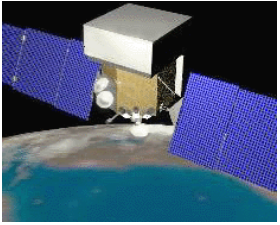


Data Acquisition System Requirements Document (DRD)

Roger Williamson
Collaboration Meeting
GSFC
March 20, 2000



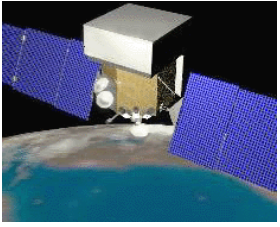
Requirements Document

◆ Scope

- All data, command, control, and electrical components of the instrument except for the ACD, CAL, and TKR detector front ends and structural components.

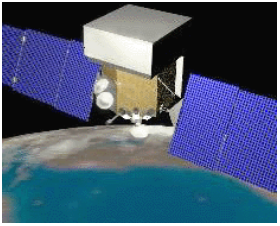
◆ Purpose

- Establish and document the requirements imposed on the DAQ by the mission, spacecraft, and detectors.



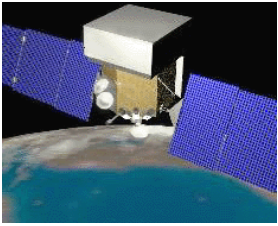
Requirements Characteristics

- ◆ Clear and concise statement of a need
- ◆ Each requirement shall be verifiable by a single test or other action (inspection, analysis, demonstration)
- ◆ One “shall” per requirement
- ◆ The requirement shall be stated such that the verification is unambiguous (e.g. don’t use adjectives such as quickly)



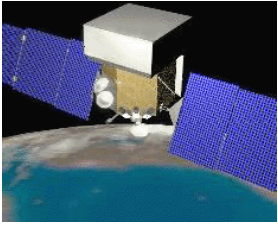
Requirements Document Format

- ◆ Introductory Material (Scope, Documents, Overview...)
- ◆ Requirements (list of “shalls” with minimum explanatory text)
- ◆ Requirements Traceability Matrix (RTM)
 - Identifies source of requirement (document and number)
- ◆ Requirements Justification Matrix (RJM)
 - Describes rationale for the requirement
- ◆ Requirements Verification Matrix (RVM)
 - Identifies verification method for each requirement
 - Test, Analysis, Demonstration, or Inspection
 - Requirements should be written to only need one test or ...



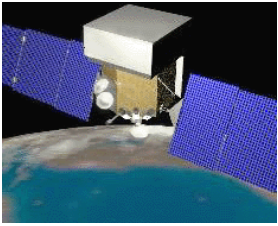
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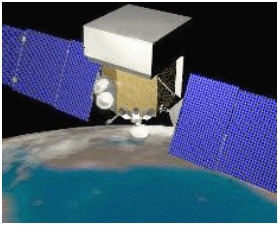
DRD Science Requirements

- 2 SCIENCE REQUIREMENTS.....**
- 2.1 LAT SCIENCE OBJECTIVES.....
- 2.2 LEVEL 1 TRIGGER.....
- 2.3 EVENT DATA FLOW REQUIREMENTS
- 2.4 SCIENCE HOUSEKEEPING REQUIREMENTS



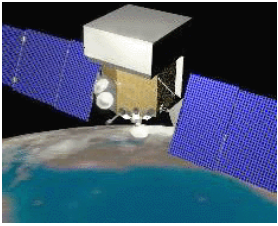
DRD Science Requirements

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- 3.12 DISCRETE CONTROL SIGNALS
- 3.13 ANALOG SIGNALS



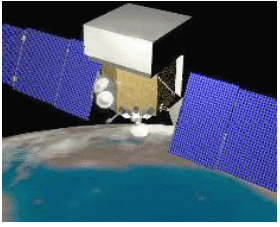
DRD Science Requirements

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4.2	1553B COMMAND SERVICES SUPPORTED.....
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DRD Science Requirements

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 - 2.1.2 *Pointing*.....
 - 2.1.3 *Gamma-ray bursts*.....
 - 2.1.4 *Event Timing Absolute Accuracy*.....
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 - 2.2.2 *Level 1 Trigger Rate*.....
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- 2.3.1 *Event Flow Rate*
- 2.3.2 *Event Data Content*.....
- 2.4 SCIENCE HOUSEKEEPING REQUIREMENTS
- 2.4.1 *Subsystem Requirements*



DRD Science Requirements
