

SocketScan™ Software: Providing Flexibility and Cross-Compatibility in Mobile Auto ID Deployments

By MICHELLE MAN

April 2008

ABSTRACT

When planning a mobile Auto ID (Automatic Identification) deployment, it is easy to focus on the Auto ID hardware and overlook the significance of software. However, software is key consideration for business implementations of mobile Auto ID technology and can provide the flexibility and cross-compatibility that are essential for deployment success. SocketScan software is a core feature of all Socket Mobile data collection products and not only provides businesses flexibility and cross-compatibility of diverse hardware components but also ease of use and ease of support to lower the Total Cost of Ownership (TCO).

INTRODUCTION

Enterprise mobility is rapidly increasing in economies around the world. By 2009, IDC research predicts that mobile workers will comprise more than 70% of the total workforce in the United States. It is critical for businesses to maintain accurate and timely access to information, no matter where employees are working, and in many business operations, vital data can only be accurately and efficiently collected with Auto ID technology. As a result, the Auto ID industry is experiencing tremendous growth in the business mobility market sector.

In business implementations of mobile Auto ID technology, flexibility and cross-compatibility are critical to deployment success. Many companies require not only multiple types of Auto ID technology, such as bar codes, RFID, and magnetic stripes, but also multiple form factors, such as wireless, integrated, plug-in, and wearable. Similarly, some workers may need to use an Auto ID device with a PDA or smartphone, while others may need to use it with a notebook, tablet or desktop computer, depending on various factors such as their job function, work environment, and personal preferences. Even if a business standardizes on one of type of Auto ID device and one type of mobile computer, flexibility and cross-compatibility are still important because standards can change, and computers eventually need to be upgraded.

First developed in 1998, SocketScan software from Socket Mobile streamlines mobile Auto ID deployments by providing the flexibility and cross-compatibility that businesses need. It combines with a comprehensive range of Auto ID devices from Socket Mobile to not only provide a common user interface for disparate data col-

SocketScan combines with a comprehensive range of Auto ID devices from Socket Mobile to not only provide a common user interface for disparate data collection products, but also a common software foundation for a wide variety of operating systems and device platforms.

lection products, but also a common software foundation for a wide variety of operating systems and device platforms. Additionally, SocketScan features enhanced software settings and customization options to not only better meet customers' application and user requirements, but also to increase the efficiency of the total mobile solution.

Currently, Socket Mobile offers more than a dozen data collection products, which include both plug-in and wireless devices; support for bar codes, RFID, and magnetic stripes; support for a variety of performance levels; as well as compatibility with four different operating systems on a variety of device platforms. They combine state-of-the-art Auto ID technology with advanced ergonomics to offer hardware that is robust yet easy to use.

Using Socket Mobile data collection products, organizations have been able to benefit from great improvements in the accuracy and efficiency of data collection. DHL Express has deployed Socket Mobile bar code scanners in a real-time delivery tracking system that has enabled the company to greatly surpass industry standards for successfully delivering packages on the first try. After Mosaic Sales Solutions deployed Socket Mobile bar code scanners in a retail merchandising system, the resulting time savings during employees' site visits has led to several million dollars' worth of cost savings for clients.

SocketScan software works with all Socket Mobile data collection products, providing users with a consistent UI regardless of data collection or host computer hardware. This makes it easier for users to transition between devices, upgrade to new technologies, or integrate a mix of current and legacy systems into the deployment. SocketScan helps to lower the Total Cost of Ownership of mobile Auto ID deployments by streamlining maintenance and support requirements.

Additionally, SocketScan gives businesses the flexibility to choose the data collec-

	Performance Levels (Versions)	Interface		Operating System Support			
		Plug-in card	Bluetooth® wireless technology	Windows Mobile/CE	Windows XP/XP Tablet Edition	Palm OS	Symbian OS
SD Scan Card Series 3	3	x		x		x	
CF Mag Stripe Reader Card Series 4	1	x		x	x		
CF Scan Card Series 5	4	x		x	x		
CF RFID Reader Card Series 6	3	x		x			
Cordless Hand Scanner (CHS) Series 7	3		x	x	x	x	x
Cordless Ring Scanner (CRS) Series 9	2		x	x	x		

