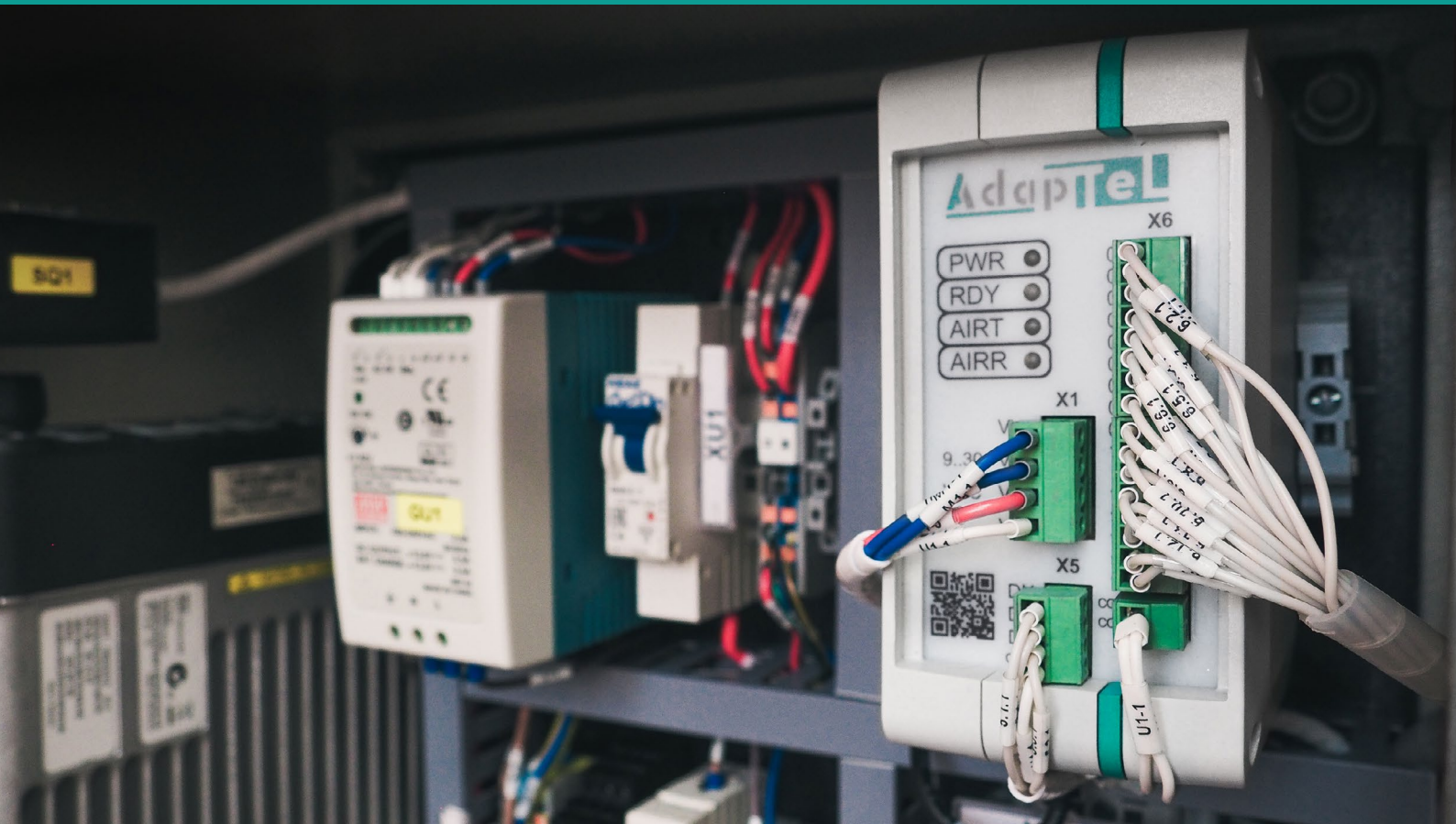


TELEMETRY DATA TRANSMISSION OVER DMR RADIO SYSTEMS



Benefits

- **Reliability:** Use of a private fail-secure communication channel, independent of third-party operators
- **Cost Effective:** Data transmission via voice communication infrastructure, so no extra frequencies required
- **Network load optimization:** Data and voice transmission over a single frequency on two channels based on TDMA technology
- **Flexibility:** Can work as part of SmartPTT or via a third-party SCADA software

