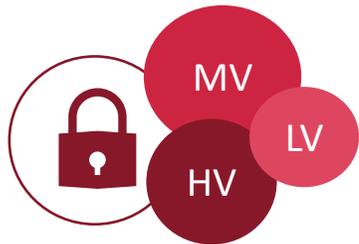


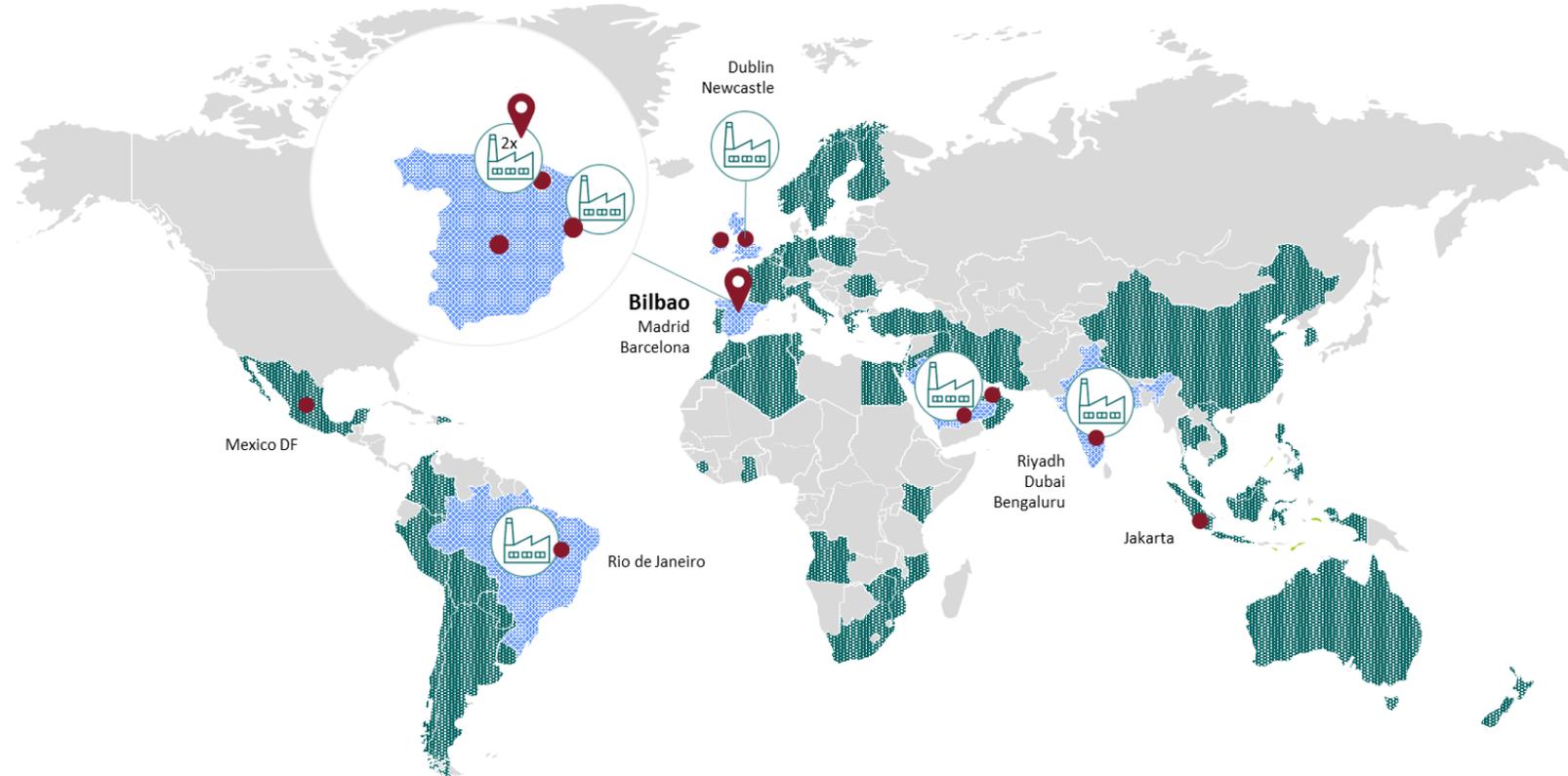
# Making the Smart Grid Real



High tech integrated HV, MV & LV solutions to help utilities and electrical companies to achieve energy transition challenges



