

The [REAMIT](#) project is excited to share our latest newsletter for February 2021. In this newsletter, we featured updates from our technology partners, [Whysor](#) and [Levstone Ltd](#) on their new app developments. We also included recent development from our lead partner institution, the University of Bedfordshire, on Big Data Hub. A very interesting news on development on CyberBar technology and LCA, conducted by [University College Dublin](#), are added features of this newsletter.

Thanks again for expressing your interest in our work at REAMIT. If you wish to subscribe or unsubscribe, please send an email to: reamit4nwe@gmail.com

REAMIT Partners meet for the 4th Bi-Annual Steering & Advisory Committee Meetings, 20 – 21 January 2021

Hosted by our Irish partner, University College Dublin. These events were held over the course of two full days via Zoom where partners discussed the progress of the project including work packages on technology, project management, communication and long-term plans.



The REAMIT project partnership meetings were kicked off with the meeting of the REAMIT project Advisory Committee. Annemarie Van Vilsteren, representing the East Netherlands Development Agency (REAMIT Associated Partner), suggested developing the REAMIT project pitch, which may become a very powerful tool in promoting REAMIT's approach and technology among new agri-food companies.

Many thanks Annemarie for your continuous support and great suggestions for the REAMIT project partnership!

Some of the highlights from REAMIT Work Packages meetings include:

Two new companies have been recruited for REAMIT pilot tests – one in the UK (recruited by the University of Bedfordshire) and one in the Netherlands (recruited by Whysor). Despite the lockdown, the work on developing two new pilot tests has begun. REAMIT partners had a virtual tour to assess how best to use REAMIT approach and technology to help new pilot test companies reduce food waste.

Setting up the Big Data server at the University of Bedfordshire has been completed, and the server is now ready to accept data for analytics from pilot tests across the NWE region. Partners at University College Dublin developed a framework for Life Cycle Assessment of REAMIT technologies and explained what data was needed to assess environmental impact of food waste for each REAMIT pilot test. Partners at Ulster University explained 'Technology Readiness Level' and 'Market Readiness Level' in the context of REAMIT technologies. This discussion was supported by Jaap Drenth from Sensipdx, who shared his experience of bringing new, innovative technology to market with the support from private sector investors.

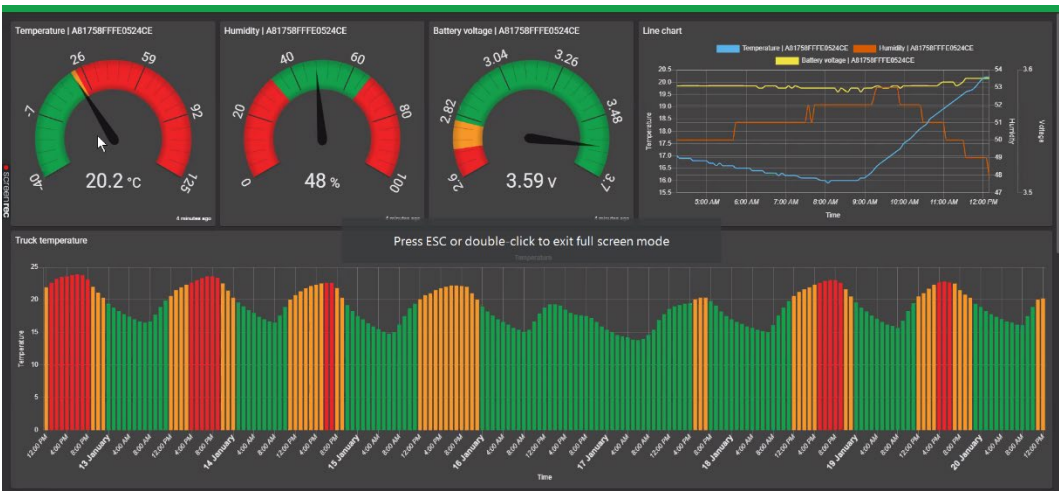
Partners at Nottingham Trent University presented an ambitious video and communication strategy for 2021, with the aim to produce five new REAMIT videos, and deliver several customised online trainings to increase partners' confidence and skills in using social media platforms to better communicate about REAMIT.

