System Overview

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System Overview

System Scope

Scope Statement:

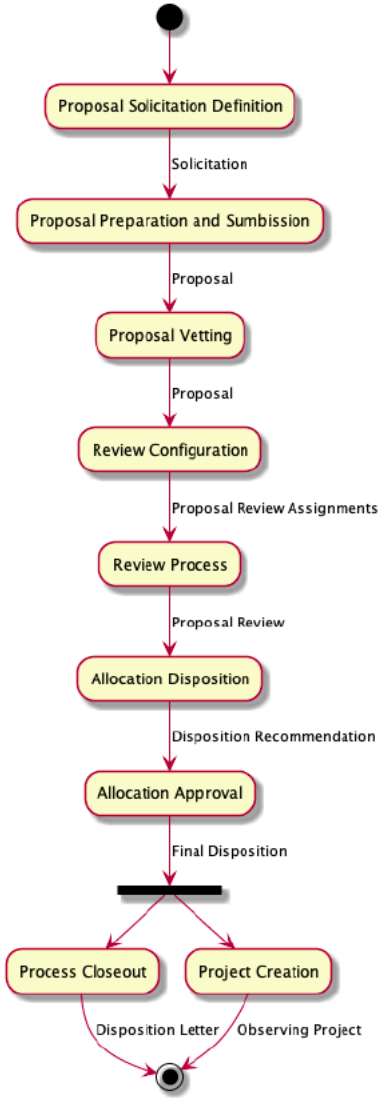
New proposal submission tool and tools to support the Review and Time Allocation process, both for AUI's existing North American telescopes and for the proposed next generation VLA.

Top Level Requirement:

Develop a new suite of software tools to support the submission, scientific and technical review, and time allocation of proposals for the NRAO telescopes, consistent with the requirements for observing preparation given NRAO's commitment to SRDP

Overview: Processes

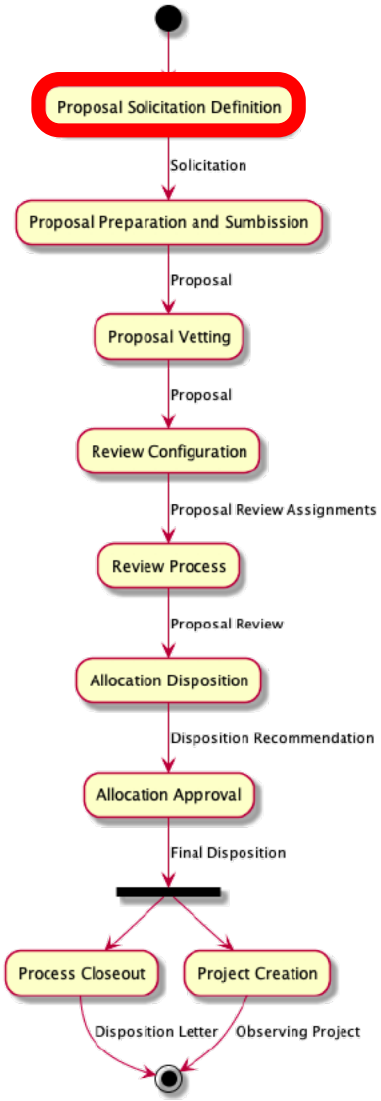
- Easy to get lost in the details.
- Linear set of processes.
  - Well defined inputs and outputs
  - Interfaces designed to encapsulate each stage and maintain modularity.
- Not necessarily how presented to users
  - For example for DDT Review Process, the Review, Allocation Disposition and Allocation Approval could all be accomplished by a single interface.



Overview

Solicitation

- The solicitation contains the information about what the proposer can request to use.
  - An announcement from the observatory to the community to submit a request to use observatory resources. Each solicitation is composed of Capabilities and a Proposal Process.
  - Multiple concurrent solicitations is a key design element for the system.



