RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS Pharmacy-Automated Dispensing Interface System
(BOP)

Technical Manual

Version 1.0
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Office of Information Technology
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PREFACE

The purpose of this manual is to provide technical information about the IHS Pharmacy-Automated Dispensing Interface System (BOP) package.

TABLE OF CONTENTS

1.0   Introduction

This manual provides IHS site managers with a technical description of the IHS Interface System routines, files, menus, cross references, globals, and other necessary information required to effectively manage the system.

All routines, files, options, and keys are namespaced starting with the letters 'BOP'. The file number range for this package is 90355 – 90355.44.

2.0   Implementation and Maintenance

2.1   System Requirements

- FileMan v21.0 or higher
- Kernel v8.0 or higher
- PIMS v5.3 or higher
- Inpatient Pharmacy v4.5 or higher
- Outpatient Pharmacy v6.0 or higher
- IHS Third Party Billing System v2.5 or higher

2.2   Package-wide Variables

All package-wide variables in the BOP* routines begin with BOP. All namespaced variables are deleted upon exiting a menu.

3.0   Routines

3.1   Routine List

BOPBAN	BOPEXCP	BOPSET	BOPTD
BOPBAT	BOPINIT	BOPSHO	BOPTSD
BOPCAP	BOPKIL	BOPSLK	BOPTU
BOPCLN	BOOPMTR	BOPT1	
BOPCP	BOPOBS	BOPT2	
BOPCP2	BOPRNEW	BOPT3	
BOPDRGF	BOPRNEW1	BOPTCP	

3.2   Routines w/ Descriptions

Routine	Description
BOPBAN	Displays Package banner on menu
BOPBAT	Batch Automated Dispensing System Messages
BOPCAP	Automated Dispensing System ADT Events & Segments: ORC, MSH
BOPCLN	Clean Up Files in 90355.1
BOPCP	Capture and File Data
BOPCP2	Automated Dispensing System Queue Processor
BOPDRGF	Deletion of drugs from 90355.5 file
BOPEXCP	Displays Exception Report
BOPINIT	Pre and Post-init log for package installation
BOPKIL	Purge Queue
BOPMTR	Automated Dispensing System Job Monitor
BOPOBS	Admits, Check OP By Location
BOPRNEW	Automated Dispensing System Listener
BOPRNEW1	Automated Dispensing System Queue Processor
BOPSHO	What's in the queue
BOPSLK	Detailed Patient Transaction Display
BOPT1	Automated Dispensing System Send and Receive
BOPT2	Automated Dispensing System Send and Receive (Cont)
BOPT3	Transmitter ORC/OBX/RXE/RXR
BOPTBS	Troubleshooting Menu Routine
BOPTCP	TCP/IP Send/Receive Utility
BOPTD	Send Active Inpatients (2)
BOPTSD	Send All Active Inpatients to Interface
BOPTU	Utility Subroutines

4.0   Files and Tables

4.1   File List

File Number	File Name
90355	BOP Site
90355.1	BOP Queue
90355.2	BOP Receive Drug
90355.3	BOP Receive Supply
90355.35	BOP IV
90355.4	BOP Receive Exception
90355.44	BOP Transfer to Drug
90355.5	BOP Drug

4.2   File Access

The following table indicates Read, Write, Laygo, Data Dictionary, and Delete access security for all BOP files.

FILE (#)	GL	RD	WR	LYG	DD	DEL
90355	^BOP(90355	@	@	@	@	@
90355.1	^BOP(90355.1	@	@	@	@	@
90355.2	^BOP(90355.2	@	@	@	@	@
90355.3	^BOP(90355.3	@	@	@	@	@
90355.35	^BOP(90355.35	@	@	@	@	@
90355.4	^BOP(90355.4	@	@	@	@	@
90355.44	^BOP(90355.44	@	@	@	@	@
90355.5	^BOP(90355.5	@	@	@	@	@

