Ninth Meeting of the Surveillance Implementation Coordination Group (SURICG/9)

WP/12 - REVISED ADS-B IMPLEMENTATION AND OPERATIONS GUIDANCE DOCUMENT

Presented by Hong Kong, China

Persistent Effort in Addressing the AD/ID Inconsistency

Conclusion CNS SG/25/13 (SURICG/6/7) - Integrity of ICAO Aircraft Address and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan	
What: To urge States/Administrations to proactively follow up with air operators to address discrepancies of ICAO Aircraft Address and Target Identification between ADS-B / MLAT / Mode S data and flight plan.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: Such discrepancies will cause safety implications in ATC operation and induce additional workload to controllers and supporting staff in handling the cases.	Follow-up: ☒Required from States
When: 22-Oct-2021	Status: Adopted by Sub-group
Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: SURICG	

2021

SURICG/6
CNS SG/25

- Urge States/Administrations to proactively follow up with air operators to address the discrepancies
- **Conclusion CNS SG/25/13**

2022

SURICG/7
CNS SG/26

- **Action Item SURICG/7-4** & **Action Item CNS SG/26-6**: A workshop to be organized to educate stakeholders and aviation community

2023

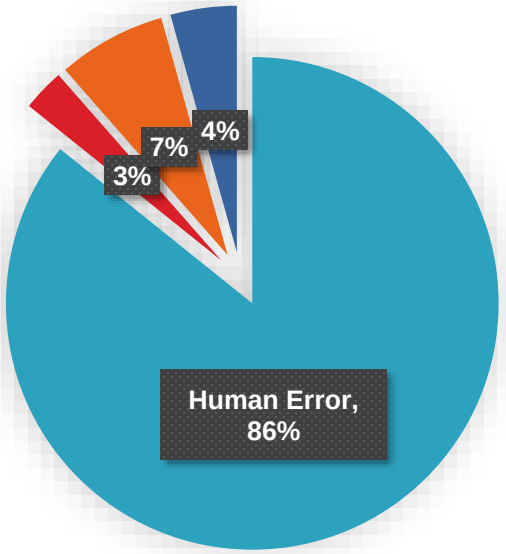
SURICG/8

- Workshop on ICAO Aircraft Address and Target Identification in Surveillance Data and Flight Plan
- **Action Item SURICG/8-1**: Develop a regional guidance material to mitigate the discrepancies

OUTCOMES CONSOLIDATED FROM THE WORKSHOP

Factors Contributing to ID Discrepancies (1/2)

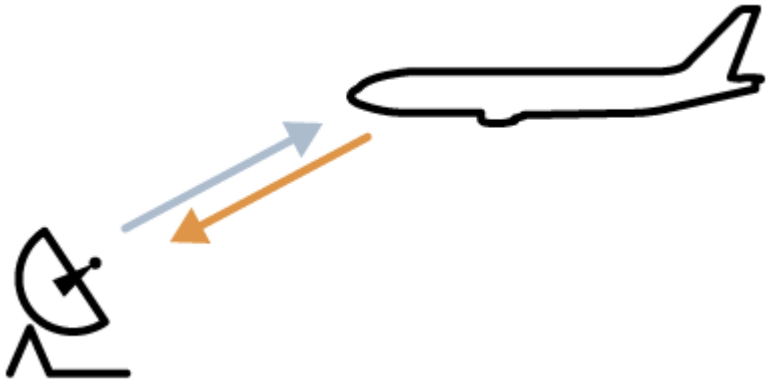
- **Human Error**
  - Typographical errors of cockpit crews, flight dispatch and/or ground handling agents, for example:
    - Incorrectly set Flight ID (e.g., ABC123 instead of ABC321);
    - Spaces in Flight ID (e.g., AB C12 3 instead of ABC123) which produce a corrupted Flight ID;
    - Additional leading zeros in Flight ID (e.g. ABC0123 instead of ABC123);
    - Omission in ICAO airline designators (e.g. 123 instead of ABC123);
    - Using aircraft registration instead of approved ACID (e.g., ZKABC instead of ABC123);
    - No Flight ID set;
  - Co-pilots and/or supervisory staff's failure to cross-check the flight data input;
  - Failure to update the flight data in cases of delayed or cancelled flights;
  - Failure to update the flight identification of the corresponding inbound flight after completing the outbound leg; and
  - Misuse of IATA airline designator in ICAO flight plan.



Data source:
Data collected from Hong Kong International Airport, from Sep 2020 to Dec 2023

Factors Contributing to ID Discrepancies (2/2)

- **Database Errors** and **Aircraft Defects**
  - Programming or database defects in the flight planning systems of airline operators and/or ground handling agents; and
  - Defects in mode S transponder system.

