TO: Distribution

FROM: Ross E. Klinger

DATE: November 4, 1974

SUBJECT: ANSI Standard Tape I/O Module - Project Status

I.   SIGNIFICANT EVENTS

Coding of Version Three of the ANSI Tape I/O Module is complete, and testing has begun. Version Three provides all of the features of Version Two, but with iox_ interfaces. In addition, the code has been simplified and several deficiencies have been removed.

II.   TASK STATUS

The code supporting the iox_ attach, open, read_record, write_record, close, and detach entry points. An MTB has been published which describes the new interfaces. The MTB was well-accepted, with only two minor changes being made to the attachment options in response to comments.

Due to a misunderstanding of system installation deadlines, the ANSI Tape I/O Module will be installed in Multics SR2.1 (January 1, 1975), instead of SR2.0.

III. PROBLEM AREAS

A significant amount of time has been lost while coding and testing, for two reasons. First, several bugs in the new ring 4 tccm_ interfaces caused all tape support to stop working for a day, and then to work incorrectly for another day. This significantly delayed the early stages of testing.

Second, the recent CPU problems reduced my coding and debugging productivity by 70%, due to extreme system overloading. It often took all afternoon to perform a single compilation, and editing was annoyingly slower.

As a result, one to two man-weeks were lost from the coding and debugging effort.

IV. FUTURE PLANS

Before the I/O module can be installed, support for volume switching and multi-volume files will be added, along with support for the iox_ position and read_length entry points, support for the processing of EBCDIC data within a tape file, and support for reading and writing user file labels. Interfaces to an IBM Tape I/O Module will also be implemented.

Most of the code for multi-volume file handling is complete, as is most of the code for handling user labels, and for the IBM Tape I/O Module. This coding will be finished during November and December, and will be debugged and installed.

Final implementation of user labels has been delayed until we can meet with the Multics Cobol compiler development group to discuss their ANSI Tape needs.

V. INTERESTING INSIGHTS

A bug in the PL/I Language Manual came to light recently. It concerns the order of evaluation of the clauses of a do-statement with <repeat-control>. This form of do-statement has the following syntax and semantics:

```
do <control-variable> = <first> repeat <thereafter>
           while (<while-expression>);
```

Assignment of the <first> or <thereafter> expressions to the <control-variable> is made before evaluation of the <while-expression>, not after as documented in the PL/I Language Manual.

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
ANSI Tape Module: correct Version Two deficiencies	Klinger	09/11/74	10/16/74	5.2	Done
		09/11/74	10/18/74	5.4	
ANSI Tape Module: convert to iox_ interfaces	Klinger	10/17/74	10/28/74	1.6	Done - 4 days lost due to hardware/tdcm_ problems
		10/07/74	10/25/74	2.4	
ANSI Tape Module: test iox_ version (without volume switching)	Klinger	10/21/74	10/31/74	1.4	Underway - 25% Done
		10/29/74	11/06/74	1.4	
Tape Mount simulator: support volume switching	Klinger	10/29/74	10/30/74	.2	
		11/07/74	11/08/74	.2	
ANSI Tape Module: support multi-volume files	Klinger	10/31/74	11/06/74	1	
		11/11/74	11/15/74	1	
ANSI Tape Module: support iox_$position and iox_$read_length entry points	Klinger	11/18/74	11/22/74	1	
ANSI Tape Module: support processing of EBCDIC data in tape files	Klinger				Done
ANSI Tape Module: support reading/writing of user file labels	Klinger	12/16/74	12/20/74	1	

PROJECT _____ ANSI Standard Tape I/O Module _____ AREA _____ IBM Tape Module

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
IBM Tape Module: support IBM Standard Labeled Tapes	Klinger	11/25/74	12/10/74	2.0	*
IBM Tape Module: allow attach options to supply information from a missing HDR2 label	Klinger				* Done
IBM Tape Module: support DOS tape formats	Klinger				* Done
IBM Tape Module: support non-labelled tapes	Klinger	12/11/74	12/13/74		*
IBM Tape Module: support processing of ASCII data in tape files	Klinger				* Done

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-M	CHANGES-STATUS
ANSI I/O Module: provide MPM documentation	Klinger	08/19/74 08/19/74			Documentation for Version Two complete
IBM I/O Module: provide MPM documentation	Klinger	08/19/74 08/26/74			Documentation for Version One almost complete
ANSI/IBM I/O Modules: provide PLM documentation for I/O Modules	Klinger				