

Innovative use of canine scenting in aviation security

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Summary

- Remote explosive scent tracing (REST) for Cargo
- Free running dogs on passengers

REMOTE EXPLOSIVE SCENT TRACING (REST)

Principle of REST

1) The air inside the truck is pumped and particles are filtered (typically 8 min)



2) In a dedicated room, 2 dogs have to be used to analyze 6 filters in a line



3) Once the cargo is cleared by the 2 dogs, it is declared secure

Operational interest REST

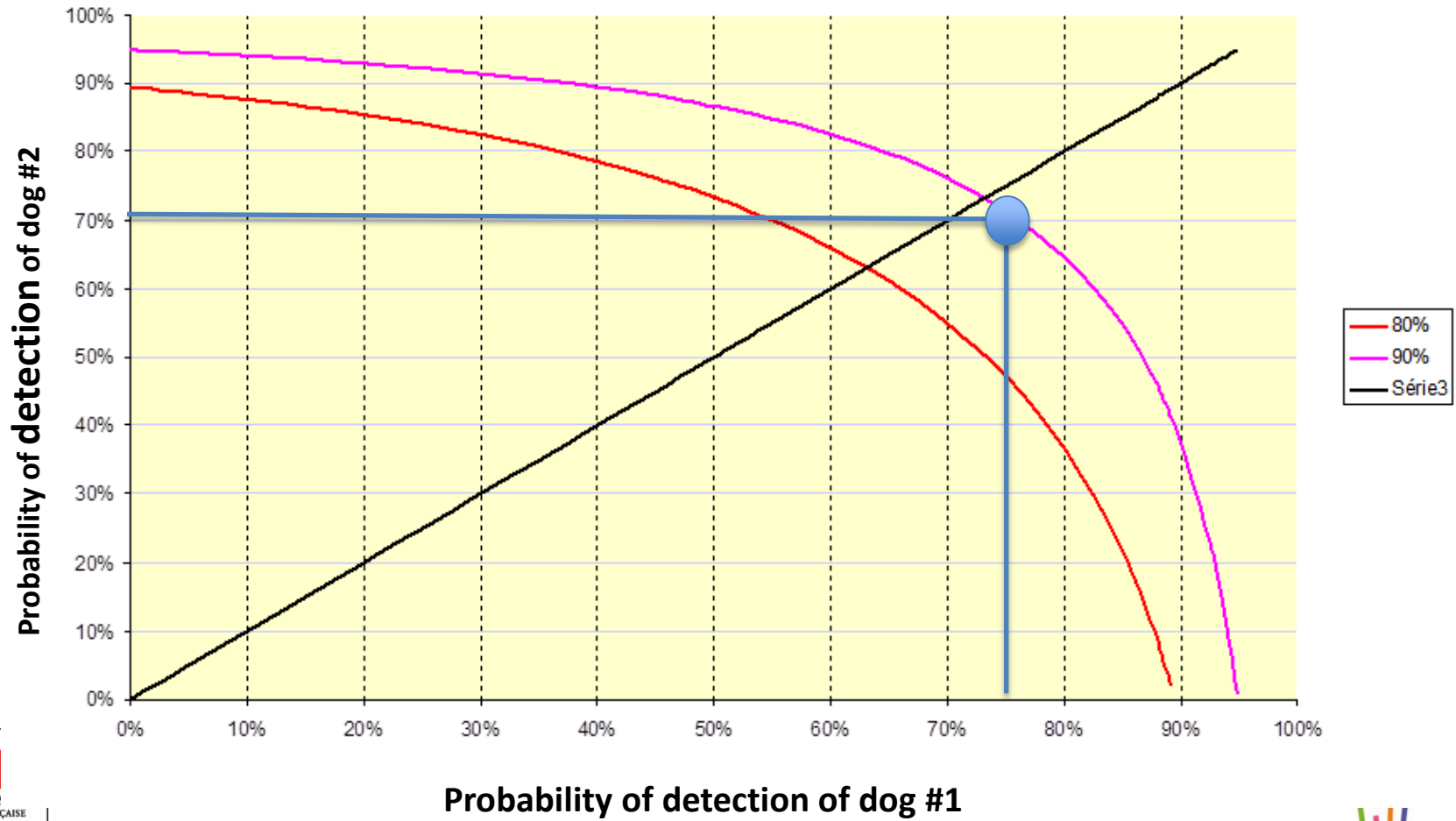
- Security is performed on pallets or trucks (no break down)
- Quick response once sample is taken
- The security can be integrated in the industrial transport process and border regulation
- Multiple trucks or cargo pieces can be screened simultaneously

