

Proposed Change Level (1, 2, 3, 4): 2

Proposed Change: Replace the probe driven electrically fired bolt cutter system for probe separation with a launch vehicle driven pyrotechnic system

Lead Engineer:

Ajluni

Subsystem: Probe and Probe Carrier Systems

Reason for Change: The existing baseline has a number of serious deficiencies that we are unable to adequately address including:

- Range Safety noncompliance for mixing pyro fire signals with other lines on a common connector and removing required inhibits before liftoff.
- Complex implementation scheme that is still vulnerable to a processor reset after launch
- Can't be fully tested until all five probes and the probe carrier are built and integrated, quite late in the flow.

The proposed LV implementation addresses all these concerns and also reduces probe complexity and dry mass.

Reference Documentation Summary

See attached Separation White Paper and Mass & Power spreadsheet.

Subsystem Impacted: (Bold indicates an impact)

ACS	C&DH	Mechanical	Propulsion	Booms	IDPU S/W
Battery	EGSE	MGSE	RF Comm	EFI	SST
Bus	Harness	Mission Ops	Solar Array	ESA	SCM
Avionics	I&T	Power	Thermal	FGM	
Unit					
BUS S/W	Launch Vehicle			IDPU	

Minutes Summary (Systems Engineering Meeting):

Approval

PROPRIETARY

YES ☐ NO ☐

Project Manager

Date

Systems

Impacted Subsystem Lead

Distribution

- Subsystem trades (level 4) can be made within the resources of the subsystem. Systems Engineer insight and involvement.
- Trades that impact subsystem/system interfaces or resource allocations (level 3/level 2) require concurrence by the Configuration Control Board (CCB): Principal Investigator, Project Manager, Mission Systems Engineer (MSE), Probe Systems Engineer, Mission Operations Manager and affected Team Leads. GSFC Mission Manager insight.
- Trades that impact Level 1 *baseline* science/programmatic requirements must include approval by Principal Investigator and GSFC Mission Manager.
- Trades that impact Level 1 *minimum* science/programmatic requirements must include approval by NASA HQ.

Date