**High tech integrated HV, MV & LV solutions  
to help utilities and electrical companies to achieve  
energy transition challenges**



**+ 400 professionals**  
Spain, UK, Ireland, KSA, India, Brazil;  
Indonesia, Mexico, UAE



Manufacturing & testing

**7 Sites**  
Headquarters in Bilbao, Spain



**85 Countries**  
References



**Flexible & Cybersecure**

1

A complete integrated **solution**,  
substation gateway + local HMI + LAN switches IEDs + P&C IEDs + communication devices  
engineering & system integration services



## All protection functions

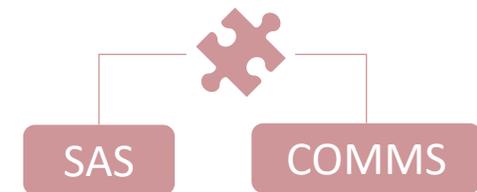
- **Distributed Busbar Protection** with Ethernet HSR or PRP redundant communication between central unit and bay units, based on process bus.
- **Line Differential Protection** with Distance Backup. Both functions are suitable for lines of any voltage level, overhead or under ground, multiterminal, and single or parallel circuits.
- **Transformer Protection** for up to four winding transformers or autotransformer, of any voltage level, with single or double circuit breaker.
- **Feeder Protection** IED for distribution feeders, transformers and generators, transmission line backup, and BCU (Bay Control Unit for single or double circuit breaker).
- **Automatic Voltage Regulator** for up to 5 power transformers in parallel.
- **Distance Protection** suitable for lines of any voltage level, single or double circuit breaker with any configuration: overhead or underground, single or parallel circuits.

## Flexible & Cybersecure

## Systems integration



Systems, integrators, OEM References



- |               |                |
|---------------|----------------|
| • HV RTUs     | • HV telecom   |
| • Protections | • Subs. Switth |
| • Tools       |                |



**Making a conventional  
MV switchgear smarter**

2



**Making a conventional  
RMU smarter**



The solution integrates all functions required to:

RELAY

1. Cover the **protection** of MV/LV Transformers

RTU

2. **Monitor the MV feeders** (measurement of voltages, currents and powers), and enable the local and remote control of the switchgear

3. Additional functions:

- **Fault detection** both between phases and between phase and ground, with indication of the direction of the same.
- **Integration** of other devices like self-powered relays or battery chargers by means of communication protocols
- Communication with **control centers** using industrial communications protocols like IEC 60870- 5-104, 101 or DNP3.
- **Remote** management (firmware update, device configuration).
- **Cybersecurity**

Systems integration



S.Subst.Automation, LBS  
LV Supervision Systems,  
References



DAS

COMMS

- MV RTUs
- MV Protections
- Swiches, Modems, Routers
- Sensors & Couplers

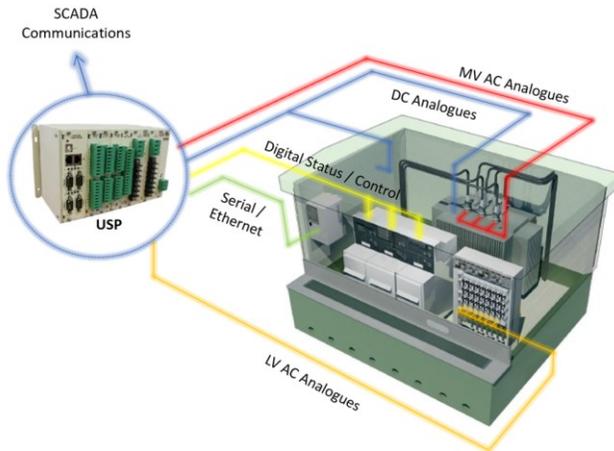


WEBINAR

- Compact Modular Unit
- Low/Medium I/O Counts
- 2x Ethernet Ports + 4x Serial Ports
- Downloadable Functionality
- Extensive Security Features
- Secure Web HMI – Full Network Line Diagram
- Centralised Software management

