

Project Name:		
Observing Database Replacement Design Study		
Business objective served by this project		
Prepare the way for replacing the existing Observing Database with an off-the-shelf solution that addresses ongoing maintenance issues and provides a solid foundation for the transition projects.		
Project Manager/Leader:	Project Sponsor:	PDS Version/Date:
Shane Walker	Bryan Miller	1 / 2010-10-20

## Project Description

### Issue Statement:

The production Observing Database (ODB) was designed in-house in the late 1990s with limited resources and under a set of assumptions that did not hold as the observatory shifted from development to operations. Namely, it was intended to be a temporary storage area for the current and previous observing semesters used primarily to facilitate observing at night. Since that time, ongoing usage of the ODB has demonstrated that while it serves its original purpose well, it is not suitable for long-term storage of all observing-related information. We are constantly stretching the bounds of its limitations to support new features and hold an ever growing collection of science programs.

Major transition projects that are planned for the coming years are poised to stretch those limitations beyond their breaking point. Meanwhile the state of the art in database solutions has evolved rapidly over the last 12+ years and there are many options that did not exist in 1998. The purpose of this project is to determine a course of action for replacing the ODB with an off-the-shelf solution that will both ease the maintenance burden and enable us to ramp up development on the transition projects.

### Project Objective Statement (POS):

There are two major objectives of this project—figure out what to do in the “exploration” phase and sketch out a plan for how to do it in the “planning” phase.

- The purpose of the exploration phase is to search for and evaluate existing storage and middleware solutions. Here we will do prototyping and research in order to select suitable alternatives that will enable us to handle the new science program / sequence model requirements and replace our custom software with industry standard solutions. At the end of this phase we should know what needs to be done (folding in input from the Sequence Model Update Feasibility Study) and how we can implement it.
- In the planning phase we will document our architectural decisions and create a migration plan for how to transition from where we are today to where we want to be. When we have completed this work, we will be able to better estimate times and assign resources to do the work.

### Project Flexibility:

Flexibility Matrix	Least Flexible	Moderately Flexible	Most Flexible
Scope		✓	
Schedule			✓
Resources	✓		

### Major Deliverables:

This project is a design study that will result in the delivery of an Architectural Overview and plan for transitioning from the existing ODB. There are two major deliverables, both in the form of project documentation:

- An Architectural Overview document that describes the changes that we anticipate making and how existing software will be transitioned.
- A backlog of tasks to be completed in the implementation phase along with time and resource estimates.

### Assumptions:

- No software will be delivered as a result of this project, though we anticipate prototyping one or more alternatives. The deliverables of this project will be used as input for subsequent implementation phases.
- At least one senior software engineer who is intimately familiar with the existing sequence model is required for project success. At least two engineers should be involved to prepare the way for future implementation stages, serve as a springboard for ideas, and provide a sanity check.
- Input from the Sequence Model update project is required to make fully informed decisions.

### **IS and IS NOT:**

- **IS:** Focused on understanding what needs to be done and documenting it.
- **IS NOT:** Focused on implementing anything, though we do anticipate prototyping solutions.
- **IS NOT:** The sole task of any software developer for the entire period of this project.

## **Strategy and Resources**

### **Milestones and Stages:**

There are two major stages of this project, the exploration phase and the planning phase

- Exploration Phase
  - Perform technology options survey
  - Prototype potential solutions
  - Review findings
- Planning Phase
  - Form migration plan
  - Create the Architectural Vision
  - Review

### **Estimated Costs:**

- No equipment or resources beyond those afforded for normal software development.

### **Core Team Members(see Guidelines for Developing New Projects document):**

- Shane Walker (Project Manager)
- Bryan Miller (Project Scientist)
- Manuel Lazo ? (Systems Engineer)

### **Extended Core Team Members:**

- Larry O'Brien

### **Dependencies that require coordination:**

- Depends upon outcome of science program sequence model update feasibility study.
- Transition projects depend upon having an updated observing database.

### **Risks and Issues:**

- The major risk that this project faces is ensuring sufficient staff effort will be available.

### **Supplemental Resources:**

- None