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Subject: document numbering

Marc,

Since we are beginning to create drawings, specifications, and ICDs at a rapid rate, there is an urgent need to set up a numbering system that will allow them to be organized and archived. An attempt was made to do this in MMA Memo 235, but the system described there (based on WBS numbers) is now recognized as unworkable. Appended below is a description of the system that I would now like to put in place.

I have discussed this with a few people here, including Jeff Kingsley (who provided useful comments and who generally finds the system reasonable) and others (who mostly just want to have some stable system in place). Jeff inquired through Torbin Andersen about drawing numbering at ESO, and was advised that it is cumbersome and bureaucratic; a written description of their system would be hard for us to obtain. Through Brian Glendenning, I got Gareth Harris to estimate the effort required to produce software that would automate the number assignments (as described below); he thought 1-2 weeks of programmer time would do it. We can put the system in place without the automation, which can be added when it's ready.

I think that we need to get something in place without waiting for widespread review, especially internationally. If there is good agreement among the most-affected DHs here, then I recommend that we simply announce that this is how we are proceeding. Changes can be made later if it's really necessary.

The scheme requires one small action by the top management: assignment of a 2-digit number to each "department," along with a designated "department head." These need not correspond to the level-1 WBS numbers, and indeed they cannot do so exactly. Nor does there need to be a 1:1 correspondence between the department heads (for this purpose) and the current DHs. Future flexibility is allowed because new "departments" can be created at any time, and old ones can be declared defunct. (If this happens so often that 2 digits are not enough, then something's wrong!) My suggestions for the initial list of departments is also appended below. I think you can issue such a list unilaterally, so that we can begin using it right away. Perhaps Dick Kurz will want to add to it later, which would be fine.

Please let me know what you think about this. As I said, I think it's getting urgent.

--Larry

Numbering of drawings, specifications, ICDs and similar items

LRD 2000-08-14

An underlying principle here is that the numbering is related to *things* rather than people. It reflects the object being worked on, not the person(s) doing the work. To the extent that human involvement is required in assigning numbers, responsibility is distributed hierarchically so as to allow local management of document numbering within a project.

Each drawing, specification, ICD, or similar item shall be assigned an identification string of the following form.

ALMAAddpppTnnnnR -- drawing number (includes specifications)
ALMAAddppp/ddppp/nnnnR -- ICD number

where

ALMA: Identifies this as an ALMA document. May be omitted from data files used *only* within ALMA, but should always be included within the documents themselves. Enables including these documents (especially drawings) in indices that cover additional projects.

dd: ALMA department number, 2 digits
Permanently assigned to each department by the Project Manager. Department numbers may never be deleted or re-assigned, even if the department itself ceases to exist, but new department numbers may be created at any time. Every physical element of the telescope is the responsibility of exactly one department at any one time. If responsibility is transferred to another department, new documents use the new department number but old documents are *not* renumbered.

ppp: Project number within department, 3 digits. Corresponds to a specific set of hardware, typically at the "module" level. Permanently assigned by the department head, never deleted. Projects may become obsolete, but their documents retain the same numbers, even if the documents are re-used within a new project. New project numbers can be created at any time.

T: Drawing type code (see list in MMA Memo 235), 1 letter.

nnnn: Sequence number, unique within project (not reused among types) or within pair of projects for ICDs; 4 digits.

R: Revision code, 1 letter. Blank (null) for the initial version of a document, "A" for the first revision, etc. If a document ever gets to "Z" and further revision is needed, it should be marked obsolete and a completely new number issued for the next version.

Notes:

- [1] ICD numbers include two projects; these identify the two hardware elements whose interface the document describes. It is possible to have an ICD for an interface that is internal to a project, in which case the two 5-digit strings (ddppp) are identical. Two ICD

numbers which are related by interchanging the two 5-digit strings shall be understood to refer to the same document (i.e., it is immaterial which number is listed first).

- [2] A Specification is considered a type of "drawing" (type code N), even if it contains mostly text. The numbering system does not depend on the structure of the document, which may be graphical or textural or some mixture.
- [3] Management of the number assignments is done at three levels: department numbers by the Project Manager; project numbers by the Department Head; and sequence numbers by the person directly responsible for each document, typically an engineer.

An automatic system for assigning numbers shall be established. It must be available to anyone over the Internet, but may require username and password for access. It will assign a name to the next available project number, but only if the user is an authorized department head. It will assign the next available sequence number within a project to anyone, and will record that person as being responsible for the resulting document. It will allow an authorized department head to change the name of the responsible person under a previously-issued number. The same system should allow read-only access without passwords. It should be able to return the title, status, and responsible person given any valid document number, and the title of any project given its 5-digit code.

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PROPOSED INITIAL SET OF ALMA DEPARTMENT NUMBERS AND HEADS

LRD 2000-08-14

- 00 - Site -- ?
(Roads, power, buildings, other infrastructure)
- 01 - Antennas, US -- Napier
- 02 - Antennas, Europe -- Andersen
- 03 - Front End, US -- Payne
- 04 - Front End, Europe -- Wild
- 05 - LO Multipliers -- Webber
- 06 - LO Photonics -- Payne
- 07 - LO Reference -- Sramek
- 08 - Signal Processing -- Sramek
(Downconversion, Digitization, Data Trans.)
- 09 - Correlator -- Escoffier
- 10 - Monitor & Control -- Glendenning
- 11 - Computing -- Glendenning
(Except MC subsystem)
- 12 - System Engineering -- Emerson

I have included both a US and a European department where I know of significant activity in both regions justifying independent control of project numbers. Additional departments, including European counterparts of some of the above, can be added whenever the need arises.