

**An automated RFID-based tracking solution would not only solve most of the problems airlines face in managing unit load devices (ULDs), but also lead to RFID usage for more applications.**

July 30, 2007—RFID adoption in the airline industry has lagged behind retail and other sectors. In the airline industry, RFID could potentially be used to track unit load devices (ULDs) and other ground-handling equipment, as well as time-definite (TD) cargo shipments, passenger baggage and spare aircraft parts. An automated RFID-based tracking solution could not only address most of the prevalent problems airlines face in ULD management, but also emerge as the inflection point for RFID's adoption in that industry, leading to its wider usage in more applications.

Airlines need to cut cargo operational costs by efficient utilization of all ground cargo-handling assets, particularly the ULDs, aluminum pallets or containers they use. Pallets are utilized to stack air cargo shipments, while containers are used for loading baggage aboard an aircraft. One endemic problem airlines face—and one that directly impacts carriage capacity—is poor ULD tracking. Considerable working airline capital is deployed maintaining a rolling stock of ULDs.



Presently, airlines employ a legacy manual system to track ULD movement. Every ULD is identified via a two-character alphanumeric [IATA](#) code specific to each airline, embossed or etched on its metal sides. An airline's cargo-booking system has a built-in module to keep ULD stock updated. When a ULD is moved from one flight to another, a ULD Control Message (UCM) is sent to that airline's central computer, updating it with the container's location.

#### **Internal Cargo System Used by Airlines**

The present ULD tracking system has a number of disadvantages:

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Location of RFID Readers at Air Cargo Complex

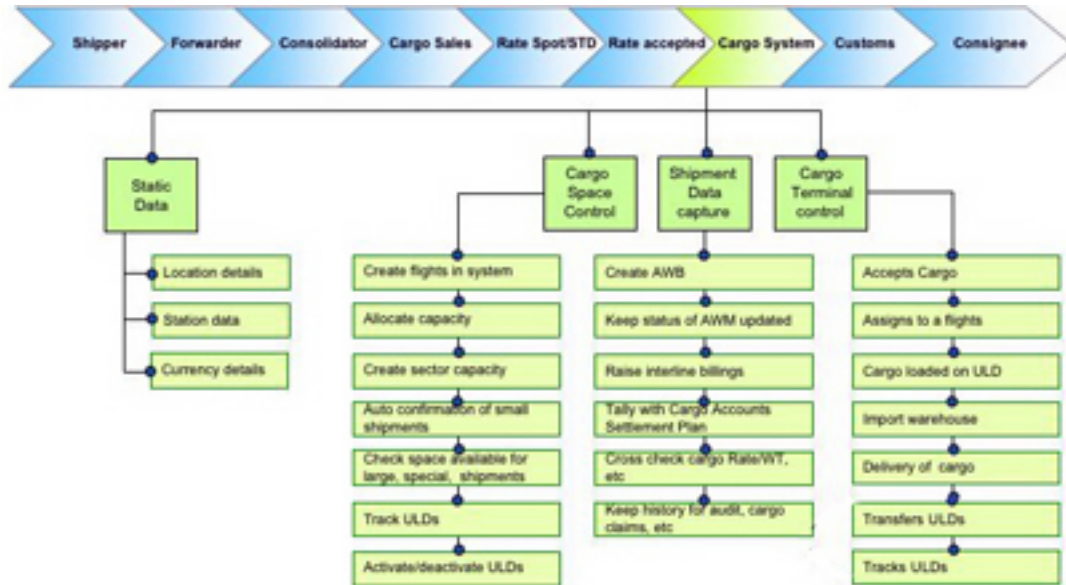
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**Making A Business Case Based on ROI**

RFID-tagging of ULDs or cargo shipments would entail the installation of interrogators and other RFID infrastructures at all major airports throughout the world, as well as hosting information database systems to make data available to all airlines for widespread adoption. There would be a need for huge investments to enact a global rollout, and no single airline can afford to go ahead alone. A global rollout would need to establish a clear road map, along with an unambiguous business case based on such time-tested methods for return on investment (ROI) as payback, net present value (NPV) and the internal rate of return (IRR).

ROI math for business case is based on the following information:

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Airlines' Air Cargo Business Processes

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The key decisions for the airline industry are as follow:

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At Infosys, we believe RFID technology offers a better business case for tracking ULDs. However, decisions regarding the selection of RFID technology (passive or active tags), tag databases, industry-standard numbering logic across different locations, agreement on tag location, readers and hosting ASP solutions across major airports must be made only after careful analysis, backed by results from real-life pilots.

The tradeoff between the type and cost of tags, the number of reader locations, the accuracy of read rates, distances, interferences, noise, global compatibility standards on data sharing, battery life, vendor management for procuring tags and the value perceived by airlines' needs (vis-à-vis the capital costs) must be carefully analyzed. An RFID ULD-tracking solution could also help the airline industry standardize handling processes in air cargo. To further optimize their RFID infrastructure investment in tracking ULDs, airlines could also use the system to track premium, time-definite express cargo across their networks, comply with new [FAA](#) security regulations and more.

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