **S**ystem*
BO	Acronym	***B**reaker **O**pen/**B**inary **O**utput*
BOC	Acronym	***B**reaker **O**pen and **C**ool down* Type of protection behavior, applied usually to the electric protections (to protect the generator).
Breaker		Electric switching apparatus with control and feedback signals, used for

Term	Category	Explanation
		dis/connecting even the powered lines, has the protection capability (compare **Contactor**).
Brown out		An intentional or unintentional drop in voltage in the utility mains power supply. Intentional brownouts are used for load reduction in an emergency. The reduction may last for minutes or hours, as opposed to short-term voltage sag (or dip) lasting seconds caused by other factors. It is known that such voltage drops can be harmful to certain sensitive electrical devices, such as computers; therefore accentuating the importance of a resilient back up regime including a generating set for a business.
BTB	Acronym	***B**us **T**ie **B**reaker* The breaker used for separating / connecting the busbars in the system of multiple buses. In the AC system the connection must be performed with **Synchronization**.
BTB	ComAp	Type of ComAp InteliMains (**CU**) **Application** controling the **BTB**
BU	Acronym	***B**usiness **U**nit*
Busbar		Copper or aluminum (usually rigid) conductors of rectangular, square, round or hollow cross section, to interconnect high current circuits in a switchboard or building.
BW	ComAp	***B**roken **W**ire*

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Term	Category	Explanation
CAN bus		***C**ontroller **A**rea **N**etwork* Communication bus used for controllers interconnection or for **ECU** connection.
CB	Acronym	See **Circuit breaker**
CHP	Acronym	See **Combined heat and power**
Circuit breaker		A protective device to interrupt the flow of current in a circuit when the current level exceeds a certain value. It is normally rated to interrupt fault current. Many devices include the protection relay etc. to make this an automatic circuit **Breaker**. Abbreviated as CB.
CMB	ComAp	*Combine* Type of ComAp (marine) **CU Application**
CMP(H)	ComAp	*Comparator (with Hysteresis)*
C/O		***C**lose/**O**pen*
Cogeneration		See **Combined heat and power**
ComAp	Acronym	***Com**puter **Ap**plication* The heart of smart control
Combi	ComAp	Type of gen-set **CU Application** (IGS-NT only), combining the **MINT**, **SPI**

Term	Category	Explanation
		and **SPtM** application
Combined cycle gas turbine		Power plant where the exhaust heat from the turbine(s) is turned into steam which us used to generate power in a steam turbine. Thereby increasing the overall efficiency of the plant.
Combined heat and power		Use of a **Generating set(s)** or sets for the purpose of utilizing the heat produced (via the exhaust and the radiator) as well as producing electricity. Thereby increasing the overall efficiency of the plant. A power plant using an engine to generate electricity and useful heat simultaneously.
Compound generator		A generator whose **Excitation system** takes elements of both voltage and current, or derivatives of these in order to give the required level of excitation to the main field.
Configuration	ComAp	Properties of attached modules, inputs, outputs, protections, languages, PLC and other information. Configuration is contained in each **Archive**.
Contactor		Electrically controlled switch used for switching an electrical power circuit (e.g. 230-volt motor). A contactor is typically controlled by a low voltage circuit (like 24-volt). Unlike a **Circuit breaker**, a contactor is not intended to interrupt a fault current.
CoolDown (Cooling)	ComAp	The procedure of cooling the gen-set (unloaded gen-set is running for the specific time).
COX	ComAp	Type of ComAp gen-set **CU Application** The **Combi** type with the **CB** controlled externally (designed to **CO**operate with an eXternal supervisory control system, like PLC).
CS	ComAp	***C**ommunication **S**erver* Translator between a controller and InteliConfig.
CT		***C**urrent **T**ransformer*
CU	Acronym	***C**ontrol **U**nit* Also referred as controller.
Current transformer		***C**urrent **t**ransformer (CT)* Is a type of transformer that is used to measure **Alternating current**. It produces a current in its secondary which is proportional to the current in its primary. Standard currents in the secondary are 1 A and 5 A at the rated primary current.
Cycle		The complete reversal of an alternating current or voltage, from zero to positive maximum down to negative maximum and back to zero.

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Term	Category	Explanation
D+		The D+ terminal is used for detection of running engine and/or for charger failure alarm detection.
D+		The energizing terminal for the charging alternator or the engine starter.
DC		See **Direct current**
DCU	ComAp	***D**rive **C**ontrol **U**nit* Type of ComAp (drive) **CU**
DDE		***D**ynamic **D**ata **E**xchange*
DE	Acronym	***D**rive**E**dit* PC software for ID-Nano configuration.
Dead bus		The **Busbar** (electrical connection) with no voltage (exactly below some defined small value).
Del		***Del**ay*
Delta		Usually associated with a winding connection configuration of a transformer or electrical rotating machine, where the three phase-coils are connected in series in a Δ (delta) configuration. There are a number of connection options for both 3 and 4 wire circuits e.g. open delta, Edison delta (sometime referred to as high-leg delta or red-leg delta), and jack-leg delta etc. A two coil 3 wire connection would be an Open Delta.
Demand		The demand of kW/MW and kVAr/MVAr of electricity (i.e. both **Active power** and **Reactive power**).
Derating		Controled reduction of gen-set(s) power based on relevant value, e.g. temperature.
Deviation factor		The maximum instantaneous deviation of a generator voltage waveform, as a percentage of the true sine wave of the same **RMS** value.
DG		***D**iesel **G**enerator*
DG		See **Distributed generation**
DHCP		***D**ynamic **H**ost **C**onfiguration **P**rotocol* DHCP is a network management protocol used on TCP/IP networks whereby a DHCP server dynamically assigns an IP address and other network configuration parameters to each device on a network so they can communicate with other IP networks.
DIN rail		A DIN rail is a metal rail of a standard type widely used for mounting circuit breakers and industrial control equipment inside equipment racks.
Direct current		Current flow in one direction only i.e. no reversal of polarity. (DC)
DISTBIN	ComAp	***Dist**ributed **B**inary **In**puts* Virtual module for receiving binary signals from other IG/IS-NT controllers on CAN bus (supported from v.3.0)
DISTBOUT	ComAp	***Dist**ributed **B**inary **Out**puts* Virtual module for sending binary signals to other IG/IS-NT controllers on CAN bus (supported from v.3.0)