4.3   Table File

FILE: BOP SITE
GLOBAL: ^BOP(90355,
FILE #: 90355

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	NAME	D0,0	1	P
.02	FACILITY ID	"	2	F
.03	RECEIVING APPLICATION	"	3	S
.04	ACKNOWLEDGEMENT TIME OUT	"	4	N
.05	NUMBER OF RETRIES	"	5	N
.06	VIEW ALERT MAIL GROUP	"	6	P
.07	SEND PRN	"	7	S
.08	SEND CONTINUOUS	"	8	S
.09	SEND ONE-TIME	"	9	S

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.1	SEND FILL-ON-REQUEST	"	10	S
.11	SEND ON-CALL	"	11	S
.12	PROCESSING ID	"	12	S
.13	VERSION ID	"	13	S
.14	DISPOSITION LOCATION	"	14	P
1.1	SEND FORMULARY	D0,1	1	S
1.2	ADMIT DIAGNOSIS	"	2	S
1.3	SEND DISCHARGE ICD9 DIAGNOSIS	"	3	S
2.1	ADT ACTIVE	D0,2	1	S
2.2	NEW ORDERS ACTIVE	"	2	S
2.3	RENEW ORDERS ACTIVE	"	3	S
2.4	OTHER ORDERS ACTIVE	"	4	S
2.5	INTERFACE VENDOR	"	5	S
3	RECEIVING FACILITY (90355.03)			
.01	RECEIVING FACILITY	D0,3,D1,0	1	P
.02	CHANNEL ACTIVE	"	2	S
.03	IP ADDRESS	"	3	F
.04	SEND SOCKET	"	4	N
.05	RECEIVE SOCKET	"	5	N
.06	ACCEPT TRANSACTIONS	"	6	S
.07	LISTEN CPU	"	7	F
.08	CLIENT OR SERVER	"	8	S
4	MONITOR ACTIVE	D0,4	1	S
4.1	MONITOR RESCHEDULING FREQUENCY	"	2	N
4.2	MONITOR CURRENT TASK	"	3	N
9	P-O INTERFACE DOMAIN	D0,"SITE"	1	F
9.1	LOCATION DECODING TYPE	"	2	S
9.2	DEFAULT OUTPATIENT LOCATION	"	3	F
9.3	DEFAULT OP SEND LOCATION	"	4	F
9.4	SEND ALL OUTPATIENTS	"	5	S
9.5	DEFAULT OP LOCATION POINTER	"	6	P
10	OUTPATIENT LOCATION (90355.01)			
.01	OUTPATIENT LOCATION	D0,"OPLOC",D1,0	1	F
1	OP SEND LOCATION	"	2	F
2	OP LOCATION POINTER	"	3	P
12	STOP	D0,12	1	S
315	BASE ALLERGY	D0,4	4	P
316	ADT SEND OUTPATIENT	D0,2	6	S
317	ADT SEND INPATIENT	"	7	S
400	DEFAULT PROVIDER	D0,"SITE"	7	P
401	DEFAULT CLERK	"	8	P
402	DEFAULT SIG	"	9	F

FILE: BOP QUEUE
GLOBAL: ^BOP(90355.1,
FILE #: 90355.1

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	DATE/TIME LOGGED	D0,0	1	D
.02	EVENT TYPE CODE	"	2	S

