



With the proliferation of the Internet, counterfeiting and gray markets have come to play an increasing role in worldwide trade. Formerly, brand pirating was limited almost exclusively to textiles. Today it affects nearly all industries. Businesses, trade organizations, and local authorities have developed numerous means to combat and prevent counterfeiting. SAP® solutions for RFID support these efforts by providing innovative software that automates product tracing and product authentication.

## COMBATING COUNTERFEITING WITH SAP® SOLUTIONS FOR RFID

Economists and politicians are alarmed. Brand and product piracy is flourishing. Brand name piracy includes the illegal use of names, logos, and business designations. Product piracy includes forbidden copying and reproduction of patented goods.

The counterfeit products trade has reached troubling dimensions. In the year 2000 worldwide losses due to counterfeit products were estimated at approximately €350 billion – approximately 9% of all goods traded. The German federal ministry of law reported in January 2007 that the number of counterfeit goods intercepted by European Union customs authorities had increased tenfold since 1998. The German advocacy group APM, which fights product and brand piracy, calculates annual losses for the German economy due to counterfeiting at €25 billion. Some 7% to 8% of drugs worldwide are counterfeit. (In some countries this figure can reach 50%.) With the counterfeit rate growing at 6% to 8% annually, this is estimated to be a US\$30 billion problem for U.S. retailers and US\$50 billion worldwide.<sup>1</sup>

Counterfeiters now have the ability to replicate brand logos and product quality criteria nearly perfectly – making any attempt to disprove their authenticity both expensive and time-consuming. And the fight against gray-market trade has been made even more difficult because counterfeiters now frequently use genuine parts in their fake products. SAP® solutions for RFID help combat the counterfeiting problem by leveraging current labeling technologies to authenticate products economically.

1. Projections by the Center for Medicine in the Public Interest, based on 2006 estimates by the World Health Organization.

## Identify Products Clearly

SAP solutions for RFID support product tracking and authentication (PTA) processes, which use clearly identifiable codes to trace the products and determine their authenticity. At a suitable point following production, a code is attached to the product, either in the form of a radio-frequency identification label (RFID tag), a 2-D bar code, or a digital copy detection pattern.<sup>2</sup> SAP solutions for RFID then match the code to all relevant product information, which enables real-time tracking and identification.

## How Does Code Matching Work?

The process of matching the code to the product begins with the generation of a code by the SAP Auto-ID Infrastructure offering, a distinctive application that links RFID data with specific business processes. The code is then written to a label using an RFID writing device (alternatively, a code that is already available on the product can be used). SAP Auto-ID Infrastructure relays this code to the central data warehouse, the SAP object event repository, which stores the scanned code as well as any important related information (for example, the product's batch number or packaging history). The repository then automatically enables this data to be searched and called up – either within the enterprise or by other authorized parties.

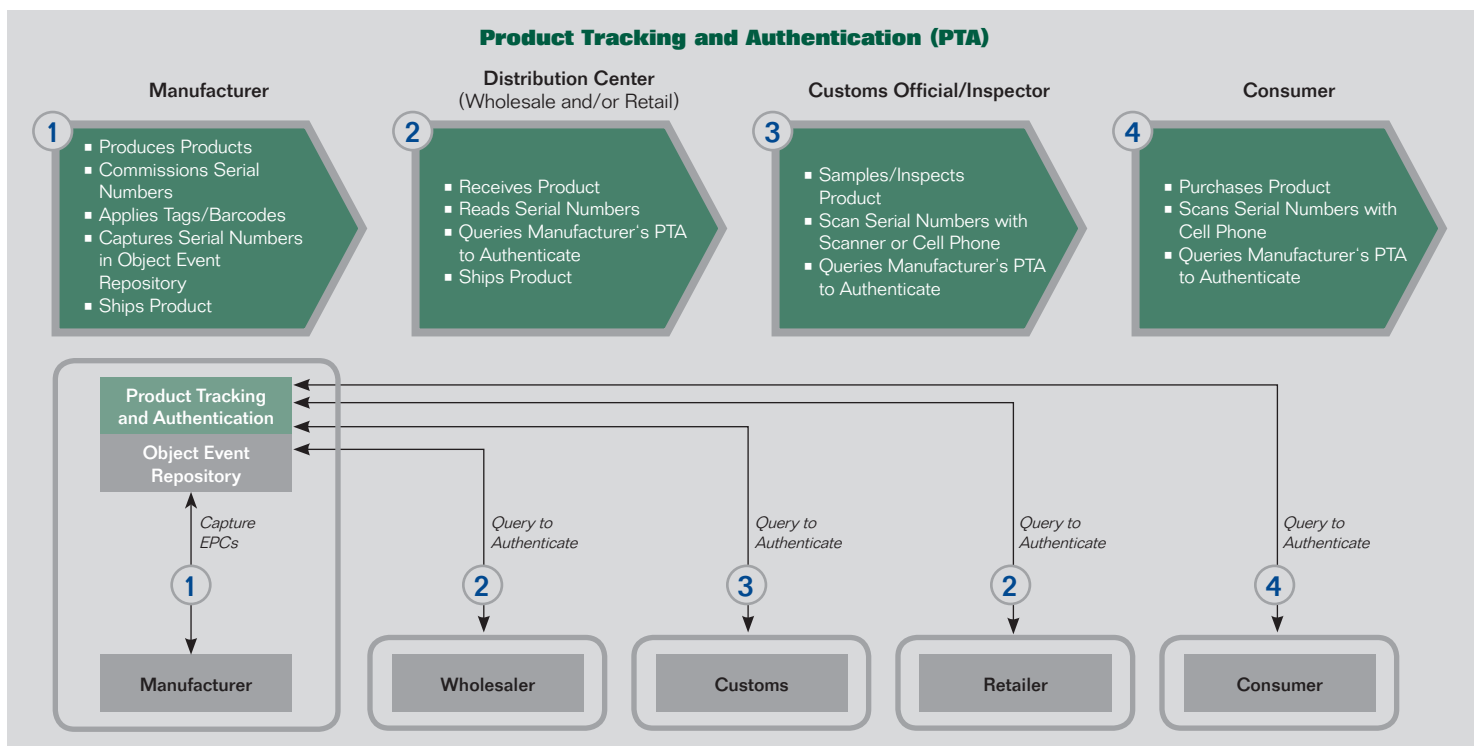
The software thus makes it possible to determine through a simple search where and when the scanned product was produced, stored, relocated, and sold. Any scanned object can be tested for authenticity, manufacturer product history, and customer delivery status.