Term	Category	Explanation
Distributed generation		Distributed generation, also distributed energy, on-site generation (OSG) or district/decentralized energy is electrical generation and storage performed by a variety of small, grid-connected devices referred to as distributed energy resources (DER).
DM		***DriveMonitor*** PC software for monitoring of InteliDrive controllers.
DNC		ID-Nano import package
DNF		ID-Nano Firmware
DNS		***Domain Name System*** Hierarchical distributed naming system for computers, services, or any resource connected to the internet or a private network.
DOC		***Directional OverCurrent***
Dongle	ComAp	HW or SW key, which unlock appropriate functions.
DPF	Acronym	***Diesel Particulate Filter***
DriveConfig		PC software for configuration of ID controllers.
Droop control mode		Type of parallel control strategy, used e.g. in load/VAr sharing mode (see **Isochronous control mode**). In the droop speed control mode the speed will decrease by a fixed percentage when the generator is loaded from no-load to full load. Similarly the voltage control decrease the requested voltage value.
Droop speed control		Term used in the generating set industry to indicate the action of a generating set when put under load. As in AVR Droop' above or speed (frequency) droop when the prime mover is under load. The setting of which are critical as generating sets can be operated in parallel running in 'droop'.
DSE	Acronym	***Different Size Engine***
DSE		***Deep Sea Electronics***
DSR	Acronym	***Dynamic Spinning Reserve*** Input signal for hybrid power management control strategy. It represents the difference between nominal and actual power of the source. The DSR value is added to the fix load reserve value giving the total available power reserve.
DTC		***Diagnostic Trouble Codes*** (particularly referring to CAN / SAE 1939)
DT-KIT		Input/Output Simulator for InteliDrive Family Controllers.

Term	Category	Explanation
Dual AMF	ComAp	System consisting of two **AMF** gen-sets, which provide backup to each other.
Duty assist		An arrangement where two (or more) generating sets are configured to provide mutual support in case of one piece failing to operate or needing assistance to achieve a required target: If one generating set fails to operate or cannot achieve a required target, the second (and subsequent) generating set will operate (see also **Dual AMF**).
Duty standby		An arrangement where two (or more) pieces of equipment, e.g. fuel transfer pumps, are configured to provide mutual support in case of one piece failing to operate: If one piece fails to operate, the other one will operate. One piece is duty, the other(s) is **Stand-by** to the duty piece. See **Duty assist**.

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Term	Category	Explanation
Earth fault		Failure of electrical insulation between live conductors and earth (also ground fault). May be considered for detection in “restricted” areas of a circuit or “unrestricted” i.e. occurrence of a fault anywhere within a circuit.
ECON-4	ComAp	ComAp digital speed governor dedicated for speed control of gas or diesel engines.
ECU	Acronym	***E**lectronic **C**ontrol **U**nit* Engine with ECU is then called electronic engine.
ECU list	ComAp	Additional files allowing ComAp controllers to control electronic various engines (including communication object definition, error codes etc.).
EEPROM	Acronym	***E**lectrically **E**rasable **P**rogrammable **R**ead-**O**nly **M**emory*
EFC	ComAp	***E**arth **F**ault **C**urrent* (see **Earth fault**)
EFCPM	ComAp	***E**arth **F**ault **C**urrent **P**rotection **M**odule*
EFI	Acronym	***E**lectronic **F**uel **I**njection* An internal combustion engine technology.
Electronic governor		Electronic device to control and maintain the speed of an engine. Usually done by monitoring the output of a tachogenerator or **Magnetic pick up**, and feeding a proportional output to an actuator which controls the engine fuel supply (see **Governor**).
EM		***E**lectric **M**otor*
EMC	Acronym	***E**lectro**m**agnetic **C**ompatibility*
EME	ComAp	***Eme**rgency* Type of ComAp (marine) **CU** application.
Engine governing		Engine speed control (see **Governor**) which may be mechanical, hydraulic or electronic.
EP		***E**lectronic **P**otentiometer*

Term	Category	Explanation
ESC	ComAp	ComAp configuration file with description of ECU communication objects.
ESF		***E**ngine **S**pecific **F**ile* Defines inputs and outputs for controller communication with ECU (part of ECU list)
ESL	Acronym	ESL stands for Distributable support library file (Microsoft Visual FoxPro).
E-stop	ComAp	***E**mergency **Stop*** A safety mechanism used to shut off machinery in an emergency, when it cannot be shut down in the usual manner. Unlike a normal shut-down switch is designed and configured to abort the operation as quickly as possible.
Event log	ComAp	See **History**
Event records	ComAp	Event records are also known as standard history records. This type of record appears in case the controller event has been made. The time stamp history also belongs in the event history. The time record is stored for a specified period of time.
Excitation system		The equipment providing the field current of a machine, including all regulating and control elements, as well as field discharge or suppression equipment and protective devices.
Exciter		The source of the electrical power providing the field current of a synchronous machine (usually small DC or AC generator on the same shaft).
Export		Situation where the output power of a plant flows to the grid (see also **Reference arrow system**). In ComAp conception has - (minus) signum.
EXT	ComAp	***Ext**ension* (plug-in modules)

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Term	Category	Explanation
FAR	Acronym	***F**uel-**A**ir **R**atio* Inversely taken the **AFR**. FAR is commonly used in the gas turbine industry as well as in government studies of internal combustion engine, and refers to the ratio of fuel to the air.
Fast Start		A start by a gen set with a **Fast Start Capability**.
Fast Start Capability		The ability of a gen set to be **Synchronized** and loaded up to full **Load** within 5 minutes.
Fbk		See **Fdb**
FC	ComAp	***F**ault **C**ode*
Fdb		Feedback (also fb.) signal (usually from **CB**)
FDR	ComAp	***Feeder*** Type of ComAp InteliMains **CU** Application controlling the **Feeder**

Term	Category	Explanation
Feeder		Circuit **Circuit breaker** used for connection of the load to the **Busbar**
Firmware	ComAp	Program loop, the core of the controller managing the controllers behavior based on **Configuration**.
FLS	ComAp	*Sensor Failure* A) condition of protection activation B) type of binary protection
FLX	ComAp	***FL**e**X**ible* Type of ComAp InteliDrive **CU** (drive)
FMI	ComAp	***F**ailure **M**ode **I**dentifier*
Forward synchronizing		Synchronizing of the gen-set (group) to the mains over the **GCB**. During the synchronization, the voltage, frequency and phase angle of the incoming generator is changed to match the values of the **Busbar** This is generally used when a generator needs to be connected to an already charged **Busbar** or directly to load.
FPC	ComAp	***F**ire **P**ump **C**ontroller* Type of ComAp InteliDrive **CU**
Frequency		The number of **Cycle**s of alternating quantities (alternating current, voltage etc.) per given time, obviously per second.
Frequency regulation		The degree of variation in frequency of a generating set from no-load to fully loaded state (ISO 8528-1 classified - class G1, G2, G3 and G4).
FV		***F**orce **V**alue* Function which enables to change setpoint value by activating/deactivating a binary input

