Preface

The Generic Interface System (GIS) will generate and file multiple types of HL7 events. It adheres strictly to HL7 Version 2.4 and can generate or file messages from any system that adheres to the GIS HL7 Specification.

This manual contains the technical documentation for the GIS, version 3.01. Included are a system description, routine descriptions, option descriptions, and a variety of other information.

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Error! Bookmark not defined.
13.4.1 Insurer Starts..............................................Error! Bookmark not defined.
13.4.2 Insurer Stops...............................................Error! Bookmark not defined.
13.4.3 Self Pay Starts............................................Error! Bookmark not defined.
13.4.4 Self Pay Stops.............................................Error! Bookmark not defined.

14.0 GLOSSARY ..................................................ERROR! BOOKMARK NOT DEFINED.
15.0 CONTACT INFORMATION..............................ERROR! BOOKMARK NOT DEFINED.
1.0 Introduction

The GIS package (BHL) allows the site to receive and send demographic and PCC data to and from the RPMS system. The data strictly adheres to the GIS HL7 Message Specification. A variety of HL7 events are supported including all that will allow the passing and receiving of data in the VA PATIENT file, the PATIENT file and all supported VISIT and V files. It also supports inbound and outbound queries for immunizations.

All user aspects of the GIS package can be maintained from the Interface Main Menu.
2.0 Implementation and Maintenance

2.1 General Information

The GIS HL7 message package resides in the IN and BHL namespaces. Options, security keys, routines and globals are namespaced.

Menu options allow users to edit the BHL Site Parameters, query for immunizations, manipulate message, segment, and file definitions, as well as controlling background jobs for GIS to handle messages.

2.2 System Requirements

a. Kernel 8.0 or higher
b. FileMan 21 or higher
c. IHS MAS Version 5 (DG/SD) Patch 8
d. IHS Immunization Package (BI) Version 7
e. PCC Data Entry Version 2.0 (APCD) Patch 6
f. XB/ZIB Utilities Version 3.0, Patch 9
g. IHS Patient Dictionaries (AUPN) Version 99.1 Patch 7
h. Patient Registration (AG) Version 6 Patch 14
i. Outpatient Pharmacy (PSO) Version 6 Patch 4
### 3.0 Routines

