

Substation Automation Systems

P&C IEDs, RTUs, COMMUNICATIONS, SYSTEMS & SW

[Portfolio](#) | [References](#) | [Systems and Use Cases](#)





ZIV e-NET
FLEX family
suite:
all protection
functions

ZIV IRL

**Compact Feeder Multifunction
solution for MV switchgear,**
with Load Shedding Function to
ensure the stability of the system,
Back-Up performing capability in
HV lines and powerful built-in
Control Logic Module.



ZIV IRS

**Self-powered Overcurrent
and Breaker Failure
Protection Relay with
Harmonic Blocking**



NEW **DISTRIBUTED BUSBAR** DIFFERENTIAL PROTECTION WITH PROCESS BUS



- Based on the latest standards for **Process Bus** (IEC 61869-9 SV, IEC 61850-8-1 & 9-2 GOOSE, and PTP IEC 61850-9-3)
- PRP or **HSR** redundancy between Central Unit and Bay Units
- Bay units as Protection and Control IEDs. Very **cost-effective** for MV busbar differential protection
- **Cybersecurity** in accordance with IEC 62351, IEC 62443 and IEEE 1686-2013 standards.

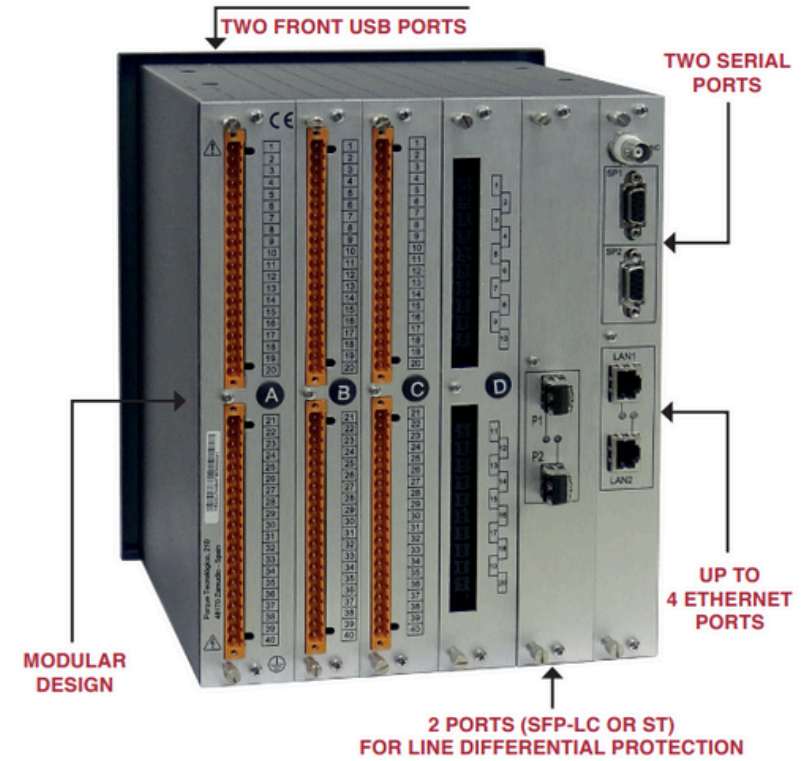
Line Differential Protection with Distance Backup



DLF

Both units are suitable for lines of any voltage level, overhead or under ground, multiterminal, and single or parallel circuits.

- DLF-A: for single breaker
- DLF-B: for double breaker or breaker-and-a-half, when CTs are at the line side (1 single set of 3 CTs)

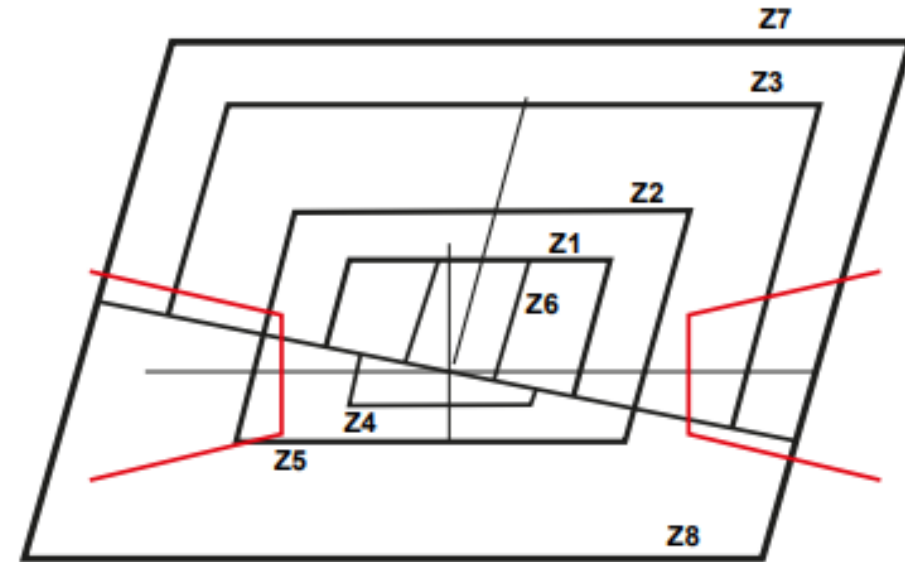


Distance Protection

ZLF

Suitable for lines of any voltage level, single or double circuit breaker with any configuration: overhead or underground, single or parallel circuits

- ZLF-B: for single breaker
- ZLF-C: for double breaker or breaker-and-a-half



Distance zones with quadrilateral characteristic and load limiters



Transformer Protection



IDF

for two to four winding transformers or autotransformers, of any voltage level, with single or double circuit breaker.

- IDF-A: for two windings transformers
- IDF-B: for up to three windings transformers
- IDF-E: for up to four windings transformers, or three windings transformers with one winding on breaker-and-a-half



Feeder Protection



IRF

for distribution feeders, transformers and generators, transmission line backup, and BCU (Bay Control Unit for single or double circuit breaker).