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Term	Category	Explanation
GC		***G**raphical **C**haracters* Controller option for additional support of one "graphical" language: eg Japanese, Chinese etc.
GC	ComAp	***G**en**C**onfig* PC tool for configuration of IG/IS-NT controllers
GCB		***G**enerator **C**ircuit **B**reaker* Allows dis/connecting of the generator to the **Busbar**
GeCon	ComAp	***G**enerator **Con**troller* System dedicated for generator control only.
GeCon	ComAp	Type of ComAp application to control the generator only, the engine is controlled by external device.
GEM	ComAp	***G**as **E**ngine **M**anagement*
Generating set(s)		A generating set is a piece of equipment that converts mechanical energy

Term	Category	Explanation
		obtained from an external source into electrical energy as the output (abbr. also genset/gensets).
Generator breaker		**Breaker** used for connecting and breaking a generator circuit (**GCB**).
Geofencing		Geofencing is a feature in a software program that uses the global positioning system (**GPS**) or radio frequency identification (**RFID**) to define geographical boundaries of the equipment.
GL		***G**en-set **L**oaded*
Global system for mobile communications		Global System for Mobile Communications (GSM), originally Groupe Spécial Mobile), is a standard developed by the European Telecommunications Standards Institute (ETSI) to describe the protocols for second-generation (2G) digital cellular networks used by mobile phones.
Governor		A device for controlling fuel to the engine to maintain speed under varying load conditions or a pre-set speed droop from no-load to full load conditions.
GP		***G**enerator **P**rotection* (see **BOC**)
GPS	Acronym	***G**lobal **P**osition **S**ystem*
GPU		***G**enerator **P**ower **U**nit*
GPU		***G**round **P**ower **U**nit* GPU is typically 400 Hz **AC generator** supplying power to the aircraft while at an airport.
Grid codes		Document(s) issued by utility company, **TSO** or national regulator. It defines conditions generators/power sources has to comply with to be allowed to operate in parallel with grid/mains. Typically a grid code will specify the required behavior of a connected generator during system disturbances. These include voltage regulation, power factor limits and reactive power supply, response to a system fault (short-circuit), response to frequency changes on the grid, and requirement to "ride through" short interruptions of the connection.
Ground fault		See **Earth fault**
GSE		***G**enerator **S**tarted **E**ngine*
GSM		See **Global system for mobile communications**
GSU		***G**enerator **S**urge **U**nit*
GUI		***G**raphic **U**ser **I**nterface*

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Term	Category	Explanation
Hall effect sensor		A transducer that varies its output voltage in response to a magnetic field.
Harmonics		A component of a periodic wave with a frequency that is a multiple of the frequency of the original wave.
HEST		***H**igh **E**xhaust **S**ystem **T**emperature*
History	ComAp	Part of archive, containing list of events recorded - has usually three types of records: event records, system records and premortem records.
HMI	Acronym	***H**uman **M**achine **I**nterface*
HST		See **History** (only)
Hunting		A term which can relate to speed or voltage, and which occurs after a control function change, causing the controlled element to continue to oscillate about the desired set value. Usually the result of insufficient damping in the control.
HV		***H**igh **V**oltage*

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Term	Category	Explanation
I/O		***I**nput/**O**utput*
IA-NT	ComAp	InteliATS New Technology automatic transfer switch controller
IB	ComAp	***I**nternet **B**ridge*, details could be found in ComAp Product Guide.
IC	ComAp	***I**nteli **C**ompact* (common identifier for IC family of controllers) ComAp compact gen-set controller for gen-sets operating in multiple island and/or parallel to mains mode. Details could be found in ComAp Product Guide.
IC		***I**nteli**C**onfig* ComAp configuration user interface.
ICD	ComAp	***I**ntegrated **C**olor **D**isplay*
ID	ComAp	***I**nteli**D**rive*
IDC	ComAp	Import package for DriveConfig
IDMT	Acronym	***I**nverse **D**efinite **M**inimum **T**ime* The protection IDMT relay see to the line current doesn't exceed safe values and if it does, triggers the circuit breaker. Inverse means "higher the current value, lesser the time taken for the relay to trip the circuit".
IEC		***I**nternational **E**lectrotechnical **C**ommission*
IEC Standard		A standard approved by the **IEC**
IG	ComAp	***I**nteli **G**en* (common identifier for IG family of controllers)

Term	Category	Explanation
		ComAp complex parallel gen-set controller for use with single or multiple gen-sets operating in standby or parallel modes. Details could be found in ComAp Product Guide.
IGS	ComAp	***I**nteli **G**en, **S**ys* (identifier for **IG**/**IS** family of controllers) ComAp complex parallel gen-set controller for use with single or multiple gen-sets operating in standby or parallel modes. Details could be found in ComAp Product Guide.
IM	ComAp	***I**nteli **M**ains* (common identifier for IM family of controllers) ComAp mains supervision controller. Details could be found in ComAp Product Guide.
Impedance		Total of resistive, capacitive and inductive elements of a circuit.
Import		Situation where the output power of a plant flows from the grid (see also **Reference arrow system**). In ComAp documentation has + (plus) signum.
InCon	Acronym	***In**jection **Con**trol system*
Independent back-up Protection		A **Backup protection** system which utilizes a discrete relay, different current transformers and an alternate operating principle to the **Main protection system(s)** such that it can operate autonomously in the event of a failure of the main protection.
Independent main protection		A **Main protection system(s)** which utilizes a physically discrete relay and different current transformers to any other main protection.
Inrush current		Initial instantaneous current drawn by **Transformer(s)**, motors, capacitors or current- using equipment on the application of a supply voltage. Causes of these high currents vary with different types of equipment.
IOM	ComAp	***I**nput **O**utput **M**odule*
IP	Acronym	***I**nternet **P**rotocol*
IPC	ComAp	***I**rrigation **P**ump **C**ontroller* Type of ComAp (drive) **CU Application**
IPU	ComAp	***I**ndustrial **P**ower **U**nit*
IPU		IPU Ltd.
IS	ComAp	***I**nteli **S**ys* ComAp premium control system, designed for control both diesel and gas gen-sets in stand-by and parallel applications.
Isochronous control mode		Isochronous means that the speed governor keep always the same frequency, usually given by setpoint. Similarly acts the voltage control - keeps the requested voltage.
Isochronous governor		Engine governor that maintains a set steady state speed without droop i.e. irrespective of load. (see also **Droop control mode**)
IV	ComAp	***InteliV**ision*

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Term	Category	Explanation
J1939		A communication standard (SAE) used for communication and diagnostics among vehicle components (e.g. **ECU**)

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Term	Category	Explanation
Knocking		Knocking (pinking) in spark-ignition internal combustion engines occurs when combustion of the air/fuel mixture in the cylinder does not occur correctly following ignition by the spark plug, and some of the mixture explodes. Knocking can result in damage to the engine.

