

**FANS Interoperability Team Meeting  
(FIT/20)**

**Auckland, New Zealand  
26 – 27 February 2013**

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**Agenda Item 5 – Working Papers**

**Invalid ADS-C Data Following Re-route**

**Presented by Airservices Australia**

**SUMMARY**

This working paper describes a number of problems that are being regularly observed with Airbus aircraft following a re-route.

**1. INTRODUCTION**

- 1.1 Following a re-route around military restricted airspace, it was noted that the subsequent ADS-C report from the aircraft contained invalid Predicted Route Group data. While this problem has been observed on a not-infrequent basis, it is not always noticeable to the controller unless they are looking for it.

**2. DISCUSSION**

- 2.1 HAL451 was recleared around military restricted airspace using UM79: CLEARED TO [SHARK] VIA [TABAL], where TABAL was already the NEXT waypoint on the aircraft's route.
- 2.2 An ADS-C report was received at 05:48:30 (a waypoint change event report as a result of a change to the Next and/or Next+1 waypoint). The data in this report appeared to be valid and correct (refer to the estimate for TABAL in paragraph 2.5).
- 2.3 However a subsequent periodic report received at 05:50:23 (nearly 2 minutes after the re-route) contained invalid predicted route group data (default values for latitude, longitude and time interval).
- 2.4 Another periodic report was requested and received at 05:52:38 (i.e. more than 4 minutes in total after the re-route had been executed by the flight crew). This periodic report contained valid predicted route group data (refer again to the TABAL estimate in paragraph 2.5).

- 2.5 Upon review of the predicted route group data in the ADS-C reports, the following observations were noted with respect to the estimate for TABAL (the NEXT waypoint in the FMS route):

Report Time (UTC)	Report Type	Estimate for TABAL
05:43:19	Waypoint Change	06:21:32
05:48:30	Waypoint Change **	06:19:45
05:50:23	Periodic	(default data)
05:52:38	Periodic	06:21:12

\*\* This Waypoint Change Report was when the re-route was executed

- 2.6 It is commonly observed that the estimate for the NEXT contained in the Waypoint Change report received after the execution of a new route clearance does not conform to the previously held estimate. In this case, the reported wind when the aircraft made these reports was approximately 30 knots coming from the right at 60 degrees to the aircraft's track (i.e. there was a 15 knot headwind component). The estimate for TABAL contained in the 05:48:30 report (i.e. when the clearance was executed in the FMS) is consistent with what would be expected if there were nil winds.

- 2.7 The questions that this working paper raises are:

- Why is default ADS-C data being received nearly 2 minutes after the re-route occurs?; and
- Why does it appear that calculations for the TABAL estimate are based on nil winds, when the re-route affects the route **after** TABAL?

### 3. ACTION BY THE MEETING

- 3.1 The meeting is invited to discuss the problems described in this working paper