University of Bedfordshire, with the support from Whysor, Ulster University, Levstone and Nottingham Trent University have developed the REAMIT project Capitalisation proposal, submitted to the Joint Secretariat of Interreg NWE Programme in January 2021. The new partners invited to the REAMIT project Capitalisation proposal are Maastricht University (NL), Sensipdx (NL), Yumchop (UK), Ethe clo (BE) and the Northern Ireland Food and Drink Association (NIFDA).

During the Steering Committee Meeting, REAMIT partners discussed risks in the REAMIT project and how they could be addressed. Valorial presented a summary of the second REAMIT Symposium (5-6 November 2020) and partners exchanged ideas for the future REAMIT symposia.

The REAMIT project meetings were concluded with three presentations of research work inspired by the REAMIT project, carried out by the University of Bedfordshire, University of Nantes and Ulster University.

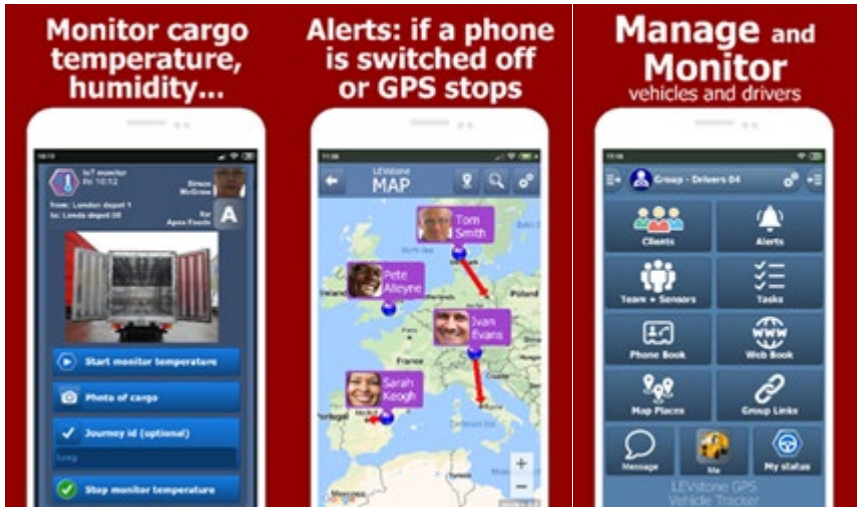
Whysor have developed the REAMIT Dashboard and Cloud Server



REAMIT project partner, Whysor, based in the Netherlands have developed the REAMIT Dashboard to enable the monitoring of data and analytics. REAMIT project partners & partner companies will be able - to monitor their data to understand the quality of their food and - to be notified when the quality of food is degrading.

Whysor, in particular are currently using this customised dashboard to monitor the results of their ongoing technology demonstrations with a Dutch online supermarket and a German fruit and veg supplier.

New developments to the Levstone Ltd ‘Gateway’ app



Background

Levstone Limited are a REAMIT technology and systems integration partner, who have previously invested over 10 person years software development into a state-of-art mobile app called “LEVstone GPS Vehicle Tracker.” The app enables organisations to manage and monitor a fleet of vehicles and to organise transport journeys, with features such as automatic departure and arrival notifications based upon GPS geo-locations.

REAMIT Challenge – Monitoring Food Quality in Trucks

To date, monitoring food quality within trucks has faced two big challenges: The expense of these sensors and the monitoring of power sources. There are some lower-cost sensors but these typically require a nearby gateway device in order to transmit the sensor data up to the internet.

REAMIT’s Solution

The latest cutting-edge technology evolution has small sensors that use wireless low-power Bluetooth for communication. Previously, IoT sensors still required a relatively expensive gateway device in the truck requiring additional maintenance.

LEVstone have developed a solution that does not require a gateway device. The idea is to simply use a regular mobile phone to act as the gateway – it means low-cost IoT sensors wirelessly communicate via low-power Bluetooth to a regular mobile phone. The phone could:

- belong to a supervisor or a person responsible for loading food onto a truck that is leaving a processing plant or warehouse,
- could belong to the truck driver
- could be a simple and cheap mobile phone that is left in the vehicle or comes along with the cargo road-sheet documentation, or the phone could belong to the person responsible for receiving, unloading and checking the food upon arrival.

To receive continual live sensor alerts and updates whilst a truck is in motion, the mobile phone in the truck or cab in order for it to transparently and seamlessly route the sensor data up to the internet.

