For WCO-UPU Global Conference

Session 6
Leveraging digitization and technology to harmonize procedures and solutions for a global transport network

# Visions & Solutions for Safe & Secure Customs & Postal Operations

TOSHIBA

Toshiba Infrastructure Systems & Solutions Corporation
Security & Automation Systems Division
June 7th, 2023

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# 01

# About Toshiba

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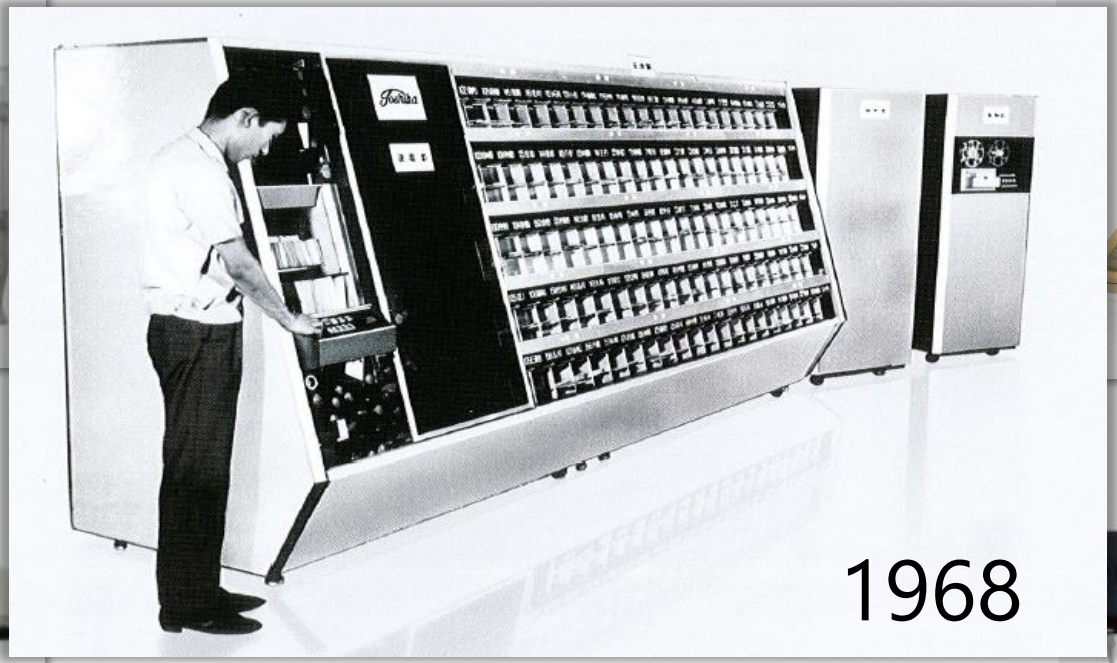
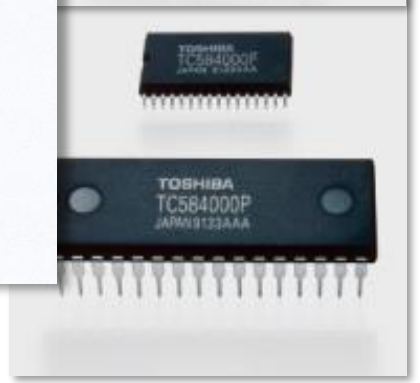
# About Toshiba

Amongst many first of their kind products in Japan or anywhere in the world, Toshiba delivered the World`s 1st automatic postal code reading and sorting device which recognizes handwritten characters in 1968.







