

Enterprise Ireland Technology Gateways

Case Studies

Construction

EMD Ireland

an Enterprise Ireland
Technology Gateway cluster



Applied IoT

an Enterprise Ireland
Technology Gateway cluster





Applied IoT

an **Enterprise Ireland**
Technology Gateway cluster

The A-IoT Cluster is a consortium of five of Enterprise Ireland's Technology Gateways, providing a single point of contact for companies looking to access technical capabilities for Internet of Things (IoT) research and development.

Via the cluster, industry can connect with 300 research professionals in software, hardware, communications/networks, data analytics, control, UI/UX and trialling. The A-IoT Cluster is open to all companies, of any size, nationally and internationally.



EMD Ireland

an **Enterprise Ireland**
Technology Gateway cluster

The EMD Cluster is a consortium of six of Enterprise Ireland's Technology Gateways operating within the engineering, materials and design sector. The cluster provides a range of expertise for companies who are looking to access research and development within these areas.

The cluster can connect with over 300 industry researchers in areas such as precision engineering, biotechnology, polymers, protective coatings, prototype design, medical imaging technologies and 3D metal additive manufacturing.

Company Name:

Site Passport Ltd.

Project Type:

Direct Research Consultancy / Enterprise Ireland Innovation Voucher Programme

Project title:

Development of an online portal and secure cloud-based database structure for the construction sector to market and assess the profiles and credentials of people, organisations and projects.

Profile of Company:

Site Passport is an industry targeted SaaS vendor which provides an online business profile to companies and professionals in the construction industry to allow them to grow their business. By understanding the obstacles that prevent users from being discovered by potential clients, Site Passport provides their users with instant access to all of the key procurement influencers and decision makers within the Construction Industry.

Problem to be solved:

To be deemed competent and suitable all people and organisations in the construction sector must provide evidence that they have a suitable level of credentials and certification. At present, this is achieved through the manual checking of hard and soft copies in multiple formats, and, from multiple sources which is time consuming, costly and unreliable in practice. To alleviate this problem and reduce the amount of time spent on manual checks, while improving the monitoring and management of construction site access, Site Passport required the development of an online platform to create and assess the profiles and credentials of people, organisations and projects. A profile for each person, contractor and project would be created with various levels of access permissions, which would allow the assessment of certification and suitability through the uploading of credentials. Access can then be determined on-site through the use of a smartphone app and bespoke site access portals.

How Gateway delivered the solution for Industry:

For Site Passport Limited, IMaR designed and developed a bespoke cloud based site management system. This platform allows organisations to create and assess the profiles and credentials of people, organisations and projects and to manage staff and their roles. In addition, the platform can be used to monitor credentials and revoke access permission upon expiry.

“Collaborating with Technology Gateway through IMaR at IT Tralee gave us a great opportunity to explore and develop the best technical solutions for our business in order achieve the optimum product market fit for our customers. I would recommend using the Technology Gateway to all aspiring and established construction companies ”

Rob Fox, CEO, Site Passport Ltd.

**Company Name:**

Eurotech

Funding Source

Enterprise Ireland innovation Partnership

Profile of Company:

Eurotech, based in Co Monaghan, is a specialist renewable energy heating solutions company, offering a full consultation, design, commissioning and aftercare service. Its solutions combine underfloor heating with air, water, ground source or geothermal based heat pumps and intelligent heating controls.

Problem to Be Solved:

Identifying a unique commercial opportunity, Eurotech sought to enhance its product portfolio by developing a novel wireless energy monitoring system, which would reduce running costs and improve ease-of-use for owners and installers. Moreover, the system would be capable of operating on a wired or a stable wireless network or a possible combination of both.

How Gateway delivered solution for industry:

Eurotech enlisted the support of the TEC Technology Gateway in a project supported with Innovation Partnership funding. Using an innovative, modular approach, the TEC centre provided Eurotech with a full system requirements analysis, specification, design and build. The system developed provides an intuitive, multi-access user interface, based on current web technologies. Field trials are currently ongoing via a gsm wireless router in Mallow, Co Cork.

Impact for the Company:

The company believes that the platform has significant export potential. No other product currently on the market offers a high-intelligence, multi-zone energy monitoring solution in a single package, capable of receiving inputs as well as delivering outputs. Eurotech now plans to set up a new manufacturing and supply chain team. This will include an additional three engineers as well as a dedicated sales and marketing team.

