



220 KV Power Circuit Monitoring with Temperature Map View

France



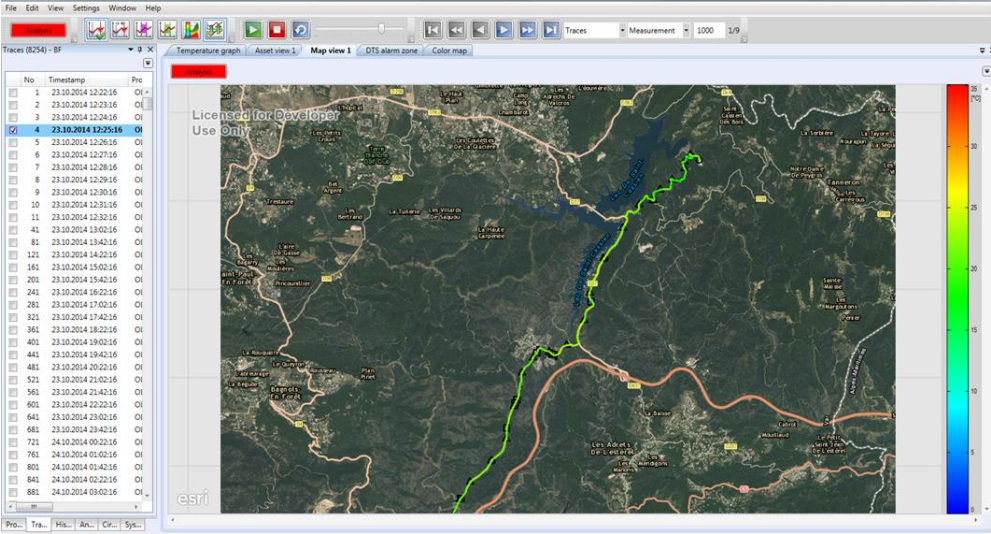
Rural area in southern France

A new 220KV underground power circuit traverses many different types of soil conditions along its 25 km length. **AP Sensing's fiber optic based DTS (Distributed Temperature Sensing) solution was selected** by the network operator RTE (Réseaux de transport d'électricité), based on its reliability and ruggedness, as well as the innovative asset visualization capabilities.

One 1-channel AP Sensing Linear Power Series device measures the 25 km underground circuit with a singlemode optical fiber for **continuous temperature measurements**. The **circuit load is recorded** by the AP Sensing Multisensor Board's analog inputs and then **shared with the SmartVision™ data management and asset visualization software**.

AP Sensing's SmartVision™ software suite automatically **detects multiple hotspot locations, issues alarms if pre-defined temperature limits are exceeded and creates temperature profiles in an SQL database** for post processing and analysis.

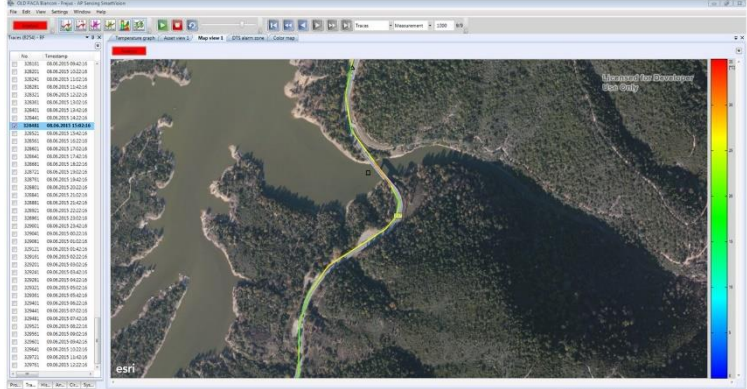
The asset viewer delivers **color-coded circuit monitoring status** to the operators and network planners. This fiber-to-the-infrastructure mapping lets the operators pinpoint the **exact alarm locations** and **place landmark symbols** along the route, such as joints and splice locations.



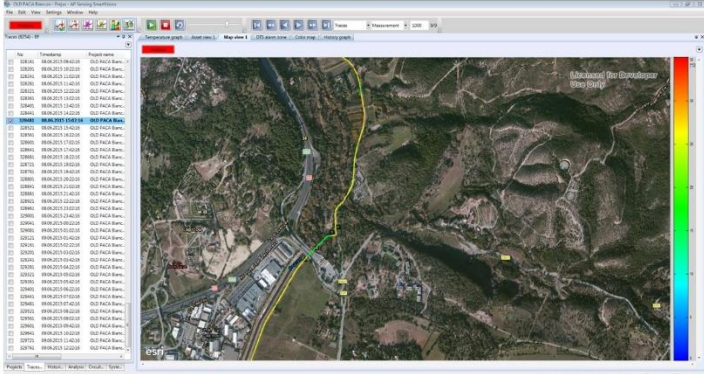
Map view of a section of the circuit

In addition, when in Map View, the map can now be zoomed in and out, providing a **resolution up to 1:5000** to show even greater detail, including street names. **GPS coordinates** are used to map the circuit route itself for maximum viewer accuracy.

The buried circuit travels through **14 different types of subsoil conditions**.



Hot spot on a bridge(*)



Horizontal drilling cold spot(*)

(*) Temperature readings taken during hot weather in Summer.

Remote and secure SmartVision™ access is also available at the RTE headquarters in Paris.

To **reduce the on-site installation and commissioning time**, AP Sensing delivered the system fully integrated into a system cabinet, which is located in a protected control room.

The complete system included the Linear Power Series DTS, a Multisensor Board, an industrial PC and the AP Sensing SmartVision™ software suite with full Data Warehousing.



Linear Power Series device including integrated LAN & USB interface, SD Card Reader and Multisensor Board