TO: Distribution

FROM: Gary C. Dixon

DATE: February 11, 1974

SUBJECT: ANSI Standard Tape DIM Project Status

I. SIGNIFICANT EVENTS

Using his new lrecl_io_ subroutine under Multics, Ross Klinger has successfully read and written all ANSI and IBM tape record formats. Testing of data interchange between Multics and OS/370 are now underway, using lrecl_io_ on the Multics side and standard OS/370 data set utilities and access methods on the OS side.

II. TASK STATUS

lrecl_io_ (Ross Klinger)

As stated above, Ross has successfully read and written all ANSI and IBM record formats onto a tape, using his new lrecl_io_ subroutine and an nstd_ simulator for Frank Canali's asynchronous tape I/O package. Many combinations of short-length records, padded records, null records, etc have been tested, and the code appears to be working well.

In testing tape data interchange between Multics and OS/370, Ross has successfully created a U-format tape file on Multics, and read it into OS/370, using standard OS/370 data set utilities. OS testing has been slow, due to unfamiliarity with OS/370 Job Control Language, difficulty in mounting tapes on Multics, problems with OS/370 data set utilities (eg, IEBGENER), etc. Now that most of these problems have been solved and a tape successfully read on OS/370, test runs should proceed at a faster pace, and should be complete within 2 weeks.

tape_in/tape_out commands (Ross Klinger)

The task of integrating lrecl_io_ into Tom Van Vleck's ostape command to support U-, V-, VB-, and VBS-formats (as well as the F- and FB-formats already supported) is now underway. The resultant command will have two entry points, tape_in and tape_out, which read tape files into Multics and write Multics

files onto tape, respectively. As with ostape, the new tape_in and tape_out commands will be driven from a control segment which relates the files on a particular tape to files (segments or MSFs) in the Multics Storage System. The control segment will also specify which record format should be used to read/write each tape file, and will provide options for automatic label skipping and tape file positioning.

The new reduction_compiler being written as part of the Library Maintenance Tools project will be used to generate an interpreter for the tape_in/tape_out control segment, and reading and writing will be performed through the nstd_ simulator used to debug lrecl_io_. We plan to install initial versions of these commands in the Installation-Maintained Library. Work will proceed on these commands during February and March.

tapeio_ (Frank Canali)

Frank Canali is finishing up the design of the tapeio_ subroutine, the new synchronous or asynchronous interface between the ANSI Standard Tape DIM (astd_) and the Tape Device Control Module (tdcm). tapeio_ will manage physical tape buffer storage, will call tdcm to issue synchronous or asynchronous I/O and order requests, and will return error status for the various requests to its caller.

An MTB describing the new design is one-half complete. It will be published during March and a design review will be held shortly after publication. Coding should begin during April, and integration of tapeio_ with lrecl_io_ should start during May.

Project Coordination (Gary Dixon)

During February, I will publish an MTB describing the installation plan for the ANSI Standard Tape DIM (astd_), and will submit an MCR proposing its installation into the system.

TO: DISTRIBUTION

FROM: Janice B. Phillipps

DATE: February 11, 1974

SUBJECT: ANSI Tape DIM Progress Report

Current Status

The ANSI tape DIM is in the testing and debugging phase. I can mount a volume registered as an ANSI tape with the new tape mount package, and have ANSI volume and file labels automatically written on the tape as part of the attachment process. Then I can write out U-format records in nine-track mode. Upon request to detach the file, the DIM automatically writes the file trailer labels and either unloads the volume or leaves it positioned after the trailer labels, depending on the disposal argument specified in the detach call. By successively attaching and detaching files, I now can write a multi-file ANSI volume through the DIM. When I read the files back with nstd_, the tape format, labels, and file positioning appears just according to the ANSI standard. I am able to attach an ANSI registered volume for reading using the new tape mount package and the DIM. Volume and file labels are read properly and the tape is positioned to the

data portion of the file. However, at this writing the file data is not being read back correctly. I believe this is a minor adjustment in internal buffer offsets.

Future Plans

In the following weeks, I plan to continue testing the DIM for all of the items listed in the following task list.

