

Chapter  
1

**MFS CONCEPTS  
& COMPONENTS**

*Get on the  
Fast Track!*



TM

**SYS-ED/  
COMPUTER  
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TECHNIQUES, INC.**

**Objectives**

You will learn:

- C MFS - Message Format Services and the IMS system.
- C MFS components.
- C MFS language utility.
- C MFS On-line execution.
- C Mapping of MFS control blocks.
- C Mapping message fields to device fields.
- C Application program receiving input messages.
- C Application program sends output message.
- C DIF/DOF.

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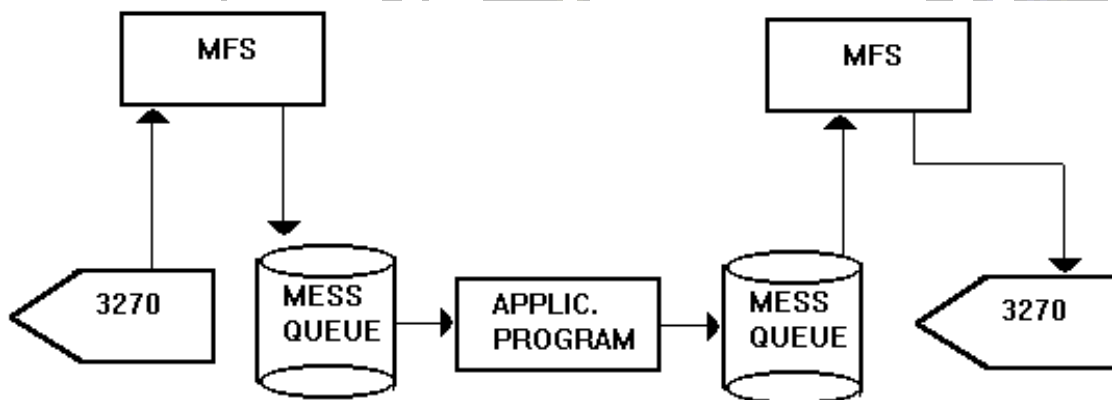
## 1 MFS: Message Format Service

Message Format Services provides:

- C Terminal interface for 3270-like terminals.
- C Device independence.
- C Input processing before it is placed on message queue.
- C Output processing as it is taken from the message queue and sent to the terminal.

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### 1.1 MFS and the IMS System



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## 2 Why MFS?

MFS:

- C Provides further device independence for IMS application programs.
- C Optimizes line and terminal efficiency.
- C Provides a formatted environment for operator's convenience.

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### 2.1 Device Independence

Application programs deal with logical messages. Fields in an application program's message may appear in a different order than fields as displayed at terminal.

Heading literals displayed at the terminal do not need to be presented to an application program.

Data on a device may change without affecting application program.

An application program is not concerned with device screen size.

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### 2.2 Line and Terminal Efficiency

MFS transmits only required data to and from 3270-like devices.

Literals, headings, titles need not be transmitted.

Only modified fields are transmitted from the terminal.

Only variable output fields are sent from the application program.

## **2.3 Formatted Environment**

Simplify data entry:

Use of headings, titles, and pre-determined cursor positioning.

Autoskip:

Cursor skips to next field which can accept user input.

Accuracy of input data

C Fields can be protected from user input.

Numeric fields can be defined:

C No alphas allowed.

**3 MFS Components**

The three MFS components are:

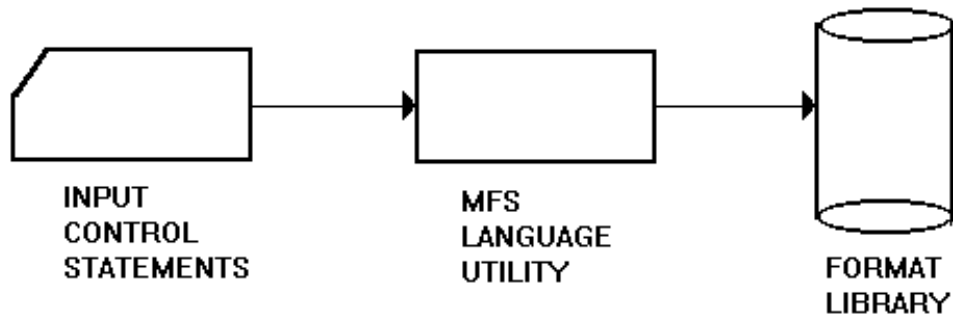
- C MFS language utility.
- C MFS message editor.
- C MFS pool manager.



