SVAC Tests after FLE discussions on IA meeting of Nov 19,2004

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Proposal from the meeting

- CAL post ship tests
  - Run at least once for each CAL module the calibDAC test, no need to run this test at the integrated tower level.
    - to characterize FLE,FHE,LAC and ULD thresholds.
      - » This is really a full "calibration" (i.e. it does every setting) rather than a "characterization" (i.e. it does a sample of settings).
    - Test duration: 8 hours
- Trigger tests
  - Perform FLE scan (for characterization) for each tower is assembled outside the flight grid
    - Use with muon telescope to help in the time-in procedure of the tower (TKR+CAL)
    - Algorithm – CAL has been doing it for a couple years (in various forms) on the EM. See LAT-MD-04187-01. The current form is in version-02. According to CAL the modifications to work with TKR data are a trivial extension.
    - Test Duration: 4 to 6 hours
- SVAC tests
  - Delete 8 hours of FLE scan for each tower after integration into the flight grid
  - Add 2 hours of charge injection for each tower after integration into the flight grid (calibGen)
    - Determine relative calibration between LE and HE channels because of possibility of FLE firing
  - SVAC tests WILL NOT use FLE to trigger on muons
    - FLE will always be disabled so
    - If we do is fine, we can accommodate it, just need to know

SVAC Tests - OLD

Purpose	Test	Duration	Settings
SVAC Day 1 for 1, 2, 4, 6, 8, 10, 12, 14, 16 towers. Integrated Time during I&T: 9 days			
TKR Threshold Dispersions – charge injection	SVAC 204	1 hour	See TKT TE701
TKR Tot Conversion Parameter calibrations – charge injection	SVAC 202	1 hour	See TKT TE602
TKR Threshold calibrations – charge injection	SVAC 201	1 hour	See TKT TE601
Determine best discriminator settings for CAL using cosmic rays	SVAC 203	8 hours	TBD
TKR MIP calibration/Trigger efficiency	SVAC 104	4 hours	GND μ flight
SVAC Day 2 for 1, 2, 4, 6, 8, 10, 12, 14, 16 towers. Integrated Time during I&T: 9 days			
Determine CAL pedestals	SVAC 103	1 hour	GND μ zero sup. off
Offline calibrations and performance	SVAC 102	23 hours	GND μ TEM diag ON
Full LAT - Vertical Orientation – Integrated Time during I&T: 15 Days			
Low-Level characterization, Offline calibrations and MC tuning	SVAC 101	6 Days	GND μ Main
Control sample with zero suppressed data	SVAC 103	1 hours	GND μ zero sup. off
Control sample with flight settings	SVAC 104	5 Days	GND μ flight
ACD performance: horizontal “tracks”	SVAC 106	6 hours	GND μ ACD trigger
ACD performance: horizontal “tracks”	SVAC 107	6 hours	GND μ ACD trigger
ACD performance and calibrations	SVAC 108	6 hours	GND μ ACD trigger
ACD veto functionality	SVAC 105	1 hour	GND μ ACD veto
VG – 1, 2 towers and LAT - Horizontal Orientation - Integrated Time during I&T: 3 days			
Background control sample	SVAC 103	3 hours	GND μ Main
Performance for low energy photons	SVAC 103	13 hours	GND μ Main
LAT - Horizontal Orientation – Integrated Time during I&T: 5 Days			
Low-Level characterization baseline for Environmental Tests @ NRL	SVAC 104	4 days	GND μ flight
Control sample	SVAC 101	1 day	GND μ Main

Moved to trigger tests since SVAC tests do not use FLE to trigger on muons

SVAC Tests - NEW

Purpose	Test	Duration	Settings
SVAC Day 1 for 1, 2, 4, 6, 8, 10, 12, 14, 16 towers. Integrated Time during I&T: 9 days			
TKR Threshold Dispersions – charge injection	SVAC 204	1 hour	See TKT TE701
TKR Tot Conversion Parameter calibrations – charge injection	SVAC 202	1 hour	See TKT TE602
TKR Threshold calibrations – charge injection	SVAC 201	1 hour	See TKT TE601
CAL Calibrations of four energy ranges - charge injection	SVAC 203	1 hour	calibGen
TKR MIP calibration/Trigger efficiency	SVAC 104	4 hours	GND μ flight
SVAC Day 2 for 1, 2, 4, 6, 8, 10, 12, 14, 16 towers. Integrated Time during I&T: 9 days			
Determine CAL pedestals	SVAC 103	1 hour	GND μ zero sup. off
Offline calibrations and performance	SVAC 102	23 hours	GND μ TEM diag ON
Full LAT - Vertical Orientation – Integrated Time during I&T: 15 Days			
Low-Level characterization, Offline calibrations and MC tuning	SVAC 101	6 Days	GND μ Main
Control sample with zero suppressed data	SVAC 103	1 hours	GND μ zero sup. off
Control sample with flight settings	SVAC 104	5 Days	GND μ flight
ACD performance: horizontal “tracks”	SVAC 106	6 hours	GND μ ACD trigger
ACD performance: horizontal “tracks”	SVAC 107	6 hours	GND μ ACD trigger
ACD performance and calibrations	SVAC 108	6 hours	GND μ ACD trigger
ACD veto functionality	SVAC 105	1 hour	GND μ ACD veto
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Low-Level characterization baseline for Environmental Tests @ NRL	SVAC 104	4 days	GND μ flight
Control sample	SVAC 101	1 day	GND μ Main

To check relative calibration for LE and HE channels (without the FLE piece)

Work with CAL and TKR for the next 2 weeks to see if 16 hours of data is sufficient. Need quantitative reasoning