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# About Toshiba

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# About Toshiba

## Systems Integrator for Complex Sorting Projects

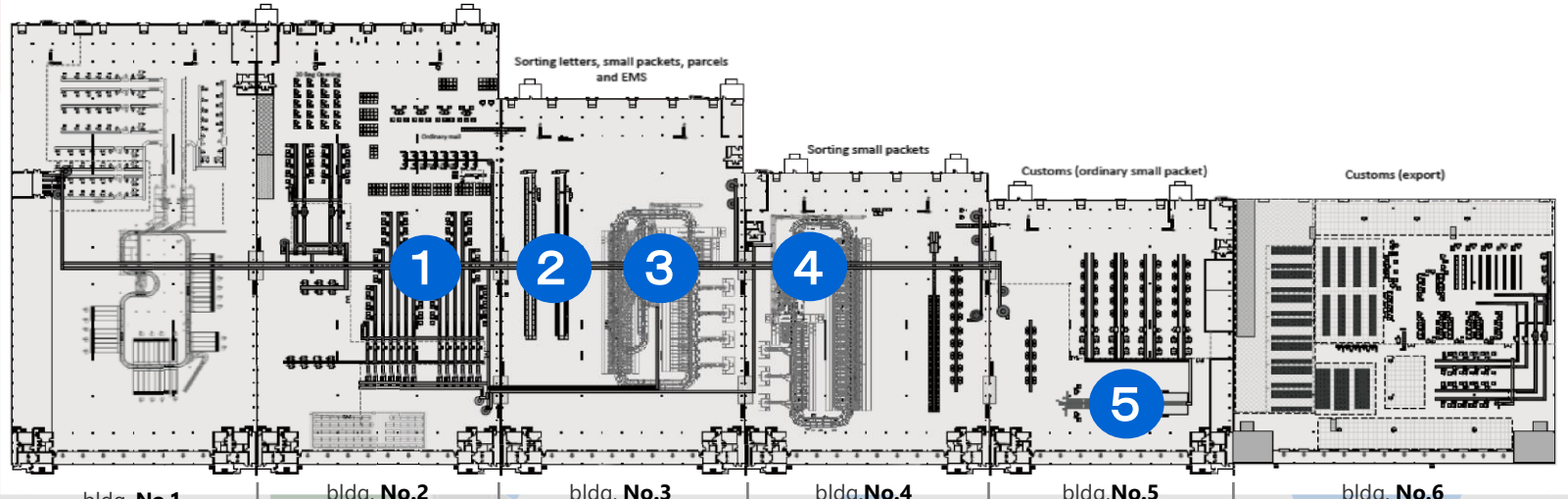
1 Customs Solution

2 Flats Letter Sorting Machine

3 Express Mail Sorter

4 Small Packet Sorter

5 Micro Packet Sorter





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# About Toshiba

2.1.2 Jointly examine and develop ways in which to improve cooperation and consultation between DOs and Customs administrations at the national level, with a view to combating illicit trade through the postal supply chain and improving mail security, and in which to assist one another in the detection of dangerous goods and other prohibited materials, while abiding by the fundamental principles of the international postal service, in particular, freedom of transit, as set out in article 1 of the UPU Constitution;

2.1.5 Assist DOs and Customs administrations in the digitalization of their working processes to facilitate a more efficient and effective collaboration;

2.1.6 Enable DOs and Customs administrations to capture, send, receive and use electronic data in accordance with applicable data privacy and protection laws, and establish appropriate measures to improve data quality and the timely submission of data (pre-loading and pre-arrival);

2.1.8 Develop and implement capacity-building initiatives for DOs and Customs administrations in areas of common interest, including digitalization to enable process automation and paperless treatment of postal items, the use of available data to identify risks/threats, and improvement of compliance with Customs and other regulatory requirements;


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# 02

## Letter Sorting Machine “TT-210”

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# Toshiba “TT-210” Letter Sorting Machine

## Features : Compact and Low Energy Consumption

### 1. Almost 60 years business experience since 1965

- In 1968, started the automation of outward sorting.
- In 1989, started the automation of inward sorting in.
- In 1998, started the automation of carrier sequence sorting.

### 2. Delivery Record : over 2,000 units delivered

- Currently, in Japan, over 1,000 “TT-210”s are in operation.

### 3. Specifications

- Letter Size: Up to C5.
- Speed: Max. 50,000 letters/hour (BCR mode)
- Outputs: Max. 450 stackers (8-bin type)
- Footprint: L 20m x W 1.8m x H 2.2m (450 stacker model)
- Power consumption: 32kVA
- Can read post codes, addresses, apartment names, recipient names to improve efficiency of sequence sorting.


