A CW Location SIG event 'Positioning for Automation in AgriFood'

21st November 2023

Hosted by **PricewaterhouseCoopers LLP (PwC),** sponsored by **Qualcomm Technologies International** and delivered in partnership with **The Royal Institute of Navigation**

Venue: PwC, The Maurice Wilkes Building, St John's Innovation Park, Cowley Road, Cambridge, CB4 0DS

AGENDA

10:30	Registration
11:00	Welcome from CW, **Paul Crane, CEO, CW**
11:05	Welcome from our host, **PwC**
11:15	Introduction to the event **David Bartlett, u-blox UK and CW SIG Champion**
11:20	**'The pivotal role of positioning in enabling AgriFood Automation'** **Pedro Carvalho, AgriFood KTN**
11:40	**Q&A**
11:45	**'Title'** **David May, Deputy Director, Lincoln Institute for Agri-Food Tech, University of Lincoln**
12:10	**Q&A**
12:15	**'Title'** **Gemma Ball, Connected Places Catapult**
12:35	**Q&A**
12:40	**'Innovate UK Launchpad: Agri-tech and food tech in Eastern England'** **Dan Dearing, Innovate UK**
12:45	**Lunch break**
13:30	Welcome from our event partner and Chair for the session **Ramsey Faragher, FocalPoint, The Royal Institute of Navigation** and **CW SIG Champion**
13:35	**'Combining sensors to assess the behaviour, health and welfare of individual dairy cattle'** **Dr Zoe Barker, University of Reading**
14:00	**Q&A**
14:05	**'Title'** **Ben Scott-Robinson, CEO and Co-Founder, Small Robot Company**
14:30	**Q&A**
14:35	**'A farm focussed approach to agricultural innovation'** **Eliot Dixon, Head of Engineering, Agri-EPI Centre**
15:00	**Q&A**
15:05	**Panel Session with all speakers: 'AI: Friend or Foe?'**
15:35	**Closing remarks from our Event Sponsor** **Ben Tarlow, Qualcomm Technologies International** and **CW SIG Champion**

With the permission of the speakers, presentations will be available upon request following the event

Profile of organiser

Cambridge Wireless (CW) -www.cambridgewireless.co.uk
CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With over 400 members from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 19 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and business developments and position their organisations in key market sectors. CW also organises major conferences and start-up competitions along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities.

Profile of host

PwC -www.pwc.co.uk
At PwC, our purpose is to build trust in society and solve important problems. Working across artificial intelligence, life sciences and AgriTech industry sectors, our clients range from SMEs to some of the most recognised businesses in Cambridge and the South East region.

Profile of Sponsor

Qualcomm Technologies International - www.qualcomm.com
For more than 30 years, Qualcomm's ideas and inventions have driven the evolution of wireless communications, connecting people more closely to information, entertainment and each other. These technologies now power the convergence of mobile communications and consumer electronics, making wireless devices and services more personal, affordable and accessible to all.

Profile of event partner

The Royal Institute of Navigation - https://rin.org.uk

The Royal Institute of Navigation (RIN) is a learned society with charitable status and aims to advance the art, science and practice of navigation. Formed in 1947, its aims have always been threefold:

- To unite in one body those interested in navigation
- To advance the art, science and practice of navigation
- To promote knowledge in navigation and its associated sciences, including positioning, timing, tracking and conduct of a journey, whether on, in, over or under land, sea, air or space

Our vision is to be an inclusive group of diverse disciplines working together for a more navigable world. Navigation encompasses the science, the technology and the practice of getting from A-B on land, in the air, on seas and rivers, and in space. The RIN exists to study, to practice and to inform the public about one of the broadest and most diverse subjects in the world. In 2007, in recognition of the importance of its work, the RIN was granted a Royal Charter by Her Majesty Queen Elizabeth II

Profile of speakers

Pedro Carvalho, AgriFood KTN - https://iuk.ktn-uk.org/agrifood
Pedro Carvalho serves as a Knowledge Transfer Manager on the AgriFood team at Innovate UK KTN. In this role, he focuses on plant and crop production, assisting innovative companies and research organisations in finding collaborators and applying for public and private funding. Pedro's primary areas of interest include precision farming and sustainable biological solutions for agricultural challenges. Pedro holds a PhD in crop science from the University of Nottingham, and has extensive expertise in plant and crop-based agriculture; obtained through a career that involves research in both academic and commercial settings. His research areas encompass nitrogen use efficiency, water uptake, plant/crop phenotyping, and the development of novel microbial biostimulants.

Gemma Ball, Connected Places Catapult - **https://cp.catapult.org.uk**
Bio to follow shortly

David May, Deputy Director, Lincoln Institute for Agri-Food Tech, University of Lincoln - www.lincoln.ac.uk

David May is Deputy Director of Lincoln Institute of Agri-Food Technology (LIAT) and an advisor to a number of start-ups within the food and Agri sector. He is an agronomist by training having studied Horticulture at the University of Reading (BSc Hons) and worked for ADAS as a BASIS trained crop advisor, specialising in Ornamentals. He has over 30 years' experience working within the food and ornamentals supply chain, including more than 20 years at Tesco, including as Category Technical Manager for Horticulture. The Lincoln Institute for Agri-Food Technology (LIAT) aims to support and enhance productivity, efficiency, and sustainability in food and farming through research, education, and technology. A specialist research institute of the University of Lincoln, our multi-disciplinary team brings together sector-leading expertise in a diverse range of subjects. This includes the newly formed Lincoln Agri-Robotics (LAR) is the world's first global centre of excellence in agricultural robotics, recently funded by UKRI's Research England as part of their Expanding Excellence in England (E3) fund.

