(intel®)

A Faster, Simpler Way to Enable End-to-End IoT Solutions in Industry

Leading IoT solution provider Telit is offering deviceWISE, an application enablement platform running on Intel® IoT Gateway Technology that greatly simplifies the process of implementing IoT solutions.

deviceWISE can turn any Intel IoT development platform into an Industry 4.0 on-ramp

Executive Summary

The Internet of Things (IoT) and Industry 4.0 are delivering better results with lower costs at almost every level of operations. Process optimization through integrated IT systems boosts productivity, speeds the response to customer needs, drives revenue growth, and more. Industry 4.0 transformations also enable predictive maintenance, which maximizes machine uptime while reducing costs for parts, labor, and supplies to maintain equipment. However, transitioning to an Industry 4.0 connected and networked operational model can generate tremendous organizational and technological challenges. Many industrial businesses—from manufacturing to energy and agricultural—have a wide range of devices operating on a number of different communication protocols. What's more, many have custom-built software that offers limited interoperability across their organization, and can be expensive to update and maintain.

Leveraging deep expertise in industrial automation and IoT, Telit has developed the deviceWISE asset gateway software agent and cloud-based Telit IoT Platform. They can turn any Intel IoT developer platform into an intelligent Industry 4.0 on-ramp to full IoT implementation. deviceWISE provides a logic engine with an extensive library of industrial machine protocols and drivers, resulting in a best-in-class Industry 4.0 Asset Gateway offering. Solutions that are based on Intel® IoT Gateway Technology and powered by Telit's deviceWISE platform provide leading performance and security for intelligence at the edge, enabling near-real-time analysis and tighter, more efficient process controls, all while reducing data transmission costs.

Solutions to IT Problems Affect All Aspects of Modern Businesses

The question of how to improve your utilization of IT resources has become one that affects every aspect of an enterprise's business operations and profitability. It also affects everyone's day-to-day activities, from the CEO to the employee on the factory floor. This convergence of IT and OT is driving the need for simpler solutions that are easier to implement. When fully realized, IT-enabled production can deliver higher quality and better customer service with greater efficiency.

Telit®

More Available, but Also More Complex

Developments in IoT technology have made the assets required to develop transformative IoT solutions more available and more affordable. Simultaneously, high-speed networking has become widely available, even in remote locations. This evolution has led to a great number of different devices, speaking different languages, and requiring different approaches to connecting them to enterprise management applications. Many factory floors are a diverse collection of technologies, platforms, robotics, machines, and tools, and this mixed bag of solutions is rarely compatible with back-end platforms for MES, CRM, and other management, and decision-making software. The internal resources required to overcome these challenges are still expensive, which can dilute the business value of Industry 4.0, and in some cases make it cost prohibitive.

What's more, the enterprise business requirements require custom-built solutions, which are time intensive and expensive to implement. And when a new process, technology, or machine needs to be brought online, creating wholly new, custom software and drivers limits the speed at which new solutions can be implemented.

deviceWISE Is Changing the IoT Equation

Acting as a universal translator for the factory floor, deviceWISE is the industry-leading, enterprise-grade industrial automation platform designed to easily connect disparate production equipment from different suppliers to enterprise systems. This equipment—which would otherwise be siloed—can be connected without custom programming, even if each machine uses different protocols, interfaces, and applications. Preconfigured for cloud connectivity and integration via Telit's IoT Portal, the scalable architecture of deviceWISE is configurable to meet the needs of multiple industrial environments and existing technologies and tools by leveraging a vast library of standardized device drivers and enterprise connectors.

Connecting Virtually Any Device to Enterprise Applications

Powering the interoperability of deviceWISE is a massive library of native drivers for virtually any sensor, RFID tag reader, programmable logic controller (PLC), microcontroller, industrial router, or other industrial machine. These drivers support device communication for tighter controls over machine operations and better visibility of assets across the enterprise. With these devices connected to gateways, it will be possible to perform real-time edge analytics, and connect equipment to the cloud and to enterprise management software. To help you fully realize the investments you've made in enterprise systems, deviceWISE offers built-in cloud connectivity, and integrates with legacy stems of many different types, so there's no need to change your enterprise, or even to shift your usage of it.
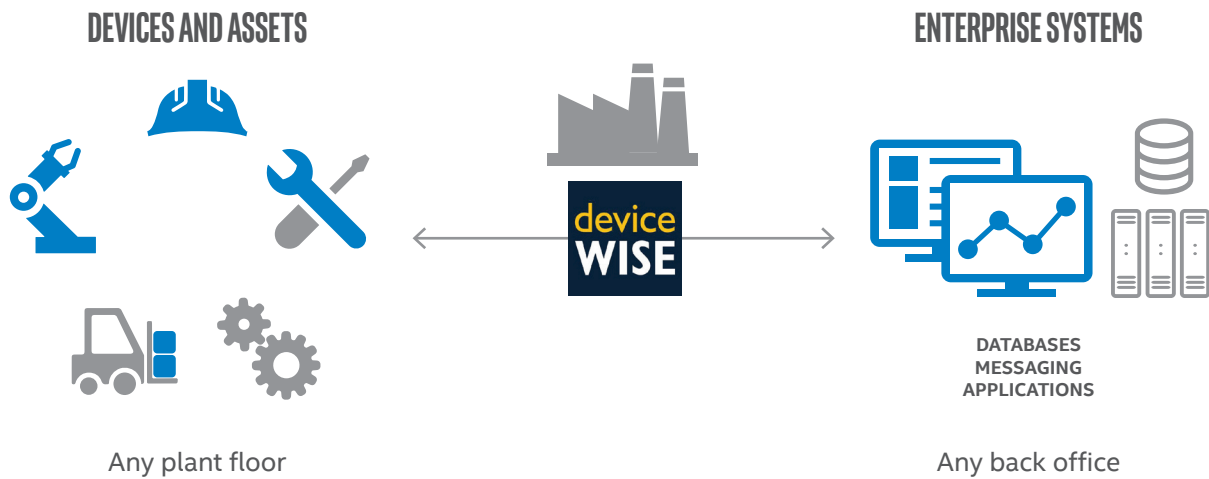

