

22 April 1965

**MEMORANDUM FOR:** Deputy Assistant Director,  
Computer Services

**THROUGH :** Chief, Plans Staff

**SUBJECT :** Development Division Input to Plan  
for Agency Hardware/Software System

### Introduction

This memorandum contains the Development Division's projection of hardware and software requirements for the period 1 June 1965 through 31 December 1969. It also presents cut over plans dictated by the installation of new projects or project phases. The training schedule is shown separately.

### Training Schedule

The attached schedule shows course names, course duration, the names of the attendees (where known), and the quarter during which the course will be taken. Since some staff members must be recruited or transferred from present assignments, their names could not be given. Thus P<sub>1</sub>, P<sub>2</sub>, ..., P<sub>6</sub> are projected for the CHIVE EDP Program System development activity and P<sub>I</sub> and P<sub>II</sub> are to be assigned to the CHIVE Support Staff.

Development and Operations Requirements (By Activity)

ALP Project

Hardware

1 June 1965 - 1 Sept. 1965--Present techniques

1 Sept. 1965 - 1 June 1966--On-line

1401

1402 card reader

1403 printer

729-V tape drive

1903 paper tape reader

ALP Processor (special purpose--  
includes photostore and core  
memories)

Off-line

Stenographic Mark Reader (SMR)  
(special purpose)

729-V tape drive

Estimated equipment use: 2-5 hours/day

1 June 1966 - 31 Dec. 1969--(All estimates presume a  
decision to continue the  
project)

Similar equipment to that above  
except that the 360/60 is used  
for I/O functions

Estimated 360/60 use: 1/4 - 1 hour/day

Software

1 June 1965 - 1 June 1966--Use standard 1401 software package--Autocoder, etc.

1 June 1966 - 31 Dec. 1969--No projection feasible at this time

Automatic Language Processing Branch Agency Support

Hardware

1 June 1965 - 1 July 1966--1410/7010 - Estimated equipment use: 2 1/2 hours/week

--7090 - Estimated equipment use: 1 hour/week

1 July 1966 - 1 Jan. 1967--360/60 - Estimated equipment use: 2 hours/week

1 Jan. 1967 - 31 Dec. 1969--360/64 - Estimated equipment use: 3 hours/week

Software

1 June 1965 - 1 July 1966--Use Autocoder, COBOL, FORTRAN-IV

1 July 1966 - 31 Dec. 1969--Use COBOL, FORTRAN-IV, NPL, BAL

CHIVE RDP System (Development and Operations)

Hardware

1 June 1965 - 1 August 1965--no requirement

1 Aug. 1965 - 1 Nov. 1965--7090  
Estimated equipment use: 26 hrs./month

1 Nov. 1965 - 1 April 1966--360/30  
Estimated equipment use: 35 hrs./month

1 April 1966 - 1 Jan. 1967--360/60

Estimated equipment use: 22 hrs./month

1 Jan. 1967 - 31 Dec. 1969:

<u>Units</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
1 - 360/60	15%*	28%	47%
1 - 1403 Printer	13%	20%	20%
8 - 2400 Tapes	5%	8%	8%
1 - Disk Storage	13%	10%	10%
1 - Page Reader	13%	25%	50%
1 - 2321 Data Cell	0	10%	10%
1 - Remote Console	Experimental		

<u>Data Volume</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
2321 Data Cell	0	112	212**
Disk Storage - Permanent	45	29	70
- Temporary	10	10	10

Additional hardware requirements to convert and use the SR Detail Index File\*\*\*

1 April 1966 - 31 Dec. 1966--360/60

Estimated equipment use: 35 hours per month of card reading and tape handling; 2 hours per month of CPU time (program test and file building).

<u>Units</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
1 - 360/60	2%	4%	3%
1 - 1403 Printer	4%	8%	12%
8 - 2400 Tapes	0	0	0
1 - Disk Storage	1%	1%	1%
1 - Page Reader	0	0	0
1 - 2321 Data Cell	30%	35%	40%
1 - Remote Console	Experimental		

\* Percentage based on : 100% = 176 hrs./month

\*\* Millions of bytes

\*\*\*This is not a firm requirement at this time. The magnitude of the task and of the resulting file indicates a need for further analysis.

<u>Data Volume</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
2321 Data Cell	1,250	1,330	1,410*
Disk Storage - Permanent	0	0	0
Temporary	0	0	0

Software

Programming and testing of system modules until April 1966 will be accomplished by using 360 Basic Assembly Language (BAL) on the 7090 and 360/30. In early 1966 we will re-evaluate the applicability of the then available COBOL language and compiler to those portions of the system which lend themselves to its use. Likely candidates for COBOL programming are part or all of the following: Output System, Inherited File Conversion Programs, File Maintenance Programs, and Retrieval Subsystem.

CHIVE Support Programs Development

Hardware

- 1 June 1965 - 1 July 1966--7090, 360/60 and 360/30  
 Estimated equipment use: 22 hrs./month (360/30)  
 Estimated equipment use: 5 hrs./month (7090 or 360/60)
- 1 July 1966 - 1 Jan. 1967--360/60  
 Estimated equipment use: 3 hrs./month

Software

Initially all programmers will use the 360 Assembly Language and associated assembler. The development of support programs after 1 July 1966 may use a procedure oriented language.

Cut Over Schedule

ALP

- 1 June 1965 - 1 Sept. 1965: Present techniques
- 1 Sept. 1965 - 1 June 1966: ALP 1401 and associated ALP equipment

1 June 1966 - 31 Dec. 1969: 360/60 and associated ALP equipment

To use the 360/60, it is suggested that existing 1401 programs be rewritten for the 360/60 under a contract agreement. Preliminary estimates indicate that the following manpower and computer expenditures will be required:

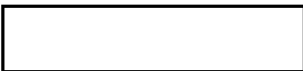
52 man/months to convert the ALP System Language Processor I/O routines from 1401 to 360/60.

30 man/months to convert the ALP System Language Processor Diagnostic programs from 1401 to 360/60.

176 hours of 360/60 time will be required to check out these new programs.

CHIVE

1 June 1965 - 1 Aug. 1965 : 7090  
1 Aug. 1965 - 1 April 1966: 7090 and 360/30  
1 April 1966 - 1 Jan. 1967: 360/30 and 360/60  
1 Jan. 1967 - 31 Dec. 1969: 360/60



25X1A

Attachment:  
Training Schedule

cc:

Distribution:  
Orig. - Addressee

1 - (File)  
1 - Chrono

JNW:rjb

25X1A

25X1A

**TRAINING SCHEDULE**

<u>Language/Course</u>	<u>April/ June</u>	<u>July/ Sept.</u>	<u>Oct./ Dec.</u>	<u>Jan./ March</u>	<u>April/ June</u>	<u>July/ Sept.</u>	<u>Oct./ Dec.</u>
25X1A 1401 FI	[ ]						
1410 AC (5 days)							
25X1A Direct Access Storage Concepts (3 days)		[ ]					
Basic Assembly Language (BAL)-360 (15, 20 days)							
COBOL (4 days)				[ ]			25X1A
NPL (5 days)					[ ]		