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Border Force

# WCO Technology Conference and Exhibition Ha Noi, Vietnam

*Session Five: Breaking Boundaries in Detection Technology: Leveraging Innovation to Enhance Customs Control Efficiency*

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## Emerging Threats

**Government takes action against deadly synthetic opioids**

**Three men's deaths in Birmingham related to new synthetic drug**

**The port was convenient for smuggling because containers are processed quickly in automatized terminals, limiting options for customs to check them”**

**Fentanyl deaths on rise in UK, drug report wa**

**Customs struggle to take full advantage of the e-commerce opportunity. They are wrestling with ongoing problems such as lost revenues from tariffs and taxes due to the misclassification and undervaluation of goods, as well as increased flows of counterfeit**

# In the United Kingdom

## £ Customs

Border Force protects substantial revenue through the seizure of alcohol, tobacco, cigarettes, and through other international trade activity. In FY 22/23 alone, Border Force seized<sup>2</sup>:



4.2 million litres



43,184 KG HRT



720 million sticks

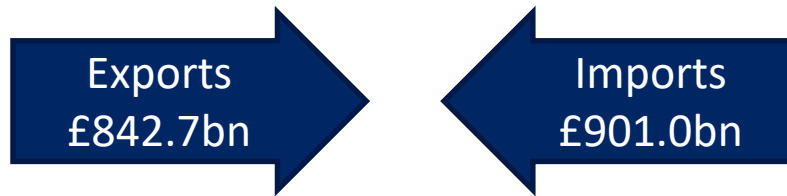
However, **we prevent only a very small proportion of the overall loss.**

**£3.4bn**

Tax Gap on Excise (FY 21/22)<sup>1</sup>

## Customer Service

The UK Border facilitates significant volumes of legitimate trade<sup>4</sup>:



**Ranked 30th**

Timeliness Across the Border<sup>3</sup>

Despite this, **we underperform international comparators** on measures of trade effectiveness including ease, timeliness and customs efficiency.

## Security

The volume of illicit goods that continue to pass through the UK cause significant harm, as evidenced by the annual socio-economic harm to the UK from illicit good flows in these modes of entry:

RoRo Freight	£2.4bn	Air passenger	£330m
		Post	£160m
Containers	£2bn	Fast Parcel	£160m

**£25.6bn**

Total cost of crimes with a border element (FY 15/16)<sup>5</sup>

## Goods Challenges

**Our ability to respond to the challenge, cut crime, reduce the threat from terrorism and support economic prosperity is impacted by:**

Complex System of stakeholders and lack of shared vision

Volume of cross border traffic

Limited window of opportunity for intervention

High volume and poor quality of Data

Antiquated Port Infrastructure and logistics

Underinvestment in Detection capabilities and innovation

Absence of operational Search Standards

Performance and outcomes

Prioritisation challenge across 5 Systems

Underinvestment in people & skills

## Goods Opportunity

Prosperity

Security

Cost Effectiveness

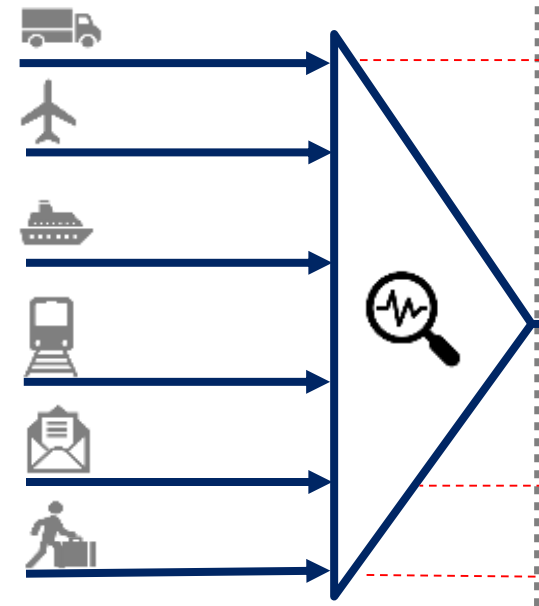
Systems Approach

*A secure border keeps the UK safe from harm and protects against revenue loss and enables trade, It is an attractive border, because compliance enforced and business profits protected. With investment in tech and infrastructure and a focus on customer service, flow can be enabled whilst security maintained. To utilise the opportunity articulating the return of investment for transformation will be key.*

