PROFILE

INSIGHTS FROM THE PROFILE EU PROJECT

WHERE TO POSITION DATA ANALYTICS IN THE CUSTOMS PROCESS AND PERFORMANCE IMPROVEMENT CONSIDERATIONS:

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Customs PROBLEM

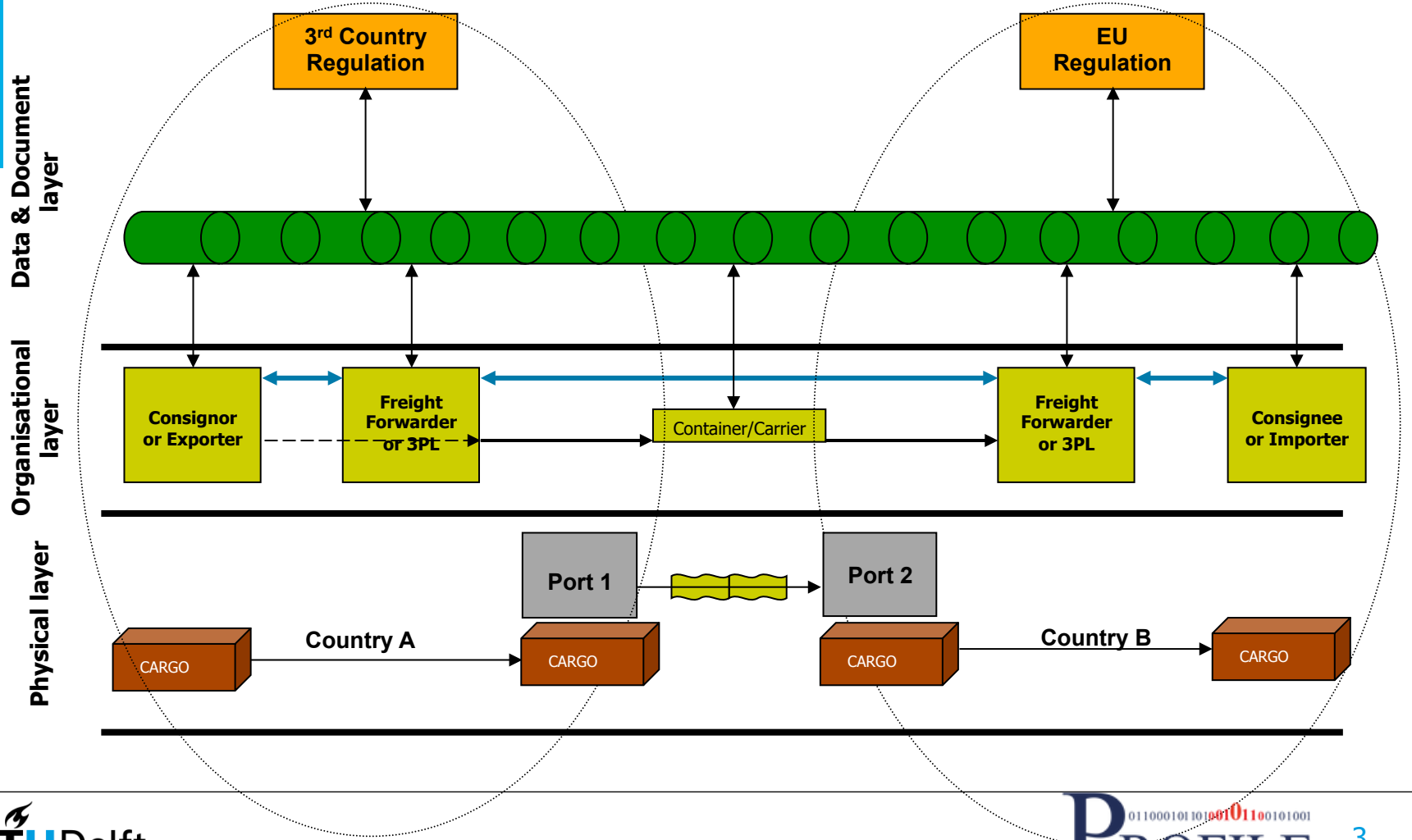
- **160 M customs declarations/year** submitted by importers/ exporters to Dutch Customs
  - Most of them have **inaccurate data**
    - **Price too low** (Undervaluation)
    - **Incorrect** Description of Goods (e.g. 'Toys')
  - Due to **e-Commerce**, **Brexit** declaration could increase to 450M/year by in a few years!!

