
XP-DITE
IN A RISK BASED CONTEXT
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ECN
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OUTLINE

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XP-DITE

Accelerated Checkpoint Design Integration Test and Evaluation

1. Introduction and scope
2. Selected key results
3. Risk based security & XP-DITE

PROJECT KEY INFORMATION

ECN | TNO innovation for life

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Schiphol Amsterdam Airport

smiths detection bringing technology to life

Fraunhofer

shannon AIRPORT

SAFRAN Morpho

FOI

CASRA

UNI FREIBURG

iconal

CASCADE TECHNOLOGIES

SCARABEE Security Group

PARTNERS

IMAGING

Key figures

- Start: 9-2012
- Duration: 59 months
- Total funding: 14.6 Meuro
- EU Confidential

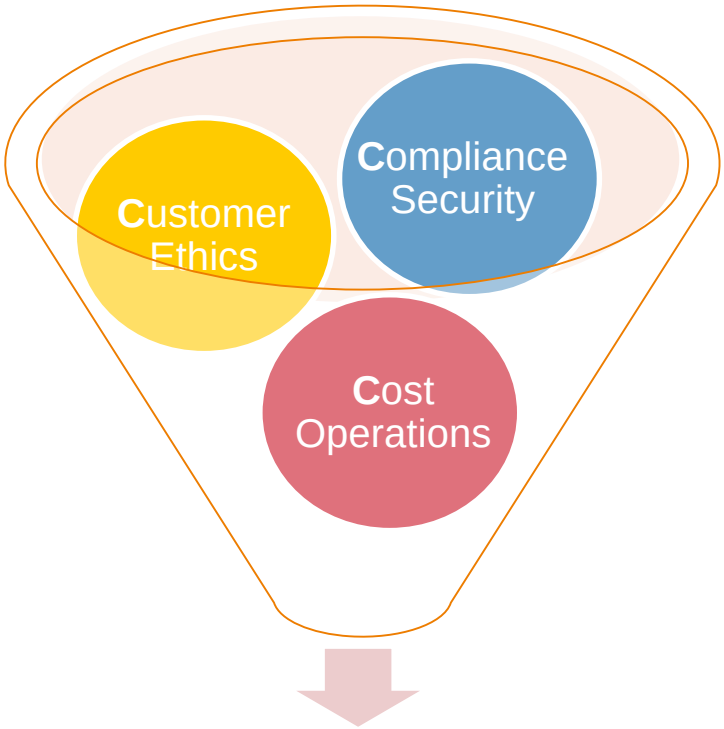
www.xp-dite.eu

The XP-DITE project has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under Grant Agreement No 285311

AVIATION SECURITY CHECKPOINTS….