- IRF-A: MV Feeder Protection & Control
- IRF-B: double breaker or breaker-and-a-half BCU
- IRF-C: general alarms BCU / I/O Box
- IRF-D: single breaker BCU

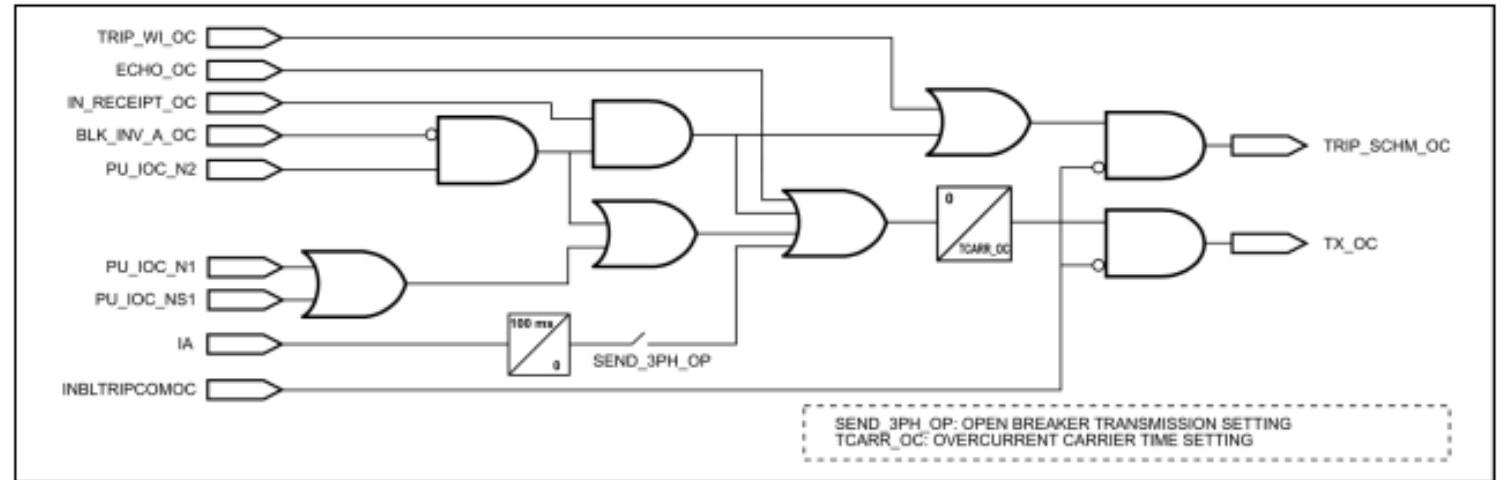


Figure 6. Permissive Overreach Trip Scheme Block Diagram (Overcurrent).

Automatic Voltage Regulator



RTF

for up to 5 power transformers in parallel.

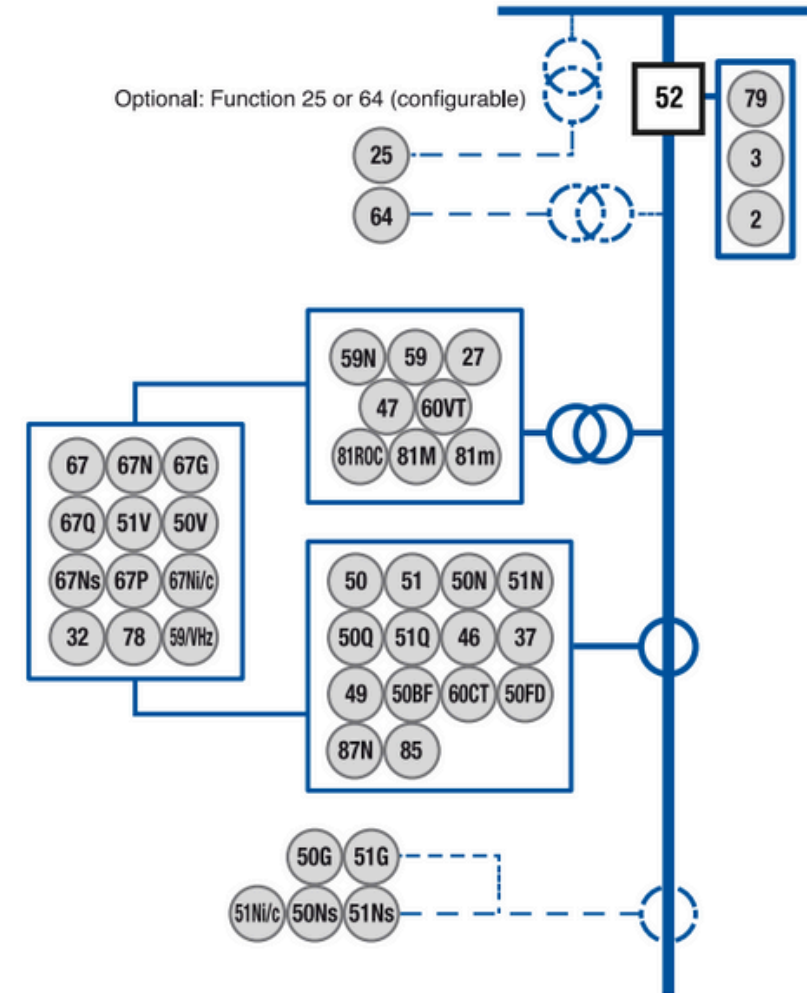


ANSI	Function	Uns.
90	Voltage Regulator.	1
	LDC (LDC-Z, LDC R-X).	1
	Under Voltage Block with Temporization.	1
	Maximum Switching Current Block.	1
	Voltage Out of Range Block with Temporization and Reset.	1
	Power Reversal Detection.	1
	Tap Changer Monitoring.	1
59	Phase Overvoltage.	1
81m	Underfrequency.	1
60VT	VT Supervision.	1

Compact Feeder Multifunction Protection

IRL-F

- Compact Feeder Multifunction solution for MV switchgear, with Load Shedding Function to ensure the stability of the system, Back-Up performing capability in HV lines and powerful built-in Control Logic Module

