Innovative Research Call 2023 for Explosives and Weapons Detection

People and/or their Possessions

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Challenge overview

1. People
2. Possessions – coats, pocket contents, bags, etc.
3. People with their possessions

Checkpoint scenarios.

- Controlled

High throughput scenario.

- Free flowing
- Constrained

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Checkpoint scenario – all threats

Checkpoint; Defined point where people cross boundary from unscreened to secure

- Variable numbers of people
- High compliance
- Carrying possessions / bags

Screened for large and small threats

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Checkpoint scenario – all threats

Capability aims – *broad guidelines*

Detection	– all threats (large and small)
Time impact on person	– <5 minutes
Equipment response	– within ‘time impact’
Alarm rate (false/nuisance)	– <5%
Alarm resolution	– couple of minutes

Detection and/or identification are important for some

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Checkpoint scenario – all threats

Innovation that addresses:

- People, their possessions, or both
- Increasing automation of elements of checkpoint screening
- Reducing the time to process individuals at checkpoints
- Enhancing automated decision-making tools
- Increasing assurance of threat detection
- Reducing cost in *operational* or *purchase* cost.

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Checkpoint scenario – large threats

Focus on large mass casualty type threats

Variable numbers of people
Variable compliance
Carrying possessions / bags

Consider response processes

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Checkpoint scenario – large threats

Capability aims – *broad guidelines*

Detection	– large threats
Time impact on person	– couple of minutes
Equipment response	– within ‘time impact’
Alarm rate (false/nuisance)	– <10%
Alarm resolution	– ~ 1 minute
Cost per person screened	– low tens of pence

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Checkpoint scenario – large threats

Innovation that addresses:

- People, their possessions, or both
- Ideally screening without the need for significant divestment
- Developing new sensors, or integrating sensors
- Increasing automation of elements of checkpoint screening
- Reducing the time it takes to process individuals at checkpoints
- Enhancing automated decision-making tools

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High throughput scenario

Large numbers of people
Low or limited compliance
Carrying possessions / bags

Screened for large threats
Consider response processes

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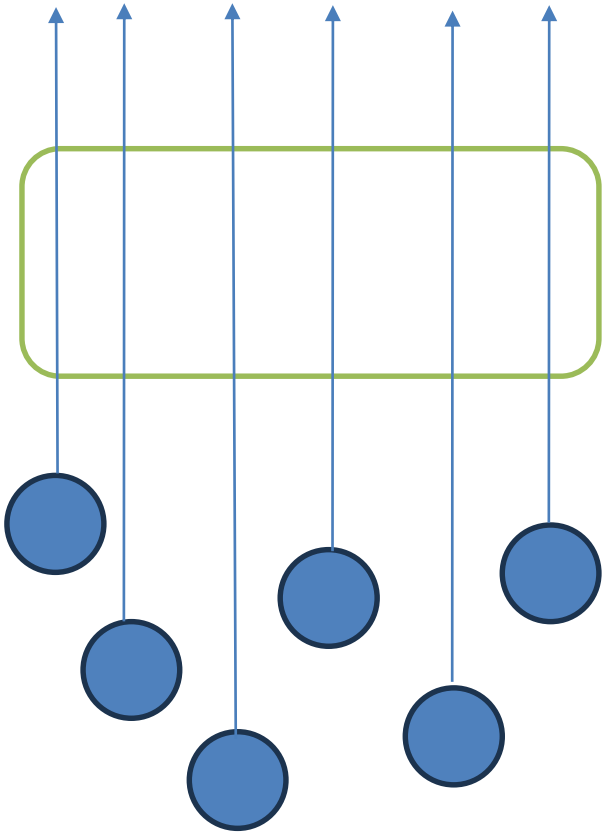
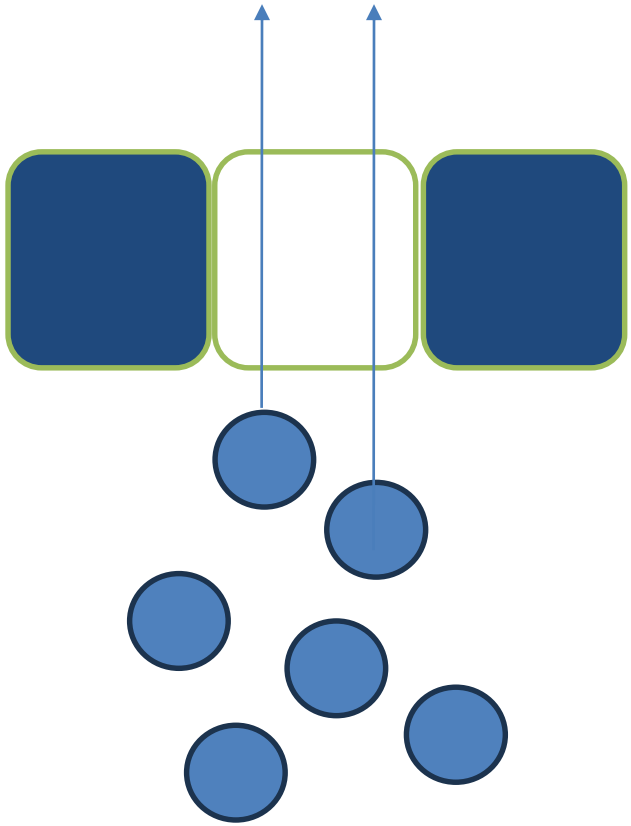
High throughput scenario

Free flowing



Constrained entry



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High throughput scenario

Capability aims – *broad guidelines*

Detection	– large threats
Time impact on person	– real time
Equipment response	– within ‘time impact’
Alarm rate (false/nuisance)	– <5%
Alarm resolution	– few seconds
Cost per person screened	– pence

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High throughput scenario

Innovation that addresses:

- Screening high numbers of individuals with their possessions
- Screening individuals without the need for divestment (outerwear and pocket contents)
- Developing new sensors, or integrating sensors
- Developing concepts of operational use
- Enhancing automated decision-making tools

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Some challenges

- Screen everybody for things that matter the most
- Operator assist tools
- Minimise impact of indications- not just frequency of them
- Permanent vs. temporary installations
- Wider operational considerations

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