

XEROX
BUSINESS SYSTEMS
System Development Department

To: Distribution

Date: June 26, 1978

From: W. C. Lynch, John Wick

Location: Palo Alto

Subject: Mesa Development Common Software Organization: SDD/SD/SS

Archive document #: Binkley archive number

Keywords: Common Software, Development

Filed on: [Iris]<Lynch>DevpComSoft.Memo

Copies:

Archives	Belleville	Bergsteinsson	Bewley	Clark	DeSantis
Harslem	Heinrich	Irby	Kennedy	LeCesne	Liddle
Lynch	Mendelson	Metcalfe	Reilly, D.	Reily, J.	Schwartz
Sonderegger	Szelong	Thacker	Townsend	Wallace	Weaver
Wick	Wickham	White			

Introduction

Development Common Software is that body of Common Software which is to be used in the creation, development, and testing of the OIS core software and the individual OIS products such as Star. As such, Development Common Software is specifically *not* intended to be a part of a product delivered to the field. This stipulation gives it a character much like that of the Mesa Debugger and the Tools System.

This memo is intended to address the relationship of software in the currently existing Mesa System to Development Common Software and particularly the question of how some or all of the existing Mesa System will become a part of Development Common Software running on the D0 under Pilot. This memo is *not* intended to address itself to the question of Product Common Software (which will be code released with the product), nor to additions to Development Common Software (eg. performance evaluation tools which are under discussion and which will be integrated with Mesa), nor to the Mesa Debugger, nor to Development Common Software which is not currently part of the Mesa System (eg. the Scavenger). The body of software covered by this memo to be operated on the D0 under Pilot will be referred to as Mesa Development Common Software (MDCS).

Philosophy

There is a substantial body of useful software written in Mesa and currently operating on the Alto. There are clearly several substantial advantages to being able to operate this body of software under Pilot with few (hopefully *no*) changes. These advantages include the early availability of this software and a low level of effort to make it available under Pilot.

We have therefore concluded that it is greatly to our advantage to provide an environment under Pilot which is identical (or nearly identical) to that on the Alto and to resist the temptation to take advantage of the extended capabilities of the D0. As MDCS is by

definition not a part of our products there is no inherent requirement that we use the expanded capabilities of the D0. It should be noted that this approach does not preclude MDCS client programs from using the extended capabilities of the D0 and Pilot.

To be more specific, MDCS will be contained within an MDS with the sole exception of the code segments which will be in hyperspace. Even the bitmap for the Mesa System display will be in the MDS (again note that the bitmap for MDCS client programs may be outside the MDS). The interfaces will not be changed to upgrade pointers to long.

A Proposal

We propose that MDCS be described in three sets:

1) Test Mesa Development Common Software - we have identified seven modules, described below, which seem to constitute the subset of MDCS that is required for proceeding with test activities. These modules require some conversion. The effort required to implement these is scoped at 3-5 Mesan days.

2) MDCS compatibility package - we have identified a subset of MDCS to be re-implemented on top of Pilot. This re-implementation would allow any existing Mesa program to operate on top of Pilot just as it operates on the Alto with two exceptions - code would be carried outside the MDS and the MakeImage function would not be implemented. The effort required to implement the compatibility package is scoped at 4 Mesan weeks.

3) MakeImage - we have not spent much time trying to specify or precisely scope a compatible implementation of MakeImage running on Pilot (if indeed it makes sense at all). It is clear that the effort required will be significantly larger than for the compatibility package. In any case this function is similar to that of section 9.3 of the *Pilot Functional Specifications*. We should wait until these facilities have been implemented and understood before proceeding with a compatible MakeImage.

We further propose that item 1 be done ASAP. The need for item 2 is unclear at this time so that we are awaiting feedback from this memo. Item 3) should be deferred indefinitely.

Test Mesa Development Common Software

The Test Mesa Development Common Software would consist of the following seven modules:

- a) Free Storage Package (FSP) - this would operate as it does now and would require minimal changes.
- b) String Package - this would operate as it does now and would require minimal changes.
- c) Directory Package - The interface "AltoDirectory" (on [Iris]<Lauer>) defines the Pilot version of the Alto Mesa directory facilities.
Differences are:
 - a. Pilot File capabilities instead of Alto FP's are used.
 - b. Pilot will not create a file or add to the directory.
- d) File Streams - The file [Iris]<Lauer>AltoFileStream.mesa defines the interface to a Pilot-style stream transducer to Alto files. This transducer should implement the standard Pilot stream operations and also the control operations specified in this

interface.

- e) Keyboard package - this requires a small amount of re-implementation.
- f) Display package - this requires a modest amount of re-implementation.
- g) StreamIO - This provides TTY style I/O and uses the two preceeding modules. The typescript file on the disk would be preallocated and have a constant length in the style of the Chat.Scratchscript file.

We believe that these routines are the ones that are required to support the test programs that exist and which are being written. It should be noted that the test programs themselves would be free to use the full range of D0 and Pilot features (eg. LONG POINTERS). It should also be noted that packages similar to the first four (but with upgraded interfaces to use the full range of features) may appear as a part of the Product Common Software.

Mesa System Compatibility Package

This package would allow the full range of existing Alto/Mesa software to run under Pilot with the following exceptions:

- a) Code segments would be moved outside the MDS. The software that examines code segments is being converted as a part of Pilot/Mesa. It is believed that this is the only software that looks at the codebase pointer. Any other software which follows codebase pointers would have to be modified.
- b) MakeImage would not be supported.

The restrictions concerning the use of the AltoDirectory would be lifted as all of BFS would be included.