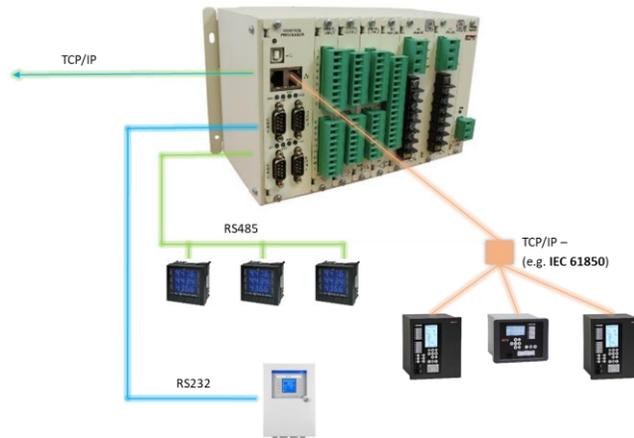
1

## MV/LV Secondary Substations Renewable Connections



2

## IED Gateway



3

## Flexible RTU RMU Use Case

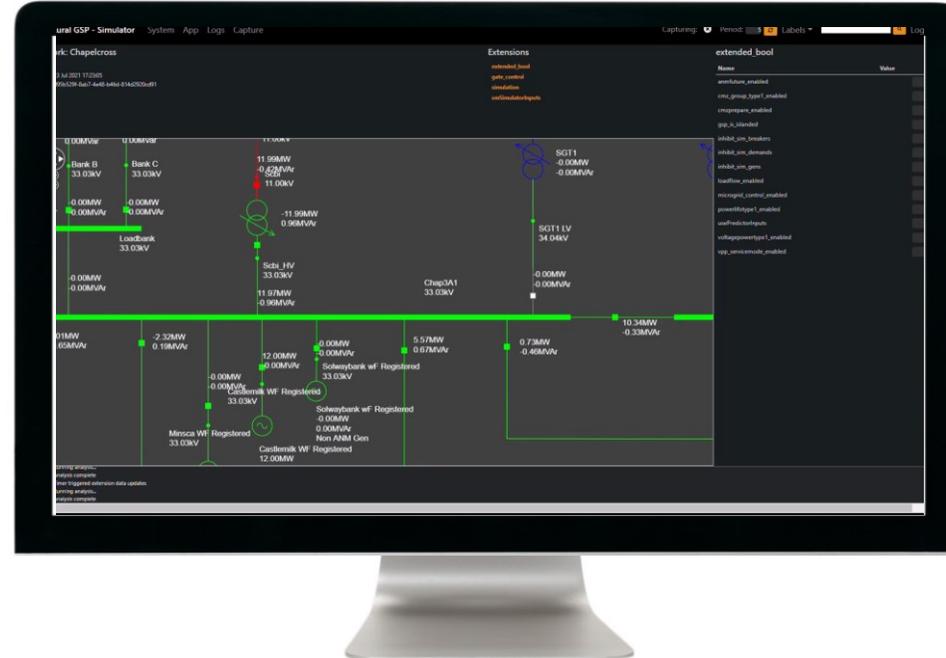


4

## Generator Constraint Controller

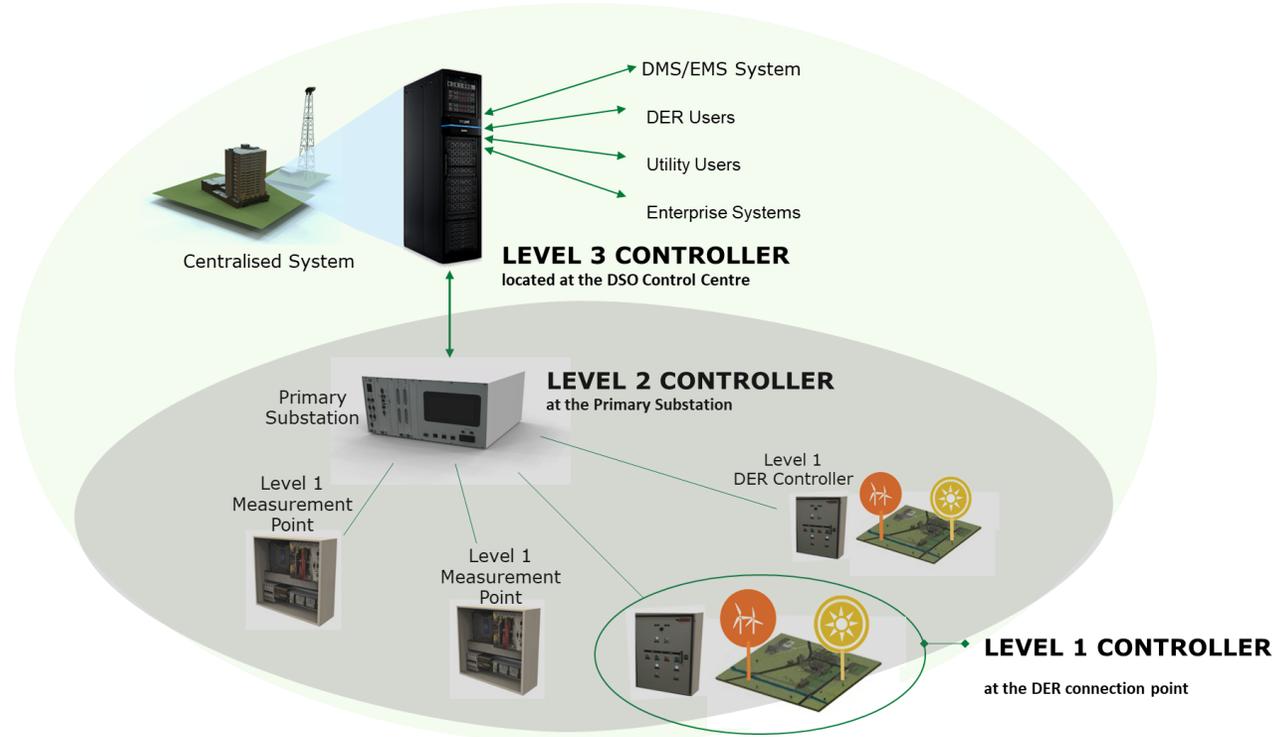


Standalone / Integrated Controllers at the connection point of Distributed Energy Resources (DERs)