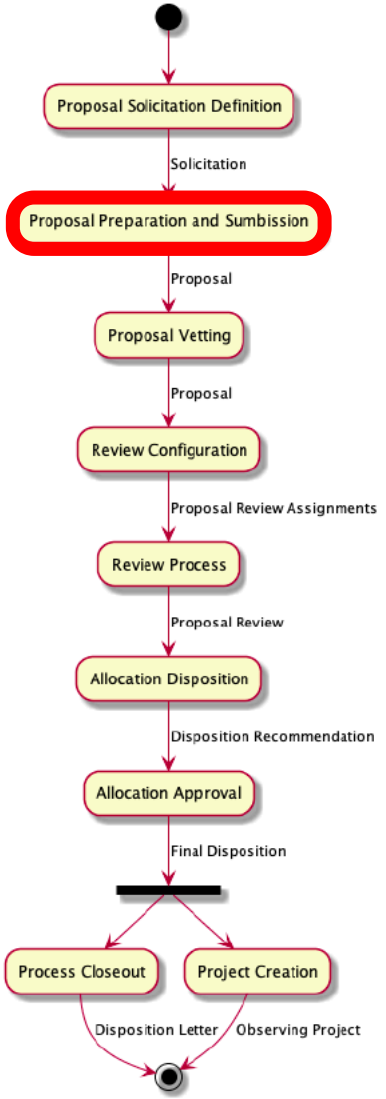
Overview

Proposal Preparation and Submission

- The Proposal consists of:
  - Proposal Information
    - Authors
  - Allocation Requests

- Allocation requests allow multiple facilities or multiple configurations to be requested.
  - Provides an additional method for users to communicate with TAC.

But will require education!

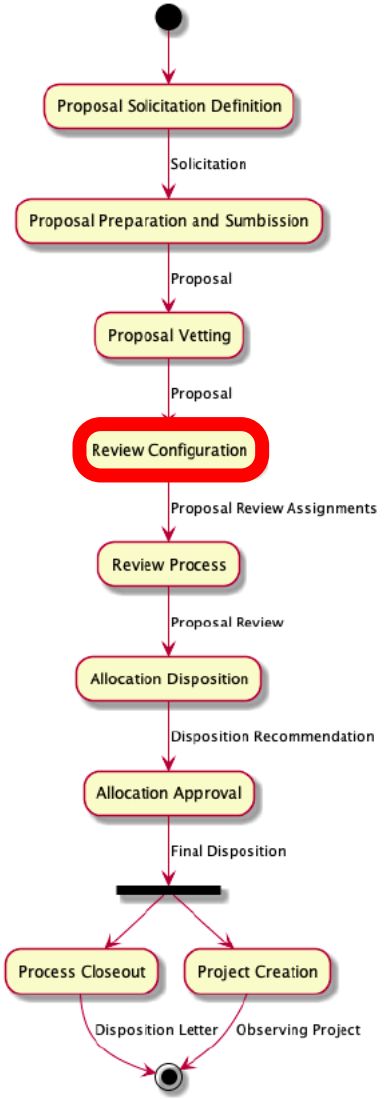


Overview

Review Configuration

- Specify review parameters that need information about response to solicitation.
  - No-Op in some cases (Observatory Review)
- For Panel Based review:
  - Map Reviewers to Panels
  - Map Proposals to Panels
  - Define and assign feasibility reviews

Lots of special cases.



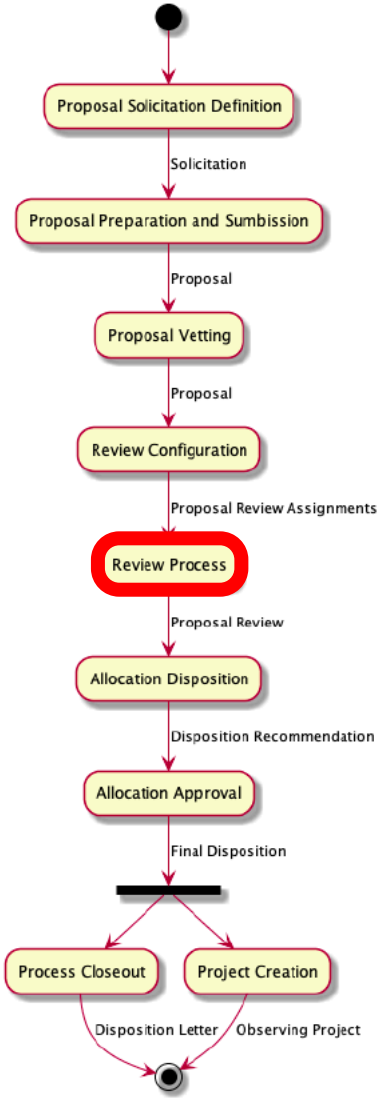
Overview

Review Process

- For each proposal produce:
  - Internal Comments and Comments for PI
    - Technical
    - Scientific
    - Data Management
  - Metric of Scientific Merit

- Two identified processes.
  - Panel Based Review
  - Observatory Site Review

Needed lots of details here to get all the relations correct.