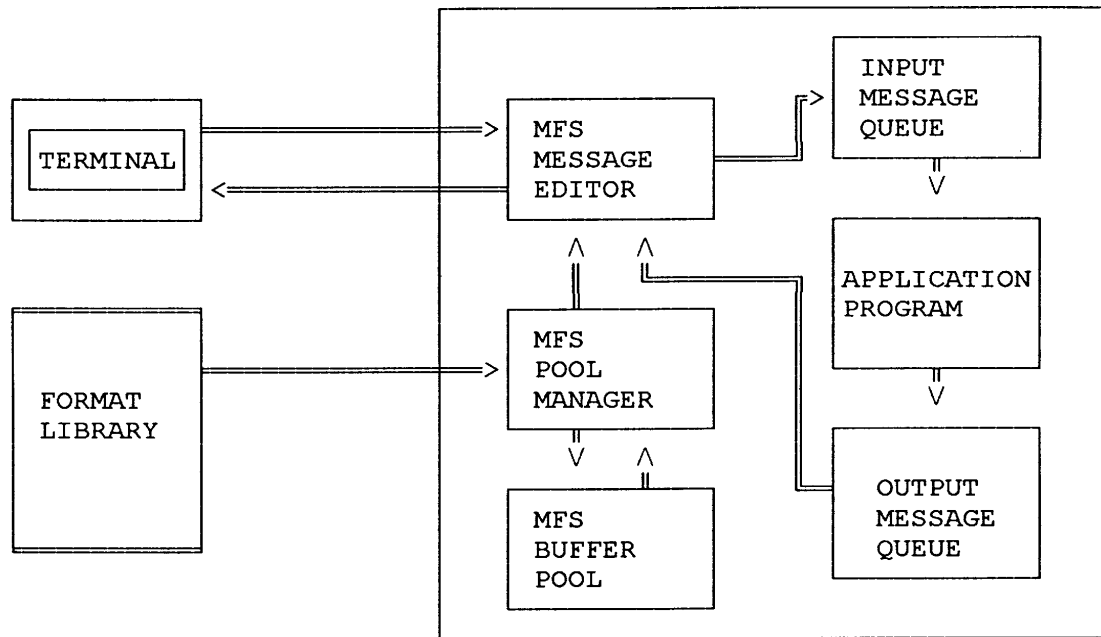
#### 4 MFS Language Utility

The MFS language utility is executed offline to create format control blocks.

Control blocks describe input and output message formatting.



