Final Proposal for
Phase 1 and 2
SVAC, E2E Tests
(hereafter LAT 70X, 80X)

Eduardo, Eric Grove and Pat
Overview of Cosmic Ray Tests

• Goals for this meeting
  – Agree on final list of cosmic ray data taking
    – Hardware configuration
    – Register configuration
    – Test duration

• Assumptions for test sequence
  – Trigger and Data flow functionality has already been tested
  – Validated calibration constants are available prior to tests
    – including operational settings (e.g. thresholds, time delays)

• Overview of Tests
  – Number : 12
    – to be distributed among Phase 1 and 2 according to schedule constraints
  – Duration : 96 hours
    – Does not include overhead for setting up and performing data taking
  – Data Analysis Results
    – The goal is to present results on Instrument Analysis Workshop 6
      › First week of March 2006 @ SLAC
Trigger Engine Configuration for all tests

- The trigger engine matrix has already been presented in the following meetings
  - Test Planning
  - Trigger
  - Calibration & Analysis
- Eric Grove is currently consolidating the information
- For this talk we assume the consolidated matrix will be used for all tests
  - unless explicitly stated
LAT SVAC/E2E System Tests: Phase 1 and 2

• SVAC Tests
  – Overhead for test time and schedule constraints to be included by IFCT (Larry)
  – Test ID to be agreed between system engineering and online (Pat/Ric)
    – In case of need to change test ID please inform SVAC

• List of Tests in Chronological Order

  • LAT 701: Flight configuration on the GND - primary side of GASU 1 hour
  • LAT 702: Flight configuration on the GND - redundant side of GASU 1 hour

  • All 8XX tests use Flight configuration on the GND

  • LAT 801: Unregulated Power Supply set to 27V 1 hour
  • LAT 811: Unregulated Power Supply set to 29V 1 hour
    • 2.1.1-2 – Condition Scan CR Test in LAT-MD-03489
  • LAT 821: pulser rate @ 15 KHz and cosmic rays 1 hour
    • 2.1.1-4 – Nominal Rate CR Test in LAT-MD-03489
  • LAT 831: pulser rate @ 15 KHz and cosmic rays 1 hour
    – CAL muon gain
      • 2.1.1-8 – Nominal Rate CR Data Volume Test in LAT-MD-03489
  • LAT 841: Unregulated Power Supply set to 27V and pulser rate @ 15 KHz and cosmic rays 1 hour
  • LAT 851: Unregulated Power Supply set to 29V and pulser rate @ 15 KHz and cosmic rays 1 hour
    • 2.1.1-5 – Nominal Rate Condition Scan CR Test in LAT-MD-03489

  • “Runs for the record”

  • LAT 701: Flight configuration on the GND - primary side of GASU 48 hours
  • LAT 702: Flight configuration on the GND - redundant side of GASU 8 hours
  • LAT 711: Muon Calibration - primary side of GASU 16 hours
    – Flight configuration on the GND but CAL front-ends set to muon gain
  • LAT 701: Flight configuration on the GND - primary side of GASU 16 hours
    – LAT oriented horizontally – baseline for NRL
Test Consolidation

• **Goal**: eliminate test redundancy
  – If a test is redundant
    – do NOT add to the SVAC list
    – ensure the number of cosmic ray triggers is sufficient for SVAC data analysis

• The following tests were *eliminated* from SVAC/E2E tests
  – they appear elsewhere

• LAT 721: ACD calibrations using ACD only: 4 hours
  – ACD CPT (triggerOps)

• LAT 731: Data Transport Errors 1 hour
  – LAT 660 (Operation and Test Plan LAT-MD-02730) –
    – System Engineering will add 1 hour of muons for this test
    – Recommendation from Committee on E2E testing (2.1.1-10 in LAT-MD-03489) - T&DF Data Transport Errors

• LAT 741: GEM self-Integrity test (Data taken during Trigger Tests) 4 hours
  – LAT 211 (2.2.5 in Trigger Test Plan LAT-MD-07604) – GEM self-Integrity test
    – Recommendation from Committee on E2E testing (2.1.2-4 in LAT-MD-03489) - T&DF False Triggers

• LAT 751: GEM Trigger engines (Data taken during Trigger Tests) 3 hours
  – LAT 211 (2.2.8 in Trigger Test Plan LAT-MD-07604) – GEM Trigger Engine test
    – Trigger group will add 10 min of muons cycled through all engines

• LAT 761: L1 Veto Efficiency (Data taken during Trigger Tests) 2 hours
  – LAT 211 (2.2.5 in Trigger Test Plan LAT-MD-07604) – VETO Efficiency test
    – Trigger group will ensure min of 2 hours of cosmic ray data taking