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.03	DATE/TIME OF EVENT	"	3	D
.04	MESSAGE TYPE	"	4	S
.05	DATE/TIME OF MESSAGE	"	5	D
.06	RECEIVING APPLICATION	"	6	F
.07	MESSAGE CONTROL ID	"	7	D
.08	PROCESSING ID	"	8	S
.09	VERSION ID	"	9	S
.1	MESSAGE STATUS	"	10	S
.11	ERROR COUNT	"	11	N
.12	RECEIVING FACILITY	"	12	P
.21	AO8 ITEM NUMBER	"	21	N
.41	BCMA STATUS	"	41	S
.5	FORMULARY	"	50	S
1.01	PATIENT DFN	D0,1	1	F
1.02	PATIENT ID (INTERNAL ID)	"	2	F
1.03	PATIENT NAME	"	3	F
1.04	DATE OF BIRTH	"	4	D
1.05	SEX	"	5	S
1.06	RACE	"	6	S
1.07	STREET ADDRESS	"	7	F
1.08	CITY	"	8	F
1.09	STATE	"	9	F
1.1	ZIP	"	10	F
1.11	FACILITY ID	"	11	F
1.12	PHONE NUMBER – HOME	"	12	F
1.13	PHONE NUMBER – WORK	"	13	F
1.14	PATIENT ACCOUNT NUMBER	"	14	F
1.15	SSN – PATIENT	"	15	F
2.1	ORDER CONTROL CODE	D0,2	1	S
2.2	PLACER ORDER NUMBER	"	2	F
2.3	ORDER STATUS	"	3	S
2.4	POSTING DATE/TIME	"	4	D
2.5	ENTERED BY	"	5	F
2.6	VERIFIED BY	"	6	F
2.7	ORDERING PROVIDER	"	7	F
2.8	ORDER-DRUG#	"	8	F
3.1	Q/T FREQUENCY	D0,3	1	F
3.11	IV ORDER FLAG	"	11	S
3.2	Q/T DURATION	"	2	F
3.3	Q/T ORDER START DATE/TIME	"	3	D
3.4	Q/T ORDER END DATE/TIME	"	4	D
3.5	Q/T ORDER TYPE	"	5	S
3.6	Q/T CONDITION PARAMETERS	"	6	F
3.7	Q/T ADMINISTRATION TIMES	"	7	F
3.8	IV INFUSION RATE	"	8	F
4.01	GIVE CODE IDENTIFIER	D0,4	1	F
4.02	GIVE CODE TEXT	"	2	F
4.03	GIVE AMOUNT MINIMUM	"	3	F

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
4.04	GIVE AMOUNT MAXIUM	"	4	F
4.05	GIVE UNIT IDENTIFIER	"	5	F
4.06	GIVE UNIT TEXT	"	6	F
4.07	GIVE DOSAGE FORM	"	7	F
4.08	CONTROLLED SUBSTANCE	"	8	N
5.1	PROVIDERS ADMIN INSTRUCTIONS	D0,5	1	F
5.2	DISPENSE AMOUNT	"	2	F
6.1	SPECIAL INSTRUCTIONS	D0,6	1	S
6.2	DISPENSE INSTRUCTIONS	"	2	F
7.1	GIVE RATE AMOUNT	D0,7	1	F
7.2	GIVE RATE UNIT IDENTIFIER	"	2	F
7.3	GIVE RATE UNIT TEXT	"	3	F
7.4	GIVE STRENGTH	"	4	F
7.5	GIVE STRENGTH UNIT IDENTIFIER	"	5	F
7.6	GIVE STRENGTH TEXT	"	6	F
7.7	GIVE INDICATION	"	7	F
8.1	ROUTE	D0,8	1	F
8.2	DISPENSE CODE	"	2	S
8.3	CYCLE DATE/TIME	"	3	D
8.6	TYPE OF ORDER	"	6	S
9.1	PATIENT HEIGHT	D0,9	1	N
9.2	PATIENT WEIGHT	"	2	N
10.1	PATIENT CLASS	D0,10	1	S
10.2	NURSING UNIT	"	2	F
10.3	ROOM-BED	"	3	F
10.4	ATTEDNING DOCTOR	"	4	F
10.41	CONSULTING DOCTOR	"	20	F
10.5	HOSPITAL SERVICE	"	5	F
10.6	ADMIT DATE/TIME	"	6	D
10.7	DISCHARGE DATE/TIME	"	7	D
10.8	ACCOUNT STATUS	"	8	S
10.9	PRIOR PATIENT ACCOUNT NUMBER	"	9	F
11	ALLERGY (90355.111)			
.01	ALLERGY	D0,11,D1,0	1	F
.02	ALLERGY INTERNAL NUMBER	"	2	N
12	ADMIT DIAGNOSIS SHORT	D0,12	1	F
20	SOLUTIONS (90355.12)			
.01	SOLUTIONS	D0,20,D1,0	1	P
20.11	GLOBAL FOR SOLUTION	"	11	F
20.2	SOLUTION DESCRIPTION	"	2	F
20.3	SOLUTION VOLUME	"	3	F
21	ADDITIVE (90355.121)			
.01	ADDITIVE	D0,21,D1,1	1	P
21.11	GLOBAL FOR ADDITIVE	"	11	F
21.2	ADDITIVE DESCRIPTION	"	2	F
21.3	ADDITIVE STRENGTH	"	3	F
21.4	ADDITIVE BOTTLE	"	4	F

