



Media release

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Agriculture's connected future on show at ECPA

The "Internet of Things" (IoT) is emerging as a significant opportunity for farmers, according to Craig Fleming of CENSIS, the Innovation Centre for Sensor and Imaging Systems.

Speaking at this year's European Conference on Precision Agriculture (ECPA) in Edinburgh, Craig Fleming will outline how LoRaWAN™, or LoRa™ – a long range, low power communications platform for building IoT networks – can address some of the major challenges facing the farming sector, as well as wider society.

CENSIS and its industry partners are currently deploying a series of LoRa™ networks across Scotland in urban and rural locations. These are being used to tackle environmental challenges; monitor pollution; and track valuable assets, like grazing livestock.

Craig Fleming, Senior Business Development Manager at CENSIS, will say: "A number of farmers are already using IoT technologies to monitor animal health and minimise the use of agri-chemicals through precise targeting. But the technology has restricted IoT to animals inside buildings or large pieces of machinery.

"Scotland's LoRa™ networks are opening up so many more opportunities. This technology removes the restrictions on range and power currently in place, giving farmers the opportunity to access and use huge amounts of data from across their entire farm. The technology on show at our demonstration area lays out some of the pioneering propositions now on offer."

To demonstrate the IoT's potential for the industry, a consortium of companies, led by CENSIS and Scotland's Rural College (SRUC), will demonstrate how farms can measure and track a range of data using existing LoRa™ networks both at the event and further afield.

Sensors in the conference hall will measure CO₂, temperature, and humidity, while systems developed by Hoofprint Technologies to track animals in remote locations will be used to track people moving around the convention centre in real-time. The consortium will also showcase live footage of moisture and temperature readings taken from the lawn outside the convention centre.

Craig Fleming will say: "We are striving to deliver a solution to the pressing need for IoT in animal and plant health identified by the UK and devolved governments¹. We want to ensure farmers have the tools to identify potential problems earlier and remedy them more effectively.

¹ HM Government et al., 'A Vision and High-Level Strategy for UK Animal and Plant Health Research To 2020 and Beyond', Government Strategy (BBSRC, 13 January 2016), <http://www.bbsrc.ac.uk/news/policy/2016/160113-n-new-vision-for-uk-animal-and-plant-health-research-published/>.



“In addition, we will enable them to better manage their stock and crops, streamline their businesses, and protect valuable equipment. Ultimately, it can make them more profitable – there are many unmet needs LoRa™ can address in agriculture. The visionary commitment of the Scottish Government to a national LoRaWAN™ network², which CENSIS is working with partners to deliver, will put Scotland at the forefront of this race.”

Live readings from sensors at the LoRa™ network in Kirkton and Auchtertyre, SRUC’s hill research farms near Crianlarich, will also be available. These farms are using animal tracking sensors and technology to measure maximum and average wind speeds, temperatures and direction. On a hill farm, that could offer better animal health and farm worker safety; while, on a lowland farm, it could inform crop spraying decisions or techniques.

LoRa™ connectivity at the exhibition will be provided by Stream Technologies.

Inmarsat, the mobile satellite communications company, will be demonstrating how IoT can perform without cellular or fibre coverage, and will transmit data via satellite to an analytics dashboard at the show.

Professor Davy McCracken, Professor of Agricultural Ecology and Head of Hill & Mountain Research Centre at Kirkton Farm, added: “The LoRa™ network established at Kirkton transmits data across topographically challenging terrain. At the moment, we’re using prototype sensors for locating livestock in the mountains, but the existence of the network also means that it is now feasible for us to work with colleagues at CENSIS to explore a wide variety of other uses for LoRa™-enabled sensors. It will be a game-changer for agricultural and environmental data collection in remote locations.”

Dr Tony Waterhouse, Chair of the ECPA Organising Committee, commented: “LoRa™ has huge potential for the agricultural sector, with seemingly endless applications. We’re thrilled to see such a range of technologies being developed in Scotland and on display at this year’s ECPA – they could prove transformational for the industry.”

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Issued on behalf of CENSIS by Big Partnership. For more information please contact Lauren Gaston or Peter McFarlane on 0141 333 9585 / firstname.lastname@bigpartnership.co.uk

Notes to editors:

1. About ECPA:

The European Conference on Precision Agriculture takes place on 17-20 July at the University of Edinburgh’s John McIntyre Conference Centre. Bringing academia and the wider industry together, this is the conference’s 20th year. The event will focus on the theme of “innovating through research” and is the first time it has been held in Scotland. It is expected to host more than 450 delegates from across the world.

² Scottish Government, ‘A Digital Strategy for Scotland’, Government Policy (Edinburgh, 22 March 2017), <http://www.gov.scot/Publications/2017/03/7843>.



For more information, visit: <https://ecpa.delegate-everything.co.uk/>

2. About CENSIS:

CENSIS is the Scottish Centre for Sensors and Imaging Systems, which aims to bring together commercial innovation and academic research, to drive economic activity in Scotland. Established in April 2013 with an initial £10 million funding, it expects to deliver collaborative R&D projects and assist Scotland's 170 companies in the industry which, between them, contribute £2.6 billion to the economy. It is funded by the Scottish Funding Council, with additional support from the Scottish Government, Scottish Enterprise and Highlands & Islands Enterprise.

For more information, visit: <http://censis.org.uk/>

3. About LoRa networks in Scotland

In its 2017 document "Realising Scotland's full potential in a digital world: a Digital Strategy for Scotland", the Scottish Government noted its commitment to establish a national LoRa-wide area network to support IoT technologies.

For more information, visit: <http://www.gov.scot/Resource/0051/00515583.pdf> (page 22)

4. About Innovation Centres:

The Innovation Centres, which were launched in 2014 and in the latter part of 2013, sit within the construction industry, oil and gas, stratified medicine, digital health, industrial bio-tech, and sensors and imaging. Each Centre aims to establish bonds between Scotland's universities and their respective industry sectors, translating the knowledge and expertise into commercially viable products and companies to benefit the country's economy.

For more information, visit: <http://www.innovationcentres.scot/>