

SATB Desirables: CIRA

Part II

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Testbed Questions

- ◆ Q: What is Success?
- ◆ Q: How do you measure it?
- ◆ Critical Factors?
 - ◆ Scope/Expectations (Faster Transition to Users?)
 - ◆ Funding (Specialization allows for more productivity?)
 - ◆ Why use this testbed? (Access to New Capabilities?)
- ◆ Barriers that were overcome?
 - ◆ Motivation (Was it built into the Testbed Design?)
 - ◆ Governance / Host Culture Issues?
 - ◆ Interface Definitions (Common Tools, Languages, Hardware, OS, Libraries, Docs, Testing, Training, etc.)



CIRA Experience: Data Processing and Error Analysis System (DPEAS)

- ◆ Software system designed for cross-platform cross-sensor parallel data processing
- ◆ Used as a matter of research convenience for projects
 - ◆ New capabilities
 - ◆ Saves people time
 - ◆ Saves computer time
- ◆ Very modular and flexible software framework
- ◆ Features:
 - ◆ Separates I/O from science algorithms
 - ◆ Common tool environment
 - ◆ Robust failover and automatic backup I/O capabilities
 - ◆ Plays well with others



SATB Desirables: Objectives

- ◆ Clear Communications
 - ◆ Univ. Usability and Accessibility (Accounts / Firewalls / Security)
 - ◆ Transparent Governance
- ◆ **Keep it simple (minimalist rules)**
- ◆ Flexibility - must serve multiple users
- ◆ **What it is not: *Hardware purchases*** ← misdirected focus
- ◆ **Long-term objectives**
(through and beyond NPOESS/GOES-R era)
 - ◆ “Best” Science (not the best “**stovepipe**” given funding limit X/Y/Z)
 - ◆ “Best” User Application / Impact
 - ◆ Sustainable funding support for continuity and system integrity
 - ◆ **Institutionalize** better science interactions by use of EDR teams
re: algo. improvements / error sources / user feedback



SATB Desirables: Design (1 of 2)

- ◆ Build Capabilities Incrementally
- ◆ **Targeted Early Objectives: e.g., Cross-sensor**
- ◆ Bottom-up Modular Coding (the low-level software, standards, and testing matters most)
- ◆ **Must separate data I/O from algorithms**
- ◆ Flexible enough to allow for Future Innovation
- ◆ Data Driven / Process Oriented / Team-Based
(NOUN) (VERB) (ADVERB)
- ◆ Benefits should eventually become more bi-directional (Research <-> SATB <-> OPS)



SATB Desirables: Design (2 of 2)

- ◆ **The SATB Design should answer the question: “What’s in it for me?”**
- ◆ A Culture Shift is in Progress. In the Future it is very likely that:
 - ◆ 1) Scientific staff will be unqualified to code on OPS systems.
 - ◆ 2) OPS CS staff will be unqualified to make science algorithm changes due to increasing algorithm complexities.
- ◆ **Participation should be Voluntary (not forced).** The benefits of working together on “common ground” should be enough to entice early adapters, and to entice late adapters once mature enough.
The SATB should have to earn its respect.

