

Reference from GREPECAS/15 APPENDIX Q

ACTIVITIES TO BE CONSIDERED FOR ADS-B TRIAL

Activities to be considered for ADS B Trial

Five main topics should be considered by the States that are interested in performing some trials on ADS-B, which are:

- Planning Function
- Expected Criteria
- Test Parameters
- Trial Limitation
- Results Dissemination

Planning Function

There's a need to develop a Concept of Operations (CONOPS), in which the scope has to be clearly stated and what the operational requirements are, as well as the issues that have to be addressed (e.g. efficiency improvement, fuel savings, capacity enhancement, etc.)

The above mentioned CONOPS should also define what kind of service will be provided in the trial area (e.g. radar like service) and the complete schedule to perform the actions required, from planning to final report.

All stakeholders should be identified and brought to the program by promoting some user and customer conferences, to discuss the contents of the CONOPS and present the benefits of new technologies. It is also important to have some Airline candidates to commit and be part of the program from the beginning.

Expected Criteria

- The migration for an ADS-B environment should be cost effective;
- The use of the new technology must provide some safety benefit;
- The trial must be concluded in a reasonable time frame;
- The Air Navigation Service providers (ANSP) must get full commitment from users and regulators before the beginning of activities;
- It is important to have some radar coverage (at least partial) over the trial area to validate ADS-B position reports;
- A performance baseline for the designated areas of trials (e.g. existing routes) should be established to make future comparisons possible;
- A Cost Benefit analysis (CBA) should be performed for the customers by the ANSP; and
- Data collection should be performed and a safety case based on that data should be presented to regulators.

Test parameters

- The update rate of the prototype system should be measured and compared to the expected rate, depending on the designated airspace (en-route, TMA, ground);
- The accuracy of the system should be evaluated by comparison with a known legacy system (e.g. secondary radars);
- The performance of the system should be monitored, in terms of NUC (for D260 compatible avionics) or Navigation Integrity Category (NIC), Navigation Accuracy Category (NAC), System Integrity Level (SIL) (for D260A compatible avionics);
- The probability of reception should also be measured over a very large sampling of flights;
- The flight ID sent by any aircraft should be assessed by the technical teams;
- The overall service availability must be measured and determined. Anomalies of all types shall be recorded and analyzed.

Trial Limitations

- The trials should be limited to ADS-B out only;
- There is a need to validate the performance of the existing communication infrastructure;
- The spectrum within the trial area should be monitored in order to make sure that the frequency 1090MHz won't be affected for the legacy systems that are currently deployed;
- It is desirable to have a monitoring system for the health of the GPS constellation to validate its performance during the test event.

Results dissemination

During the trial processes, a dedicated team should be assigned to collect, organize and analyze data that will be used to write a complete report of the ADS-B trial results and to submit that report to GREPECAS through the Surveillance Task Force. These results and data should be sent to the Rapporteur of the Surveillance Task Force.