<table>
<thead>
<tr>
<th>Routine Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHL3MI</td>
<td>BHL Setup Message and Pass to APCD for 3M Coder</td>
</tr>
<tr>
<td>BHLDG1</td>
<td>BHL GIS DG1 Supplement</td>
</tr>
<tr>
<td>BHLDG11</td>
<td>Files the inbound DG1 segment</td>
</tr>
<tr>
<td>BHLERR</td>
<td>BHL HL7 message error processor</td>
</tr>
<tr>
<td>BHLF0</td>
<td>BHL Get Inbound Filing Order</td>
</tr>
<tr>
<td>BHLI</td>
<td>Inbound message driver</td>
</tr>
<tr>
<td>BHLIN1</td>
<td>BHL IN1 Supplement</td>
</tr>
<tr>
<td>BHLIN1IA</td>
<td>BHL File Inbound IN1 segment continued</td>
</tr>
<tr>
<td>BHLIN1I</td>
<td>Files inbound IN1 segment</td>
</tr>
<tr>
<td>BHLIN1MR</td>
<td>BHL IN1 Segment Medicare Supplement</td>
</tr>
<tr>
<td>BHLIN1PI</td>
<td>BHL IN1 Segment Private Insurance Supplement</td>
</tr>
<tr>
<td>BHLIN2I</td>
<td>File inbound IN2 segment</td>
</tr>
<tr>
<td>BHLIQUI</td>
<td>BHL HL7 Immunization Query User Interface</td>
</tr>
<tr>
<td>BHLMKFI</td>
<td>Process inbound MFK event</td>
</tr>
<tr>
<td>BHLMSAI</td>
<td>Process inbound MSA segment for V03 event</td>
</tr>
<tr>
<td>BHLMSH</td>
<td>BHL MSH Supplement</td>
</tr>
<tr>
<td>BHLMT50</td>
<td>BHL Master Table Update Drug User Interface</td>
</tr>
<tr>
<td>BHLNK1</td>
<td>BHL NK1 Supplement</td>
</tr>
<tr>
<td>BHLNK1I</td>
<td>File inbound NK1 segment</td>
</tr>
<tr>
<td>BHLOBRI</td>
<td>File inbound OBR segment</td>
</tr>
<tr>
<td>BHLOBX</td>
<td>BHL OBR/OBX Supplement</td>
</tr>
<tr>
<td>BHLOBX3M</td>
<td>BHL Supplement to OBX segment for 3M</td>
</tr>
<tr>
<td>BHLOBX1I</td>
<td>File inbound OBX segment</td>
</tr>
<tr>
<td>BHLORCI</td>
<td>File inbound ORC segment</td>
</tr>
<tr>
<td>BHLORUDI</td>
<td>BHL File inbound ORU message for Dynacare Lab Interface</td>
</tr>
<tr>
<td>BHLPD1I</td>
<td>File inbound PD1 segment</td>
</tr>
<tr>
<td>BHLPID</td>
<td>BHL PID Supplement</td>
</tr>
<tr>
<td>BHLPIDI</td>
<td>File inbound PID segment</td>
</tr>
<tr>
<td>BHLPR1I</td>
<td>File inbound PR1 segment</td>
</tr>
<tr>
<td>BHLPR1</td>
<td>BHL PR1 Supplement</td>
</tr>
<tr>
<td>BHLPRV</td>
<td>BHL Provider Utilities</td>
</tr>
<tr>
<td>BHLPV1</td>
<td>BHL PV1 Supplement</td>
</tr>
<tr>
<td>BHLPV13M</td>
<td>BHL PV1 Supplement for 3M</td>
</tr>
<tr>
<td>BHLPV1I</td>
<td>File inbound PV1 segment</td>
</tr>
<tr>
<td>BHLQRD</td>
<td>BHL QRD Supplement</td>
</tr>
<tr>
<td>BHLQRF</td>
<td>BHL QRF Supplement</td>
</tr>
<tr>
<td>BHLQU</td>
<td>BHL Query Utilities</td>
</tr>
<tr>
<td>BHLRDXM</td>
<td>BHL Reindex Message File after KIDS install</td>
</tr>
<tr>
<td>BHLRXA</td>
<td>BHL RXA Supplement</td>
</tr>
<tr>
<td>BHLRXAI</td>
<td>File inbound RXA segment</td>
</tr>
<tr>
<td>BHLRXD</td>
<td>BHL RXD Supplement</td>
</tr>
<tr>
<td>BHLRXDI</td>
<td>File inbound RXD segment</td>
</tr>
<tr>
<td>BHLSETI</td>
<td>Sets up package for inbound messages</td>
</tr>
<tr>
<td>BHLSITE</td>
<td>BHL Edit HL7 Site Parameters</td>
</tr>
<tr>
<td>BHLU</td>
<td>BHL Utilities</td>
</tr>
<tr>
<td>BHLV</td>
<td>BHL GIS Variable set</td>
</tr>
<tr>
<td>BHLV01I</td>
<td>File inbound V01 event</td>
</tr>
<tr>
<td>BHLV02I</td>
<td>File inbound V02 event</td>
</tr>
<tr>
<td>BHLZ01I</td>
<td>Process inbound Z01 event</td>
</tr>
</tbody>
</table>
### 3.1 Callable Routines

^BHLIQUI – generates a V01 immunization query:

^BHLMT50 – triggers a drug file MFN/Z01 update message
## 4.0 Files

<table>
<thead>
<tr>
<th>File #</th>
<th>Global</th>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90076.1</td>
<td>^BHLEM(</td>
<td>BHL HL7 Error Message (GIS)*</td>
<td>Stores the Canned Error messages that can occur on message filing.</td>
</tr>
<tr>
<td>90076.2</td>
<td>^BHLERR(</td>
<td>BHL HL7 Error Log (GIS)</td>
<td>Logs HL7 message processing errors.</td>
</tr>
<tr>
<td>90076.3</td>
<td>^BHLSITE(</td>
<td>BHL HL7 Parameter (GIS)</td>
<td>Contains BHL Site Parameters</td>
</tr>
</tbody>
</table>

* Data is distributed with this file

### Cross References

90076.1  BHL HL7 Error Message (GIS)

.01  Abbreviation

90076.1^B

90076.2  BHL HL7 Error Log (GIS)

.01  Message IEN

90076.2^B

90076.3  BHL HL7 Parameter (GIS)

.01  Location

90076.3^B
5.0 Exported Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHL EDIT HL7 PARAMETERS</td>
<td>Allows editing of the site parameters.</td>
</tr>
<tr>
<td>BHL DRUG MASTER TABLE UPDATE</td>
<td>Allows triggering of a Master File Notification Update message</td>
</tr>
<tr>
<td>BHL IHS GIS USER MENU</td>
<td>IHS User Menu in GIS</td>
</tr>
<tr>
<td>BHL IMMUNIZATION QUERY</td>
<td>Allows a user to query another system for immunizations</td>
</tr>
<tr>
<td>BHL MASTER TABLE UPDATE MENU</td>
<td>Menu containing Master Table Update options</td>
</tr>
</tbody>
</table>
6.0 Menu Diagram