# The United Kingdom Goods Transformation Strategy

## Risking & Intelligence

Sensitive Intelligence Collection and better Data via the Single Trade Window, using Modern Risking Systems to direct border intervention



More onus on industry to ensure **in-transit security**



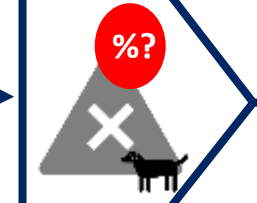
## Detection

Border Force Officer will direct screening through behavioural and visual detection and where risk testing underway



Customs Compliance checks

If screening capability is cost effective and doesn't impact adversely on flow, it should be ubiquitous. In this circumstance, risking and intelligence becomes the driver for where we put in additional effort

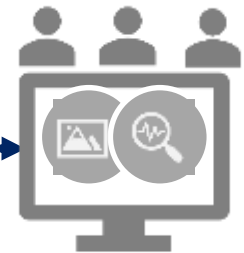


Artificial Intelligence Capability removes hay from the haystack by identifying what looks normal and directing intervention. In some modes rather than removing the hay it will identify specific objects of interest for example firearm components

Feedback loop



Identity confirmation in RoRo



Hub & Spoke Data & Image Analysis Capability that enables machine learning and can inform future targets.

## Search

Consignment differed for Secondary Screening / Search. Where appropriate automated port logistic capability utilised to move goods to agreed search area



Standard search methodology applied  
Standard secondary search detection kit



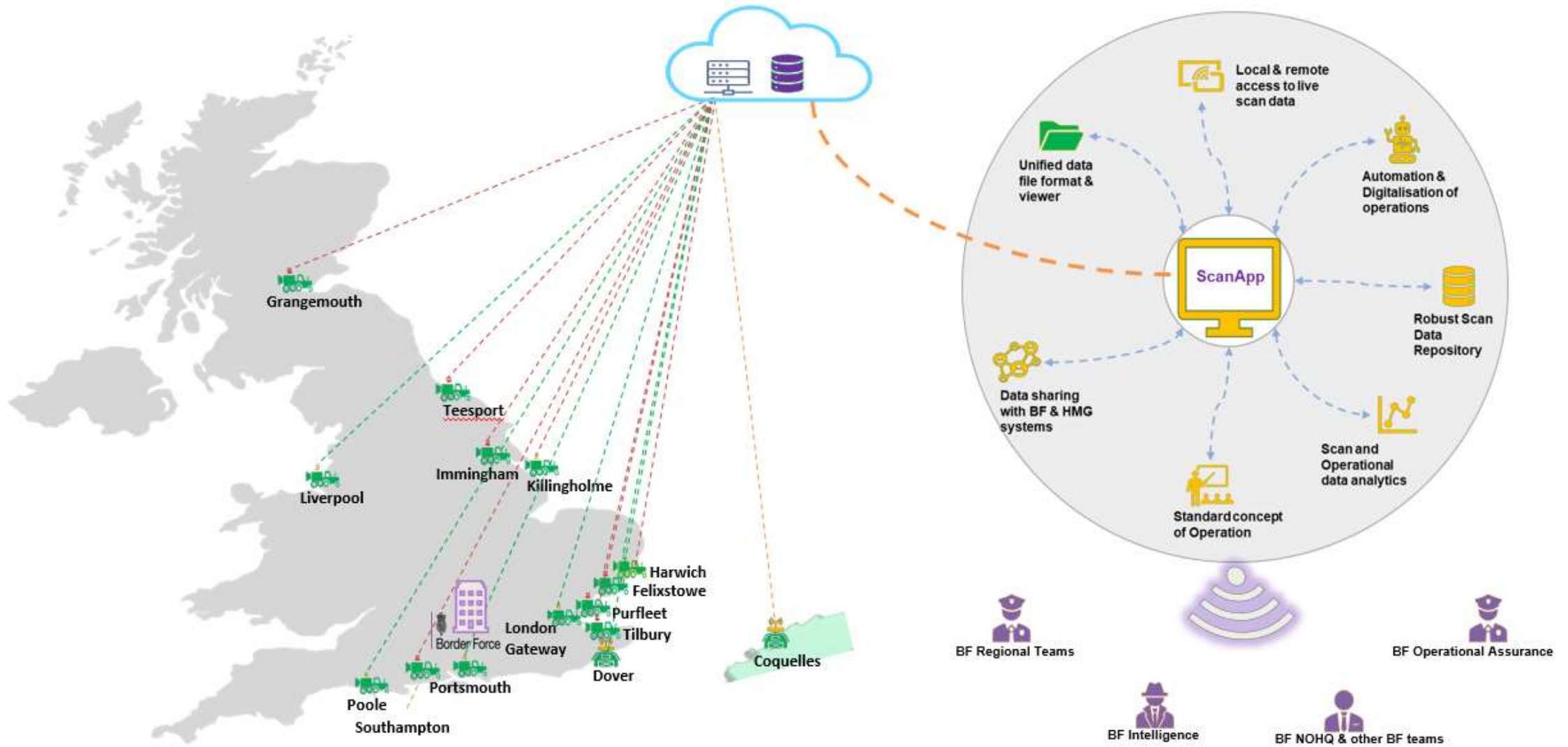
Consignment proceeds on onward journey (STW updated to confirm consignment released)