Source: https://insideflyer.nl/inside-look-nieuwe-centrale-security-schiphol/

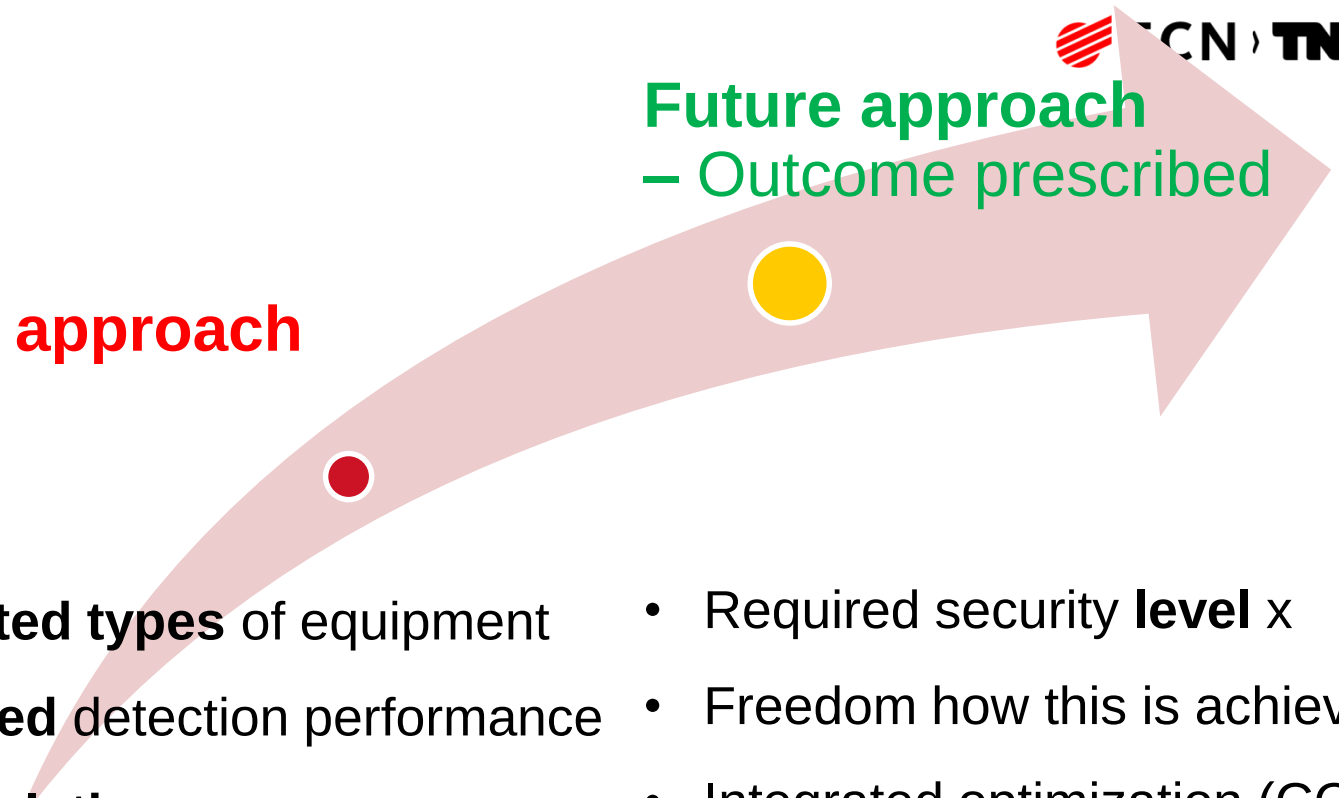
PERFORMANCE OF CHECKPOINTS



Quantitative performance?

Optimal design?

PARADIGM SHIFT IN MANAGING SECURITY



- **Permitted types** of equipment
- **Required** detection performance

  ..in **isolation**
- **Detailed** checkpoint processes
- Testing **equipment** compliance

- Required security **level** x
- Freedom how this is achieved
- Integrated optimization (CCC, EEE*)
- Testing **whole** checkpoint performance

*IATA/ACI Smart Security

MAIN OBJECTIVES

Support evolution to system level approach (CCC, EEE)

Develop concept and approach

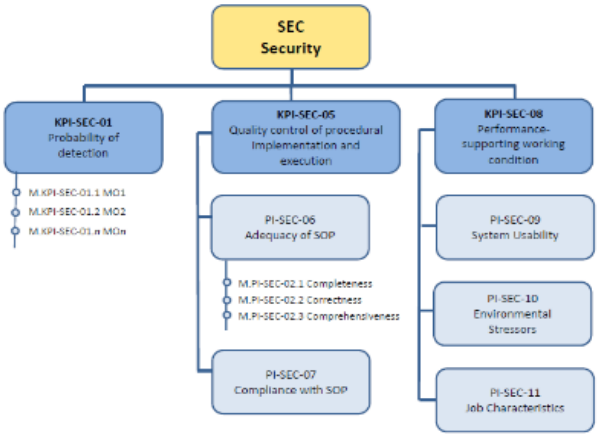
Develop methods, tools

Validate the concept and methods

- Demonstrate, build trust

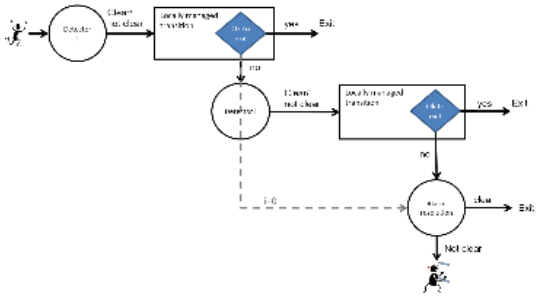
~~Build ultimate checkpoint~~

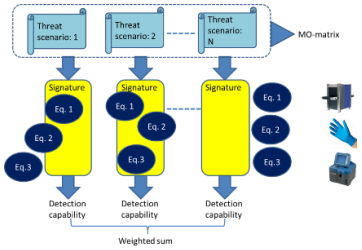
RESULTS - CONCEPTS



Conceptual model

- Performance areas CCC, PI taxonomy
- Checkpoint concepts





Security

- System level security approach
- Scenario based concept for simulation
- Equipment performance data sourcing