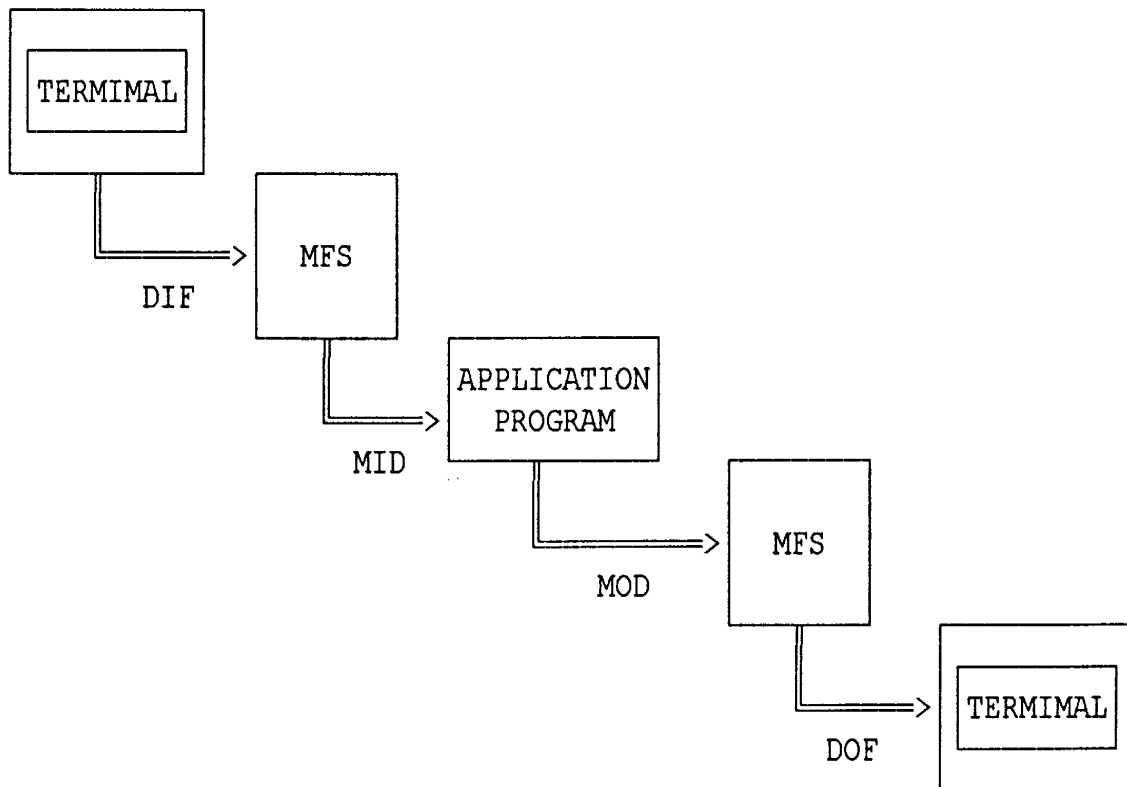
5 MFS Online Execution





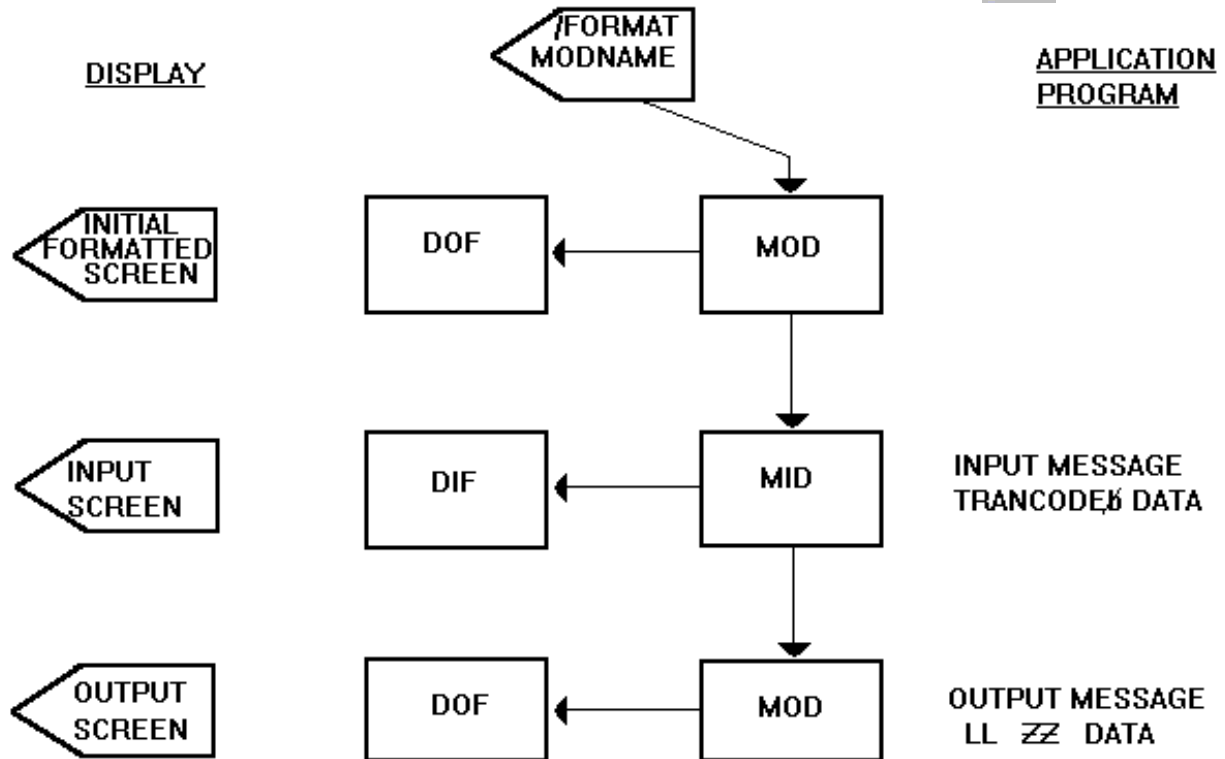
6 MFS Control Blocks

DIF	Device Input Format	Description of data for input display.
DOF	Device Output Format	Description of data for output display.