*As part of the transformation, we are taking these*



# And Doing This.....



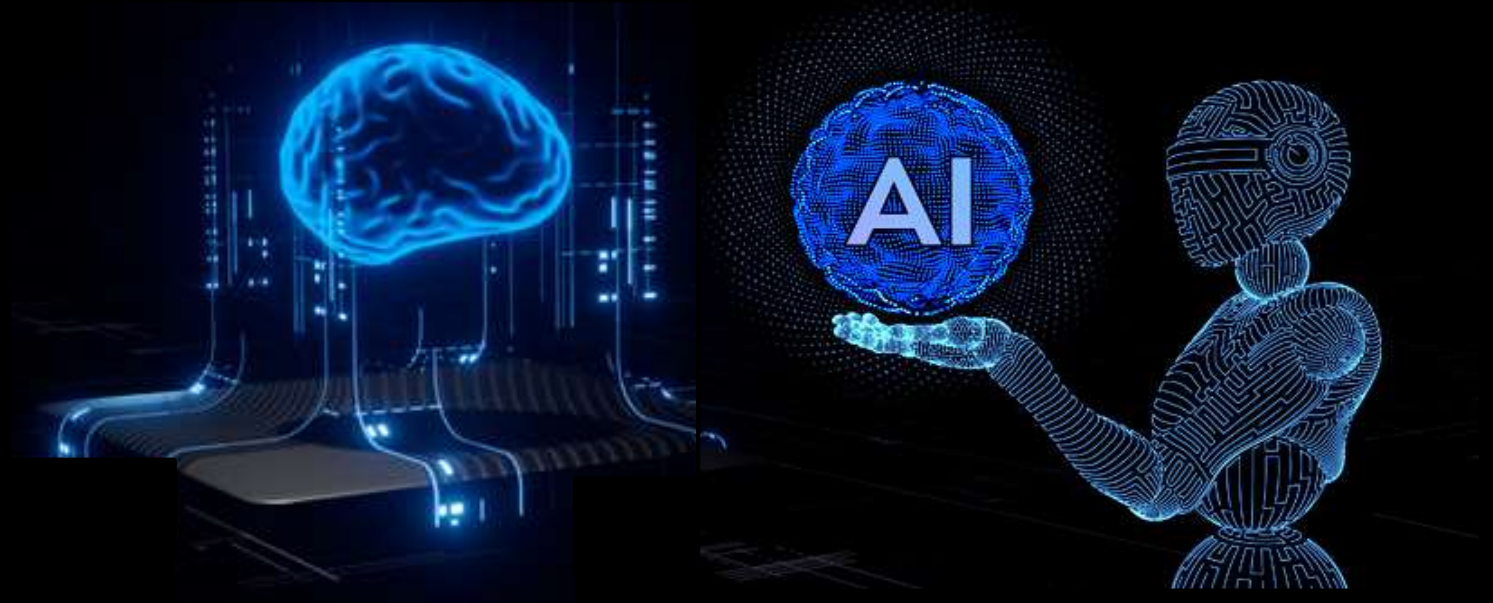
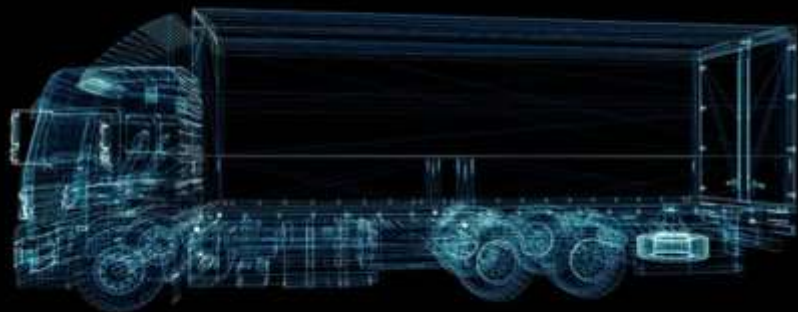


