ALMA Configuration Control

1. Overview

As a project with a projected budget greater than half a billion U.S. dollars conducted jointly by two Partners and many participating institutions, ALMA is a large, highly complex and geographically diverse project. A well-defined and organized process for controlling and communicating changes throughout the project is essential. Configuration control processes insure that changes proposed are accepted only after their impacts are well understood and that all parts of the project are aware of any change in a timely manner.

2. The ALMA Configuration

The term "ALMA configuration" refers to all those documents that define the Project. Appendix ?.A is a list of the applicable documents. For the purpose of configuration control, the ALMA documents are divided into four groups:

i) Board level documents
ii) Project level documents
iii) IPT level documents
iv) Non-controlled documents.

3. Configuration Control

Configuration control acts on the documents that define the project. The process that is used depends on the type of document, above, that is to be controlled.

Configuration control is made up of four main elements:

i) A means of formally requesting a change;
ii) A process for analyzing the technical, cost and schedule impacts of the proposed change;
iii) A process for making a decision concerning the change;
iv) A process for communicating that decision.

The application of these elements to each of the four types of Project documents is as follows.

Board level documents include this Management Plan (and its Appendices), official cost and task division documents, the Top Level Science Requirements Document and international agreements passed by the ALMA Board. Baselining of, and changes to, Board level documents can be requested by Board members of the ALMA Project Director and require direct action by the ALMA Board.

Project level documents include the Project Book, top level engineering requirements documents for each major subsystem and ICDs between subsystems that cross IPT or

WBS boundaries. Requests to change project level documents can be initiated by anyone in the Project and require action by the Configuration Control Board (CCB).

IPT level documents include detailed drawings and documents intended to implement the contents of project level documents. Control of these documents is the purview of the IPT management. It is the responsibility of the IPT management to insure that these documents are consistent with all applicable Project level documents.

Non-controlled documents include the ALMA Memo Series and other documents that do not officially define the Project. Baseline and change authorization for these documents depends on the document type but all such processes are outside CCB control.

The ALMA Project Manager defines which documents are Project level documents and he/she determines when a version of that document is to be submitted to the CCB for baselining. Once baselined, all change requests must be presented to the CCB using the process outlined below.

4. Configuration Control Board

The configuration control board is responsible for managing changes to all project level documents as described above. The CCB is chaired by the IPO ALMA Project Manager. Until this individual is appointed the Systems Engineering IPT Leader will serve as the Chairman. The System Engineering IPT Deputy Leader will serve as the CCB Secretary.

The CCB shall consist of six permanent members:

- The Project Managers from both Executives;
- The Project Scientists from both Executives;
- The Project Engineers from both Executives.

Additional temporary CCB members may be added at the discretion of the CCB Chairman when he/she feels that a particular issue needs special consultation. In any case, as noted below, the CCB solicits input from all IPTs prior to considering a requested change. It is anticipated that most actions will be carried out by consensus of the CCB membership. If efforts to reach consensus fail, a vote of the members will be necessary. Such votes of the CCB can be carried out in any manner selected by the Chairman including, but not limited to: face to face meetings; audio or video teleconference; email or paper correspondence; or telephone polling.

The ALMA IPO Director has the authority to rescind actions of the CCB by informing the ALMA Project Manager and the ALMA Board.

5. Configuration Change Requests

A configuration change request (CR) may be made by any ALMA IPT Leader or Deputy Leader. Requests are made in writing using the CR template form available on the ALMA website. A copy of this form is included in the Appendix. All change requests are submitted to both the CCB Chairman and CCB Secretary.

The CR form identifies the initiator and it includes a title, summary, description of the change being proposed, justification and known impacts in the areas of technical specification, science performance and schedule. Cost impact is not an issue for the CCB to consider directly (but see section