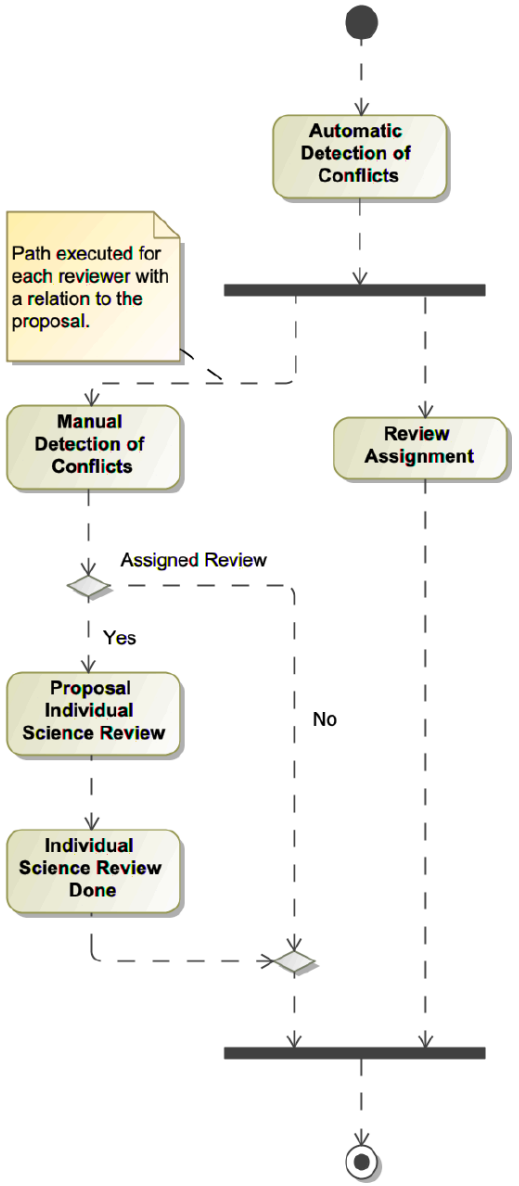


Panel Based Review Process

System Role in Review

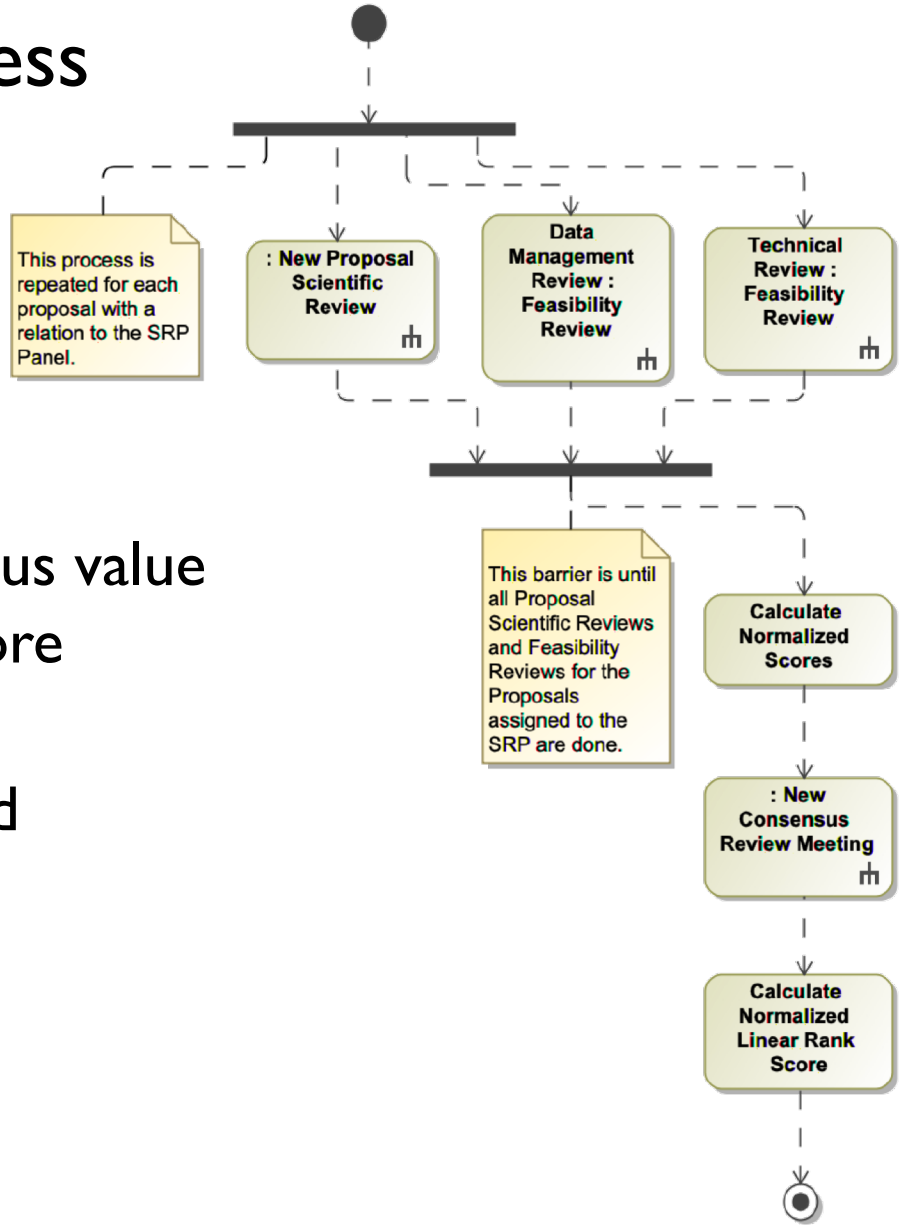
- Tasking system for Panel Chair and TTA Group Member to have multiple independent unbiased reviews.