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# 03

# Customs Inspection System

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# Toshiba's Customs Inspection System

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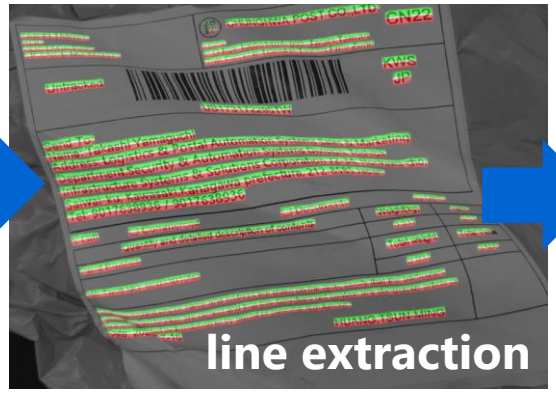
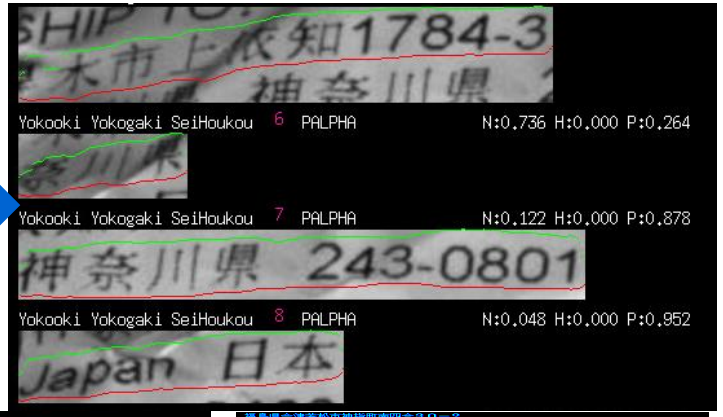
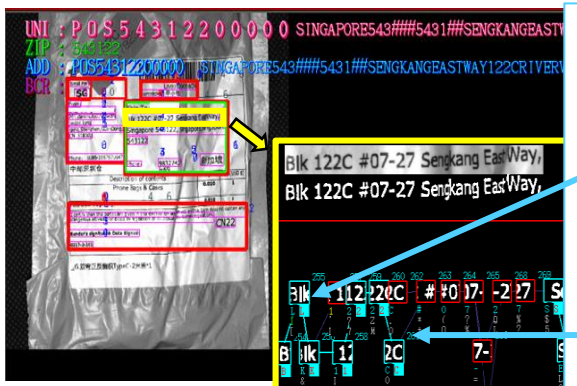
# OCR Features

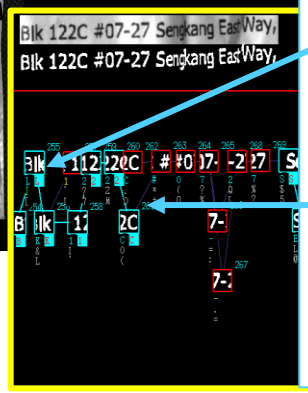
## Line recognition and extraction to DB matching



