Webinar: Project Update

Impact of Security Measures on Safety

Wednesday 22nd May 2024

Delivered in cooperation with our consortium

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• Event code: 7149499
• Passcode: t5jsxw
Agenda

1. Welcome from EASA
2. Project overview / Recap
3. Task 1 – An overview including impact assessment methodology. Followed by Q&A.
4. Task 2 – Upcoming activity, purpose, expected outputs and stakeholder input. Followed by Q&A.
5. Task 3 – Upcoming activity, purpose, expected outputs and stakeholder input. Followed by Q&A.
6. Task 4 – Summary of purpose, key steps and expected outcomes.
7. Next steps and concluding remarks

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Welcome from EASA

Adam Borkowski
Technical Lead, EASA

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Welcome from EASA

Research project: Impact of Security Measures on Safety

Importance of understanding interdependencies

Your views and expertise are needed

Thank you and stay connected!
Project Aims & Objectives

Objectives:

→ **Interdependencies analysis**: Assess how security measures / safety and security interdependencies impact safety.
→ **Impact identification**: Identify affected processes, job roles, certification, and licensing activities.
→ **Risk management**: Develop harmonized risk assessment methods, provide recommendations for national and EU policy and decision-making.

Output:

→ **Knowledge Base**: Create a comprehensive resource to evaluate the impact of security measures on aviation safety, including key indicators and factors.
The Team

The consulting and training arm of the UK CAA
- Kevin Sawyer - Technical Lead
- Sarah Fox - Project Manager
- Dorota Broom - Lead for Tasks 1 & 4
- Stuart Coates - Communications Lead

Apave Group centre of excellence for risk and safety management solutions for both civil and military Aviation community
- Jacques Bernardi – Lead for Task 2
- Lucas Lempereur de Saint Pierre – Subject Matter Expert
- Ivan Pastorelli – Subject Matter Expert

Centre for Adaptive Security Research and Applications
- Sarah Merks – Lead for Task 3
- Adam Troczynski – Technical Expert
Task 1 – An overview including Impact Assessment Methodology

Dorota Broom
Task Lead, CAAi

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Task 1 Overview

→ Task 1 now complete
→ Safety-Security interdependencies report available on EASA website
→ Safety-security job roles report available on EASA website
→ Provisional methodology to assess the impact of security measures on safety developed and in use

Impact of Security Measures on Safety | EASA (europa.eu)
Task 1 Interdependencies

→ 64 interdependencies in 8 main areas

→ Aircraft, ATM, UAS, Air Operations, Ground Operations, Aerodrome, Screening, Off-Airport Operations

→ Analysis and definition of specific security measures that will undergo in-depth assessment (task 2.2)
Task 1 Job Roles

Research Study on the Impact of Security Measures on Safety

1. JOB ROLES AT A GLANCE

Our research assessed the job roles within civil aviation that have both safety and security interdependencies, in accordance with international standards and EU regulation*.

50.7% of safety roles include a security interdependency.

63.6% UAS and ATS have the highest percentage of safety-security interdependencies.


### Task 1 Job Roles

**Percentage of Safety Roles by Domain with A Security Interdependency**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Percentage</th>
<th>Job Roles Analysed</th>
<th>Security Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft and Aircraft Equipment (including design certification and airworthiness)</td>
<td>15.4%</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>UAS</td>
<td>63.6%</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Air Traffic Services</td>
<td>63.6%</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Aerodrome / Airport Operation</td>
<td>61.5%</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Air Operations</td>
<td>50%</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Ground Operations</td>
<td>60%</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>
Task 1 Methodology (interim)

Step 1. Security measure to be assessed
- Rationale for introduction
- Threat to be addressed

Step 2. Identification of safety domain and selection of safety experts
- Safety areas pre-defined by the methodology

Step 3. Assessment
- SME’s to indicate potential impact on safety and provide descriptive assessment

Step 4. Impact rating
- Based on analysis all assessments
- Rate negative impact
- Describe positive and neutral impact

Step 5. The outcome
- Accept, treat or avoid the impact on safety
### Task 1 Methodology (interim) – more details can be found in D-1.3 report

