

Japan's Approach on Automatic Threat Recognition

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Orchestrating a brighter world

NEC

Background

Seeking Solutions with Technology

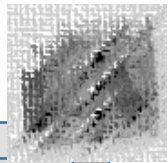
Advancement of Deep Learning

Increased number of Customs Declarations

Illicit Trade through Postal Items

Efficient and Effective
Customs Operation and Risk Management
Required

X-ray images



Automatic Sorting based on
the result of AI Analysis

Automatic Threat Recognition
as a Potential Solution

Joint Research and Development
with Private Sector

Low-energy
X-ray

Low-Risk Goods

Physical inspection

High-Risk Goods

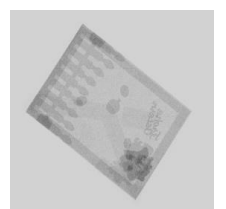
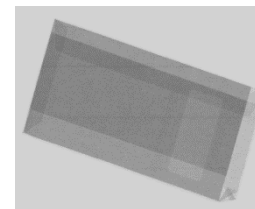
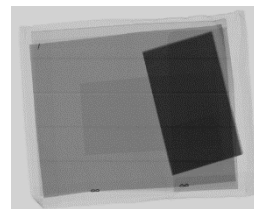
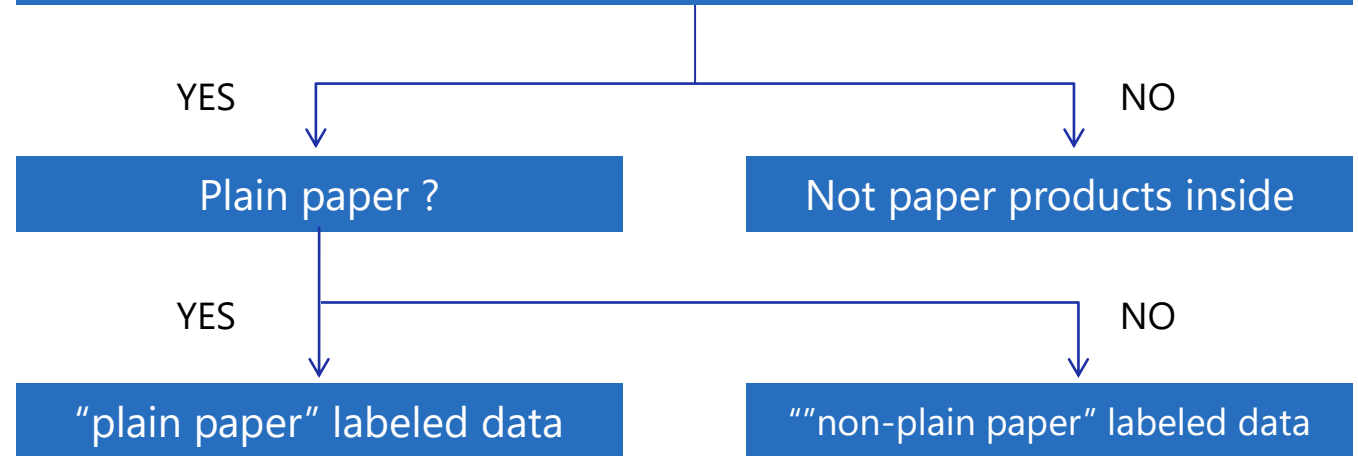
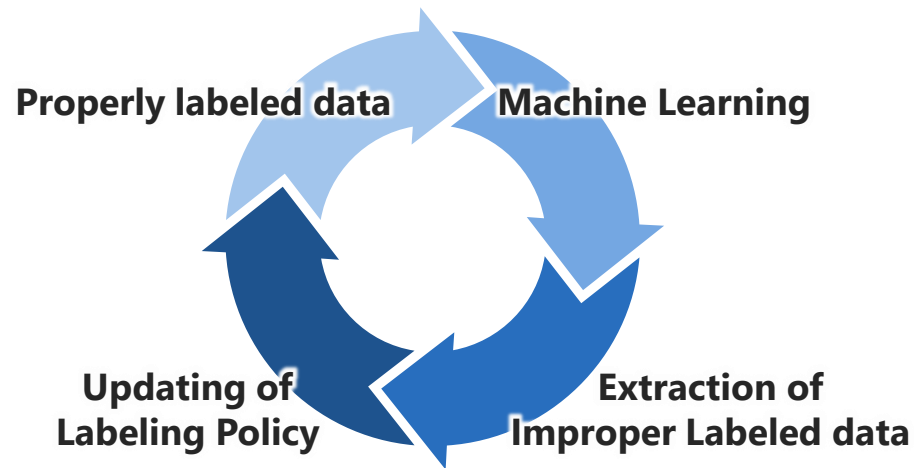