- This steep increase **can not be solved** by hiring **more inspectors**, only by more automated processing of declarations with IT innovation

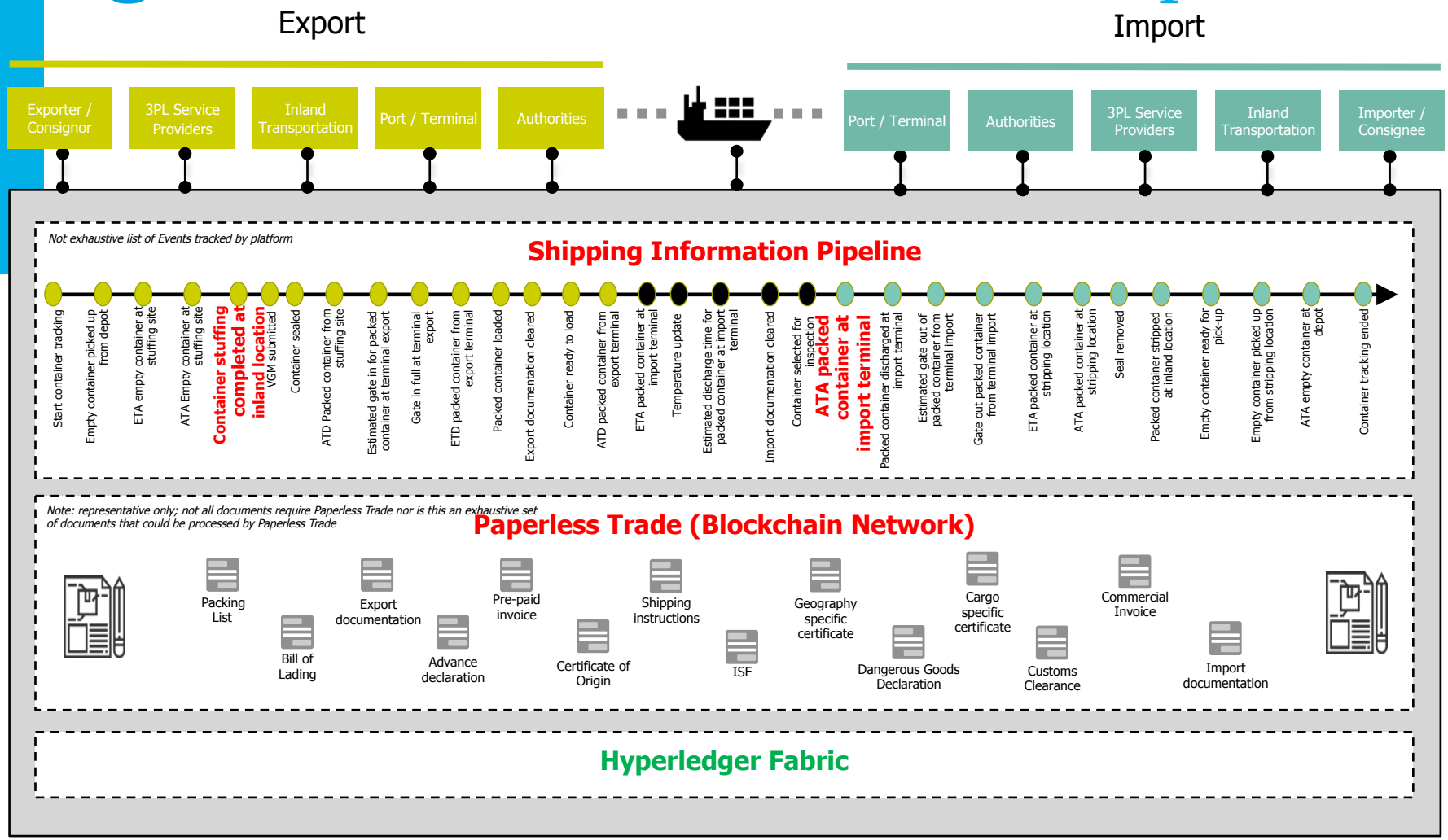
- **IT innovation**
  - **Collect extra business data** (e.g. purchase order, invoice, container packing list) to cross-validate declaration data
  - **IT infrastructure for sharing data** in international supply chains
  - **Data Pipeline, Blockchain** and **Big Data analytics**