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
49.1	DRUG TRANS CODE	D0,49	1	S
49.2	DRUG ID	"	2	F
50.1	PZFM FORMULARY TRANS CODE	D0,50	1	S
50.11	PZFM STRENGTH UNITS	"	11	F
50.12	PZFM VOLUME	"	12	F
50.13	PZFM VOLUME UNITS	"	13	F
50.14	PZFM ALTERNATE MED ID2	"	14	F
50.15	PZFM THERAPEUTIC CLASS	"	15	F
50.16	PZFM COST	"	16	F
50.17	PZFM CHARGE	"	17	F
50.2	PZFM MEDICATION ID	"	2	F
50.3	PZFM GENERIC NAME	"	3	F
50.4	PZFM MEDICATION CLASS	"	4	F
50.5	PZFM ALTERNATE MED ID	"	5	F
50.6	PZFM FACILITY CODE	"	6	F
50.7	PZFM BRAND NAME	"	7	F
50.8	PZFM DOSAGE FORM	"	8	F
50.9	PZFM STRENGTH	"	9	F
51.1	PZFM MANUFACTURER	D0,51	1	F
51.2	PZFM UNITS OF ISSUE TO MED	"	2	F
51.3	PZFM ORDER UNIT FROM SUPPLIER	"	3	F
51.4	PZFM DISPLAY OPTION	"	4	F
51.5	PZFM PICK AREA	"	5	F
51.6	PZFM BILLABLE	"	6	S
51.7	PZFM MEDICATION NAME	"	7	F
55.1	OZMI MASTER ITEM FILE ENTRY	D0,55	1	F
55.11	OZMI UNIT OF ISSUE	"	11	F
55.12	OZMI CONV STOCK TO ISSUE UNIT	"	12	F
55.13	OZMI NORMAL REORDER SOURCE	"	13	F
55.14	OZMI NORMAL REORDER BIN LOC	"	14	F
55.15	OMFE RECORD LEVEL EVENT CODE	"	15	S
55.16	OZFO NDC	"	16	F
55.17	OZFO NDC NAME	"	17	F
55.2	OZMI LOCATION	"	2	F
55.3	OZMI CHARGE ID	"	3	F
55.4	OZMI BRAND NAME OF DRUG	"	4	F
55.5	OZMI PAR LEVEL	"	5	F
55.6	OZMI REORDER POINT	"	6	F
55.7	OZMI CRITICALLY LOW LEVEL	"	7	F
55.8	OZMI QUANITITY ON HAND	"	8	F
55.9	OZMI UNIT OF RE-STOCK	"	9	F
56.1	OZMI CRITICAL LOW REORD SOURCE	DO,56	1	F
56.11	OZMI DEA SCHEDULE	"	11	F
56.12	OZMI MANUFACTURER ID/NAME	"	12	F
56.2	OZMI CRITI LOW REORD BIN LOC	"	2	F
56.3	OZMI BILLABLE	"	3	S

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
56.4	OZMI ITEM COST	"	4	F
56.5	OZMI ITEM PRICE	"	5	F
56.6	OZMI UNIT DOSE STRENGTH	"	6	F
56.7	OZMI UNIT DOSE VOLUME	"	7	F
56.8	OZMI TOTAL VOLUME	"	8	F
56.9	OZMI UNIT DOSE DRUG FORM	"	9	F
99	SEND OR FILE	D0,99	1	S
99.1	MED USAGE MESSAGE STATUS	"	2	S
100	DATA (90355.11)			
.01	DATA	D0,"DATA",D1, 0	1	W