Data Collection & Machine Learning

AI requires properly labeled data, in sufficient quantities, to be effective

How to properly label

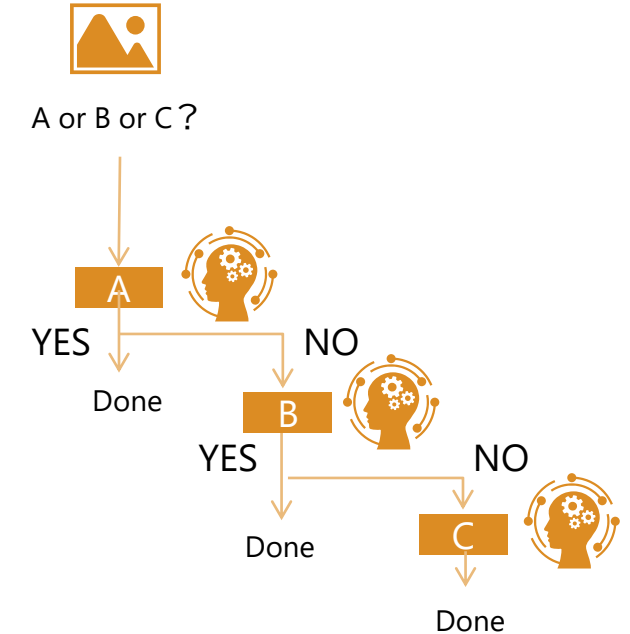
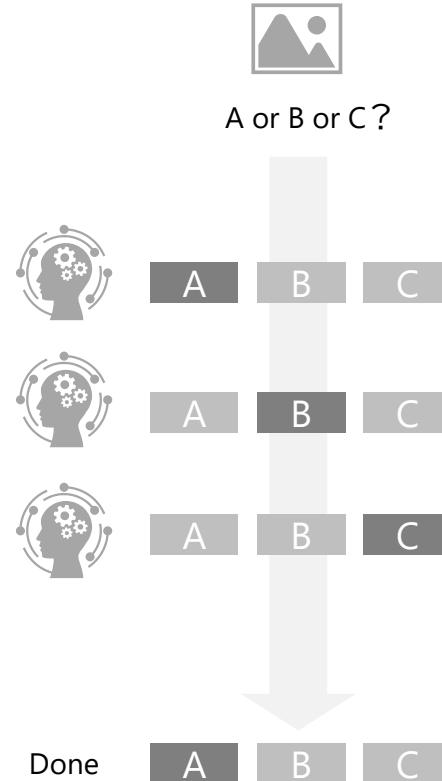
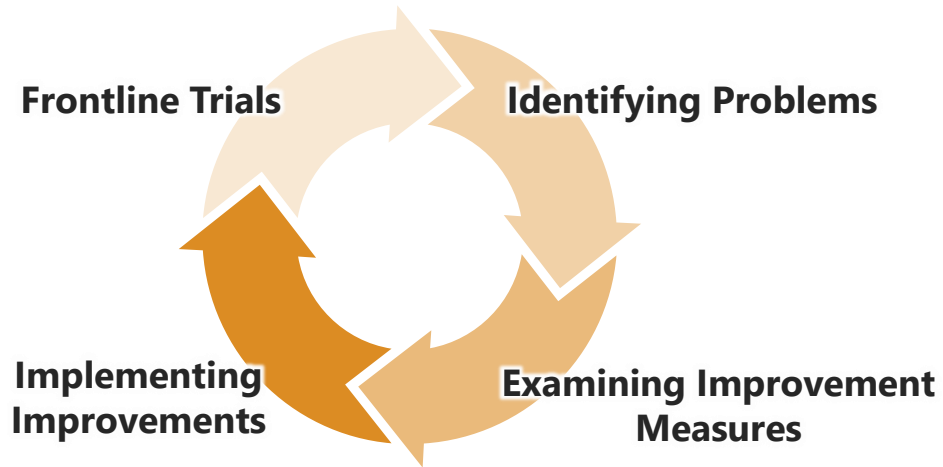
Judgment by the human eye to recognize only “paper products” (documents, letters, books, notes, etc.) to be visible ?



