

# UKRRIN Centres of Excellence

## Request for Expressions of Interest

### Introduction

The UK Rail Research and Innovation Network (UKRRIN), established in 2018, has been designed to create powerful collaboration between academia and industry, aiming to provide a step-change in innovation in the sector and accelerate new technologies and products from research into market applications globally.

The initiative has been built on the development of three new Centres of Excellence formed by a consortium of universities, in collaboration with existing industry testing and trialling facilities such as Network Rail's Rail Innovation and Development Centres. These are:

- **Centre of Excellence in Digital Systems** – Led by the University of Birmingham (with Lancaster, Hull and Brunel)
- **Centre of Excellence in Rolling Stock** – Led by the University of Huddersfield (with Newcastle, Loughborough, Cambridge and Bristol)
- **Centre of Excellence in Infrastructure** – Led by the University of Southampton (with Nottingham, Heriot Watt, Sheffield & Loughborough)
- **Centre of Excellence in Testing** (at-scale test facilities) including Network Rail's Rail Innovation & Development Centres (RIDC Melton and RIDC Tuxford)

UKRRIN is a strong demonstration of industry – academic collaboration, offering access to purpose-built world-leading facilities and skills in a range of areas to support research, development and innovation for new technologies and products. The Centres are supported by industrial partners to deliver world-leading research from inception to market application for both the UK and global markets. The Centres of Excellence provide the ability to deliver new products and technology to market faster, using advanced purpose-built simulation and testing facilities. The centres will also help the UK maintain its position as a technology leader in rail on the world stage.

## Vision

UKRRIN offers industry access to purpose built world-leading facilities and skills in a range of areas to support research, development and innovation for new technologies and products. A recent review of network capabilities has prompted discussions about areas that can be enhanced to meet the current and emerging of industry and society.

The [Rail Technical Strategy](#) sets a clear direction for the development and uptake of existing and new solutions that are essential for industry to deliver against the challenges it faces.

The strategy recognises the need for the accelerated deployment of research and technology and Centres of Excellence play a vital role in supporting the testing of new systems and concepts to prove they are viable for real world operation.

The current version of the Railway Technical Strategy has been revised to make it more compelling, more focused and more impactful. This has been developed by industry for industry and highlights what needs to be done in the 5 years and 20 years to achieve the desired outcomes of having happy customers, a vibrant sector, stronger economy and a better environment. The short- and medium-term goals are strongly aligned with the UKRRIN aim to accelerate the development of new technologies and push products from research to application globally.

The existing Centres of Excellence in the areas of infrastructure, digital systems and rolling stock are closely matched to the RTS priorities of optimised train operations, reliable and easy to maintain assets and data driven. The network has delivered research and worked on initiatives in the area of low emissions and to create a better environment, for example supporting less disruptive electrification and zero carbon diesel replacement.

Reviewing the priorities in the RTS and comparing them to the capabilities in UKRRIN has highlighted areas where additional capabilities could enhance the network. These are:

- **Easy to use for all** – This is the first priority in the RTS, closely aligned with industry endeavours to ‘Put Passengers First’. While passenger experience is relevant to all four centres but is not currently a key focus for any of them. Passenger experience needs to influence aspects of rolling stock and infrastructure design and plays a key role in determining how customer-facing digital systems are developed. Now, more than ever the industry needs to renew faith in rail as a safe, efficient, easy to use mode of transportation. A system that can adapt and is well positioned to innovate in ways that can help to future-proof operation for the travelling passenger.
- **Economy and Society** – The RTS highlights how important it is for research and innovation supported by industry to clearly identify benefits for economy and society. In order to realise these benefits, it is important for research to be supported by strong business cases and a good understanding of transport economics and future demand. This is of even greater importance now as rail can be a fundamental component in helping the country build back better after the global pandemic and in levelling up regions with services shaped to fit local needs.