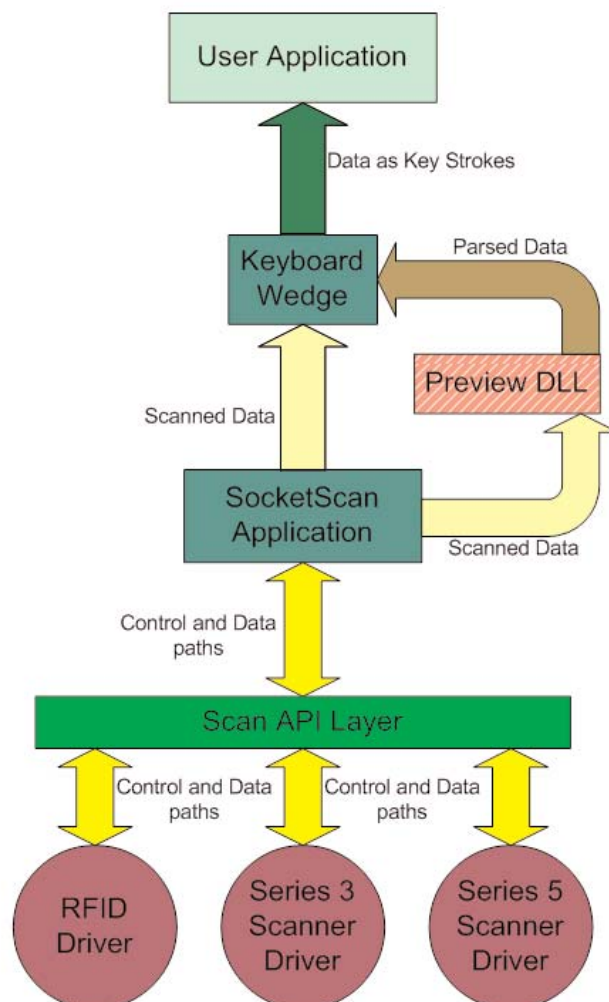
SocketScan gives businesses the flexibility to choose the data collection device and computer that best fit their workflow, budget and prior capital investments.

tion device and computer that best fit their workflow, budget and prior capital investments. This can be vital especially in PDA and smartphone based solutions, because allowing users to select their favorite device can boost adoption rates and increase the success of a deployment. For example, a hospital in the Midwest was able to successfully deploy a handheld Bedside Point of Care (BPOC) system because SocketScan enabled nurses to choose their favorite handheld device to combine with a Socket Mobile plug-in RFID/bar code reader. Previously, technology deployments suffered from low adoption rates because nurses refused to operate cumbersome hardware.

Socket Mobile data collection devices are easiest to deploy with the company's SoMo™ 650 handheld computer, a durable business-class device that is pre-loaded with SocketScan and other Socket Mobile software utilities and guaranteed to work out of the box with Socket Mobile bar code, RFID and magnetic stripe readers.

SocketScan is "keyboard wedge" software that takes information read by a Socket Mobile Auto ID device and feeds it directly into any program running on the host computer, whether it be an Excel spreadsheet on a laptop computer or a proprietary patient care application on a smartphone. This eliminates the need for custom programming, so users can begin using Socket Mobile hardware with software they already have.

From a technical point of view, SocketScan creates a virtual interface for different



protocols, such as standard operating system protocols and protocols for scanning engines. To support the broad range of Socket Mobile data collection products, the software is designed to handle messages and transactions through a CompactFlash card, Secure Digital card or *Bluetooth* wireless interface. For businesses that have already deployed Auto ID technology, the keyboard wedge precludes complex protocols and allows the dissemination of SocketScan into existing systems.

SocketScan for Windows XP even supports simultaneous support of different Socket Mobile data collection devices. This capability is ideal for applications like POS (point of sale) that require both bar code and magnetic stripe reading capability in the same computer.

USING SOCKETSCAN SOFTWARE

To operate SocketScan, a user simply invokes the program, connects the Socket Mobile data collection device to the host computer, opens the target application, and begins reading data with the hardware. SocketScan will automatically feed the data captured by the hardware into the active field of the target application. SocketScan runs in the background and requires little or no interaction from the user.