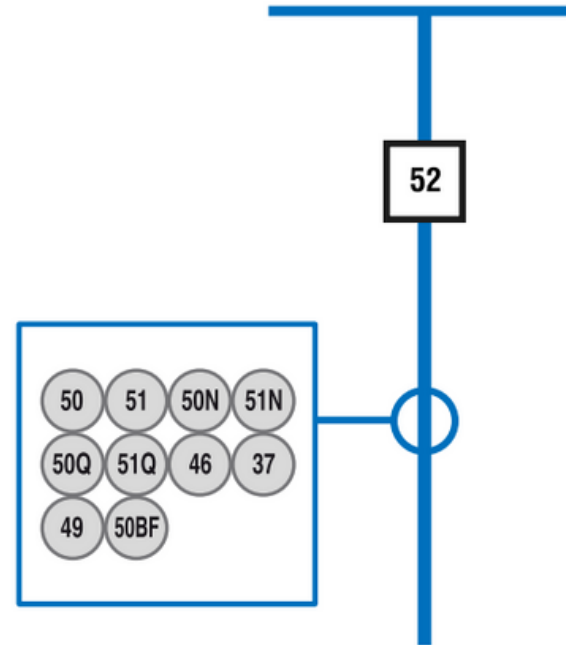


Self-powered Overcurrent and Breaker Failure Protection Relay with Harmonic Blocking



IRS

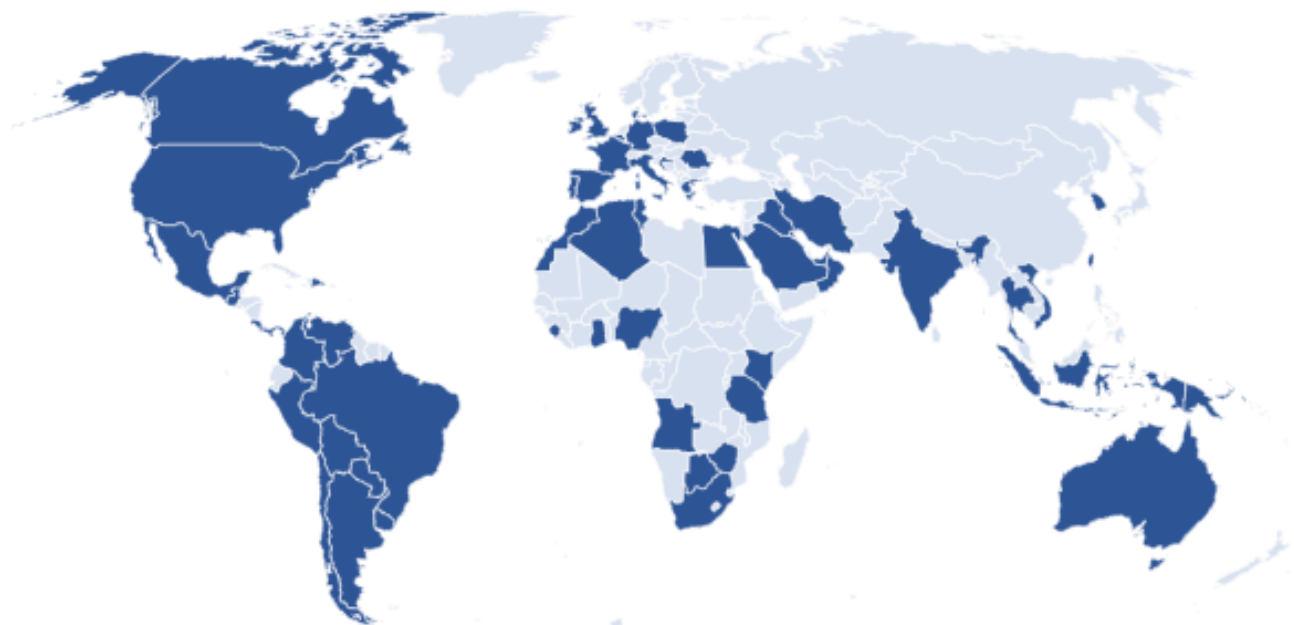
Where dependable auxiliary power source is not available, the IRS Relay can be energized either directly from Main Current Transformers, AC/DC Auxiliary Voltage or through the USB Front Port.



