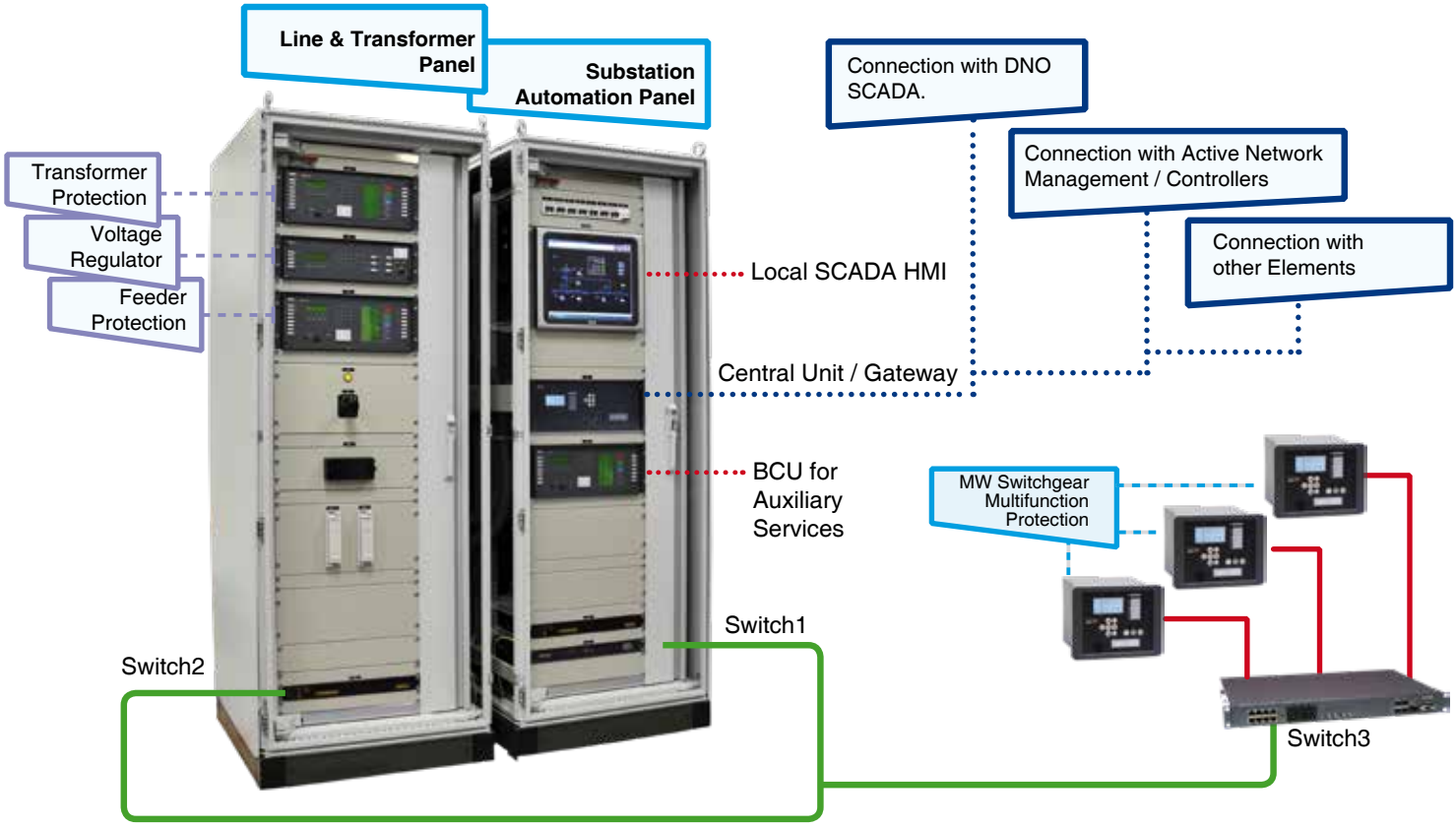
Solutions for Interconnection Points

For **Independent Connection Providers (ICP)**

Provide your customers with a simple, robust and cost-effective solution for Protection, Control Monitoring and Communications.

- ✓ Loose items to be delivered if your company has capabilities to build and wire C&R panels as a System Integrator.
- ✓ A configured set of loose items to your company if you have panel manufacturing facilities but not the need to act as a system Integrator.
- ✓ The **Complete Solution** of control and relay panels with all configured IEDs installed if you prefer to treat the SAS like one more component of your system.



Typical Application Elements

1) Protection and control Panel for the transformer to connect to the grid, including inside:

- Protection relay for the transformer.
- Backup protection relays for the HV and LV windings of the transformer.
- Automatic Voltage Regulator.
- Bay Control Unit.

2) IEC61850 Substation Automation System panel, including inside:

- Substation Gateway.
- Substation HMI (optional).
- Auxiliary Services System Controller.
- Ethernet Switches.
- GPS Synchronizing Clock.

3) In case the system includes metalclad cabinets for MV feeders (case of wind farms) also the protection relays can be supplied or integrated.

UCA International Users Group

ZIV e-NET flex platform:

Cybersecure, adaptable and modular protections for the digital substation. IEC 61850 Edition 1 & 2 Certified

- **IDF** - Transformer Protection
- **IRF** - Feeder Protection
- **ZLF** - Distance Protection
- **DLF** - Line Differential Protection
- **BCF** - Capacitor Bank Protection
- **RTF** - Automatic Voltage Regulator (AVR)

ZIV e-NET compact platform:

- **IRL** - Multifunction Protection for MV Power Systems & Industry. For Grounded or Ungrounded Schemes

Available Accessories

- ✓ Workstation PC For Local Scada HMI. The Embedded Web HMI features the following main functions: Databases, Commands, Event management, Alarm management.
- ✓ Integration With DNO SCADA (Standard Protocols). The options of protocols for integration are the following:
  - IEC60870-5-101 through RS232.
  - DNP3 through RS232.
  - IEC60870-5-104 through RJ45 to the substation Switch.
  - DNP3 through RJ45 to the substation Switch.
- ✓ Integration with Reactive Compensation Equipment.
- ✓ Integration with other make Equipment that is requested to be in the substation.
- ✓ Logic Engineering and Configurations of the SAS.
- ✓ Control and Protection Engineering. Document for Electric Engineering: In-detail Single Line Diagram of the Substation; Control and Wiring Schemes for the Protection, Control and Metering System; Interconnection Diagrams of the Protection, Control and Metering System.
- ✓ Setting Calculations & Protection Coordination Study.
- ✓ Factory Acceptance Tests.
- ✓ Site Acceptance Tests.
- ✓ Training.

ZIV e-NET tool:

It is the software tool used for the configuration of all ZIV devices.

It provides a friendly interface to program all the IED features and settings, and access all the recorded information.

Intelligent Electronic Devices (IEDs); Substation Central Units (RTUs); Switches; Terminal Servers; Merging Units; RIO modules.

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