



# Transmission and Distribution Network Operator goes DTS!

## Australia

A leading Australian network operator wanted to gain more monitoring insight into his distribution network: to monitor the 33kV medium-voltage power cable's condition, identify hotspots and bottlenecks, and to improve overall efficiency.

The result? Following installation and commissioning the operator was pleased that the new solution exceeded his expectations. In particular, the combination of spatial and temperature accuracy, mapped along the route of his installation, provided a new level of insight into his network's status.

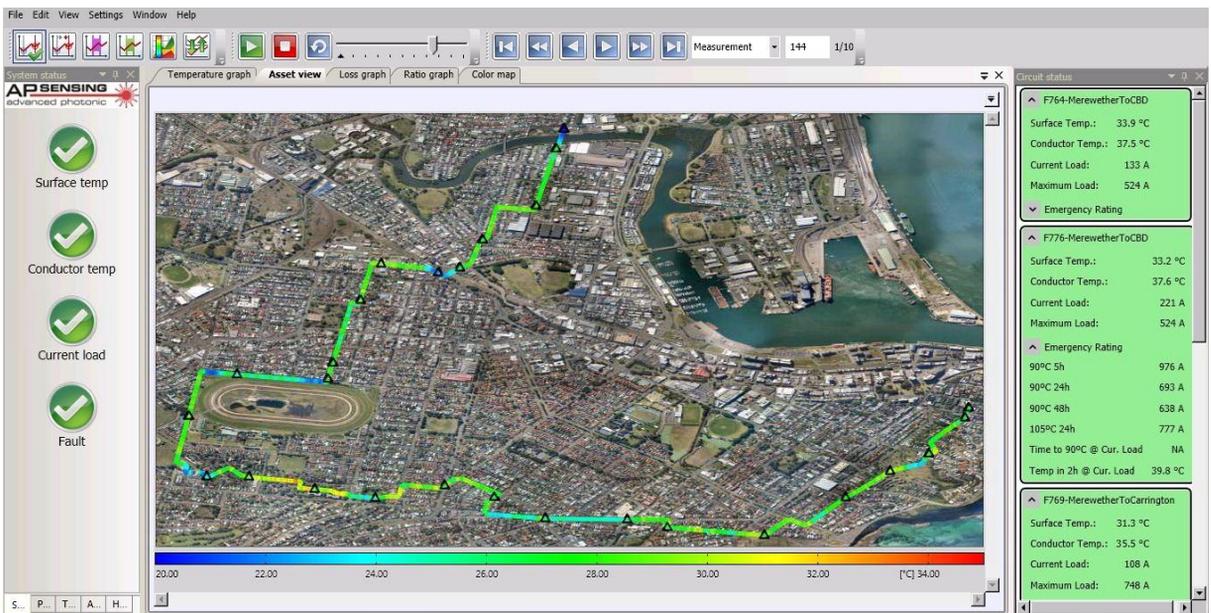


## Key solution components

With AP Sensing's *Linear Power Series* the operator found a solution that addressed all of his requirements:

- **Real-time thermal rating (RTTR).** The DTS (Distributed Temperature Sensing) device continuously measures the temperature at the jacket of the cable. Combining this data with the cable's load, the RTTR engine provides valuable thermal analysis data:
- **Conductor temperature** Continuous temperature monitoring lets operators compare the current load with the maximum permissible load. Comparing the ampacity calculation made during the planning stage to the RTTR results, the operator can adjust his steady-state load table by +14%. Additionally it shows him that the load can be increased by 32% if a temperature of 90° C is tolerated for 24 hours. During peak load or emergency situations, if 105° C is tolerated for 24 hours, a 48% capacity increase can be realized.

- **When overloads need to be applied** RTTR predicts the cable temperature when the peak period is over. This is valuable information when planning maintenance and controlling peak load cases.
- **AP Sensing's intuitive software suite, SmartVision**, provides a data server with analysis and statistics, colored temperature mapping, and its remarkable asset viewer that shows color-coded routes along the sensor cable route.
- **Interface to the SCADA and load dispatch center** with DNP3 protocol, easily integrated into his existing network topology.



**AP Sensing's SmartVision software: Alarm signaling, asset visualization, RTTR results**

## Conclusion

The Linear Power Series enabled the customer to increase utilization by 32% and in peak-load or emergency situations by 48%, without risk to his valuable assets.