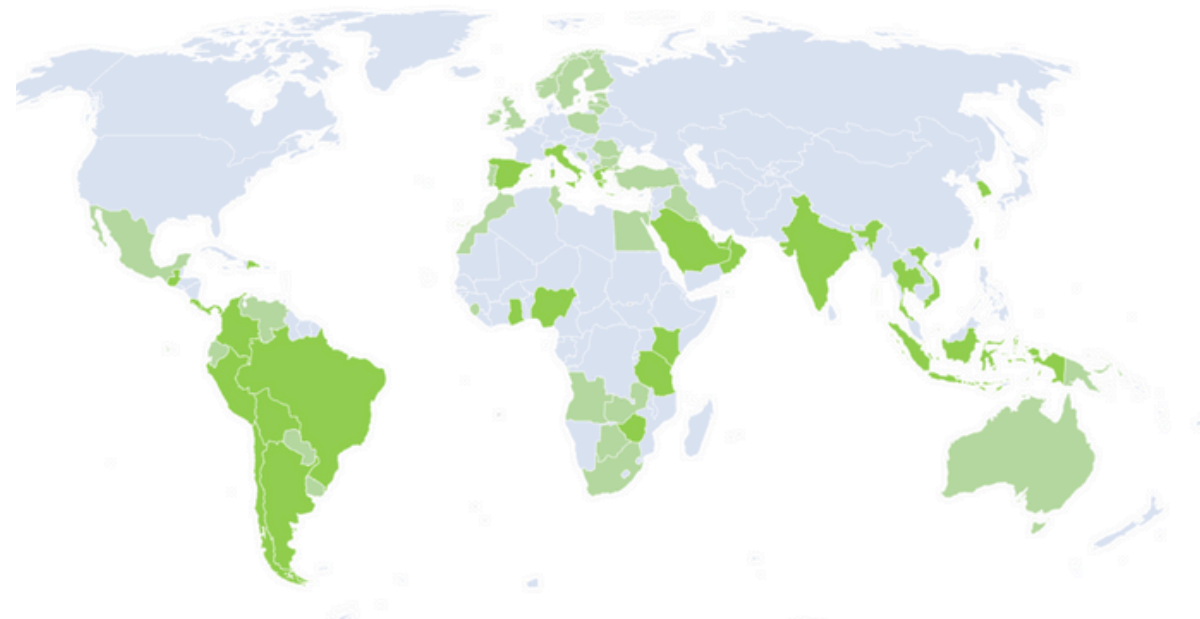


References & Homologations

References



IEDs certified



Value Added Services

Systems Integration & Eng. Services | Use cases

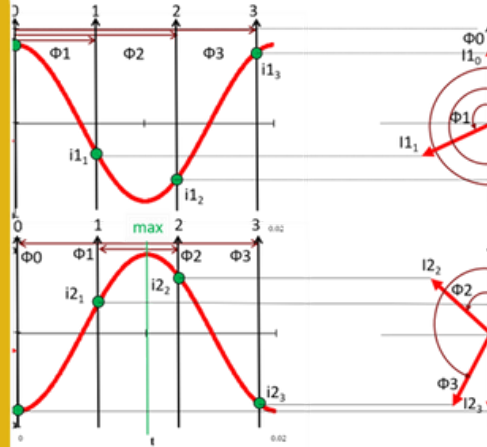


Settings calculations and selectivity studies

RTDS Lab

Feasibility studies

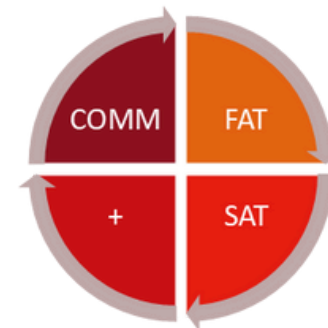
ANALYSIS



Engineering



DESIGN



IMPLEMENTATION



Training

Tech assistance

Preventive maintenance

Repairing

Retrofit / Revamping

+ SERVICES



Use cases



LATAM

EUROPE & AFRICA

IBERIA

ME

BRAZIL

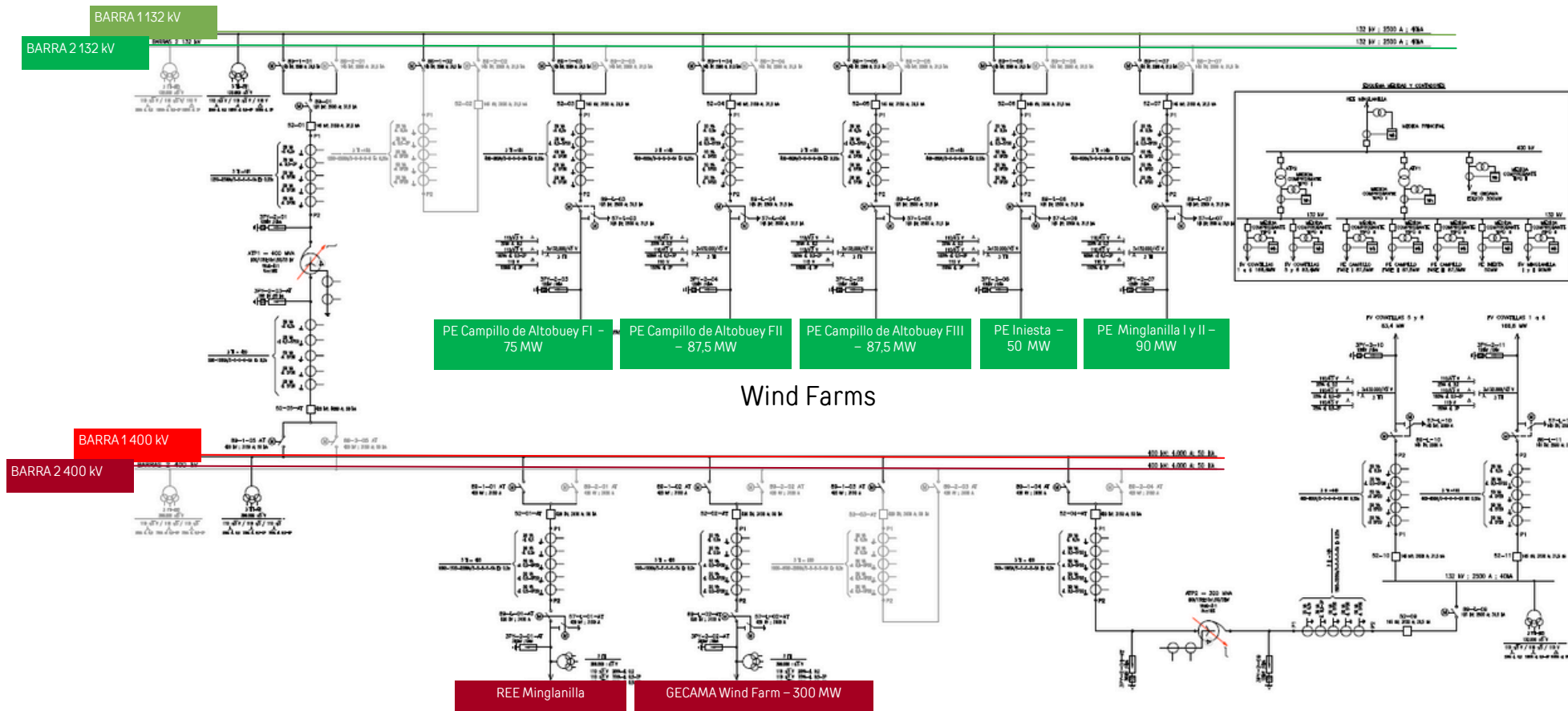
INDIA

APAC

A **Wind Farm** Substation Automation System (30/132kV subst., 132kV line, Generation Subst. 132/400 kV, & **evacuation line 400kV**)