Result of recognition



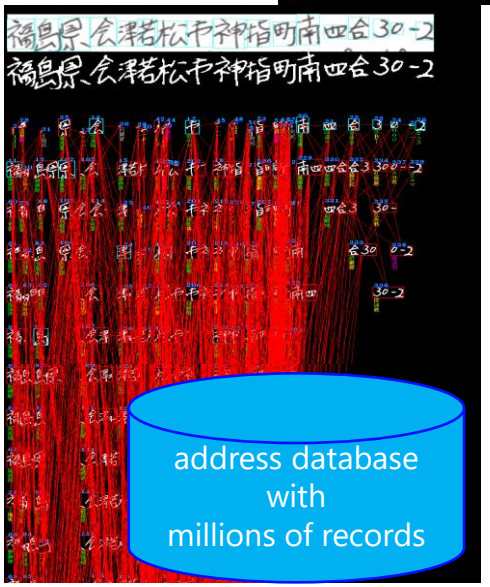

Result of line recognition

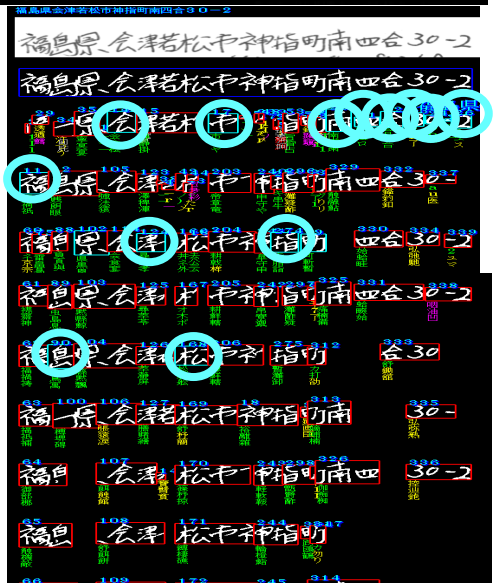
Light blue shows database and recognition result of characters after database matching.

Enabling recognition below address correctly

"Blk 122C"
"Sengkang East Way"

Change shape of characters in 3D



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# Toshiba's OCR for Customs operation

**The OCR system is able to recognize multiple information on the Customs declaration forms and labels affixed to packages, and automatically collate those with pre-registered information, and alert Customs officers and inspectors if needed .**

1. **Automatic recognition of information on Customs forms or labels**
2. **Automatic recognition of specific items or key words on Customs forms**

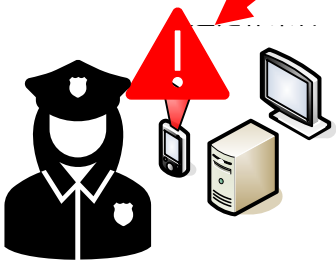
**Match !**

Referential Database

Conversion

**Specific information is registered into Toshiba's AI-OCR database**

**ALERT!**



**Inspector decides "Caution is needed"**

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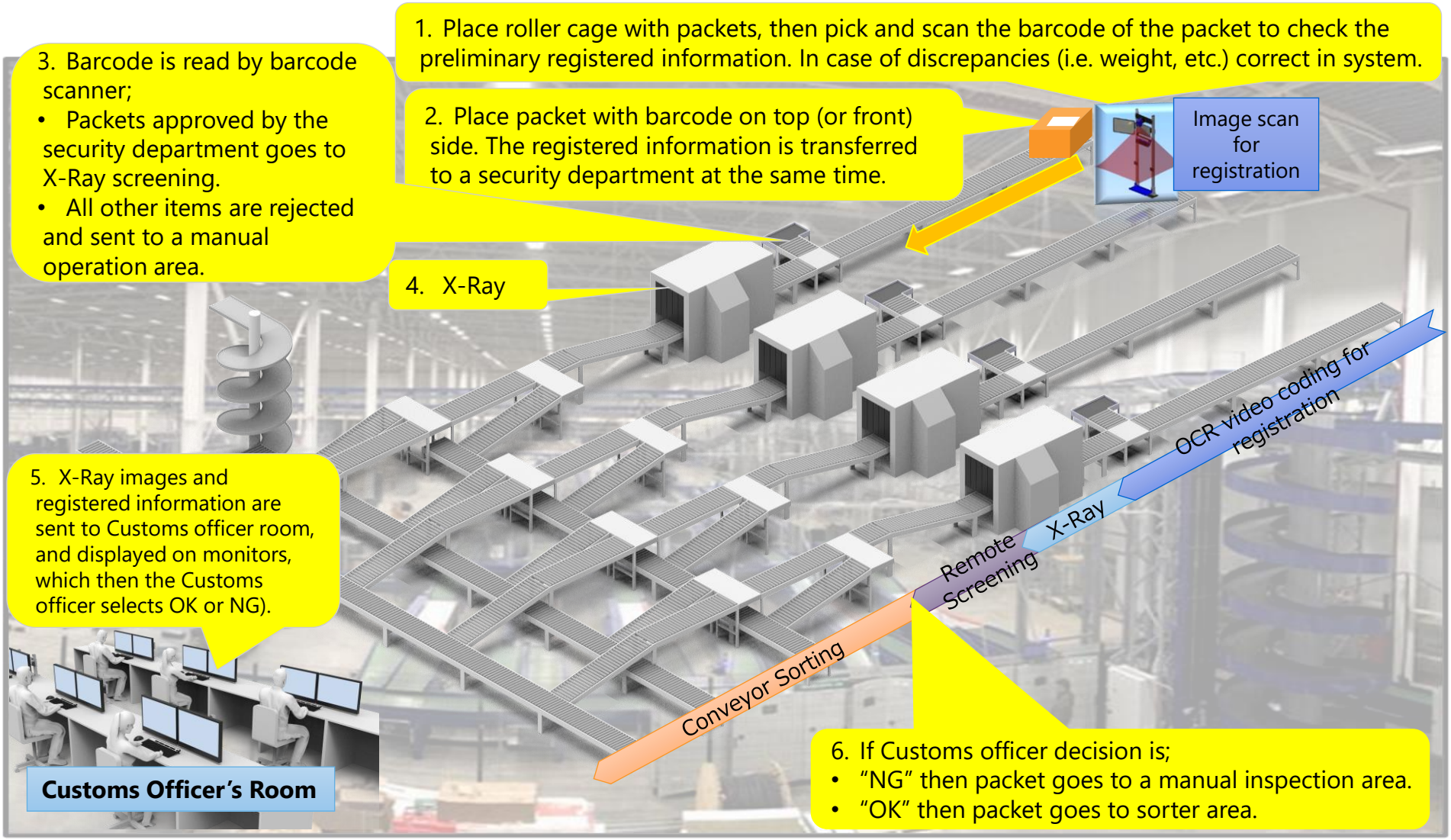
# Overview of Centralized Screening process for Postal Packets





