Case Study
Intel® IoT Gateway
Intel® DK100 Series Development Kit
Internet of Things
Manufacturing

ICT develops predictive services

ICT Automatisering runs iOTA* on the Intel® IoT Gateway, an Internet of Things solution that helps customers connect new and legacy devices to extract maximum value from the data residing within them

ICT Automatisering

With customer interest in the Internet of Things (IoT) growing, ICT Automatisering (ICT) identified an opportunity to create a single end-to-end solution which bundles the software, communication infrastructure, data analytics, and business apps of an IoT deployment into a single platform. Bringing together ICT's software, apps, and cloud expertise and the Intel® IoT Gateway, the resulting Internet of Things Analytics* (iOTA)* solution reduces costs and deployment time for IoT solutions.

Challenge

- **Customer demand.** ICT's clients in the commercial, industrial, and energy market segments were increasingly interested in the possibilities of the IoT but unsure about how best to realize the potential benefits
- **Securing data.** ICT needed to develop an IoT solution that would reassure customers who were concerned about the security of sensitive commercial data
- **Time and costs.** ICT also recognized that traditional IoT implementations could be lengthy and costly. It wanted a scalable, interoperable, and flexible solution that could be implemented quickly in a variety of use cases

Solution

- **IoT packaged solution.** ICT developed iOTA, an end-to-end solution based on ICT's own expertise in embedded systems and cloud deployments that bundles together software, applications, security, and connectivity infrastructure
- **Intelligent gateway.** iOTA includes the Intel IoT Gateway, which collects, filters, and normalizes sensor data from the network edge for analysis and dissemination through the cloud
- **Enhanced security.** The Intel IoT Gateway includes Embedded Control* from McAfee, which maximizes the gateway's security features

Impact

- **Predictive maintenance.** ICT's customers can use iOTA to gather data about their operations, optimizing corrective and preventative maintenance, improving system uptime, enhancing service availability, and prolonging equipment lifetime
- **Predictive diagnostics.** Customers can use data gathered during maintenance and held within the system to retain, extend, and enhance the expertise of their workforces
- **Predictive marketing.** ICT's equipment builders/manufacturing customers can use data to identify how equipment is used in production and use the insight for more relevant and accurate product development

An intelligent gateway for the Internet of Things

"The Intel® IoT Gateway delivers on all fronts. In addition to its essential security features, it enables ICT to implement advanced data management and analytics from sensor through to data center. And because it uses technologies that seamlessly communicate with each other, it helps us achieve our goals for shorter time to market and reduced deployment costs."

John Koot,
IoT Business Development Manager,
ICT Automatisering

Realizing the benefits of the Internet of Things

"The IoT is becoming reality at a rapid pace," says John Koot, IoT business development manager at ICT, one of the leading systems integrators and IT solution providers in the Netherlands. "It is a subject that our clients raise with us again and again. But although organizations know that there are significant benefits to be had from connecting their appliances, sensors, and embedded objects to the Internet, they aren't sure how best to go about it. Our role is to help them realize those benefits. It is a huge business opportunity for them – and for us."

Creating a secure IoT solution for its clients is a perfect fit for the company's strategy and strengths. The company serves businesses in six key market segments: automotive, industrial automation, logistics, machine and systems, healthcare, and energy. With its extensive experience of both embedded systems and cloud developments, ICT's goal has always been to enhance its clients' flexibility and simplify their operations, while improving their business, production, and communication processes.

"The market segments in which we specialize are also those that present the most obvious opportunities for IoT solutions," says Koot. "We have built our business on meeting client demand for affordable, reliable solutions and de-risking the deployment of new technologies. We wanted to develop an IoT solution to fit that profile."

Unlocking data within the enterprise

For many of ICT's customers, the adoption of an IoT solution involves connecting legacy devices and equipment to the relevant business applications and then on to the cloud. As Koot points out, there is a large installed base of standalone equipment that has the potential to be connected.

