INTEGRATED MANUFACTURING DATA ADMINISTRATION SYSTEM (IMDAS) OPERATIONS MANUAL

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OPERATIONS MANUAL

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National Bureau of Standards

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DISCLAIMER

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I.   INTRODUCTION

        1.   PURPOSE OF THIS DOCUMENT

The purpose of this manual is to provide instructions to
train an operator to run Version 1.3 of the Integrated
Manufacturing Data Administration System (IMDAS). The IMDAS is
an ongoing research effort supporting data access throughout the
Automated Manufacturing Research Facility (AMRF) [2].

        2.   MODES OF OPERATION

The mode generally used during operation of the IMDAS is the
Foreground mode; this mode gives the operator a more visual
layout of the IMDAS. The Background mode is available
should a Sun workstation not be in service.

        3.   CONTACTS FOR ERRORS

If the operator encounters any error, he/she should contact
one of the principal operators/researchers of the Integrated
Systems Group for assistance at x3557.

        4.   CONVENTIONS USED IN THIS DOCUMENT

        4.1.   Keyboard Conventions

        4.1.1.   Carriage Return

As a general practice, after each command, enter a carriage
return <cr>.

        4.1.2.   Delete

In case of a typographical error, use the delete key to
erase.

        4.2.   Sun References

Throughout this manual references to a 'Sun workstation' are
made. These are aliases for Sun Microsystems and Sun
Workstations which are trademarks of Sun Microsystems, Inc.

        4.3.   VAX References

Throughout this manual references to the 'VAX' are made.
These are aliases for the CME::VAX.

4.4. NETWORK References

Throughout this manual references to the 'NETWORK' system
are made. These are aliases for the Automated Manufacturing
Research Facility Network System. To run the Network System
refer to "AMRF Network Communications" [1].

II.   <u>DEVICES NEEDED</u>

The following is a list of DEVICES needed for operating the
IMDAS in the Foreground and Background modes. The DEVICES
mentioned below are located in Control Room II of the Shops
Bldg. (An AMRF floor plan is appended to the back of
this manual.)

1.   FOREGROUND MODE

A Sun microsystem is needed in addition to the NETWORK system.

2.   BACKGROUND MODE

A vt100 terminal linked to the VAX via a net is needed in
addition to the NETWORK system.

III.   FOREGROUND MODE

This section describes how to bring up IMDAS in Foreground mode using a Sun workstation.

1.   SUN STARTUP

1.1.   Lockscreen Mode

If the Sun is in lockscreen or screen-saver mode (i.e. the background of the screen is blacked out and an icon (picture) is flashing about the screen), press the left mouse button or a key on the keyboard to quit.

1.2.   Power Off

If the Sun is completely turned off, turn it on via two main power switches:

 (1) Turn the base pedestal switch to position (1).

 (2) Turn the terminal (display screen) switch to position (1).

At this point the Sun should be either at a login prompt or rebooting itself. The user will notice a reboot in process if he sees the word "boot" being displayed. Should the SUN get stuck at a question mark (?) during the boot process, an expert should be notified at the number given in Section 3 of the Introduction of this manual.

2.   LOGIN

At the Sun login prompt, type 'imdas'.

NOTE: At this point, ask the supervisor or NETWORK operator if the NETWORK is ready for processing. If so, proceed to the next step, IMDAS STARTUP; otherwise, wait until the NETWORK is ready for processing.

3.   IMDAS STARTUP

The system will give the following prompt:

 Do you wish to bring up the VAX imdas? (y/n)

Enter 'y' to bring up the imdas.

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4.   CONNECTING AMRF SYSTEMS

The IMDAS automatically connects to all the AMRF systems and
displays the connected command and status mailboxes for each
system in the window labelled 'realuser' (located at the top left
of the screen) [1].   To decipher the mailbox names
listed, i.e., (for example):

```
name: DS_PP_CMD
name: DS_PP_STS
```

look at the mailbox prefix (for the above example - DS_PP)
and Section V, Database Mailbox Prefixes. In the above example,
the prefix refers to the Process Planning system.

Note: The IMDAS is ready for transaction interaction when
the messages in the windows have stopped scrolling.

5.   BRINGING DOWN THE IMDAS

(1)   Type a 'q' at the realuser prompt.

(2)   Type 'exit' at the VAX DEBUG prompt DBG>.

(3)   Move the Sun mouse pointer to each window, except
the 'console' window (located at the top right of
the screen), and type a '<ctrl-c>' (hold the control
key down while depressing the 'c' character).

(4)   Move the Sun mouse pointer to each window, except
the 'console' window, and type 'exit'.

