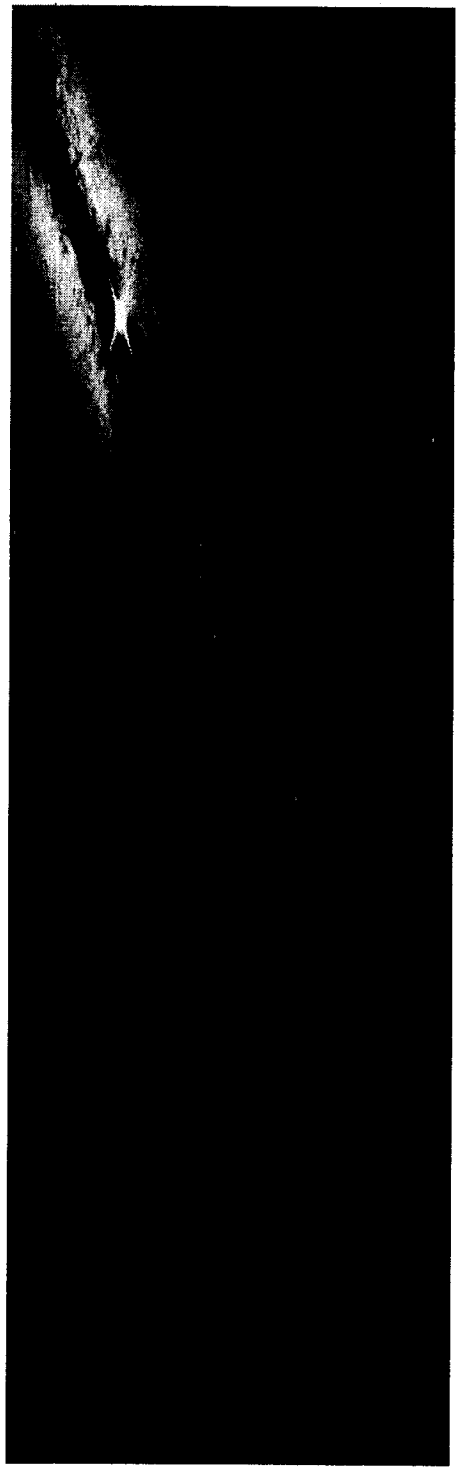

JPL Goddard Space Flight Center NASA CSMISS

Testing Lessons Learned on QuikSCAT/SeaWinds

Science Data Processing Session

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Jet Propulsion Laboratory

4th Quality Mission Software Workshop
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Testing "standard" approach

- Test Plan: Who, What, How Long, How Much Cost, etc.
- Test Requirements/Design: What kinds, start/stop criteria, test fixtures, etc.
- Test Procedures: Step-by-step for sets of cases; grouped by categories such as stress, limit, regression, etc.
- Test Reports: Results by case and by set.

Nice in theory and in classroom examples, but how well does it fit real-world systems?

Issues

- "Standard" approach fine for first deliveries and establishing baseline functionality, but what about when the testing evolves into verifying sublties and small changes
- How to keep track of details? How to keep track and tie in change work and deliveries?
- How to demonstrate (to self and others) a good process and compliance with ISO processes, etc.?
- What makes sense for a Class B system?
- What do you do as you're running out of money (planned or unplanned)?

QuikSCAT/SeaWinds Approach

- Introduction of QuikSCAT Mission changed development from incremental (SeaWinds only) to "multi-mission" system for both QuikSCAT and SeaWinds.
- Initial testing followed Plans/Procedures; verification of subsequent releases focussed more on functionality "below the radar" of the SRDs.
- Test Plans/Procedures not updated with details of testing needed; kept details in PR/CR database and kept test results in daily test reports.

Daily Test Reports

- Very detailed information for CDEs to diagnose/debug problems
- Used to verify closure of PRs and CRs

PR/CR Tracking

- Coordinates changes among the CDEs to ensure consistent deliveries/builds