



DISTILLERY GAINS EFFICIENCY WITH RFID BARREL TRACKING SYSTEM



Company: KWV Limited

Application: Asset tracking

Area of Use: Cellar/warehouse

Status: Production

Tag Supplier:
Alien Technology

System Integrator:
Cybertrack

Challenge

- Use RFID to efficiently track oak-barrel life cycle, from "forest" through manufacture to cellar
- Asset tracking and management of barrels, batches, and liquid beverages

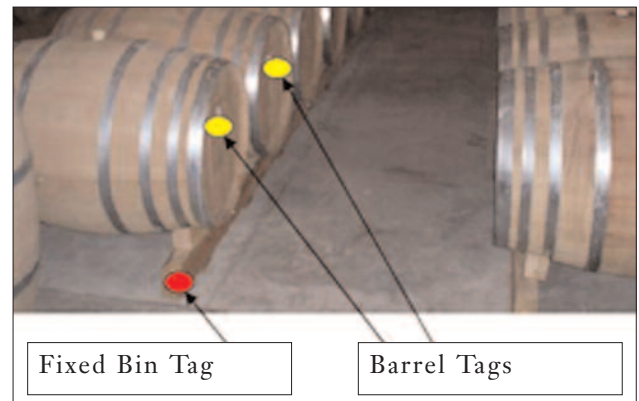
Solution

- Customized barrel tags using Alien Technology Higgs UHF Gen 2
- RFID handheld hardware and software
- RFID control software
- Barrel management software
- SAP interface

Benefits

- Automated stock allocation to database
- Traceability of barrel current and historical cycle status
- Real-time reporting on barrel and batch location and movement
- Automated integration into SAP
- Automated historical database

KWV was established as a private wine cooperative in 1918 to stabilize the South African wine industry after several outbreaks of a deadly aphid-like insect that destroyed the vines as well as a wine surplus. In 1997, the co-operative converted to a private company. Located in Paari, South Africa, KWV brands are now available in 35 markets, and the company is recognized worldwide for its KWV 10-year-old pot still brandy. Winemaking for KWV is anything but easy business though. Wine has to be produced, aged, stored, and carefully tracked to full maturation before distribution can begin.



CHALLENGE

Currently, KWV manufactures wine and brandy through a distilling and maturation process that involves the use of oak wooden barrels, commonly referred to as a vat.

Extensive maturation facilities enable KWV's wine makers to age both red and white wines in small French or American oak barrels to create a variety of styles and character.

Distilling includes both pot still and column facilities of carefully selected wines, followed by maturation in oak barrels for a minimum period of three years.

The existing manual system had many shortcomings, including:

- Delays in stock allocation
- Slow manual transfer of inventory from spreadsheet to database
- Limited tracking and location of individual barrels or batches
- No real time information on batch movement through barrels
- No immediate access to barrel or content information

SOLUTION

KWV required a turnkey RFID solution, including system analysis and feasibility study, system design and specification, full system implementation, training and technical support.

The RFID system requirements included the tracking of the oak-barrel life cycle, from 'forest' through manufacture to cellar, providing an automated asset management system integrating into the existing

RFID INSTITUTES A PROJECTS DIVISION
**RFID BARREL
TRACKING SYSTEM**



Systems Applications and Products (SAP) asset register; and tracking the liquid content on a batch basis through the distilling and maturation process.

The RFID system had to enable the tracking and management of assets (individual barrels), batches (multiple barrels), and product, or liquid content.

The system also needed to provide real-time information in the form of reports on:

- Traceability of barrels from manufacture
- Barrel current and historical status
- Batch current and historical status
- Barrels linked to batches
- Product movements by cycle and location

An important environmental requirement was the selection of a tag attachment utilising an adhesive that would not taint the oak or contents of the barrels.

RESULTS

A turnkey RFID System has been implemented comprising:

- Customized RFID barrel tags
- RFID handheld hardware and software
- RFID control software
- Barrel management software
- SAP interface

The customized barrel tags were manufactured and supplied by Cybertrack using the base Alien Technology Higgs UHF Gen 2 chip encapsulated in robust materials designed to withstand the

environment and extended lifespan of the barrels. Importantly, the adhesives utilized conformed to the environmental requirements specified.

KWV is using a Gen 2 portable handheld reader/writer as a verifier for reading the barrels. The Barrel Tracking System application software menus for the various process functions are programmed and hosted on the terminals. The terminal docking station will be connected to the Barrel Tracking System server via the LAN.

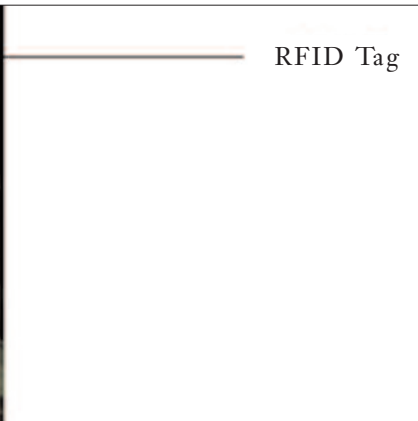
A customized Barrel Tracking System software application was developed for KWV with the required reporting attributes and interface capabilities to the host SAP system. Each barrel has its own barrel register that has certain essential fields to populate and various fields that will automatically update over time and processes.

BENEFITS

The RFID system enables automated real time information to KWV management with regards to the location, movement and status of assets (barrels) and product; enhancing more efficient management processes and controls.

The direct benefits include:

- Automated stock allocation to database
- Trace-ability of barrel current and historical cycle status
- Real time reporting on barrel and batch location and movement
- Automated integration into SAP
- GUI on all authorised user PCs
- Automated historical database
- Automated asset register per barrel.



*The RFID system
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