

Eltav's Wireless Monitoring— Operator's Device (OD)



A typical actuator installation



The VD



The VDR

Eltav's Success

The Eltav Wireless Valve Monitoring System has consistently proved itself in all industrial installations.

OD Overview

The OD is a mobile field operational panel for the Eltav Wireless Valve Monitoring System used by field operators. The OD enables operators to effectively perform a variety of operational, setup, maintenance and monitoring tasks related to all Eltav System components (VD, VDR and TVDR). The most basic functions of the OD are turning the devices ON/OFF, supporting installation and commissioning, and receiving real-time feedback in regard to the status of a particular valve device (VD).

Operation

The operator uses the OD to as a portable control panel to conduct one-on-one communications with various Eltav devices.

Login ensures that each operator is associated with all conducted operations, thus providing comprehensive support for full traceability when an operation is executed.

In addition, the OD is used to configure new Eltav devices prior of joining the network, report performance, and assist in installation and maintenance tasks.

The OD communicates with VDs and VDRs/TVDRs using a low frequency (LF) channel (to communicate with the device) and a ZigBee channel to receive a response (from the device or from the Gateway).

As part of the system commissioning procedure, the OD transfers – over the LF channel – the required AES key so that VDs can join the secure ZigBee network.

The OD manages a log-in mechanism in which each user has a unique username and password.



System Configuration

The Eltav Wireless Valve Monitoring System consists of the following components:

VD (Valve Device)

Installed on the valve (or actuator) and reports on valve status (by measuring stem angle) at predetermined times or whenever a deviation in stem angle is detected.

VDR (Valve Device Router)

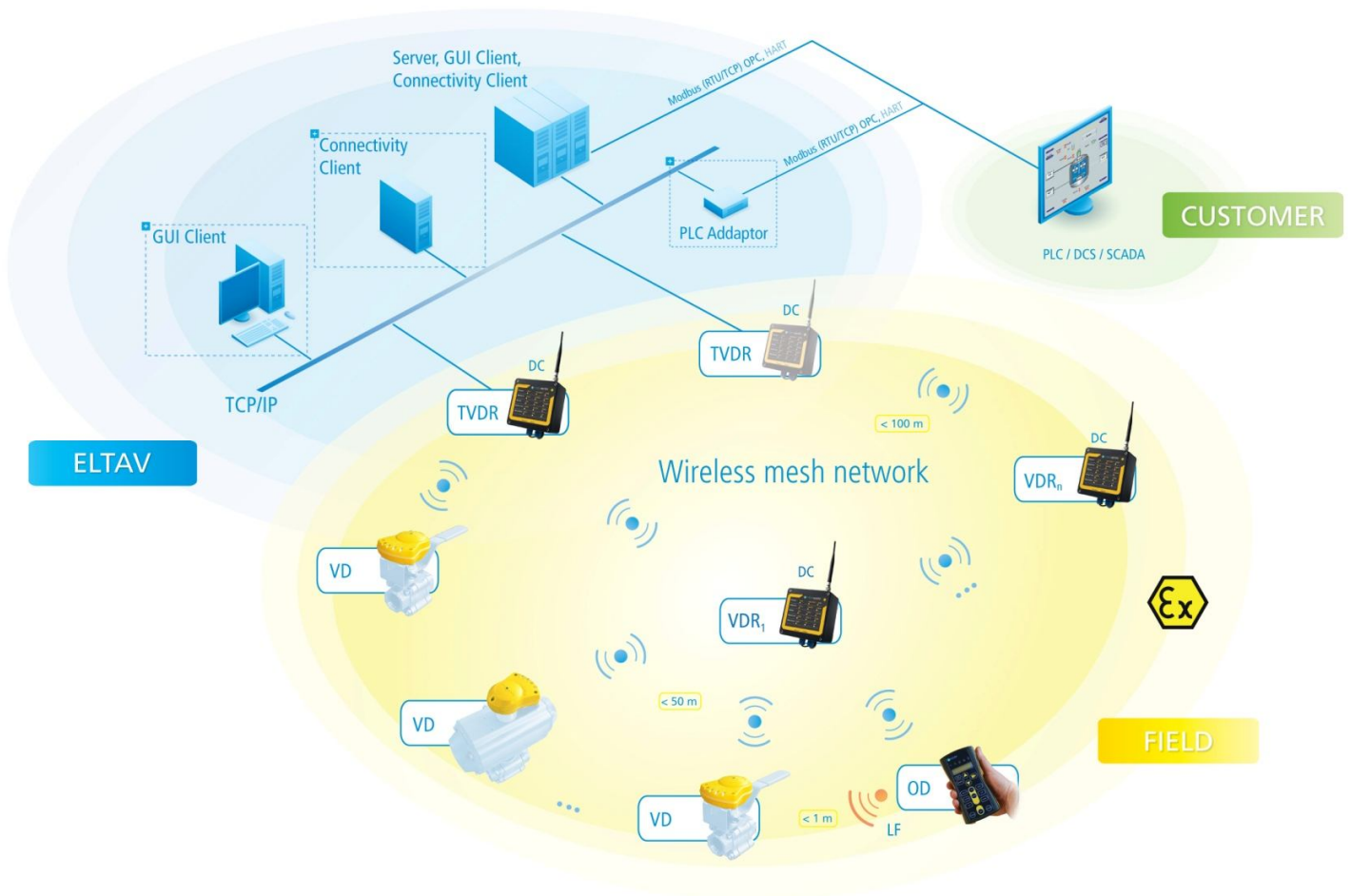
Collects reported data from all associated VDs and wirelessly transfers the information to the next VDR on a "mesh" topology.

TVDR (Tunneling VDR)

Last-hop VDR that transfers collected data from VDRs to the Eltav Gateway. Several TVDRs can be connected, via TCP/IP, to the Eltav Gateway (thus ensuring full redundancy and avoiding a single point of failure).

Eltav Gateway

An industrial computer running the EMS package used to manage the Eltav Network, and the OPC Server which establishes the interfaces to the OPC data clients and/or PLCs.



OD Specifications

General	
OD Communication	Magnetic at Low Frequency (LF at 125KHz) from OD to device. Device responds back on Zigbee channel.
OD LF range	Up to 1 m typical
OD display	Alphanumeric, back lighted, 2 rows 12 characters.
Keypad	16 special membrane keys.
LF data rate	1366 bps
Battery	0.75 AH Li-Ion rechargeable battery. Charged when unit connected to USB.
Indications	BAT full charged; BAT fast charge; Low BAT; USB activity; Zigbee / LF transmit.
Supported Functions:	<ul style="list-style-type: none"> • Identify all devices in range • Select a device for a one-on-one session • Turn device on/off • Set up the device by providing all required data either manually or from a preloaded template/list (loaded by the EMS package) • Perform calibration of VD • Command devices to join/leave the network • Read and present setting of device • Read and present status of device (continuously updated) • Monitor network status • Evaluate radio coverage • And many more.