



# REGIONAL SHOWCASE

## EAST MIDLANDS

NICK MELLORS  
FOUNDER  
INNOVATION NOTTINGHAMSHIRE



**SPOTLIGHT ON ...**

**5G & Advanced Wireless  
Innovation Opportunities  
across the  
EAST MIDLANDS**



**Nick Mellors  
Founder**

**Innovation Nottinghamshire**

**UKTIN CLUSTERS Advisory Group Meeting – Sept 2023**

# Innovation Nottinghamshire



- An independent not-for-profit company set up to inspire the creation of business and career opportunities across Nottinghamshire & the East Midlands



- Created the **UK's first 5G Careers programme** – training the telecoms' industries next generation of customers



THE EAST MIDLANDS

## At the heart of UK innovation



Innovation  
Nottinghamshire

[www.innovnotts.org.uk](http://www.innovnotts.org.uk)

### Derbyshire, Nottinghamshire, Lincolnshire, Leicestershire, Rutland, Northamptonshire,

- 8 universities (3 in the THE Top 40)
- Cromford Mills, Derbyshire – birthplace of the UK Industrial Revolution
- Ericsson Telephones Ltd – founded in Nottingham in 1903
- Leicestershire home of the UK's National Space Centre
- Silverstone Park, Northamptonshire - the heart of UK's Motorsports Valley
- Major industry sectors include Manufacturing, Logistics, Food Production, Energy & Renewables (inc offshore Lincolnshire), Life Sciences
- East Midlands Airport the UK's largest dedicated air cargo operation, handling over 440,000 tonnes of goods each year



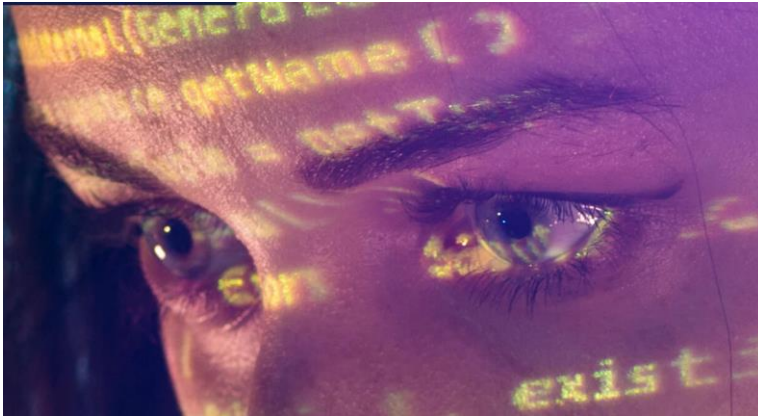


DERBYSHIRE

## University of Derby Data Science Research Centre



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- Features high-performance computing facilities and a state-of-the-art Data Visualisation Laboratory.
- Composed of four interconnected clusters. **Cybersecurity, Artificial Intelligence and Machine Learning, Data Visualisation** and the Internet of Things (IoT) and **distributed computing**

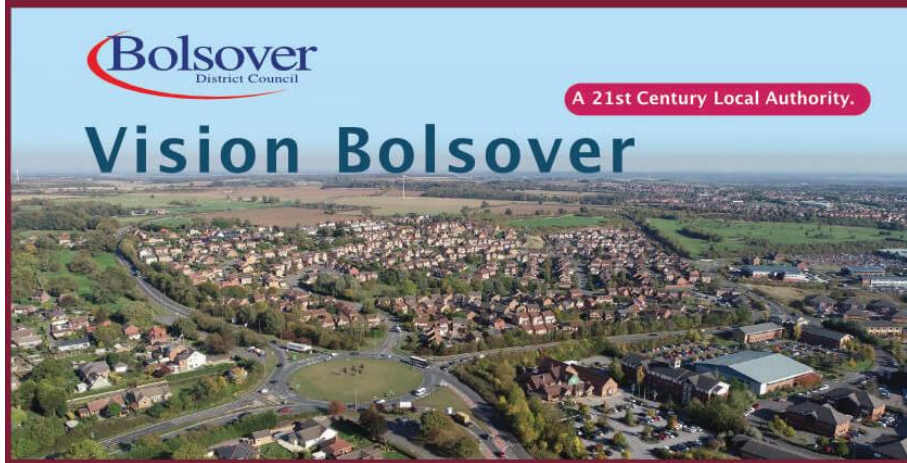
To find out more:

<https://www.derby.ac.uk/research/centres-groups/data-science-research-centre/>

Prof Farid Meziane - Head of Data Science Research Centre

<https://www.linkedin.com/in/prof-farid-meziane-a7653b4/>

DERBYSHIRE  
**Bolsover District**



- North East Derbyshire between Nottingham & Sheffield
- M1 Junctions 28-30
- HQ Amazon
- Strategic plans include IoT for Social Housing, 5G enabled Creative hubs, Travel & Tourism sector, 'Smart Towns', 'Connected Communities'

To find out more:

Chris Fridlington – Bolsover DC – Director, Economic Development  
- [chris.fridlington@bolsover.gov.uk](mailto:chris.fridlington@bolsover.gov.uk)

DERBYSHIRE

... and there's more

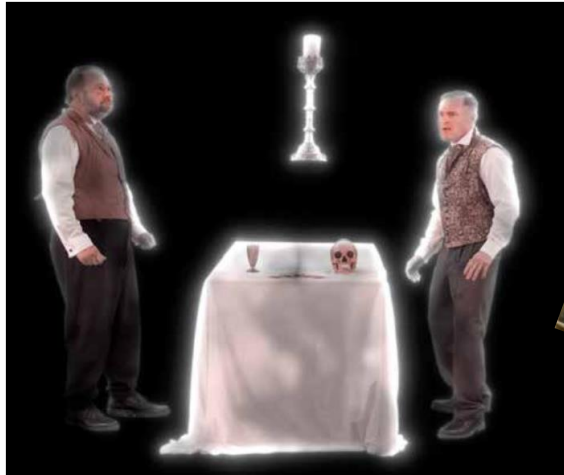


Innovation  
Nottinghamshire

[www.innovnotts.org.uk](http://www.innovnotts.org.uk)

- **Institute for Innovation in Sustainable Engineering (IiSE)** -  
<https://www.derby.ac.uk/research/centres-groups/iise/>
- **Rail Research and Innovation Centre (RRIC)**  
<https://www.derby.ac.uk/business-services/innovation-research/rric/>
- **East Midlands Cyber Resilience Centre** - led by regional Police officers working in partnership with universities, and business  
<https://www.emcrc.co.uk/>
- **East Midlands Institute of Technology** is being set up across Loughborough University, Loughborough College, the University of Derby and the Derby College
- **IoT Smart Bins** rolled out in Derby -  
<https://www.derbytelegraph.co.uk/news/derby-news/bins-sensors-set-rolled-out-8540339>

**NOTTINGHAMSHIRE**  
**Rufford Abbey 5G Testbed**



To find out more:

5GCF - <https://www.nottinghamshire.gov.uk/media/5079295/5g-connected-closure-report.pdf>

Callum Jones – Nottinghamshire County Council

[Callum.Jones@nottsc.gov.uk](mailto:Callum.Jones@nottsc.gov.uk)

Gooii - <https://gooii.com/our-work/vr-ar/>



NOTTINGHAMSHIRE

## Sherwood Forest 5G Testbed



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### Environmental Monitoring

Gizmo & Eric – Robot Forest Rangers created by Birmingham City University



### An Arrow Through Time

“the world’s first 5G powered interactive holographic movie” created by Gooii of Nottm



To find out more:

5GCF - <https://www.nottinghamshire.gov.uk/media/5079295/5g-connected-closure-report.pdf>

Callum Jones – Nottinghamshire County Council

[Callum.Jones@nottsc.gov.uk](mailto:Callum.Jones@nottsc.gov.uk)

Gooii - <https://gooii.com/our-work/vr-ar/>

BCU – Dr Moad Idrissi - <https://www.linkedin.com/in/moad-idrissi/>

NOTTINGHAMSHIRE

## Smart Wireless Innovation Facility (SWIFt)



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SWIFt

Part of Nottingham Trent University (NTU), SWIFt has a wealth of experience in networks such as **3G/4G/5G**, IOT, and **data visualisation**. Our specialist team is able to consult and advise on a number of different areas **from product conception to commercial delivery**. **The living lab** is the perfect test environment for organisations who want to develop and trial solutions in a **secure private sandbox environment**.