## Accelerating RES Integration with a scalable ANM System





## Accelerating RES Integration with a scalable ANM System

Real Time Management | Forecasting | Transmission Support (VPP) | Resilience

### Systems integration



ANM / DERMS  
References

### Turnkey ANM System HW + SW + Services



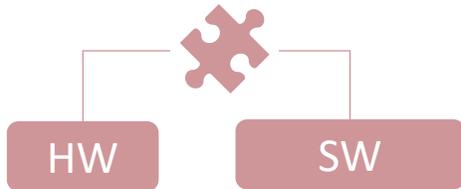
HW

SW

- Xcell
- USP 020
- Altair

- Constellation

## Turnkey ANM System HW + SW + Services

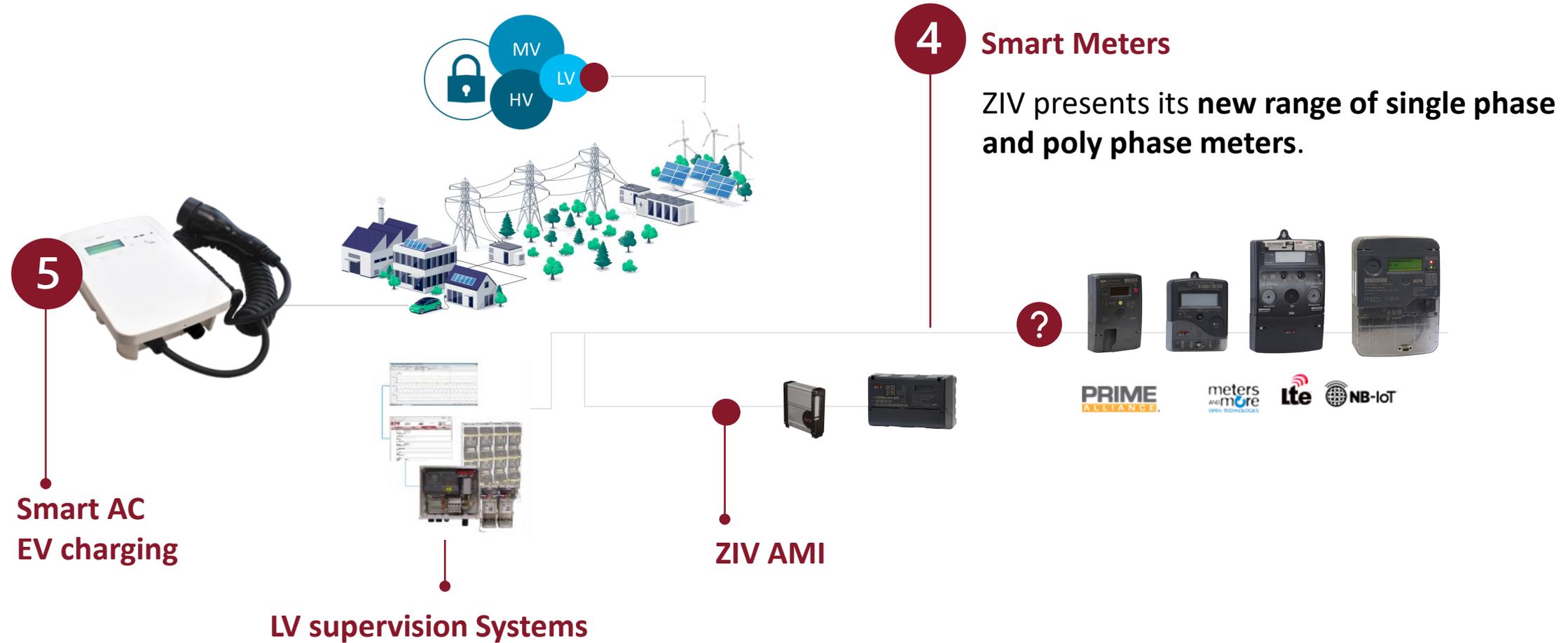


**A scalable framework  
for Advanced Network  
Management Systems**



## ANM Typical Applications







WEBINAR

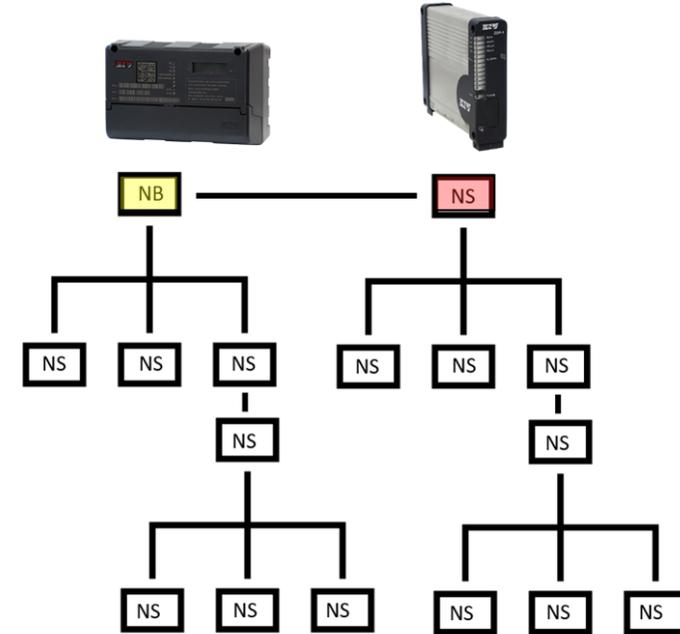
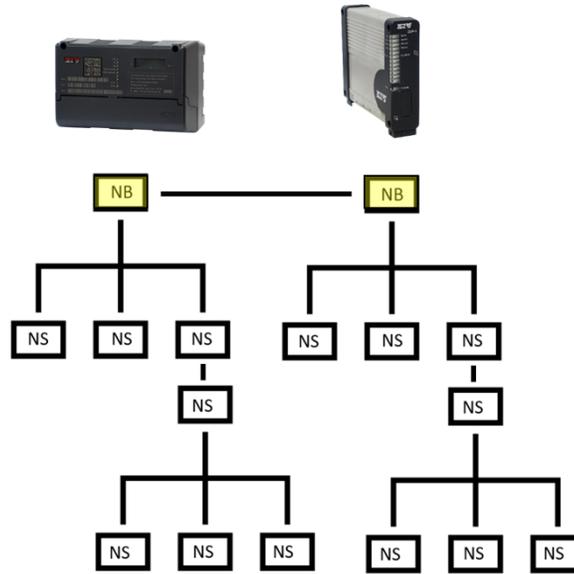
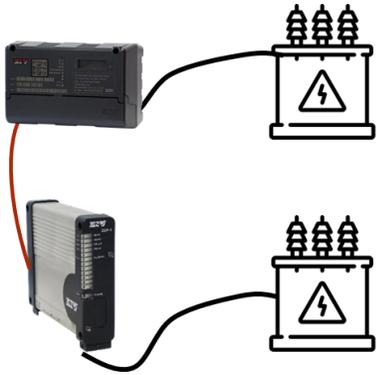


