Power Line Infrastructure Management Support

Southern Mapping Company (SMC) completed several power line surveys in Africa, using Lidar to derive a digital terrain model and digital ortho-photos to obtain a map of the specific areas. Aerial surveying saves valuable time, money and resources for these tasks.

"The processed data has been handed over to our clients and can now be used to evaluate their current power line infrastructure, therefore aiding them in effectively managing current- and planned infrastructure. This information proves vital in assessing environmental hazards adjacent to power lines," says Peter Moir, Chief Executive Officer of SMC.

A key goal of the overhead power line design process is to ensure that an adequate clearance between conductors and the ground is maintained, in order to prevent dangerous contact with the line. Initial design also requires prior consideration of the conductor temperature, which can increase due to escalating heat from electrical currents flowing through it, forming more slack in the lines between the towers. Consequently the minimum overhead clearance should be maintained for safety and requires proper consideration and planning beforehand.

Tower structure foundations can be large and costly, particularly if the ground conditions are poor, such as those in wetlands. Structures can be stabilised considerably with the use of guy wires to counteract some of the forces applied by the conductors, but adds to overall costing.

"Accurate research done on building locations of towers can reduce costs considerably," says Moir. He adds that proper project management can only be done when accurate survey data is on hand.