RESOURCE AND PATIENT MANAGEMENT SYSTEM

Dental/EDR Interface

(BADE)

Installation Guide & Release Notes

Version 1.0
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Division of Information Resource Management
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DOCUMENT REVISION HISTORY

Date of Change	Location of Revision	Revision
05/2009		First published
06/2009		Updated with currently installation sample and other corrections
2/2010		Updated to BADE t6k Build

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Preface

This manual provides information regarding the release and installation of the Dental/EDR (Electronic Dental Record) Interface package enabling the set up and running of the interface.

1.0   Release Notes

The Dental/EDR interface is the way to send data bi-directionally from the Electronic Dental Record (EDR) to the Resource and Patient Management System (RPMS). The EDR was designed to meet the needs of the dental program. The interface is used to send patient and provider data from RPMS to the EDR for accuracy of patient records. Dental procedure information is sent back to populate and complete patient records in Patient Care Component (PCC).

This installation is the first phase in sending data between the two systems. This version of the software includes:

- An initial upload of all living patients to the EDR.

- An initial upload of all dentists to the EDR.

- Sending in real time new patient registrations.

- Sending in real time patient updates.

- Sending in real time dental provider additions and updates.

- Receiving in real time dental procedure information for the V DENTAL file.

- Installation sets the Registration Trigger in the PROTOCOL file to an inactivated state. After the Initial Patient Upload and the Provider Upload is completed, the BADE Protocols must be activated to support normal registration activity. See the EDR GOBY directions for further details.

- Although this RPMS BADE application was designed to be fully operational without the use of the Ensemble Integration Engine for the transport of EDR HL7 messages, BADE has only been verified and released to use with the EIE component.

Since the interface uses the HLO options, which are part of the HL7 version 1.6 application, the user must be familiar with the following documents:

- VistA HL7 – Optimized (HLO) Installation Manual /Release Notes (hl_1_6_126_ig.pdf).
- VistA HL7 – Optimized (HLO) Technical Manual (hl_1_6_126_tm.pdf).
These manuals help the user navigate the HLO menus and options, and may be found at http://www.va.gov/vdl.

2.0   Installation Notes

- Prefix: BADE
- Current Version: 1.0
- Warning: Read entire notes file prior to attempting any installation

2.1   General Information

- Make a copy of this distribution for offline storage.
- Print all notes and readme files.
- Capture the terminal output during the installation using an auxport printer attached to the terminal at which you are performing the software installation. This will insure a printed audit trail should any problems arise.

2.2   Contents of Distribution

- bade0100.k – KIDS file
- bade010i.pdf– Installation guide and Release notes
- bade010t.pdf – Technical manual
- bade010u.pdf – User manual

2.3   Required Resources

- Kernel v8.0 patch 1015 or higher
- FileMan v22 patch 1002 or higher
- Ensemble v2009.1.2 or later
- XB/ZIB Utilities Version 3.0 patch 11 or later
- HL7 Version 1.6 patch 1006 or later
- AG__0710 Patch 5 or later
- AVA 93.2 patch 19 or later
- IHS PCC SUITE version 2.0 or later

3.0   Installation Instructions

3.1   Pre-Installation

There is no pre-installation preparation necessary for the Dental/EDR Interface package.

3.2   Installation

- Under KIDS, load then install bade0100.k
- Answer YES to all "Want to continue installing this build?" questions
- Answer YES to the menu rebuild
- Answer NO to the other questions

3.3   Set Up Post-Installation HL7

This setup is ONLY for sites running Ensemble (Figure 4-1). For any other system, see the VistA HL7–Optimized (HLO) Installation Manual/Release Notes (hl_1_6_126_ig.pdf) document for further instructions on HLO setup.

```
    Event monitoring menu ...
    Systems Link Monitor
    Filer and Link Management Options ...
    Message Management Options ...
    Interface Developer Options ...
    Site Parameter Edit
 HLO  HL7 (Optimized) MAIN MENU ...
```

Figure 4-1: Post-Installation HL7

The HL7 main menu should look like the menu above. If the HLO menu is not there, the site is missing HL patch 1006.