RESULTS - CONCEPTS

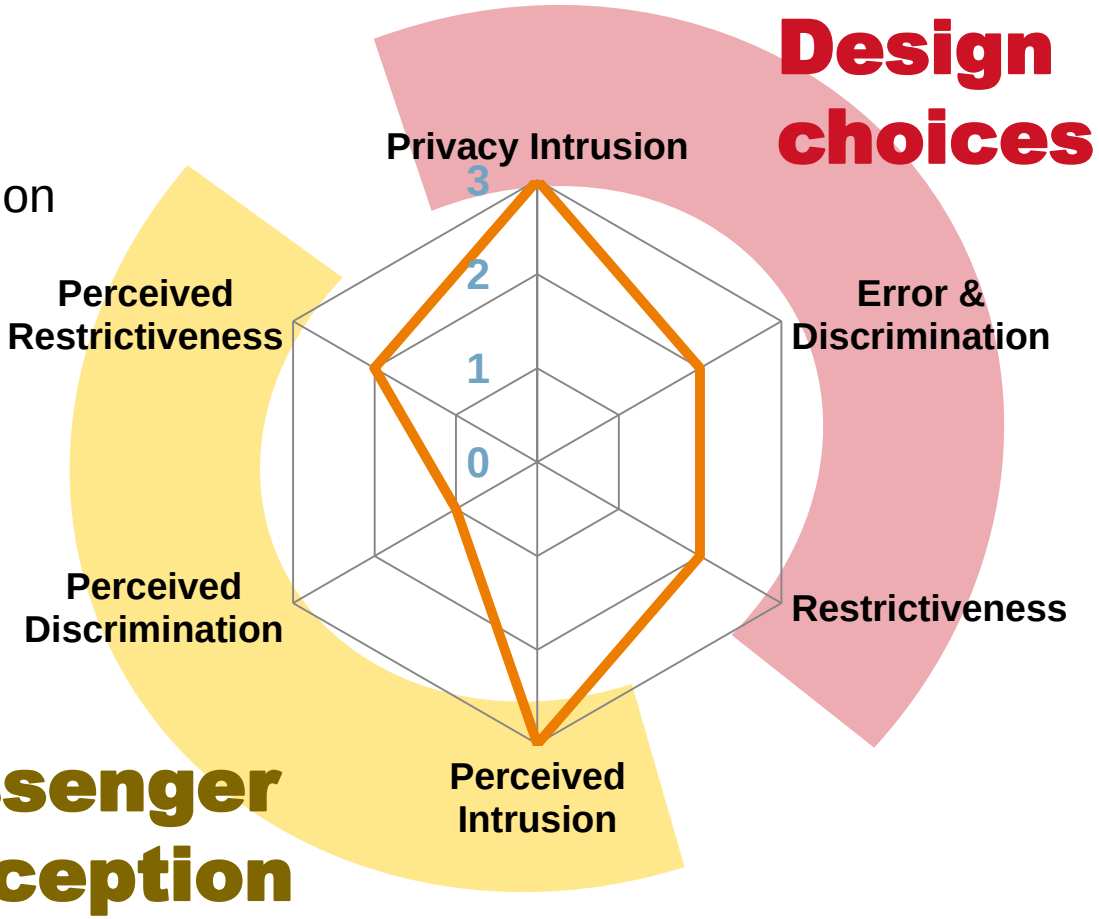
Ethical framework

3 realistic best-case

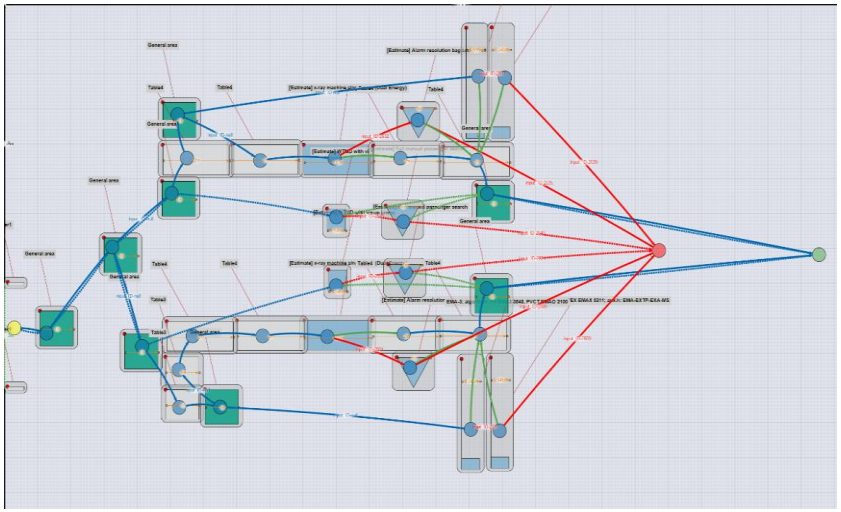
2 good performance

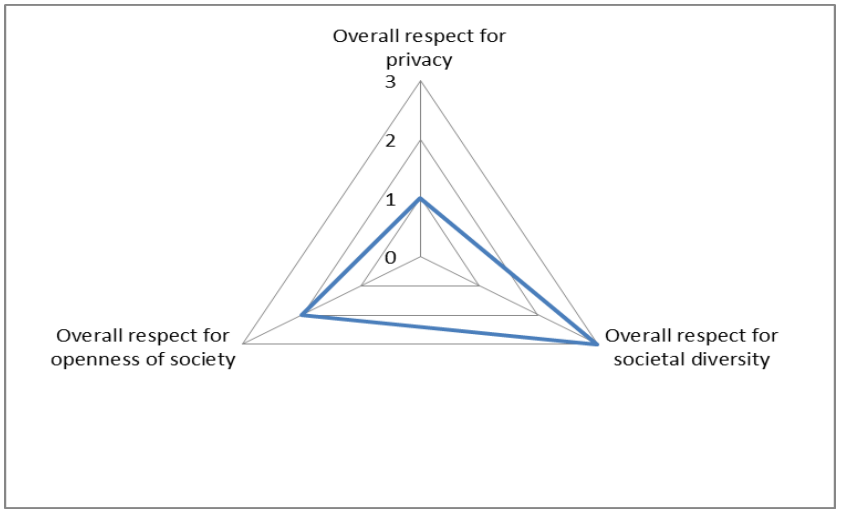
1 minimum level of protection

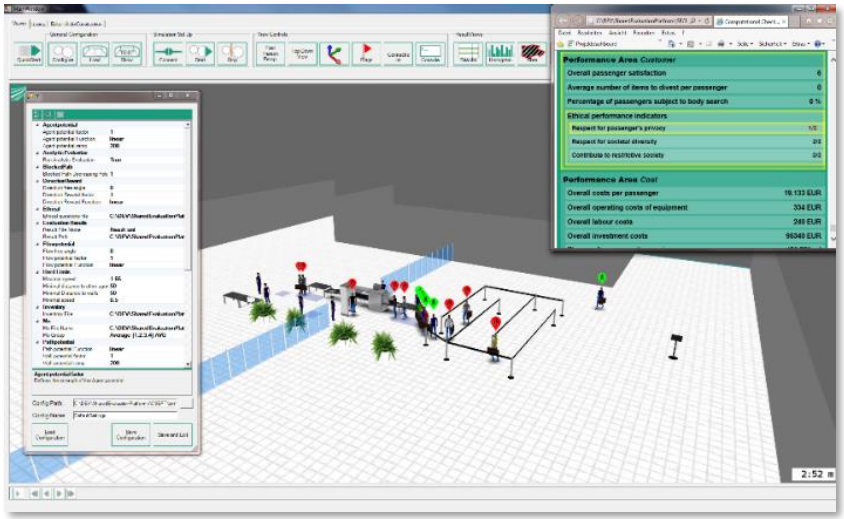
0 realistic worst-case

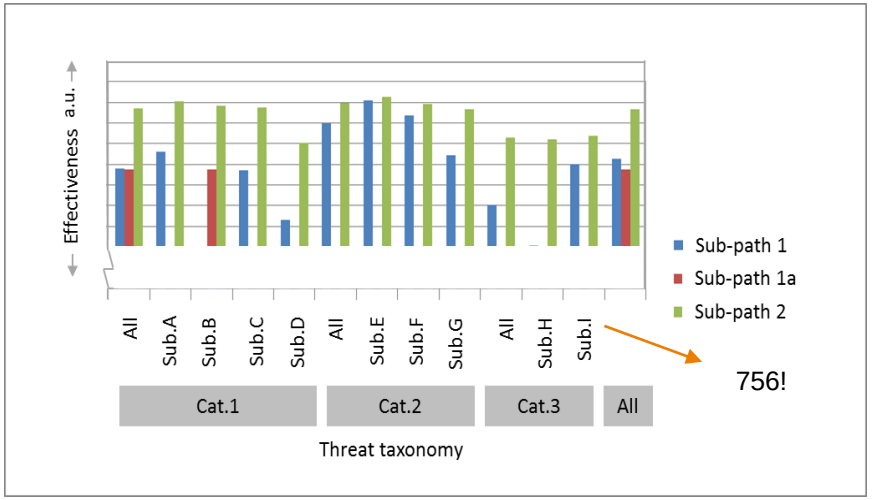


PERFORMANCE – CCC DASHBOARD



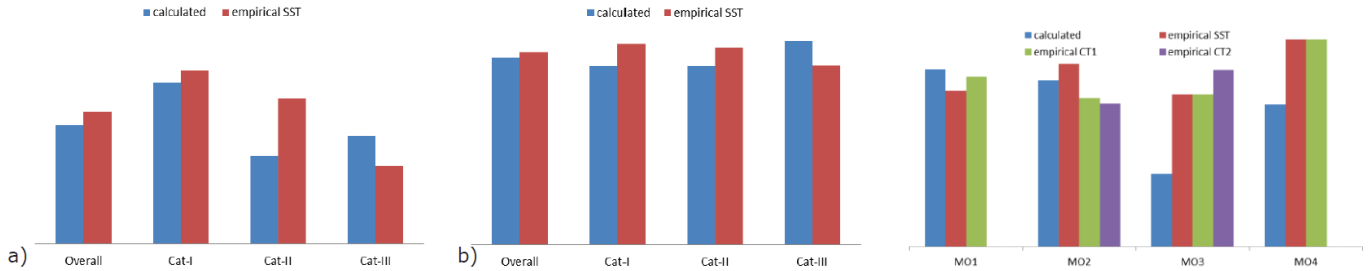






EMPIRICAL METHODS & VALIDATION

- *Passenger Questionnaire (PAX-Q)*
- *Security Officer Questionnaire (SO-Q)*
- *Time or Frequency Measurement (TFM)*