Note: In the window labelled 'ctgms' (located at the third
right of the screen), after the above (4) 'exit' has been
typed, type an additional 'exit' at the VAX DEBUG prompt
DBG>.

6.   LOGGING OUT

6.1. Logging Out Connections to the VAX

Move the Sun mouse pointer to each of the windows, except
the 'console' window, and type 'logout'.

All the windows on the screen should vanish except the 'console'
window.

6.2. Logging Out of the IMDAS Sun Account

(1) Move the Sun mouse pointer to the gray area.

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(2) While depressing the right mouse button, move the Sun mouse pointer to the 'Basic Tools ->' arrow (another menu should pop up), and keeping the right mouse button depressed, move the Sun mouse pointer to the 'Exit Suntools' selection on the second menu. Release the button.

The Suntools screen should disappear and the directory prompt:

('machine name')imdas:

should be visible.

(3) Type 'logout'.

The login prompt should now be visible.

IV.   BACKGROUND MODE

This section describes how to bring up IMDAS in BACKGROUND
mode using a vt100 terminal.

1.   LOGIN

At the VAX login prompt, type AMRFINT1, password AMRF.

2.   ENTER IMDAS DIRECTORY

At the directory prompt:

    directory (NET, IMDAS, TEKDISP, other):

Type 'imdas' to enter the IMDAS subdirectory.

NOTE: At this point, ask the supervisor or NETWORK operator
if the NETWORK is ready for processing. If so, proceed
to the next step, BACKGROUND STARTUP; otherwise, wait until the
NETWORK is ready for processing.

3.   BACKGROUND STARTUP

Type '@bgimdas amrftst1'.

The following processes should be listed, followed by a system
prompt ($):

    TM
    BSE
    DSE
    CTFS
    CTPPS
    CTING
    CTGMSRIM

4.   START OPERATOR INTERFACE

Type 'run/nodebug realuser'.

The following prompt should be listed:

    imdas, connect, read, write, declare, sync, print-style,
finish, @file:

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5.   CONNECTING AMRF SYSTEMS

NOTE: For each AMRF system connection, steps (1) thru (3) must be made.

(1)   At the prompt, type 'c' for connect.

(2)   At the mailbox prompt:

mailbox prefix (<cr> for "COKE"):

Type the appropriate mailbox prefix.

For example, for Inspection Workstation, the mailbox prefix is: DS_IWS. A list of the mailbox prefixes for each workstation is located at the back of this manual in Section V, Database Mailbox Prefixes. Ask the supervisor or NETWORK operator which AMRF systems are to be connected. NOTE: Mailbox prefixes must be typed in CAPITALS.

(3)   At the station name prompt:

station name (<cr> for "VAX"):

Type a carriage return <cr>.

(4)   Type 's' for sync.

(5)   Type 'r' for read; this will list back the command and status mailboxes of each AMRF system that has been connected, enabling the operator to check for typographical errors. For example, connecting the Process Planning system with the following mailbox prefix:

DS_PP

connects the system's appropriate command and status mailboxes:

name: DS_PP_CMD
name: DS_PP_STS

If an error is discovered, redo steps (1) thru (5) until connection is established.

NOTE: The system is now ready for transaction interaction.

6.   BRINGING DOWN THE IMDAS

(1)   Type a 'q' at the realuser prompt.

(2) At the system prompt, type '@killimdas'. After a short period of time all the processes should vanish.

7. LOGGING OUT

To disconnect the session from the VAX, type 'logout'.

V.   DATABASE MAILBOX PREFIXES

This section gives a listing of the Database Mailbox prefixes for each workstation. These are the current prefixes as listed in the November 29, 1986 document of Mailbox Scripts.

    1.   HORIZONTAL WORKSTATION

        Workstation Controller Bucket - DS_HWS
        Machine Tool Controller Bucket - DS_HMTC
        Material Buffering Device Bucket - DS_HMBD
        RCS Robot Controller Bucket - DS_HRCS
        Vision System Bucket - DS_HVIS

    2.   INSPECTION WORKSTATION

        Workstation Controller Computer - DS_IWS
        Coordinate Measuring Machine Computer - DS_ICMM
        Robot Controller Computer - DS_IRCS
        Surface Roughness Instrument Computer - DS_ISRI