DEVICES AND ASSETS

ENTERPRISE SYSTEMS

deviceWISE

DATABASES
MESSAGING
APPLICATIONS

Any plant floor

Any back office

Figure 1. One common tool saves development and maintenance time and cost for both OT and IT.

Designed to Support a Wide Array of Businesses

deviceWISE runs on any computer system. It is also able to run on programmable logic controllers (PLC), rack systems, or backplanes. Once deviceWISE is fully implemented, virtually any machine, sensor, or other device can begin to transfer bidirectional data—both sending edge data to enterprise software, and receiving logic and instructions. Simple-to-use graphical tools can be used to configure these new networks of machines, the cloud, and enterprise software. Your IT developers will not have to learn new programming languages or go to the effort of writing lengthy custom code.

Flexibility Delivers Results

Maintaining your competitiveness means being more flexible with the same amount of resources. For example, a manufacturer may need to be able to ramp up production to respond to economic forces without increasing staff. Achieving desired results may also require a business to find new ways to maximize coordination between different plants and other resources or it may need to create different types of facilities to serve different purposes. If these facilities lack the ability to work with each other and the back office efficiently, key opportunities may be lost.

With the deviceWISE platform and Intel IoT Gateway Technology, businesses can leverage analytics insights and tighter process controls to respond dynamically and increase productivity. They can rapidly bring on other resources or coordinate with satellite facilities to assist in achieving the ever more demanding business goals. Solutions that would take a large amount of custom programming, such as the creation of new drivers to incorporate new machines or tools, are implemented in a fraction of the time with deviceWISE.

Scalability for Varying Requirements

With Intel Inside®, Intel IoT Gateway Technology provides an inherently flexible and scalable infrastructure from the edge to the data center. Support for Intel® Quark™, Intel® Atom™, and Intel® Core™ processors means solutions based on Intel IoT Gateway Technology have the performance to support a range of workload requirements, both today and in the future.

Figure 2. deviceWISE is helping a great number of industries and markets transition to Industry 4.0.

The Key Components of deviceWISE

Asset Gateway Agent

The deviceWISE Asset Gateway is one of the essential components of the Telit IoT Platform. At its core, the Asset Gateway—which runs on Windows* or Linux*—is software that communicates with the company's assets, processes any data, and sends the processed data either to the Telit IoT Portal or to one of the enterprise applications via a deviceWISE Enterprise Gateway. The Asset Gateway uses the deviceWISE Workbench to configure its innovative logic engine that enables rapid development of applications—eliminating time-consuming custom application development and testing that accompany many custom applications. The deviceWISE Asset Gateway software agent acts as a server. deviceWISE Workbench connects to the agent and can be used to connect, configure, and fetch data from the assets connected to it.

Telit IoT Portal

The Telit IoT Portal is a hosted service that handles all security, messaging, device management, and administration for the application solution. The IoT Portal is configured and monitored using the web-based Management Portal.

Enterprise Gateway Agent

The deviceWISE Enterprise Gateway provides enterprise-grade software that is installed in the back office to instantly map data from the deviceWISE AEP to enterprise applications such as Microsoft MSMQ, IBM WebSphere* AS, IBM MQ*, IBM Maximo*, Oracle MOC, SAP NetWeaver*, and BAPI, as well as many commercial relational databases such as Microsoft SQL Server, Oracle, and MySQL.

The Partnership of Intel and deviceWISE Creates Powerful Advantages

Businesses deploying Intel IoT Gateway Technology solutions powered by the deviceWISE asset agent quickly enable and future-proof their IoT strategy; connect legacy and new systems; help data flow securely between edge devices, the cloud, and the enterprise; and save money for years to come.

Performance at the Edge

IoT solutions that include the application-ready deviceWISE agent can efficiently aggregate and filter data at the edge, allowing businesses to analyze and act upon information closer to its source, and in near real time. With intelligence at the edge enabled by Intel IoT Gateway Technology and deviceWISE, businesses can be smarter, create new revenue streams, and save money on data transmission, storage, and analysis.