3.3.1   Edit Logical Links

In Figure 4-2, choose the interface Developer Options and then type **EL** (Edit Link).

```
  EA    Application Edit
  EP    Protocol Edit
  EL    Link Edit
  VI    Validate Interfaces
    Reports ...
```

Figure 4-2: Edit Link

3.3.1.1 The OUTBOUND LINK

The outbound link was included in the KIDS build. The site must enter its own DNS DOMAIN in Figure 4-3, and click the LLP TYPE to proceed to the next screen.

Figure 4-3: DNS Domain

Figure 4-4 is an EXAMPLE ONLY. Sites must fill in the IP address and port where the messages are being sent.
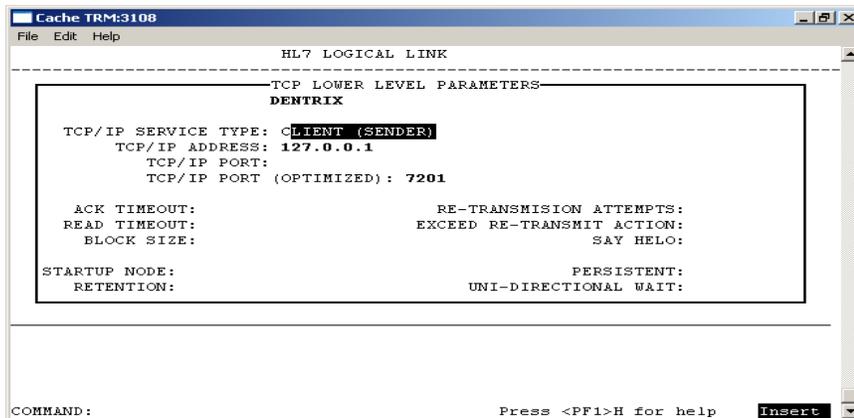
Figure 4-4: IP Address and Port

3.3.1.2 The INBOUND LINK

HLO has only one inbound link for ALL applications. If the site is using E-prescribing, this link is already configured. The name of this link is HLO RPMS.

Set up the site DNS DOMAIN and click LLP TYPE.

Figure 4-5 is an example for a test server:

Figure 4-5: Example for Test Server

The standard port for this is set to 5001 for production servers and 5026 for test servers (Figure 4-6). Use caution when changing this port.
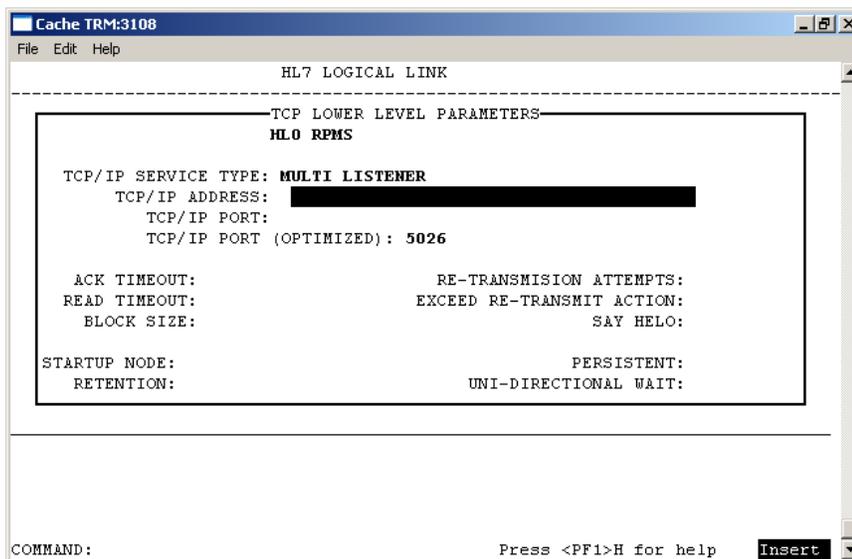
Figure 4-6: Standard Port for Test Server

3.3.2   HLO System Parameters File (779.1)

- Check and edit the HLO SYSTEM PARAMETERS file in FileMan.
- Make sure the site's domain and station number are correct.
- Turn HLO off.