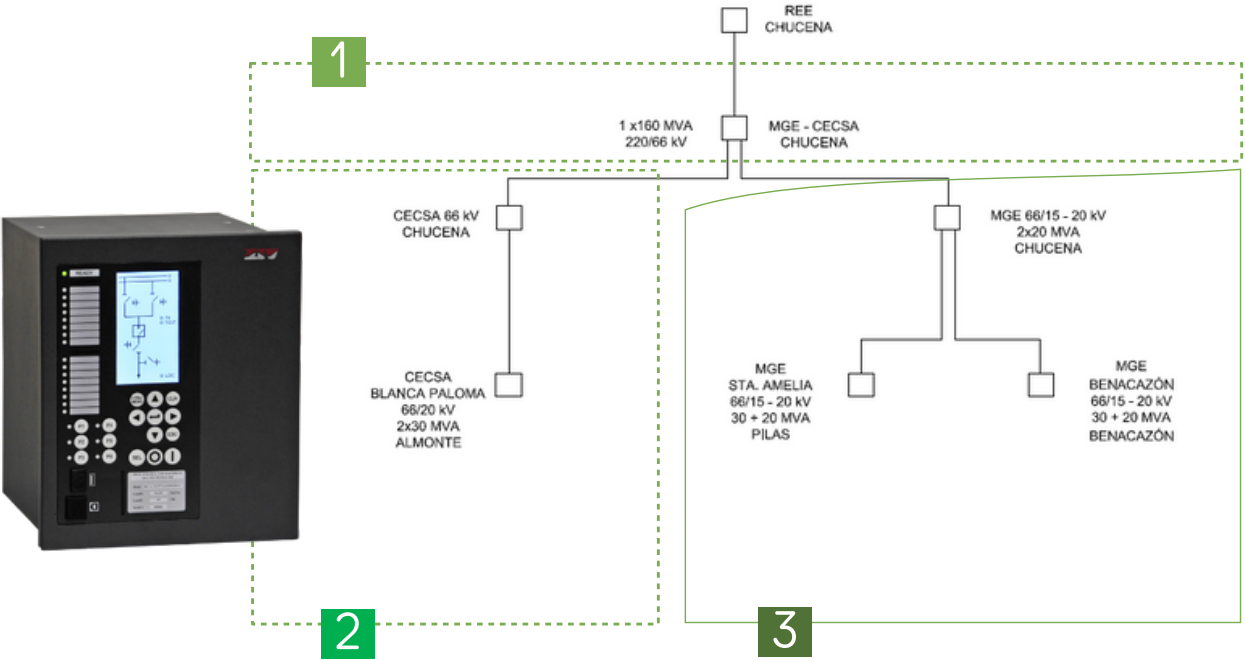
SAS

+600MW



SYSTEM INTEGRATION

Eg. Collector Substation
 Electrical & Logical Engineering
 IEDs supply + System integration + FAT + Commissioning



