

JAL and NUL Jointly Develop and Release Domestic Cargo Weighing System

- Increases safety and work efficiency at local airports using IC tags -

Tokyo February 23, 2007: Japan Airlines Corporation (JAL) and Nihon Unisys Ltd. (NUL) have jointly developed a cargo container weighing system utilizing IC (Integrated Circuit) tags which not only enhances flight safety by accurately measuring container weight prior to loading in aircraft but also reduces cargo handling costs at small domestic airports.

From now the system is being introduced at 13 domestic airports in Japan after successful completion of trials in 2006 at JAL's cargo warehouse in Kagoshima airport, Kyushu. Tests showed that the system improved safety improved cargo handling efficiency.

The new system accurately sends and receives information while reducing labor such as the manual input of data, by utilizing IC tags affixed to cargo containers, handy terminals to read information embedded in the IC tags by wireless (Radio Frequency Identification – RFID), and dedicated terminals installed on forklift trucks. Information registered at each airport will be input in the server in Tokyo and then transferred to JALDOM, the airline's domestic cargo information and handling system at JAL, and used to decide Weight and Balance of aircraft.

Information on the container number and weight are necessary in making the Load Plan to maintain balance at takeoff and landing and during flight. Up until now, at small domestic airports containers were weighed and their information was input manually into the JALDOM cargo information system, and checked many times in order to prepare the aircraft Load Plan for each flight. By introducing this new system, the workload will be reduced and work efficiency will be increased.

Compared with the system utilizing conventional IC tags at major airports, such as Haneda, Sapporo, Osaka, Nagoya, Fukuoka and Okinawa where the scale of cargo operations justifies the installation of special local cargo handling systems, the new JAL/NUL system will reduce initial costs for system expansion, cut purchase and maintenance costs for IC tags, and thus reduce overall costs for expanding the system at other small domestic airports within Japan. Also, as information is centrally controlled in the database in the server in Tokyo, maintenance and management costs at each local airport can be reduced.

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JAL and NUL are now considering further ways for utilizing the new tags, such as asset management (e.g. control of cargo movement). JAL will continue to improve safety and work efficiency utilizing NUL technology.

Feature of Domestic Cargo Weighing System

- Affixes IC tags on about 10,000 containers
- Employs 2.45GHz passive-type IC tags(Note 1)
- Reduces the manual work process, manual writing and input
- Compared with conventional semi-passive-type IC tags (Note 2) used at trunk airports, purchase and maintenance (changing batteries) costs per IC tag will be largely reduced.

Note 1:Passive-type IC tag

An IC tag is a tag embedded with an IC that can read (rewrite) data and can read information using radio waves. A passive-type IC tag is an IC tag that does not have an electric source, such as a battery, and generates electricity from radio waves emitted from a reader-writer.

Note 2:Semi-passive-type IC tag

A semi-passive-type IC tag contains a battery. When it catches radio waves from the reader-writer (R/W), it transmits radio waves using its own electric power.

Work Flow of new weighing system

- 1) Using a handy terminal the forklift driver reads information in the IC affixed on the container.
 - 2) The container weight, which has been measured on the forklift, and the container number are sent automatically to the server along with any additional information input by the driver.
- The JAL office checks information stored in the server, adds any necessary information, and sends it to the JALDOM cargo information handling system.
 - JALDOM calculates the Weight and Balance for loading the container on aircraft and decides the loading position of the container. Based on JALDOM's information, the container is loaded in the appointed section of the aircraft cargo belly.

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