- Enter HLO RPMS as the standard listener.

Figure 4-7 shows an example of these settings:

```
Select HLO SYSTEM PARAMETERS DOMAIN NAME: HL7.DEMO.EDR.COM
DOMAIN NAME: HL7.DEMO.EDR.COM Replace
STATION NUMBER: 808701//
PRODUCTION ID: production//
MAXIMUM STRING LENGTH: 512//
BUFFER SIZE FOR HL7 (BYTES): 15000//
BUFFER SIZE FOR USER (BYTES): 5000//
NORMAL MSG RETENTION (HOURS): 36//
BAD MESSAGE RETENTION (DAYS): 7//
HLO ON/OFF SWITCH: ?
   Set to 0 to turn off messaging and all HL7 processes.
   Choose from:
    0    OFF
    1    ON
HLO ON/OFF SWITCH: 0 OFF
HLO STANDARD LISTENER: HLO RPMS
```
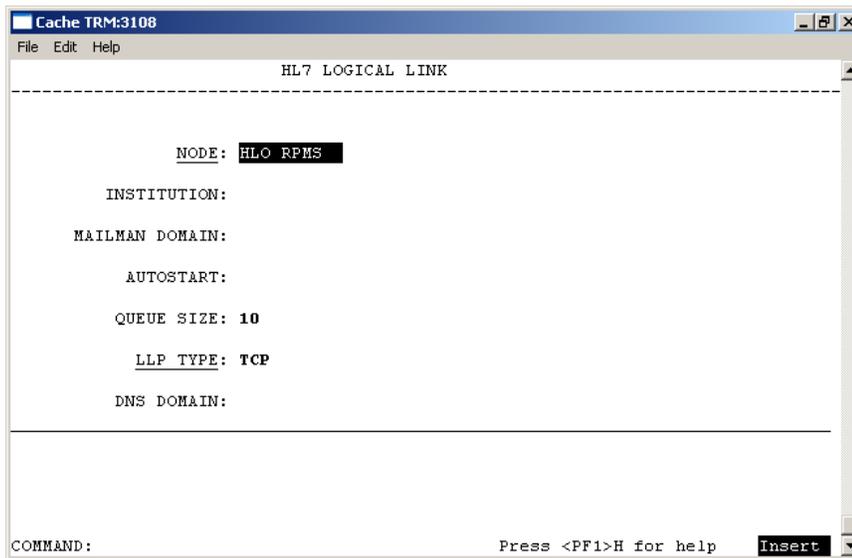
Figure 4-7: HLO System Parameters File

3.3.3   Set Up the HLO Application

- First select the HLO setup on the HL7 Main Menu.
- Next select APPS – HLO Application Registry.

```
  SM    HLO SYSTEM MONITOR
  MV    HLO MESSAGE VIEWER
  APPS  HLO APPPLICATION REGISTRY
  STAT  HLO MESSAGE STATISTICS
```

Figure 4-8: HLO Application Setup

The application RPMS-DEN was included in the KIDS build. Review the application for any problems.

```
Select HLO APPLICATION REGISTRY APPLICATION NAME: RPMS-DEN
APPLICATION NAME: RPMS-DEN//
Package File Link: DENTAL//
APPLICATION SPECIFIC LISTENER:
RESPONSE LINK (OPTIONAL): DENTRIX
DEFAULT PRIVATE IN-QUEUE: DENTRIX RPMS//
DEFAULT ACTION TAG: ERR//
DEFAULT ACTION ROUTINE: BADEHL1//
BATCH PRIVATE IN-QUEUE:
BATCH ACTION TAG:
BATCH ACTION ROUTINE:
Select HL7 MESSAGE TYPE: DFT//
 HL7 MESSAGE TYPE: DFT//
 HL7 EVENT: P03//
 PRIVATE IN-QUEUE: CHARGE RPMS//
 ACTION TAG: PROC//
 ACTION ROUTINE: BADEHL3//
Select HL7 MESSAGE TYPE:
```