REAMIT partners have jointly researched the market to identify a suitable low-cost IoT sensor. One commonly encountered problem was that the sensor manufacturers used closed proprietary communication protocols. This allowed LEVstone to design and develop a compatible software interface. This interface is complete and is presently being embedded into the “LEVstone GPS Vehicle Tracker” app.

Next steps

- The app “LEVstone GPS Vehicle Tracker” will be launched in February 2021 with support for IoT low-power Bluetooth sensors.
- Later in 2021 we aim to launch a new digital service that LEVstone is developing especially for REAMIT, to help users register and receive alerts and visualise the IoT data.
- To make food quality assurance and food waste monitoring simpler to use, at a lower cost and avoiding installation and wiring, and so make it easier for more agribusiness and logistics organisations to adopt IoT technologies thereby saving food wastage.

Updates on the Big Data Hub at the University of Bedfordshire

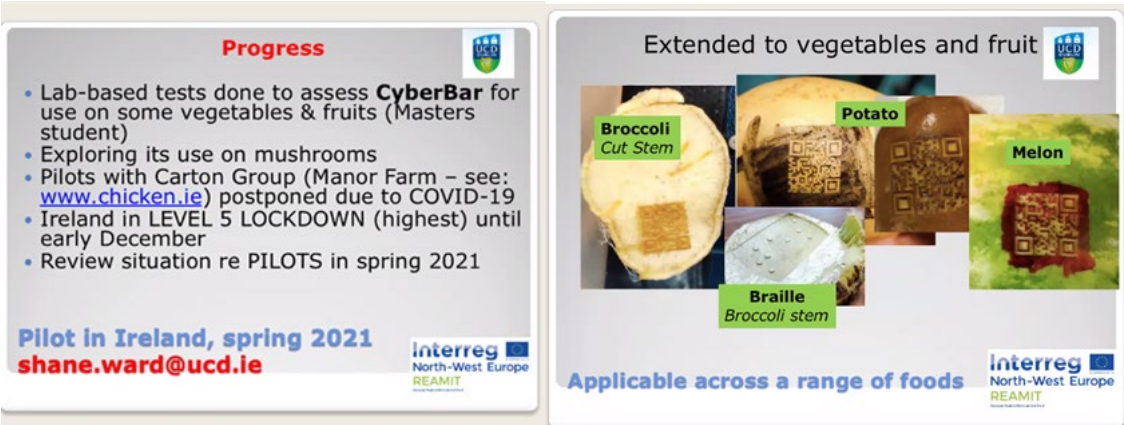


The Big Data Hub was set up at the University of Bedfordshire’s data centre. The server was placed in a demilitarized network zone with special security protocols which allows rerouting of REAMIT specific data traffic through a secure and independent network pathway. In principle, due to this, external access was made possible and was tested for access with one of the partner company through a standard Virtual Private Network (VPN) procedure. The standard MS SQL software installed in the server now enables partners to store and receive data from the server in real time. However, the inward streaming of real time data is yet to be tested based on further inputs about specific needs (data type, data structure, data handling software architecture etc.) of the pilot leads to deposit sensor data.