Innovation on REST detection

- Development of appropriate pumping systems
 - Aspiration time = f (temperature, volume, ...)
- Development of specific operational procedures
- Eg: verify the cargo is confined for at least 2 hours
- Development of a two dogs procedure
 - Aim: detection performance
 - Principle: need of two “clear” responses of two dogs to clear the cargo under inspection

Efficiency of detection with a two dogs procedure

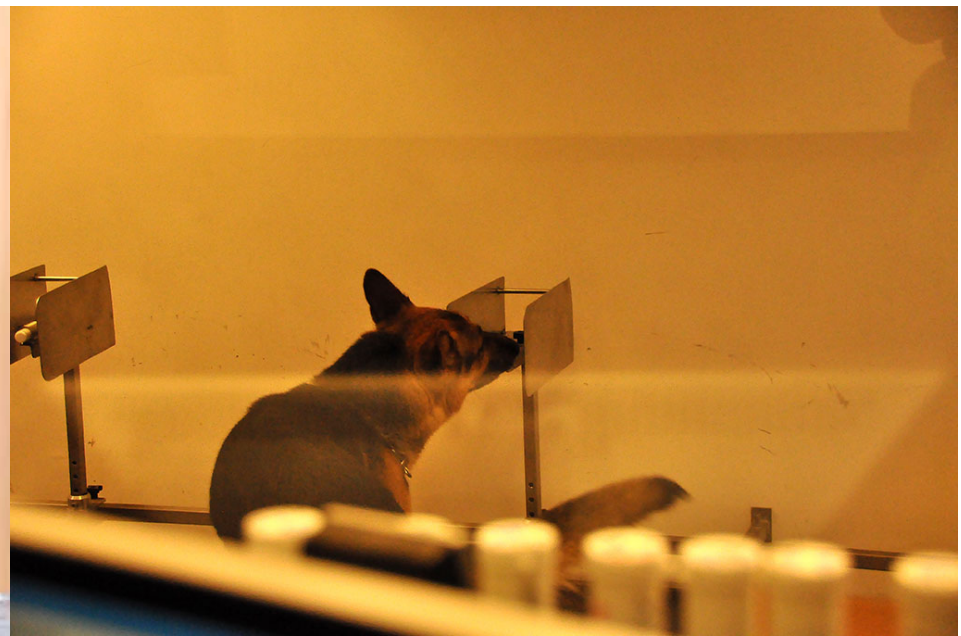
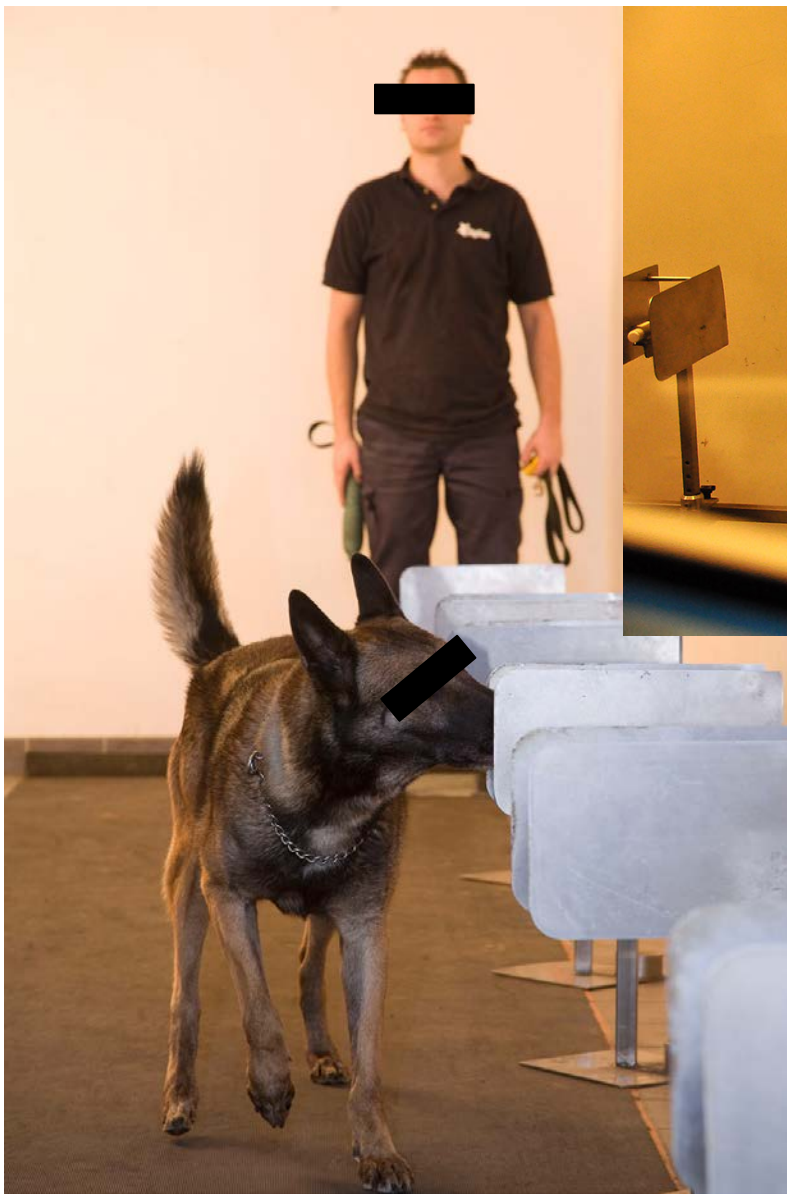
Example: a combination of a dog with 75% PD and 70% PD gives an overall 90% PD