Figure 4-9: RPMS-DEN in KIDS Build

3.3.4   Set Up the HLO PROCESS REGISTRY File (779.3)

- Set the ACTIVE Field (02) to YES, Figure 4-10.
- Set the DEDICATED LINK field (.14) to the site's listener link.

System Type	HLO Process Registry Entry
Cache on Open VMS DSM on Open VMS	VMS TCP LISTENER
Cache on NT Other M systems	TASKMAN MULTI-LISTENER
COTS interfaces unable to use a multi-listener	SINGLE LISTENER

```
Select HLO PROCESS REGISTRY PROCESS NAME:  TASKMAN MULTI-LISTENER
PROCESS NAME: TASKMAN MULTI-LISTENER Replace
ACTIVE: YES//
MINIMUM ACTIVE PROCESSES: 1//
MAXIMUM ACTIVE PROCESSES: 1//
SCHEDULING FREQUENCY (minutes): 30//
DT/TM LAST STARTED OR STOPPED: FEB 3,2005@06:07:05
     //
HANG TIME (seconds): 0//
GET WORK FUNCTION (TAG): GETWORK//
GET WORK FUNCTION (ROUTINE): HLOSRVR//
DO WORK FUNCTION (TAG): DOWORKM//
DO WORK FUNCTION (ROUTINE): HLOSRVR//
MAX TRIES FINDING WORK: 9999//
PERSISTENT: NO//
DEDICATED LINK: HLO RPMS//
VMS TCP SERVICE: NO//
```

Figure 4-10: HLO PROCESS REGISTRY File Setup

3.4   Assign Security Keys

Three security keys are available for interface users:

- BADEZMGR─Given to those who need access to both menus for the initial upload and the maintenance of the interface.
- BADEZUPL─Given to those who are doing the initial patient and provider upload.
- BADEZSN─Given to those responsible for sending or resending individual messages.

3.5   Set Up the Parameters

There are several site-configurable parameters available from the menus (Figure 4-16). The Main menu is locked with the BADEZMGR key.

```
Select OPTION NAME: BADE EDR MAIN MENU     Dental Interface Main Menu

  UPL  Dental Interface Upload Menu ...
  MAN  Dental Interface Management ...
```

Figure 4-11: Main Menu

The Upload menu, Figure 4-17, is for the initial upload of patient and provider data, and is locked with the BADEZUPL key. The menu is listed below, including the parameters that must be reviewed. See the *RPMS-EDR User Manual* for a full description of how to use these options.

```
  UAP  Load all Patients
  PUP  Pause Patient Load
  RUP  Restart Patient Upload
  UPV  Upload All Providers
  PPV  Pause Provider Upload
  RPV  Restart Provider Upload
  DSP  Display Progress
  ERR  List of patients with errors
  ERRP  List of providers with errors
  TCT  Pt Count for Throttle action
  THR  Throttle Patient Upload
```

Figure 4-12: Upload Menu

Other parameters are on the Dental Interface Management Menu, shown in Figure 4-18, which is locked with the BADEZSND key. The menu is below:

```
  A28  Send a single A28 Message
  A31  Send a single A31 Message
  MFN  Send an MFN Message
  ACK  Send an ACK
  CLN  Default Clinic for Interface
  DEFT  Default Time for Dental Visit
  REP  Reprocess an Inbound HL7 Message
  RES  Resend Outbound HL7 Message
```

