ADVANCED ULTRATEM-III UXO DETECTION AND CLASSIFICATION IN THE SOUTH PACIFIC REGION

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Unexploded ordnance contamination in the South Pacific region affects the development of large amounts of contaminated land. Buried ordnance presents a risk to personal who carry out ground excavation operations in these areas. For works to be carried out safely these ordnances must be identified and removed. This can often be a costly process with areas needing to be surveyed multiple times to achieve the required depth of investigation.

Electromagnetic induction geophysical methods are well suited for finding buried metal, but challenges include object discrimination, depth of investigation and survey speed. To overcome these challenges, we developed the new UltraTEM-III system which consists of a powerful transmitter, an array of three-component EM receivers, accurate positioning and custom software. This paper presents two case studies where this technology has been used to provide areas cleared of UXO for subsurface works to take place in Papua New Guinea and Australia.

The Wafi-Golpu Joint Venture is a mineral exploration project located in the Morobe Province of Papua New Guinea. This province was a major staging area during the Second World War. UltraTEM-III technology was used to identify areas clear of UXO for a geotechnical study along a 100 km proposed pipeline route that traverses jungle, swamp and suburbia. After UltraTEM-III survey no UXO were encountered during excavation works.

Australia's RAAF Base Williamtown has a long operational history from the first and second World War's up to the present day. UltraTEM-III technology