## Work Package: BSM

## SPIRE-ATC-REP-001788

Baseline design accepted at Delta-PDR, including digital electronics control by MCU. CPP parts requested. Single axis prototyping complete. DDR held. 2 axis prototype tests complete. IBDR complete. Development Model testing	1. Subsystem Progress Since Project Inception								
2. Subsystem Progress This Month         DM-2 initial characterisation tests complete, investigative strip down and corrective mods completed. Tayco flexitapes received and re-build started.         3. Problem Areas       Remedial Action         I and Latch design       Scheduled for after Xmas.         I Launch Latch design       Detailed investigation, Mumetal screening, servo loop mods, cold tests, magnetic modelling         4. Engineering Activities       Detailed investigation, Mumetal screening, servo loop mods, cold tests, magnetic modelling         Control loops closed up to the limit of (warm) motor saturation. Warm motor torque constants, repeatability on chop rest position also seen. Magnetic coupling between the chop and jiggle motors has been isolated as the cause of cross talk, and test data supports the hypothesis that the increase in spring rate (and maybe also unpowerd repeatability) seen on the chop axis is due to coupling in of the jiggle spring rate by a stiff magnetic 'spring'.         Discussions are progressing well with LAM on telementy and BSM //CUU software. Discussions on the ICD with MMSL are in hand - some confusion over beam positions on the BSM. Launch latch ICD changes passed to LAM for comment.         5. Design Changes         Minor design changes : the most significant being to add optical alignment tolerances to several assembly drawings in the light of DM-2 buil desperience. Given magnetic cross talk, we have issued a prototype mumetal shield design to the ATC workshop and will test this in January. The design has not been modelled and optimised, but works on the principle of placing the maximum amount of mumetal in the only convenienthy available position. If tests are encouragi									
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	<b>10. Activities Yet to be Achieved</b>	5.							
BSM SSSD update, BSM ICD u[date (launch latch, structure, MCU). Sign off of ATC PA plan.		II) Sim off	of ATC DA plan						
Improvements to the drawing configuration data base are being sought.									
11. Milestones Status									
		Baseline							
					-				
20K test dewar available     N/A     Nov.02     Dec02     +1month				Dec02	+1month				
Integrate DM 2 at LAM     30 Mar 01     Nov.02	-			<b>D</b>					
DM release for manufacture Oct.01 Nov.01 Dec.01									
DM-2 release for manufacture N/A Apr.02 Apr.02		N/A	_	Apr.02					
2 axis prototyping at ATC complete N/A Mar.02 Apr.02	2 axis prototyping at ATC complete	N/A	Mar.02	Apr.02					
SPIRE IBDR N/A Mar.02 Mar.02	SPIRE IBDR	N/A	Mar.02	Mar.02					
DM-2 tests complete         30.Apr 02         21.Mar.03         + 2 months	DM-2 tests complete	30.Apr 02	21.Mar.03		+ 2 months				

<b>SPIRE</b>	(ATC)
	(AIC)

## Monthly Report – Dec 2002

**Date:** 19.Dec.02

BSM STM del'y to RAL	01 Feb 00	5.Nov 02	5.Nov 02	
BSM CQM delivery to LAM	Jul.02	Mar03 TBC		+ 1 month
BSM CQM del'y to RAL	13 Mar 02	26.May.03		+ 1 month
BSM QM tests complete (flight design valid)	25.Apr.03	15.Aug.03		+2 months
BSM PFM delivery to LAM	03.Jun 03	15.Aug.03		-1 month