GROUP_____PDO: MULTICS SUPPORT GROUP_____ DATE___02/11/74_____ PAGE__1___/___1_____

PROJECT_____ANSI Standard Tape DIM_____ AREA_____Asynchronous Tape I/O_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS	
tapelo_: design asynchronous tape I/O interface for ANSI DIM	Canali	12/25/73 12/25/73	01/14/74 02/30/74	1.5 3.0	MTB 1/2 complete	*
tapelo_: code subroutine	Canali	04/01/74	04/30/74			*

GROUP_____PDO: MULTICS SUPPORT GROUP_____ DATE___02/11/74____ PAGE__1___/___1_____

PROJECT_____ANSI Standard Tape DIM_____ AREA_____Read/Write Interface_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS	
Irec_io_: ANSI Standard Tape DIM read/write interface for U, F, D, V, and S record formats	Klinger	12/10/73	12/18/73	1.4	Done	
file_ DIM simulator for asynchronous tape io	Klinger	12/19/73	12/21/73	.6	Done	
testing with file_ DIM	Klinger	12/26/73	01/07/74	1.1	Done	+
nstd_ simulator for asynchronous tape io	Klinger	01/08/74	01/11/74	.8	Done	+
testing with nstd_	Klinger	01/14/74	01/30/74	2.0	Done	+
cv_char_ : alm subroutine for ascii - ebcdic / ebcdic - ascii conversion	Klinger	01/18/74	01/22/74	.6	Done: required due to announced EIS pl1 restrictions on translate builtin to 7 bit ascii data	+
tape interchange testing: Multics tapes on OS: OS tapes on Multics	Klinger	02/04/74	02/22/74	3.0	U format Multics to OS tested	+
SPS documentation of Irec_io_ and cv_char_	Klinger				ongoing task	
Inclusion of Irec_io_ in ANSI DIM	Klinger				when work on non-read/write interfaces of ANSI DIM is complete	
Irec_io_: testing with asynchronous tape io package	Klinger				when asynchronous tape io package becomes available	

GROUP_____PDO: MULTICS SUPPORT GROUP_____ DATE___02/11/74_____ PAGE__1___/___1_____

PROJECT_____ANSI Standard Tape DIM_____ AREA_____Interim Tape I/O Command_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS	
Design phase: extension of ostape to a general tape I/O command.	Klinger	02/07/74 02/07/74	02/15/74	1.4	Scope of planned extension has increased. Task has been re-defined.	*
Coding phase: general tape I/O command.	Klinger	02/18/74	03/01/74	2.0	as above	*
Testing phase: general tape I/O command.	Klinger	03/04/74	03/15/74	2.0	as above	*

GROUP_____PDO: MULTICS SUPPORT GROUP_____ DATE___02/11/74_____ PAGE__1___/___1_____

PROJECT_____ANSI Standard Tape DIM_____ AREA_____Attach-Detach/File-Positioning_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
ATTACH: attach (write) a new volume and write a single file	JP	02/01/74 01/28/74	02/07/74 02/05/74	.5	Checked out.
ATTACH: attach (read) a file of a single-file volume	JP	02/08/74 02/05/74	02/14/74	.5	Read volume and file labels ok. Don't read file data correctly.
ATTACH: attach (write) to append a file to a multi-file volume	JP	02/15/74 02/01/74	02/19/74 02/05/74	.25	Checked out.
ATTACH: attach (read) a file of a multi-file volume after label chain has been constructed	JP	02/19/74	02/21/74	.25	
ATTACH: test for bad attachment modes	JP	02/21/74	02/25/74	.25	
ATTACH: attach (read) a file not found on tape	JP	02/26/74	02/28/74	.25	
ATTACH: attach (write) a file already on tape	JP	02/28/74	03/06/74	.5	
DETACH: test detaching file with unload, rewind, reread, & leave disposals	JP	03/06/74 02/05/74	03/08/74	.25	Disposals leave and unload checked out, 02/08/74.
ORDERS: test order calls	JP	03/09/74	03/13/74	.25	
WRITE: write file (ASCII, 9-mode, U-format)	JP	03/13/74 02/06/74	03/23/74 02/08/74	.75	Checked out.
READ: read file (ASCII, 9-mode, U-format)	JP	03/23/74 02/07/74	04/02/74	.75	
MULTICS-OS/370: write tape on Multics, read into OS; write on OS, read into Multics	JP	04/02/74	04/09/74	.5	