ADVANCED WIRELESS INNOVATION REGION (AWIR)

Advanced Wireless Innovation Region | River Severn Partnership

HARTPURY UNIVERSITY AND HARTPURY COLLEGE
PROJECT DELIVERY HIGHLIGHTS

HARTPURY UNIVERSITY AND HARTPURY COLLEGE

ADVANCING CONNECTIVITY IN AGRICULTURE

Showcasing the transformative potential of 5G and advanced wireless tech to drive efficiency, sustainability and set new standards in modern agriculture.

The River Severn Partnership Advanced Wireless Innovation Region (RSPAWIR) is a £3.75m initiative, funded by the Department for Science, Innovation & Technology and led by Shropshire Council.

Hartpury University and Hartpury College's Digital Innovation Farm, in collaboration with Harper Adams University and Birmingham City University, is working with farmers and industry partners in the River Severn catchment area to showcase advanced wireless technology for crop monitoring, security and energy management.

Thank you to our valued funders, partners and collaborators

Department for Science, Innovation, & Technology

Advanced Wireless Innovation Region

River Severn Partnership

Harper Adams University

Gworx nex

TH WHITE AGRICULTURE

Verfácil.

Emerald Dynamics

Light Science Technologies Holdings

DeLaval

JET CONNECTIVITY Extending Horizons

TAG tallis amos group

BIRMINGHAM CITY University

WHY RURAL CONNECTIVITY IS CRUCIAL FOR UK AGRICULTURE:

Faster problem solving

Remote support for fixing machinery.

Improved sustainability

Live soil and environmental monitoring.

Better security and efficiency

Access monitoring to track farm activity.

Higher productivity

Real-time crop and livestock management.

Cost savings

Smarter resource management.

It's been a fascinating journey, and I'm thrilled to be part of this groundbreaking project! Over the last ten months, Hartpury University and Hartpury College has led the way in advancing connectivity in agriculture, showcasing how 5G and wireless technologies can transform farming for the future.

The enthusiasm and collaboration from farmers, tech partners and industry experts have been truly inspiring - this is just the beginning of a smarter, more connected future for agriculture!"

Claire Edwards
Hartpury University and Hartpury College RSPAWIR Project Manager

PROJECT MILESTONES

Expertise and collaboration

Appointed a Rural Industries Technical Lead (nexGworx) and partnered with Harper Adams University and Birmingham City University on research and impact analysis.

Advanced connectivity deployment

Delivered a mobile 5G/AW connectivity unit (Jet Connectivity) and expanded farm-based technology with new sensors and radio access nodes.

Engagement and insights

Hosted a programme showcase for DSiT representatives (Nov 2024) and gathered critical feedback through the Rural Connectivity Survey.

Final showcase event

Supported the closing programme demonstration event, hosted by Harper Adams University, (March 2025).

PROJECT HIGHLIGHTS

Attended 12 major agricultural shows and B2B events

Including LAMMA, CROPTEC, Low Carbon Agriculture, Three Counties and Royal Welsh Shows.

Launch of Flagship 5G Unit

A state-of-the-art mobile Advanced Wireless Demo Unit, designed by Jet Connectivity, showcasing LoRaWAN, Starlink and 5G to transform rural connectivity and farm innovation. Travelling to over 10 locations!

Launched series of FARM FORWARD Demo events

7 Hartpury University and Hartpury College Digital Innovation Farm events covering connectivity, networks, environmental monitoring, farm safety, robotics and precision farming. Culminating with the Harper Adams showcase event.

5G Spectrum Strategy developed

Secured two Ofcom 5G licences to enhance connectivity at Hartpury University and Hartpury College Home Farm.

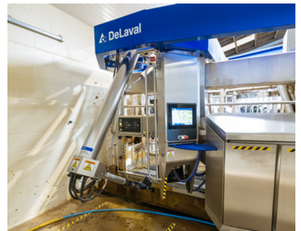
7

Advanced wireless technology use cases demonstrated on-farm.

Exhibited at 4 key B2B industry events

> *On a personal note, I've worked across telecoms for 22 years and this is some of the highest levels of excitement of the implementation of this kind of technology that I've seen."*
>
> **Dominic O'Reirdan**
> JET Connectivity

With robust wireless networks and smart technology, farmers can boost efficiency, cut costs and drive sustainability - securing the future of UK agriculture.



HARTPURY UNIVERSITY
AND HARTPURY COLLEGE

USE CASES

Real-world examples of a product or service in action on our farm.

Hartpury's use cases demonstrate how advanced wireless technologies are transforming on-farm efficiency, sustainability and decision-making.

ADVANCED WIRELESS DEMO UNIT

Hartpury University and Hartpury College's flagship demo unit showcases how LoRaWAN, Starlink, and 5G enhance farm connectivity, enabling real-time monitoring, precision agriculture and remote operations for smarter, more sustainable farming.

ENVIRONMENTAL MONITORING OF LIVESTOCK HOUSING

Healthier animals, better farm performance – LoRaWAN sensors provide real-time temperature and humidity monitoring for optimal livestock housing conditions.

REMOTE EXPERT SUPPORT FOR FARMING

Instant expert support, minimal downtime – 5G-enabled VR headsets connect farmers to remote technicians for faster fixes and lower costs. Adaptable for other machinery, vehicles or vet diagnosis.

FARM RESOURCE MANAGEMENT

Farm-wide sensors deliver real-time insights, ensuring farmers can capture, analyse and act on data instantly - driving efficiency and sustainability.

FARM SECURITY & ASSET MONITORING

Smart security and real-time tracking – LoRaWAN sensors monitor movement, visitor numbers and energy use to protect farms and improve efficiency.

SOIL HEALTH MONITORING

Smarter soil, stronger yields – LoRaWAN sensors and AI-powered analysis provide real-time insights to optimise soil health and crop management.

DRONES FOR CROP & BIODIVERSITY MONITORING

Faster insights, better decisions – 5G-connected drones deliver real-time crop health and biodiversity data for smarter farm management.

LESSONS LEARNED

FUTURE OUTLOOK

The project has highlighted key challenges and opportunities in advancing wireless connectivity for agriculture.

While awareness of the benefits of Advanced Wireless Connectivity (AWC) is growing, there remains a gap in understanding its practical applications and business advantages.

KEY INSIGHTS:

Market awareness gap – Short delivery timelines mean many in the sector are still unfamiliar with AWC's potential benefits.

Bridging the knowledge divide – Roadshow and demo events show a widespread need for clearer translation of AWC's role in data processing, learning and decision-making.

Rural connectivity challenges – Persistent gaps in rural network infrastructure must be tackled alongside efforts to promote AWC adoption.

Industry innovation needs – More opportunities exist to test and challenge suppliers to develop affordable devices and data management solutions tailored for agri-tech.

Beyond 5G – Testing has shown that many valuable AW applications don't necessarily require 5G, reinforcing the need for technology solutions that work with existing connectivity.

Cross-sector potential – Strong business collaborations indicate opportunities for joint innovation with other industries, including autonomous vehicles and connected technologies.

> ***This is a real flagship project for us to show, at Hartpury University's Digital Innovation Farm, how a mobile 5G connectivity unit can be brought into a working farm and connected to a range of devices to show how productivity on the farm can be improved."***
>
> **Matt Smith**
> RSPAWIR - The River Severn Partnership
> Advanced Wireless Innovation Region

GET IN TOUCH

If you would like to find out more about the River Severn Partnership or Hartpury University and Hartpury College's Digital Innovation Farm, we'd love to hear from you.

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