GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT INITIATION

Date: _May 14, 1979_

Project Title: Microprocessor Word Processor System

Project No: A-2361

Project Director: Ms. Carol M. Agee

Sponsor: Retail Sciences, Inc.; Atlanta, Ga. 30326

Agreement Period: From _4/19/79_ Until _7/3/79_

Type Agreement: Standard Industrial Agreement, dated 4/10/79

Amount:
        $6,585 (Includes $1,000 for Patent and Data Rights)

Deliverables
    ~~XReports~~ Required: Monthly Progress Report; Final Report/Software Package on Floppy Disk

Sponsor Contact Person (s):

Technical Matters

Contractual Matters
(thru OCA)

Mr. Ben Dyer, President
Retail Sciences, Inc.
Suite 419
3384 Peachtree Road, NE
Atlanta, GA   30326
Phone: 231-2303

Defense Priority Rating: N/A

Assigned to: _____RAIL/CSD_____ (School/Laboratory)

COPIES TO:

Project Director
Division Chief (EES)
School/Laboratory Director
Dean/Director—EES
Accounting Office
Procurement Office
Security Coordinator (OCA) ✓
Reports Coordinator (OCA)

Library, Technical Reports Section
EES Information Office
EES Reports & Procedures
Project File (OCA)
Project Code (GTRI)
Other_____

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION

Date: _____3/17/81_____

Project Title: Microprocessor Word Processor System

Project No: A-2361

Project Director: Mr. C. G. Roby

Sponsor: Retail Sciences, Inc.; Atlanta, GA 30329

Effective Termination Date: _____12/29/80_____

Clearance of Accounting Charges: ___12/29/80_____

Grant/Contract Closeout Actions Remaining:

NONE

_ Final Invoice and Closing Documents

_ Final Fiscal Report

_ Final Report of Inventions

_ Govt. Property Inventory & Related Certificate

_ Classified Material Certificate

_ Other _____

Assigned to: _____ECSL/CCS_____ (School/Laboratory)

COPIES TO:

Project Director
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Project Code (GTRI)
Other_____

CA—4 (1/79)

MICROPROCESSOR-WORD PROCESSOR SOFTWARE
FOR RETAIL SCIENCES, INC.

Monthly Status Report

19 April through 20 May 1979

EES/GIT Project A-2361

Prepared by

Radar and Instrumentation Laboratory
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia   30332

C. M. Agee

for

Retail Sciences, Inc.
Suite 419
3384 Peachtree Rd., N.E.
Atlanta, Georgia   30326

Attention: Mr. Ben Dyer

under

Standard Industrial Agreement 4-10-79

WORK SUMMARY

During the past month, progress on the Microprocessor Word Processor has included completion of familiarization, design and major coding of the software and entry of the test phase. Details such as the exact wording of operator interface may require additional attention. The software routines supplied by Retail Sciences were in a form incompatible to the EES development system; therefore, a procedure to load a tape through an Interdata 8/32 to the MDS had to be devised. The Formatter routine could not be compiled on MDS without modification and has yet to be tested after modification. The Alter routine is still needed in a linkable form.

During the next month, testing the EES software will receive priority, to be followed by a test of the interface with Retail Sciences routines. Retail Sciences will be responsible for providing completed routines and revisions on Alter and Formatter routines.

Because of limited resources, EES cannot be responsible for supplying the MDS as a development tool for sponsor personnel.

MAN HOURS

Carol Agee   152

MICROPROCESSOR-WORD PROCESSOR SOFTWARE
FOR RETAIL SCIENCES, INC.

Monthly Status Report

21 May through 20 June 1979

EES/GIT Project A-2361

Prepared by

Radar and Instrumentation Laboratory
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia 30332

C. M. Agee

for

Retail Sciences, Inc.
Suite 419
3384 Peachtree Rd., N.E.
Atlanta, Georgia 30326

Attention: Mr. Ben Dyer

under

Standard Industrial Agreement 4-10-79

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WORK SUMMARY

Since the May report, code and compilation of all PLM word processor

functions have been completed. The interface between routines supplied by

Retail Sciences and those written by EES has been further defined and

modified. Modification has been made as requested for error conditions and

for the formatter's access to documents. The EES's MDS has been made

available to Steve Mann for work on routines to be provided by Retail

Sciences. As has been disussed on in order for EES to continue the PLM Word

Processor sub-task of the Retail Science Project, an extension was requested.

A number of factors have impeded progress on the project. These include

EES being required to develop a procedure to transfer the formatter file on

tape to floppy diskette and the number of modifications requested by RS to the

functions of the word processor as documented at project start-up and the time

involved in defining these.

Real time test of the PLM word processor system has been dependent on use

of CPM V1.4 due to problems with V1.3 as distributed by Digital Research.

Therefore, it has been necessary to either accomplish implementation of V1.4

on the MDS or to develop another method for transferring ISIS files to CPM.

During the remainder of the effort on the PLM system the following will be

completed: integration with Retail Sciences routines, real-time test and

debug as necessary and self-documentation of source.

