30,000km Lidar Survey of Overhead Power Lines

A multimillion-pound contract to produce the largest ever Lidar survey undertaken by an electricity distribution network operator in the UK has been awarded to ADAS and Bluesky International. The companies have been contracted to conduct an aerial 3D Lidar survey of the whole of UK Power Networksâ€™ High and Extra High Voltage (HV & EHV) overhead power lines, which extend to over 30,000 kilometres.

Lidar is a remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light to produce high-resolution maps. The technology is central to the UK Power Networks contract, a three year risk-based tree clearance programme for the electricity company. The survey assesses the current state of vegetation near the overhead lines via the use of fully up to date 3D Lidar images rather than aerial photography

Tree related electrical disruptions present the single greatest risk to electricity supplies. For this reason, electricity industry regulators in many countries require proof that vegetation management systems are in place to minimise the potential for this type of incident and the impact on customers.

A major challenge of the contract was the need to complete the survey before autumn leaf fall started in earnest. Weather conditions and Air Traffic Control restrictions can sometimes be unpredictable and add to the challenge. However, three fixed wing aircraft, each fully equipped with the world’s most advanced Lidar sensors, have been in the air every day since mid July and successfully completed the survey within the strict deadline

Track record

ADAS and Bluesky have a strong track record of working together on similar projects. The UK Power Network project follows on from a highly successful contract that the companies delivered for SP Energy Networks in 2013. It involved the use of stereo aerial photography to assess the amount of vegetation near the overhead lines combined with an assessment of the number of customers affected which informed a prioritised programme for resilience clearance.

Project team manager Roy Dyer said ADAS provides high level policy and operational advice to a number of electricity distribution network operators but this new contract win proves that the combination of Bluesky’s aerial photography and Lidar capability and ADAS’ knowledge and experience of vegetation management near overhead electricity lines provides the most comprehensive strategic vegetation service available.

Rachel Tidmarsh, managing director of Bluesky International, stated by combining Bluesky and ADAS’ expertise the company has been able to offer an innovative and cost effective solution that provides UK Power Networks with highly detailed Lidar, aerial photography, mapping and analysis of their overhead line assets enabling them to make more informed decisions regarding vegetation management.

Through this project, UK Power Networks will be able to demonstrate to both the industry regulators and their customers that they have invested in the best available vegetation management system that will enable them to minimise tree related electrical disruptions.