SATO XML-enabled 3.0

Executive Summary: The *e* Series printers are now "SATO XML-enabled 3.0". With this, the *e* Series offers a simple and easy-to-manage interface to print barcode labels and RIFD media from enterprise applications developed by SAP, ORACLE and other leading ERP system vendors.

The *e* Series can directly process and encode print data in SBPL barcode format as part of a direct print solution. Using another approach, the middleware solution, barcode output from an enterprise application system environment is generated through a third-party software such as SATO's label designing software, SATO Label Gallery™.

Two Printing Solutions

SATO offers two printing solutions to users interfacing with enterprise applications such as ORACLE's WMS and MSCA, and SAP's SAP R/3, SAP ERP, SAP Event Manager, other SAP and non-SAP Backend system applications: the direct print solution and the middleware solution.

For its direct print solution, SATO is about to achieve certification that will prove that its XML-enabled *e* Series printers can successfully parse XML output into barcode output format and print directly print from ORACLE's WMS and MSCA. SATO is also about to receive official confirmation that it has passed the test proving that its barcode and RFID media printing solution is natively supported in an SAP environment.

**Solution 1: Direct Print Solution with XML Parser**

SAP and ORACLE are among two of the main enterprise application systems vendors employed by the end-users. SATO's direct print solution is natively supported in either environment. ORACLE's WMS and MSCA transmit print output in XML data streams, which is natively understood by SATO's *e* Series printers without any middleware or additional server hardware thanks to the XML parsing function. Similarly, SATO's *e* Series printers are designed to interoperate with SAP AG's Auto-ID infrastructure (AII) without any need for middleware.

ORACLE's WMS and MSCA use e**X**tensible **M**arkup **L**anguage (XML) as the interface to exchange data with other applications. There's an XML parser embedded in the *e* Series printers to allow them to connect directly to ORACLE's and SAP's enterprise applications without having to go through a third-part application such as label designing software, a document management software, print server or any other middleware. The parsing function enables the *e* Series printer to understand the native XML data stream generated by the enterprise applications.

Using the direct print solution approach, the first step is to register a pre-defined format into printer memory. Up to 999 formats can be registered, but this depends on the size of the memory available. Next, the label information in XML native format is then transferred to the *e* Series printers via TCP/IP, wireless or any other connection. The XML parser will analyse the incoming XML data stream, which includes a header that specifies the label format number, label quantity, and the variable data on the corresponding variable field. The printer firmware then recalls the pre-defined format, populates it with the variable data and outputs the barcode label.
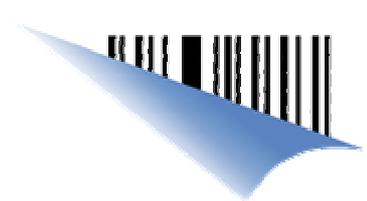
## Solution 2: Middleware Solution with SATO Label Gallery™
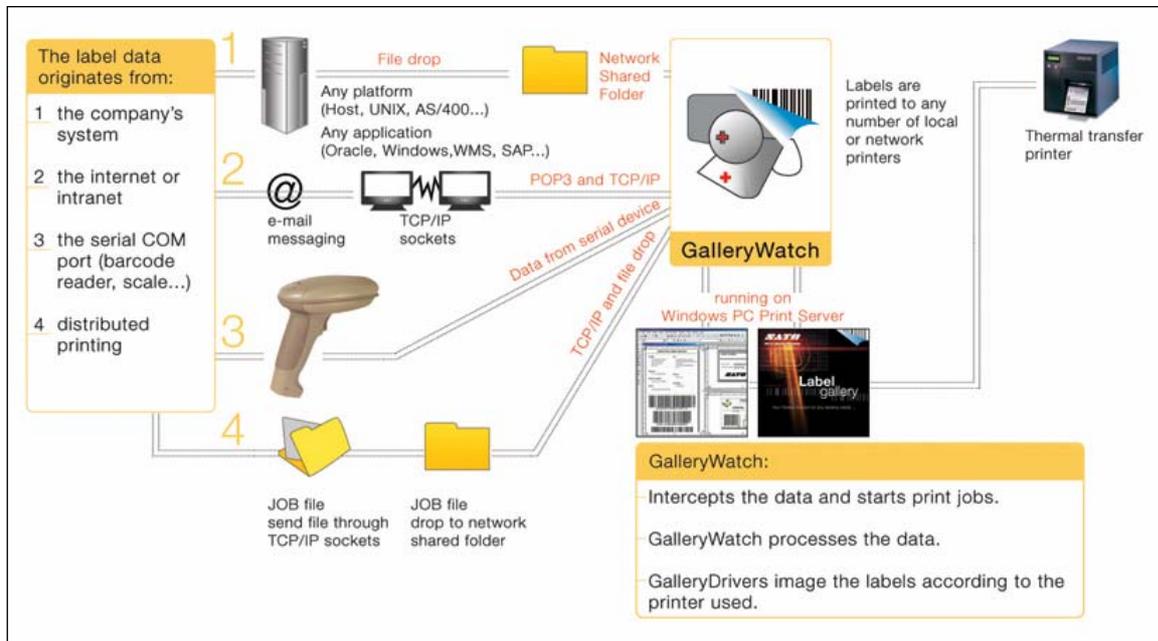
Middleware, sometimes known as the 'enabling technology', acts as an intermediary between systems software and an enterprise application system such as SAP or ORACLE. It can be a label designing software such as the SATO Label Gallery™ or a print server application such as the GalleryWatch, an automated print server that enables real-time, on-demand label printing from Windows and even non-Windows platforms.