Based on this UKRRIN is inviting Expressions of Interest from academic institutions who wish to participate in the development of new Centres of Excellence in the following areas:

- **Centre of Excellence in Inclusive Passenger Experience**

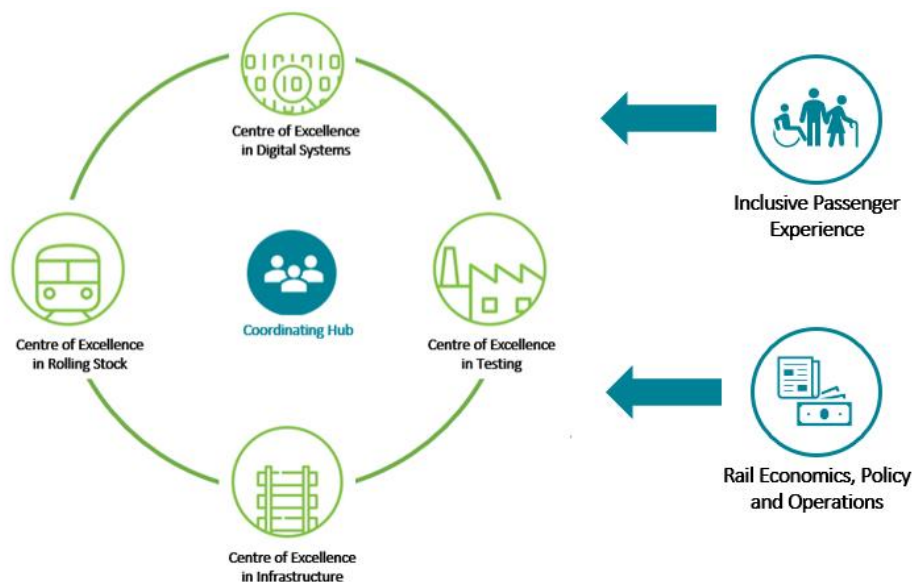
The Centre will cover topics such as:

- Inclusive Design
- Passenger digital connectivity
- Future passenger preferences and demand
- Passenger performance metrics

- **Centre of Excellence Rail Economics, Policy and Operations**

This Centre will cover topics such as

- Demand Forecasting
- Cost Modelling
- Pricing
- Regulatory Policy and Competition
- Investment Appraisal and Evaluation
- Operations Research



## Benefits

The rail industry is keen to engage with the academic community in a structured and informed way. The development of the UKRRIN Network will benefit industry, academia and the supplier community in the following ways:

1. Integrating the key elements of industry / academic collaboration under one banner.
2. Provide an efficient and simplified means of:
  - a. Bridging the gap between industry, academia and the supplier community.
  - b. Promoting the activities of centres involved in rail research and innovation.
  - c. Keeping members informed about and engaged with industry plans and strategies.
  - d. Support research in finding a route to market.
  - e. Providing a clear map of test facilities and capabilities relevant to the rail industry.
3. Simplify the structure of collaborations to provide clarity to both the sector and external stakeholders.
4. Provide a single point of entry into the research, development and innovation activities of the rail sector for new players.

## Expressions of Interest Process

Academic institutions are invited to put forward expressions of interest to become official members of the UKRRIN network as part of one of the new Centres of Excellence.

The Expressions of Interest will be reviewed by an expert panel nominated by the Technical Leadership Group (TLG) and selected universities will be invited to participate in a series of workshops to develop a cohesive plan for each Centre.

Expressions of interest should outline:

1. Track record for research relevant to the rail industry.
2. Existing staff in relevant area
3. Existing equipment and facilities
4. Vision for future development (particularly relevant to those seeking future investment to develop new testing/trialling facilities)
5. Proposed contribution to Centre of Excellence, detailing expertise relevant centre theme
6. Statement of industry support

Expressions for interest should be 3 pages maximum outlining the points above.

Your expression for interest will not be shared with any other university without your permission.

Please send your expressions for interest to [UKRRIN@rssb.org.uk](mailto:UKRRIN@rssb.org.uk) with the subject heading UKRRIN Eol.

## What does membership mean?

It means:

- Support from the UKRRIN coordination hub in 5 key areas: bridging services, link to industry plans, route to market, capability mapping, promotional activities.
- Raising the profile of your institution with key stakeholders in the rail industry, in government and in the supply chain.
- Access to dedicated engagement events with suppliers and industry.

It does not mean:

- Guaranteed funding for research and innovation activities.

## Timeline



Launch Call for Expressions of Interest  
12<sup>th</sup> February 2021



Deadline for Expressions of Interest  
19<sup>th</sup> March 2021



End of Expressions of Interest Review  
9<sup>th</sup> April 2021



Feedback to Submitters  
14<sup>th</sup> April 2021



Begin Centre of Excellence Planning sessions  
19<sup>th</sup> April 2021

Please direct any questions or queries to [ukrrin@rssb.co.uk](mailto:ukrrin@rssb.co.uk)