To Create this.....

Using This.....

To do this....

- Automated Threat Detection
- Vector Validation
- Goods Validation
- Goods Declaration Compliance
- Pattern Recognition
- Anomaly Detection



With these Challenges....

- Sufficient images to support machine learning
- Sufficient data scientists
- Infrastructure (bandwidth, processing power)
- Data synthesis (for example declaration data)
- Predominantly 2D x-ray images
- Diverse range of threats
- Must be fast and improve border flow
- Augmentation V Automation



### Problem

Organised Crime Groups (OCGs) use GPS & Bluetooth trackers (inc. Apple airtags) to track illicit goods entering the UK

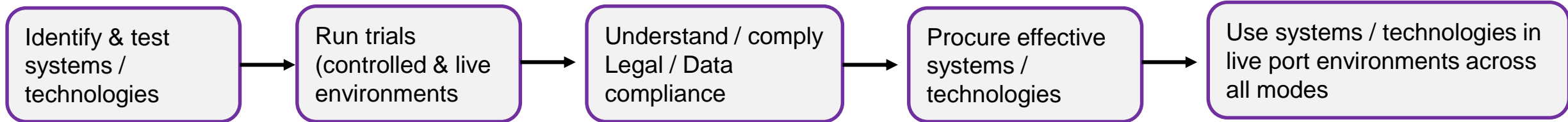
People enter the UK clandestinely (usually in possession of mobile phones)

UK Border Force have limited baseline data to enable understanding of threat / risk levels.

Different modes of traffic require different solutions

### Aim:

Detect Radio Frequency (RF) signals emitted from these trackers & Mobile phones to increase detections of illicit goods & people trying to enter the UK clandestinely. Reducing threats / risk to life and increasing seizure of illicit goods entering the UK.



### What we are doing:

RF detecting systems & technologies market research to identify those most suited to BF ConOps & requirements. Designing and running a set of technology trials on 2-4 of the identified systems, completing data analysis that will build an evidence base for Border Force to inform potential uses of technologies in detection of RF at the UK Border.



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# Thank You

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