"We quickly realised the ability of CIT to research, discover and integrate possibilities using cutting edge IT technology to transfer our thermal and mechanical know-how into a modern IT solution. We know there was no possibility that we could have made these discoveries and developments in-house. Due to the flexibility afforded us and a clear willingness to exploit every possibility, we will succeed in developing an energy monitoring solution beyond our original expectation."

Gerard Duffy, Eurotech's Managing Director

**Company Name:**

Air House Products Ltd (formerly Alucast Ltd)

Funding Source

Enterprise Ireland Innovation Voucher

Project Title:

AluCast Phase 2

Profile of Company:

Alucast are developing a product which will be marketed through their new company Air House Products. Air House Products are going to specialise in low-cost air to air heat exchangers which can be retrofitted into any existing building, both commercial and residential.

Problem to Be Solved:

The purpose of their voucher is to further refine the design of a prototype air to air heat exchanger which they have developed. The first voucher was used to complete a thermal analysis of the performance of the device while deployed in a live environment. Having shown promising results the device was carried onto phase 2. Phase 2 of the project involved refining the design of the device and adding a control system which will increase the operation efficiency of the device by minimising the operation during periods where the external conditions are not optimum for the induction of room temperature air.

How Gateway delivered solution for industry:

Extensive testing of the device was carried out during the course of the voucher project. A report of the system performance was supplied to the client which will allow them to proceed with a product which will deliver the required performance to the end user. The test report includes results from a Sound Pressure Level analysis, Flow rate testing and an estimation of an annual operating costs and air change rate.

Impact for the Company:

Alucast have decided to go to market with the hardware revision they currently have, following the testing completed during the two voucher projects. Following recommendations from Nimbus, they have been in contact with their local enterprise board as well as Gentian to bring the product to a more market-ready state.

"The Nimbus Centre are fantastic to work with. They are always at the end of the phone and are very accommodating to clients. They were very thorough in their work and provided us with a very comprehensive report. This allowed us, as a company, to progress forward with confidence. I cannot recommend visiting The Nimbus Centre highly enough."

Owen Dennehy, Sales Manager. Air House Products Ltd.

Company Name:

Standard Access

Funding Source:

Enterprsie Ireland Innovation Partnership Programme

Profile of Company:

Standard Access specialises in the acquisition, disposal and leasing of commercial real estate investments in Ireland and the UK.

Problem to Be Solved:

Through the EI Innovation Partnership Programme the IMaR Gateway investigated the feasibility of developing a uniquely combined hardware / software based electronic lock system accessible via smartphone and/or tablet, integrated with a client management platform to facilitate secure building access from anywhere in the globe. This system is targeted across both commercial and residential property markets. Smartphones were chosen because of their increasingly ubiquitous nature and their capacity to take full advantage of Internet-of-things technologies including computation, communication, and interface capabilities (e.g., a camera, Bluetooth).

How Gateway delivered solution for industry:

The development team at IMaR delivered a complimentary hardware and accompanying software solution. This involved developing state of the art hardware, software and lock combination which facilitated secure building access using a smartphone or tablet, integrated with a client management platform. During this process the Standard Access team were regularly updated on development progress and regularly visited the IMaR facilities for demonstrations and potential stakeholder visits. This regular engagement was essential as it enabled Standard Access to gain a better understanding of the potential of the technology in the market place and actively engage potential stakeholders during the development phase.

Impact for the Company:

The developed solution is now at scale stage with the assistance of the IMaR. Standard Access is beginning commercial product development for the global market.

'The impact of IMaR's service to my problem has been immense. From the start I was made to feel very welcome at all stages during development and through regular meetings my concerns were allayed almost immediately. Standard Access is now in the process of launching product onto the European, US and Russian markets in 2015. Standard access, a company that started as a small subsidiary is now preparing to launch product onto a global platform in 2015'

Damien Browne CEO Standard Access

Company Name:

Ecoballast

Funding Source

EI funded Innovation Voucher

Profile of Company:

Ecoballast Technologies is a start up company based Dunboyne, Co Meath. The company have designed and patented a new generation "Hybrid Illuminated Signage Apparatus" using EL (Electroluminescence), technology that better meets the application needs of light signage such as traffic lights.

Problem to Be Solved:

Ecoballast wanted to develop a prototype of their patented technology, the "Hybrid Illuminated Signage Apparatus" to enable them to be able to demonstrate the technology and explain the concept. Traffic lights using this technology can provide significant energy consumption benefits over the current LED technology. ETL estimates that by adopting this technology the global annual energy saving could potentially amount to in excess of €10B by 2020 while also reducing greenhouse gas emissions by up to 30M tonnes per year. There is a significant global market opportunity for traffic lights using this technology since the "new installation" global market for traffic lights is approximately €5B per year and is expected to grow at between 2% and 7% out to 2020.

