

Issue Paper 6

ADS-B Broadcast Moving and Stationary Obstacles

Presented to:

RTCA SC-186

ADS-B MASPS Ad Hoc Group

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Why Mark Obstacles With ADS-B?

- Charting alone hasn't solved CFIT issue.
- This specific safety issue being addressed by FAA's Safe Flight 21 Applications # 2.1 & 2.2.
 - High-level ConOps drafted.
- Nature / examples of safety hazard:
 - 1,000 HDTV antennas planned, each 2,000 feet AGL.
 - Tethered balloons with radar systems (to FL 150)
 - Uncharted (new) towers that do not yet appear on charts
 - Vessels operating within airport obstructions zones (e.g., BOS airport making ILS approach temporarily N/A)

What is an obstacle?

(As defined by SC-193, WG-2, or others)

- Three-types.
 - Point (single tower)
 - Cluster (windmill farm)
 - Barrier (transmission lines)
- (How to display this data on CDTI will be a SAE G-10 issue)
- Specific obstacle types: Defined as meta-data.
- “Permanent” versus “temporary”.
 - Examples of temporary obstacles: Tethered balloons; Cranes that goes up or down each day (NOTAM L)
- “Fixed” versus “moving”.
 - Examples: Crane along a rail / track (e.g., Space Shuttle); Floating oil rig, Vessel in a ship channel

ADS-B Obstacle Attributes (Proposed)

- First, revise DO-242 scope: Obstacles, NOT obstructions. Also, fixed and moving, temporary and permanent.
- Define various types
- Define significant. (Use SC-193 criteria)
- Define reference system (WGS-84)
- Units of measurement. Lat/Long. Accuracy.
- Unique identifiers. Needed?

ADS-B MASPS Changes (Suggested)

- Class B 3. Use the proper label -- Obstacles
- Include “fixed” (F) & “moving” / “mobile” (M) obstacles
- Address all “temporary” F/M significant obstacles
- Address “permanent” F/M significant obstacles, especially when not charted
- Include “permanent” F/M obstacles even when charted, if deemed an unusual and significant safety hazard
 - e.g., tethered high-altitude radar balloons
 - e.g., high-line catanery wires over valleys
- Modify “category” section (MASPS Section 2.1.2.1.3) sub-categories to reflect above suggested changes.

Changes (Continued)

- Create a list of the types of obstacles (both F/M) that will be supported by ADS-B “DAP-Like” services
- Provide this list to the new SAE G-10 WG on symbology. (New SAE WG will coordinate with ASSAP CDTI MOPS group). First meeting in August.
- Define ADS-B broadcast rate for this ADS-B data. (Once per minute??).
- Ensure through MASPS attribute descriptors that there will not be any “phantom” or dual images.
- Define all definitions in Appendix B: Definition of Terms

Discussion

- Follow-on action items?
- Who does what, and by when?