    3.   CELL

        Interface - DS_C

    4.   VERTICAL WORKSTATION

        Sun Communications Server - DS_VWS

    5.   CLEANING AND DEBURRING WORKSTATION

        Sun Commications Server - DS_DWS

    6.   MATERIAL HANDLING WORKSTATION - DS_MHS
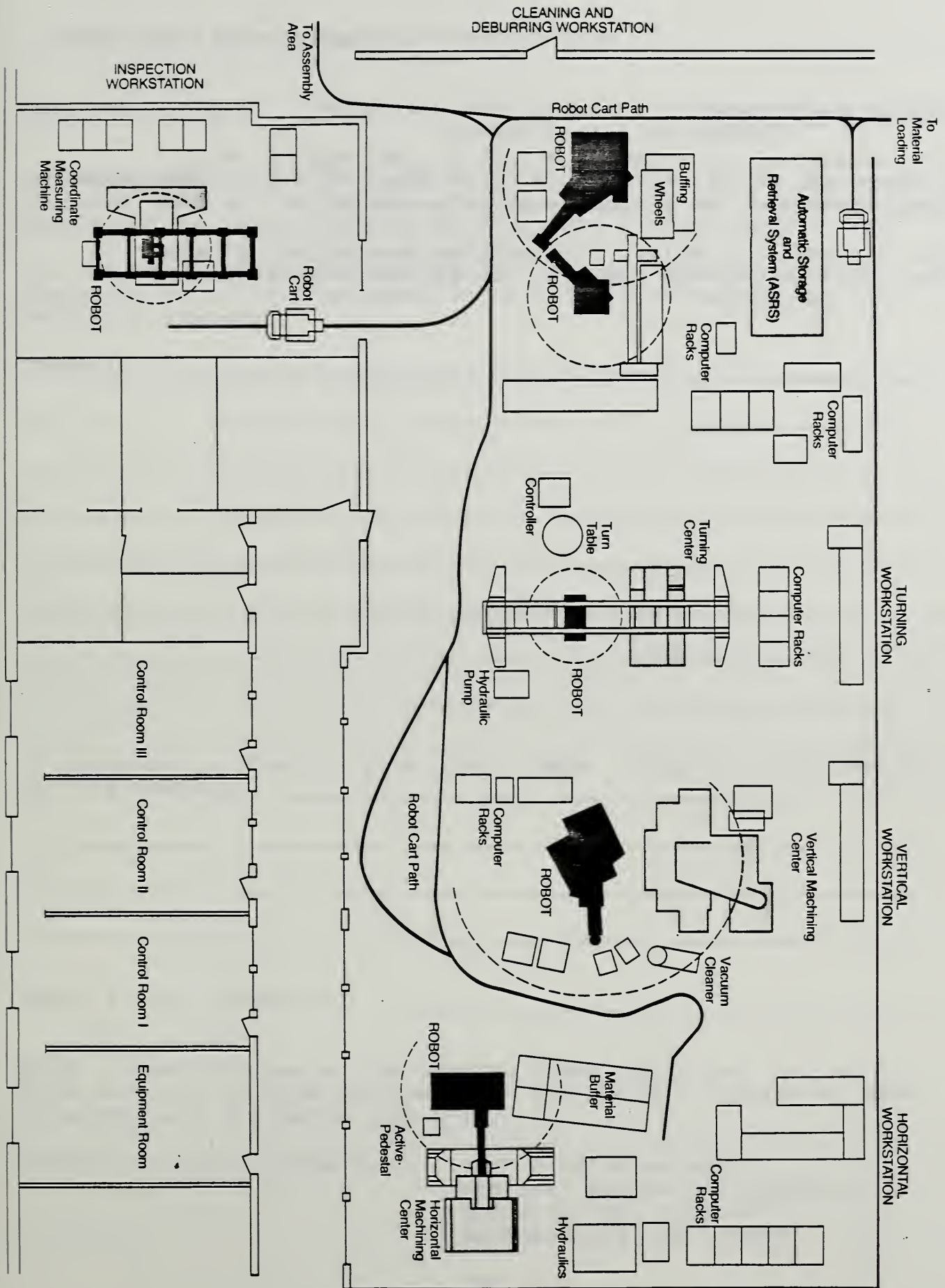
    7.   PROCESS PLANNING - DS_PP

Figure 1. AMRF Floor Layout

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List of References

[1] Rybczynski, S., Barkmeyer, E. J., Wallace, E. K., Strawbridge, M. L., Libes, D. E., Young, C. V., "AMRF Network Communications", to be published as an NBSIR.

[2] Furlani, C., Editor, "Integrated Manufacturing Data Administration System (IMDAS)", to be published as an NBSIR.

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10. SUPPLEMENTARY NOTES

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)

This is an operator's manual for the Integrated Manufacturing Data Administration System (IMDAS) of the Automated Manufacturing Research Facility (AMRF). The IMDAS is designed to provide the control systems of the AMRF access to the data necessary to support the design, planning, manufacturing, and inspection of parts. This manual describes the necessary steps to place the IMDAS into service within the AMRF.

12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)

IMDAS, AMRF, CIM

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