



Overview

Customer Name
Patrick

Industry Sector
Transportation

Location
Port of Brisbane, Australia

Application
Sony IP cameras and support

Communitech Solution
Providing IP cameras on Patrick terminal for latest innovation, RCOS

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Customer Overview

Patrick is Australia's leading provider of port-related services to importers, exporters and shipping lines.

Its focus on productivity, efficiency and innovation, along with its world class assets and infrastructure management expertise, places the Patrick businesses at the forefront of the ship-to-shore and shore-to-door service providers for both domestic and international trade markets.

Patrick, the leading Australian Stevedore, has been actively engaged in commercialisation of the robotic AutoStrad™ Terminal, through its development company Patrick Technology & Systems. The AutoStrad™ terminal is the world's first free-roaming stevedoring terminal, in which 110 ton AutoStrads™ autonomously transport shipping containers between ship to shore cranes and road trucks.

The AutoStrad™ Terminal located at the Port of Brisbane is the largest heavy industry robotic site globally. The AutoStrad™ Terminal operates in a 24 hour 7 days a week maritime environment which places high environmental and reliability demands on equipment and systems.

Patrick's continued focus on improving terminal productivity has led to its latest innovation the Remote Control Operator Station (RCOS).



As part of Patrick's continuous improvement methodology – the desire to automate and improve systems is always top of mind.

The RCOS project involves the relocation of existing operators located in terminal truck grids over 500m away into a control centre. Operators will remotely control an AutoStrad™ to pick or place containers with an accuracy of 25mm.

The trial period of 12 months required a close working relationship with commitment to test and refine product software to address the technical challenges as they arose. Communitech and Sony had the expertise and passion to make this challenging project a reality.



Project Scope

The RCOS involves the relocation of existing operators located in terminal truck grids over 500m away into a control centre. Operators will remotely control an AutoStrad™ to pick or place containers with an accuracy of 25mm.

This is a very demanding requirement, given that the accuracy is required over a site of more than 1km by 0.5km in area.

To meet the demanding operational requirements of the RCOS project, the camera equipment had to be low latency, have high reliability, exact motor control, low colour sensitivity and high operational levels in a maritime environment. These requirements pushed at the limits of current knowledge and equipment capabilities.



Communitech Role

Communitech have been involved with Patrick terminal since 2004 when the largest IP camera installation to that time was conducted by Communitech installers, with a large range of SNCRZ30 cameras and camera housings installed at the original Patrick terminal at Berth 3. The cameras have been since moved to the new terminal.

Communitech was invited to the initial project guidelines meetings and offered recommendations and suggestions at the outset. It was at this stage where the requirements of the project were considered. Some of the requirements pushed the boundaries of current technology and may have been impossible to do. By gaining small increments in latency, and improvements in cameras and firmware it was determined that the requirements could be met.

The testing phase was rigorous, through various stages of trials it was shown that the overall aim of the project – automation of the truck grids through operator assisted collections could be achieved.

Communitech was involved in suggesting and recommending ways to achieve the desired outcomes. Service was always at hand and solutions to problems were resolved quickly and with certainty. Communitech showed an understanding for the demands of this project by recommending Sony products from the beginning. Ultimately this recommendation proved to be correct.





Sony Role in overall solution

Sony provided the camera technology and were able to address any specific technical requirements as they came about. Also specific recording questions were addressed and suggestions made.

The relationship between Communitech & Sony was important as part of this solution, Communitech as specialists in IP cameras offered the solution and were able to source Sony engineers in Japan if needed. Sony were able to provide additional support to Patrick if needed. Ultimately the close working relationship between Patrick and Communitech to Sony formed the glue that made the solution come together in the end. Sony's IP cameras being a far superior product to others was able to address the very tight and specific requirements that Patrick needed to make this project work.



Communitech General Manager, Gary Else (L); Automation Manager, Robert Davie, Patrick Corporation (R)

Shown in front of working Truck automation bay, with cameras, truck and straddle carriers

Results

The RCOS Project has brought many benefits to Patrick Terminals. Automation by its very nature brings about productivity gains, so containers are unloaded faster and turnaround time has been reduced considerably. Extra benefits have been received such as better use of human resources and savings to insurance and running costs to the Terminals. Moving staff away from the hazardous environment on the terminals has meant a reduction in insurance costs including Workplace Health and Safety, injury, work cover, and skin damage.

Automation of the AutoStrad's has provided predictability into the operation, so planning can now be undertaken for daily pickups as no allowance has to be made for human characteristics. Since the cameras have been installed, there have been minimal maintenance costs. Autonomous reliability testing and accuracy testing on the cameras will be conducted ensuring maximum camera performance.





Overall while the Patrick Terminals are only partially automated, the 28 truck bays now run efficiently, clearly and without risk of safety to personnel. Safety to the people is a major priority in a heavy machinery environment, so management can now rest much easier and focus on the roll out of IP camera installations on the remaining truck bays. Robert Davie, Patrick Automation Manager, comments overall that the RCOS Project “sets a new labour and automation platform for the continual improvement of operations”.

General Manager of Communitech Mr Gary Else, commented “automation of the truck facilities at Patrick have proved that Patrick are leading the way with world class automation facilities, we congratulate them on the successful trial and wish them the best for the rollout of the other truck bays”.

Terms:

RCOS - Remote Control Operator Station

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