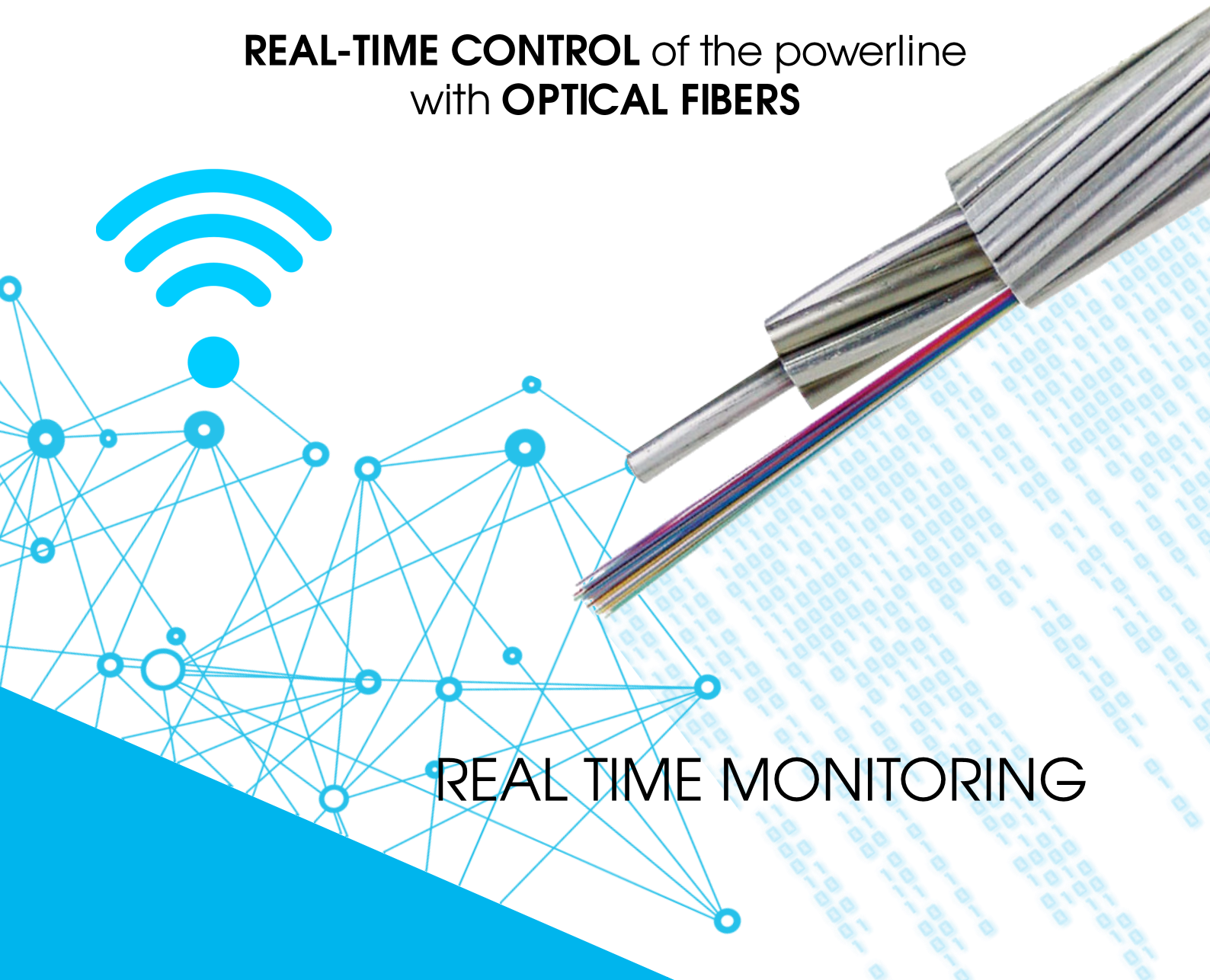


Advanced Technologies

SMART CONDUCTORS

REAL-TIME CONTROL of the powerline
with **OPTICAL FIBERS**



REAL TIME MONITORING

Smart Conductor

Design / Research and Develop Department

Davide Peroni

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INTRODUCTION

The desire of the Utilities to monitor the power grids is growing, so De Angeli Prodotti **developed** and **patented** an innovative conductors with an integrated **real time monitoring system**: the **SMART CONDUCTOR**.

OUR GOALS

- Continuous and real-time control of the status of the powerline;
- Increase system reliability and efficiency.

CURRENT SITUATION

- DTR (Dynamic Thermal Rating) with point by point sensors;
- OPGW (Optical Ground Wire).

SMART CONDUCTOR

REAL-TIME of the status of the power line with distributed OPTICAL FIBER.

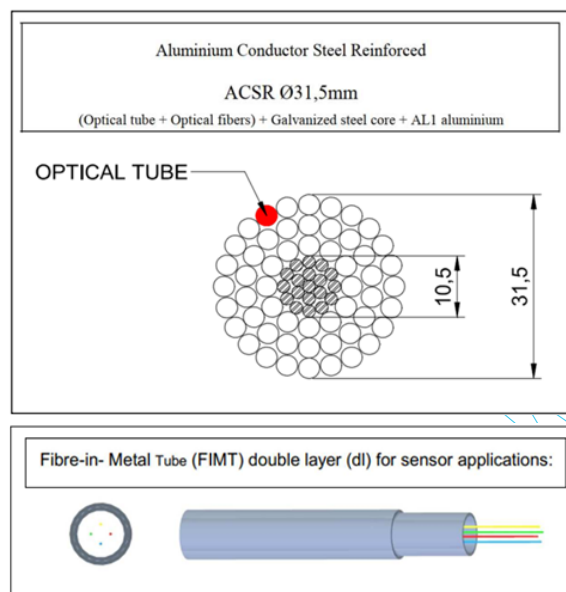
PROS FOR TSO

- Optimal power flow management;
- Electricity cost reduction;
- Maintenance cost reduction;
- Increase system reliability and efficiency.

ENGINEERING

Tube material choice	Steel & Aluminium
Metal tube position	Inner or outer layer
Lifetime of optical fibers	40 years
Operating temperature	≥ 80°C (optional > 150°C)
Dedicated fittings	Compression joint suggested
Data analysis	Information and not data

EXAMPLE OF CONDUCTOR



MEASUREMENTS

- Temperature
- Strain
- Failure position
- Vibrations

OFFER

De Angeli Prodotti offers a complete package to its customers:

- **FITTINGS**: together with the supply of the conductor we can offer the fittings studied by our suppliers. **Compression clamps** are the most suitable and secure.
- **SUPPORT ON FIELD**: of our engineers.
- **TRAINING IN CLASSROOM**: before the installation.
- **INSTALLATION MANUAL**: made by our engineers and customized for every item.
- **TAILOR MADE**: the R&D department can design **CUSTOMIZED CONDUCTOR**, suitable for the various needs of the customers.
- **DATA**: assistance for interrogation and interpretation of data.