How Gateway delivered solution for industry:

The WiSAR Gateway through an EI funded Innovation Voucher performed research and development on the state-of-the-art in traffic light technology and developed a proof on concept prototype to demonstrate the technology and provide initial data showing a 46% saving in energy. Ecoballast Technologies Limited now has a proof of concept traffic light based upon their patented technology to explain and demonstrate their proposed product.

Impact for the Company:

Initial results on the prototype have provided evidence of the energy saving potential of their proposed solution and will be influential as they seek investment for further development.

"In the current climate it is important for companies to continue to innovate and enhance their products. The voucher provided an excellent opportunity for small companies like us to tap into the knowledge that exists in the third level educational sector such as the specialist resources at LYIT and the WiSAR Lab,"

Managing Director, Ecoballast Technologies

Company Name:

ESB International (ESBI)

Funding Source

Case Study

Engineer training course in protective coatings

Profile of Company:

ESB International (ESBI) is a leading global engineering consultancy specialising in the utility sector. ESBI invests in, develops, designs, operates and maintains power stations both nationally and internationally, and also trades electricity in competitive European energy markets. Employing over 1,100 professional staff between its offices in Ireland and abroad, ESBI has completed projects in over 120 countries.

Problem to Be Solved:

Since 2005 ESBI have been regular clients of CREST with particular needs in the area of corrosion prevention. Following remediation works the management team in ESBI identified technical needs in the area of coatings and inspections. Following discussions with the CREST Gateway team in December 2015 a training plan was outlined and schedule put in place.

How Gateway delivered solution for industry:

In August 2016 eleven senior engineers started a bespoke course in Protective Coatings. Over the course of four Mondays the staff were introduced to coating technology and surface treatments during the morning and practical sessions in the afternoon. Using current ESBI coating systems, the staff were trained to evaluate and assess their suitability on pristine, contaminated and badly corroded surfaces. The coating challenges faced during the course were designed to mimic those experienced in the field. A company visit to Galco Steel was also included. Galco treat products from Irish companies, such as Meath Metals, that are eventually used by ESBI.

Impact for the Company:

The engineering team were exposed to the practical aspects of a range of surface treatments and coating technologies. Equipped with new tools, the team are now confident that they can take necessary preventative steps in their specifications, in identifying and treating localised corrosion failures before they require substantial remediation.

“This training has added another level of expertise for the ESBI senior engineers from Asset Management Services and HV Design; they can quickly identify suitable coatings, failures and potential treatments during the course of their work, both during the asset lifetime on site and feeding back to the design and specification stage”

**Stewart Flood ESBI Engineering, Electrical Engineer, Stations Maintenance,
Asset Management Services**



Company Name:

Northwest Aluminum

Funding Source

Enterprise Ireland Innovation Voucher

Case Study

Case Study "Development of a dry ridge roof tiling system"

Profile of Company:

Northwest Aluminum is an SME based in Donegal that manufactures and distributes Roofing and Ventilation Products.

Problem to Be Solved:

The company sought expertise from the PEM Gateway in IT Sligo through an Enterprise Ireland Innovation Voucher to further develop their dry ridge roofing system for a range of roof types including plain tile and slate mediums.

How Gateway delivered solution for industry:

The work entailed developing a 3D model of the attachment mechanism for ease of understanding to the end user. The existing drainage gasket was also optimised to present its functionality when fixed. PEM also identified ancillary opportunities and accessories that can be introduced into the current roofing fixing product line. The Gateway designed and developed a jointing solution for Northwest's slate dry verge product to overcome site fixing issues. This entailed creating 3D printed prototypes for a straight and apex jointing solution to replace "quick fix" on-site methods for jointing currently employed.

Impact for the Company:

The series of 3D prototypes of variable dimensions were tested alongside the company's existing range of verge components with satisfactory results.

"From our perspective the outcome from working with PEM and Enterprise Ireland enabled us to develop prototypes for a new product concept that we wouldn't have been able to produce in house. The prototypes that were developed have now gone into pre production and will be launched within the next few months after testing. As a result of the innovation voucher, we have now decided to continue this collaboration with PEM and increase our investment in R & D by embarking on an ambitious Innovation strategy that will be implemented on a continuous basis into the future. Innovation is paramount to our companies future success."