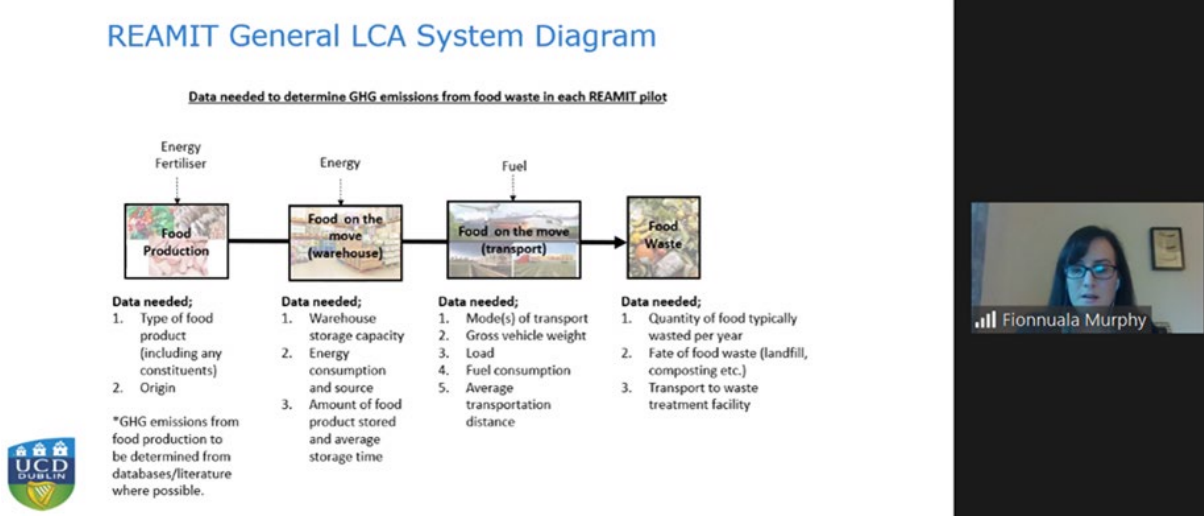
On the other hand, outward streaming of data to different partners would remain mostly common in the standard format which can be appropriately cleansed and used by analytics partners. A multi-phase approach is being followed to setup the data transfer architecture in which the first phase involves installation of SQL software, testing of basic connection to the server through VPN and Remote Desktop (RDP). Access was for internal and external users. The second phase would involve testing connection to MS SQL data base software and configuration of MS SQL software instances for access by different partners.

The third phase would involve collecting opinions of partners and developing a common architecture to standardise the process of sending and receiving data. Having completed the first phase, and with the ongoing second phase of the setup we aim to complete the future stages in coming months.

Life Cycle Assessment & CyberBar Technology at the University College Dublin

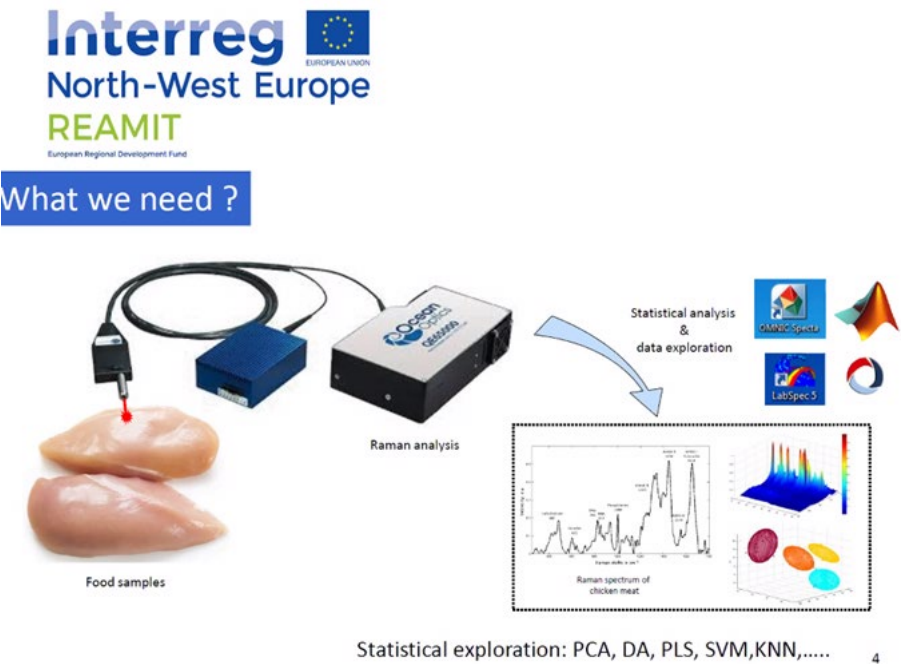


In the recent REAMIT Steering Committee Meetings, a presentation by Professor Shane Ward of the University College Dublin (UCD) provided an insight into the current CyberBar technology demonstrations taking place in Ireland. The REAMIT team in the UCD is currently testing this CyberBar technology on chicken samples. CyberBar is all about ensuring total food traceability. This provides a tamper-proof system using QR codes imprinted onto chicken fillets.