<table>
<thead>
<tr>
<th>Step One</th>
<th>Definition of Security Measure</th>
<th>Completed within Security Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rationale behind Security Measure documented</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threat measure counters described</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step Two</th>
<th>Identification of Safety Domain and selection of SMEs</th>
<th>Completed within Security Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Identify safety areas impacted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appropriate SMEs from safety domain selected</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step Three</th>
<th>Assessment</th>
<th>Completed by Safety SMEs &amp; Assessor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select appropriate indicators from the methodology guidance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document rationale behind decisions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow supporting questions guidance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step Four</th>
<th>Rating</th>
<th>Completed by designated Assessor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Document rationale behind decisions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow supporting questions guidance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete Assessment form</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step Five</th>
<th>Outcome</th>
<th>Completed by designated Assessor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete Positive Impact Summary</td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>Accept Security Measure</td>
<td></td>
</tr>
<tr>
<td>NO</td>
<td>Carry out recommendation to reduce risk</td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>Avoid Security Measure</td>
<td></td>
</tr>
</tbody>
</table>

**Impact of Security Measures on Safety**

**EASA (europa.eu)**
Q&A

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**Facilitated by Simon Evans**

Subject Matter Expert, CAAi

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Task 2 – Upcoming activity, purpose, expected outputs and stakeholder input

Lucas Lempereur De Saint Pierre
Task Lead, Apave Aeroservices

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Task 2
Assessment of the Impact of Security Measures on Safety

→ Reminder and objectives
  → Assessment of the Safety – Security interdependencies
  → Assess the impact of Security measures on Safety
  → Detailed gap analysis to define which elements and measures are currently missing to ensure better safety outcomes

D-2.1 Identification of the main security threats and scenarios, having an impact on Safety
D-2.2 Safety and security interdependencies to be assessed, the questionnaires and interviews proposed as well as the participants to the surveys
D-2.3 Assessment(s) of the impact of the interdependencies on the areas agreed upon following the interim report
Task 2
Assessment of the Impact of Security Measures on Safety

→ Task 2 - Overall methodology

D-1.1 Safety – Security areas of Interdependencies
D-1.2 Safety – Security Job functions
D-2.1 Main Security threats

Selection of Security measures to be assessed

D-2.2 Task 2 Interim Report

D-1.3 Methodology (SIA)

D-2.3 Final Report

Identification of Stakeholders
Surveys & Interviews framework definition
Task 2
Assessment of the Impact of Security Measures on Safety

→ D-2.1 - Main threats and scenarios, having an impact on Safety

→ Draw up an exhaustive listing of the main Security threats with an impact on Safety

→ Define existing EU security mitigation measures

→ Describe and characterise the threats:
  ▪ Potential scenarios
  ▪ Impact on Safety
  ▪ Type of perpetrator (Insider, Passenger, Non-travelling person)
  ▪ Impacted operational area(s)
  ▪ Type of threat (Landside, Airside, Cyber)
Task 2
Assessment of the Impact of Security Measures on Safety

→ D-2.2 - Safety – Security interdependencies analysis

→ Clear and complete description of the Security measures:
  → Objectives
  → Rational for introduction
  → Mitigated security threat (based on D-2.1 list of threats)

→ Selection for Safety Impact Assessment in D-2.3
Task 2
Assessment of the Impact of Security Measures on Safety

→ D-2.2 - Safety – Security interdependencies selection
→ Based on the interdependency and associated Security measures origins

<table>
<thead>
<tr>
<th>Criteria for selection</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The interdependency and associated security measures originate in Regulations (EC) 300/2008</td>
<td>Safety Impact Assessment to be conducted</td>
</tr>
<tr>
<td>The interdependency and associated security measures originate from ICAO SARPs</td>
<td>Safety Impact Assessment to be conducted, if considered of special interest</td>
</tr>
<tr>
<td>The interdependency and associated security measures originate in the safety regulatory framework</td>
<td>Safety Impact Assessment to be conducted, if considered of special interest</td>
</tr>
<tr>
<td>The interdependency and associated security measures lack clear regulatory references</td>
<td>Safety Impact Assessment to be conducted, if considered of special interest</td>
</tr>
</tbody>
</table>
Task 2
Assessment of the Impact of Security Measures on Safety

→ D-2.2 - Safety – Security interdependencies analysis

Example

#3 – Protection of Flight Crew Compartment (relating to aircraft design)

<table>
<thead>
<tr>
<th>Operational Domain</th>
<th>Aircraft safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Area</td>
<td>Design and certification</td>
</tr>
</tbody>
</table>

**STEP 1 – Definition of the security measure**

**Description of the security measure**
Measures under consideration primarily focuses on requirements related to the protection of the flight crew compartment, from the perspective of aircraft design, encompassed in the European safety regulatory framework. There is no European aircraft design security requirement for the protection of flight crew compartment. The European security regulatory framework focuses on in-flight security measures related to flight crew compartment protection, which falls under the “Air Operations” safety area for this study.