Data Pipeline (Frank Heijmann, David Hesketh)

"**Internet for Logistics**" developed in EU research projects e.g. **CORE**, **CASSANDRA, ITAIDE**



Global data pipelines already scaling-up e.g. TRADELENS Blockchain IT platform



Data sharing and data analytics as next steps

- "**Get Data from the Source**"; Customs should use more trade data to cross-validate accuracy of import/export declarations
  - Examples: invoice, purchase order, packing list

- Companies are **willing** and **able** to share their trade data via IT platforms with customs
  - Able; Most companies use enterprise information systems (e.g. ERP)
  - Willing; if it provides less inspections (= "trade facilitation")

- **Data sharing** among **customs administrations**, as well as between Customs and **other agencies** nationally and internationally
  - Combining data from different sources can improve risk management

- **Data analytics** as a **next generation IT innovations** for customs

PROFILE

GOAL Develop modern data analytics and leverage Big Data and open data sources for customs risk management

PARTNERS 15 partners (5 Customs)

BUDGET 5 million EUR

Customs Administrations

- Belgium
- Estonia
- Netherlands
- Norway
- Sweden

Other Partners

- Cross-border Research Association(Coordinator)
- Netherlands Organisation for Applied Scientific Research
- The Swedish Defence Research Agency
- The Norwegian Defence Research Establishment
- IBM
- INLECOM
- BMT
- Joint Research Centre
- TU DELFT
- University of Lausanne

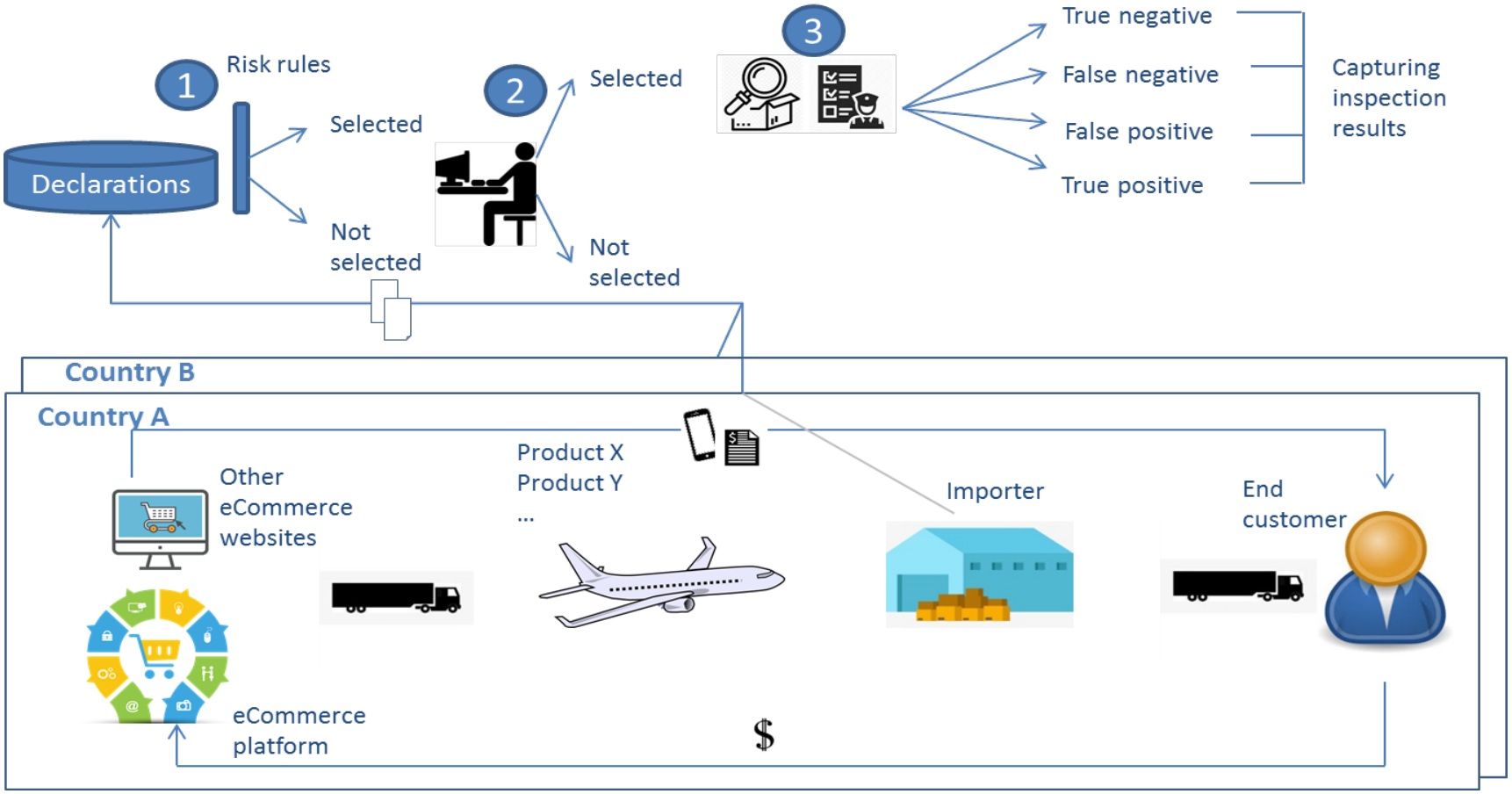
DURATION 36 months **START** 1 August 2018