FILE: BOP RECEIVE DRUG
GLOBAL: ^BOP(90355.2,
FILE #: 90355.2

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	NAME	D0,0	1	P
.02	PATIENT	"	2	P
.03	DATE VENDED	"	3	D
.04	ORDER NUMBER	"	4	F
.05	QUANTITY VENDED	"	5	N
.06	ORDERED BY	"	6	P
.07	ORDER TYPE	"	7	S

FILE: BOP RECEIVE SUPPLY
GLOBAL: ^BOP(90355.3,
FILE #: 90355.3

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	ITEM	D0,0	1	P
.02	PATIENT	"	2	P
.03	DATE VENDED	"	3	D
.04	ORDER NUMBER	"	4	F
.05	QUANTITY VENDED	"	5	N
.06	ORDERED BY	"	6	P

FILE: BOP IV
GLOBAL: ^BOP(90355.35,
FILE #: 90355.35

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	IV ORDER	D0,0	1	F
.02	PATIENT	"	2	P
.03	DATE VENDED	"	3	D
.04	ORDER NUMBER	"	4	F
.05	TRANSACTION QUANTITY	"	5	N
.08	BILLING STATUS	"	8	S
1	ADDITIVES (90355.351)			
.01	ADDITIVES	D0,"AD",D1,0	1	P
.02	STRENGTH	"	2	F
.03	BOTTLE	"	3	F
2.01	SOLUTION	D0,"SOL"	1	P
2.02	VOLUME		2	F

FILE: BOP RECEIVE EXCEPTION
GLOBAL: ^BOP(90355.4,
FILE #: 90355.4

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	DATE/TIME OF EXCEPTION	D0,0	1	D
.02	PATIENT	"	2	P
.03	DATE VENDED	"	3	D
.04	ORDER NUMBER	"	4	F
.05	TRANSACTION QUANTITY	"	5	N
.06	ORDERED BY	"	6	P
.07	ORDER TYPE	"	7	S
.08	ORDER NUMBER	"	8	F
.09	EXCEPTION TYPE	"	9	S
.1	ITEM NAME	"	10	F
.11	DRUG	"	11	P
.12	CHARGE DESCRIPTION	"	12	F
.13	SUB NODE FROM QUEUE FILE	"	13	F
5.01	DRUG MEDSTATION	DO,5	1	F
5.02	SUPPLY STATION	"	2	F
5.03	VEFS 19235.1 NUMBER	"	3	F
5.04	ID NUMBER	"	4	N
5.05	PATIENT NAME	"	5	F

FILE: BOP TRANSFER TO DRUG
GLOBAL: ^BOP(90355.44,
FILE #: 90355.44

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	DATE	D0,0	1	D
.02	DRUG OR SUPPLY	"	2	F
.03	QUEUE FILE ENTRY	"	3	P
.04	PATIENT DFN	"	4	P
.05	PATIENT EXTERNAL NUMBER	"	5	F
.06	PATIENT SSN	"	6	F
.07	DIVISION	"	7	F

FILE: BOP DRUG
GLOBAL: ^BOP(90355.5,
FILE #: 90355.5

FIELD #	FIELD NAME	SUBSCRIPT	PIECE	TYPE
.01	NAME	D0,0	1	F
2	DRUG ID	"	2	F

5.0   Internal Relations

The only menu that is intended to be assigned to users is BOPMENU option (BOP User Menu). Users that have this menu option require the security key BOPZMENU.

Within that menu, the user will have access to modify the site parameters, review the records in the queue to be transmitted, transmit data for a single patient, display data that either has been transmitted or will be transmitted for a specific patient, and perform troubleshooting.

There are no options assuming that the entry/exit logic of another option has already occurred.

IRM users are intended to be assigned the option BOP IRM MENU (BOP IRM MENU).

6.0   External Relations

In order for outpatient demographic data to be transmitted through the BOP interface, the users must set up specific outpatient locations as they are named in the Hospital Location file (file 40 - ^SC(#)) in the BOP Site File (^BOP(90355)).

Users must either check in a patient or enter in an unscheduled visit through a scheduling option off of the Scheduling or PIMS package menu structure.

