RFID SOLUTIONS

RFID increases supply chain efficiency for Patrick

Publicly listed logistics company Patrick Corporation has implemented an RFID solution from Ramp RFID for the tracking of containers of copper from the Northparkes (NSW) mine through to their unload destination point at Port Kembla, south of Wollongong.

Northparkes is a copper and gold mine located 27 kilometres north west of Parkes in the Central West of New South Wales. Northparkes' ore is processed on site to produce high-grade copper concentrate, which is then transported by road train to the Goonumbla rail siding, approximately 13 kilometres from the mine. The containers are then placed on a train and transported to Port Kembla, approximately 450 kilometres away, where they are unloaded into a ship for export – primarily to Asia.

Patrick is an innovative company that is always looking for new ways to improve its supply chain processes, including leveraging the best in technology to deliver bottom-line savings to the company and its customers. With this ongoing objective in mind, and to meet the business requirements for its contract with Northparkes, Patrick sought an efficient, cost effective and accurate means of tracking and reporting on container movements between the mine and Port Kembla. Patrick evaluated a number of RFID providers before settling on Ramp RFID.

Each of Patrick's containers at the Northparkes site is fitted with two passive Omni-ID Dura 1500 UHF RFID tags. The Omni tags were chosen for their ability to cope with rugged outdoor conditions, including the dust, heat and vibration they would need to endure throughout the container supply chain.

At the Northparkes site a forklift picks up each container and conveys it to the mine's weighbridge prior to its joining the road train. An RFID reader at the weighbridge records each container and its weight and the data is sent to a cloud-based server via the cellular network.

Forklifts equipped with mobile RFID readers and in built GPS track the movement of all containers at the port.

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Dene Ladmore
Eastern Regional Manager
Patrick Stevedoring



It was for cost and simplicity reasons Patrick opted for a cloud-based database solution rather than on premise infrastructure, as Dene Ladmore, Eastern Regional Manager for Patrick Ports & Stevedoring, explains:

"When we were scoping out our RFID project we decided on a cloud solution because it was cheaper and easier", said Dene. "With the cloud we did not have to incur any sizeable up front hardware or software costs. We also eliminated the need for potentially complex integration with our own IT systems, which would have been prohibitive both in terms of money and time."

Now fully installed and operational, the Ramp RFID solution is reducing labour costs and improving container-tracking accuracy.

"The traditional manual method of monitoring cargo movements can be slow, laborious and susceptible to error so the alternative of an RFID solution was very attractive to us", he said. "Rather than have a foreman write down the weight of every container and note where it is as it moves through the transportation and unloading process the RFID solution does it all for us. And if, at any point, we need to produce a report showing where a container is and how much cargo its carrying, we can do that with the press of a button. It's all very fast and simple and we know that the information we're providing is up to date and accurate."

The improved operational visibility provided by the RFID solution is also helping Patrick tweak its day to day container movement operations. Anyone in Ramp's operations team can log into the RFID database and produce reports that can be used for useful analysis and action.

"Our operations people like to keep a keen eye out for any areas where efficiency and productivity can be improved", said Dene. "By logging in to RFID system and creating reports, they can, for example, find out where unnecessary delays are occurring, which shifts are under performing and where there are any other logjams. When it comes to fine tuning our supply chain processes this is a big plus."

To ensure that the RFID solution addressed all its requirements Patrick deployed mobile readers for its forklifts. One of the objectives with the RFID project was that it be infrastructure light, and the option of a mobile solution allowed Patrick to avoid the expense of fixed readers. A further benefit is easier and more accurate identification of a container's location.

"When you have containers located all over a port, and a vessel that could be positioned anywhere along its berth, you don't want to have to set up a number of gates or read points", said Dene. "Our solution of a mobile pickup point addresses this. And because a container cannot move unless it's first read by the forklift, we can be sure of 100 percent accuracy with the reads."

An additional requirement for Patrick was that the RFID tags be able to indicate which compartment of a ship a container is loaded into and its corresponding weight.

"A cargo shipping company needs to know exactly what's going into its ship, where it is going and how much it weighs, as it's obviously important not to overload the vessel", said Dene. "We customised our RFID solution so that it could provide this data. Again this is a task that could be carried out by a clerk using pen and paper, but with RFID technology in place we don't have to do that. Once a container is unloaded its location within the ship, and its weight, is automatically recorded in the system. In terms of labour resources this saves us one person per ship – the employee who would otherwise be taking down that information can now focus on other tasks."

Improved container rotation management was a primary goal of Patrick's RFID project. The movement of Patrick's copper-filled containers is managed on a FIFO (first in, first out) basis. The company's RFID solution allows it to know the order in which containers should be loaded onto the cargo ship.

"Although we have never encountered any problems storing copper concentrate for any length of time, there's always the chance it could become gluey if left in its' container for too long", said Dene. "This could potentially create a problem when the concentrate is being tipped out, and that's why we follow a FIFO process for moving these boxes. Our RFID solution fully automates the process by showing us when each container was placed in the port's storage area. When the ship becomes available we know which containers need to be moved out first and which can wait. This simplifies, and makes more accurate, another process that would otherwise have to be carried out manually.

"Additionally, all our containers are identical in outward appearance and without the RFID system it would be more difficult for us to verify when each container was dropped off."

Patrick estimates that the Ramp RFID solution has delivered supply chain cost savings of approximately 18%, largely a result of reduced labour costs. Looking towards the future, Dene says Patrick Corporation and Ramp RFID may collaborate on other RFID projects.

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