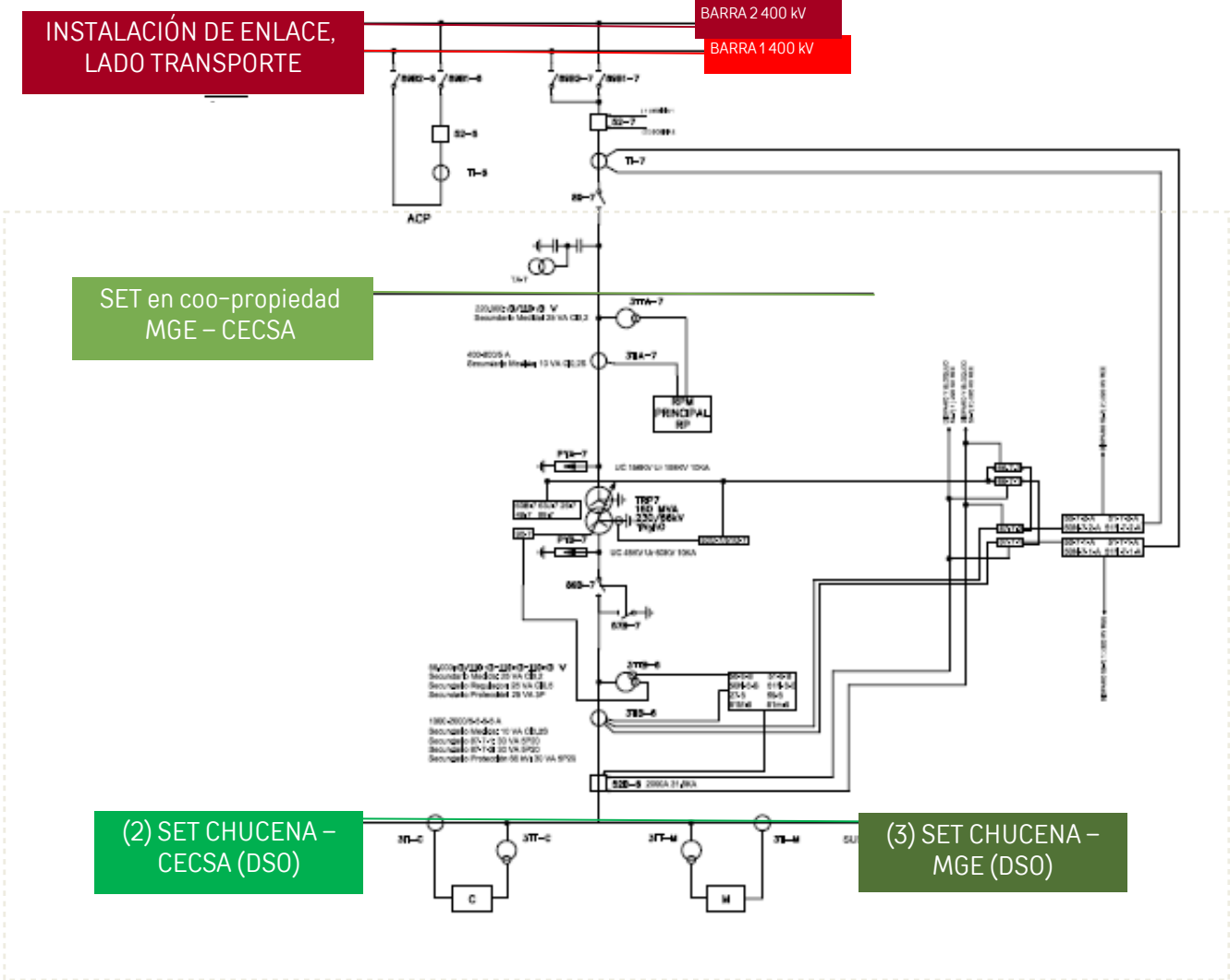
INSTALACIÓN DE ENLACE,
 LADO TRANSPORTE

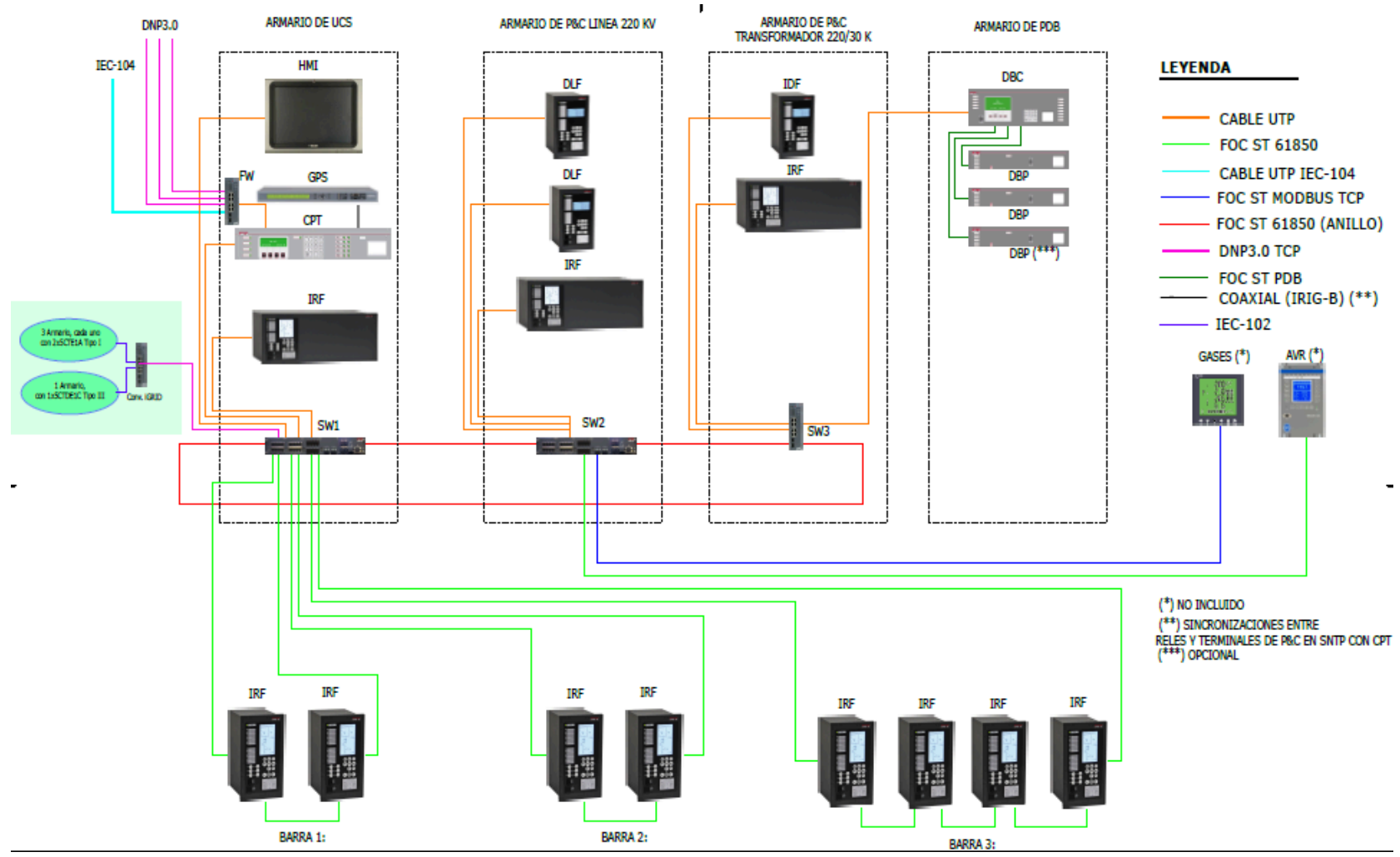
BARRA 2 400 kV
 BARRA 1 400 kV

SET en coo-propiedad
 MGE - CECSA

(2) SET CHUCENA -
 CECSA (DSO)

(3) SET CHUCENA -
 MGE (DSO)





[Read more](#)