Verticals

EMERGENCY SERVICE
PUBLIC SAFETY

AGRICULTURE

ELECTRICAL DISTRIBUTION FACILITIES
ENERGY

MANUFACTURING
MINING
COALMINING

PRODUCTION & EXPLORATION
OIL & GAS
GAS DISTRIBUTION

AIRPORTS
TRANSPORT
TRANSPORT COMPANIES

WATER SYSTEM
UTILITIES



AdapTEL

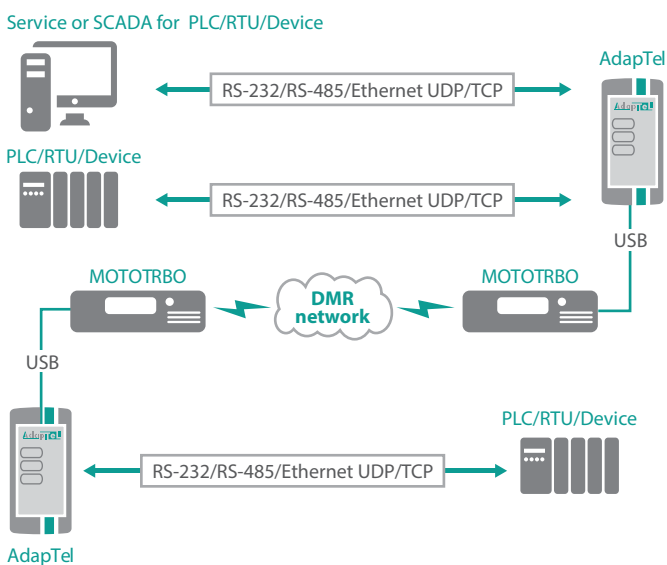
AdapTel is an interface adapter for transmitting and receiving telemetry data from remote facilities to SCADA system dispatching software in DMR networks

Functionality and characteristics

- **Equipment status monitoring:** Uninterrupted data acquisition, even in an emergency
- **Easy configuration:** User-friendly web interface to configure settings
- **Point-to-multipoint communication:** Opportunity to control a large number of distributed facilities
- **Clear graphical representation of data:** Intuitive software for real-time equipment monitoring and control
- **Robustness:** Wide range of operating temperatures and protection against reverse polarity

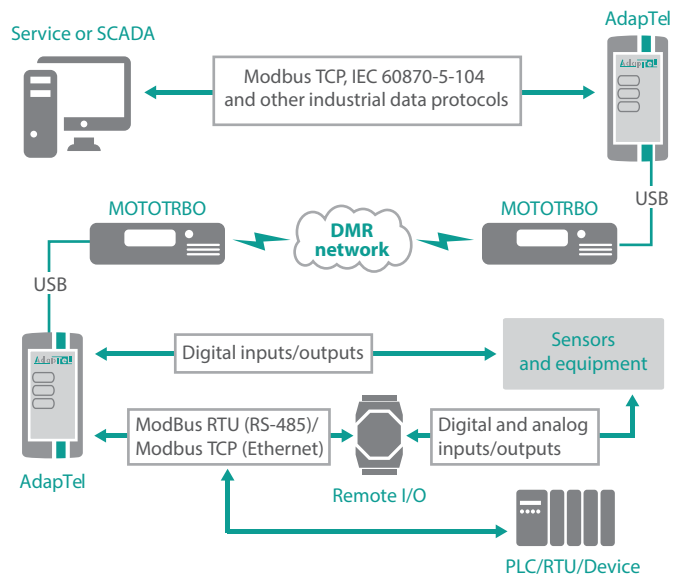
Two operation modes

Transparent mode



AdapTel provides transparent transfer of data between third-party devices (PLC/RTU/meters/sensors/etc) and SCADA software in DMR network.

RTU mode



AdapTel collects technological signals and controls equipment through built-in digital inputs (DI) and digital outputs (DO), as well as through third-party input/output expansion modules using Modbus data protocol.

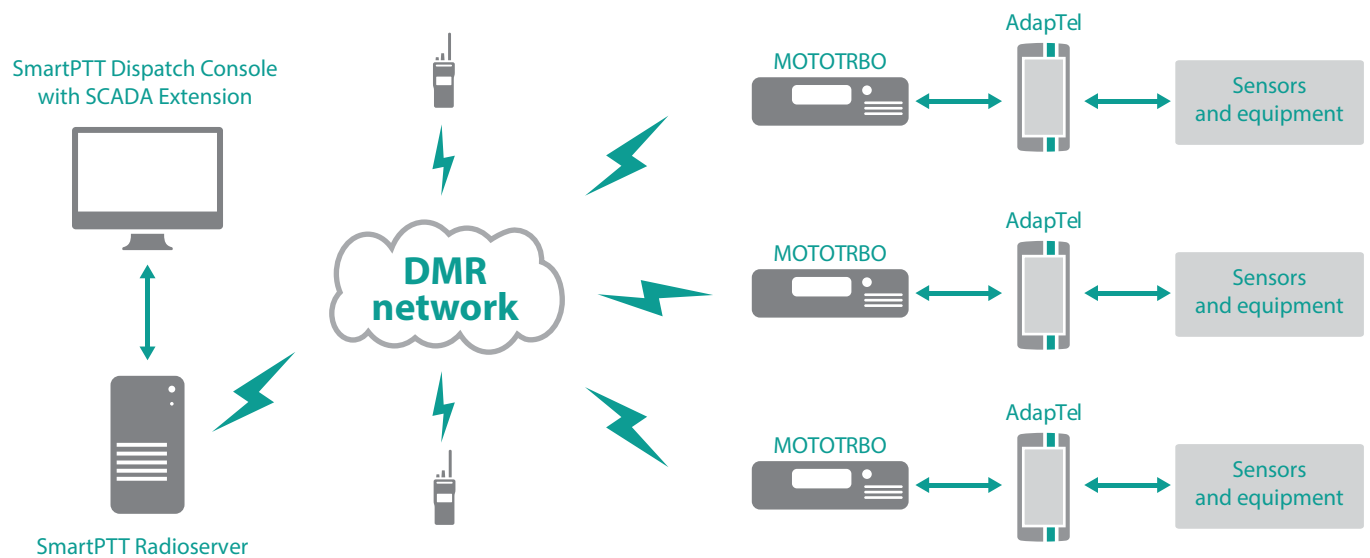
All-in-one solution for business process optimization based on AdapTel and SmartPTT dispatch software

