



with embedded

AI

CASE STUDY

AI and CaskTEK cut waste for major whisky manufacturer

Specialist automation business KIGTEK, part of the Actemium UK network, has supported a globally leading spirits manufacturer in delivering an advanced, AI-enabled cask monitoring capability for the palletised disgorging conveyor at its maturation and disgorging site in Scotland. This scalable, high-performance approach reduced product loss, improved productivity, and enabled data-driven decision-making across high-volume whisky production.

Sector: Food & Beverage – Spirits Manufacture

Location: Scotland

Expertise: Electrical design and panel build, advanced vision systems, software integration, system engineering and delivery

Scope: Design, Build, Test, Stall & Commission



01

Client & Requirements

The client is a global leader in premium spirits manufacture, producing and distributing some of the world's most recognised whisky brands. It also operates Europe's largest maturation and cask disgoring site which produces whisky for many of the company's world-renowned labels.

To address product loss and improve operational performance, the client initiated a project to measure and analyse cask performance through enhanced monitoring and data capture at the point of disgoring.

During maturation, spirit stored in casks is gradually lost through evaporation or leakage - commonly known as the "Angel's Share". With HMRC allowing for losses of up to 2% per year, minimising liquid loss is critical to maintaining production volumes and protecting financial performance.

Natural losses occur throughout the maturation process, creating significant production management and commercial challenges. These are driven by:

- Ongoing **liquid losses across millions of casks**
- Limited visibility of **performance at individual cask level**
- Constraints in making **operational decisions at scale**

At the client's palletised conveyor, additional complexities are also present, including:

- **Multiple casks processed simultaneously**
- **Inconsistent barcode positioning** across cask tops
- Requirement to maintain **high throughput without compromising accuracy**

Therefore, the customer required a solution capable of delivering **reliable, scalable insight across high-volume operations**, while maintaining full traceability and data integrity.



02

The Solution

KIGTEK developed a high-throughput, **AI-enabled monitoring system**, integrated with its proprietary **CaskTEK** platform and tailored it specifically to palletised disgoring operations.

The solution transformed the plant into an **intelligent, data-enabled production environment**, capable of capturing and analysing performance data at scale.

The new palletised process includes:

1. Scalable cask identification

- Each cask is assigned a permanent **QR Code**, ensuring it can be tracked throughout its lifecycle.
- **A high-speed vision system** captures multiple casks at pallet level, enabling accurate identification and traceability across high-throughput operations.

2. Intelligent barcode detection with AI

- An advanced **AI-enabled vision system** scans the tops of palletised casks, identifying barcodes regardless of position or orientation.
- The system automatically maps each barcode to its physical cask location and validates that all casks are assigned to the correct blend prior to disgoring.

3. Automated disgoring and quality capture

- Whisky is extracted from each cask using **disgoring lances** within a controlled process.
- During extraction, key quality parameters - including **Alcohol by Volume (ABV) and tint** - are captured automatically and assigned to each individual cask.

4. Data processing and performance analysis

- All captured data is processed in real time through the **CaskTEK platform**, converting operational measurements into actionable performance insights.
- By analysing disgorge data against fill records, the client can assess cask performance across large volumes - informing decisions on reuse, repair, or replacement.
- With each cask carrying a permanent unique ID, performance can also be tracked across multiple fill cycles, enabling long-term optimisation of cask utilisation and reducing avoidable product loss.



03

Key Operational Improvements

Designed as a **deployable engineering solution built around the client's operations**, the system enables **efficient, high-throughput processing without compromising data quality**. Its main operational benefits include:

- **Scalable traceability across pallet operations** which enables accurate tracking of multiple casks within dynamic, high-speed environments.
- **Identification and validation** that removes reliance on manual processes while improving accuracy and consistency.
- **High-volume data capture and analysis** which converts operational data into actionable insight across the operation.
- **Consistent quality measurement** that enabled through standardised ABV and tint capture across all processed casks.

04

Commercial Impact

By combining AI, automation and data analytics, Kigtek has delivered measurable commercial value for this global spirits manufacturer - namely:

- Potential savings in the **tens of millions of pounds annually**, driven by:
 - Reduced product loss
 - Improved cask lifecycle management
 - Increased operational efficiency
- Enabled **data-led optimisation and improved productivity at scale**, supporting better operational decisions.
- Establishes a **future-ready**, technology-enabled model that delivers sustained value across ongoing and future maturation cycles.

Technology

- **CaskTEK** – modern web-based application & real time reporting
- **AI-enabled vision systems**
- **Industrial imaging and automated barcode recognition**

Contact Us

T: 08451 800 863

E: sales@kigtek.com

in [@kigteksolutions](#)

www.kigtek.com

More about Kigtek