Avenues for possible optimization of the PLM word processor have been

identified by Retail Sciences personnel. These include the following:

1. Expansion of the set up function to allow modification of a number of

    additional system variables.

2. Combination of functionally equivalent routines in formatter and

editor.

3. Guarantee that a new file is an #EDIT# file before the edit of a previous file is terminated.

4. Allow a "link" to other documents in formatter to include line range specifications.

5. Maintain a memory buffer of records last read from the diskette to decrease the number of disk accesses.

The effort involved to implement these modifications which are past the scope of the current contract can be left open for discussion at a later time. The Pascal word processor will be considered to have priority following completion of an operable PLM system.

Man Hours

Carol Agee   130

MICROPROCESSOR WORD PROCESSOR SOFTWARE
FOR RETAIL SCIENCES, INC.

Monthly Status Report
21 June through 30 July 1979

EES/GIT Project A-2361-000

Prepared by

Computer Science and Technology Laboratory
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia 30332

C. M. Agee

for

Retail Sciences, Inc.
3384 Peachtree Road, N.E.
Suite 254
Atlanta, GA 30326

Regarding the PLM word processor (A2361-000), from June 21 to July 30 integration with RSI routines was accomplished, a satisfactory transfer procedure was devised and real-time debug of the software was begun.

A number of factors have impeded progress on the PLM project. The number of modifications made in the definition of the system has impacted the schedule. At integration with the Formatter, several last-minute changes/additions were necessary because the interface needed by the Formatter had not been completely defined to EES previously. It was learned from Digital Research that V1.3 of the CPM operating system has problems on Intel's Micro Development System (MDS) preventing efficient transfer of a file as large as the word processor. Since conversion to V1.4 was slower than anticipated, it was necessary to devise the alternate method of transferring files by directly linking the MDS to a Clerk 300. Real time test began on the Clerk 300 on July 10. Due to these problems, in addition to the effect of problems reported in previous status reports, the software was not ready for demonstration by July 12 as had been requested by RSI during mid June.

As indicated verbally on July 2 to Mr. John Hayes, and again by letter on July 3, the amount of money estimated to complete the EES PLM effort had all been used and an extension of one half month was agreed to. Work continued on verbal request by RSI to do so and assurance of the extension being formally approved. A preliminary version of the PLM software was to be given to RSI as soon as possible for feedback.

Since negotiations for a second task (A2361-001) were completed during June, work was begun on the translation of the PLM word processor onto Pascal for the Interdata 5/16 using EES's Interdata 8/32 for development. Delivery of the KSU 32-bit Pascal compiler was delayed until mid July. Documentation provided by KSU was scant and in many areas non-existent. The 16-bit cross compiler was not received during July. By the end of July, the Formatter was approximately 60% complete and coding on the editor begun.

A2361-000 (PLM)

	Man Months
6/23-6/30 C. Agee	0.19

(Total expenditure 6/1-6/30: $2459)

7/1-7/31 C. Agee	0.50

(Total expenditure 7/1-7/31: $1634)

Project funds remaining: __0__
Percent of funds remaining: __0__

A2361-001 (Pascal)

6/7-6/30

L. Gallaher	.17
G. Peckham	.05
C. Agee	.10

(Total expenditure 6/7-6/30: $1367)

7/1-7/31

L. Gallaher	.55
G. Peckham	.05
C. Agee	.12
G. Baird	.20

(Total expenditure 7/1-7/31: $3751)

Project funds remaining: __$7870__
Percent of funds remaining: __81%__

MICROPROCESSOR WORD PROCESSOR SOFTWARE
FOR RETAIL SCIENCES, INC.

Monthly Status Report
1 August through 31 August 1979

EES/GIT Project A-2361-000

Prepared by

Computer Science and Technology Laboratory
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia 30332

C. M. Agee

for

Retail Sciences, Inc.
3384 Peachtree Road, N.E.
Suite 254
Atlanta, GA 30326

PLM Task

Debug of the PLM Word Processor continued into August. A preliminary
version was made available to John Hayes on August 10, 1979. Again on August 17,
the PLM software was given to John Hayes along with a letter which indicated the
financial status of the task and requested corrections be submitted in writing.
On August 23, a list of changes to the word processor was received including
numerous additional messages to the console. At RSI's request, the revisions
were speedily incorporated with little time for check-out and RSI then providing
feedback. As of August 31, a final version was not yet completed, nor are funds
available to finish the documentation.

Pascal Task:

At RSI's suggestion, the Pascal Editor has been translated from the Basic
version. Code of the Editor was completed and functions tested during August.
The messages as used in the PLM Version remain to be incorporated into the
operator interface. The formatter portion will be translated from PLM.

The 16-bit cross compiler did not arrive during August. EES personnel did
discover some problems with the 32-bit compiler and received necessary fixes
from KSU. Some modification has been needed to the 32-bit compiler in order to
use it for this application.