BHL IHS User Menu (BHL IHS GIS USER MENU)

- MTU Master Table Update Menu
- QRY Query for an Immunization
- SIT Edit HL7 Site Parameters

BHL Master Table Update Menu (BHL MASTER TABLE UPDATE MENU)

- MED Send a Drug Master Table Update
## 7.0 Security Keys

<table>
<thead>
<tr>
<th>Key Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH MESSAGE EDIT</td>
<td>Assign to Message Developers</td>
</tr>
<tr>
<td>INH SITE MANAGER</td>
<td>Assign to appropriate Site Manager Staff</td>
</tr>
</tbody>
</table>
8.0 Options

PT Purge Transactions  [INH TRANSACTION PURGE]
**LOCKED: INH SITE MANAGER**

EIT Edit an Interface Transaction  [INHO EDIT]
**LOCKED: INH MESSAGE EDIT**

MTC Mark Transaction Complete [INH MARK COMPLETE]
**LOCKED: INH MESSAGE EDIT**

SPE Site Parameter Entry/Edit [INH SITE PARAMETERS]
**LOCKED: INH SITE MANAGER**

IOE Interface OS Edit [INH OS ENTRY EDIT]
**LOCKED: INH SITE MANAGER**

IAD Interface Application Display [INH INTERFACE APPL DISPLAY]
**LOCKED: INH SITE MANAGER**

PE Purge Errors  [INH ERROR PURGE]
**LOCKED: INH SITE MANAGER**

PT Purge Transactions  [INH TRANSACTION PURGE]
**LOCKED: INH SITE MANAGER**

EIT Edit an Interface Transaction  [INHO EDIT]
**LOCKED: INH MESSAGE EDIT**

MTC Mark Transaction Complete [INH MARK COMPLETE]
**LOCKED: INH MESSAGE DIT**
9.0 Archiving and Purging

None
10.0 External Relations

This package calls the following documented entry points:

^KAPCDALV
^KAPCDALVR
^KAPCDVLK
11.0 **Internal Relations**

All users should be given access to the appropriate options and key, as needed. All of the options in this system stand alone.
12.0 How to Generate On-Line Documentation

The file number range for this package is 90076.1-90076.3. The namespace is BHL. All routines, globals, options, etc. begin with BHL.

This section describes some of the methods by which users can generate BHL system technical documentation. Online technical documentation pertaining to the BHL software, in addition to that which is located in the help prompts and on the help screens throughout the BHL 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

Entering question marks at the "Select ... Option" prompts can also provide users with valuable technical information. For example, a single question mark (?) lists all options that can be accessed from the current option. Entering two question marks (??) lists all options accessible from the current one, showing the formal name and lock for each. Three question marks (???) displays a brief description for each option in a menu, whereas 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, please consult the DHCP Kernel Reference manual.

12.1 %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 efforts and warnings
- Routine listing
- Local variables
- Global variables
- Naked globals
• x  Label references
• x  External references

By running %INDEX for a specified set of routines, you are afforded the opportunity 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 BHL package, specify the BHL namespace at the Routine(s)?> prompt.

<table>
<thead>
<tr>
<th>Option name</th>
<th>Menu text</th>
<th>Option description</th>
<th>Type of option</th>
<th>Lock (if any)</th>
</tr>
</thead>
</table>

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

### 12.2 Inquire Option

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

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

### 12.3 Print Option File

This utility generates a listing of options from the Option file (# 19). You can choose to print all of the entries in this file or you can specify a single option or range of options. For a list of BHL options, please refer to the Exported Options section of this manual.
12.4 **List File Attributes**

This VA FileMan option allows you 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:

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

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

- x Field name, number, title, and description
- x Global location
- x Help prompt
- x Cross-references
- x Input transform
- x Date last edited
- x Notes

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

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

For a comprehensive listing of the BHL package files, please refer to the Files section of this manual.
13.0 SAC Requirements / Exemptions

The following is a list of SAC exemptions:

“BHL” “DW” “IN” “IS” “UT” “XU” “ZI” “ZT”

