

# OXEMS

A utility underground asset  
mapping technology



OXEMS is a University of Oxford start-up which offers a fully integrated underground asset management system that gives utilities full visibility of their network. They needed to determine how best to optimise the system for manufacture and worked with Sagentia to design the core RF elements of the OXEMS solution and turn an academic concept into a commercially viable product.

## Challenge ↵

The OXEMS rFINDGoTo™ solution includes tags, detectors and a database with automatic data logging and instant recall, allowing utility assets to be mapped, located and identified with precision. This is important when utility companies or local councils need to update or repair their assets and want to avoid costly and often error prone underground interventions.

In 2010, OXEMS had just been spun out of the University of Oxford by Isis Innovation. The start-up had rights to an initial tagging technology that had been developed by Professor David Edwards at the University of Oxford as part of the Engineering and Physical Sciences Research Council's (EPSRC) Mapping the Underworld challenge.

Although proven at a concept level, OXEMS needed to determine how best to optimise the system for manufacturing. This included needing to identify the appropriate number of tag IDs that should be used and how to optimally allocate that spectrum within realistic manufacturing tolerances.

## Approach ↵

Sagentia was brought into the project as a technology and product development partner to conduct a feasibility study and help turn the academic output into a commercially viable product. Working closely with OXEMS, the Sagentia team looked at cost models, evaluated system performance and ranges and undertook a technology assessment of the tags and accompanying equipment. Having determined the best approach, we then worked with OXEMS to develop manufacturing tolerances, electromagnetic models and electronic prototypes.

## Benefits ↵

OXEMS now has a fully developed technology that is technically sound, market ready and commercially attractive for the UK utility market. The company has gone on to complete field trials with fully functioning equipment at customer sites around the country.

Through the use of advanced sensor technologies and data fusion models, companies like OXEMS are delivering 'smarter infrastructure'.

“At last utility companies have the one tool needed to transform the economics of underground asset management. OXEMS’ ability to tag, register, map and pinpoint each buried asset is the 21st century digital toolkit of the future. Sagentia was a key partner in helping us progress our solution from the university research environment to the market.”

Kevin Gooding CEO, OXEMS

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