Current research in the PROFILE EU-project

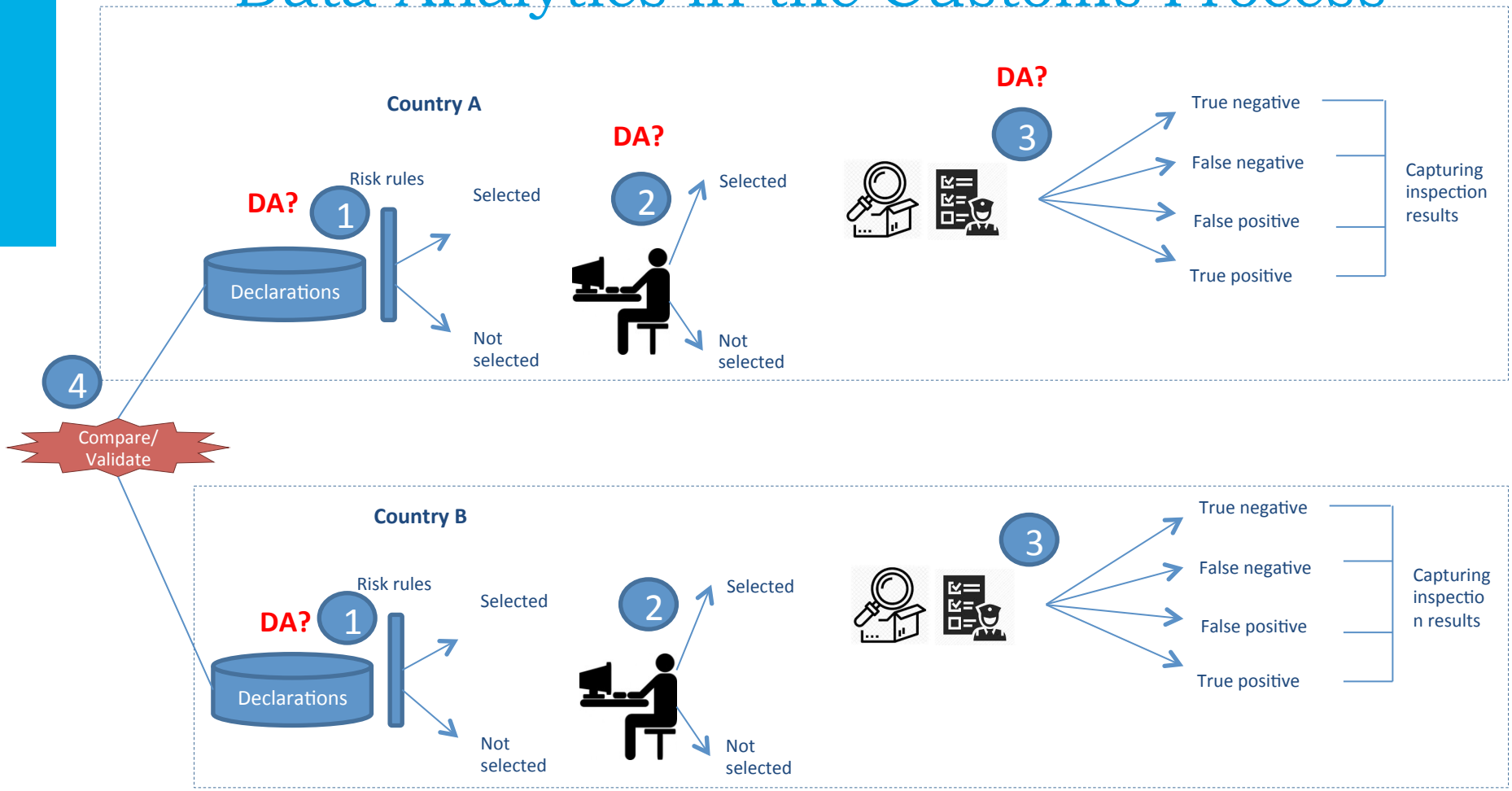
- **4 Living Labs** for using data analytics in customs in different countries