GIS VERSION 3.01

2.1.4 Unsupported FM 21 Entry Point

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

<table>
<thead>
<tr>
<th>Routine</th>
<th>is invoked by</th>
</tr>
</thead>
<tbody>
<tr>
<td>^DICN</td>
<td>INHBLD, INHD, INHPSA, INHSYS05, INHFT, INHTUC3, INHVAM, INHVAX</td>
</tr>
<tr>
<td>EN^DICN</td>
<td>INHF, INHTUC1</td>
</tr>
<tr>
<td>NEW^DICN</td>
<td>INHF, INHTUC1</td>
</tr>
<tr>
<td>^DICOMP</td>
<td>INHMGD3, INHSG221, INHSGZ22, INHSZ21, INHSZ5</td>
</tr>
<tr>
<td>EN^DICOMP</td>
<td></td>
</tr>
<tr>
<td>INHDIA3</td>
<td></td>
</tr>
</tbody>
</table>

2.2.8 Vendor Specific Subroutines

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

Possible use of Vendor Specific Subroutine.

```
+93^INHPOST : S ^INTHOS(1,3)="D ^%ET"
+22^ZTFNMT : S XNOD=$G(XNOD) Q:'$L(XNOD) $ACTIVE^%ACTJOB(XJB)
+25^ZTFNMT : Q:XCURNOD=INOD $ACTIVE^%ACTJOB(XJB)
+60^ZTFNMT : S ^%ZTSCH("ACTIVE",XJB,0)=$ACTIVE^%ACTJOB(XJB)
+78^ZTFNMT : Q ' $$TERMINAL^%HOSTCMD("cd " X_">nul")
+116^ZTFNMT : S:$L(NAME) X=$$JOBWAIT^%HOSTCMD("delete "_NAME) ; Delete file
+152^ZTFNMT : Q:'$G(X) "" D:X>4 HIGH^%HL D:X<5 LOW^%HL
```

2.2.10 Naked Global References

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.
2.2.12.1 Z first letter of namespace routines, export prohibited

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

ZINETNTM should not be included in the package.
ZTFDTNTM should not be included in the package.
ZTFENTM should not be included in the package.
ZTOS should not be included in the package.

2.2.12.2 Creation of Local Routines

Exception request: All BHL files are named for valid HL7 Segments. Z segments are a part of HL7, therefore I would like to include the following BHLZ routines in the package.

BHLZ01I  BHLZDXI  BHLZP1I  BHLZP2I  BHLZP3I  BHLZP4I
BHLZPR  BHLZPRI  BHLZRAI  BHLZV1  BHLZV1I

2.3.1.4 SET OF DUZ ARRAY VARIABLES

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SUSPECT unconditional SET of DUZ or DUZ array.

DUZ=X, DUZ(0)="@" K DO
+127^INHVCVR : S DUZ=+$G(DUZ) N A S A=$G(\$UTL("XQ",\$J,0)) I
A,$D("XUSEC(0,A,0)") L +"XUSEC(0,A,0):1 I D SETDT^UTDT S
%=$P($H,"",2)\$P("XUSEC(0,A,0),U,4)=DT_%60#60/100+\%\#60/10000)/100 L -
"XUSEC(0,A,0)
+27^INTSTF : S DUZ=.5, DUZ(0)="@"

UTIL : ASKDUZ I "$G(DUZ) K DUZ S DIC(0)="$QAEM", DIC="^DIC(3," Y=-1
I $O("DIC(3,0)) D ^DIC G:($E(X)'[U&(Y<0)) ASKDUZ S:Y>0 DUZ=+Y

Technical Manual  17  SAC Requirements / Exemptions
July 2001
2.3.1.5.2 SET, KILL or NEW of Variable DT

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SUSPECT unconditional SET, KILL or NEW of Variable DT.

+51^INHMG2 : S DT=$P(LEN,U,2) S INFD(ID1,"SQ","DT")=$P($G
("INTHL7FT(DT,0),U,2)
+44^INHMSYS : D VAR^DWUTL,%ZIST I '($D(DT)#2) N DT S DT=$$DT^%ZTFDT()
;CMS SCOPES DT
+11^INHSYS : S INASK=+$G(INASK),INREPRT=1 I '($D(DT)#2) N DT S
DT=$$DT^%ZTFDT() ;CMS SCOPES DT
+17^INHSZ : S DT=$$DT^UTDT
+34^INHUTDT : S DT=$$DT Q
+15^INHVMTR : N DT,INENDTM,ER,L,INDSTR,INIP,INQP,INQT,INUIF,
LCT,LINE,INOK,SYSTEM,X,XXDFN,XXDTRDA,INIFOPH,INRUN,WAIT,INPNAME,INCEIS,XXNO
+96^UTDT : D ^XQDATE S DT=$P(,%)
+11^ZTFDTNMTM : I DT?1.N1","1.N!($L(DT)<7) S DT=$$CDATH2F(DT) ;Convert
DT to FileMan format