Advanced Data Security and Protection from Costly Attacks

Intel IoT Gateway Technology with deviceWISE and the Telit IoT Platform administration and security functions provide a superior layered security approach to defend against threats, both external and internal. The multitenant structure provides inherent privacy and security for the coexistence of an endless number of organizations and suborganizations.

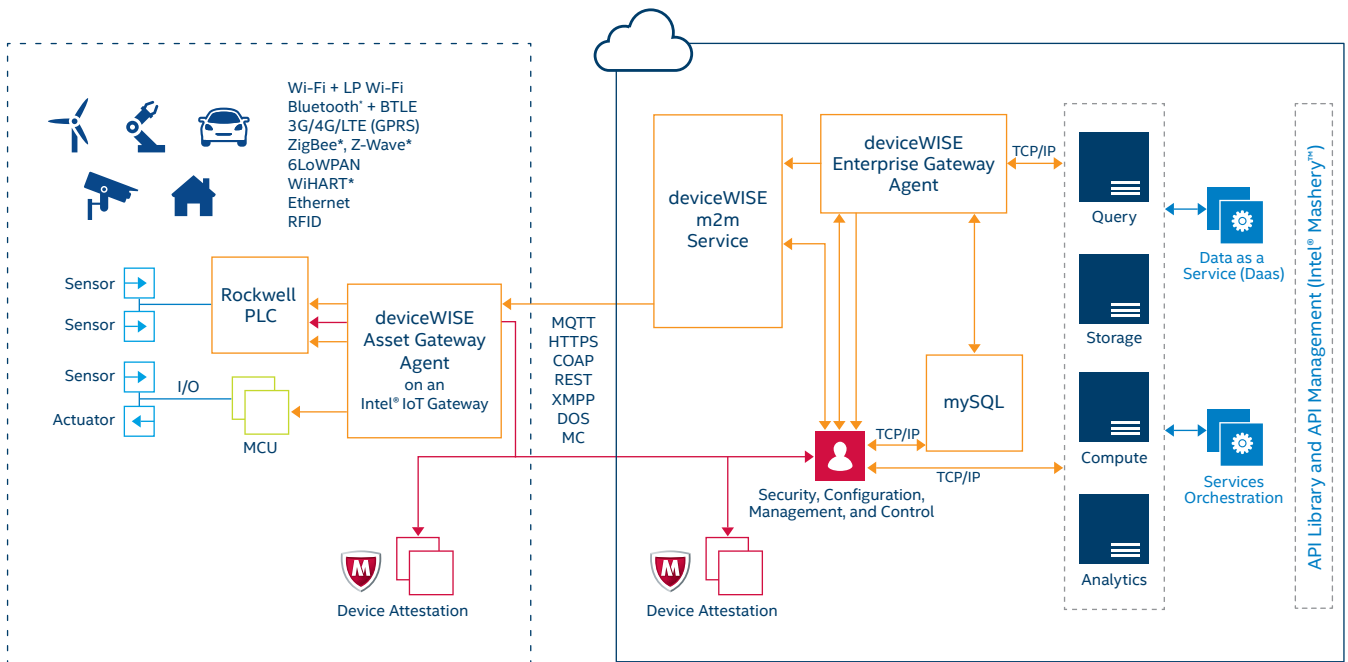### Manageability for Secure Remote Upgrades and Services

Intel IoT Gateway Technology powered by deviceWISE provides a robust set of horizontal, cloud-based application-creation and device-management tools to simplify remote operations and updates for any remote application. Remotely configure, provision, and perform software updates based upon your customized parameters. Increase the reliability and continuity of your IoT service by streamlining troubleshooting and technical ticket handling. Reduce IoT device replacements and servicing by empowering customer service and technical support teams.

Faster, More Flexible Deployment with a Platform That Supports Your Choice of Operating Systems and Ecosystem Applications

Intel IoT Gateway Technology solutions support a wide range of operating systems, ecosystem applications, and plug-and-play options to provide developers choice, flexibility, and OS investment protection. Intel IoT Gateway Technology makes it easier for businesses to integrate new or existing cloud partners and manageability solutions.

An Easier Way to Optimize Operations

The drag-and-drop functionality of the logic configuration tool allows developers to easily create actions and triggers to control operations, or to optimize data collection, aggregation scaling, and validation. No programming is required, and when data is analyzed and optimized it can reduce the processing load on enterprise systems.

Figure 3. The deviceWISE Asset Gateway performs the data acquisition and connection to the deviceWISE Enterprise Gateway, where the device drivers, agent functions, and logic to access the business systems reside.

Intelligence That Improves the Bottom Line

Leveraging data at the edge is key to the transformative power of deviceWISE. When information flows freely from edge devices to key decision-makers, the enterprise can amplify its operational effectiveness by increasing productivity, reducing energy costs, increasing machine uptimes through predictive maintenance applications, increasing visibility of risks, improving supply chains, and much, much more.

Together, Intel and Telit want every business to have the opportunity to take advantage of Industry 4.0. Businesses using deviceWISE can overcome the barriers to full implementation of IoT solutions in less time than you might imagine. You don't need to be held back from taking part in the data revolution.

Learn More

For more information about Telit and deviceWISE, please visit **intel.com/iot**.