## ZIV presents its new range of single phase and poly phase meters.

Among other features, these meters upgrade its PLC modem for PRIME 1.4, certified to communicate in all 8 channels FCC, three-phase injection and overcurrent protection relays.

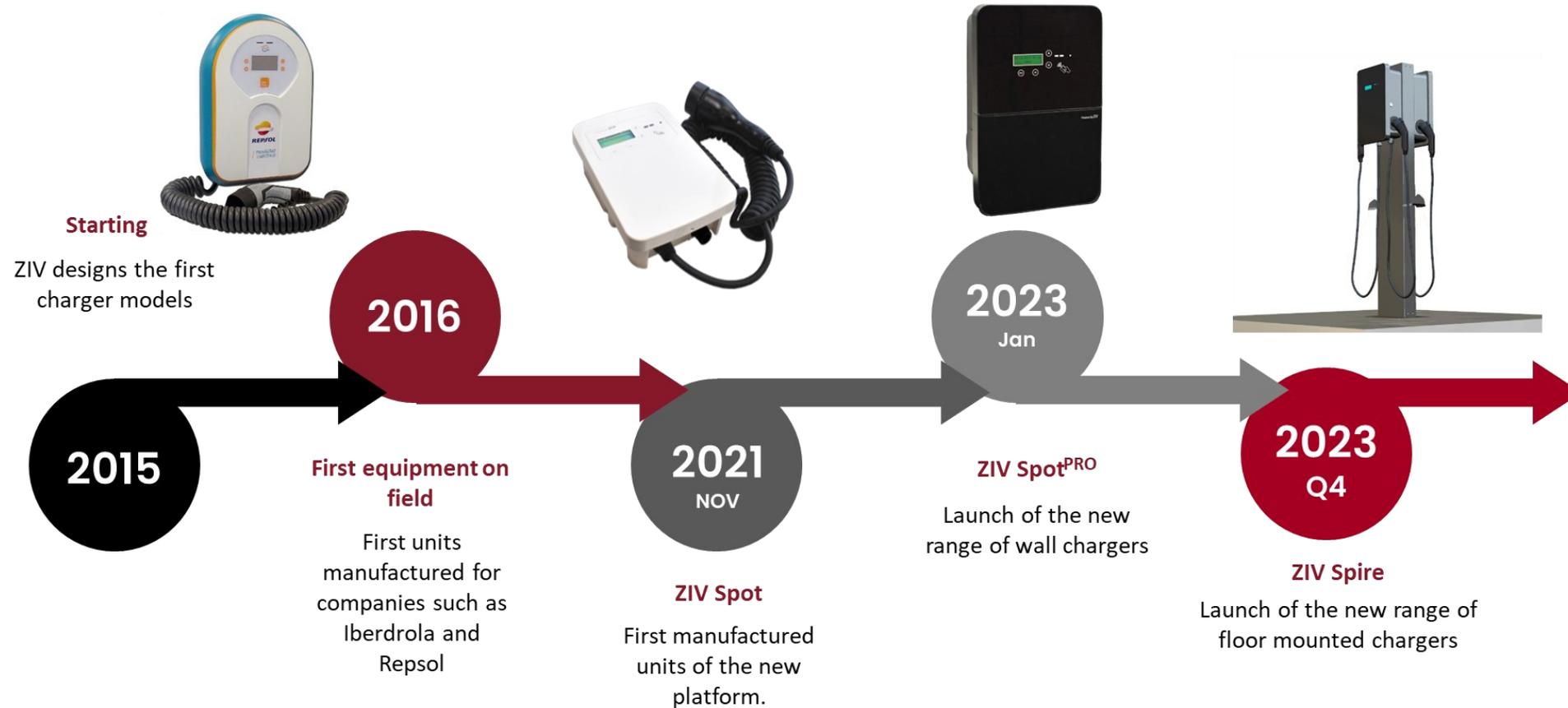
## PRIME over TCP

## PRIME over UDP



## ZIV AMI devices will complete the new PRIME 1.4 networks,

making available phase detection from the meters that enhances the knowledge of the low voltage network in the last mile, three-phase injection, the possibility to choose between channels of communication and that will enable and smooth evolution of the smart meter communication networks from PRIME 1.3 to PRIME 1.4.