- Recording system to store and propagate comments and scores.



Panel Based Review Process

Review Process Objective



- Objective: Determine consensus value of Normalized Linear rank score (metric of scientific merit).
- Record internal comments and comments for the PI.

Overview and Project Scope

SRDP-522: Reviews - general comment

I was (am) having some trouble getting my head around the various reviews that (may) take place, so at least to an outsider it feels a complex area with a number of reports that need to be tied together.

Fundamentally the output is a set of comments (internal and for the PI) that come from the Science and Feasibility Reviews, and a Metric of Scientific Merit that comes from the Scientific Review.

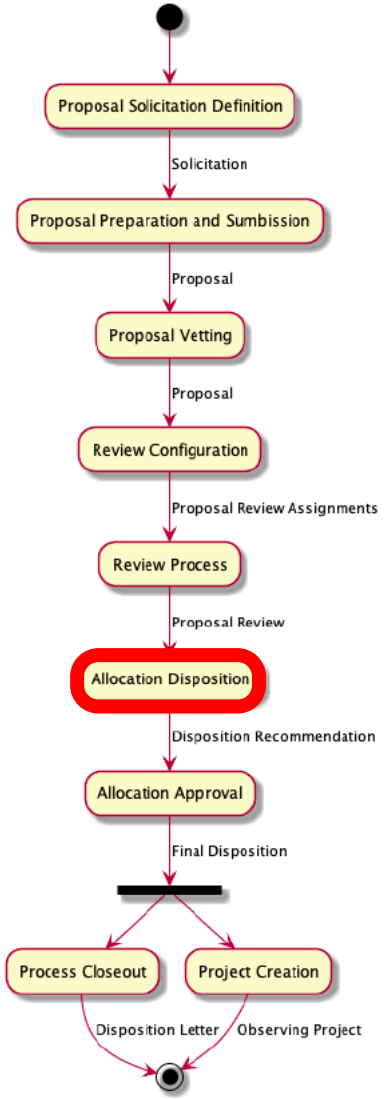
In the Panel Review process individual scores and comments are used to arrive at these via consensus. Additionally the TTA system serves as a tasking system to track assignments.

Suggested Action: ?

Overview

Allocation Disposition

- Based on the review metric and the comments recommend an allocation disposition.
  - TAC Process
  - Observatory Site Review
- Observatory details become important here, independent prioritizers, constraints, process.