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Term	Category	Explanation
LAI	ComAp	***L**ogical **A**nalog **I**nput* It is function associated with analog value. E.g. Cyl Temp 3 is function for temperature detection of engine's 3rd cylinder.
Lagging power factor		A lagging power factor signifies that the load is inductive, as the load will “consume” reactive power (the reactive component Q is positive as reactive power travels through the circuit and is “consumed” by the inductive load). The phase of the current is leading the phase of the voltage (see also **Leading power factor**). Mnemonic: CIVIL – in a capacitor (C) the current (I) leads voltage (V), voltage (V) leads current (I) in an inductor (L).
LAM	ComAp	***Lam**bda Probe* Is an electronic device that measures the proportion of oxygen (O2) in the gas or liquid being analyzed (also Oxygen sensor, Lambda sonde).
LBA	ComAp	***L**ow **B**attery **A**daptor*
LBI	ComAp	***L**ogical **B**inary **I**nput* It is function associated with binary input signal. E.g. GCB feedback is function for Generator Circuit Breaker state detection (closed/opened).
LBO	ComAp	***L**ogical **B**inary **O**utput* It is function associated with binary output signal.
LCB		***L**oad **C**ircuit **B**reaker*
LChr		***L**oad **Ch**aracter* IG/IS-NT history column name

Term	Category	Explanation
LDE		***L**ine **D**iagram **E**ditor* SCADA editor in InteliMonitor.
LDS		***L**oad **D**emand **S**wap* Automatic start and stop of different sized gen-sets within a group based on actual load and belonging to predefined power bands.
LdShed		See **Load shedding**
LE	ComAp	***L**ite **E**dit*
Leading power factor		A leading power factor signifies that the load is capacitive, as the load "supplies" reactive power (the reactive component Q is negative as reactive power is being supplied to the circuit). The phase of the current is leading the phase of the voltage (see also **Lagging power factor**). Mnemonic: CIVIL – in a capacitor (C) the current (I) leads voltage (V), voltage (V) leads current (I) in an inductor (L).
Limited export	ComAp	Type of (power) **Export** to the mains.
Load		The active, reactive or apparent powerconsumed.
Load acceptance		% of the rated set load that can be applied to a **Generating set(s)** and is capable of accepting in one step, and recovering from to within defined parameters.
Load balancing		Common term used to describe best practice of balancing the load evenly across 3 phases where possible. With reference to the **Negative phase sequence component** entry below it must be noted that for 3-phase generators the load must be balanced within the negative phase sequence rating of the generator otherwise overheating of the generator can occur.
Load bank		Resistance and/or inductors to provide **Load** for **Generating set(s)** for test purposes. Usually the resistance/inductance units are transportable.
Load factor		The ratio of average load to the generating set power rating.
Load sharing		Load sharing is defined as the proportional division of the kW total load between multiple **Generating set(s)** in a paralleled system (see **VAr sharing**, too). Load sharing is essential to avoid overloading and stability problems on the systems' gen-sets.
Load shedding	ComAp	Load shedding is the deliberate shutdown of electric power in a part or parts of a power-distribution system, generally to prevent the failure of the entire system when the demand strains the capacity of the system.
Load shedding		A controller function which manages closing/opening load breakers in case of insufficient power.
Load step		Normally a percentage load applied to a **Generating set(s)**.
LOM	Acronym	***L**ost **o**f **M**ains* Fast islanding or load sheeding. See also **RoCoF**, **VS**
LoP		***Lo**w **P**ower*
Loss of mains		
Louver control		Cooling (radiator) limiter

Term	Category	Explanation
LS/LdSharing		See **Load sharing**
LSM + PMS	ComAp	***L**oad **S**haring **M**odule* + **Dongle** allowing **Power management**, **Load sharing** or **IGS**
LV	Acronym	***L**ow **V**oltage*
LVRT	Acronym	***L**ow **V**oltage **R**ide **T**hrough* (see **Grid codes**)

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Term	Category	Explanation
Magnetic pick up		A device that detects the speed of a prime mover, typically an engine or turbine. Based on the inductive phenomena between the flywheel ring teeths and sensor coil.
Mains circuit breaker		A circuit breaker (**MCB**) that is usually positioned at the electricity services intake of a premises and which may be interlocked with a generator circuit breaker to form a changeover from mains to generator power. Also known as the Utility Breaker.
Main protection system(s)		The equipment (like protection relays) to ensure the safe operation of generators and the grid.
Make before break		An arrangement for electrical switchgear whereby two switching devices close to make a circuit in parallel before one switching device opens. This as a term often relates to parallel electrical power supplies, for arrangements where when changing from one power supply to another, there is no interruption between supplies. Note that it is extremely important when considering parallel **AC** electrical supplies that consideration is made to ensure that the supplies are **Synchronized**. Parallel coupling of supplies that are not synchronized may be hazardous.
MAN	ComAp	Fully manual control **Mode of operation** of controller. MAN (manual) mode is usually used when a gen-set needs to be started by an operator based on his/her will.
MAN		Engine manufacturer
MAP	ComAp	***M**anifold **A**ir **P**ressure* The pressure of the mixture (gas and air) after **AFR Mixer**
MarCom	ComAp	***Mar**keting **Com**munication*
MAT	ComAp	***M**anifold **A**ir **T**emperature* The temperature of the mixture (gas and air) after **AFR Mixer**
MBB		**Make before break**
MCB	Acronym	**Mains circuit breaker**
MF	ComAp	***M**ains **F**ailure*
MGCB	Acronym	***M**aster **G**enerator **C**ircuit **B**reaker*

Term	Category	Explanation
		E. g. connecting the group of gen-sets to the **Load**.
MGCB	ComAp	Type of ComAp InteliMains **Application**
MIB	Acronym	***M**anagement **I**nformation **B**ase* Is a database that allows identification of information used by system administration in **SNMP**.
Minimum import	ComAp	Minimum requested power **Import** from a mains (used in parallel operation control), should influence e.g. the base load.
Minimum power to mains	ComAp	Minimum gen-set power level (used in parallel operation control) - doesn't allow to understep this level even in the case of lower generator power demand.
MINT	ComAp	Type of ComAp **Application**: **M**ultiple gen-sets with **INT**ernal sync and load sharing (typically operation or multiple gen-sets in parallel with mains).
Mixer		Air-gas mixing device that has been designed for optimum blending of gas and engine intake air. The mixer should deliver very homogenous gas-air mixture over the speed and load range.
Modbus		Serial communication protocol used by industrial electronic devices. There are two dominant variants - RTU /TCP - of physical layer of the protocol.
Mode of operation	ComAp	There are following operation modes of ComAp controllers: **OFF**, **MAN**, **AUT**, **TEST**, **SEM** modes. Each mode allows only specific functions of controller operation. Details could be found in Reference manual of specific product.
Motoring		This is the term applied when a generator remains connected to a network or other generators but its drive engine fails to deliver power - the generator set continues to run with the generator now driving the engine, i.e. the generator now becomes a motor (see **Reverse power**).
MP	ComAp	***M**ains **P**rotection*
MPU	Acronym	**Magnetic pick up**
MRS	Acronym	***M**anual (or) **R**emote **S**tart/**S**top* The control mode of single or multiple gen-sets operating in standby or parallel modes.
MRS	ComAp	Type of ComAp **CU Application**for **MRS** functionality
MSF	ComAp	***M**anual **F**use **S**ynchronizing*
MSU	ComAp	***M**ains **S**urge **U**nit*
MTU	ComAp	***M**easuring **T**ransformer **U**nit*
MTU		MTU - engine manufacturer
MultIslOp		***Mult**iple **Isl**and **Op**eration* (MCB is opened, GCB's are closed)
MultParOp		***Mult**iple **Par**allel **Op**eration* (MCB is closed, GCB's are closed)
MV	Acronym	***M**edium **V**oltage*
MVS		***M**ains **V**ector **S**hift* IG/IS-NT history column name

