



# The RTT x-ray unit

## – a game changer for New Zealand biosecurity



Biosecurity NZ is running trials with Rapiscan Systems to test the latest advance in x-ray screening (real time tomography) for baggage carried by arriving international air passengers at Auckland Airport. The unit will be used to detect goods that pose biosecurity risk to New Zealand.

### Why this is a game changer

- » The technology will allow x-ray screening before arriving passengers pick up their bags from flights. This will fundamentally change the existing biosecurity screening process and will be similar to how inbound security x-ray screening operates at many major international airports.
- » The new system will identify risk items and bags of interest before passengers approach the biosecurity lanes. This information will be available to quarantine officers before they interact with passengers, allowing them to make better biosecurity risk assessment decisions. Officers will have a much better idea of the contents of a passenger's baggage before they ask any questions.
- » The technology provides enhanced three-dimensional images of baggage, making it easier to pinpoint items of biosecurity concern. Some items that were previously undetectable using two-dimensional images can be spotted with the enhanced view. These include dried meat and risk goods hidden by laptops.
- » Biosecurity NZ is developing software for the technology that will automatically detect and identify biosecurity risk goods. Over time, this is likely to be more accurate than human observation.
- » The technology can screen baggage faster than the current units, reducing waiting times for passengers. The customer experience will also be improved by the fact that passengers will no longer need to load their baggage onto an x-ray machine. The screening will take place before the baggage arrives in the collection area.
- » The technology will potentially reduce the need for x-ray machines in the busy biosecurity control area currently shared with New Zealand Customs Service.
- » The technology can assist New Zealand Customs by detecting illegal goods in check-in baggage.

### How x-ray screening works now

Quarantine officers assess every arriving passenger for biosecurity risk. Higher risk passengers can be directed to have their baggage screened by x-ray.

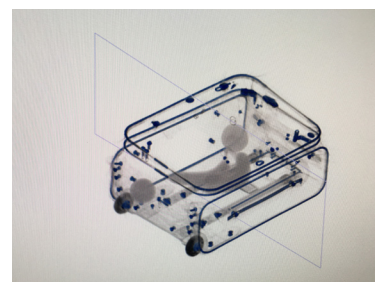
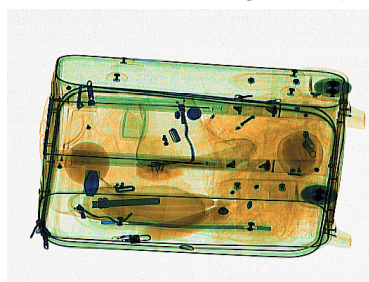
Current technology and related processes have not changed much since they were introduced in the 1990s. Since this time, there has been an explosion in international visitors, creating growing pressure to move passengers quickly through biosecurity checks.

There are currently eight x-ray units in use at Auckland Airport. At peak times, up to 32 staff can be required to operate the units. The current technology produces two-dimensional images that rely on the operators to identify risk items.

The Rapiscan RTT x-ray unit.



2D (left) versus 3D (right) x-ray images.



## Working with Australia

Biosecurity NZ has an agreement with Australian border officials to work closely on exploring emerging technologies to improve biosecurity. Australian officials will employ an identical x-ray scanner in their mail operation and develop an algorithm capable of predicting threats in mail and parcels. New Zealand and Australia will share all intellectual property, including algorithms.

## What happens next?

A Biosecurity NZ project team will run a series of trials to make sure the new system lives up to expectations. The work will include testing of a bag tracking system

so that quarantine officers can associate images with particular bags. The unit is expected to be ready for operation by late December. Development of an algorithm to automatically detect risk items will take up to two years.

During the proof-of-concept tests, the unit will be located in the existing biosecurity area. It will be moved behind the carousels once the algorithm is operating. If everything goes to plan, Biosecurity NZ intends to purchase additional RTT units to help clear all arriving check-in baggage at Auckland Airport. The ultimate objective is to have this technology employed across the passenger, mail and cargo pathways.