MID	Message Input Descriptor	Description of program's I/O area for input.
MOD	Message Output Descriptor	Description of program's i/o area for output.

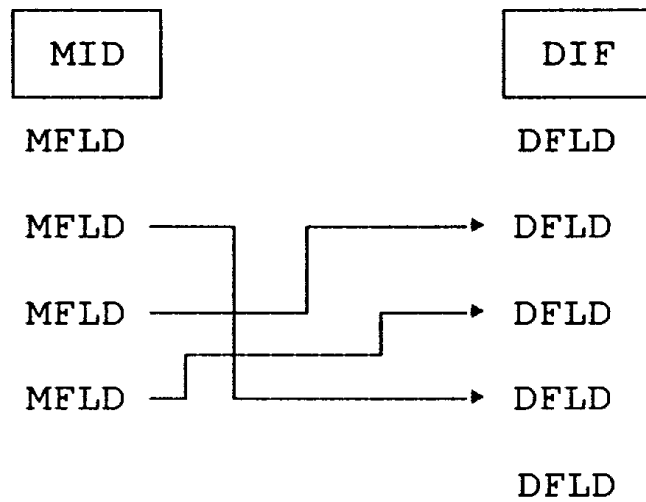
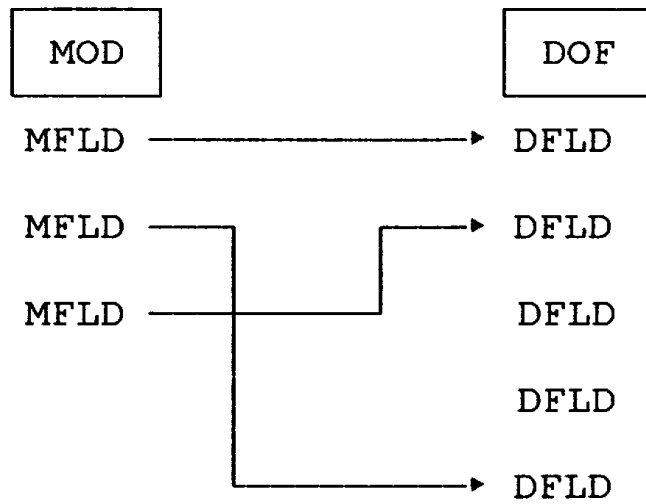


