Cardiauvergne, almerys and Digi save lives and money, as France pilots M2M-based cardiac care

Each year, the US-based M2M systems and services provider, Digi International hosts two User Group conferences – one in the US and the other in Europe. The French Riviera again played host to 140 delegates who heard about a life-and-death critical healthcare application being trialled in France.

An insight into the challenges of extending a successful pilot telehealth scheme into a nationwide roll-out were highlighted in a presentation by Robert Boualit, health services director at **almerys**, a French client of **Digi International**.

Cardiauvergne was France's first co-ordinated heart care service to use telemedicine tools. Operational since January 2011, Cardiauvergne has already supported more than 300 patients, 250 doctors, 230 pharmacies, and 500 nurses receiving up to 80 alerts per day.

At the start of this initiative the goal for Professor Cassagnes, chief of Cardiology in Clermont-Ferrand, was to strengthen the co-ordination of care and the monitoring and education of patients with the most serious cardiac conditions in the Auvergne region. Chronic heart failure is the most common cause of

hospitalisation among patients of 60 years or older in France. Medical monitoring, emergency response, hospitalisation and treatment can be very expensive for the patient and for healthcare providers.

Aware of this major public health issue, the Auvergne Regional Health Agency supported the creation of Cardiauvergne, as a not-for-profit initiative offering a free service to patients. Cardiauvergne chose almerys for its experience in wireless data and financial transactions within the French healthcare system. Founded in 2000 by state-owned network operator **France Telecom**, almerys is now a subsidiary of **Orange** and is the French market leader in third-party insurance payment systems.

A common indicator of a heart treatment failure is that the patient starts to retain salt and water and ➜

> **"The return on investment works out at €5,000 – €6,000 per patient per year."**
> **Robert Boualit, almerys**

gains weight. This correlation is so strong that if a patient's weight is monitored regularly any weight gain can provide a crucial warning signal, enabling medical professionals to take action.

The mission for almerys was to develop a system of in-home monitoring that would collect the patient's weight data daily, and transfer it quickly and securely to the co-ordination unit. The unit would then make the appropriate medical decisions.

"With medical monitoring applications there is always health at stake," said Robert Boualit, health services director at almerys. "Our goal was to develop a system that had a secure infrastructure that we could control entirely. We could not rely on (finding) established internet connections and computer equipment for patients who, for the most part, are elderly residing in rural areas. We wanted to design a system that would operate independently – out of the box – wherever it was placed."

The solution was to network a weighing scale using a wireless module that would collect and transfer data back to the co-ordination unit. Following a comparative study of several suppliers recommended by Orange, almerys chose Digi ConnectPort X3 gateway and the Digi Transport WR41 to form the communication piece of its solution.

"We wanted to be up and running quickly and Digi provided us with the rapid development environment we needed. Its solutions were easily integrated into our IT platform. The solution was ready in less than two months, and enabled us to get to the markiet quickly," explained Boualit.

The ConnectPort X3 is connected via the serial cable to the weighing scales provided to the patient. Daily weight readings are recorded by the ConnectPort X3, which is programmed in open source with Python to the Device

Cloud by Etherios™ platform that remotely manages the operation of the devices. The data is then transmitted to a secure almerys server which communicates it on to the health co-ordination unit. The Digi Transport WR41 is used where the patient's home is not covered by a 3G or RTT network. The WR41 transfers the weight data via the fixed line network.

The pilot project began in September 2011 and so far 315 patients have been monitored. Cardiauvergne has responded to over 600 alarms, with responses ranging from calling the patient to organising emergency hospitalisation. "This has averted 600 health crises and, in critical cases, helped us save lives," said Professor Jean Cassagnes, cardiologist and medical director at Cardiauvergne.

"In 2013 our goal is to extend our offering to other networks and healthcare organisations specialising in heart failure in France," said Robert Boualit. "Looking to the future, we hope to continue our collaboration with Digi to develop a telehealth application that can remotely monitor a number of different health indicators, such as body temperature, heart rate, and so on."

As Boualit's presentation showed, for an outlay of €15.00 per patient per day, the return on investment works out at €5,000 - 6,000 per patient per year. Most of the saving reportedly comes in avoiding hospitalisations. The French Ministry of Health approved an expansion of the pilot following the recent visit of President Francois Hollande. ✚

M2M Now Jargon Buster

ARPU = Average Revenue Per User

GSMA = Global System for Mobile communications Association

MVNO = Mobile Virtual Network Operator

RTT = Radio Transmission Technology

TTM = Time-to-Market

Digi conference

In his keynote presentation to the Digi conference, Jeremy Cowan, the editor of *M2M Now*, focused on the industry's urgent need for simplicity. "There have been enormous strides forward in telematics, automotive, agriculture, and healthcare services just to name a few," he said. "M2M is Good News – and this is echoed by the CEOs that I speak to: M2M services are growing well, … even if profits are growing more slowly than connections."

One of the things holding back M2M, he said, is low profitability. In fact, some of the challenges are closely inter-related. He pointed to the complex delivery model for M2M applications, and the urgent need to cut time-to-market for new services. Solve one of these problems and you make it easier to solve another.

Complex, crowded supply chains

M2M service delivery often contains eight or more ecosystem partners, all of whom need to take a share of the revenue. Compare this, he said, to the four or five partners involved in the delivery of mobile voice communication services, and it becomes easier to see why some M2M applications, already plagued by low ARPU, find it hard to achieve an attractive return on investment.

The good news, Cowan added, is that M2M network connections worldwide are currently growing at 25 - 30% per year, and **Beecham Research** forecasts faster growth to come (see webinar, How to launch an M2M customer in 30 days, www.M2MNow.biz). He went on to describe the re-shaping of the current M2M landscape with original device manufacturers getting involved in platform provision, platform developers turning into catalysts for new global operator alliances, and MVNOs becoming Managed Service Providers.

"Clearly, the whole M2M 'industry', if we can call it that now, is re-inventing itself," he said, "not just to drive down costs but also for service innovation."