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From: N. I. Morris

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Subject: Online T&D Task Report

A series of meetings were held in Phoenix during FW15. At these meetings, CISL personnel were presented with a concentrated tutorial on the structure and operation of MDR´s. The last meeting was held to discuss a plan for the implementation of MDR´s under Multics.

At that time, CISL agreed to attempt to run an MDR using Larry Johnson´s "test_dcw" command. This would enable CISL to determine if the mechanics of running an MDR under Multics were feasible given the current I/O Interfacer implementation. This "breadboard" MDR test was successfully performed during FW16.

CISL also agreed to study listings of the universal driver for disk and tape as well as the control package for tape. The control package contains code to be executed before and after the execution of each MDR as well as code which controls the sequence of MDR tests. The control package is found on the firmware tape, and thus, it would be desirable to use it under Multics with no changes whatsoever. An interface routine to the control package has been coded in ALM, and the basic mechanism has been checked out. This task, however, is being hampered by the lack of documentation for the universal driver environment. The universal driver and the control package communicate with each other through fixed memory locations. Many of these communications cells are used, but the source code establishing these locations contains no comments which might help the reader to determine the purpose of each of these cells. Thus, code must be examined carefully in order to gain an understanding of the communications between driver and control package. This knowledge is required in order to successfully implement the same environment for the control package under Multics.

It was noted that no universal driver exists for URMPC peripherals, and therefore, there are no separate control packages for each device. CISL stressed the importance of creating such an environment, since otherwise, each driver for a URMPC peripheral would have to be edited extensively in order to interface to the Multics environment. This would cause great complications each time a driver was changed by SME. The code

which would have to be extracted from each URMPC peripheral MDR driver would, in fact, constitute a control package for the peripheral device. Therefore, since the work of creating universally drivable control packages must be done, it should be done in such a way that both Multics and GCOS can make use of the same code. Such packages could then be placed on the firmware tape, greatly easing the problems of maintainability. CISL work on producing an MDR driver for URMPC peripherals cannot begin until SME has worked out a plan for such control packages.

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PROJECT __Online T&D__ AREA __Phase 2 (ITR and MDR implementation)__

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Implement IOI Channel Suspension	NIM				Completed.
Implement Multics ITR Driver	LEJ		FW13		Completed.
Provide GCOS T&D Interface to ITR Driver			FW13		
breadboard an MDR	LEJ	FW16	FW16	1	Completed for URMPC MDR.
Discussion of structure of MDR's and MDR Drivers	All	FW15 FW15		1	Meetings held in PHX. Phone conversations as necessary.
Examine Tape MDR control package for interfaces to universal driver	LEJ	FW16			Code undocumented and poorly commented. Continuing task.
Design and code interface to MDR control package for tape	LEJ	FW16		2	Basic mechanism completed and checked out.
Design and code MDR Execution Routine (DOALL) for tape	LEJ	FW18	FW20	3	
Design and code status analysis for tape MDR's	LEJ	FW21	FW22	2	
Integrate and test tape MDR package	LEJ	FW23	FW24	2	
Provide GCOS T&D Interface for Tape MDR's					
Investigate Universal MDR Driver for URMPC Peripherals	SME	FW16			Must be done before starting work on URMPC MDR's.
Create universally drivable control packages for each URMPC peripheral	SME				Should be done as part of universal driver for GCOS.

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PROJECT ___Online T&D___   AREA ___Phase 2 (ITR and MDR implementation)___

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Design and code MDR Driver for URMPC Peripherals	LEJ	FW25	FW28	4	May use subroutines in common with tape Mdr driver.
Integrate and test MDR's for URMPC Peripherals	LEJ	FW29	FW30	2	
Provide GCOS T&D Interface for URMPC MDR's					