

# **BAG-INTEL**

**AI-powered BAG-INTEL solution:  
Transforming customs operations at international airports**

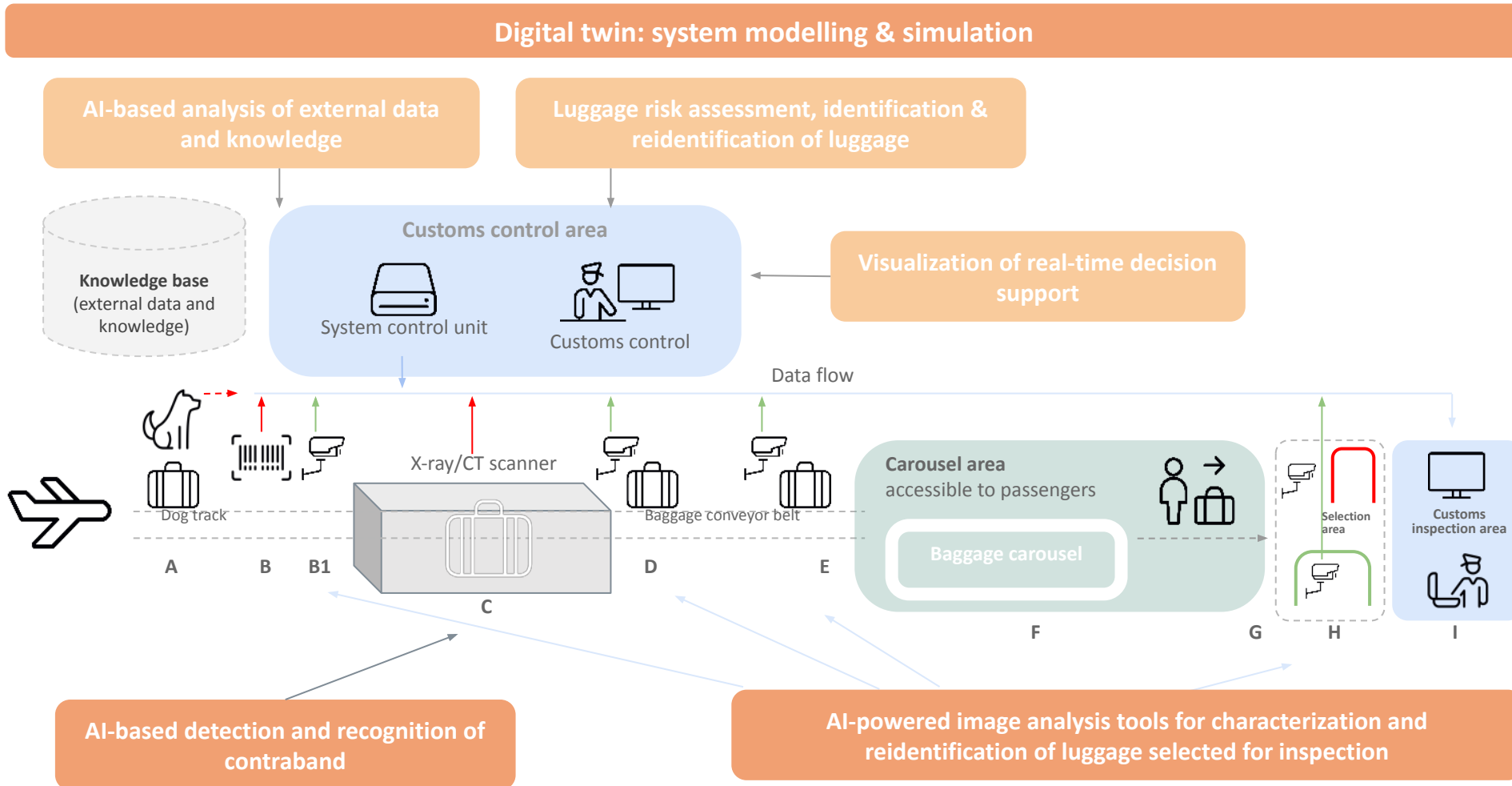
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**I-SEAMORE Webinar: Use of AI in Border Security**