The PTA process functionality found in SAP solutions for RFID is easily adaptable to organizations that normally wouldn't have access to such data. SAP solutions for RFID provide customs officers, for example, with a tool that enables them to examine goods deliveries simply and faster than ever before.

## PTA Processes in Detail

The PTA processes track individual objects (for example, products or packing units) throughout their entire life cycle, from production to final delivery to the consumer. The processes also ensure that the product came from the authentic manufacturer. Common instances in which PTA processes can be utilized include the following:

- **Manufacturers** tag the products at the end of production and store the serial number (for example, the electronic product code) plus any related information (for example, the batch number) in the SAP object event repository.



2. Copy detection pattern authentication available only on a project basis from the SAP Research department

- **Customs officers** read serial numbers applied to containers or pallets with a mobile RFID reader or bar-code scanner attached to a cell phone to obtain manufacturer information in order to identify the product.
- **Wholesalers** read containers and pallets using mobile or stationary readers (frequently RFID readers) to obtain manufacturer data. In addition, they can leverage codes to automate the logistic processes and to enter further logistic information.
- **Retailers** are usually not equipped with RFID readers. Common cell phones equipped with a camera can be used to read the 2-D bar code and thus prove the authenticity of the goods.
- **End consumers** likewise rarely possess RFID readers. Common cell phones equipped with a camera can be used to read the 2-D bar code and thus prove the authenticity of the purchased goods.

**“Despite legal patent rights, many manufacturers do not possess systematic ways of protecting their products effectively against increasing product piracy. Broad protection can often only be reached through a combination of production-related and IT-based approaches.”**

German Ministry of Education and Research, August 2006

### **SAP Solutions for RFID in Action**

A manufacturer of brand-name shoes attaches a 2-D bar code to the product directly following production. The bar code stores a clear, electronic product code (EPC). The shoes are packaged and bundled in 100 pairs and placed on a pallet. An RFID tag is attached to the pallet. The RFID tag also stores an EPC. This code combination (100 individual product codes plus 1 pallet code) is transferred to SAP Auto-ID Infrastructure and to the SAP object event repository. The information is then accessible for each member in the delivery chain. For example, wholesalers can access this data to prove the inbound delivery is complete and that the product is genuine. Also procedures such as product scanning, repackaging, or stock removals can be registered by the solution. Retailers can run the same process for the receipt of the goods as well as for the registration of the sold article.

Today it is already possible to recognize 2-D bar codes with camera-equipped mobile telephones and to send them electronically to the SAP object event repository. Thus even untrained system users can verify goods quickly and easily.

### **SAP Solutions Provide the Complete Package for RFID**

SAP began its RFID research in 1998 and has since gained extensive experience in diverse industries. With SAP Auto-ID Infrastructure, SAP developed its own specialized application that transfers RFID signals into automated systems.

### **Find Out More**

To find out more about SAP solutions for RFID visit our Web site at [www.sap.com/rfid](http://www.sap.com/rfid).

### **Powered by SAP NetWeaver®**

SAP solutions for RFID are powered by the SAP NetWeaver® platform. SAP NetWeaver unifies technology components into a single platform, allowing organizations to reduce IT complexity and obtain more business value from their IT investments. It provides the best way to integrate all systems running SAP or non-SAP software.

SAP NetWeaver also helps organizations align IT with their business. With SAP NetWeaver, organizations can compose and enhance business applications rapidly using enterprise services. As the foundation for enterprise service-oriented architecture (enterprise SOA), SAP NetWeaver allows organizations to evolve their current IT landscapes into a strategic environment that drives business change.

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