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New monitoring system developed to enhance trolley allocation at Hong Kong airport

By **Srivani Venna**

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The Chinese University of Hong Kong's (CUHK) researchers have developed a Real-time Trolley Supply Monitoring System to optimise trolley management at Hong Kong International Airport (HKIA).

The system has been developed by the university's department of systems engineering and engineering management, the Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre), and Airport Authority Hong Kong (AA).

Frontline staff will be able to use the system to effectively allocate trolleys to passengers.

AA Smart Airport general manager Chris AuYoung said: "Through the application of intelligent data and automation technologies, we hope HKIA can become more efficient, convenient, and enhance the airport experience for our passengers.

"This baggage trolley tracking system not only greatly reduces the need for manual checking of the trolleys, but also helps our service provider to replenish the trolleys at specific locations at a timely manner."

Frontline service providers and management can monitor trolley availability at all pick-up points using the new Real-time Trolley Supply Monitoring System, which can be connected to iOS and Android apps.

Immediate alert notifications will be given in yellow when the trolley quantity drops to 50 or below, red alert for empty racks and green alert for normal supply of more than 50.

"Through the application of intelligent data and automation technologies, we hope HKIA can become more efficient, convenient, and enhance the airport experience for our passengers."

Research team member Tim Chan said: "Currently, 18 video cameras have been placed in the baggage reclaim hall for monitoring trolley availability.

"The system is also able to automatically blur visual contents other than the trolley racks. All images are encrypted and requires specific client applications to decrypt for viewing. We want to minimise both the privacy and security concerns."

CUHK's research is supported by the Innovation and Technology Fund.

Last year, HKIA served more than 70.5 million travellers and handled more than 1,100 flights per day.

Image: 18 video cameras are installed in the baggage reclaim hall of HKIA for monitoring trolley availability through machine learning techniques and image-based technologies. Photo: courtesy of The Chinese University of Hong Kong.

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