- VA Fileman v21.0
- VA Kernel v8.0
- PIMS v5.3
- Inpatient Pharmacy v4.5
- Outpatient Pharmacy v6.0
- IHS 3P Billing System v2.5

6.1   Published Entry Points

Routine	Description
EDIT^BOPCP2	This entry point is called if there is an edit to a patient Order.
NEW^BOPCAP	This entry point is called if there is a new order
RENEW^BOPCAP	This entry point is called if an order is reactivated
ADT^BOPCAP	[Used as Protocol: "IHS BOP"] Capture ADT RPMS events.

6.2   Exported Options

The Interface menus provide control over the interface. Two menus are released with the interface, BOP USER MENU and BOP IRM MENU. The options found on these two menus are listed in the following table.

6.3   Option List for the BOP User Menu

Option Name	Description
BOP MONITOR	Abbreviation MON. This option starts the BOP interface monitor. The monitor constantly checks the system to see if the appropriate jobs are running. If it finds that a necessary process is not running, it schedules it to run using the RPMS Task Manager. The monitor process

	reschedules itself using the RPMS background task scheduler, TaskMan. It will run 'X' seconds in the future, (determined by the field "Reschedule Frequency" in the IHS BOP Site Parameters file, #90355 – Recommend 300 to 900 seconds). When it runs it checks to see if the transmitter to Automated Dispensing System and receiver from Automated Dispensing System are running and attempts to start them if they are not running.
BOP PATIENT DISPLAY	Abbreviation PAT. This option is used to display the transactions in the sending queue for a particular patient.
BOP PATIENT DISPLAY	Abbreviation PAT. This option is used to display the transactions in the sending queue for a particular patient.
BOP PURGE	Abbreviation PUR. This option removes old data from the Automated Dispensing System Queue. Entries that are less than 7 days old are ignored. Purging of old transmissions from the queue file is a important item and controls the amount of space on the system that the interface uses.
BOP SHOW	Abbreviation: SHOW. This option displays the status of the sending queue. The display shows the total number of items in the queue file, how many are ADT, how many are Orders, and how many timing transactions from Automated Dispensing System
BOP SITE	Abbreviation: SITE. This option allows the editing of site parameters that control the interface.
BOP STOP	Abbreviation: STOP. The interface can be stopped in two ways. The first is to edit the setup file and change the monitor active field (file 90355) from ON to OFF. This will stop the monitor so that the monitor will not reschedule itself in TaskMan. This does not stop the current running transmitter or receiver. The second way to stop the interface is to use this option. This option will halt the current running transmitter and receiver but does not interfere with the interface monitor. Use this option if the interface needs to be stopped for a short while but not permanently.
BOP TRANSMIT ONE PATIENT	Abbreviation SEND. This option is often used

	to force ADT and Order transactions across the interface. If an ADT or order did not make it to the interface, this option allows the sending of all of that patient's current orders to the Automated Dispensing System. The patient IEN (DFN) is entered and if the patient's location is a sending location the patients ADT information and all orders for that patient are sent. This option is for inpatients only.

BOP TROUBLESHOOT MENU	Abbreviation: TRB. Within this Menu, there are 3 options:
	   CHK Check the Log File
	   FUT Display Future Monitor tasks
	   RUN Display Running Tasks and job ID
	There are times when the interface will have nothing to send. At that time, it will create a future BOP Monitor task scheduled for 3 to 15 minutes in the future. If you see a Future Task, it means the interface is running, but completed its processing and will check for more processing at the time listed in TaskMan.
	The CHK option will show the actual numbers in the Queue file that are waiting to be sent. If there are entries in that file and the numbers do not change, contact IRM and let them know.

7.0   Security Keys

The security keys BOPZIRM and BOPZMENU have been released with the KIDS package. These keys should be assigned to the users who will have the BOP IRM MENU or BOP USER MENU.

8.0   Archiving and Purging

The BOP PURGE option removes old data from the Automated Dispensing System Queue. Entries that are less than 7 days old are ignored. Purging of old transmissions from the queue file is a important item and controls the amount of space on the system that the interface uses.