2.3.1.5.3 SET DTIME.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SUSPECT unconditional SET of DTIME.

+72^INHSZ1 : S A=A_"D SETDT^UTDT S:'$G(DUZ)
DUZ=.5,DUZ(0)="@",DUZ("AG")="",DTIME=1 S
(LCT,GERR)=0,INMODE="",INVS=$P("INRHSITE(1,0),U,12),INV=$S(INVS<2:""INV",
1:""UTILITY(""INV"",$J")""), (MULT,INSTERR)=0" D L
+36^INHULOG : S DTIME=$$DTIME(DUZ) Q:'$L(DTIME) "2"Incomplete User
record"
+161^INHUT7 : S U="",DUZ=.5,DUZ(0)="@",IO="",DTIME=1

2.3.2.3 KILL of unsubscripted global

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

+67^INHPCO1 : K ^INRHS S ^INRHS(0)="INTERFACE SCRIPT^4006"

2.3.2.4 % Global Nodes

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SET or KILL of %-Global Node.

+17^INHR : K:$D(ZTSK)^%ZTSK(ZTSK)
+33^INHR : K:$D(ZTSK)^%ZTSK(ZTSK)
+54^INHR : K:$D(ZTSK)^%ZTSK(ZTSK)
+60^ZTFNTM : S ^ZTSCH("ACTIVE","XJB,0")=$$ACTIVE^%ACTJOB(XJB)
+64^ZTFNTM : S ^ZTSCH("ACTIVE","XJB,0")=0

2.3.2.5 Use of ^UTILITY

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.
Possible SET of ^UTILITY (global.
+72^INHDIA :  S DR(DIAR,DI)=DR(DIAR,DI)_Y ;",DRS=DRS+1,DIAP=DIAP+1 I
$D(DIAB), Y=’Q’ S ^UTILITY($J,DIAP#1000,DIAR-1,DI,DIAP\1000)=DIAB
+30^INHE1 :  S ^UTILITY($J,1)=S(SE(POST)=’C’":D TOP\INHE1",1:"W @OF D
HEAD\INHE1"), I(0)="INHER (",J(0)=4003
+44^INHMGD2 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INERN)=+FILE(FLVL)_U_"Multiple "_INX_ does not exist"
+49^INHMGD2 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INERN)=+FILE(FLVL)_U_"FILE# MISSING***"
+36+INHMGD6 : ...S ^UTILITY("INHMGD",$J,"F",INF)=INAS
+41^INHMGD6 : ...S ^UTILITY("INHMGD",$J,"F",INF)=INDL
+84^INHMGD6 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"***NO DATA TYPE***"
+93^INHMGD3 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_INOLDX_" Unable to resolve or
missiing from Data Dictionary."
+123^INHMGD3 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"Multiple "_INX_ does not exist"
+39^INHMGD7 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"FILE# MISSING***"
+57^INHMGD7 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"INFC_" Unable to resolve or
missiing from Data Dictionary."
+62^INHMGD7 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"Missing "_INFLD_ or "_INFIL
_"+
+6^INHMGD7 : ...S
^UTILITY("INHMGD",$J,"E",INMSG,INSEG,INFLDC)=+FILE(FLVL)_U_"FLVL at -1"
+54+INHMSR :  S ^UTILITY($J,"INHR",4001)=1
+55+INHMSR :  S ^UTILITY($J,"INHR",4001,12)="
+56+INHMSR :  S ^UTILITY($J,"INHR",4001,01)="
+57+INHMSR :  S ^UTILITY($J,"INHR",4001,02)="
+58+INHMSR :  S ^UTILITY($J,"INHR",4001,1)="
+59+INHMSR :  S ^UTILITY($J,"INHR",4001,14)="
+60+INHMSR :  S ^UTILITY($J,"INHR",4001,11)="
+61+INHMSR :  S ^UTILITY($J,"INHR",4001,16)="
+62+INHMSR :  S ^UTILITY($J,"INHR",4001,08)="
+63+INHMSR :  S ^UTILITY($J,"INHR",4001,03)="
+64+INHMSR :  S ^UTILITY($J,"INHR",4001,5)="
+69+INHMSR :  S ^UTILITY($J,"INHR",4003)=1
+70+INHMSR :  S ^UTILITY($J,"INHR",4003,11)="
+71+INHMSR :  S ^UTILITY($J,"INHR",4003,04)="
+72+INHMSR :  S ^UTILITY($J,"INHR",4003,09)="
+73+INHMSR :  S ^UTILITY($J,"INHR",4003,1)="
+74+INHMSR :  S ^UTILITY($J,"INHR",4003,05)="
+75+INHMSR :  S ^UTILITY($J,"INHR",4003,06)="
+76+INHMSR :  S ^UTILITY($J,"INHR",4003,01)="
+77+INHMSR :  S ^UTILITY($J,"INHR",4003,02)="
+88+INHPCO : S ^UTILITY("INSAVE","GIS
PREP","REMEMBER")=INHPREP_U_$$NOW\%ZTFDT
+53+INHPAR :  S ^UTILITY("INHPAR",$J,INCH)="
+83+INHPAR :  D CRE(INCH,INBS),DEL(INCH) S
^UTILITY("INHPAR",$J,INCH)=""
^UTILITY($J,MS,DES,STAT,INC)=$G(^UTILITY($J,MS,DES,STAT,INC))+1
+98^INHRTH : . S
^UTILITY($J,DAY,DES,STAT,INT)=$G(^UTILITY($J,DAY,DES,STAT,INT))+1
+108^INHRTH : .F III=1:1:$L(ST) F IN=INC,INT S
+63^INHRTH : . S ^UTILITY($J,MSGDTTM,C)=$G(^UTILITY($J,MSGDTTM,C))+1
+65^INHRTH : . I DET S
^UTILITY($J,MSGDTTM,DES,STAT,C)=$G(^UTILITY($J,MSGDTTM,DES,STAT,C))+1 S:^(C)>DV DV=^(C)
+65^INHRTH : . S
^UTILITY($J,DTTM,T)=$G(^UTILITY($J,DTTM,T))+1 S:^(T)>DV DV=^(T)
+79^INHRTH : . S ^UTILITY($J,X,DES,$E(ST,III),IN)=0
+169^INHRTH : .S
^UTILITY($J,DAY,I)=$G(^UTILITY($J,DAY,I))+X
+169^INHRTH : .S
^UTILITY($J,DAY,I)=$G(^UTILITY($J,DAY,I))+X
+172^INHRTH : . S
^UTILITY($J,DTTM,T)=$G(^UTILITY($J,DTTM,T))+1 S:^(T)>DV DV=^(T)
+82^INHRTH : . S
^UTILITY($J,MSGDTTM,DES,STAT,T)=$G(^UTILITY($J,MSGDTTM,DES,STAT,T))+1 S:^(T)>DV DV=^(T)
+48^INHRTH : . S ^UTILITY($J,MSGDTTM,DES,STAT,T)=$G(^UTILITY($J,MSGDTTM,DES,STAT,T))+1 S:^(T)>DV DV=^(T)
+79^INHRTH : . S
^UTILITY($J,DTTM,T)=$G(^UTILITY($J,DTTM,T))+1 S:^(T)>DV DV=^(T)
2.3.4.2 Access to SSVN's restricted to Kernel.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

