

RTCA Special Committee 186, Working Group 5
ADS-B UAT MOPS
Meeting #12

Aircraft Track Acquisition

Prepared by

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SUMMARY

In response to Action Item 11-05, results from the Multi-Aircraft UAT Simulator in the Core Europe re-running the Aircraft Track Acquisition for a 99% for range acquisition, originally presented in UAT-WP-11-17 in response to Action Item 10-6.

Aircraft Track Acquisition Assumptions

- Epoch message sequence as re-defined in Brussels
- 16-second transmission sequence
 - ◆ Four 4-message epochs
 - ◆ Rotation of start message
- Requirements for acquisition vary by aircraft type
 - ◆ A3 – reception of TSR, TCR0, TCR1, MS
 - ◆ A2 – reception of TSR, TCR0, MS
 - ◆ A1H – reception of TSR, MS
 - ◆ A1L/A0 – reception of SV

Acquisition Methodology

- Use probes in head-on scenario
- Starting ranges vary by aircraft type
 - ◆ A3 – 180 NM
 - ◆ A2/A1 – 80 NM
 - ◆ A0 – 50 NM
- Determine 95th percentile for range at acquisition

95% Acquisition Results

	A3 xmt	A2 xmt	A1 xmt	A1L xmt	A0 xmt
A3 rcv	173	63	66	51	28
A2 rcv	178	64	67	44*	30
A1 rcv	175	54	62	38	23

Results are 95th percentile for range at 95% acquisition.

*This run was done starting at 50 NM, rather than 80.

99% Acquisition Results

	A3 xmt	A2 xmt	A1H xmt	A1L xmt	A0 xmt
A3 rcv	137	53	53	49	18
A2 rcv	145	54	53	52	17
A1 rcv	122	50	38	37	11

Results are 99th percentile for range at 99% track acquisition.