9.0　Generating Online Documentation

This section describes a few methods to generate Patient Registration system technical documentation. Online BOP technical documentation, in addition to that which is located in the help prompts throughout the Patient Registration package, can be generated through the use of several Kernel options. These include, but are not limited to, the following:

- %INDEX
- Menu Management
- Inquire Option
- Print Option File
- VA FileMan
- Data Dictionary Utilities
- List File Attributes

Typing ? at the "Select . . . Option" prompt will provide online technical information.

- A single question mark (?) lists all options that can be accessed from the current option.

- Two question marks (??) list all options accessible from the current one, showing the formal name and lock for each.

- Three question marks (???) display a brief description for each option in a menu.

- An option name preceded by a question mark (?OPTION) shows extended help, if available, for that option.

For a more exhaustive option listing and further information about other utilities that supply online technical information, consult the DHCP Kernel Reference manual.

9.1　%INDEX

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS programming standards. The %INDEX output can include the following components:

- Compiled list of errors and warnings
- Routine listing
- Local variables
- Global variables
- Naked globals
- Label references
- External references

Running %INDEX for a specified set of routines, allows users to discover any deviations from RPMS programming standards that exist in the selected routines and

to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run %INDEX for the BOP package, type the BOP namespace at the Routine(s)?> prompt.

9.2   Inquire Option

This menu management option provides the following information about a specified option:

- Option name
- Menu text
- Option description
- Type of option
- Lock (if any)

In addition, all items on the menu are listed for each menu option. To secure information about patient registration options, specify the BOP namespace.

9.3   Print Option File

This utility generates a listing of options from the Option file (#19). Users can choose to print all of the entries in this file or specify a single option or range of options. For a list of BOP options, refer to the Exported Options section of this manual.

9.4   List File Attributes

This VA FileMan option allows users to generate documentation pertaining to files and file structure. Using the standard format of this option yields the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
- Global location
- Help prompt
- Cross-references
- Input transform

- Date last edited
- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected
- Global location of each field in the file
- Input, print, and sort templates

For a comprehensive listing of BOP package files, please refer to the Files section of this manual (section 4.0).

10.0   SAC Requirements / Exemptions

Exemptions to allow references to $ETRAP were approved on March 16, 2005.

Request exemption for # reads.   These are necessary for interactive interface processing.   # reads appropriately check for the carriage return/line feed at the segment ends of the HL7 messages.

11.0   Glossary

Archiving	The storing of historical or little-used data off-line (often on tape).
ASUFAC number	Area Service Unit Facility; A unique identifier for each facility within IHS. A six-digit number comprised of 2 digits for Area, 2 digits for Service Unit, and 2 digits for Facility.
Banner	A line of text with a user's name and domain.
Browser	An interactive application that displays ASCII text on a terminal that supports a scroll region. The text can be in the form of a word-processing field or sequential local or global array. The user is allowed to navigate freely within the document.
Callable Entry Points	Places in a routine that can be called from an application program.
Cross-reference	An indexing method whereby files can include pre-sorted lists of entries as part of the stored database. Cross-references (x-refs) facilitate look-up and reporting.
Default Facility	A user selects a facility identification to work with patients registered to that facility.
Entry Point	Entry point within a routine that is referenced by a "DO" or "GOTO" command from a routine internal to a package.
File	A set of related records or entries treated as a single unit.
FileMan	The database management system for RPMS.
Global	In MUMPS, global refers to a variable stored on disk (global variable) or the array to which the global variable may belong (global array).
Health Record Number (HRN)	Each facility assigns a unique number within that facility to each patient. Each HRN with its facility identification 'ASUFAC' make a unique identifier within all of IHS.
INDEX (%INDEX)	A Kernel utility used to verify routines and other MUMPS code associated with a package. Checking is done according to current ANSI MUMPS standards and RPMS programming standards. This tool can be invoked through an option or from direct mode (>D ^%INDEX).