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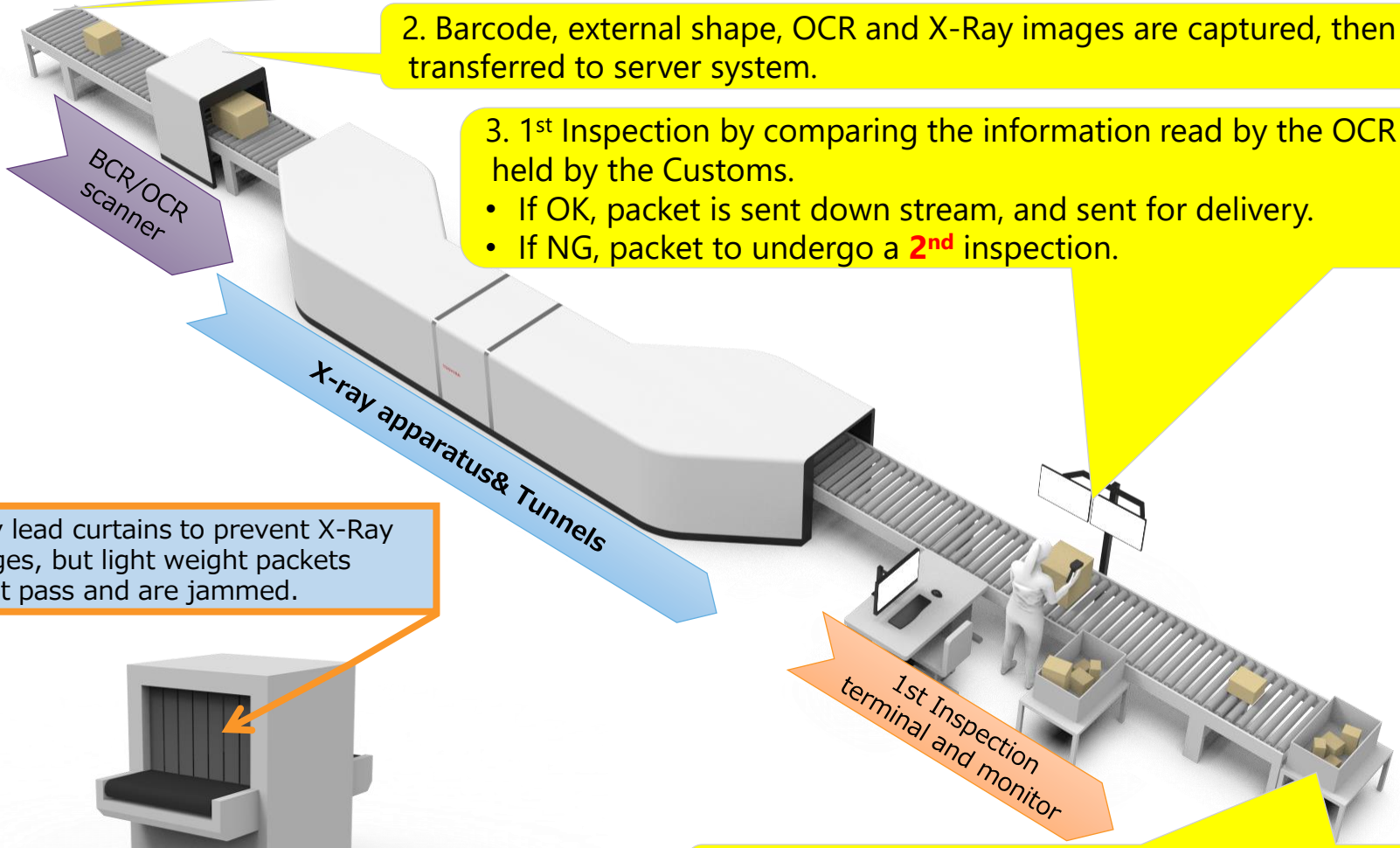
# Overview of Screening process for Postal Packets