- **Living labs** pilot with data analytics based on:
  - **Internal customs data**
  - **External government data** from other customs or other government agencies
  - **External data** from eCommerce websites
  - **External data** from **data pipeline** providers

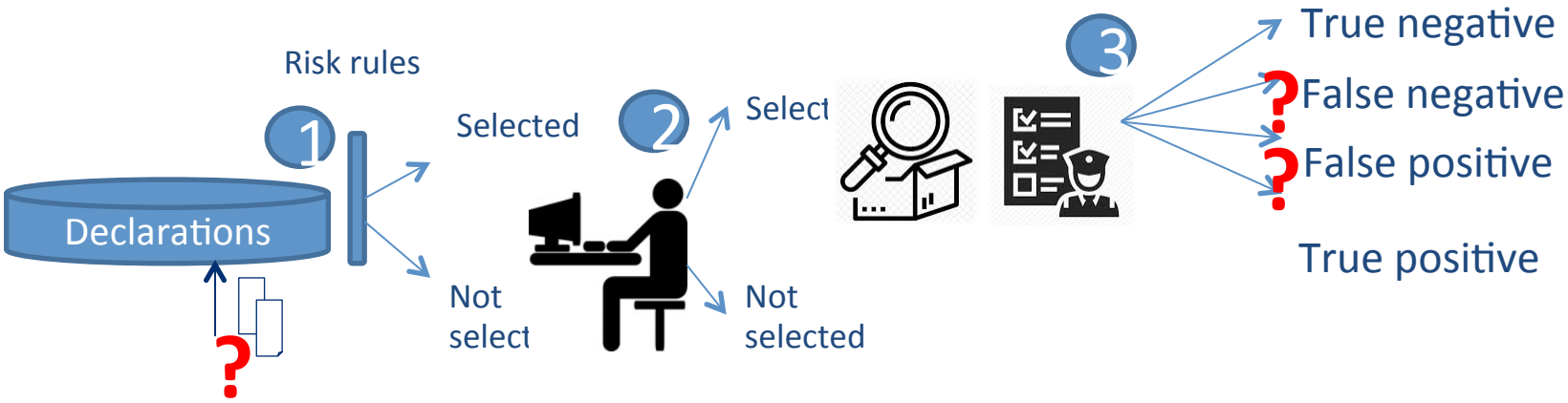
Risk Analysis in the Customs Clearance Process



Different Options of Where to position Data Analytics in the Customs Process



Where to focus the performance improvements with Data Analytics



Large increase in declaration volumes

Observations

- Decision points where **DA benefits** are **most useful**
  - Use DA to decrease **False Positive** inspections?
    - Now typically 94% False Positives
    - What if DA would improve that to 70% False Positives?
    - Less ineffective inspections, hence increase customs efficiency
      - Needed to be able to process the huge growth in declarations due to e-commerce and Brexit
  - Use DA to decrease **False Negative** inspections
    - "catch more illicit trade"
  - Different types of DA innovation (e.g. different training data sets)

- Customs **Resource limitations** constrain DA benefits
  - More true positives also requires more customs staff
    - to inspect
    - for administrative after processing (fines, reporting etc.)
  - **Trade-offs** have to be considered between DA innovation and customs resource limitations

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https://www.rsm.nl/master/executive-masters/executive-master-customs-and-supply-chain-compliance/overview/

THANK YOU!

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