



Willow Technology

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***WILLOW TECHNOLOGY LAUNCHES THE ECTROPYX™ INTEGRATION PLATFORM FOR SENSORS; PARTNERS WITH CROSSBOW TO DELIVER ONLINE INTEGRATION OF WIRELESS SENSOR NETWORKS WITH THE ENTERPRISE***

***Crossbow Motes Integrate with Willow Technology's Ectropyx Integration Engine***

SANTA CLARA, Calif.—Oct. 20, 2004--Willow Technology, Inc. today announced its Ectropyx integration platform for sensors. Ectropyx is designed to provide online, secure and reliable integration between sensors and enterprise applications and databases, allowing centralized administration and control of sensors and controllers, as well as the processing of collected sensor data. For sensors such as RFID readers, this permits true online transaction processing.

Before Ectropyx, the typical integration point for sensors and sensor networks was typically a Personal Computer (PC) that obtained data via batch transfers from a datalogging device, or online via a simple serial connection. The PC typically provided a graphical viewing capability and repository for the data. Integration, if any, with the enterprise involved transferring files to a host for further processing. This approach limits the immediate use of the data to a few users restricts the number of sensors that can be reasonably managed. Also, the delay in providing the data to other applications and users limits both its strategic and operational value to the enterprise.

**Ectropyx Components**

The Ectropyx Sensor Gateway resides on low-cost, powerful microcontrollers directly attached to field networks of attached sensors. The Sensor Gateway handles remote requests to manage itself, to set sensor reporting criteria and to define reporting rules. These rules act as filters and thresholds on the events, exceptions and data that are transmitted back to the Integration Server thereby minimizing the amount of data transmitted. Supported interfaces include wireless Motes, Dallas Semiconductor 1-wire and others. The Sensor Gateway communicates with the Ectropyx Server using specialized lightweight protocols optimized for high-density, low-bandwidth applications, and supports protocols such as Willow's implementation of the publish/subscribe oriented Message Queue Telemetry Transport (MQTT), as well as an enhanced version of MQTT providing secure delivery of data. Being Java™ based, the Sensor Gateway is easily ported to a wide variety of microcontrollers.

The Ectropyx Integration Server integrates directly with industry standard heterogeneous middleware to deliver messages in a meaningful form that can be used by IT applications. The Integration Server delivers events, exceptions and data to upstream applications, and

command and control information downstream to the Sensor Gateway. Supported environments include WebSphere MQ, WebSphere Integration Broker and JMS providers such as IBM WebSphere™, BEA WebLogic™ and the open source JBoss Application Server. Supported Integration Server platforms are AIX, HP-UX, Linux, Solaris and Windows.

Ectropyx Transform is an optional purpose built transformation engine that plugs into the Integration Server and is intended for organizations that do not already have a broker capable of providing the transformations. It provides a library of standard data transforms applicable to a wide variety of sensors to facilitate the delivery of sensor data to existing applications. User defined transforms are also supported.

### **Wireless Sensor Networks**

In June 2004, Willow publicly demonstrated the first connection between Crossbow Technology, Inc.'s self-organizing ad-hoc wireless mesh sensor networks and IBM WebSphere enterprise middleware. Willow and Crossbow have subsequently entered into a partnership to deliver end-to-end enterprise integration of wireless smart sensor networks comprising Crossbow Motes running on the open source TinyOS operating system. This includes the recently FCC certified Crossbow MICAz™ ZigBee-ready Motes. The Ectropyx Sensor Gateway is hosted on Crossbow's Stargate controller and communicates with the Ectropyx Integration Server via TCP/IP over Ethernet, 802.11 or GSM/GPRS networks.

Motes, based on the concept of "Smart Dust," are tiny, self-contained, battery-powered computers with radio links that enable them to communicate and exchange data with one another, and to self-organize into ad hoc networks. Motes are the building blocks of wireless sensor networks, and have a wide variety of uses in environmental and seismic, RFID, industrial and building automation, defense and Homeland Security and various other applications.

"The Ectropyx platform bridges the gap between the corporate IT infrastructure and the world of sensors, telemetry systems and engineering networks. This greatly simplifies integration with enterprise applications," said Gary Clueit, CEO of Willow Technology. "Sensors generate vast quantities of data that is extremely valuable to the corporation if it can be readily harnessed. With Ectropyx, IT can now easily undertake that exploitation - without the need to understand the intricacies of devices and field networks that are traditionally outside the IT realm."

"We are pleased to partner with Willow to be able to deliver integration of our wireless sensor networks to the enterprise," said Mike Horton, Crossbow President and CEO. "Users will be able to leverage sensor networks in real-time, at any time."

### **About Willow Technology**

Founded in 1991, Willow Technology, Inc. is an established enterprise infrastructure software provider for mobile, sensing and telemetry markets. The company is also the leading independent provider of fully compliant WebSphere MQ products, developed under license from IBM. Willow can be reached at: phone +1-408-296-7400; fax +1-408-296-7700; email [info@willowtech.com](mailto:info@willowtech.com); or visit [www.willowtech.com](http://www.willowtech.com).

### **About Crossbow Technology**

Founded in 1995, Crossbow Technology, Inc. is the leading end-to-end solutions supplier in wireless networks and the largest manufacturer of Smart Dust wireless sensors. Crossbow has for years been at the forefront of creating and deploying smaller, smarter, wireless sensing

devices and mesh networking platforms for large-scale defense, environmental, agricultural, industrial monitoring and control, building automation, security and asset tracking applications.

Crossbow's open architecture, TinyOS-based platform enables highly intelligent multi-sensing devices to dynamically and reliably self-organize to efficiently capture and send detailed physical data anywhere, anytime.

Crossbow is also a leading supplier of inertial sensor systems for aviation, land and marine applications and other instrumentation sensors. The company has shipped more than 500,000 of its Smart Dust and other advanced sensors to more than 1,000 customers, including select Fortune 100 and other leading industrial, defense, technology, civil engineering and manufacturing companies. Contact Crossbow at +1-408-965-3300, e-mail [info@xbow.com](mailto:info@xbow.com) or visit Crossbow on the Web at [www.xbow.com](http://www.xbow.com)

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