IMaR
Technology Gateway

INTELLIGENT MECHATRONICS AND RFID

Introduction

IMaR provides an open access point to industry for the provision of innovative applied research and technical expertise nationally and internationally. Research and Development at IMaR focuses on the strategic integration of both hardware and software (Mechatronics, RFID, Internet of Things (IoT) and Sensor Technologies) in the form of intelligent systems development. IMaR is part of the nationwide network of 12 Technology Gateways core funded by Enterprise Ireland whose role is to deliver technology solutions through collaboration on projects which are close to the market needs of Irish industry. The IMaR Technology Gateway serves a diverse cross section of industries including automotive, telecommunications, pharmaceutical, production/manufacturing, aeronautical, environmental and agri-business. IMaR specialises in the implementation of automatic identification technologies such as RFID equipped to deliver supply chain/logistical efficiencies. IMaR also exploits the use of smart Mechatronics via precision instrumentation and automation conditioning to enhance process automation, reduce lead times and increase validation processes across Ireland's Manufacturing base.

Minister Launches IMaR Technology Gateway

On Friday 22nd November 2013, Jimmy Deenihan T.D. Minister for Arts, Heritage and the Gaeltacht officially launched the Enterprise Ireland funded IMaR Technology Gateway based at the Institute of Technology, Tralee. IMaR acts as the 'Research & Development arm' of companies to deliver solutions to regional and national industry using technologies including Radio Frequency Identification (RFID), Sensors, Mechatronics and Industrial Automation.

IMaR was formed through an amalgamation of two successful applied research centres; The Centre of Intelligent Mechatronics and Sensor Systems (CIMSS) and The Centre for Innovation in Distributed Systems (CIDS). Combined, these research centres have worked with close to 100 companies, contributing significantly to the economy of the region. Since its formation in April 2013, IMaR has injected in excess of €10,000 of funding each month into both local and national industry.

Addressing guests at the official launch event Minister Deenihan said "*The role of Government is to create the conditions where enterprise, entrepreneurship and innovation can flourish and quality employment opportunities can be grown and maintained. By funding the Technology Gateway Network, the Government's primary goal is to generate growth and create employment in the towns and cities around Ireland. This programme will facilitate access for companies all over Ireland to industry-relevant solutions to technology challenges*".

*IMaR Official launch (L-R): **Jerry Moloney** (Enterprise Ireland), **Dr. Oliver Murphy** (President of IT Tralee), **Minister Jimmy Dehinhan**, (Minister of Arts, Heritage and the Gaelteacht) **Dr. Ultan Mc Carthy** (IMaR Centre Manager), **Brid Mc Elligott** (Head of Development IT Tralee).*

Research & Development is vital for the survival of industries today and every company wants to know what the next 'big thing' is in their sector. Currently the Institute of Technology, Tralee and the IMaR Technology Gateway are leading a wide range of industry focussed projects including RFID and ICT based technology development projects targeted at SME's, including a €1.6 million pan-european project

developing next generation agricultural equipment, with partners such as Dairymaster. This project is supported by the European Union through the 7th Framework Programme (FP7) "Research for the benefit of SMEs".

Dr Oliver Murphy, President, Institute of Technology, Tralee *stated that "To improve the competitiveness of our regions in Ireland it is imperative that we provide an innovative environment that provides support for research, education and infrastructure. Technology Gateways have already proven to be very successful in engaging with local industry and the Institute now has the opportunity to increase these engagements and to shift to longer term, more significant cooperative relationships".*

The IMaR Technology Gateway focusses on providing technology solutions for manufacturing industries and have already engaged with companies such as Dairymaster, Altobridge, Central Solutions, Astellas, Borgwarner Beru Systems and Kostal.

How can IMaR help you

There is no set defined pattern of engagement with companies. At IMaR we commonly engage with companies in a number of ways but we are open to suggestion and would love to hear from you.

Common engagement mechanisms with companies include:

- National funding mechanisms
- Service Level Agreements
- FP7 / Horizon 2020
- Consultancy
- Direct costed R&D

Industrial Partners

Industrial engagement at IMaR spans across a number of key sectors. A number of our industrial partners include;

Events: Vision ID "Experience is everything"…

Showcasing the "store of the future", the retail technology seminar and exhibition organised by VisionID took place in City West, Dublin on 22 October 2013 and provided an insight into futuristic technologies which are revolutionising the industry, driving down costs and improving customer experiences.

On the day, IMaR Center Manager Dr. Ultan McCarthy made a presentation and attendees met with IMaR staff at our stand and viewed the technology in action.

Delegates also heard presentations from Industry experts such as Denis O Brien from GS1, Mark Thompson from Motorola; Damian O Reilly, DIT and Graham Merriman, Carrickane Consulting giving attendees an overview of the impact of introducing such technologies within their companies.

Research Themes at IMaR

Our principal competencies are built on the design and development of Intelligent Mechatronics and RFID innovative solutions for industrial applications. Research and development at IMaR focuses on the strategic integration of both hardware and software (Mechatronics, RFID, Internet of Things (IoT) and Sensor Technologies) to enhance intelligent systems development to support manufacturing and increase cost competiveness.

The IMaR Technology Gateway provides a world class R&D centre serving a diverse cross section of industries including automotive, telecommunications, pharmaceutical, production/manufacturing, aeronautical, environmental and agri-business.

INTELLIGENT MECHATRONICS STRAND

- System and Equipment Development
- Product / process automation
- Electronic prototyping design
- Mechanical Design and Prototyping
- Precision instrumentation
- Automated End-of-line and Life cycle testing

RADIO FREQUENCY IDENTIFICATION (RFID) AND INTERNET OF THINGS (IOT) STRAND

- Radio Frequency Identification (RFID) intergration
- Data Analytics, Software Development and Artificial Intelligence
- Back end Supported development

Postgraduate Opportunities through Research:

An increasing number of students are undertaking postgraduate research for Masters or PhD Degrees. Subject areas available for a postgraduate research degree are usually determined by the current research activities of the particular School or Department.

The Institute of Technology, Tralee is at the forefront of innovative research and collaborative links with industry are an integral and fundamental part of research undertaken at the IMaR Technology Gateway. It serves to facilitate the transfer of advances in academic research to applications in business and industry. Our research programme seeks to further strengthen the capacity of the Institute in a manner which will both enhance the educational programmes being offered to our students and also enable us to serve the economic, social and cultural requirments of the region.

Please visit our web site to see a lst of available postgraduate positions.

Contact us

If you or your company are interested in working with IMaR of if you feel IMaR can help you please do not hesitate to contact us

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