Joined testing French DGAC – TSA on REST in Nov. – Dec. 2013

- Test on site
- With real cargo trucks and with real explosives
- During commercial operations
- Operational procedures applied: result was given once the complete procedure with two dogs was performed and the security decision given
- Logistics :
 - More than 800 samples collected and analyzed
 - Four weeks of testing
 - 7 persons (TSA + DGAC)





Joined testing French DGAC – TSA on REST in Nov. – Dec. 2013

- Detection rate measured is high
- False alarms rate is low
- The procedure using two dogs is robust, even if some dogs were confused by the test in the first days (rewarding issue)

Towards an industrialization of REST ?

- Air France Cargo built a specific area at its CDG facility to screen all trucks entering the facility ...
 - 18 lanes for trucks under screening
 - 9 pumping systems
 - One dedicated building to REST (administration of REST, 2 analyzing rooms, security staff area)



- More than 25 000 trucks screened every year at CDG
- 20 to 40 minutes to screen a full truck (~ 25 t)

FREE RUNNING DOGS ON PASSENGERS

FREE RUNNING DOGS ON PASSENGERS

- In France, lab experiments only for the moment
- Concepts of operation to be tested:
 - Kiosk
 - Waiting line
- Explosives preparation
 - Use of models
 - Explosives are hidden behind clothes or in small handbag or in another belonging (hat...)

FREE RUNNING DOGS ON PAX – Kiosk

- **Advantages:** avoids direct contact with dogs
- Efficient detection method
 - Dog powerful scenting
- Dissuasive
 - Because of the unknown technology
- 2 concepts are under consideration: opaque or translucent cabins – **the concepts presented in this conference are patented**



The concepts presented in this conference are patented



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FREE RUNNING DOGS ON PAX

Waiting line

- Efficient detection method
 - Dog powerful scenting
- Very dissuasive
 - because of the visibility and presence of dogs
- Usable before or after the checkpoint, or at check in...
- Direct contacts with dogs may occur
 - Fear for dogs
 - Culture and religion
 - Hygiene
 - Bad reaction of dog depending on passenger's behavior
- Alarm resolution in a public environment



- For further evaluation and certification
 - Test under progress on models
 - Adults and children
 - Clothed
 - Perfumed (some)
 - With bags, hats...
- Results by end 2014

THANKS FOR YOUR ATTENTION

Frédéric FUSO



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