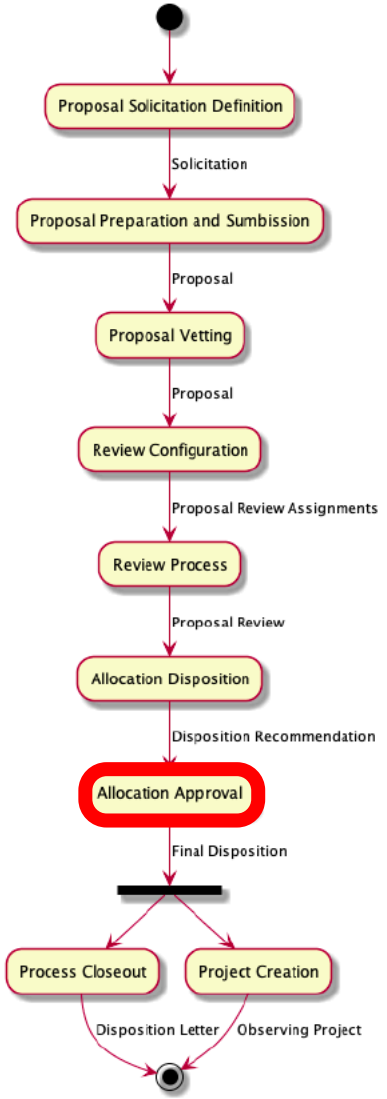


Overview

Allocation Approval

- Formal approval of an allocation and metrics.
  - Observatory Site Review
  - Directors' Review