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Term	Category	Explanation
NC	Acronym	See **Normally closed contact**
NCB		***N**eutral **C**ircuit **B**reaker*
Negative phase sequence component		In any three phase system, the currents or voltages that make up the system can be resolved to **Positive phase sequence component**, negative and **Zero phase sequence component** systems. Thus the positive sequence components produce a normal rotating field; the negative sequence components create a counter-rotating field and the zero sequence components produce an oscillating field that does not rotate. Negative sequence components are an important consideration of unbalanced ratings for generators as these cause heating, particularly in the field components.
NFC		***N**ear **F**ield **C**ommunication*
NO	Acronym	See **Normally open contact**
Non-linear load		A **Load** in which there is a non-linear relationship between current and voltage. Commonly the result of electronic switching during the cycle in the load circuits, such as with SCR controllers e.g. switch mode supplies, VSDs (see **Harmonics**).
Normally closed contact		Description of the status of a relay contact when the relay is de-energised (i.e. connected). Abbreviated as NO.
Normally open contact		Description of the status of a relay contact when the relay is de-energised (i.e. disconnected). Abbreviated as NC.
NPU		Mains protection relay (voltage, frequency, vector shift protections)
-NT-	ComAp	***N**ew **T**echnology* ComAp generation of controllers (like **IG**-NT, **IS**-NT, etc.) or accessory modules (like **IB**-NT). Details could be found in ComAp Product Guide.
-NTC-	ComAp	***N**ew **T**echnicology **C**ommunication* Communication ports extension **CU** (-NT- with extended communication features).
NVD	ComAp	***N**eutral **V**oltage **D**isplacement*

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Term	Category	Explanation
OC	ComAp	***O**ccurrence **C**ounter*
Octave band		Frequency range where the highest frequency is double the lowest, with eight bands 63 Hz, 125 Hz, 250 Hz etc. being used most frequently to analyze and quantify sound.
OEM	Acronym	***O**riginal **E**quipment **M**anufacturer*

Term	Category	Explanation
		Is a company that produces parts and equipment that may be marketed by another manufacturer.
OFF	ComAp	A **Mode of operation** when controller doesn't perform any action. Related to genset control, laso allows entry to the programming mode of **CU**.
OFL	ComAp	Off load
Open coupled		The AC generator has its shaft extension coupled to the engine flywheel without a mechanical tie between the generator frame and the engine flywheel housing. Generally, the generator has two bearings.
Out-of-phase		Referring to alternating currents or voltages of the same frequency, which are not passing through their zero points at the same time.
Overload		Term referring to the amount by which an electrical circuit is exceeding its rating.
Overshoot		The exceeding of the nominal (requested) value during the transient state of control (e.g. after load change, starting the generator etc.). Could be tolerable if decays to the stable (requested)) value.
Overspeed		The dangerous exceeding of preset speed (RPM) level due the system malfunctionalty (e.g. rapis unload). Usually leads to the shutdown (SD) of the system.

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Term	Category	Explanation
Parallel operation		Operating two or more generators, or generators and network together to supply a common load, or just to supply power to the grid/utility.
Partial shutdown		The same as a **Total shutdown** except that all generation has ceased in a separate part of the total system and there is no electricity supply from external interconnections or other parts of the total system.
PCB	Acronym	***P**rinted **C**ircuit **B**oard*
PCC	Cummins	***P**ower **C**ommand **C**ontrol* system
PCC	Acronym	**Point of common coupling**
Peak lopping		Load dependent automatic starting of power generation equipment. To reduce the load on the system by running the generating plant in parallel with the pains supply to maintain a fixed import load from the mains.
Peak shaving	ComAp	Peak shaving is the use of an additional power source (such as a generator) in synchronization with the mains power supply, to deliver enough power to meet the peak demand that cannot be met by the mains supply and/or requested to not deliver from mains side. Power generation equipment running in parallel with the grid, producing power according to the load control parameters (e.g. base load, import/export).
PF		See **Power factor**

Term	Category	Explanation
PGI	ComAp	***P**ower **G**eneration **I**ndustrial* The Power generation industrial is targeting the industrial world, supplying essential energy to industrial, manufacturing, commercial and residential customers.
PGN	Acronym	***P**arameter **G**roup **N**umber* (SAE **J1939**) Part of **CAN bus** message header. It identifies a message's function and associated data.
Phase match synchronizing		Phase match synchronization is the process of matching the speed and frequency of a generator or other source to a running network (mains). The phase angle different is maintaining by control loop (see also **Slip synchronizing**.
Phase (voltage) unbalance		The ratio (in percent) between the **RMS** values of the **Negative phase sequence component** and the **Positive phase sequence component** of the voltage. (Simplified - the difference between phase voltage extremes)
PLC	ComAp	***P**rogrammable **L**ogic **C**ontroller* Set of functional blocks inside the ComAp controller (**CU**) which could be combined to solve user defined logic (control) algorithm. The programming of PLC is done via the graphic user interface.
PLS	ComAp	***P**ropulsion **L**oad **S**haring*
Plug&Play		Auto-configured feature of extension / communication modules for easy operation based on controller application.
PMG	Acronym	***P**ermanent **M**agnet **G**enerator* Used for the power supply for a generator **AVR**
PMS	ComAp	***P**ower **M**anagement **S**ystem* See **Power management**
Poil	ComAp	Oil pressure
Point of common coupling		That point on the electricity transmission system electrically nearest to the user installation at which either **Demand**s or **Load**s are, or may be, connected.
Pole		Generally refers to the magnetic poles of field assembly of a generator or motor. It can also refer to the electrodes of a DC battery or the number of contacts on a contactor or circuit breaker.
Pole slip		Typically occurs under severe fault conditions which cause a transient torque on the generator which exceeds the ability of the field to hold the generator rotor synchronized to the stator. This situation should be prevented by some protection unit (relay).
Positive phase sequence component		Element of phase (i.e. current) vector in same phase sequence as the supply voltage (compare also **Negative phase sequence component**).
Power derating	ComAp	Type of parallel operation. This function linearly decreases gen-set nominal power according to analog input value.
Power factor		Power factor is only relevant in AC circuits, and in its simplest form it is the