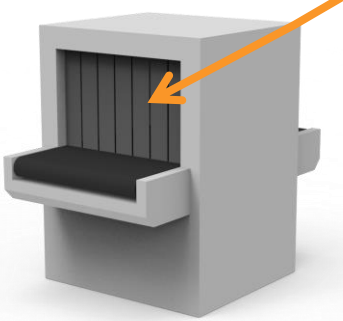
1. Place roller cage with packets, then pick and place on conveyer with barcode on top side.

2. Barcode, external shape, OCR and X-Ray images are captured, then transferred to server system.

3. 1st Inspection by comparing the information read by the OCR and held by the Customs.
- If OK, packet is sent down stream, and sent for delivery.
- If NG, packet to undergo a **2nd** inspection.




Heavy lead curtains to prevent X-Ray leakages, but light weight packets cannot pass and are jammed.



4. **2nd** Inspection result registered in work station.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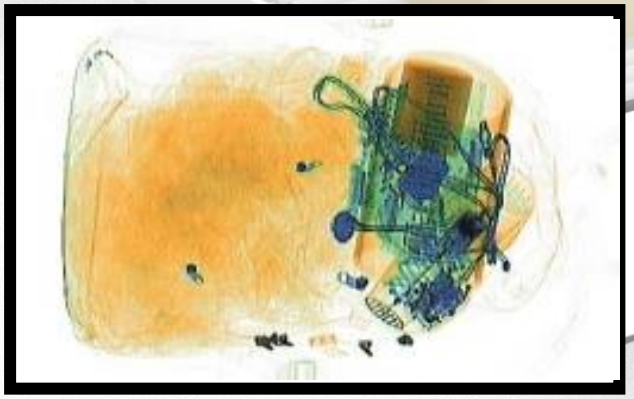
# Customs Inspection Workstation Set-up

**Integration of sub-system provides not only X-ray images, but also registration result and external picture on the screens for remote assessment.**



Screens available in both Touch or Non-Touch Screens!

OCR information
(comparing information read by OCR and held by Customs)
Barcode information
External images
are displayed.