To find out more:

SWIFt - <https://www.swiftlabs.co.uk/>

Stuart Fenton (MD) - [stuart.fenton@ntu.ac.uk](mailto:stuart.fenton@ntu.ac.uk)

Ivan Marjanovic (Technical Director) - [ivan.marjanovic@ntu.ac.uk](mailto:ivan.marjanovic@ntu.ac.uk)

SWIFt on LinkedIn – <https://www.linkedin.com/showcase/smart-wireless-innovation-facility-swift/>

**NOTTINGHAMSHIRE**  
**Digital Turbine Centre**



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- Netmore 5G test bed
- Bluetooth Mesh testbed for smart city/parking & secure logistics IoT
- IoT Lorawan testbed
- Serviced office space

To find out more:

Worksop Turbine <https://worksopturbine.nottinghamshire.gov.uk/digital-innovation-centre/>

Callum Jones – Nottinghamshire County Council

[Callum.Jones@nottsc.gov.uk](mailto:Callum.Jones@nottsc.gov.uk)

Nick Mellors – Innovation Nottinghamshire – [NickMellors@ispb.co.uk](mailto:NickMellors@ispb.co.uk)

Richard Brooks – Blue Mesh Solutions - [richard@bluemeshsolutions.com](mailto:richard@bluemeshsolutions.com)

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... and there's more



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- **Thatcham Research vehicle safety test centre**  
<https://www.thatcham.org/>
- **University of Nottingham – 5G and beyond networks** (eg reconfigurable intelligent surfaces based smart transceiver to enhance the Virtual Reality (Quest 2) performance the use of 5G and beyond techs to support industries, AI, and in support of low-carbon energy networks  
– Gabriele Gradoni <https://linkedin.com/in/gabriele-gradoni-b01ba867> & Minglei You <https://www.linkedin.com/in/minglei-you-19ab6a165/>
- **CybSec** - UoN centre of interdisciplinary cyber security research
- **Robotics for Good - Telepresence business start up**  
<https://www.roboticsforgood.co.uk/>
- **Coming soon**
- UK's only inland Freeport <https://www.emfreeport.com/>
- Ashfield Automated Distribution and Manufacturing Centre (ADMC)



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## World's biggest offshore wind '5G living lab' being developed in the Humber



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- Two 5G technology development and demonstration zones over the existing fibre network will be built – one at Grimsby Port and the other within the Lynn and Inner Dowsing wind farm
- Consortium led by the Offshore Renewable Energy (ORE) Catapult and bringing together the expertise of Microsoft, Vilicom, JET Connectivity, XceCo, Associated British Ports (ABP), Accelleran and Satellite Applications Catapult.

To find out more:

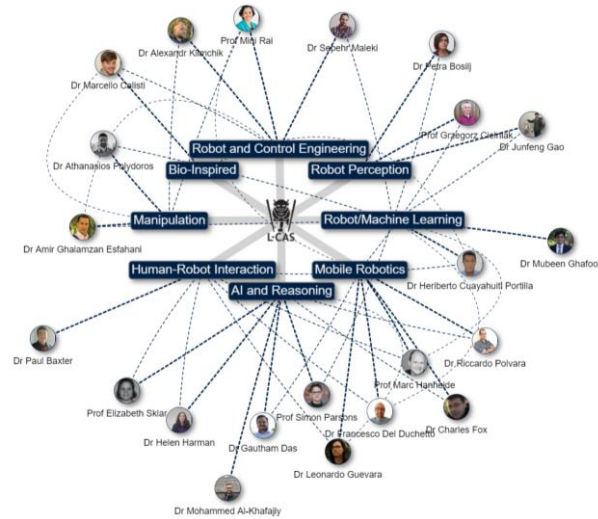
<https://ore.catapult.org.uk/press-releases/the-biggest-offshore-wind-living-lab-in-the-world-to-be-developed-in-the-humber/>

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# Lincoln Centre for Autonomous Systems (L-CAS)



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- L-CAS specialises in technologies for **perception, learning, decision-making, control & interaction** in autonomous systems, especially **mobile robots** and **robotic manipulators**, and the integration of these capabilities in application domains including
  - agri-food,
  - healthcare,
  - intelligent transportation,
  - logistics,
  - nuclear robotics,
  - service robotics, and
  - space robotics.

To find out more:

Prof Marc Hanheide - Director of L-CAS - [mhanheide@lincoln.ac.uk](mailto:mhanheide@lincoln.ac.uk)

L-CAS - <https://lcas.lincoln.ac.uk/wp/>

L-CAS on LinkedIn - <https://www.linkedin.com/company/l-cas/>

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## Lincoln Institute for Agri-Food Technology (LIAT)



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- 5G testbed
- Lincoln Agri-Robotics (LAR) - 'the world's first global centre of excellence in agricultural robotics'
- LIAT work across the whole agriculture and horticulture sector.
- 200 hectare Riseholme Campus facilities from crop trials and research areas to a refrigeration research centre and demonstration packhouse facility.

