



SENSORNET GUARANTEES INTEGRITY OF SUPPLY FOR TRANSMISSION NETWORK OF ASIAN UTILITY

Sensornet provided a Sentinel DTS-XR Distributed Temperature Sensing system for monitoring the transmission network. The Sentinel DTS-XR provides world beating performance and can measure with high resolution at distances of 30km.

CLIENT REQUIREMENTS

The client required uninterrupted supply for the transmission network which supplies one of Asia's most important financial and industrial centres. In order to ensure integrity of supply it is essential for the network operator to understand the condition of the power cables and to ensure that there are no hot spots along the length of the network. By using a distributed temperature sensing system the client has a continuous real time monitoring system which monitors all points along the power cable.

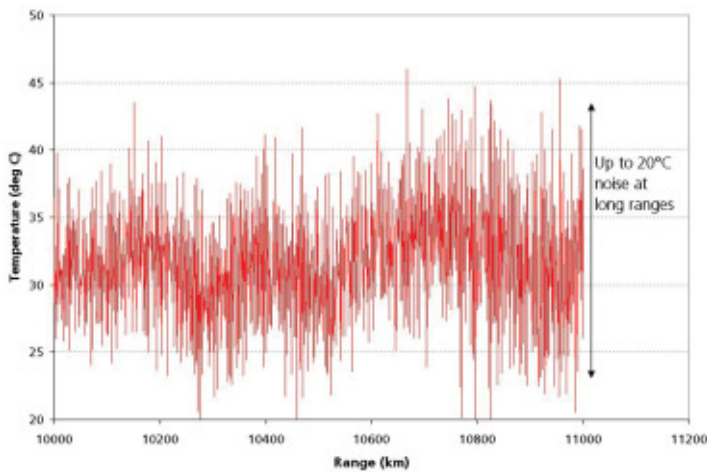
For this particular application the client required monitoring on six power cables using multimode fibre, with the longest power cable being 15km in length. No other DTS supplier could offer a system at this range that could meet the client's specifications.

THE MONITORING GAP

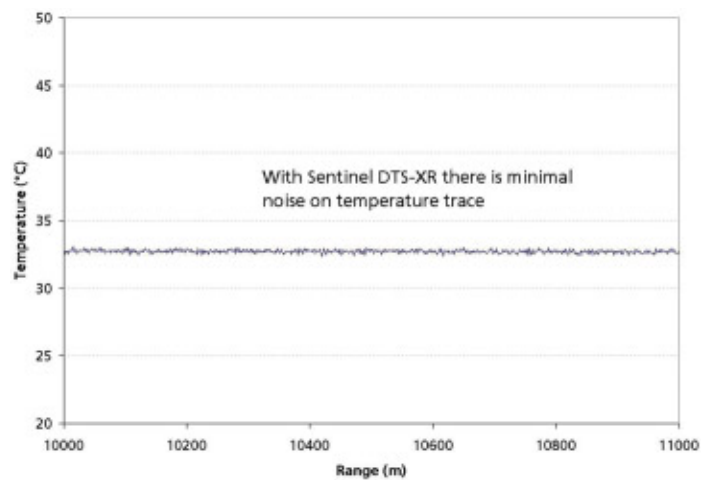
The operator of the transmission network is one of the worlds most respected and technologically advanced utilities, and was one of the earliest adopters of distributed temperature sensing (DTS) technology for integrity assurance of the network. However, over long distances (greater than 8km) the operator was experiencing large temperature deviations with their existing DTS system. These temperature deviations are due to inherent noise with the existing DTS system. Because there is significant noise on the temperature trace, hotspots are more difficult to detect and will only be identified once they are large in magnitude and potentially risk exceeding the cable rating.

THE SENSORNET SOLUTION

Sensornet proposed that the customer used the Sentinel DTS-XR distributed temperature sensor, which is a high-performance system capable of measuring temperature at every point along the length of power cables up to 30km in length. The Sentinel DTS-XR offers the most advanced performance with the capability of monitoring very fine temperature differences at speeds much faster (more than 1000 times faster) than competing DTS systems. In order to validate this performance, the customer carried out comparative tests with Sensornet vs. the existing DTS system. The cable length monitored was a 12km cable length of 230kV.



Previous generation DTS performance



Next generation Sentinel DTS-XR performance

THE SENSORNET ADVANTAGE

As can be seen, the temperature resolution of the Sentinel DTS-XR is far superior to the competing system. Over a 12km range, in a 9 minute measurement time the resolution of the Sensornet system is significantly less than 1°C, whereas for the competing DTS system the temperature deviations are in the order of 20°C, which makes it impossible to detect hotspots until it is far too late. In order to achieve a satisfactory level of temperature resolution of 1°C the competing system would require a measurement time in the order of hours, whereas the Sentinel DTS-XR will only require a measurement time in the order of seconds.



SUBSTANTIAL BENEFITS

The benefits of this superior technical performance for the operator is that they are able to detect potential hotspots in the cable much earlier than with the competing system and take preventative action much sooner before the temperature of the cable approaches the official ratings. This proactive approach to risk management of the cable enables the operator to have a much better understanding of the condition of the cable over the lifetime of the network. This enables the operator to extend the lifetime of the network with greater confidence and thus improve the return on investment for the assets.

To close your monitoring gap, call +44 20 8236 2550 or visit www.sensornet.co.uk