The GalleryWatch – an add-on available in SATO Label Gallery™ True Pro edition – constantly monitors a directory or folder and when a file is created or modified, it can automatically trigger the start of label production. There are a number of ways that the GalleryWatch can trigger the start of a print job: e.g. from any device within common application systems that "drops" a file into a directory or folder. It can also be from any device that sends a data stream via TCP/IP sockets to the port on the GalleryWatch server. Alternatively, it can be from any device (barcode scanners and weighing scales among others) connected to a COM port. It can also be through an email containing label data in the body of the message.

Each time a label print job is triggered within the enterprise application system, an XML file containing the label data is copied to a shared directory. The GalleryWatch will monitor the shared directory for any changes made. If any change is detected, it will extract the variable data from the XML file and merge it into a pre-defined label format. The printer driver will then convert it printer language format, SBPL, and transmit the data to the printer. The SATO LabelGallery™ can also be used to create a specific label format based on customised requests with minimum knowledge or training required.

Any application or device that is IP-enabled allows it to connect to the GalleryWatch TCP/IP socket server for a synchronous connection between that application or device and GalleryWatch. Whether the data is coming from across the globe or the wireless Local Area Network, GalleryWatch can as easily be activated to trigger a print job.

So, in this approach, the SATO Label Gallery™ acts as the intermediary or middleware
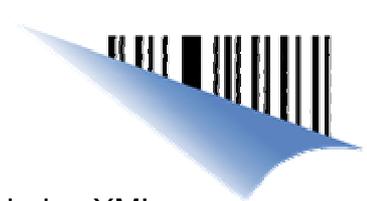
receiving data stream from the enterprise application. GalleryWatch includes XML data filters for seamless label printing integration with common enterprise applications. So, SATO Label Gallery™ can carry out the XML conversion so that the ORACLE data can eventually be generated in barcode and text format on the printed label.
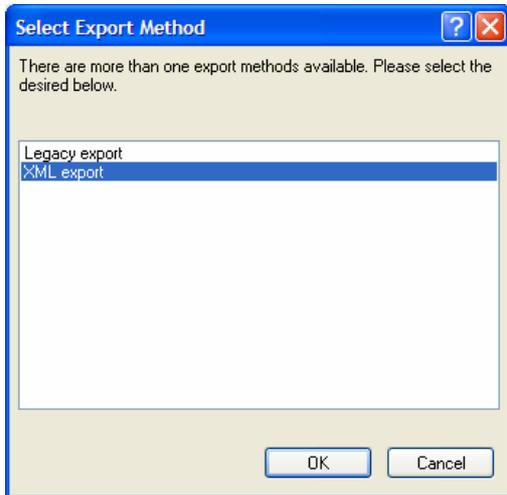
SATO LabelGallery™ provides you options if you do not want to use it as middleware. It can be used as a design tool for custom label formats where you wish to download to SATO XML- enabled printers. This function is available in both Plus and TruePro editions. Gallery Watch processes the label data at the appearance of the trigger file, or upon receiving it via TCP/IP server sockets or an e-mail from the enterprise application. This generates a trigger event for Gallery Watch to start execution of the label print job.

How And When To Choose The Direct Print or the Middleware Approach

Solution 1: Direct Print Solution with XML Parser

Required:

● SATO e Series printer with XML parsing function enabled.

Advantages
● Fewer layers, therefore a simplified printing solution.
● No third-party software license fees, print server hardware required.
● Less customisation needed and programming costs.

Solution 2: Middleware Solution with SATO LabelGallery™

Required:
● A PC to run GalleryWatch.
● The SATO Label Gallery™ software package to design the label format and execute printing.

Advantages
● Easy to customise the format layout.
● Filtering support for easy modification of the XML stream from common enterprise applications.
● Error notifications to user in case of printing error(s).