TO: PDO Staff

FROM: Janice Phillipps

DATE: October 29, 1973

SUBJECT: ANSI TAPE DIM PROGRESS REPORT

Current Status

Work on record blocking has begun. This blocking routine is the logical record control module which, on write: copies data from a user's buffer, composes a variable-length logical record with a record descriptor word containing the length of the record at the beginning of the record, and then packs the logical record into a physical block to be put out onto tape; on read, a block is brought in and unpacked to logical records of specified length, then the logical records are "sized" before the specified number of elements are copied into the user's buffer.

The first cut of ANSI blocking will be a VB blocking scheme mentioned above. the code which makes up the logical records by striping the NL character, converting the length to character and composing the record descriptor prefix, "RDW", and packing the records into a blocking buffer is completed. Filling in the block prefix word and dispatching the block remains to be done on the write side. The read side of this module is coded to the point where it gets a block, translates it, sets up to unpack, but does not yet unpack the logical records.

Interfacing with the blocking routine will be a buffering routine which will handle read-ahead write-behind - one level of a synchronism between the ANSI DIM and the DCM. The read side of this module is coded. Essentially it dispatches three blocks from tape and maintains counters as it passes blocks to the blocking (unblocking) routine, so that there is always at least one block read in waiting to be dispatched. The error handling between this module - the physical record control module - and sync_tapeio_(which calls the DCM) has been worked out for both read and write errors.

After reading several tape drive specifications manuals, I have improved on error checking and error recovery in the I/O dispatching of sync_tapeio_. Rather than merely passing back hardware status to the caller if major status is raised during an I/O operation as the non standard dim does, considerable effort is made to screen the status and to retry the operation wherever it makes sense to do so before returning. This status handling is done during both label

processing and data processing as well as for non data transfer operations.

SPS documentation of sync_tapeio_ is substantially underway. The functioning of each entry and possible status to be raised has been covered.

Future Plans

I plan to complete the blocking and buffering routines to be tested in the VB case initially. After testing this case, code to check for user specified block scheme and code for record spaning will be added. The blocking routine needs a few more days work and the write buffering also needs a few days work before testing can begin. At this point, files will be able to be read and written with all basic file statistics maintained. Next the label writing and processing routine will be finished and tested and then the file locator module will be finished and tested. An optimistic estimate for arriving at this point is the end of November. This depends on how much trouble I run into in testing.

Testing Considerations

Thinking about testing regimes for the ANSI DIM, some effort in examing a range of error conditions should be made. In addition to testing the average type user problems such as recovery from a system crash while writing an ANSI file a futher layer of problems should be examined before releasing the ANSI DIM on users.

Questions under investigation are - what possible data recovery is there when a tape becomes physically damaged (crinkled)? What does the tape drive do under these circumstances and can anything be done to get at the data on the tape?

I am composing a testing script for tape checkout. If anyone has suggestions based on their experience with tape problems, please come forth.

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TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
VOL1_labeler_$inst_lbl_ck	JP		08/07/73		Done.
		07/25/73	08/22/73		
VOL1_labeler_$read_lbl	JP		08/07/73		Done.
		07/09/73	08/22/73		
VOL1_labeler_$write_msl_insert	JP		08/07/73		Done.
		07/23/73	08/22/73		
VOL1_labeler_$write_lbl	JP		08/07/73		Done.
		07/23/73	08/22/73		
VOL1_labeler_ : add code to identify and write BOS volume label.	JP				Done.
		08/21/73	08/22/73		
sync_tapeio_$read	JP		07/27/73		Done.
		07/16/73	08/22/73		
sync_tapeio_$write	JP		07/27/73		Done.
		07/16/73	08/22/73		
sync_tapeio_$write_lbl	JP				Done.
		08/06/73	08/22/73		
sync_tapeio_$write_tm	JP		07/27/73		Done.
		07/16/73	08/22/73		
sync_tapeio_$forward_one_record	JP		07/30/73		Done.
		07/27/73	08/22/73		
sync_tapeio_$forward_one_file	JP	07/30/73	07/31/73		Done.
		08/06/73	08/22/73		
sync_tapeio_$back_one_record	JP	07/31/73	08/01/73		Done.
		08/06/73	08/22/73		
sync_tapeio_$back_one_file	JP	08/01/73	08/02/73		Done.
		08/06/73	08/22/73		

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TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
sync_tapelo_$rewind_unload	JP	08/02/73 08/06/73	08/03/73 08/22/73		Done.
sync_tapelo_$rewind_notunload	JP	08/03/73 08/06/73	08/06/73 08/22/73		Done.
sync_tapelo_$reset_status	JP	 08/06/73	 08/22/73		Done.
sync_tapelo_$erase_tape	JP	 08/20/73	 08/22/73		Done.
Establish an environment in which to check out all entries of sync_tapelo_ to test the moving of tape, reading and writing. Establish an environment in which to check out all entries of VOL1_labeler_ in the ASCII case only. This will be a check out of all the DIM's ring 1 interface.	JP	08/06/73 08/23/73	09/05/73 09/30/73		Done.
cv_chrs	JP	 	 		Decoding using translate and nine mode. 1/2 done.
astd_cv_chrs_data$A_to_E	JP	 	 09/12/73		Coded and tested.
astd_cv_chrs_$AI_to_A	JP	 	 		Yet to code.
Set up test for tape controller nine mode operation.	JP	08/08/73	08/08/73 09/15/73		Done.
Create include files for ANSI volume and ANSI file labels.	JP	 	 07/13/73		Done.
Create include files for OS and DOS volume labels .	JP	07/13/73 08/20/73	 08/22/73		Done.

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TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Create include files for OS and DOS file labels.	JP	08/12/73			OS labels 1/2 done. DOS labels yet to do.
make_labels_	JP	07/11/73			ANSI labels done. OS and DOS yet to do.
volume_ctrlr_$attach	JP			.40	Coding underway. Parsing of identifiers yet to code.
volume_ctrlr_$detach	JP			.60	Module outlined. Coding underway.
file_ctrlr_$open	JP			.40	Coding done. Yet to check out.
file_ctrlr_$close	JP			1	Module designed. Yet to code.
lrecord_ctrlr_$read	JP	08/03/73 10/05/73	10/10/73	1	1/2 coded.
lrecord_ctrlr_$write	JP	10/01/73 10/05/73	11/14/73		Partially coded.
lrecord_ctrlr_$order	JP				Coded.
phys_record_ctrlr_$read	JP	10/01/73 10/05/73			Coded.
phys_record_ctrlr_$write	JP	10/01/73 10/23/73			Yet to code.
buffer_control_module	JP			1	Yet to code.
Final test of version 1 of the ANSI DIM in ASCII.	JP	10/01/73	12/25/73		

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TASK DESCRIPTION	PERSONNEL	START	FINISH	M-M	CHANGES-STATUS
Documentation -- SPS and MPM sections.	JP				Continuing task.