To find out more:

LIAT - <https://www.lincoln.ac.uk/liat/>

Simon Pearson – LIAT Founding Director - [spearson@lincoln.ac.uk](mailto:spearson@lincoln.ac.uk)

Robotics & Automation research -

<https://www.lincoln.ac.uk/liat/research/roboticsandautomation/>

LINCOLNSHIRE

... and there's more



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- **Lincolnshire Institute of Technology** led by the University of Lincoln, with centres across the county including Lincoln College, Grantham College and University Centre, Boston College, Grimsby Institute of Further & Higher Education, Bishop Burton College, University Campus North Lincolnshire, & Lincoln UTC; supported by Bakkavor Plc, Olympus Automation Limited, alongside the Greater Lincolnshire Local Enterprise Partnership, and Siemens Energy UK. <https://www.thefuturefocus.co.uk/teachers/lincolnshire-institute-of-technology/>
- **Food Valley** - Greater Lincolnshire is home to Europe's largest Agri-food Tech automation and robotics cluster <https://www.greaterlincolnshirelep.co.uk/funding-and-projects/uk-food-valley/>
- **FruitCast** - AI / Video crop analysis. The technology has been on trial at "at field-scale" with two UK soft fruit growers and processors for two years & becomes commercially available for 2024 <https://fruitcast.co.uk/>

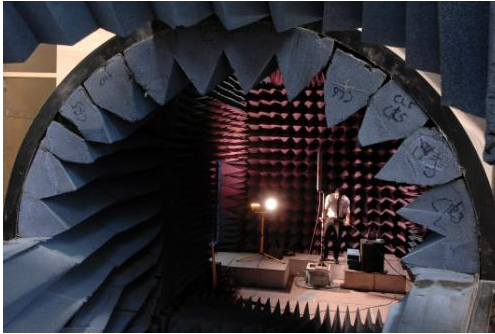


LEICESTERSHIRE

## Loughborough 5G Research Centre



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- Antenna design and test including electromagnetic simulation software expertise
- Networks (high speed and mobile)
- Microwave measurements (500MHz to 10GHz)
- On-body communications (wearable and flexible antennas)
- Cellular and point to point radio communications
- Metamaterials - special surfaces
- Signal processing - cognitive radio
- Biomimetics
- Underwater acoustics.

**“One of the best equipped set of test and measurement facilities related to mobile communications in the UK”** including state of the art large and small scale anechoic chambers.

To find out more:

5GRC - <https://www.lboro.ac.uk/research/5grc/>

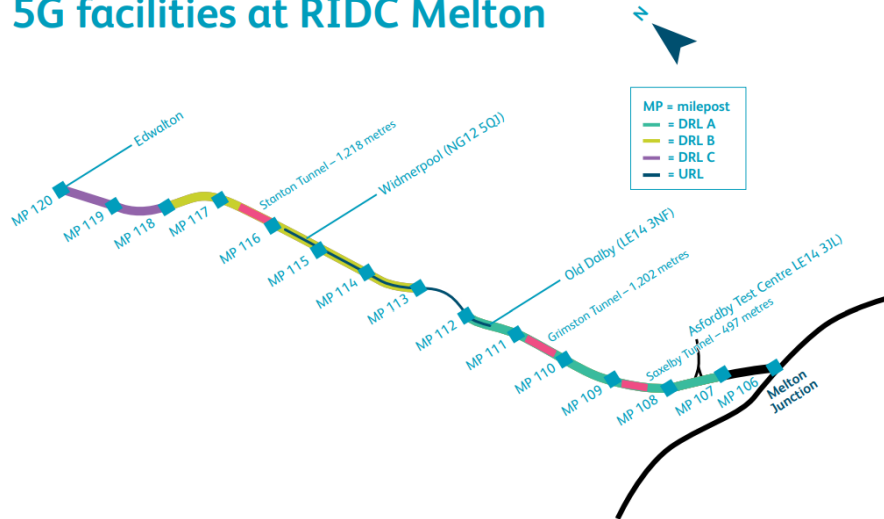
Project Examples -

<https://www.lboro.ac.uk/research/5grc/researchprojects/currentprojects/>

Dr Rob Edwards - 5GRC Director - [r.m.edwards@lboro.ac.uk](mailto:r.m.edwards@lboro.ac.uk)

## LEICESTERSHIRE 5G rail testbed

### 5G facilities at RIDC Melton



At the **Rail Innovation & Development Centre (RIDC)** at Melton Mowbray in Leicestershire.