ROUTE^ZTFNTM : Q:'$L($G(X)) 0 Q 'S'D('S'R(X))

2.4.3.1 CLOSE command, DIRECT use is required.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

HALT+K INRHB("RUN",INBPN)
2.4.5.1 DIRECT use of the JOB command is prohibited.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

ACTIVE+17^ZTFNTM
  J ACTIVJ^%ZTF(XJB,XUCI,XVOL,XNOD)

2.4.6.2 KILL, exclusive use is prohibited

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

+8^INHOM : K (Ulf,XUAUDIT,XUTIMP,XUTIMT,XUTIMH,INBPN,INHSRVR)
+16^INHOS : K (INBPN,INHSRVR,INPNAME,XUAUDIT,Ulf,INDEV,
XUTIMP,XUTIMT,XUTIMH) S INDEV=$G(INDEV)
+11^INHOT : K (INBPN,INHSRVR,INPNAME,XUAUDIT,XUTIMP,XUTIMT,
XUTIMH,Ulf,MODE,INDEV) S INDEV=$G(INDEV)

2.4.7.2 Timeouts on Locks.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SUSPECT LOCK w/o timeout, or not +/-.
+22^INHBLD : S (INREQIEN,DA)=+Y L +^INTHU(DA) S ^UTIL(DUZ,ZZ)=INREQIEN
K A1 D NAME
+38^INHND : S DA=+Y L +^INTHU(DA)
+94^INHDH : S DA=+Y L +^INTHU(DA)
+127^INHDD : L +^INTHU("MESSID")
+23^INHDIA : L +"DIE K ^DIE(+) S ^(+Y,0)=X_U_DT_U_"@"_U_+%F_U_U_"