**Requirements originate from**

**Rationale for introduction**
These requirements have been introduced to protect the flight crew compartment against forcible intrusion (floors and ceilings shall be designed to resist penetration by small arms fire and grenade shrapnel). The access must be controlled, and only authorized personnel should have access to the cockpit to counteract the threat.

**Mitigated threats**
- Attack with improvised weapon
- Conventional hijack

**Safety Impact Assessment to be performed**
According to the above analysis, Task 2.3 should not evaluate the aircraft design requirements concerning flight crew compartment protection, which will be analysed in Task 3. However, this interdependency is considered of special interest, and will undergo a further analysis in D-2.3. Additionally, task 2.3 will assess the in-flight security requirements related to flight crew compartment protection through a safety impact assessment, which is included in the "Air Operations" safety area, #45 Security of the flight crew compartment.
Task 2
Assessment of the Impact of Security Measures on Safety

→ D-2.2 – Safety – Security analysis
→ Identification of stakeholders
→ Identification of the areas of impact
→ Selection of appropriate stakeholders to be consulted accordingly (Based on D-1.2)

<table>
<thead>
<tr>
<th>Areas of Impact</th>
<th>Stakeholders to be consulted</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅ Aircraft</td>
<td>Aircraft:</td>
</tr>
<tr>
<td>- Design</td>
<td>- Design Organisation Manager</td>
</tr>
<tr>
<td>- Maintenance</td>
<td>- MRO Safety Manager</td>
</tr>
<tr>
<td>□ ATM / ATS / ATC</td>
<td>- MRO Manager</td>
</tr>
<tr>
<td>□ Air Operations</td>
<td>- CAMO Safety Manager</td>
</tr>
<tr>
<td>□ Ground Operations/Handling</td>
<td>- CAMO Manager</td>
</tr>
<tr>
<td>□ UAS</td>
<td>- CAMO Manager</td>
</tr>
<tr>
<td>□ Airport/Aerodrome</td>
<td>- CAMO Manager</td>
</tr>
<tr>
<td>□ Other:</td>
<td>□ Other:</td>
</tr>
</tbody>
</table>
Task 2
Assessment of the Impact of Security Measures on Safety

→ Security Measures analysis


→ Correlation with identified interdependencies, main security threats
Task 2
Assessment of the Impact of Security Measures on Safety

→ Areas of special interest
  → Security measures
    ▪ Impact of security measures implemented on the ground on overall safety of aerodrome and air operations
    ▪ In-flight security measures
    ▪ Cybersecurity measures
    ▪ Cargo, mail, hold and cabin baggage security measures
  → Management of security incidents
  → Preparedness level and training needs
Task 2
Assessment of the Impact of Security Measures on Safety

→ Deployment of D-1.3 methodology
→ Development of Questionnaires / Interviews

**Questionnaires**

- (Will be made) Available on the EASA website
- Tailored according to the participant’s profile
Task 2
Assessment of the Impact of Security Measures on Safety

→ Deployment of D-1.3 Methodology

→ Development of Questionnaires / Interviews

<table>
<thead>
<tr>
<th>Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Support in the application of the Safety Impact Assessment Methodology</td>
</tr>
<tr>
<td>• Feedback on areas of special interest</td>
</tr>
<tr>
<td>• Validation of questionnaires’ trends</td>
</tr>
</tbody>
</table>

• Addressed to the identified stakeholders

• To support the application of the Safety Impact Assessment

→ Task 2 expected output:

→ Impact assessment (Positive / Neutral / Negative) of security measures on safety
Q&A

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Subject Matter Expert, CAAi

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Task 3 – Upcoming activity, purpose, expected outputs and stakeholder input

