

RTCA Special Committee 209

Working Group #1

Mode S Transponder MOPS Development/Maintenance

Meeting #1

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**BAE Systems Response to Action Item 6-3
Transponder Reply Rate Capabilities**

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SUMMARY

This Working Paper summarizes the BAE Systems response to SC-209 Action Item 6-3 requesting the testing of the company transponders for reply rate capabilities.

Our military transponder performance specifications are defined by the DoD AIMS office. Their governing performance specification is AIMS 97-1000 for Mode 4 based transponders and the new 03-1000A for military Mode 5 transponders.

Both AIMS 97-1000 and 03-1000A require a minimum reply rate of 1000 SIF/ATCRBS interrogations (SIF includes Modes 1 & 2 - a single reply rate limiter is used). For a TCAS compatible transponder, the minimum reply rate is specified as 65 +/- 5 replies. Mode S has a separate reply rate limiter.

The BAE Systems APX-117, APX-118, APX-123 and APX-124 are certified for AIMS compliance and will support 1000 ATCRBS replies simultaneously with 60 Mode S replies. These reply rates were verified on the USAF APX-124 transponder.

Any military transponder certified by the AIMS office has to meet these requirements. I would say the Raytheon APX-119 should support the same reply rates (but let Raytheon tell you).