"@",^DIE("F" +%F,X,+Y)=l L +"DIE K ^UTILITY($J,"OV")"
+122^INHPOST : . L +"INLHFTSK(INTSK)
+53^INHS : S G=DIE_DA",,"_SS(+H=N:N,1,";;;;_N_;;;;") )" L +G
2.4.9.1 OPEN, DIRECT use is prohibited

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

2.4.10.2 All user input READs must have a timeout.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

2.4.11.1 USE, with parameters is prohibited

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

2.9.1.1 FileMan Utility Routine - DIR

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

Consider use of DIR instead of (suspected) READ.
9999 MISCELLANEOUS

1. Reference to routine that isn’t in this UCI.
   
   Routine                       Displacement
   INHERR  IHSJUMP+28    "XGABAR" routine that isn’t in this UCI.
   INHMS  BGNSRCH+72     "XGABAR" routine that isn’t in this UCI.
   INHPRE  ERR+2         "%ZTOS' routine that isn’t in this UCI.
   INHSYSE  PKG+9        "IN2TTC' routine that isn’t in this UCI.
   INPU1  ERRMSG+1       "%ZTOS' routine that isn’t in this UCI.
   INHULOG  LGNLOG+1     "%ZTOS' routine that isn’t in this UCI.
   INHUT3  ZISASK+22     "%ZTFS1' routine that isn’t in this UCI.
   OPENIT  "%ZTFS1' routine that isn’t in this UCI.
   INHUT4  PRINT+14      "%ZISPL' routine that isn’t in this UCI.
   INHUT7  SETENV+9      "%XUDIV' routine that isn’t in this UCI.
   INHUTC4  IHSJUMP+3    "XGARBAR" routine that isn’t in this UCI.
   INHVCRA  ERR+4        "%ZTOS' routine that isn’t in this UCI.
   INHVCRA1  LOGLOCI+3   "%ZTFS1' routine that isn’t in this UCI.
   INHVMTR  CLOSE+1      "%ZTFS1' routine that isn’t in this UCI.
   OPEN+3  "%ZTFS1' routine that isn’t in this UCI.
   ERR+1   "%ZTOS' routine that isn’t in this UCI.
   INHVTAPE  ERR+1       "%ZTOS' routine that isn’t in this UCI.
   INHVTM5  ERR+4        "%ZTOS' routine that isn’t in this UCI.
   INTST  ERR+1         "%ZTOS' routine that isn’t in this UCI.
   INTSTRT  START+4      "%ZIST' routine that isn’t in this UCI.
   SEL+16  "INTS' routine that isn’t in this UCI.
   INTSTRT1  QUERY+10    "INTS' routine that isn’t in this UCI.
   ZTFNTM  PRG+1        "%SAICOPS' routine that isn’t in this UCI.
   PRING+1  "%SAICOPS' routine that isn’t in this UCI.
   RMARGIN+2  "%SAICOPS' routine that isn’t in this UCI.
   ROUSIZE+1  "%SAICOPS' routine that isn’t in this UCI.
   ZH+2   "%SAICOPS' routine that isn’t in this UCI.
   SETPRIN+1  "%SAICOPS' routine that isn’t in this UCI.
   ET+1   "%ZET' routine that isn’t in this UCI.
   READ+1  "%ZTF1' routine that isn’t in this UCI.

2. Star or pound READ used.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

INHOA1
   W !,"More..." F X=1:1:INPAR("REPAINT") Q:INTASKED R *%:1 Q:$T
   OVF+2 S - Star or pound READ used.
3. Invalid local variable name.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

```
   FLATNAM+14^INTSUT3
..N $ET
```

4. Non-standard $Z special variable used.
Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

\textbf{INHSYSE}

\begin{verbatim}
S %NODE="^UTILITY($J)",$,ZT="ERR^INHSYSE"
SV2FLT+7    S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{INHSYSE}

\begin{verbatim}
S %RTNBFR="^UTILITY(""INHSYS"")",$,ZE="",$,ZT="ERR^INHSYSE"
RSFRFLT+4    S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{INHSYSE}

\begin{verbatim}
S X=\$CLOSESEQ^%ZTFSL1(INAME),$,ZT=""
ERR+1        S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{INHVZTE}