*October 30, 2024, online*

# Operational scenario

## CUSTOMS CONTROL OF INCOMING PASSENGER BAGGAGE AT INTERNATIONAL AIRPORTS



# Operational scenario

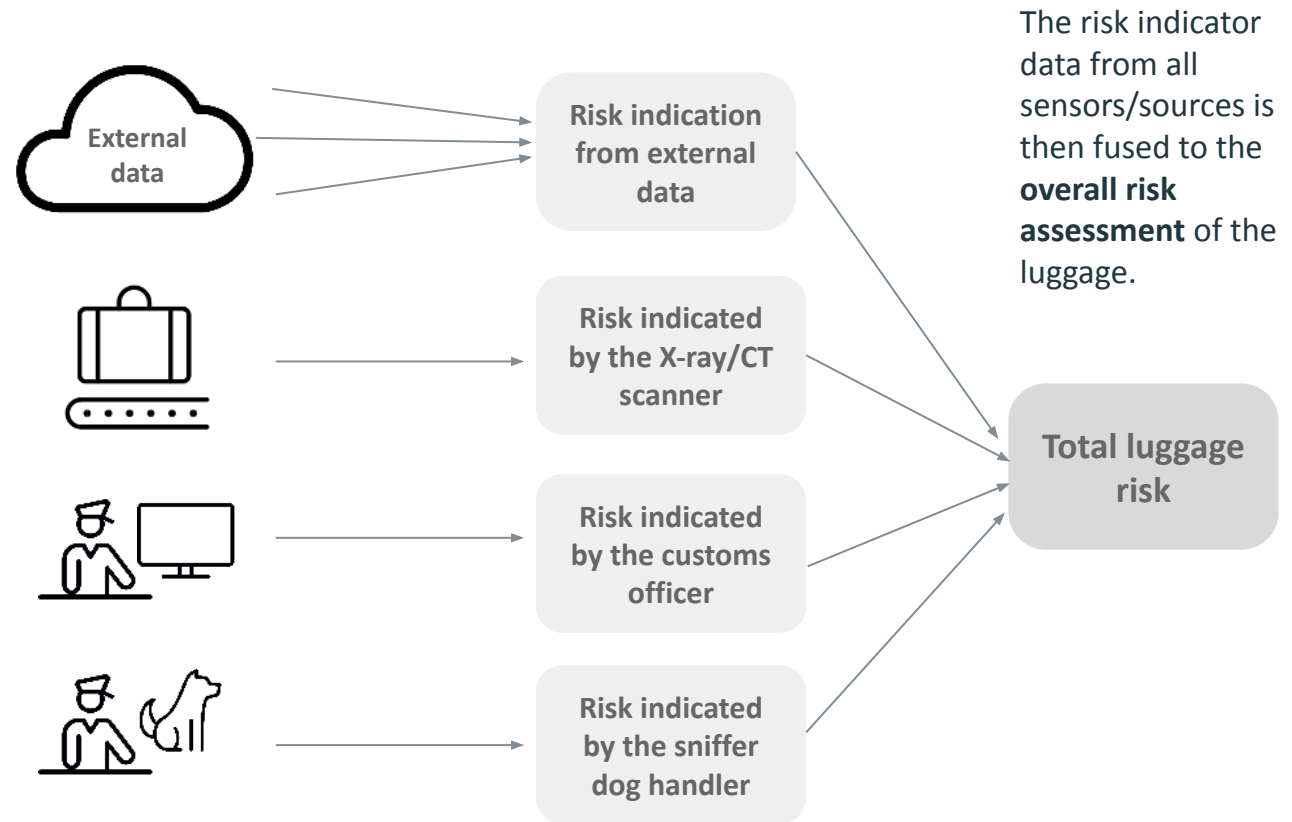
## CUSTOMS CONTROL OF INCOMING PASSENGER BAGGAGE AT INTERNATIONAL AIRPORTS



Upon flight arrival, when the luggage is unloaded and placed on the baggage conveyor belt, the **customs risk** of each piece of luggage is **assessed using AI-supported tools** under the supervision of the customs control officer(s).