Frontline Implementation

The entire AI system must meet the criteria for being useful as a Frontline solution

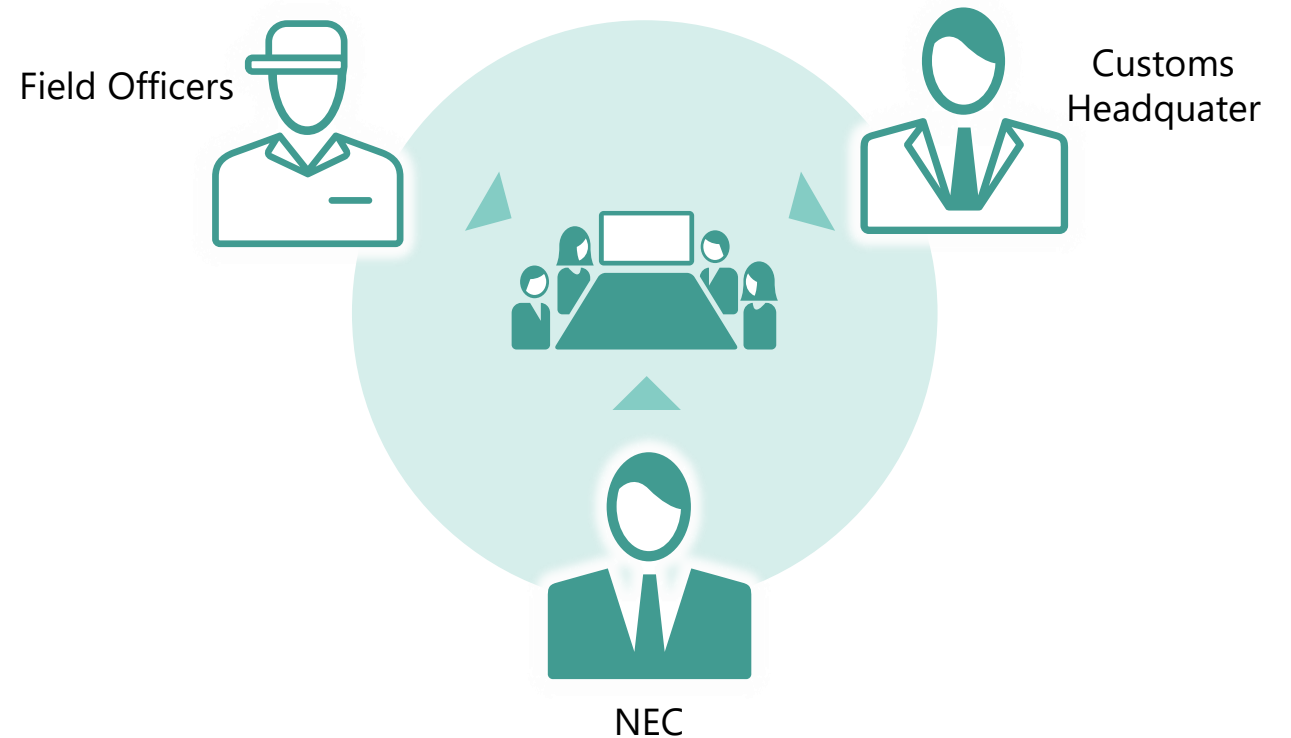
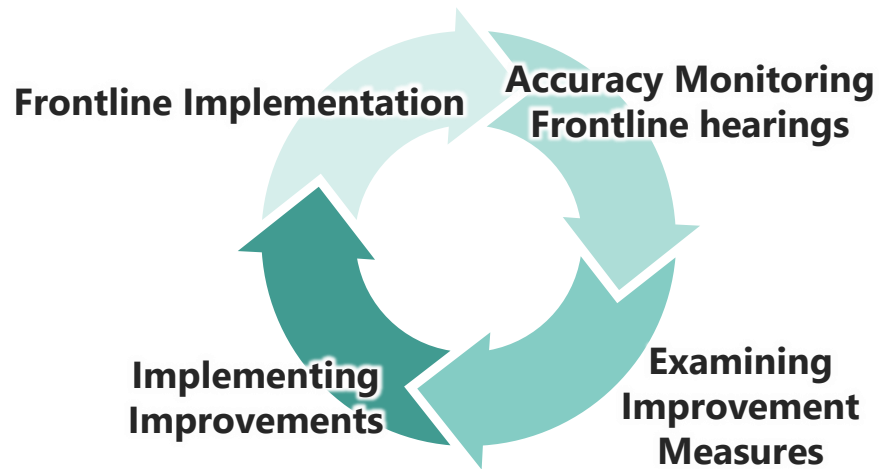
Multi-stage judgment