\begin{verbatim}
I IPS["C",$,ZE["CTRAP" Q 1 ; cks for CTRAP & CTRAPERR in DSM 6.3
ETYPE+1 13   S - Non-standard $Z special variable used.
I IPS["A",$,ZE["ALLOC" Q 1
ETYPE+1 14   S - Non-standard $Z special variable used.
I IPS["N",$,ZE["NOSYS" Q 1 ; NOSYS err may not exist in DSM 6.3
ETYPE+1 15   S - Non-standard $Z special variable used.
I IPS["D",$,ZE["DSTDB" Q 1 ; DSTDB err may not exist in DSM 6.3
ETYPE+1 16   S - Non-standard $Z special variable used.
I IPS["O",(($,ZE["DSM-E-READERR")!($ZE["DSM-E-DEVALLOC") Q 1
ETYPE+1 17   S - Non-standard $Z special variable used.
ETYPE+1 17   S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{INTSUT3}

\begin{verbatim}
..S $ZE="",$,ZT="ERR^INTSUT3"
FLATNAM+15   S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{ZINETNTM}

\begin{verbatim}
S $ZT="ERR" $T(+0)
OPEN+8        S - Non-standard $Z special variable used.
S $ZT="QUIT" $T(+0)
CLOSE+5       S - Non-standard $Z special variable used.
S $ZT="ERR" $T(+0)
SEND+6        S - Non-standard $Z special variable used.
S $ZT="ERR" $T(+0)
RECV+11       S - Non-standard $Z special variable used.
..I ZITO,$ZC S ZIX(0)="Socket closed: MSM Error $ZB="_ZB,ZIX="" Q
RECV+28       S - Non-standard $Z special variable used.
I $ZE["<DSCON" S ZIX(0)="Remote end disconnected" X:$G(ZICHAN) "C 56:ZICHAN S
ZICHAN="""" U:INDI]"" INDI Q
ERR+1        S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{ZTFNTM}

\begin{verbatim}
I IPS["C",$,ZE["INRPT" Q 1
ETYPE+13      S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{ZTFNTM}

\begin{verbatim}
I IPS["A",$,ZE["PGMOV" Q 1
ETYPE+14      S - Non-standard $Z special variable used.
I IPS["N",$,ZE["NOSYS" Q 1
ETYPE+15      S - Non-standard $Z special variable used.
I IPS["D",$,ZE["DSTDB" Q 1
ETYPE+16      S - Non-standard $Z special variable used.
I IPS["O",$,ZE["NOPEN" Q 1
ETYPE+17      S - Non-standard $Z special variable used.
I IPS["V",$,ZE["NODEV" Q 1
ETYPE+18      S - Non-standard $Z special variable used.
\end{verbatim}

\textbf{ZTNMTM}

\begin{verbatim}
I X="C",$,ZE["INRPT" S %=1
ETYPE+5       S - Non-standard $Z special variable used.
I X="A",$,ZE["PGMOV" S %=1
ETYPE+6       S - Non-standard $Z special variable used.
Q $ZV
OS+1 S - Non-standard $Z special variable used.
S $ZT="UCICHK1" N V
UCICHECK+1 S - Non-standard $Z special variable used.
N EC S EC="" I $G(C) S EC=$TR($P($ZE,"":"",4,5),"":"") S:EC
EC=$P($T($EC"%ERRCODE),"":"",2)
ZE+2 S - Non-standard $Z special variable used.
Q $ZE_EC
ZE+3 S - Non-standard $Z special variable used.
ZTOS
Q $ZE
GETERR+1 S - Non-standard $Z special variable used.

5. Undefined Special Variable.

Exception request: The following software was provided to IHS by SAIC. After discussion with Frank Wilcox at SAIC, the following exceptions to the IHS SAC are required.

SV2FLT+7\INHSYSE
S %NODE="\UTILITY($J)"$,ZT="ERR\INHSYSE"
RSFRFLT+4\INHSYSE
S %RTNBFR="\UTILITY("\INHSYS"",$,ZE="",$,ZT="ERR\INHSYSE"
ERR+1\INHSYSE
S X=$$CLOSESEQ\ZTFS1(INAME),$,ZT=""
14.0 Glossary

Archiving
The storing of historical or little-used data off-line (often on tape).

Banner
A line of text with a user's name and domain.

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.

Entry Point
Entry point within a routine that is referenced by a "DO" or “GOTO” command from a routine internal to a package.

Event Type
A message that is sent that signifies a particular event on the system. (i.e., an admit, discharge, etc.)

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).

HL7
Health Level Seven

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).
**Internal Entry Number (IEN)**

The number used to identify an entry within a file. Every record has a unique internal entry number.

**ITSC**

Information Technology Support Center. 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.

**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.

**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.

**Segment**

An element in an HL7 message that identifies and contains particular pieces of data.

**UCI**

User Class Identification: a computing area.
Up-Hat (A)
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.