

To : Ed Fomalont, AIPS group, Arnold Rots, Gareth Hunt, Ron Ekers.

From : Tim Cornwell

Subject :

In the spirit of revisionism which now seems to be sweeping through the AIPS group following the return of WaWa I would like to suggest the following changes to AIPS.

1. Improve the History file thus : (a) make it a text file so that users can access it and (b) routinely write the INPUTS of a task into the file when that task is executed and changes the data in any way. These two changes could be invisible to most programs. The advantages of such a scheme have been well demonstrated in the DEC-10 where the calibration of a data-base can be repeated with minor changes simply by editing the .HST file and submitting it to the batch system. Furthermore, the history file ALWAYS contains sufficient information to reconstruct a given data set provided, of course, that the initial condition are known. The main disadvantage is the increase in disk space required, however I believe that this is a minor consideration.

An example :

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TASK 'APCLN' /TIME AND DATE OF EXECUTION
/VERSION # OF PROGRAM, DATE OF REVISION, PROGRAMMER NAME
INNAME = '3C449'
INCLASS = 'IMAP'
etc.
"
"
BADDISK = 3,4,0,0,0,0,0,0,0,0
GO
WAIT
/STUFF WRITTEN BY APCLN
/STUFF WRITTEN BY APCLN
/STUFF WRITTEN BY APCLN
TASK 'COMB'
INNAME '3C449'
etc.

```

To repeat the analysis with minor changes or for a different object the user simply edits the history file into a RUN file.

2. As you can see the above example includes the VERSION number, date of last revision and programmer name for the program, this is essential for any large system of software. The proliferation of AIPS will lead to problems unless some record of this sort is kept. This information should also appear on the monitor when a task is executed.

3. The message file should also be a text file so that users can extract only the information that they require. This change should considerably enhance the usefulness of the message file which is now in question.

An example is a message file containing information from both IMEAN and APCLN, the user very often wants only the former, preferably in a neat form for his notebook. In the present implementation he would have to run APCLN and IMEAN separately whereas in the proposed scheme he

could edit out the APCLN messages.

Another file which could well be a text file is the clean component file. At the moment, users have to go through terrible tortuous procedures to isolate sections of the clean components or to fabricate models of sources.

A general point should be made that unless a data set is very large, e.g. images or u,v data, storage as a text file is preferable because of the flexibility allowed. I do not accept the argument that users should be protected from themselves !

4. Since the format of the catalog is being discussed I would like to suggest that only directory information should be kept in a master file e.g. the CAn00000.xxx files, and that the map header should be stored in the first few blocks of the data file. Each data file, together with extensions, would then be a totally independent entity and can be easily transported. Furthermore the catalog or directory would then only be a convenience rather than the necessity it is now. By reducing this type of unnecessary linkage between files the system should become considerably more robust and flexible. The forms of the directory and of the map names need to be considered carefully so that enough information is present to be enable searches keyed on certain variables.

A possible bonus is that the length of the map header could be a parameter stored in the first few words along with a header type specification e.g. 'MA', 'UV', 'SC', etc.

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The first three suggestions are motivated by comments made by a large number of users to me. The last has arisen from our problems with the spontaneous zapping of AIPS files by the system. Although this will, hopefully, be fixed soon it has illuminated an unnecessary fragility and connectedness in AIPS.