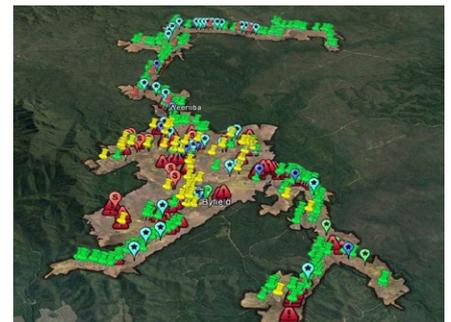# FUGRO
DISASTER MANAGEMENT

Fugro's disaster support services contributed to a fast recovery from the effects of tropical cyclone Marcia which left more than 67,700 households without power when it made landfall in February in Queensland, Australia.

When tropical Cyclone Marcia thundered in from the Pacific Ocean it left devastation in its wake and sent residents and businesses scrambling to assess the damage. Marcia made landfall on February 20, 2015 as a severe category 5 tropical cyclone over Shoalwater Bay, Queensland, Australia. Recording wind speeds over 200 km/h (125 mph), the storm caused extreme and widespread damage reaching an estimated $67 billion AUD. As the storm moved out, power distribution company Ergon Energy, who supplies electricity to more than 700,000 customers in Queensland, received reports of more than 63,700 power outages across their network.

ROAMES DISASTER RESPONSE SERVICE

After announcing an ambitious recovery plan, Ergon Energy turned to the disaster response services of Fugro's asset management system, Roames, to detect and model damage in their network, over a 5,000km² area in the Rockhampton region.

Ergon Energy's subscription to the Roames service allows them to monitor their one million spans of network annually, paving the way for prompt and efficient pre- and post-disaster differentiation.

Fugro's disaster report services was used by Ergon Energy to quickly assess damage.

*Roames network model showing post-storm damage.*

Within one day of the cyclone's passing through Queensland, Fugro was mobilized over Ergon Energy's network and surveying over 5,000 km² of impacted network and surrounding environment.

Twenty-four hours later, Roames' highly automated cloud processing routines were able to deliver a centimetre accurate 3D virtual environment of the damaged network to Ergon. The model enabled Ergon to allocate resources and materials for the most efficient and safest response and minimize inconvenience to customers.

Roames rapid network assessment identified and modeled more than 654 instances of critical damage to infrastructure within Ergon's network. The report modeled downed poles and wires and damaged buildings and roads, as well as other debris related issues.

Equipped with Roames' comprehensive models, the first priority was to ensure that power was returned to critical infrastructure, including hospitals and water treatment facilities. For response crews in the field during natural disasters, it is a complex and physically challenging situation. Using the Roames disaster response service, Ergon's asset managers were able to direct infield crews from issue to issue, provide location specifics, and recommend tools and materials that would be required to restore power. In addition to being more efficient this gave crews advance warning of what to expect on the ground.
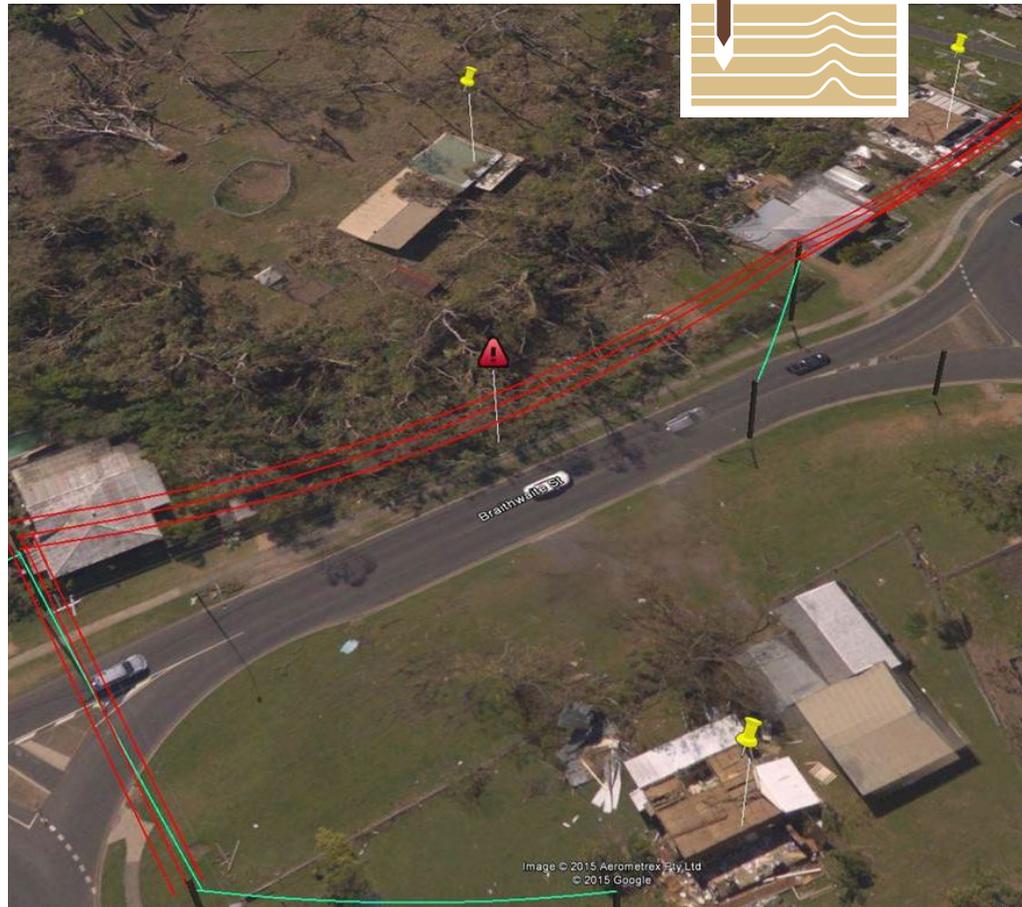

Rapid assessment to identify damaged infrastructure, downed poles and wires to assist with response and recovery effort.

POWER RESTORATION IN RECORD TIME

By Wednesday, February 25, five days after Marcia's landfall, crews had restored power to 27,300 customers. Within a week of the cyclone only 13,000 outages in rural areas remained. In the quickest and most efficient restoration of power recorded in Australia, Ergon's full network was restored in a record 10 days post-disaster.
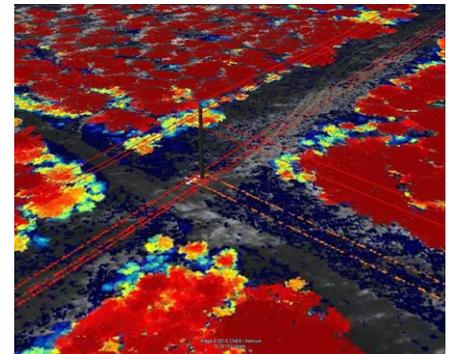
Ergon 3D network model with vegetation height map in Roames virtual world before Marcia.
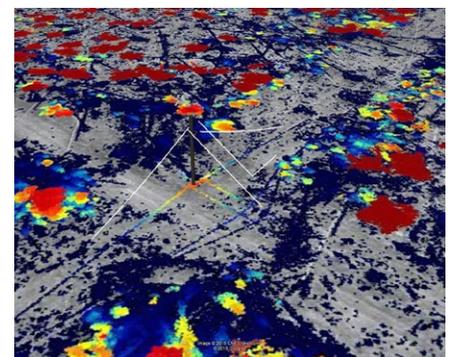
New model visualises network after Marcia with down power lines and annotated damage flags.

WWW.FUGRO.COM/ROAMES