Post Implementation

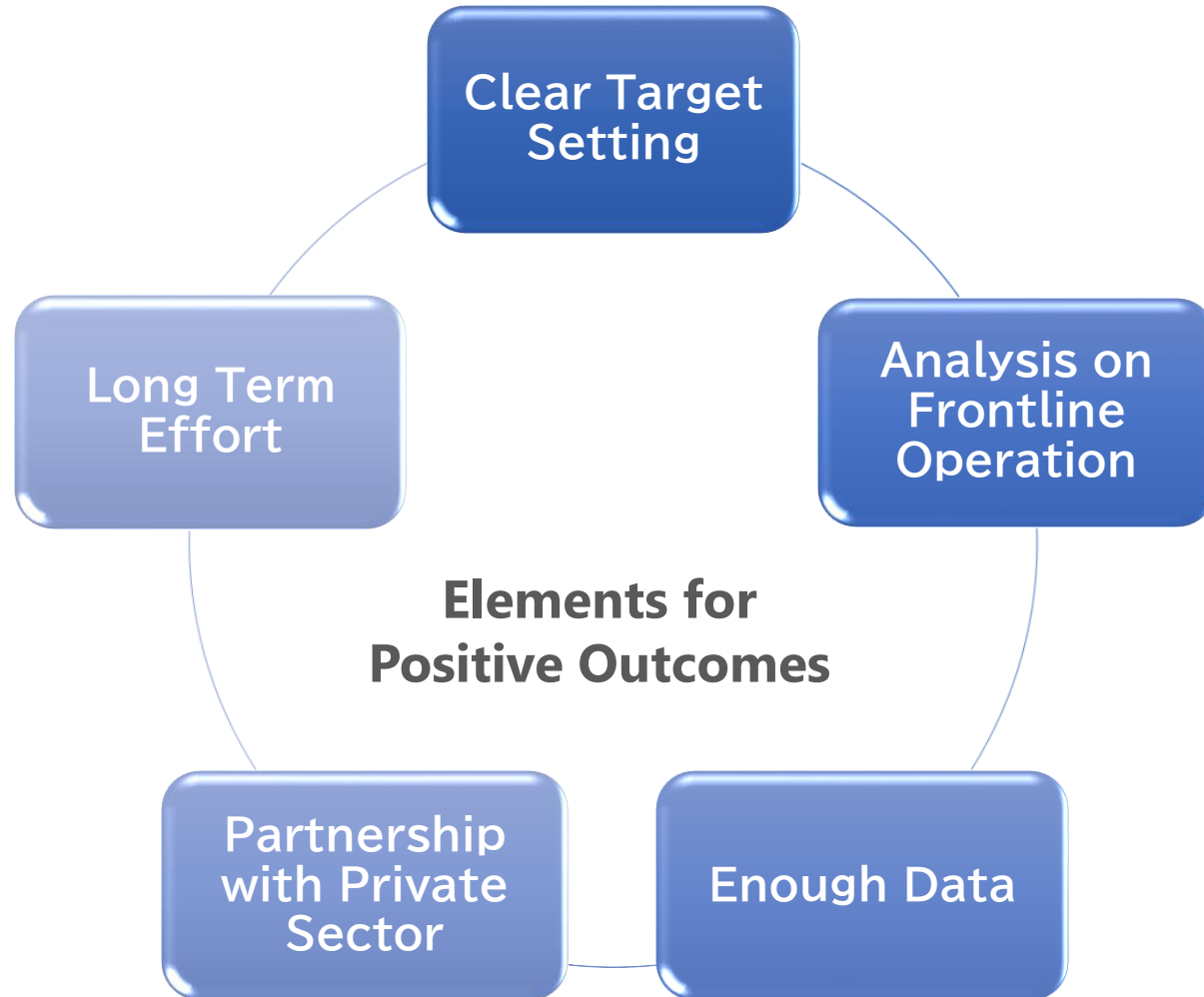
AI system is continuously updated after introduction for longer usage

- Continuous and regular discussion to reach the ideal goal together



Lessons Learnt

Taking Steps Forward



Continuous Journey

X-ray CT with AI Algorithm