One of the challenges in an enterprise deployment is training cost. The ergonomic nature of the hardware makes it easy to use, and the menu driven software is intuitive for end users as well as IT managers tasked with provisioning a device. While external factors such as network topologies and workflow tend to complicate a deployment, the SocketScan installation process includes a standardized method of software deployment to alleviate these dependencies.

For people using the *Bluetooth* enabled bar code scanners from Socket Mobile — Cordless Hand Scanner Series 7 or the Cordless Ring Scanner Series 9 — Socket Mobile has developed Connect!Agent™ software, which automates the *Bluetooth* connection to the host computer. Connect!Agent integrates with SocketScan software to provide a seamless, easy to use user experience. Although *Bluetooth* has become common in consumer devices like audio headsets, it remains relatively difficult to use when serial communications (COM) ports are involved, such as with many business and industrial products including Auto ID devices. Simplifying the user experience can greatly reduce training and support costs and minimize downtime. Connect!Agent software currently includes support for Windows Mobile/CE, and compatibility with other operating systems is coming soon. Like SocketScan, Connect!Agent comes pre-loaded on the SoMo 650 handheld computer.

THE SOCKETSCAN CONFIGURATION UTILITY

SocketScan features an easy-to-use, graphical utility that offers more configuration options than any other keyboard wedge application in the market. Configuration options such as bar code symbologies (types of bar codes) are part of the menu-driven UI, eliminating the need to print out a technical manual and scan programming bar codes in order to configure the scanning engine.

The SocketScan utility features the following configuration options:

1. Automatic prefix/suffix characters or functions. This helps to further reduce manual data entry and increase the efficiency of the overall solution. The default suffix is a carriage return, which automatically advances the cursor to the next line or field for the next data input. SocketScan for Palm OS even allows time and date stamps for the prefix or suffix.

SocketScan features an easy-to-use, graphical utility that offers more configuration options than any other keyboard wedge application on the market.

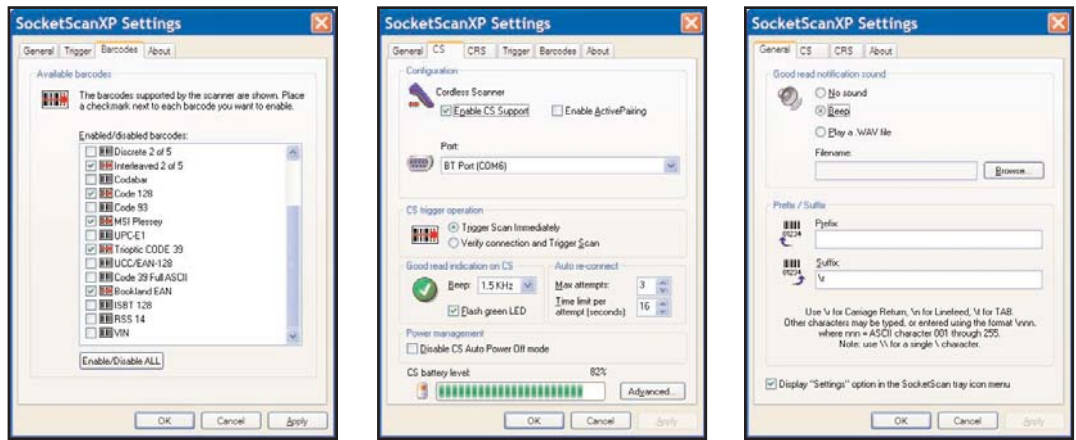
2. Bar code symbology selection, including multiple symbology support and support for VINs (Vehicle Identification Numbers).
3. Audible and visual feedback for a good scan. Users can configure beeps or a sound file to signify good read. For *Bluetooth* devices, an LED flash can also be configured for the same purpose. This enables users to verify that data has been successfully scanned without having to look down onto the computer screen, increasing workflow efficiency.
4. Task tray icon changes to indicate device connection status.
5. Battery level of *Bluetooth* devices. This is crucial when using wireless scanners to minimize downtime caused by lack of battery power.
6. Bar code or RFID device trigger from host computer. In most deployments, users utilize the local trigger on the device hardware to read a bar code or RFID tag. However, in some workflows, it makes sense to trigger the scanner/reader remotely, by pressing a hardware button on the host computer instead.
7. *Bluetooth* security management. SocketScan enables you to set up authentication and encryption for advanced data security, critical when communicating proprietary business information over the air.
8. Automatic *Bluetooth* reconnection attempts. The automatic reconnection feature helps to minimize downtime and support calls when a Bluetooth connection is lost. SocketScan enables you to configure how frequently and how long reconnection attempts occur.
9. *Bluetooth* ActivePairing™ support (CRS with Windows XP only). With ActivePairing, the scanner initiates the *Bluetooth* connection instead of the host computer. Users can pair/unpair with a host computer by simply scanning special bar codes. This is ideal for deployments where users roam from system to system and need an effortless way to transition between computers. This feature will be added to the CHS in a later release.
10. Error Proof Protocol™ support (CHS/CRS only). This exclusive, patented feature verifies the *Bluetooth* connection and receipt of data by the host with each scan. When the user scans a bar code, the “good scan” beep and green LED light do not occur until the scanned data has been received by the host computer. A 10-second trigger lockout prevents the user from scanning more bar codes until the good beep is received.