6.1 Mapping of MFS Control Blocks

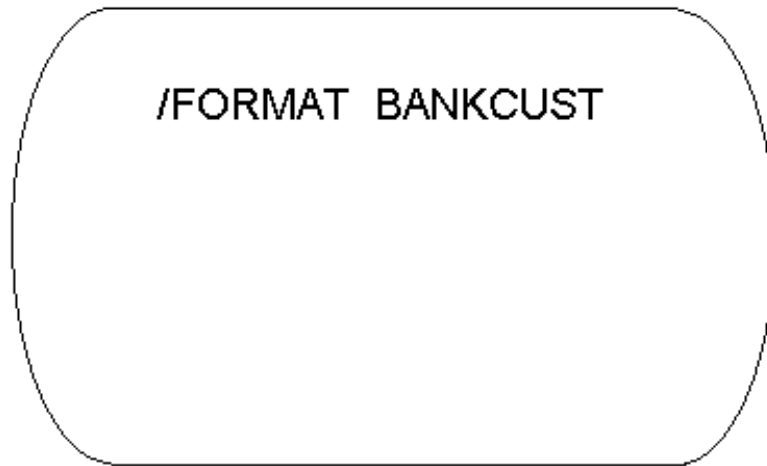
Format Command triggers by using MFS.



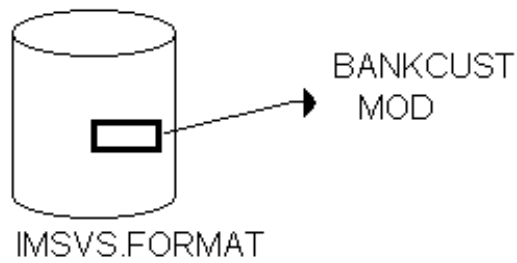
6.2 Mapping Message Fields to Device Fields



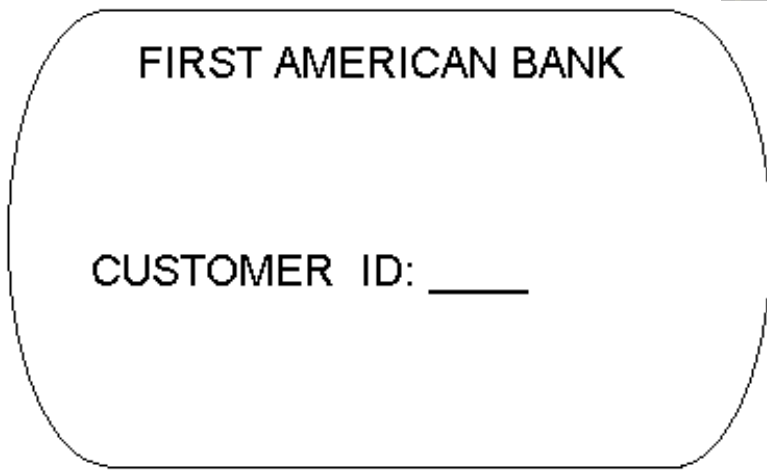
7 Terminal Operator Requests a Format



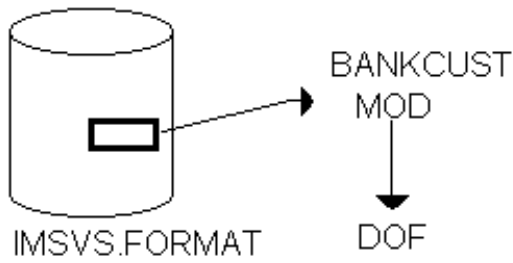
REQUEST FOR A MOD



7.1 Initial Formatted Screen



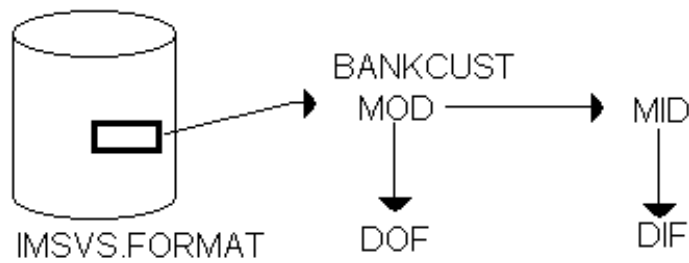
DESCRIBED BY A DOF



7.2 Terminal Operator Enters Input Data



DESCRIBED BY A DIF



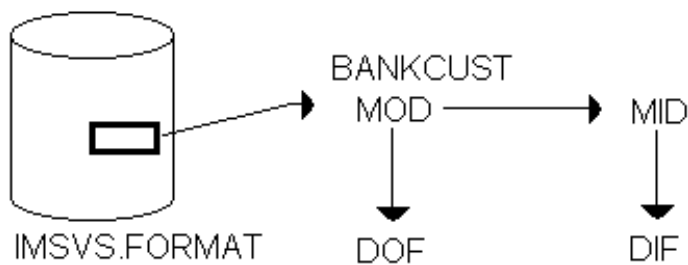
### 7.3 Application Program Receives Input Message