Dr Zoe Barker, University of Reading - https://www.reading.ac.uk
Zoe Barker is a lecturer in Animal Science at the University of Reading. Her research interests are centred around the health, welfare and sustainability of livestock systems. Her early research involved epidemiological studies of risk factors for lameness and also involved encouraging project farmers to implement interventions to reduce lameness by project farmers. This was followed by projects that used novel sensors for the detection of health and welfare conditions including lameness and dystocia. She has recently been awarded a £1.4 million BBSRC grant to continue working with novel sensor technologies to study the interactions between dairy cattle behaviour and their environmental microclimate.

Ben Scott-Robinson, **CEO and Co-Founder, Small Robot Company** - **www.smallrobotcompany.com**
Ben is the co-founder and CEO of The Small Robot Company, a pioneer in per plant farming. For over six years, he has been leading a team of experts in agriculture, engineering, machine learning, and design to create a new way of farming that is healthier, more efficient, and more sustainable for the planet and the people. Small Robot Company have developed an end-to-end system of autonomous, precision agri-robots and an AI-driven operating system that can increase crop yields, reduce chemical usage, and preserve soil condition. Their robots Tom, Dick, and Harry, and their smart assistant Wilma, are already delivering our 'Farming as a Service' model to farmers across the UK and beyond. The company has won multiple awards, secured over £13m in funding, and partnered with leading organisations in the industry. Their vision is to scale up the service and impact by 2025, and to help farmers feed the world while regenerating the planet.

Eliot Dixon, Head of Engineering, Agri-EPI Centre
As the Head of Engineering at Agri-EPI, Eliot Dixon leads a team of engineers who provide data, robotics and AI solutions for Agri-Tech projects. He also participates in innovation work in AI and Robotics, finding and forming projects that address the challenges in Agri-Tech development. His team offers services including remote spectral imaging, data labelling, and data management from a network of farms. Eliot has a background in Physics and Robotics, and has worked on autonomous cars, radar processing and drone design. Growing up in a farming business, he knows that agriculture is an enormous development challenge and requires design that regards it as a complex system. He is inspired to ensure that agricultural technologies are relevant to modern agriculture and robust enough to meet its demands.

Profile of CW Location Group SIG Champions

David Bartlett, Head of Technology Positioning, u-blox UK - www.u-blox.com
David Bartlett works in the positioning technology (R&D) group at u-blox with a focus on hybrid positioning: bringing together GNSS with terrestrial systems such as UWB and V2X, primarily in support of future autonomous vehicle, driverless car and robotics applications but also for IoT and indoor positioning. Prior to this he was CTO and co-founder of Omnisense delivering high precision indoor IoT tracking solutions. He also worked at Cambridge Positioning systems with a focus on cellular positioning and network aided GNSS techniques.

Bob Cockshott, Knowledge Transfer Manager, Positioning, Navigation, Timing and Quantum, KTN - https://ktn-uk.org
After 25 years in the space industry working mainly on electro-optical payloads, Bob has spent the last 13 years in the government-funded Knowledge Transfer Network, supporting business in position, navigation and timing, and

more recently also quantum technology. Bob has taken a special interest in GNSS vulnerability, and has organised international conferences on vulnerability and its mitigation. Bob is a member of the Cabinet Office PNT Technical Group and chairs the Royal Institute of Navigation's Technical Committee. Bob is a member of the International Time and Sync Forum Steering Group and is also a Cambridge Wireless Location Based Services SIG Champion.

Dr Ramsey Faragher, Founder, President, and CTO, FocalPoint - https://focalpointpositioning.com
Dr Ramsey Faragher is the Founder, President and CTO of Focal Point Positioning, a Fellow of the Royal Institute of Navigation, and a Fellow of Queens' College, at the University of Cambridge. He is the inventor of the Supercorrelation digital signal processing technique, which has redefined the state of the art in GPS positioning. He is the author of dozens of patents, and has been the recipient of numerous awards within the positioning and navigation ecosystem. His company is pioneering improvements to smartphone and automotive navigation systems, and in the past during his time in the Defence sector he has developed technologies that have been to the bottom of the ocean and all the way to Mars. He also helped to improve the bluetooth tracking capabilities of various globally-deployed contact tracing technologies during the Covid pandemic. He regularly contributes to technology podcasts, writes for Forbes, and has provided science advice for two television production companies. Ramsey lives with his family in Cambridge and is currently navigating the challenging landscape of having three small and adventurous children.

Ben Tarlow, Senior Staff Engineer, Qualcomm Technologies International - www.qualcomm.com
Ben has worked in positioning for 15 years, developing algorithms for satellite, cellular and other terrestrial RF technologies. At Qualcomm, Ben works in the Advanced Algorithms group, where current research areas in location are data fusion, use of sensor data for positioning and fitness applications; one day, he hopes to be given the remit to explore the area of olfactory positioning. Ben has a background in Pure Mathematics and a PhD in Combinatorics. He has over 20 different patents filed or granted, mostly on subjects relating to positioning.