Adam Troczyński
Task Lead, CASRA

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Task 3

Analysis of certification standards

→ Recap of current developments

### 3.1 – Impact of security threats on aircraft design standards and best practices:
1. **3.1.1 - Assessment report on the current aircraft design requirements and their relevance for mitigating physical security threats, including gap analysis of aircraft design standards**
2. **3.1.2 - Assessment report on the relevance of the existing detection requirements for screening equipment to mitigate threats to aircraft structure**
3. **3.1.3 - Assessment report on the current aircraft design requirements and their relevance for mitigating information security threats, including gap analysis of aircraft design standards**
4. **3.1.4 - Report on the assessments performed, conclusions and recommendations**

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**Final call - you can still contribute before the end of May:**
- Let us know if you are available for an interview

**You input is important**
Task 3

Tasks 3.1.1 and 3.1.3 methodology
→ Recap of current developments

Work methods:
• Analysis of documents, regulations, literature
• Stakeholders’ consultations
• Workshop
• Surveys
1. Threat scenarios

- Threat scenario 1.1: Insider/passenger on body (PBIED)
- Threat scenario 1.2: Insider/passenger in cabin baggage
- Threat scenario 1.3: Insider/NTP in services and flight supplies

2. Preventive security measures

- Screening of persons other than passengers and items carried
- Screening of passengers and cabin baggage
- Security controls for in-flight supplies

3. Escalating factors and their mitigations

- IED (assembled) in passenger cabin (Threat 1, 4 from D2.1)

Top event

- Pressurised compartment loads
- Emergency landing dynamic conditions
- Seats, berths, safety belts and harnesses
- Security considerations
- Ventilation
- Pressurised cabins
- Fire extinguishers
- Compartment interiors

Worst case consequences

Aircraft design-based mitigations

Prototype visualisation of output
Task 3

Tasks 3.1.2 methodology

Recap of current developments

Work methods:

- Analysis of documents, regulations, literature
- Stakeholders’ consultations
- Workshop
- Surveys
Task 3

Visualization of output

Prohibited Articles (Security)

Dangerous Good (Safety)

Threats to aircraft structure

Security – safety interdependence in the context of screening equipment
Task 3

Analysis of certification standards

→ Next tasks

3.2 – Assessment of the impact of security-related requirements on the safety certification and/or licensing of air operators, aerodromes

3.2.1 - Assessment report on the existing safety and security certification requirements

3.2.2 - Assessment report on the verification of security related requirements during certification processes (gap analysis and best practices)

3.2.3 - Report on the assessments performed including data collection, analysis and review, and conclusions and recommendations for implementation

Engage with project team now so we can:
- Reflect perspective of all stakeholders involved (airports, air operators, regulators)
- Invite representatives responsible for airport certification and AOC processes
Q&A

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Subject Matter Expert, CAAi

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Subject Matter Expert, CAAi
Task 4 – Summary of purpose, key steps and expected outcomes

Dorota Broom
Task Lead, CAAi

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Objective: To identify a series of recommended practices and solutions for the implementation of integrated risk management concept while considering the key differences as well as the main limitations resulting from existing national or EU regulatory frameworks.

→ Safety mechanisms, methods and tools that might contribute to the effective implementation of security measures
  → What safety tools are you currently using when implementing security measures?
  → Example: SMS, Reporting, Change Management, HIRA (Hazard Identification & Risk Assessment), Safety Case, Flight Safety Assessment

→ Safety and security risk assessment practices
→ Recommendations to support an integrated policy and decision-making process at national and EU level
Task 4

→ Scheduled to commence June 24 and complete July 25
→ Call for experts to support
  → Attend a workshop in March
  → Complete surveys
  → Sign up to 1-2-1 interviews

Get in touch with us if you currently undertake risk assessments and would like to be part of the research

caa.i.impactofsecuritymeasuresonsafety@caa.co.uk
Next steps and concluding remarks

Simon Evans
Subject Matter Expert, CAAi
→ Thank you all for attending

→ Full details of this presentation, will be posted on the EASA Website

→ Further workshops are scheduled for this year and next to share more information with you as to how the project is progressing

→ In addition, there will be more topic focused workshops which we will notify you about.

→ 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 @ caai.impactofsecuritymeasuresonsafety@caa.co.uk
Webinar: Project Update

Impact of Security Measures on Safety

Wednesday 22nd May 2024

Delivered in cooperation with our consortium

End Presentation

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