- *Info from detection component (IDC)*
- *Covert Testing (CT)*
- *Lab Sub-system Testing (SST)*
- *Quality Control Method (QCM)*



TRIAL CASE & VALIDATION: SNN

Shannon passengers flying to US no longer have to queue twice for security checks

A new screening system is being trialled to combine European and US pre-clearance systems.

Sep 12th 2016, 7:20 PM 16,495 Views 16 Comments Share 21 Tweet Email

A NEW SECURITY screening system, which could halve the time spent in security, is being trialled at Shannon Airport.

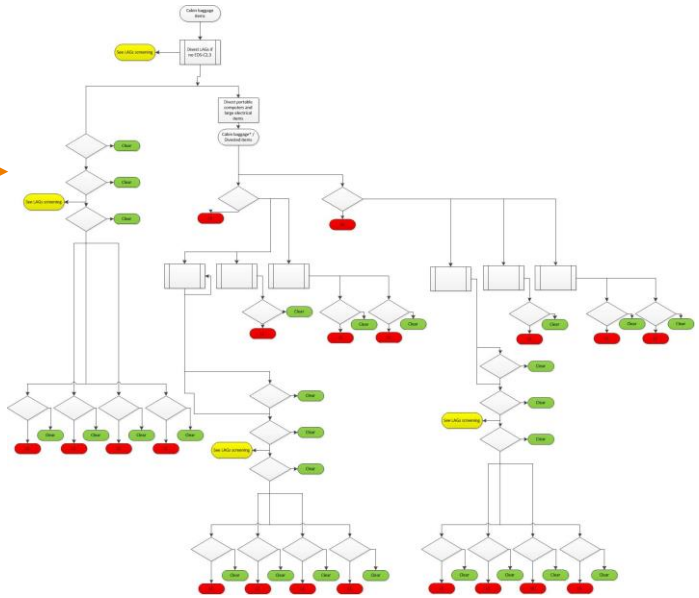
Shannon is the first airport in the world to trial the new pre-clearance checkpoint, which was developed as part of an EU funded project. It will mean passengers flying to the US will no longer have to queue twice for separate security checks.

The new approach combines European and US pre-clearance checkpoints and the airport said this trial will show how a checkpoint can be designed to comply with two different sets of regulations.

This combined checkpoint is the first of its kind in the world and has been designed to improve customer experience.