AdapTel can be used in SmartPTT radio dispatch systems. Advantages of SmartPTT software coupled with AdapTel transmitting and receiving telemetry data include:

- Remote real time equipment control and monitoring
- Simultaneous control of large amount of facilities
- Alerts to dispatcher about incidents and parameter deviations from a normal state
- Resource consumption recording
- Automated notifications to responsible people about emergencies
- Clear data representation
- Event logging and reporting

➔ Single hardware and software platform from one vendor

➔ Efficient business processes management with remote equipment monitoring and corresponding staff coordination



CONTROL OF ELECTRICAL SUBSTATION EQUIPMENT FOR SUSTAINABLE POWER SUPPLY

Continuous operation of electrical substations is critical for uninterrupted power supply. Isolated locations of substations require remote monitoring and control of the equipment that can be done by transmitting telemetry data in DMR networks.

Benefits

- Constant monitoring and remote control reduce operational costs: there is no need to send employees to check equipment, change settings and make measurements.
- Instant notifications from security and fire alarm systems improve response times in case of an emergency or unauthorized access.
- Metered values are automatically transmitted to the dispatch console, eliminating human error and making financial accounting easier.
- Ongoing equipment monitoring enables dispatchers to prevent emergency power cutoff and schedule maintenance based on equipment performance.



Equipment controlled

High-voltage switches, circuit breakers, bus section breakers, feeders, protective earthing and lighting systems, power meters, energy accounting meters, automatic standby activation, security alarm systems, fire-alarm systems

HIGHER SAFETY OF OIL & GAS PIPELINES

Oil and gas pipelines are considered to be highly hazardous, and require constant monitoring of equipment and parameters such as pressure, temperature, flow rate and leak detection.

Benefits

- The dispatcher immediately receives an alert upon any controlled parameter deviation and can automatically react to it by notifying employees of the issues or isolating the emergency site.
- AdapTel helps prevent accidents from occurring or contain an incident to reduce potential damage.
- Instant notifications from security and fire alarm systems improve response times in case of an emergency or unauthorized access.
- The dispatcher automatically receives information about equipment status and metered values, which eliminates the necessity to send employees for inspection and diagnostics.
- Constant equipment monitoring provides proper information to schedule maintenance works.



Equipment controlled

Valves, gas detectors, security alarm systems, flow meters, sensors

Parameters controlled

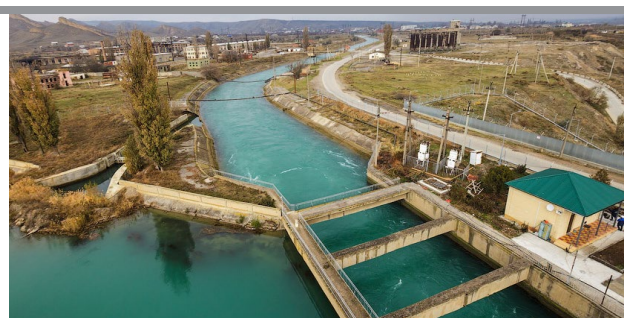
Pressure, temperature, position of the valves, flow rate, quantity of oil & gas

WATER WELLS CONTROL FOR STEADY WATER SUPPLY

Insufficient control of water wells may cause water supply shortage, so organizations have to spend resources on equipment monitoring, especially when water wells are geographically distributed and distant from a dispatch center.

Benefits

- Remote control and automatic data acquisition can lower the number of on-site visits for equipment check and settings change, which reduces operating costs of the system.
- Constant monitoring of pump and other equipment status helps prevent unexpected breakdowns and incidents.
- Permanent monitoring of water well operations provides information about its efficiency and helps find ways to increase its productivity.
- AdapTel helps avoid well declines by optimizing well operation.
- Control of water level, pressure, and flow rate, as well as electric energy consumption makes financial accounting easier and more exact.



Equipment controlled

Water pumps, energy accounting meters, security alarm systems, fire-alarm systems, flow meters, sensors

Parameters controlled

Pump state, pump operating time, pressure, water level, flow rate