"It is generally acknowledged that more than 85 percent of current devices are in isolated systems," he says. "Naturally, customers want to preserve the investment they have already made, but retrofitting connectivity to an installed base of equipment can be time consuming and resource intensive. We wanted to develop a repeatable solution that would simplify our customers' move to IoT and which we could deploy in any number of different scenarios."

To enable its customers to connect legacy systems and transfer data seamlessly and securely from the edge to the cloud, ICT developed iOTA - a single end-to-end solution that bundles the software, communication infrastructure, data analytics, and business apps of an IoT deployment into a single platform. It brings together three key functions: connecting devices in a client's estate, controlling and managing those devices, and turning the data it gathers into actionable information.

"We built iOTA on three core principles: connect, control, and predict," says Koot. It's about making it as easy as possible for our clients to manage the devices and equipment they connect together and extracting maximum value from the data that is produced."

Ensuring security and interoperability

ICT developed the iOTA software platform informed by its own expertise in embedded systems and cloud deployments. But it needed a gateway to complete the chain. The company turned to Intel and selected the Intel® IoT Gateway DK100 Series Development Kit with the Intel IoT Gateway to complete its iOTA solution.

The Intel IoT Gateway integrates technologies for networking, embedded control, enterprise-grade security, and manageability to enable connectivity between new and legacy devices. It then collects sensor data at the network edge and acts as a filter to analyze and normalize the data for sharing through the network and into the cloud.

Crucially for ICT, the Intel IoT DK100 Series Development Kit includes Embedded Control from McAfee, which maximizes the gateway's security features, as well as Wind River Intelligent Device Platform* XT and Wind River Workbench*, which provide a proven development environment. "Security is understandably a big concern for our customers," explains Koot. "So the pre-integrated and pre-validated hardware and software from Intel, McAfee, and Wind River were important considerations."

As a system integrator, ICT also needed high levels of interoperability, scalability, and manageability to ensure the iOTA solution could be deployed in a wide variety of situations and for a range of business use cases. "The Intel IoT Gateway delivers on all fronts," says Koot. "In addition to its essential security features, it offers advanced data management and analytics from sensor through to data center. And because it uses technologies that seamlessly communicate with each other, it helps us achieve our goals for shorter time to market, reduced costs for deployment, and Predictive Services."

Internet of Things and Predictive Services

ICT is clear about the benefits it offers for both users of industrial equipment and manufacturers. It calculates that a traditional IoT deployment can take between six and 18 months. Because it combines local device management, data collection, and data management in a single solution, iOTA can reduce deployment time to less than six months.

iOTA is the central plank of ICT's Predictive Services business line. "It starts with Predictive Maintenance," says Koot. "Once organizations start gathering data from machines in use, they gain powerful insight into how best to optimize operations, using both corrective and preventative maintenance to improve system uptime, enhance service availability, and prolong the useful life of equipment." The same insight can be fed into equipment manufacture to improve system design and to ensure that customers get the features they want. Predictive Marketing enables swifter product improvement, reduces costs associated with product development, and cuts time to market and profit.

The final area of Predictive Services is Predictive Diagnostics. "Industry has a demographic problem," Koot points out. "The workforce is aging and, as engineers retire, critical knowledge retires with them. By collecting and analyzing data on where, why and how maintenance is carried out, iOTA ensures that expertise remains within the system.

"iOTA enables our customers to take advantage of the Internet of Things, unlock the huge amount of data residing in their organizations, and use it to create a more responsive, reliable, and resilient business," concludes Koot. "Predictive Services is just the start. It's going to transform business."

For more information please visit www.predictive-services.com

Spotlight on ICT Automatisering

ICT Automatisering has built its business on three core pillars: people, technology, and ideas. One of the leading systems integrators in the Netherlands, it serves customers across Europe and the U.S. It is committed to simplifying its clients' operations and improving their businesses through enhanced production and communication processes, specialist and in-depth IT knowledge, and innovative solutions enriched by the latest technologies.

Find the solution that's right for your organization. For further information please visit www.intel.com/iot

0115/RS/CC/XX/PDF