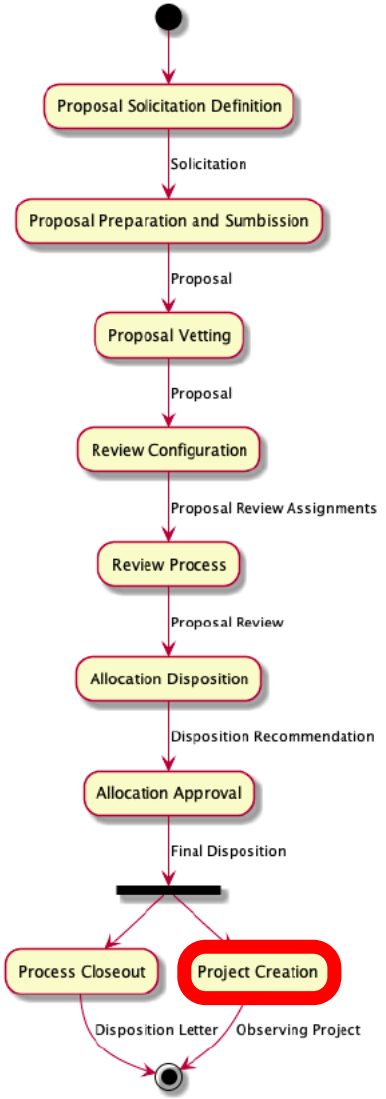
- Output a Final Disposition



Overview

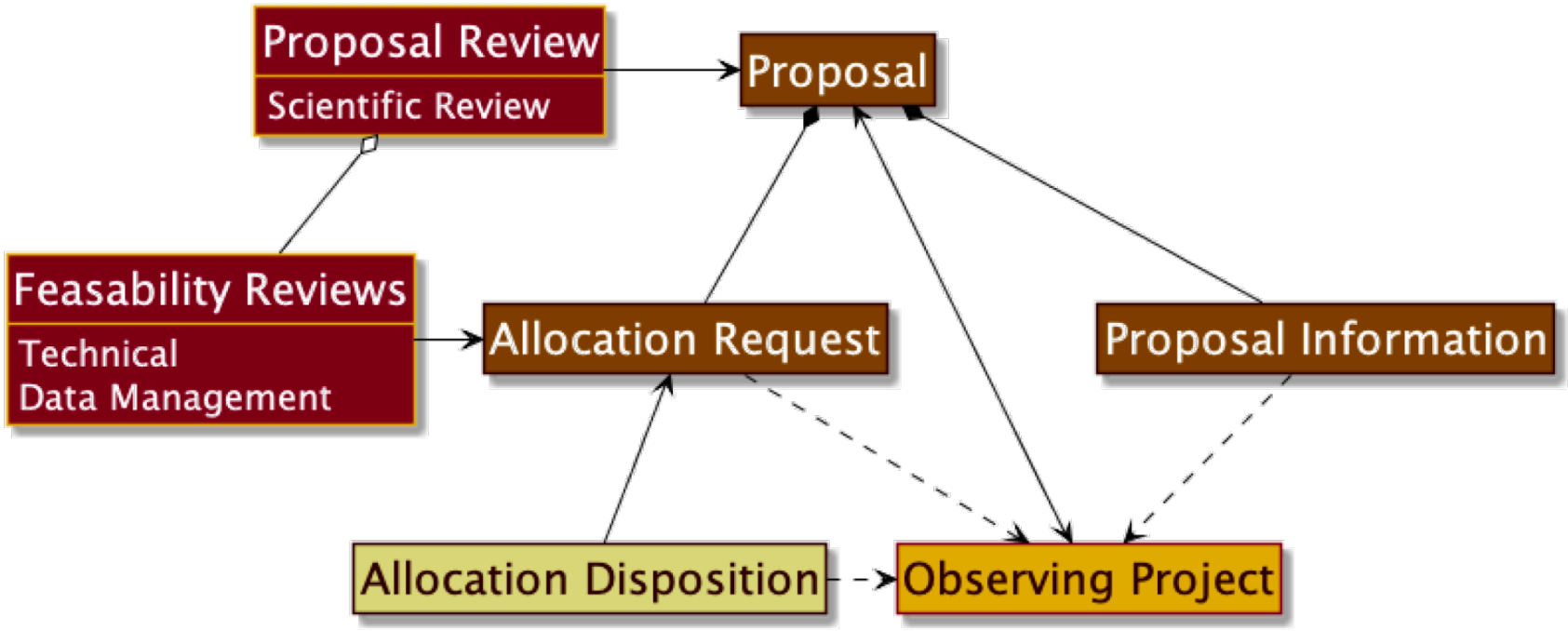
Project Creation

- Based on the Final Disposition and information in each Proposal create one or more projects.
  - Very facility dependent.



System Overview

Figure 1



Overview and Project Scope

SRDP-496: Diagrams could use keys and other improvements

SRDP-475: Figure 1, 6 and 9 not understandable

Many are half-way to UML/SysML but if they are meant to be one or the other that is not made clear.

These diagrams were used to communicate concepts as seen by the user to the architect. Their resemblance to UML/SysML is just because that is the diagramming language I am comfortable with. This is purely user perspective and the definitive relationships and multiplicities are given by the architecture.

Suggested Action: Add descriptions of diagrams to documents and clarify their role and meaning.

Overview and Project Scope

SRDP-493: Project creation

Note that DDT projects are created immediately while those from semester solicitations project create may be months later.

Also, one of the two semester solicitations will be for 2 VLA configurations, there must be a way to create projects for a single configuration, rather than a single semester.

Not mentioned at all (e.g. RSRO review panel).

The need to create projects relating to subsets of proposals is discussed in the system description.

My understanding was that projects that had multiple configurations were a single project with program blocks (based on system concept).

RSRO review panel may be a missing requirement. What is it?

Overview and Project Scope

SRDP-532: Updates to Users Committee…

There is a comment about how the Users Committee appears to misunderstand the scope and timescale for this effort. Updates to this committee should clarify these.

This document is now approximately one year old. At the UC meeting last year I presented the slide to the right.

This year we will be able to provide a more detailed assessment.

New TTA Tool Suite

Preliminary Effort Estimate

Module	Lines of Code	Java Code	FTE-Years
PST	147315	93764	19.6 (12.5)
OPT	27681	20151	3.7 (2.7)
RCT	13753	8761	1.8 (1.2)
SCT	16940	12856	2.3 (1.7)
Total	205689	135532	27.4 (18.1)

- **Assumption**: 29 SLOC per day or ~7.5k LOC per FTE-Year
  - ALMA had a net of 852,460 SLOC over the interval from 2005-2013.
  - Includes managers, testers, etc.
- For comparison: ALMA-OT is ~300k SLOC (~40 FTE-Years)

11 Users Committee Meeting – June 2019

Overview and Project Scope

SRDP-461: UI Look and feel - influence of ALMA

SRDP-531 PST & ALMA-OT

It is noted that the "Look and feel of software should be ... as close to the ALMA interface as possible"…

We agree that hitting the moving target of ALMA's look and feel is not what was intended by this requirement and that the intention was very much to embrace the concepts and philosophy of the ALMA tools.

I believe that we have been true to the intention of the requirement if not the letter.

Suggested Action: Modify requirement to reflect this understanding of the intent. (Due: April 30, 2020)

Overview and Project Scope

SRDP-515: Sub-Arrays

Are sub-arrays under consideration at all? Commensal observing - both sharing data products and sharing observing (but different products)?

For the VLA sub-arrays are considered a capability, allowing specification of a subset of antennas for each execution.

Commensal observing does not currently go through these processes and is not considered. Commensal products are not a *capability* offered in solicitations but are handled on a case by case basis outside of the tools.

Suggested Action: ?

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