Term	Category	Explanation
		ratio of kW to kVA. Therefore, the result is a number between 0 and 1. See also **Lagging power factor** and **Leading power factor**
Power factor control		Control of generator power factor when in parallel operation by means of varying the excitation.
Power management	ComAp	The power management is in general control of active / reactive power according to the specific requirements. It includes for example these functionality: **Base load** control, **Load/ VAr sharing**, **Peak shaving**, import / export control etc.
Power System Stabiliser		Equipment controlling the **Exciter** output via the voltage regulator in such a way that power oscillations of the synchronous machines are dampened. Input variables may be speed, frequency or power (or a combination of these).
Premortem history	ComAp	Premortem record is visually a different block of history records generated just before the shutdown alarm. The record brings time zooming to the interval of event.
Prime mover		Island operation of gen-sets. The generator is producing the electric energy as the continuous (not acting as the **Backup**) source.
Prime mover		A machine which converts a source of energy into mechanical power. It can be a turbine, steam, gas or hydro, a diesel engine or a spark ignition gas engine, amongst others.
Prime power		The maximum power which a generating set is capable of delivering continuously whilst supplying a variable load when operating for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power over 24 hours of operation must not exceed 70 % of the prime power agreed by the engine manufacturer.
Prime power rating		The prime power rating has two distinct categories: Indefinite running time (is the maximum power accessible at the variable load for an unlimited number of hours per year in a variable load setting) Limited running time (prime power is accessible for a limited number of hours in non-variable load situations).
Protection		The provisions for detecting abnormal conditions on a system and initiating fault clearance or actuating signals or indications.
Protection apparatus		A group of one or more **Protection** relays and/or logic elements designated to perform a specified protection function.
PRP	ComAp	***Prop****ulsion* Type of ComAp (marine) **CU Application**
PRT	Acronym	***P****latinum* ***R****esistance* ***T****hermometer*
PS	Acronym	See **Pole slip**
PS	ComAp	***P****ersistent* ***S****torage*
PSC	ComAp	***P****ower* ***S****tation* ***C****ontrol*

Term	Category	Explanation
		Type of ComAp IGS **CU Application**
PSS		See **Power System Stabiliser**
PT	Acronym	***P**otential **T**ransformer*
PtM	ComAp	***P**arallel **t**o **M**ains*
PTM	ComAp	***Pt** (sensor type) **M**odule*
PT ratio	ComAp	Gen-set potential (voltage) transformers ratio
PV	Acronym	***P**hotov**o**ltaic*
PWM	Acronym	***P**ulse **W**idth **M**odulation*
PWR	ComAp	Power

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R

Term	Category	Explanation
RA	ComAp	***R**emote **A**nnunciator* Essentially an interface for user to monitor gas sensors, alarm status and more.
Ratiometric		Input circuit that can be configured to be digital, resistive, 4-20 mA or 0-I0 V.
RD	ComAp	***R**emote **D**isplay*
Reactance		Opposition of a circuit to a change in electric current due to inductance or capacitance (see **Impedance**
Reactive energy		The integral with respect to time of the **Reactive power**.
Reactive power		The product of voltage and current and the sine of the phase angle between them measured in units of volt-amperes reactive and standard multiples thereof, ie: 1000 VAr = 1 kVAr / 1000 kVAr = 1 Mvar. Commonly used symbol is Q, where the Q+ resp Q- is used for inductive resp capacitive type (see **Lagging power factor** resp **Leading power factor**
Real time clock		A computer clock that calculates the present time. Not to be confused with hardware clocks in computers which time the device but may not calculate in world time.
Reference arrow system		Reference arrow system has two types: - *network*: the energy, which flows from the network, has minus (-) sign - *consumer*: the energy, which flows from the network, has plus (+) sign For **Distributed generation** is most used *consumer* reference system (also by ComAp).
Redundancy controller communication		See **Backup** (control)
REST API		***REST**ful API*

Term	Category	Explanation
		A method of allowing communication between a web-based client and server that employs REpresentational State Transfer (REST) constraints.
Restricted earth fault protection		Electrical protection normally consisting of current transformers in each phase and in the connection between neutral and ground of a generator or transformer. Protection will operate for an earth fault in the zone (Restricted), but not for phase to phase faults, nor to a fault outside the zone.
Reverse power		Power absorbed by a generator from a paralleled system e.g. due to engine failure. Active power absorbed by a generator from the connected system. This may be another paralleled generator, the utility supply or possibly a motor such as a crane hoist that is being driven by the load. The generator enters the motoric regime.
Reverse synchronizing		Synchronizing of (even loaded) gen-set (group) to mains over **MCB**. Reverse Synchronization or backward synchronization is generally done when a the supply from a grid utility is needed to be synchronized with a bus bar in the factory. Since, it is not possible to alter the voltage, frequency, etc. of the incomer, in this case, the grid. The voltage, frequency, etc. of the bus bar are adjusted to match the incomer.
RFID	Acronym	***R**adio **F**requency **ID**entification*
RJ45		Type of connector, widely used for twisted pair Ethernet communication connection.
RMS	Acronym	***R**oot **M**ean **S**quare* value See **Root mean square**
RoCoF	Acronym	***R**ate **o**f **C**hange **o**f **F**requency* Is function used for islanding detection and fast load shedding, to speed up operation time in over- and under-frequency situations and to detect loss of grid (loss of mains). The function is sensing the voltage frequency change.
Root mean square		Mathematical term for establishing the effective voltage or current of an AC Circuit. (RMS) It is calculated by summing the square(s) of the waveform over time, then taking the square root of the sum. For a sine wave, this is 0.707 of the peak value. In case of AC signal the RMS value is equal to the value of the **Direct current** that would produce the same average power dissipation (thermal effects) in a resistive load.
Rotor		A rotating part of a machine, e.g. of an electrical generator or motor.
RPM	Acronym	***R**evolutions **P**er **M**inute* A measure of rotation frequency.
RPU	Acronym	***R**edundant **P**rotection **U**nit*
RTC	Acronym	***R**eal **T**ime **C**lock* See **Real time clock**