Daniel Gallagher the MD of NWA



Applied Polymer Technologies



Company Name:

Thinstone Ireland

Funding Source

Enterprise Ireland Innovation Voucher

Case Study

Development & Prototype Production of Foam insulated product

Company Profile:

Thinstone are based in Westport, Co Mayo and supply natural stone facing and carry out stonework all over Ireland.

Problem to be solved:

The current Thinstone product is very attractive from a visual standpoint but does not add to the insulation of the house – a new product was to be developed that contained insulating properties.

How Gateway delivered solution for industry:

APT has significant experience in the chemistry of Polyurethane foams (used for insulation). APT has worked with thinstone to create a new polymer foam that adds to the insulating properties of the stone and adheres to all of the materials needed for attaching the thinstone product to a home.

Impact for the Company:

The innovation voucher was extremely successful. Thinstone have a new prototype that they are doing market research on with a view to launching a new product range. Additionally, Thinstone are committed to continuing the partnership with APT to develop a lean manufacturing method for their new product range.

'APT were able to identify the materials we needed to work with and the correct suppliers as well as helping us design the new product and guide us with regards to insulating requirements – They have been, and continue to be, an invaluable resource for a small company such as ourselves.'

Tom Wilson

Company Name:

Smart Wall Paint

Funding Source

Feasibility study - Innovation Partnership Programme

Case Study

Development & Prototype Production of Foam insulated product

Company Profile:

Smart Wall Paint is Dublin based high potential start up company that is manufacturing and distributing a paint which turns any surface into a whiteboard.

How Gateway delivered solution for industry:

Once the Smart Wall Paint is painted onto any surface it becomes a high performance dry erasable and durable whiteboard. The main customers are Education Institutes and Businesses that use the whiteboard spaces for Innovation, Training and Idea Generation sessions. The company approached the CREST Gateway in DIT, part of the EI funded Technology Gateway Network, to undertake a material development investigation on the paint that will enhance its functionality and its capacity to be used with a variety of visual aids that be utilised in Innovation and Training sessions.

Impact for the Company:

This project was funded as a feasibility study under the Innovation Partnership Programme and the initial results achieved were so encouraging the company has committed to a Full Innovation Partnership with CREST which was completed in 2014.

“What will come out of this will be huge for us and for a small Irish company to be able to do that kind of R&D, without that innovation partnership scheme it just wouldn’t happen.”

Ronan Clarke, Company Director



Company Name:

Bustard Heating

Funding Source

EI funded Innovation Voucher

Profile of Company:

‘Optimisation and product development for an autonomous mobile heat control device.’
Bustard Heating is an SME based in Donegal that provides a range of heating and plumbing services to the domestic and commercial building markets.

Problem to Be Solved:

As an ancillary to their core heating and plumbing business, the company install a range of renewable energy and heat saving products. One such product is their “Mobile Heat Switch” used to autonomously control heating and hot water systems by SMS phone text activation. The company were keen to optimise their heat switch product by developing further end user functions and to introduce a manual / time clock control interface to their device. They were also keen to optimise the reconfiguration of the products interface components, dimensions and aesthetics to make it a more viable product of choice in the market place.

How Gateway delivered solution for industry:

Through an Enterprise Ireland Innovation Voucher the PEM Gateway in IT Sligo undertook an investigation to optimise the existing mobile heat switch device by re-designing the control box interface so that a manual time-clock activation device could be integrated , offering the end user both remote & manual setting functions. This included a 3D printed component to realise the design modifications and to test compatibility with the existing heat switch device. The Gateway also investigated other options beyond GSM/SMS by developing a prototype arduino board and programme to perform existing functions as well as additional diagnostics for the end user. PEM also reduced the packaging profile of the device by reducing the scale and dimensions of the product through re-design of its housing and internal components.

Impact for the Company:

The engagement with IT Sligo enabled the company to act on feedback received from their client base by re-designing and creating a number of additional functions for their mobile heat switch product. Solutions for optimising the design, functionality and user interface / control functions were progressed to prototype development stage as part of this project. It is hoped that with customer feedback, these adjustments can be progressed to a further stage of product development.

“Operating in a progressive and fast changing building services market it is important that we act on end user feedback to optimise our products. The R&D input supported by the innovation voucher initiative was invaluable in helping us realise necessary and further potential for our heat switch device.”

Trevor Bustard, Bustard Heating



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