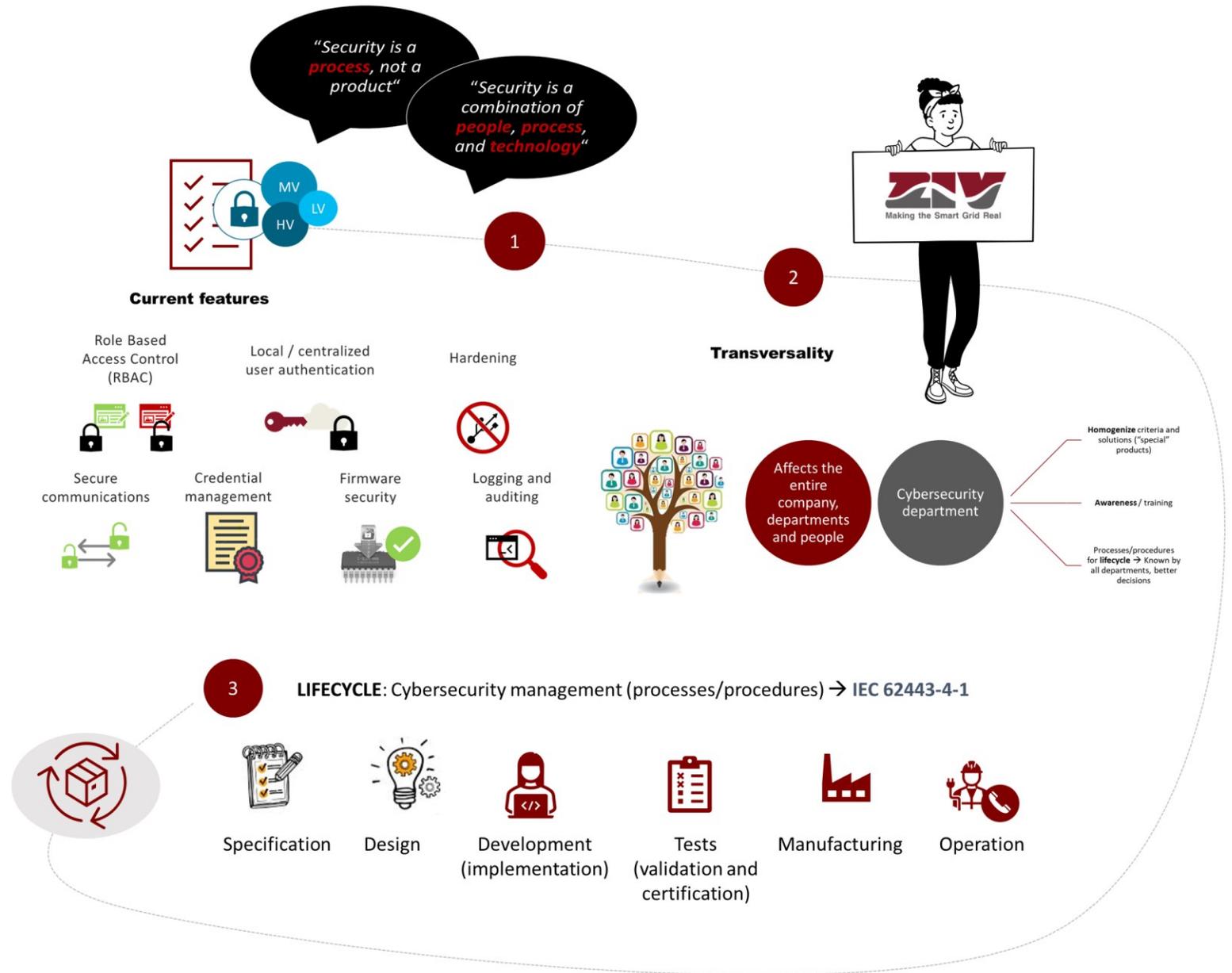


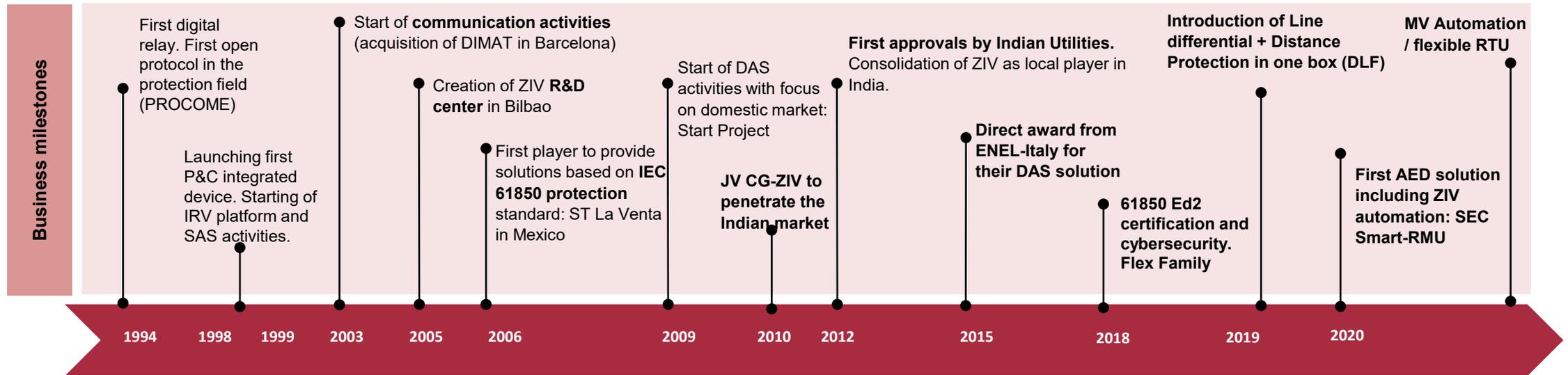
# Cybersecurity

is not just a set of functions implemented in a device, it equally applies to all the company procedures and departments.

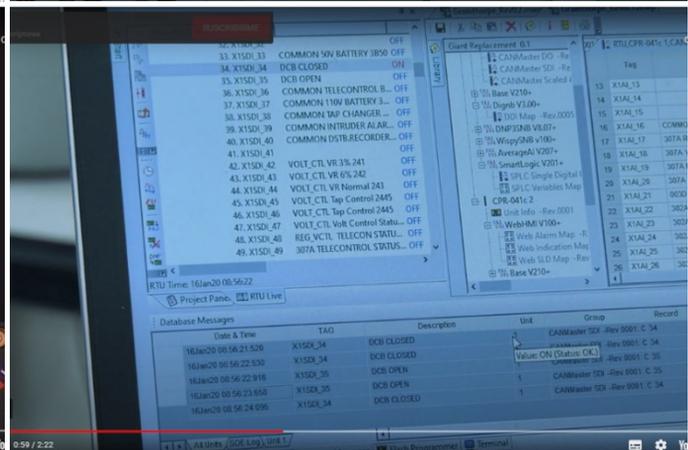


WEBINAR





- Company created in 1993. Core business: Protection & Control devices.
- 1998 ZIV do Brazil is created.
- 2012 CG acquires the company and ZIV starts managing ZIV Automation Ireland/UK (a business that was part of GC Group)
- 2017 alfanar becomes the new sole shareholder.



Thank you!

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