‘CURRENT’ PREDICTION CAPABILITIES

- Predict and compare security performance, overall as well as in each sensible detail:
  - of existing checkpoints
  - of compliant variations (EC1998)
  - of checkpoints with **new technologies**
  - against **‘new’ threats**
  - for case studies (e.g. sensitivity, **optimization**)
- Predict ethical impact (3/6 dimensions) of checkpoint designs
- Predict flow in checkpoint designs



Example: cabin baggage screening

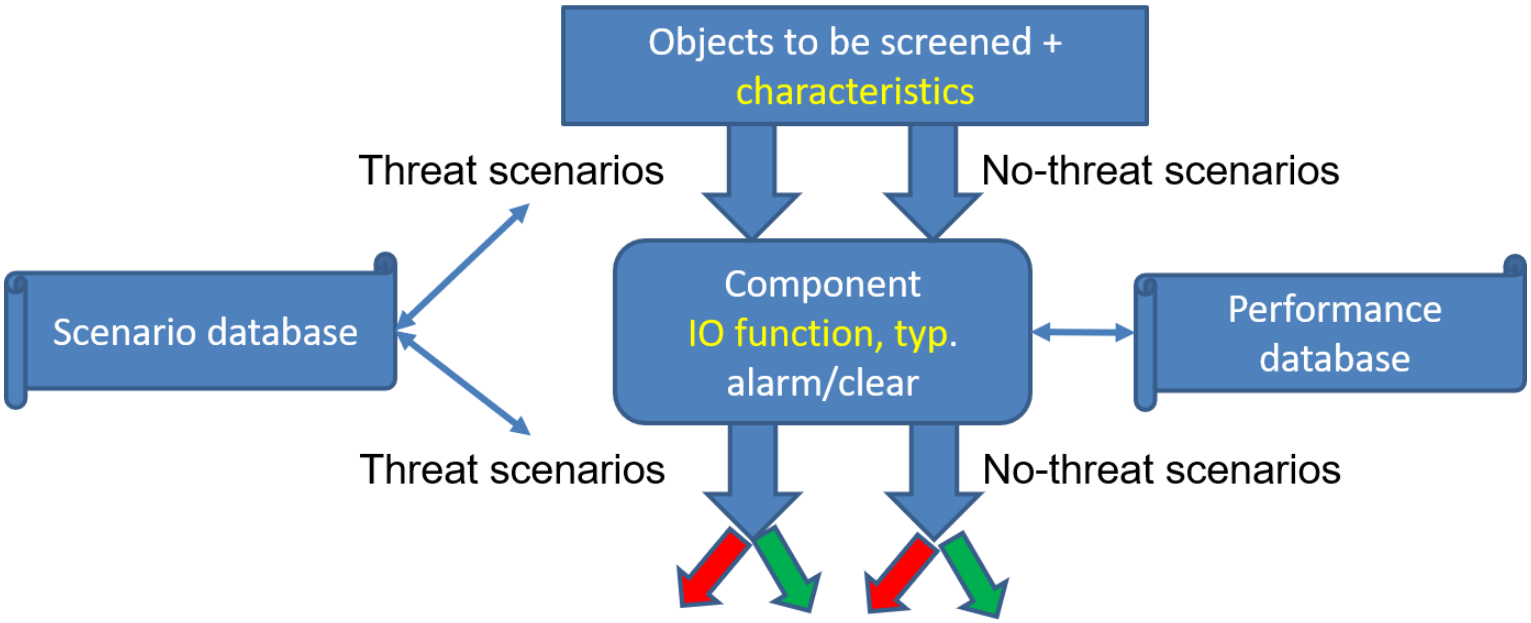
MAIN BENEFITS TO BE EXPLOITED

XP-DITE provides a major step towards a system level approach to aviation security checkpoints aiming for

- *satisfied passengers,*
- *meeting airport business needs,*
- *and robust security,*

now and in the future!

RISK BASED SECURITY & XP-DITE ? !



Risk based security requires a system level approach

- Risk based decisions **preceeding** the process in checkpoints, play in fact the same role (pre-selection for alarm resolution) as other decision components (i.e. all detectors)
- Any risk based selection mechanism can be a (binary) component in XP-DITE modelling

THE WAY FORWARD

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Roadmap XP-DITE

- Apply in AVSEC
- Trusted tools - Outcome focused security
- Long term
- Multiple stakeholders

Apply system performance prediction to EU checkpoints

- Regulators (EU, MS)
- Airports
- Manufacturers

Include risk based security & extend concept to non-AVSEC

- TRESSPASS
- …


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