

Case Study

Atrial Fibrillation Screening Monitor Prototype

CLIENT – Melys Diagnostics Ltd

BRIEF – Design and develop commercial prototype of new medical screening device to facilitate raising of investment or worldwide licensing agreements

ACTION – Design and develop printed circuit board, hardware and software in conjunction with third party enclosure designer. Produce associated documentation to facilitate production from the prototype design.

OUTPUT – Our client sent six commercial prototypes to potential manufacturing and commercial partners in China, the USA and the UK. Investors who previously discounted the engineering prototype showed renewed interest in the product and its market potential. Significant commercial partners in the medical sector have held advanced discussions with a view to signing licensing agreements. Our client expects to sign the first commercial agreements in the near future. When launched, the monitor will readily identify patients with irregular heartbeats who are 4-6 times more susceptible than normal to strokes.

"Your team had total understanding of our project goals and a complete command of the electronics needed. You developed our 'engineering prototype' into a finished, working design we could take directly to worldwide manufacturers and potential investors. One US manufacturer told us your documentation was so good that it required no further work and could go straight to production. This seldom occurs.

We chose CEPE on the basis of a strong recommendation. We would also fully endorse your services to other companies."

Dawood Parker, Managing Director, Melys Diagnostics Ltd

Case Study

Recommend and Design New Wireless Keypad

CLIENT – Lodgesons Ltd

BRIEF – Investigate options to update existing infrared keypad to wireless device with enhanced functionality

ACTION – The CEPE team evaluated alternative wireless technologies and provided a bespoke short range wireless solution which met the full range of client and end user requirements, and embedded this solution into a new keypad design.

OUTPUT – Our client launched a product range incorporating the selected wireless technology which has:

- Facilitated the incorporation of new functionality including speech synthesis features
- Enabled updates to be performed through the integral keypad without the need for specialist equipment or technicians
- Opened access to EU and other worldwide markets
- Considerably increased their sales and reputation
- Maintained their position as market leader

Key Contacts



Steve Gardner
CEPE Manager
and Principal
Lecturer, Steve has
extensive experience
in both academic and

commercial environments. He specialises in and manages research programmes working in the areas of Mobile Application Development, Remote Monitoring Networks using Integrated Mobile, Wireless and Internet facilities, related security issues, embedded devices and the delivery of mobile-to-mobile multimedia services.

A key element to his research is the subsequent development of practical products and services for private and public sector organisations.



Dr Ralf Patz
Head of the Medical
Electronics and
Signal Processing
Research Unit
(MESPRU), Ralf has

been involved in the Centre for Electronic Product Engineering since 1995, providing consultancy and technology transfer to companies. He is a Senior Lecturer with 8 years experience of teaching at undergraduate and postgraduate levels and achieved his PhD in Medical Signal Processing from the University of Glamorgan in 2003.

Ralf is active in research and consultancy in the areas of Medical Electronics, Signal Processing and Embedded Systems. His research interests include Instrumentation for Magnetic Induction Tomography (MIT), Digital System Design, Embedded Systems, Signal Processing and Digital System Design.



Having previously engaged CEPE with great results, they were a natural choice to help us develop a new product range.

The success we have enjoyed as a direct result of their work speaks volumes, but we also appreciated their unbiased approach, ongoing interaction with our team and their understanding of our budget and timeframe.

Andrew Law
Managing Director
Lodgesons Ltd



Foremost South Wales Centre supporting industry with expert advice, feasibility studies and development of products and solutions in the microelectronic, electronic, embedded systems, embedded internet and wireless communications, and related fields.

Welsh Assembly Government Centre of Excellence for Technology and Industrial Collaboration (2001-7).

Providing a range of knowledge transfer services, the Centre for Electronic Product Engineering (CEPE) provides clients with full access to 'new to them' technologies to facilitate new product, process and solution development. Working closely with research groups based in the Faculty of Advanced Technology at the University, CEPE helps clients to move up the technology 'ladder' and, regularly, establish a position at the forefront of their market.

Specialist Expertise

Centred around a strong industrial and commercial orientation, our team has a vast knowledge of current technologies and future trends. Our expertise in analogue and digital systems, information and communication technologies and both technical and project management facilitates specialist application knowledge in the following fields:

- Embedded Systems Development
- Remote Data collection, Monitoring and Control
- Short Range Wireless Solutions
- Medical Instrumentation and Signal Processing
- Radio Frequency Identification (RFID)
- Global Mobile Connectivity

To maintain our position as the leading technology partner for new and existing clients, we are continuously researching new technologies and enhancing our team of industry experts.

Delivering Client Results

The Centre has a proven track record of successfully introducing new microelectronics technologies to companies in diverse industry sectors, including the automotive, bioscience, chemical, food processing, industrial control, instrumentation, medical and recycling markets. Our team jealously guards our reputation for project delivery.

Our Clients

We include a broad cross-section of small, medium and large companies amongst our clients across Wales. Appreciating the value from working in a true partnership, numerous clients maintain a working relationship with CEPE over many years and many projects.

About Us

Over many years, the Centre for Electronic Product Engineering has established itself as a key innovation partner for Welsh companies. It was awarded Centre of Expertise status by the Welsh Development Agency in 1994 and appointed as a Centre of Excellence in 2001.