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 Paarl, 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 database.
The RFID system enables automated real-time information to KWV management regarding location, movement and status of 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.