Dr. Fionnuala Murphy of the University College Dublin giving a talk on their Life Cycle Assessment (LCA) for REAMIT, at the recent project meetings in January 2021

Raman Spectroscopy trials at the University of Nantes, France



Ali Assaf of the University of Nantes has reported at the recent REAMIT project meetings that the current technology demonstration in France is still underway. By means of Raman Spectroscopy technology, University of Nantes team are testing chicken samples using this advanced spectrum. The next step in these trials is to integrate this technology into a transportable cooling enclosure, to transition between the work in labs to testing on the go, in the trucks.

Past Event Highlights

- Professor Ram Ramanathan of the University of Bedfordshire presented the REAMIT project at the Internet of Food Things (IoFT) Lunchtime talk on 22 January 2020.
- Dr Lohithaksha Maiyar, Dr Tahmina Ajmal, Professor Ram Ramanathan of University of Bedfordshire, alongside Professor Usha Ramanathan of Nottingham Trent University all presented at the Horizon 2020 – European Green Deal and co-funding opportunities by the Department of Biotechnology (DBT), Government of India - Session 2 on Farm to Fork: Testing and demonstrating systematic innovations in support of Farm to Fork strategies – 3 November 2020.
- Prof. Ram Ramanathan was the distinguished speaker at the "Technology based Entrepreneurship Development Programme" on Food Processing and Internet of Things, Amity University, Uttar Pradesh, India on 3 February 2021.
- Prof. Ram Ramanathan delivered a research seminar on the REAMIT project at the Indian Institute of Management, Tiruchirappalli, India on 5 February 2021, which received very positive response- [Please click here for link.](#)


Upcoming Events

REAMIT Project lead, Prof. Ram Ramanathan will be Keynote Speaker at the [Global Conference on Manufacture and Industrial Engineering \(GCMIE-2021\)](#), September 13-15, 2021 in Brussels, Belgium.

Testimonial received by Amity University in India

Prof. Ram Ramanathan (project lead) was the distinguished speaker at the "Technology based Entrepreneurship Development Programme" on Food Processing and Internet of Things, Amity University, Uttar Pradesh, India on 3 February 2021 and talked about the REAMIT project, which received good feedback from staff members and students. [Please click here for link.](#)

Most relevant ▾



Dr Ashwani Kr Dubey • 1st

Associate Professor at Amity University, Noida, UP, India Organizing Chair...

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Thank you so much Prof. Ramakrishnan for your wonderful presentation. It was indeed a good session. We have enjoyed and learned a lot from your session. We have noted your moto that "Saving a waste for the best" and a quote "Use the power of bigdata for social cause". You are implementing a good research project which has a direct impact onto the society. We wish you all the very best for the success of the project REAMIT.

Best Regards

Testimonial from the Indian Institute of Management, Tiruchirappalli

Prof. Ram Ramanathan delivered a research seminar on the REAMIT project at the Indian Institute of Management, Tiruchirappalli, India on 5 February 2021, which received a very positive response- [Please click here for link.](#)





Indian Institute of Management Tiruchirappalli

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IIM Trichy was honored to host Dr. [Ramakrishnan Ramanathan](#), Director of Business and Management Research Institute, Business School of the University of Bedfordshire, Luton, UK.

Through an engaging session, Dr. Ramanathan talked about his work titled "Using IoT and Big Data for minimizing food waste in agribusiness supply chains: Some recent developments from the [REAMIT](#) project". Dr. Ramanathan focused not only on the game-changing implications of his project for the betterment of the global environment but also reminded us of the role we can all play in minimizing food wastage by being more cognizant of our consumption habits.

About REAMIT

Our main objective is '**Improving Resource Efficiency of Agribusiness supply chains by Minimising waste using Big Data and Internet of Things sensors**' (REAMIT). Since reducing food waste not only increases food availability but has more benefits in the form of saving significant food production resources (water, energy, labour, fertilisers, etc.) and most importantly there are social benefits too.

This REAMIT project (www.reamit.eu) is funded by [Interreg-North West Europe](#) until June 2022 and led by the University of Bedfordshire involving 12 Academic and Industry partners. Nottingham Trent University is one of the partners leading communication, also supporting the project in reaching end-users in agribusiness supply chains and logistics.
https://youtu.be/BW_l7scboRQ

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www.reamit.eu



REAMIT is funded by Interreg North-West Europe. This project will run from 2019 to 2022, with a total budget of €4.88m.

Interreg North-West Europe (NWE) is a European Territorial Cooperation Programme funded by the European Commission.