Term	Category	Explanation
RTD	Acronym	***R**esistance **T**emperature **D**etector*
RTOS	Acronym	***R**eal **T**ime **O**perating **S**ystem* An operating system (OS) intended to serve real-time applications (used in embedded systems).
RUI	ComAp	Analog input settings - Resistance, Voltage, Current

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S

Term	Category	Explanation
SAE	Acronym	***S**ociety of **A**utomotive **E**ngineers*
Safety integrity level		Safety integrity level (SIL) is defined as a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. In simple terms, SIL is a measurement of performance required for a safety instrumented function (SIF). In the EN 61508 standard, four SILs are defined, with SIL 4 the most dependable and SIL 1 the least.
SCADA	Acronym	***S**upervisory **C**ontrol **A**nd **D**ata **A**cquisition* Type of industrial computer-controlled system.
SCR	Acronym	See **Selective Catalytic Reduction**
SCR	Acronym	***S**ilicon **C**ontrolled **R**esistor* Power electronic device also known as thyristor.
SD	ComAp	See **Shutdown**
SDO	ComAp	***S**hut **D**own **O**verride*
Selective Catalytic Reduction		The technology of reduction the nitrogen oxides (NOx) in combustion engines flue gas. It is based on the addition of reductant (typically urea) to the exhaust gas.
Self-excited generator		A generator whose excitation system takes power from its own output.
SEM	ComAp	SEM (semiautomatic) mode is a modification of the AUT mode whilst the start/stop of engine is done manually and the rest function of AUT mode are active.
Separately excited generator		A generator whose excitation system takes power from a separate source. Usually a secondary permanent magnet generator or exciter.
Setpoint	ComAp	Setpoint is a software parameter, which can be changend online (without programming).
SG	ComAp	***S**peed **G**overnor* See **Speed regulator**
SHAIN		***Sh**ared (virtual) **A**nalog **In**put module*
SHAOUT		***Sh**ared (virtual) **A**nalog **Out**put module*
SHBIN		***Sh**ared (virtual) **B**inary **In**put module*
SHBOUT		***Sh**ared (virtual) **B**inary **Out**put module*

Term	Category	Explanation
Short Term Operating Reserve		***S**hort **T**erm **O**perating **R**eserve (STOR)* Is a service for the provision of additional active power from generation and/or demand reduction (UK specific). When there's peak demand for electricity across the UK, the National Grid have the flexibility to start gen-sets across the country that feed in at very short notice to balance the grid and make sure there are no blackouts or brownouts in the system.
Shunt trip		A feature added to circuit breakers in order to remotely trip the breaker from an externally derived signal; such as a generator controller or switchgear control system.
Shutdown	ComAp	These types of alarms protects the gen-set or engine during the wrong / dangerous state. Usually represented by the red color, also 2nd level of alarm.
Shutdown	ComAp	The condition of a generating unit where the generator rotor is at rest or on barring.
SIF	Acronym	***S**afety **I**nstrumented **F**unction* See also **Safety integrity level**
SIL	Acronym	***S**afety **I**ntegrity **L**evel* See **Safety integrity level**
Single line diagram		A schematic representation of a three-phase network in which the three phases are represented by single lines. The diagram shall include (but not necessarily be limited to) busbars, overhead lines, underground cables, power transformers and reactive compensation equipment. It shall also show where other power stations are connected, and the points at which demand is supplied.
SLA	Acronym	***S**ervice-**L**evel **A**greement* Is a commitment between a service provider and a client (e. g. ComAp TSUP and customer).
SLD		***S**ingle **L**ine **D**iagram* SCADA drawing created in InteliMonitor
Slip		The difference between synchronous and actual speed of an induction generator or motor.
Slip synchronizing		Process of synchronizing the generator to the live network by using the constant frequency difference (interference). The frequency defference is maintained by control loop (see also **Phase match synchronizing**) between mains and generator voltage.
Slope		The ratio of the steady state change in voltage, as a percentage of the nominal voltage, to the steady state change in **Reactive power** output, in per unit of reactive power capability.
SMTP	Acronym	***S**imple **M**ail **T**ransfer **P**rotocol* An Internet standard for electronic mail (email) transmission.
SNMP	Acronym	***S**imple **N**etwork **M**anagement **P**rotocol* One or more administrative computers called managers have the task of monitoring or managing a group of hosts or devices on a computer network.

Term	Category	Explanation
		Each managed system executes a software component called an agent which reports information via SNMP to the manager. SNMP traps enable an agent to notify the management station of significant events by way of an unsolicited SNMP message.
Soft load		Generator soft loading according to Load ramp loop setting
Soft unload		Generator soft unloading according to Load ramp loop setting
Solid state controls		Electronic control (switching) devices e.g. transistors, thyristors.
SPC	ComAp	***S**imple **P**arallel **C**ontroller* Type of ComAp **CU**
Speed droop		Governor speed reference is reduced as load (or fueling) increases. The speed drop is usually described as % of nominal speed at nominal load slope. See also **Isochronous control mode**.
Speed regulator		The device maintaining speed of the engine at desired value (see **SG**).
SPI	ComAp	***S**ingle **P**arallel **I**sland* Type of ComAp **CU Application**
SPM	ComAp	***S**ingle **P**rime **M**over* Type of ComAp **CU Application**
SPN	Acronym	***S**uspect **P**arameter **N**umber (SAE J1939)* SPN it represents the identity of a **J1939** parameter. Every J1939 parameter has a unique SPN, which is 19-bits wide, assigned to it by the SAE committee when the parameter is defined.
SPtM	ComAp	***S**ingle **P**arallel **t**o **M**ains* (includes **AMF** no parallel) Type of ComAp **CU Application**
SRO	Acronym	***S**peed **R**egulator **O**utput*
SS		***S**ingle **S**peed* Type of ComAp **CUApplication**
SSB	Acronym	***S**ystem **S**plit **B**reaker* The breaker used for separating / connecting the main distribution busbar in the systems with two or more main sources.
SSB	ComAp	***S**ingle **S**tand **B**y* Type of ComAp **CU Application**
SSE	Acronym	***S**ame **S**ize **E**ngine*
Stand-by		A standby generator is a **Backup** electrical system that operates automatically. When the network outage is detected, the generator starts and the electrical load is supplied by the generator.
Star - delta starter		Device for switching induction motor windings to reduce starting current.
Star connection		The 3 windings are connected in a star configuration. The winding ends opposite the phase outputs are all connected together. The star point can be used as a neutral, and can be connected to ground (Earth).
Starting current		High current drawn by an electric (especially induction) motor during