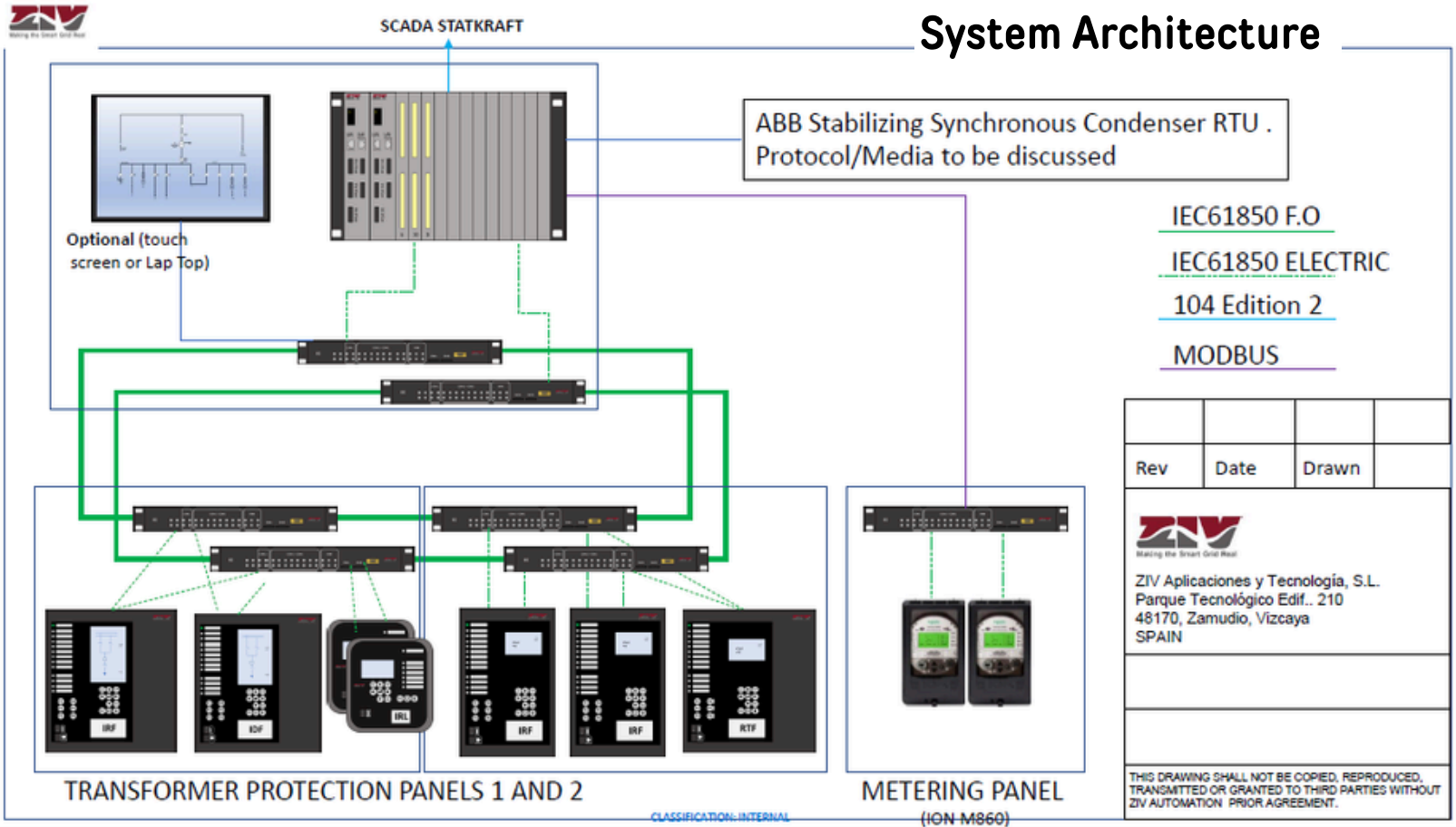
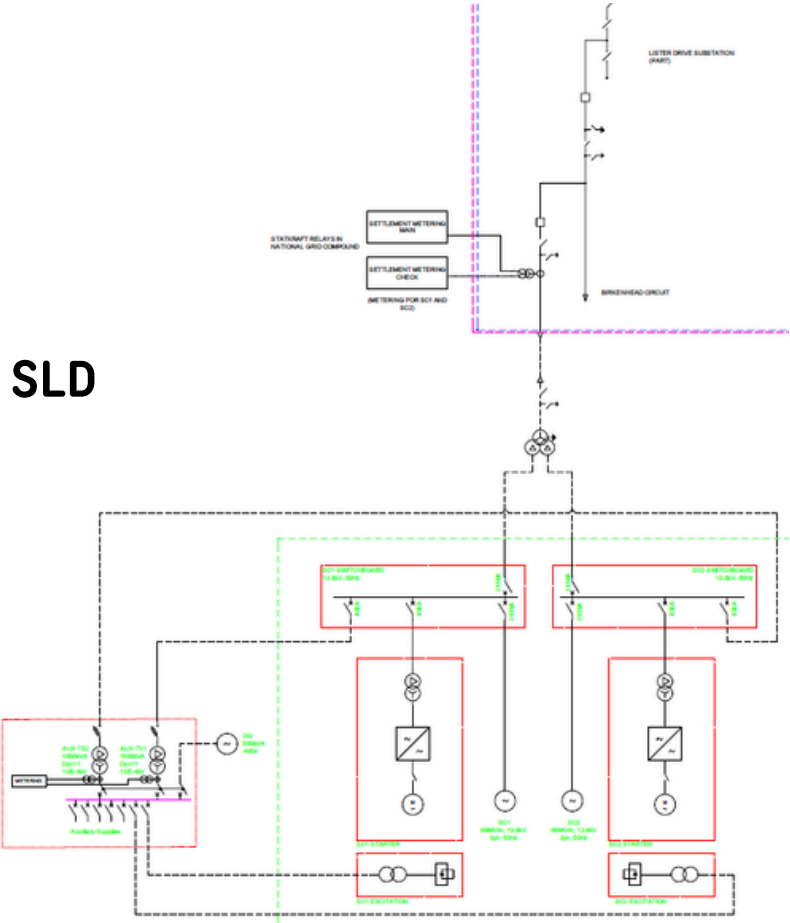
ZIV has equipped the new Venalta substation and a new line position for Huéneja (220kV).
A complete SAS for three solar parks capable of generating 150MW

SAS | Liister Drive Stability Project



A project in collaboration between the ZIV team of experts in Substation Control and RTUs located Newcastle (UK) and the experts in protection and control systems at ZIV headquarters. The project consisted in **a connection of a Stabilizing Synchronous Condenser in the National Grid transmission system**. It included the protection and control of the transformer both for the 275Kv as for the 13,8kV part considering also the necessities of the controller of the SSC device itself. The direct client was the British company NRS Group and the owner of the project was the UK's subsidiary of Nordic company Statkraft who accepted the ZIV IEDs, systems and communications protocols in the tendering phase.

