**Dr Daniel Clark** was a lecturer at the Institute of Sensors, Signals and Systems at Heriot-Watt University when he was awarded a Royal Academy of Engineering Industrial Fellowship in 2016. This enabled him to work with the Defence Science and Technology Laboratory (Dstl) to develop sensors for maritime surveillance.
RESEARCH
Dr Clark’s research interests span the theory and application of algorithms for sensor fusion problems, such as the challenge of reliably bringing together and processing sensory data from different sources. A Royal Academy of Engineering Industrial Fellowship enabled him to apply his expertise in this area to a collaboration with Dstl.

Having already worked with Dstl for several years, the Industrial Fellowship created an opportunity to consolidate the collaboration, through a varied programme of work.

“It presented me with a chance to work with government scientists in defence across a range of different domains, including Space Situational Awareness, maritime surveillance and advanced image processing,” explains Dr Clark. “I was provided with security clearance that enabled me to gain a better appreciation of the nature of the problems faced in practice.”

During the secondment, he developed a method for autonomously calibrating sensors used in maritime environment surveillance with radar and infra-red cameras.

IMPACT
Having gained an insight into Dstl’s work, Dr Clark provided the organisation with technical support on current areas of work. He was also able to highlight emerging issues of importance and provide direction for future research developments and enhancements.

Dr Clark’s work in multi-target tracking was highlighted as a significant breakthrough in the technology by the University Defence Research Collaboration, a venture that was set up with the Engineering and Physical Sciences Research Council to support the Ministry of Defence to directly access academic signal processing research.

Students at Heriot-Watt University benefited from the collaboration; following the Dr Clark’s secondment, three scientists from Dstl participated in his multi-sensor fusion master’s course.

PROFESSIONAL DEVELOPMENT
Dr Clark plans to continue working with Dstl on defence-related problems in signal processing, both as an academic in his new position in Telecom SudParis in France, and through his new company, Rastreo Ltd.

“Working with Dstl gave me a better appreciation of the relationship between government, industry and academia in the context of supporting research and development for defence applications,” he explains.

ROYAL ACADEMY OF ENGINEERING INDUSTRIAL FELLOWSHIP SCHEME
The Industrial Fellowship scheme provides an invaluable opportunity for early- to mid-career academics to undertake a collaborative research project in an industrial environment. The scheme aims to strengthen the strategic relationship between the university and the industry host by providing an opportunity to establish or enhance collaborative research between the two parties and enhance the quality of teaching.

“My Industrial Fellowship provided an opportunity to work on problems of genuine importance for the defence of the UK.”