CONTENTS OF I/O AREA:

CUST03	b	428675
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TRANCODE TEXT

DESCRIBED BY A MID

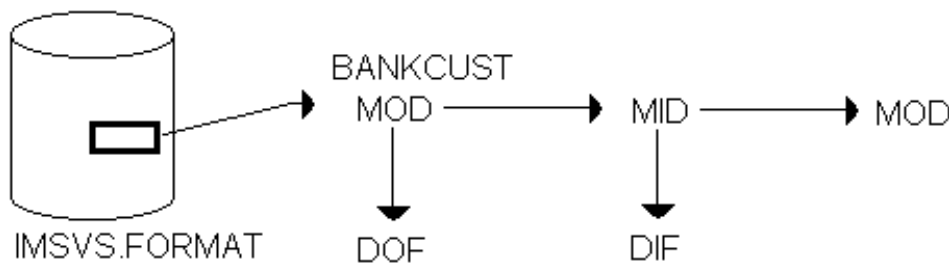


7.4 Application Program  
Sends Output Message

CONTENTS OF I/O AREA:

LL	ZZ	428675	JOHN BROWN	5182	CHKG...
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DESCRIBED BY A MOD

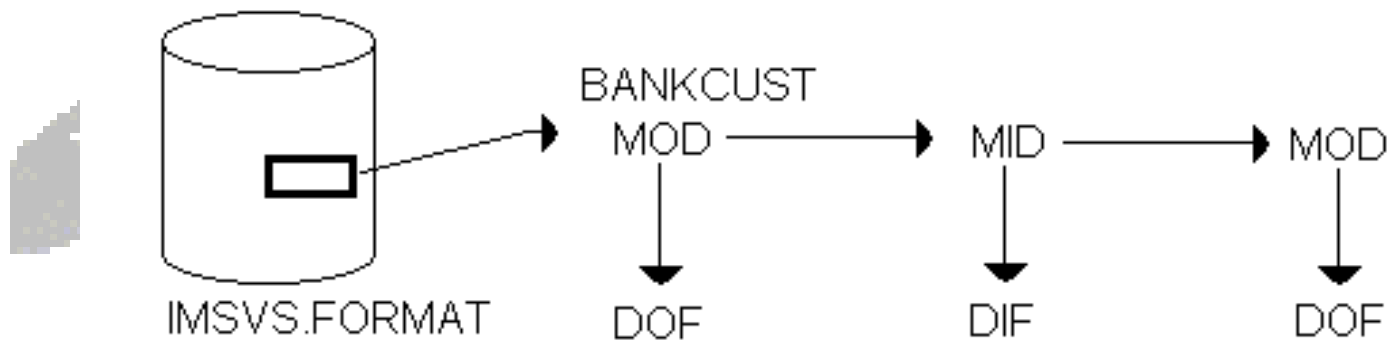




8 Output Message Displayed on Screen

FIRST AMERICAN BANK  
CUSTOMER ID: 428675 NAME: JOHN BROWN

<u>ACCT. NO.</u>	<u>ACCT. TYPE</u>	<u>BALANCE</u>
~~~~~	~~~~~	~~~~~
~~~~~	~~~~~	~~~~~
~~~~~	~~~~~	~~~~~



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**9 DIF/DOF**

DOF describes the initial formatted screen.

The terminal operator keys in variable data on the initial screen, creating an input message.

Device formats describing the initial screen and user's input screen are the same.

An MFS programmer needs only to code one format control block, called DIF/DOF.

MFS will generate two control blocks, a DIF and a DOF, from one device format description.