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MEETING ON ARCHIVE SYSTEM

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Abstract

Minutes of a meeting on 11 Oct 1988 on new archive project.

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1 Main Points of the Discussion

This meeting was organised to discuss the paper in ref (1) and to study the feasibility and desirability of such new archive structures. The main points of the discussion are summarised below.

2 Size and Number of Archives

An archive would normally span a whole accelerator in order to limit the risk of inconsistencies. Such large archives may be difficult to handle. To facilitate this we may sub-divide the archives in smaller sections, corresponding to SUB-WSETS. How large an archive is and how it is sub-divided is decided by the operators. Sub-divisions can be useful for copying parts of existing archives into a new archive which could then be edited. This would save time when preparing new operations. The resulting archive is not guaranteed to be consistent and should be tested in a MD.

For each WSET, any number of archives can be created. The total number of archives for all WSETS is now arbitrarily set at 200. This may not be enough and can be increased. SINTRAN III now admits more than 256 files per user.

2.1 Re-Entrancy and Place available for Archive Buffers

It must be possible to do archive manipulations from several consoles. This means that there must be as many ABUF segments as there are consoles. One set of server routines can be on still another segment. The archive servers must be re-entrant or else protected against simultaneous access by semaphores.

One segment must contain 2 archive buffers (ABUF1 and ABUF2). This limits the buffer size for each archive to 24KByte. This is probably sufficient even for archives which cover a whole accelerator and, when not, we still have the option of splitting the archive in two. The size limitation will vanish anyway on our future computer system.

2.2 PLS Matrix Information

An archive would be saved for a particular user line. If it is restored for a user line, everything will work as before, regardless of the state of the user matrix. However, other users may be affected because they share values through common elementary lines. This problem will only be solved when the elementary lines have disappeared. In the meantime, the user matrix will be saved with the archive and the operator will be warned when the saved user matrix does not correspond with the present one. This will not prevent the archive from being loaded in the machine, however.

2.3 Partial Operations and Sequences

We can split the properties into two or more categories. An archive would still store everything but, when loading it into the accelerator, we would have the option of loading only selected categories of properties. This facility would enable to do partial loading (e.g. only actuations) but could be also used to do things in a certain sequence (within limits). The categories would be global for all classes.

Real sequences of operations with wait states and intermediate checking is not foreseen at present and is reserved for the SETUP program.

2.4 Exeptions and special Cases

The present proposal defines treatment for ranges of equipment. It is proposed now to indicate the treatment individually for each equipment in table EQUIP. It remains to be seen whether all special cases can be treated elegantly in this way. Many of these special treatments are now hidden in the code.

2.5 New Application Programs

Some more application functions are required:

DISPLAY : Display the archive on the console screen.
LOG : Print the archive on paper.
EXPORT/IMPORT: Convert archive structure to flat-file format and vice-versa.
CHECK : Compare accelerator state with archive values after loading.
A reset function will try again in case of discrepancies.

2.6 Effort

The foreseen effort of 3 man-months for the server routines and 3 man-monts for the database and console application programs may be overly optimistic, especially with the new requirements added here.

3 Conclusions

Not too much effort should be put into a new archive system which anyway cannot solve the fundamental problem of user interaction through elementary lines. The ORACLE database programs and the service routines in the TREES computer seem to be worthwhile. Not too much effort should be put into the console programs: just enough to give the operators a feel for what is possible. The real application effort may be better spent for implementation on the new workstations. Effort should be put into essential parts of the system while we try to get more input from the operators.

A new version of (1), taking into account the new requirements, will be prepared and circulated.

4 References

(1) Accelerator-Operation Archives, J.Cupérus, M.Lelaizant, Database-Article 11-6, 19 Sep 1988.