During September, completion of coding on the Formatter, Menu, and Set-up
modules is scheduled as well as test of each of these. Test and mn
modification of the 16-bit compiler will begin when it arrives.

As requested by John Hayes in the August 16, 1979 status meeting, the
following modifications to the Pascal word processor operator interface will be
made:

(1) File names will be preceded by a volume designation rather than a drive designation

(2) File names will be offset with spaces rather than quotes.

Expenditures (8/1-8/31)

Man Months

A2361-000 (PLM)

0

Project funds remaining _0_
Percent of funds remaining _0_

A2361-001 (Pascal)

	Man Months
L. Gallaher	.24
C. Agee	.20
G. Peckham	.05
C. Roby	.46
M. Boatwright	.70
G. Baird	.15

(Total Expenditure -$5250)
Project Funds remaining: _$2600_
Percent of funds remaining: _20%_

GEORGIA TECH RESEARCH INSTITUTE
ADMINISTRATION BUILDING
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA 30332   404/894-4820

February 11, 1981

Refer to: GDH/A-2361

Mr. Michael S. Jones
Vice President - Software Development
Retail Sciences, Inc.
Suite 700
3 Corporate Square
Atlanta, Georgia 30329

Subject: GTRI Research Project Agreement No. A-2361; Power-Text
          Word Processing Package

Dear Mr. Jones:

In recognition of your letter dated December 29, 1980 in which you effect
contract cancellation, we wish to present the following project summary.

The subject research project agreement addresses the tasks to be performed,
the level of effort envisioned, and the conditions and constraints related to
the completion of a 16-bit Pascal-based word processing system for Retail Sciences,
Inc. (RSI). Briefly, the project consisted of the development of a 32-bit Pascal
version of the RSI word processing system, followed by the cross-compilation to
a 16-bit version. The cross-compiler was supplied by Kansas State University
(KSU). This project was to have been completed in February, 1980. Slippage
in project initiation (caused by non-delivery of requisite RSI documentation),
cross-compiler failures, hardware failures, non-delivery of acceptance test
procedures, and other problems resulted in the project's status as of this date.

The Georgia Institute of Technology (GIT) has successfully developed
and demonstrated the 32-bit version. Additionally, the 32-bit source code has
been successfully (without error) cross-compiled to 16-bit object code, properly
establishing a load module. This load module has been executed on RSI's 16-bit
computer system, but not without errors.

The failure of the 16-bit version to execute without error is the result
of a problem either in the KSU supplied cross-compiler or in RSI's 16-bit
machine -- neither of which is under the control of GIT. The probability of
the cross-compiler being faulty is substantiated by two factors. First, RSI/GIT
are the first and only users of the Kansas State 16-bit Pascal cross-compiler.
In essence, RSI and GIT are the test case for a newly developed and complex
cross-compiler. Second, GIT has already uncovered several errors in the cross-
compiler; the first was corrected by GIT in January, 1980; the others by KSU in
June, 1980.

It is Georgia Tech's position that we have satisfactorily completed the
work authorized by the subject agreement within the framework of the circum-
stances which were under Georgia Tech's control. GIT has accumulated the

following allowable unbilled costs in attempts to assist RSI in obtaining
a completely error free product:

Personal Services	$9,207.42
Fringe Benefits	653.64
Materials and Supplies	141.30
Overhead	6,997.64
TOTAL	$17,000.00

Recognizing that problems have been encountered on both sides of this issue,
GIT has invested additional resources of its own in the amount of:

Personal Services	$3,105.02
Fringe Benefits	223.51
Materials and Supplies	26.19
Overhead	2,359.82
TOTAL	$5,714.54

We are still prepared to stand by our commitment to a successful demonstration of
the package without changing the originally agreed upon $17,000 fixed-price amount,
if and only if RSI at its own expense, will obtain from KSU a cross-compiler
which has successfully completed reasonable verification and validation testing.
Otherwise, Georgia Tech plans to spend no additional time or resources on this
project. Further, the modified agreement, subject to your acceptance of the
aforementioned proposal, will be honored only if this office is notified of
your intention to accept it within thirty (30) days of the date of this letter.
If you should decide to abide by your right to terminate the agreement, please
advise us when and to whom we may deliver the existing version of the KSU cross-
compiler.

Sincerely,

Duane Hutchison
Contracting Officer ·

bxc: Mr. John B. Hayes
      Law Offices of Alston, Miller and Gaines
      Citizens & Southern National Bank Building
      35 Broad Street
      Atlanta, Georgia 30303

dh

      Mr. C. G. Roby
      Mr. H. B. Teates
      Mr. F. L. Cain
      Mr. D. L. Allen
      Mr. J. W. Dees
      Dr. D. J. Grace
      Mr. C. E. Smith
      Mr. B. H. Atcheson
      Mr. W. H. Borchert
      Ms. C. B. Mahaffey
      File
      Diary

xc: Mr. Ben J. Dyer, President
     Retail Sciences, Incorporated

     Dr. Thomas E. Stelson
     Vice President for Research
     Georgia Institute of Technology