SCOTRAIL CASE STUDY: RAIL MAINTENANCE KNOWLEDGE TRANSFER PARTNERSHIP

A NEW COLLABORATION BETWEEN FIRST SCOTRAIL AND GLASGOW CALEDONIAN UNIVERSITY (GCU) WILL ENHANCE THE RELIABILITY AND EFFICIENCY OF SCOTLAND’S RAIL NETWORK.

Joint funding of £126,000 from ScotRail and the UK Government will support a two-year Knowledge Transfer Partnership (KTP) project, supervised by Dr Babakalli Alkali from GCU’s Department of Mechanical, Electrical and Environmental Engineering.

First ScotRail Ltd operates over 95% of passenger train services in Scotland under a franchise agreement with the Scottish Executive. The company is currently working with GCU to review existing maintenance practices on ScotRail passenger diesel and electric trains and identify optimal cost effective maintenance practices and periodicities.

Dr Alkali will also support the company in categorising the company’s train fleet which will help to inform how resources are best allocated across the network. The KTP will conduct reliability centred maintenance and statistical analysis of failure data and identify critical factors contributing to trains delay impact minutes and cancellations and identify areas where advanced technology could be used to better inform future business planning and assessment of new business opportunities.

The KTP programme is the UK’s leading knowledge transfer scheme, helping businesses to access the knowledge and skills that reside within universities to improve competitiveness and productivity. The programme is funded by the Technology Strategy Board and 17 other funding organisations.
The project will recruit a graduate as KTP Associate under the supervision of Dr Alkali, with support from GCU’s Professor Chengke Zhou and Professor David Edgar.

Dr Alkali said: “We are delighted to be working with such a prestigious company in an area that should help to improve the passenger experience for thousands of commuters all over Scotland. Our academic team will draw on its vast industrial research experience and engage with ScotRail’s engineers to further improve the company’s already excellent levels of performance.”

Ken Docherty, Interim Engineering Director of ScotRail, said: “The opportunity to collaborate on this excellent project with one of Scotland’s leading universities is one we are relishing. “We are continually exploring ways to improve our services to Scotland and I’m confident that our new partnership with GCU will further assist us in that objective.”

Dr Janette Wark, GCU’s Knowledge Transfer Manager, said: “GCU has worked with a number of leading companies on KTP programmes and we are pleased to be adding such a respected brand as ScotRail to the list. KTPs can help companies to find innovative solutions to difficult problems. They help businesses to increase their competitive advantage and continue to grow by accessing the immense expertise resident within the university sector.”

Dr Alkali has research interests in industrial maintenance modelling; energy assets management and statistical process control; reliability analysis and applied probability modelling; stochastic processes, optimisation, risks and availability assessment.

He is part of GCU’s Design, Process and Manufacturing Research Group in the Institute for Sustainable Engineering and Technology Research, which is focused on providing practical solutions for industry based on applied research and knowledge transfer using expertise in design, manufacturing technology, measurement, finite element analysis and computational fluid dynamics.

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At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real world innovation. GCU’s strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.

Contact us to find out more about building a brighter future with GCU at www.gcu.ac.uk/business.

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