



Smoothing The Way For Goods Through Customs

Labour Intensive Processes

More than 1.2 million transhipped containers are temporarily stored at the Port of Kaohsiung every year and with five container centres at the Port, all of which are at various locations in the city, smuggling was common even with a human escort.

Prior to adopting EPC/RFID processing of in-transit containers relied on paper-based systems and this was very labour intensive. Around 40,000 to 50,000 of these containers have to be inspected every year and random inspections used to be performed automatically by a dynamic container audit system.

Each transport firm had to pay approximately USD \$600,000 annually for escort services and escorting one container could take between 4 to 10 hours. Due to the problems with criminal activity it was considered vital to implement EPC/RFID, which meets the requirement of WCO SAFE (Framework of Standards to Secure and Facilitate the Global Trade), as a matter of urgency.

Putting EPC into operation at the Port of Kaohsiung, Taiwan (1)

"In-transit Container Escort Exemption Program at the Port of Kaohsiung" was funded by the Ministry of Economics Affairs, Taiwan and involved the EPC/RFID solution to replace human escort. This implemented during the period 2006 to 2008 and since 2010 all international ports in Taiwan have been required to adopt it.

With this programme each container has an eSeal attached onto its door frame. Every entry of the container centre has a reader point and was equipped with EPCglobal compliance readers.

The system had to have the following requirements:

- use the EPC C1 Gen2 standard.
 - have a maximum reading distance of 7 meters.
 - when vehicles in motion pass an inspection station at a speed of 60 km/h, the system must have a reading rate of at least 95% within 200 ms.
 - must be able to read all types of EPC eSeals in spite of different seal locations and variations in metal background.
 - the outdoor environment at the Port of Kaohsiung is hot, damp, and highly saline, and is subject to typhoons.
- Existing RFID hardware must enable the system to maintain 24-hour operations throughout the year.
- the system must achieve a high level of reliability

and be connected and completely compatible with the Kaohsiung Harbour Bureau's existing online image identification system.

EPCIS - Customs data exchange (2)

EPCIS collects container transport information among Taiwan's main ports. The Directorate General of Customs, Taiwan, is the first customs sector in the world to own the EPCIS. The next step will be to

extend the implementation of the system in order to improve cross-border cooperation and customs information sharing among different countries.

Escort, export, transhipped and import container information can all be generated and exchanged in multiple EPCIS which provides visibility for customs, encourages EPC/RFID adoption in container transport among Asia countries and facilitates Green Lane policy.

A Clear Route To Efficiency (3)

The new customs system at Port of Kaohsiung has a number of clear, demonstrable benefits, most notably:

- The labour intensive requirement for people to escort containers has been significantly reduced; by approximately 10,000 trips in escort operations of in-transit containers and 4,000 trips in inspections for inland transshipment, per year;
 - Improvement in overall customs efficiency;
- A reduction in around 48,000 hours per year in inspection for in-transit container transport;
- Container vehicles can now pass through quickly without stopping;
 - A clear reduction in manpower and cost;
 - A saving, for the transport and logistics industry, of about USD\$3,100,000 per year in relation to the previous cost of document review and customs clearance;
 - A much more robust approach to tackling smuggling and preventing cargo loss.

