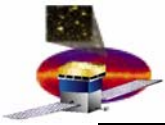


# Connection between FSW and SVAC

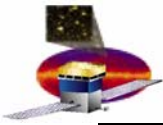
**Eduardo do Couto e Silva and Michael DeKlotz**  
**March 15, 2004**



# “Calibration” Semantics

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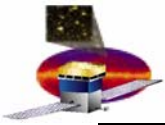
- **Charge Injection Calibration** – charge injected, results acquired, processed, sent to ground
- **Diagnostics**
  - **Normal/Science** – commanded special processing and forwarding of data to ground during normal science ops
  - **Special** – commanded special processing and forwarding of data to ground requiring special instrument configuration
- **Event Monitoring** – processing and forwarding of science-related data to the ground occurring during all normal science ops
- **Offline Calibration** – ground processing of data received from any of the above means to calibrate the instrument



# FSW and SVAC

To be reviewed by subsystems

Purpose	FSW Method	Operation Mode	ACD			CAL			TKR		
			Description	SVAC Plan ID	Freq.	Description	SVAC Plan ID	Freq.	Description	SVAC Plan ID	Freq.
Determine operational value for hit thresholds	Threshold Scan	Charge Injection	Veto (or hit)	C2	2 weeks	Low Energy	C24	2 weeks	fast OR (or hit)		2 weeks
			HLD		2 weeks	High Energy	C25	2 weeks			
			Zero-surppresion		2 weeks	Zero Suppression	C26	2 weeks			
Determine Energy Calibration (gain) Characterize non-linearity effects Produce hit maps	Fixed Hit Threshold	Charge Injection	Mip peak (PHA)	C3	2 weeks	Mip peak (PHA)	C19	2 weeks	Mip Peak (TOT)	C12	2 weeks
			linearity	C5	2 weeks	linearity	C20,C21	2 weeks	linearity	C12	2 weeks
			Dead/Noisy			Dead/Noisy	C23,C22	2 weeks	Dead/Noisy	C10,C11	2 weeks
Check rates and deadtime	Monitor Trigger primitives in LRS Countes	Diagnostics Science	Veto	C27	per orbit?	FLE	C27	per orbit?	fast-OR	C27	per orbit?
			HLD		per orbit?	FHE		per orbit?			
Monitor charge Distributions Monitor hit map Monitor pedestals Record Data	Monitor Low Rate Science Counters	Diagnostics Science	PHA	C4	per orbit?	PHA		per orbit?	TOT	C13	per orbit?
			Dead/Noisy		per orbit?	Dead/Noisy	C23,C22	per orbit?	Dead/Noisy	C10,C11	per orbit?
			pedestals	C3	per orbit?	pedestals	C18	per orbit?	alignment	C6,C7,C8	per orbit?
Offline calibrations on GND	Set configuration and record event data	Diagnostics Special	pedestals	C3	2 weeks	pedestals	C18	monthly	Dead/Noisy	C10,C11	monthly
			Dead/Noisy		2 weeks	gains	C19	monthly	TOT	C13	monthly
			Energy Scale (CNO)	Sec 7.1.6.	2 weeks	light asymmetry	C14	monthly	alignment	C6,C7	monthly
						light attenuation	C15	monthly	LAT-GCN alignment	C8	yearly
						Dead/Noisy	C23,C22	monthly			
			light yield	C16	monthly						
			Energy Scale (CNO)	Sec 7.1.6.	monthly						



# Current Status

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- **Definition of SVAC plan calibrations for first two towers available for review by subsystems by end of March**
  - No significant deviations from the test methodology provided by subsystems for data collection (based on current knowledge)
  - We are now discussing with subsystems how to define the data reduction (for both EGSE and SAS software)
  - We need to discuss how to monitor history and trend relevant parameters
  
- **For Future phases**
  - SVAC has identified (MD-00446) both onboard and ground calibration processing
  - FSW is currently working with subsystems to define detailed onboard calibration requirements (SS-00399).
  - Mismatches identified and working to close:
    - FSW missing onboard items identified in MD-00446
    - Some items identified as ground-only in MD-00446 identified as onboard in SS-00399
  - Mismatches should be resolved by end of March
  - Detailed onboard requirements refinement likely to continue through at least April