Thank you all for attending

The Webinar will start shortly

Time has been allowed at the end of the presentation to ask the panel questions

Questions should be logged using the Q/A function at the top of the screen
Agenda

- Welcome to the Webinar
- Project Background
- Introduction to the project team
- Project overview
- Project Delivery
- Feedback, questions & answers
- Close
Welcome from EASA

Research project: Detection of lithium batteries using screening equipment

- Focus: Hold baggage screening

Importance of investigating what are technical, operational and regulatory solutions that can be used to detect lithium batteries using screening equipment

EASA objective: Ensure safety of flights

Your views and expertise are needed

Thank you and stay connected!

Adam Borkowski
Aviation Security & Intelligence Expert
Project Technical Lead
Lithium batteries and passengers

Main concerns are related to:
- Increasing number of incidents involving lithium batteries on board the aircraft
- Increasing number of items containing lithium batteries by passengers (unlimited)
- Increasing power of such items (limited)
- Counterfeit items
- Passengers not complying with the regulations – carriage of undeclared items

Risks posed by lithium batteries are mainly fire and smoke. The event occurs very quickly and has catastrophic consequences due to the high temperatures reached and the amount of toxic smoke.

Mitigating measures:
- Before: prevent the items from reaching the aircraft:
  - Screening (to be explored)
  - Information to passengers (regulations and safety promotion)
- After: Training (CBTA), procedures (ICSG), establishing further limitations – EASA’s LOKI-PED project
EASA’s Related project
LOKI-PED

Project funded from the EU Horizon Europe Research and innovation programme

Contract with: Frauenhofer Gesellschaft. Consortium members are Fraunhofer Institutes for Highspeed-Dynamics, Ernst-Mach-Institut, EMI, and Building Physics IBP team with AIRBUS

https://loki-ped.de/

Detection of Lithium Batteries Using Security Screening Equipment
• A leading global provider of security inspection solutions, with more than 100,000 products installed in over 170 countries.
  • Dean Smith – Project & Technical Lead
  • Eric Chevalier – Technical Expert

• The consulting and training arm of the UK CAA
  • Sarah Fox - Project Manager
  • Stuart Coates - Communications Lead
  • Simon Evans – Technical Adviser
  • Jackie Burtenshaw – Project Support

• Regulatory advice and specialist guidance
  • Dr Ben Wong - UK Civil Aviation Authority
  • Mario Ranito – UK Civil Aviation Authority
As the UK CAA’s independent technical cooperation arm, we unite and export UK CAA know-how to improve aviation and aerospace standards globally.

Our subject matter experts provide holistic advice, training and regulatory systems on UK, ICAO and European-based standards, and work in partnership with Governments, aviation agencies, regulators and industry organisations to establish robust, sustainable regulatory systems.

We believe everyone, everywhere, should have access to safe, secure and greener air transportation and as a Social Enterprise we take action to overcome the greatest aviation challenges facing the developing world – investing and driving change where it is needed most.
Rapiscan

- This lithium battery detection project is focused on checked baggage
- Rapiscan has many years of experience in this application
- >500 checked baggage explosive detection systems sold
- On-site algorithm trial at a Rapiscan customer
- Experience already with dangerous goods algorithm (incl. Lithium Batteries)
Lithium batteries are on the rise and pose a safety concern. 

- **Total Incidents:** 398
- **Year-to-Date Incidents:** 41

### Occurrences by Year
- 2018: 29 occurrences
- 2019: 18 occurrences
- 2020: 11 occurrences
- 2021: 7 occurrences
- 2022: 10 occurrences

### Occurrences by Type
- Fire: 37 occurrences
- Smoke: 25 occurrences
- Smell: 11 occurrences
- Fumes: 5 occurrences
- Explosion: 2 occurrences

Source: European Central Repository

Source: FAA
Project Overview

Project comprises 4 tasks

1. State-of-the-art solutions; Test Plan; Consultation with stakeholders
2. Development & on-site trial of a lithium detection algorithm
3. Analysis of the on-site test results
4. Project summary report

Start  Task 1  Task 2  Task 3  Task 4  End
Project Overview

Task 1 - 3 components

- Review of the state-of-the-art solutions for lithium battery detection
  - Identification of technologies capable of being used in an airport setting
  - How the most suitable technology could be applied

- Test plan
  - Lithium battery detection algorithm specification
  - Algorithm development process
  - Running the algorithm at an airport
  - Data to be collected and presented

- Consultation with stakeholders
  - Summary from 1-to-1 interviews conducted with airports, airlines, interest groups and regulators & this Webinar
Task 2 – 3 components
- Laboratory controlled test of the lithium detection algorithm
- Laboratory test using trial airport stream of commerce
- On-site trial to establish performance and operational/security impact
  - Observe screeners – alarm clearance times …
  - Algorithm performance – detection rate, real alarms, false alarms …
  - De-briefs with screeners and supervisors
Project Overview

Task 3

- Results from the trial will be collated, analysed and summary report
  - Detection rate
  - Real and false alarms/rate
  - Operator performance and review times
  - Process to clear a real and false alarm
  - Operational/security impacts
  - Feedback from screeners and supervisors
  - Summary report
Task 4

- Create a publicly available report summarising
  - Main outcomes
  - Conclusions
  - Recommendations for detection of lithium batteries in checked baggage
- A study that could support detection of lithium batteries in checked baggage by providing objective and reliable data on performance and impact
- A look at how lithium battery detection is performed today
- Views from across the industry
- Operational and performance data from an on-site test using an EDS machine + dedicated detection algorithm
- Summary report
Delivery Schedule

- **Consortium instructed by EASA to deliver project**
  - Task One: Dec 2022
    - Set up and delivery management
  - Task Two: May - Jul 2023
    - Review of state-of-the-art solutions, and development of test plan & protocols
  - Task Three: Aug – Dec 2023
    - Performance of tests and collection of data
  - Task Four: Jan – Mar 2024
    - Analysis of tests performed
  - Mar - Apr 2024
  - Apr 2024
    - Conclusions & recommendations

- **Stakeholder Engagement and Interaction**
Questions & Answers

Please submit questions using the Q/A function at the top of the screen
Thank you all for attending

Full Question and Answers, along with this presentation, will be posted on the EASA Website

We are planning a further workshop in February next year to share with you the results of the tests performed

If you wish to participate further in this project, share your thoughts with us or provide general feedback please contact a member of the Project Team

Introductory Webinar: Research Project on the Detection of Lithium Batteries using Security Screening Equipment - Online event | EASA (europa.eu)
End Presentation