Operator can chose the
Result of inspection (i.e. “OK”, “NG”)
(destination chute)

1st Monitor
X-ray image

2nd Monitor X-ray image
(alternative surface)

3rd Monitor registration results of the target item

- Operation keyboard ➔
- Zoom-in, Zoom-out
- Decision button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# Features of Toshiba's Customs System

1. Accurate AI-OCR technology

2. Curtain-free No-Jam X-Ray System

3. Tailor-made conveyor and operator screen layouts

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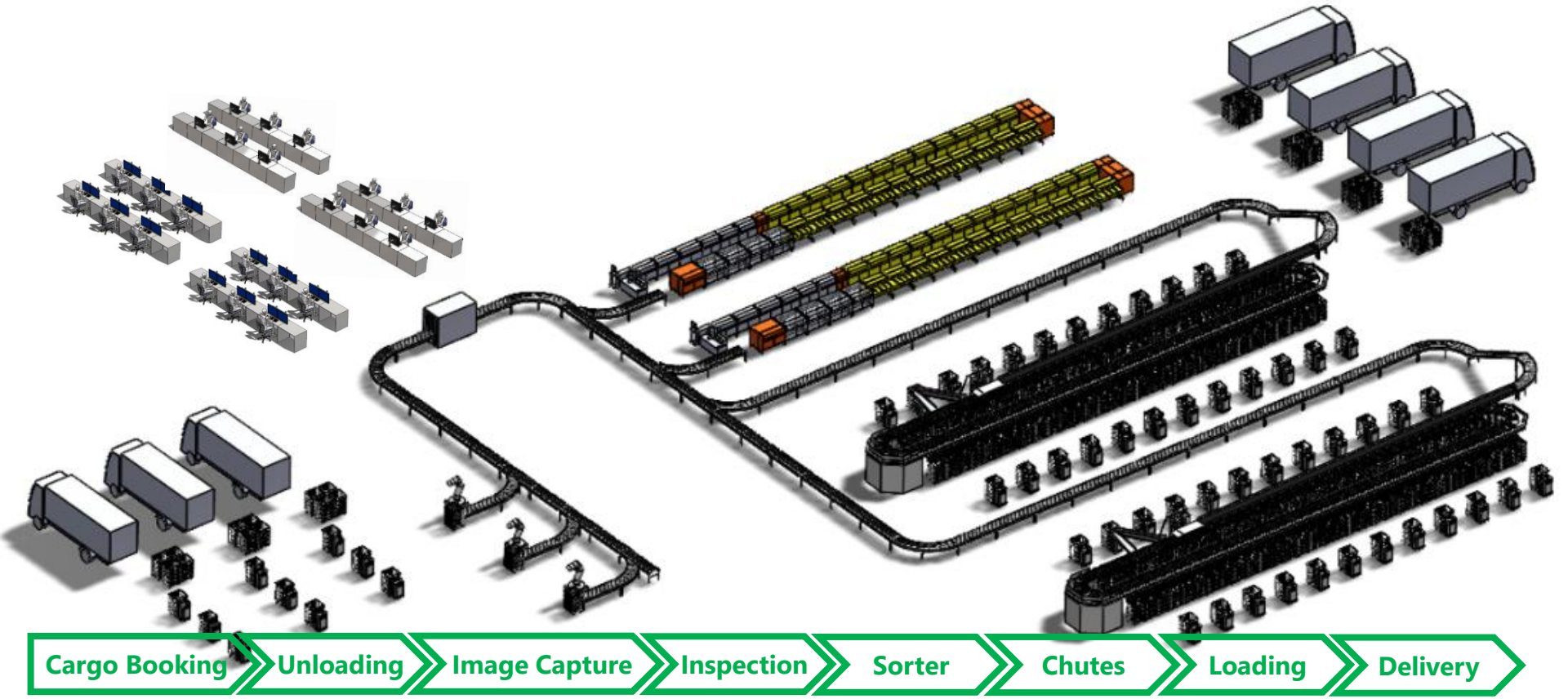
# Our Vision for the future of Customs & Posts

## Harmonized Customs Inspection & Postal Sorting Process




## Ensure safety and security of society and well-being of the public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# Committed to People,
# Committed to the Future.