SLD



System Architecture

- IEC61850 F.O
- IEC61850 ELECTRIC
- 104 Edition 2
- MODBUS

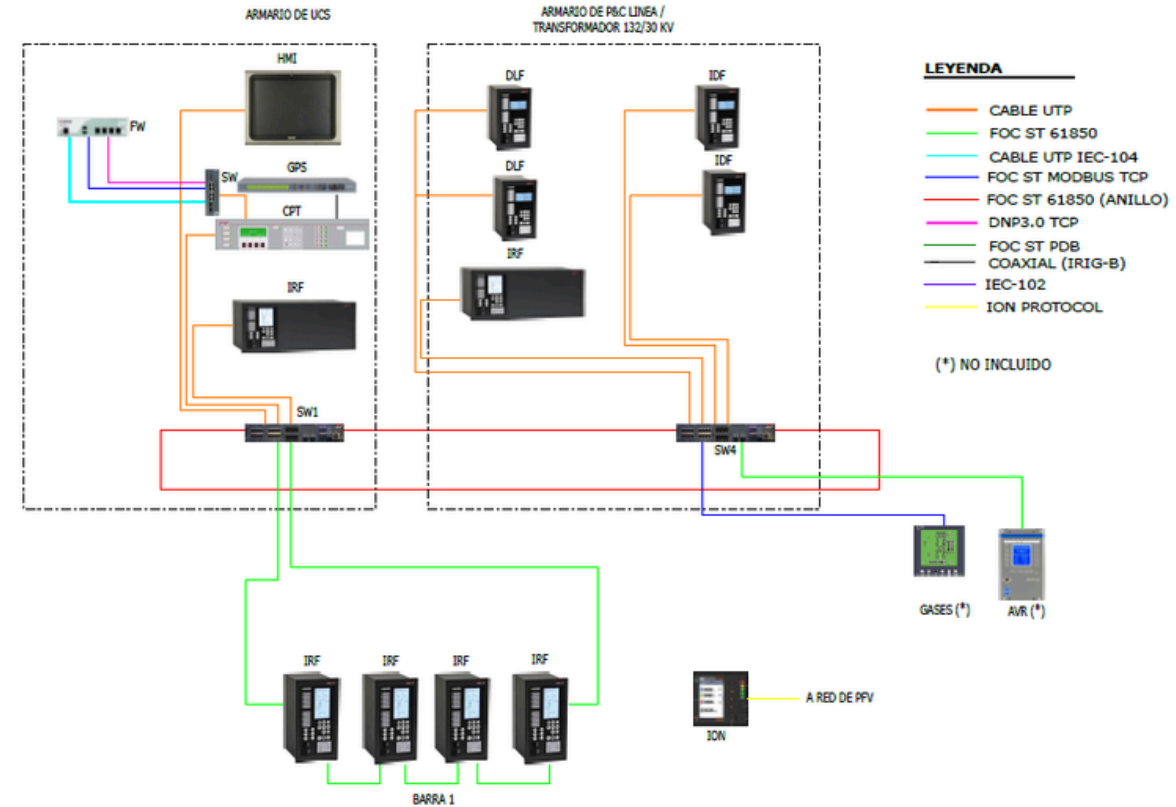
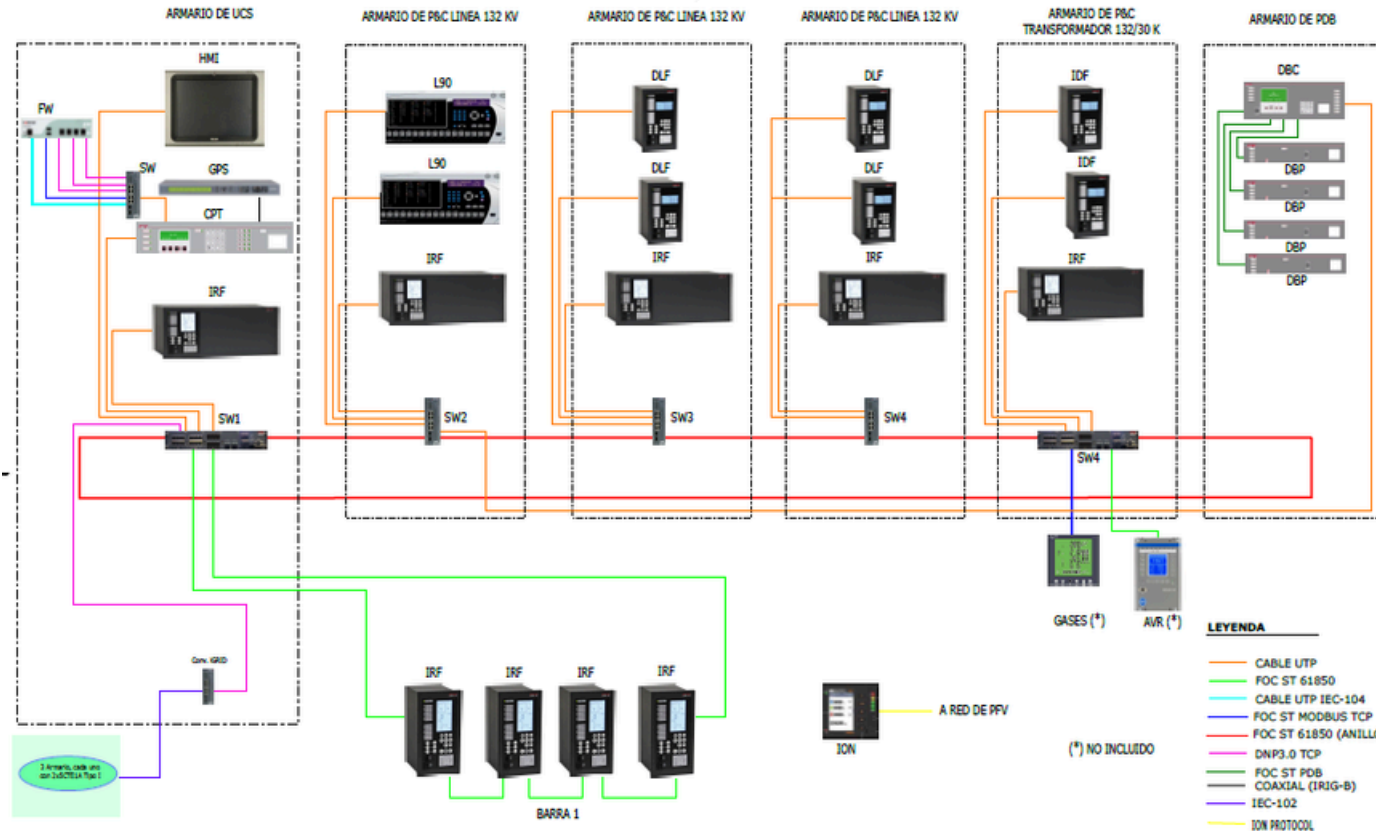
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ZIV Aplicaciones y Tecnología, S.L. Parque Tecnológico Edif.. 210 48170, Zamudio, Vizcaya SPAIN			
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SAS | Los Llanos I -II- III

EPC:



IPP:





UK & Ireland

Spain

Brazil

KSA

India



Factory Tour

 **Spain**
Bilbao
Barcelona
Madrid

 **Brazil**
Rio de Janeiro

 **UK & Ireland**
Dublin
Newcastle

 **KSA**
Riyadh

 **India**
Bengaluru

 **Engineering & Sales Support**
Mexico
UAE
Thailand
Indonesia



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