Open for rail and non-rail related 5G testing including access to:

- Masts, structures, power, equipment housings and trackside fibre
- Innovation laboratory
- Fibre internet connectivity
- Trackside environment
- Multi-disciplined rail professionals.

To find out more:

Satnam Thiara – RIDC Business Development -

[satnam.thiara@networkrail.co.uk](mailto:satnam.thiara@networkrail.co.uk)

5G rail testbed - <https://www.networkrail.co.uk/wp-content/uploads/2019/05/Enabling-5G-for-the-rail.pdf>

LEICESTERSHIRE

... and there's more



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- **National Space Centre** – inc. the UK's largest planetarium  
<https://www.spacecentre.co.uk/>
- **University of Leicester Space Research Centre** <https://le.ac.uk/space-research-centre>
- **Space Park Leicester** (inc Satellite Application Catapult)  
<https://www.space-park.co.uk/>
- **Loughborough & Leicester Science and Innovation Enterprise Zone**  
<http://enterprisezones.communities.gov.uk/%ef%bb%bf%ef%bb%bfloughborough-leicester-science-innovation-enterprise-zone/>
- **AIDAM** - University of Leicester Research Centre for Artificial Intelligence, Data Analytics and Modelling <https://le.ac.uk/aidam> including <https://le.ac.uk/archaeology/research/new-approaches-to-the-material-world/arch-i-scan>
- **East Midlands Institute of Technology** is being set up across Loughborough University, Loughborough College, the University of Derby and the Derby College

RUTLAND

## The UK's smallest county 'the Playground of the East Midlands'.



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- **Digital Rutland** - partnership between Rutland County Council, BDUK & BT
- Project Gigabit Lots 5 & 11
- Around 95% of the county has access to Superfast Broadband.
- Over 1,900 businesses in the county inc manufacturing and service sectors
- Rail links to Stansted and Birmingham and easy connections to the A1, A47 and the A606
- **Rutland Water** –One of the largest man made lakes in Europe, and the largest in England, set in over 3,000 acres of beautiful rolling countryside



NORTHAMPTONSHIRE

## Centre for Advanced and Smart Technologies (CAST)



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- CAST brings together inter/multidisciplinary research and knowledge transfer activities in two key areas:
- Engineering – Lift Technology and High-Performance Engineering (LTHPE) and Non-Destructive Testing (NDT);
- Computer Science – **Artificial Intelligence, future networks, embedded systems & Internet of Things (IoT), augmented reality, virtual reality** and sustaining the future of computing through innovative STEAM education.

To find out more:

Prof Michael Opoku Agyeman - CAST Lead-

[michael.opokuagyeman@northampton.ac.uk](mailto:michael.opokuagyeman@northampton.ac.uk)

Dr. Triantafyllos Kanakis - CAST Telecommunications Lead -

[triantafyllos.kanakis@northampton.ac.uk](mailto:triantafyllos.kanakis@northampton.ac.uk)

CAST - <https://www.northampton.ac.uk/research/research-institutes-and-centres/centre-for-the-advanced-and-smart-technologies-cast/>

**NORTHAMPTONSHIRE**  
**... and there's more**



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- **Robot Food & Grocery Delivery** -Starship autonomous robot delivery vehicles with Co-op Food, Costa Coffee stores & a number of independent food takeaways <https://www.starship.xyz/robot-food-grocery-delivery-in-northampton/>
- **Daventry International Rail Freight Interchange (DIRFT)** – also home to Royal Mail’s largest UK parcel hub
- **Digital Northants** -collaboration between local digital businesses, the University of Northampton & local councils to support digital innovation in Northamptonshire <https://www.digitalnorthampton.com/>
- **Silverstone Park** - Silverstone Technology Cluster & Centre Of Innovation
- **Kandou Bus Limited** - *Open Networks Ecosystem Competition (ONE) Project AURA* (Location: Bristol, Ipswich, Northampton)
- **Fab Lab Northampton** – currently planning a creative space that provides access to digital fabrication tools



Do you fancy creating an

# EAST MIDLANDS CLUSTER?



**Nick Mellors**

**Innovation Nottinghamshire**

**[nickmellors@ispb.co.uk](mailto:nickmellors@ispb.co.uk)**

**THANK-YOU**