The applied **risk indicators** arise from 4 kinds of **sensors/sources**:

- **External data and knowledge**, such as the Passenger Name Record and the databases of Law Enforcement Agencies, where suspicious travel patterns and links to organized crime are recorded.
- **An X-ray/CT scanner** with absorption sensing and object recognition in the scanning image, which will be trained to detect/recognize various kinds of contraband, such as drugs, cigarettes, currency, etc.
- **The customs control officer** who may detect suspicious content that has not been detected and flagged by the scanner itself.
- **Dog handler input**, if the customs apply a sniffer-dog at the dog track before the X-ray/CT scanner.

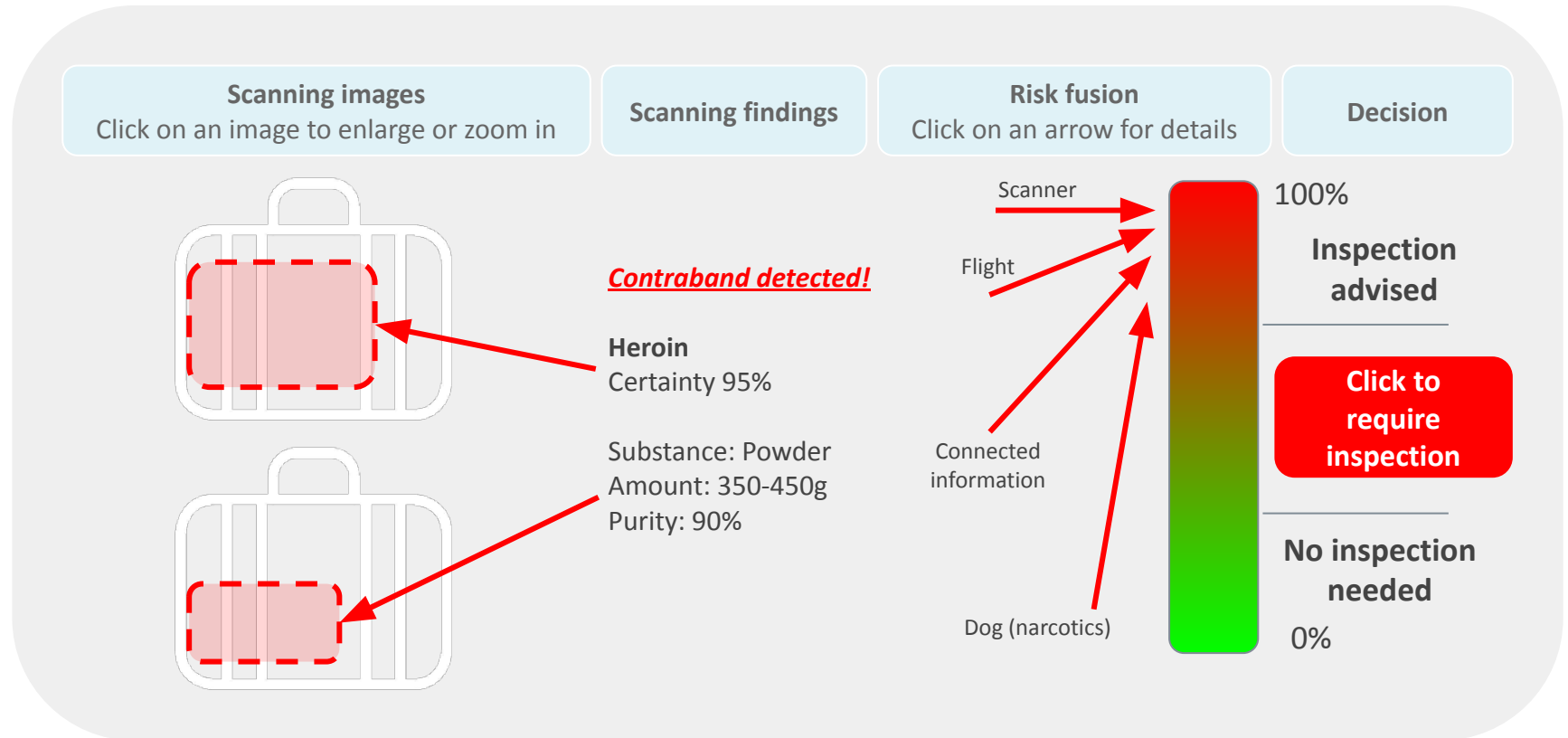


# Operational scenario

## CUSTOMS CONTROL OF INCOMING PASSENGER BAGGAGE AT INTERNATIONAL AIRPORTS



Based on the **overall risk assessment** of the luggage, a **decision** whether the luggage should undergo **manual inspection** is taken.



# Advancing the state of the art

## CURRENT SOLUTIONS

- The security scanning of outgoing luggage is well-developed but **the customs scanning of incoming luggage is not developed to its full potential.**
- Utilization of external data for the risk assessment is, in general, **not exploited to its full potential** for the customs control.
- While some airports apply radio-frequency identification (RFID) tagging for the customs reidentification of luggage, this method has several **disadvantages:**