Term	Category	Explanation
		starting. See also **Inrush current**.
Start-up		The action of bringing a generating unit from shutdown to synchronous speed.
Stator		The stationary winding assembly of an AC generator or **Exciter**.
STOR	Acronym	See **Short Term Operating Reserve**
STP		***S**low **St**op*
Sub-transient		Initial reactance of generator at the instant of short circuit fault condition.
Surge		A term applied to both current and voltage, it refers to an exceptionally high increase in the quantity over a very short time period. Usually the result of load switching or lightning strikes.
Surge suppressor		A general term used for a device to prevent externally promoted voltage surges from destroying other devices. Commonly employed on the exciters of brushless generators to prevent rotating diode failure.
SUS	ComAp	***S**tart**U**p **S**ynchronization* Usually used for elimination of transformer inrush current during it's first energization. The gen-set is started without he excitation, after the nominal speed is reached, the voltage is control by ramping function of **AVR**. At multiple island topology SUS speed up the time of full site operation to the state.
Synchronized		The condition where an incoming generating unit or Power Park Module or DC Converter or system is connected to the busbars of another system so that the frequencies and phase relationships of that generating unit, Power Park Module, DC Converter or system, as the case may be, and the system to which it is connected are identical.
Synchronization		The act of matching the voltage amplitude, frequency and zero crossing times (phase), of two alternating current sources for the purposes of connecting them in parallel.
Synchroniser		Instrument which detects whether two periodic motions are in synchronism. In power generation, an instrument that checks that two wave forms are aligned prior to the breaker closing.
Synchronizing breaker		**Breaker** with the closing circuit controlled by a synchronising device. It may be the Generator Breaker and / or the breaker(s) connecting to the utility.
Synchronous compensation		The operation of rotating synchronous apparatus for the specific purpose of either the generation or absorption of **Reactive power**.
Synchronous reactance		Measure of generator magnetic stiffness.
System records	ComAp	Are also known as text history record. These type of records are generated during the user login/off or controller programming.

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Term	Category	Explanation
TDC		***T**op **D**ead **C**enter* The most upper position of the piston.
ATDC, BTDC		***A**fter **T**op **D**ead **C**enter, **B**efore **T**op **D**ead **C**enter*
Temp by power	ComAp	Type of parallel control mode where the power is regulated on the required analog (usually temperature) value (see also **CHP**).
TEST	ComAp	TEST mode is a modification of the **AUT** mode, the engine is started immediately.
Test on Load		Test of the genset system readiness.
THD	Acronym	***T**otal **H**armonic **D**istortion* See **Harmonics**
Thermistor		Temperature dependant resistor.
Thermocouple		Bi-metal junction producing signal voltage proportional to temperature.
Thermostat		Device which switches at a designed temperature - used to control temperature of a medium e.g. air ambient, coolant temperature.
Time constant		Normally the time taken for a system to rise or fall exponentially to approximately 63 % of the difference between its old and new value.
TLC	ComAp	***Telecom*** Type of ComAp InteliDrive **CU**
Total shutdown		The situation existing when all generation has ceased and there is no electricity supply from external interconnections and, therefore, the total system has shutdown with the result that it is not possible for the total system to begin to function again without **TSO**'s directions relating to a black start.
Transducer		Device to convert one form of energy to another. In power generation, often a device found at the boundary between the mechanical systems and the control and monitoring system e.g. pressure, temperature, position transducers. Also used to convert voltage, current and power etc. Output is analogue (4-20 mA) or digital signals.
Transformer(s)		Device which transfers electrical energy between circuits by electromagnetic induction.
Trend	ComAp	Signal value with respect to time
True RMS	Acronym	**RMS** value taking into account also the signal **Harmonics** distortion.
TSO	Acronym	***T**ransmission **S**ystem **O**perator*
TSUP	ComAp	***T**echnical **Sup**port* depatment

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Term	Category	Explanation
Unbalanced load		The situation where the **Load** on each phase is not equal.
Under frequency relay		An electrical measuring relay intended to operate when its characteristic quantity (frequency) reaches the relay settings by decrease in frequency.
Undershoot		Refers to the amount by which frequency or voltage drops below the nominal value as a result of load changes.

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Term	Category	Explanation
VAr		***V**olt **A**mpere **r**eactive* See **Reactive power**
VAr sharing		VAr sharing is defined as the proportional division of the reactive (VAr) total load between multiple generator sets in a paralleled system (**Load sharing**, too). VAr sharing is essential to avoid overloading and stability problems on the systems' gen-sets.
VBOUT		***V**irtual **B**inary **Out**puts*
VDE		*Verband der Elektrotechnik, Elektronik und Informationstechnik* Association for Electric, Electronic and Information Technologies, publishing the standards and performing product testing and certification in these fields.
Virtual synchronizing	ComAp	The running in **Synchronization** of two (more) networks without the direct electrical connection. Used for instant replacement of power supply in case of one network failure.
Volt free contact		A term used to describe a digital control signal used to interface between systems. The indicating system opens or closes a relay contact to provide a circuit. The “ends” of the circuit are left available for the receiving system to use with a voltage of its choice. It is important when specifying a volt free contact that the intended voltage and current to be used on the circuit is known to ensure that the circuit is rated appropriately. (Also potential free)
Voltage dip		The temporary drop in generator voltage that occurs when a load is connected, before the control system responds and corrects it. Also known as Voltage sag.
Voltage regulation		The allowed difference between maximum and minimum steady state voltage as a percentage of the nominal voltage. (ISO 8528-1 classified - class G1, G2, G3 and G4)
Voltage regulator		Device for maintaining voltage between the allowed limits for varying load conditions. Generally used for a generator output (see **AVR**).

Term	Category	Explanation
VPIO		***V**irtual **p**eriphery **I/O** module* An internal “SWwires” linking binary outputs to inputs
VRO		***V**oltage **R**egulator **O**utput*
VS	Acronym	***V**ector **S**hift (also **V**ector **S**urge)* This function is used in parallel mode for islanding detection and fast load shedding, to speed up operation time in over- and under-frequency situations and to detect loss of grid (**Loss of mains**). The function is sensing the voltage phasor position.
VT		See **PT**
VT ratio		See **PT ratio**

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Term	Category	Explanation
WRN	ComAp	See **Warning**
Warning	ComAp	These types of alarms inform the user that something is wrong and need to be checked and confirmed. Usually represented by the yellow color. 1st level alarm.
WSV		See **Web Supervisor**
Web Supervisor	ComAp	Cloud-based system for remote monitoring of ComAp controllers.
WinScope	ComAp	Graphical controller monitoring software.

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Term	Category	Explanation
Zero phase sequence component		Element of fault (i.e. current) vector with no phase sequence rotation (see also **Negative phase sequence component**).
ZST		***Z**ipped Archive **S**et* A file created by InteliMonitor, can be used for sending of complete archive sets to the ComAp technical support

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3 Notes

3.1 Document history

Revision number	Date	Author
3	30.11.2018	Martin Klíma
2	5.10.2018	Jiří Gerlich
1	4.7.2018	Jiří Gerlich

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