

# Decision Trees vs. Simulation for Cargo Screening Cost Benefit Analysis

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## Background

- Cargo screening at seaports and airports
- Looking for stowaways, weapons and other threats
- Efficiency is not known

## Research question

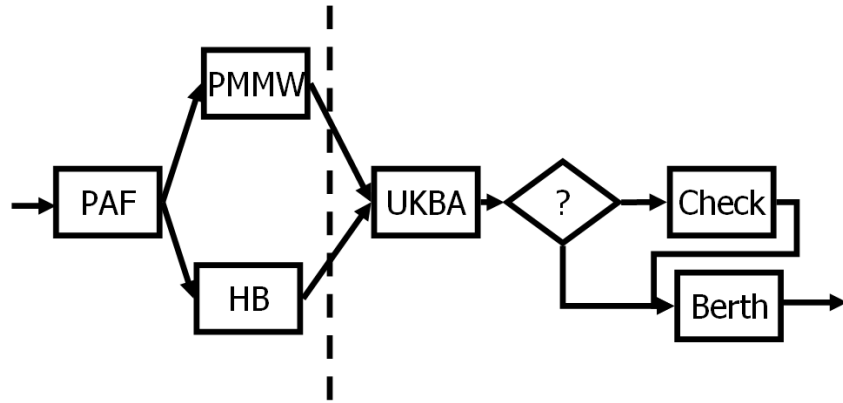
- Decision trees vs. simulation for conducting cost benefit analysis
  - How to use decision trees?
  - How to use simulation?
  - What is the difference between them?
- Can decision trees and simulation help us to define data requirements

## First Case Study

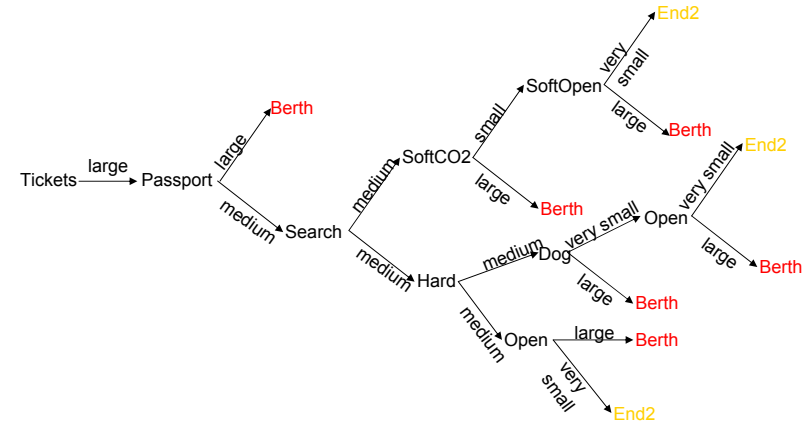
- Stowaways (clandestines)
- 900,000 lorries/year
- 0.4% are positive detected lorries



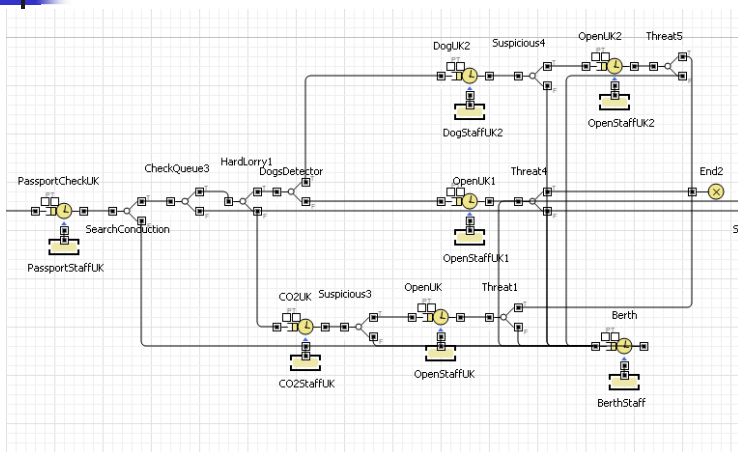
# The Conceptual Model



# Decision tree



# Simulation



# Conclusions

- Decision trees and Simulation are useful for basic analysis of static systems
- In dynamic environments simulation is more flexible (e.g. queue jumping or queue size)
- Both techniques are useful for data requirement analysis
- Simulation requires more data than decision trees



# Comments or Questions?