  - **the smuggler may find and remove the tag** upon collecting the luggage and before entering the customs area at the exit of the baggage delivery space
  - **tags must be manually placed in/on the luggage and then removed** before the traveller leaves the customs area following the inspection of their luggage
  - it has a relatively **high operation and maintenance cost**
  - it comes with an **environmental impact** due to production and disposal of tags



# Advancing the state of the art

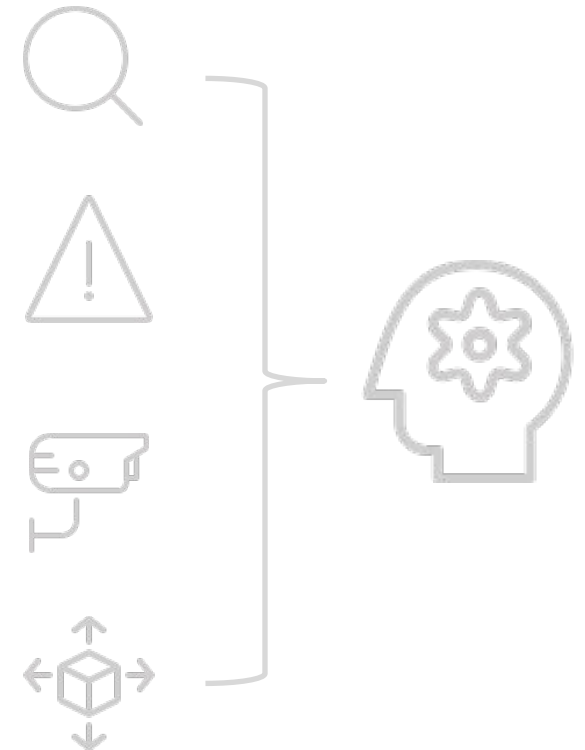
## THE BAG-INTEL SOLUTION



### Implementing the BAG-INTEL solution with its advanced features and capabilities, including:

- AI-powered functionality for enhanced detection of contraband in X-ray scanning of luggage,
- AI-powered risk assessment based on the analysis of data from external sources (Passenger Name Record and Law Enforcement Agencies),
- AI-camera-based end-to-end reidentification of luggage, and
- digital twin for system visualization and performance optimization,

**will lead to greater effectiveness and efficiency of the customs control processes!**



- ✓ The cases of manual inspection not leading to finding contraband will decrease as **only luggage containing contraband will be inspected manually.**
- ✓ More contraband will be detected as **more luggages containing contraband will be flagged.**
- ✓ Besides, the **AI-camera-based reidentification is non-intrusive**, avoiding all the disadvantages of alternative solutions.

# Reach out to BAG-INTEL >



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