Additionally, Error Proof Protocol allows an application to validate the scanned data against a database and, if needed, return an “error” beep sequence to the scanner, informing the user that something is wrong with the last bar code scanned.

No other Auto ID manufacturer provides software with such a rich variety of features and configuration options in a user-friendly utility.

No other Auto ID manufacturer provides software with such a rich variety of features and configuration options in a user-friendly utility, which enables even non-technical users to modify their data collection settings to better fit their business workflow. This is essential for many emerging Auto ID market sectors where businesses may be deploying the technology for the first time.

SocketScan and Connect!Agent software are available as free downloads from the Socket Mobile website. Businesses can easily upgrade their existing deployments with software updates downloaded online. The software is periodically refreshed, and support for more computer platforms, operating systems, *Bluetooth* stacks, bar code symbologies and data collection devices is rolled out on a regular basis.



CUSTOMIZING SOCKETSCAN

Although custom programming is not required to use either SocketScan or Socket Mobile data collection devices, businesses that require a more complex solution can use the SocketScan Software Developer's Kit (SDK) to create a more tailored solution. The SocketScan SDK, which is available separately, provides a .NET application programming interface with low level hardware control.

Custom versions of SocketScan can be made with Dynamic Link Libraries (DLLs), which add special functions to data collection applications. Typically, DLLs are created for automatic data parsing, to separate scanned data into different components and direct each component into the appropriate data field. For example, information swiped from a credit card usually contains several types of information — including the credit card number, cardholder name, address, and expiration date — all in one string. A DLL can be written to extract the different pieces of information and direct them to the correct fields in a user's software application. This helps to streamline data processing, minimizing user input and making data available faster for business operations.

CONCLUSION

When considering a mobile Auto ID deployment, software is an important consideration, because it affects not only the mix of hardware you can implement, but also the ease of use, ease of configuration, and potential expansion or upgrade options for the total solution. SocketScan software combines with the wide variety of data collection devices from Socket Mobile to provide a flexible mobile Auto ID solution that works with diverse computer platforms and operating systems to meet the needs of your business workflow, user environment, and existing infrastructure. Additionally, the software offers a user-friendly configuration utility, customization through DLLs, and an SDK so that businesses can adapt the software according to their needs. All of these factors can help make a mobile Auto ID solution truly a competitive advantage by streamlining operations, making devices manageable to support and maintain, and lowering the Total Cost of Ownership.



Sales Offices
Corporate Headquarters:
 39700 Eureka Drive
 Newark, CA 94560
 USA

Web: www.socketmobile.com

Phone: +1-510-933-3000

USA & Canada Toll Free:
 +1-800-552-3300

Fax: +1-510-933-3030

Online:
www.socketmobile.com/contact

© 2008 Socket Communications, Inc. dba Socket Mobile, Inc. All Rights Reserved. Socket Mobile, the Socket logo, SoMo, SocketScan, ActivePairing, Error Proof Protocol and Connect!Agent are registered trademarks or trademarks of Socket Communications, Inc. dba Socket Mobile, Inc. The Bluetooth wordmark is a registered trademark of the Bluetooth SIG, Inc. USA, and any use by Socket Mobile, Inc. is under license. All other product names are trademarks of their respective owners.