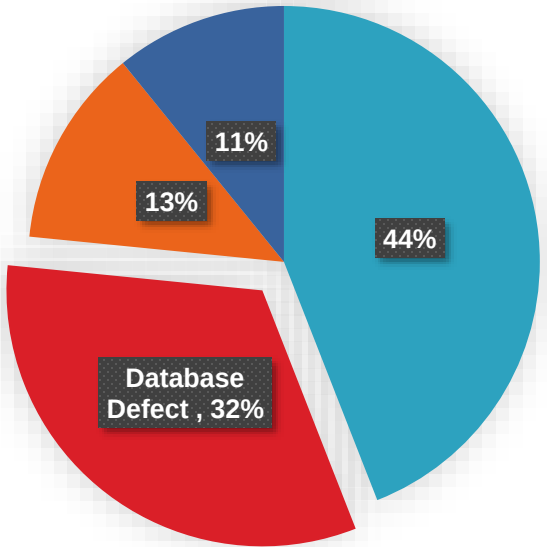


Mitigation Measures for ID Discrepancies

- **Mitigate Human Error**
  - ✓ Debriefing and Additional Training
  - ✓ Internal Safety Bulletins and Notices
  - ✓ Review of the standard operating procedures (SOPs)
  - ✓ Automation and System Upgrades
- **Mitigate Database Errors** and **Aircraft Defects**
  - ✓ Timely Maintenance
  - ✓ Software Upgrades
  - ✓ Proactive Monitoring

Factors Contributing to AD Discrepancies (1/2)

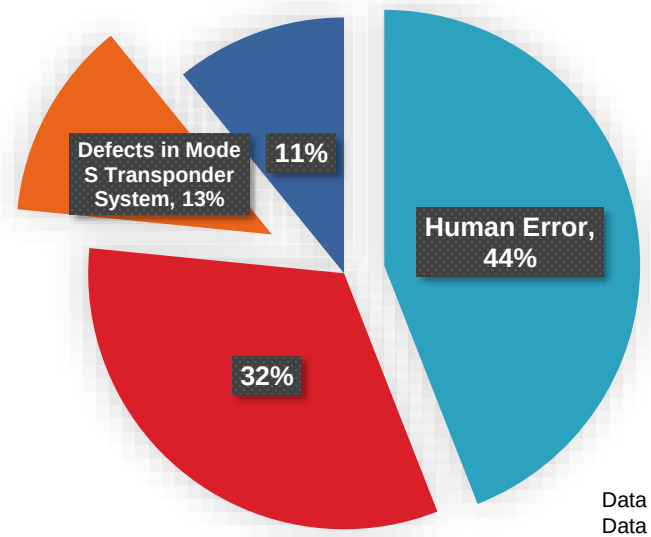
- **Database errors**
  - Failure to update the aircraft database upon registration of new aircraft or revised aircraft registration of the existing aircraft;
  - Late notice airframe changes with the change message (CHG) not being generated, or arriving after the flight becomes airborne;
  - Data loss during upgrade to a new flight planning system; and
  - Software-based defects in the flight planning system.



Data source:
Data collected from Hong Kong International Airport, from Sep 2020 to Dec 2023

Factors Contributing to AD Discrepancies (2/2)

- **Human errors**, e.g. flight dispatch staff and/or ground handling agents' input of wrong 24-bit aircraft addresses in Item 18 of ICAO flight plans; and
- **Hardware defects** in mode S transponder system.



Data source:
Data collected from Hong Kong International Airport, from Sep 2020 to Dec 2023

Mitigation Measures for AD Discrepancies

- **Mitigate Database Error and Software Defects**
  - Comprehensive Database Overhaul and Update for Operator's Fleet
  - Procedures for Timely Removal of Obsolete Aircraft Data
  - Communication Protocol for Sharing Aircraft Information between Engineering and Flight Operations
  - Development of an Automated System for Aircraft Database Updates
- **Mitigate Human Errors**
  - Issue reminders and safety notice
  - Comprehensive training programs
- **Mitigate Aircraft Defects**
  - Timely maintenance

Coordination Issues

- Issues on working with regulators and air operators to rectify the ID/AD discrepancy issues
  - The time delay between an event and notifying the operator for the event;
  - Inadequate details on the operator, particularly for non-scheduled international traffic;
  - The ability of the overseas operator's regulator to action requests from another country;
  - Lack of feedback from the regulator and/or operator.

It is essential to strengthen international cooperation between regulatory authorities and operators.

Draft Conclusion

Draft Conclusion SURICG/9/X - Revised ADS-B Implementation and Operations Guidance Document (AIGD)	
What: That, the AIGD is revised for incorporation of a guideline, which consolidates the outcomes of a Workshop on ICAO AD and ID in Surveillance Data and Flight Plan, be adopted as Edition 16.0.	Expected impact: □ Political / Global □ Inter-regional □ Economic □ Environmental ☒ Ops/Technical
Why: Updates from SURICG/9, including incorporation of a guideline on Consistency of ICAO Aircraft Address and Target Identification between Surveillance Data and Flight Plan in Appendix 9 of AIGD.	Follow-up: □Required from States
When: 10-May-24	Status: Draft to be adopted by Subgroup
Who: ☒Sub groups □APAC States ☒ICAO APAC RO □ICAO HQ □Other:	

Action by the Meeting

The meeting is invited to:

a) note the information contained in this paper;

b) review and endorse the revised AIGD Edition 16.0 provided in **Attachment 1**;

c) discuss any relevant matter as appropriate.

Thank you


• Safe • Orderly • Efficient
• Airworthy • Teamwork
Committed to a Safe, Efficient and Sustainable Air Transport System