Init	Initialization of an application package. The initialization step in the installation process builds files from a set of routines (the init routines). Init is a shortened form of initialization.
Internal Entry Number (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRM	Information Resource Management. The IHS personnel responsible for information systems management and security.
Kernel	The set of MUMPS software utilities that function as an intermediary between the host operating system and application packages, such as Laboratory and Pharmacy. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying MUMPS implementation. These utilities provide the foundation for RPMS.
Menu	A list of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).
Namespace	A unique set of 2 to 4 alpha characters that are assigned by the database administrator to a software application.
Official Registering Facility	A facility so designated that when HRNs are added/modified, those changes are sent to the central database. A Service Unit may have several satellites for which it is registering patients.
Option	An entry in the Option file. As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.
Patient Care Component (PCC)	The central repository for data in the Resource and Patient Management System (RPMS).
Queuing	Requesting that a job be processed at a later time rather than within the current session.

Routine	A program or sequence of instructions called by a program that may have some general or frequent use. MUMPS routines are groups of program lines that are saved, loaded, and called as a single unit via a specific name.
UCI	User Class Identification: a computing area.
Up-Hat (^)	A circumflex, also know as a "hat" or "caret," that is used as a piece delimiter in a global. The up-hat is denoted as "^" and is typed by pressing Shift+6 on the keyboard.
Utility	A callable routine line tag or function. A universal routine usable by anyone.
Variable	A character or group of characters that refers to a value. MUMPS recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of the main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays.

12.0   Sample Data

RECORD LINKAGE for BOP INTERFACE:

90355.1 NEW ADT – ADMISSION INTO EMERGENCY ROOM:

```
NUMBER: 201                              DATE/TIME LOGGED: FEB 13,
2004@11:02:31
  EVENT TYPE CODE: A01                   DATE/TIME OF EVENT: 1730
  MESSAGE TYPE: ADT
  DATE/TIME OF MESSAGE: FEB 13, 2004@11:02:31
  RECEIVING APPLICATION: OMNICELL
  MESSAGE CONTROL ID: FEB 13, 2004@11:02:31
  PROCESSING ID: P                       VERSION ID: 2.2
  MESSAGE STATUS: Closed
  RECEIVING FACILITY: CLAREMORE INDIAN HOSPITAL
  PATIENT DFN: 8570                      PATIENT ID (INTERNAL ID): 8570
  PATIENT NAME: PATIENT,DEMO             DATE OF BIRTH: JAN 14, 1939
  SEX: M                                 STREET ADDRESS: RT. 1 BOX 99-3
  CITY: DEMO                      STATE: OKLAHOMA
  ZIP: 74016                             FACILITY ID: 505201
  PHONE NUMBER - HOME: 999-3894          PATIENT ACCOUNT NUMBER: 7856993
  SSN - PATIENT: 000330000               PATIENT CLASS: O
  NURSING UNIT: EMERGENCY MED
```

Actual Global for record 201:

```
^BOP(90355.1,201,0)=3040213.110231^A01^30^ADT^3040213.110231^OMNICELL^3040213
.110231^P^2.2^9^^1^^^^^^^^^
                1)=8570^8570^PATIENT,DEMO^2390114^M^^RT. 1 BOX 99-
3^DEMO^OKLAHOMA^74016^505201^999-3894^^78569^000330000
                10)=O^EMERGENCY MED
^BOP(90355.1,201,"O",0)=3040213.11024
^BOP(90355.1,201,"O",1,1)=

MSH|^~\&|OMNICELL|505201|OMNICELL||20040213110231||ADT
^A01|3040213.110231|P|2.2|
^BOP(90355.1,201,"O",2,1)=EVN|A01|3000|||
^BOP(90355.1,201,"O",3,1)=PID|1||8570^^^505201||PATIENT^DEMO^|||||||RT. 1 BOX
335-2^CHELSEA^OKLAHOMA^74016|||||||78569|
^BOP(90355.1,201,"O",4,1)=PV1||O|EMERGENCY
MED^^^505201|||^|^|||||||||^||||||||
|||||||||||||||||||
```

13.0   Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk by:

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(888) 830-7280

Fax: (505) 248-4363

Web: http://www.rpms.ihs.gov/TechSupp.asp

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