Figure 4-13: Dental Interface Management Menu

3.5.1   TCT–Pt Count for Throttle Action (BADE EDR THROTTLE CT)

This parameter on the Upload menu, shown in Figure 4-19, determines how many patients to process before the computer checks to see if it should stop or hold for a few seconds before continuing. The default value is set at ten. The maximum count is 1000.

```
          Pt Count for Throttle Action
--- Setting Patient Load Throttle Count for System: DEMO.EDR.COM ----
Patient Load Throttle Ct: 10//
```

Figure 4-14: Pt Count for Throttle Action

3.5.2   THR–Throttle Patient Upload (BADE EDR PT THROTTLE)

This parameter on the Upload menu, shown in Figure 4-20, controls the number of seconds the interface holds before it continues processing patients after the THROTTLE COUNT is met. The default value is zero. The maximum number is 20.

```
          Throttle Patient Upload
------- Setting Patient Load Throttle for System: DEMO.EDR.COM ------
Patient Load Throttle: 1//
```

Figure 4-15: Throttle Patient Upload

3.5.3   PUP–Pause Patient Load (BADE EDR PAUSE PATIENT LOAD)

If this parameter located on the Upload menu, shown in Figure 4-21, is set to YES, the patient upload stops when the next THROTTLE COUNT is met. The default is set to YES until the initial upload is started. The patient load and restart options check this parameter, and if it is NO, they will not run assuming the load is already running.

```
            Pause Patient Load
----- Setting Stop Dental Patient Load for System: DEMO.EDR.COM -----
Pause Dental Patient Load: YES/
```

Figure 4-16: Pause Patient Load

3.5.4   PPV–Pause Provider Upload (BADE EDR PAUSE PROV UPLOAD)

If this parameter located on the Upload menu, shown in <u>Figure 4-22</u>, is set to YES, the provider upload stops after the next provider is processed. The default is set to YES until the initial upload is started. The provider load and restart options check this parameter, and if it is NO, they will not run assuming the load is already running.

```
            Pause Provider Upload
-------- Setting Stop Provider Load for System: DEMO.EDR.COM --------
Value: YES//
```

Figure 4-17: Pause Provider Upload

3.5.5   CLN–Default Clinic for Interface (BADE EDR DEFAULT CLINIC)

This parameter located on the Manager menu, shown in <u>Figure 4-23</u>, enables sites wanting to see these visits in the EHR to set up a default dental clinic under which to store the visits. This default clinic is only be used if the clinic is not sent in the message.

```
Dental Interface hospital location may be set for the following:

    80 Division   DIV  [EDR]
    90 System     SYS  [DEMO.EDR.COM]

Enter selection: 90 System  DEMO.EDR.COM

- Setting Dental Interface hospital location for System: DEMO.EDR.COM -
Hospital Location for Visit: DENTAL
    1   DENTAL
    2   DENTAL WALKIN
CHOOSE 1-2: 1 DENTAL
```

Figure 4-18: Default Clinic for Interface

3.5.6   DEFT Default Time for Dental Visit (BADE EDR DEFAULT TIME)

This parameter located on the Manager menu, shown in Figure 4-24, enables sites to set a default time for visits coming from the EDR. The EDR Dental application does not pass a Visit Time in the HL7 DFT message. This parameter is used if the site wishes to have a default Visit time other than 12 noon. If nothing is entered, a default time of 12:00 noon is assigned to visits.

```
          Default Time for Dental Visit
--------- Setting Default visit time for System: DEMO.EDR.COM ---------
DEFAULT TIME: 1138//
```

Figure 4-19: DEFT Default Time for Dental Visit

3.6   Mail Group

A new mail group named RPMS DENTAL, shown in Figure 4-25, is included in the KIDS build. This mail group receives notifications when there is an error in message processing. Be sure to set up this mail group and include as members those who would be fixing and reprocessing messages that contain errors.

```
Select MAIL GROUP NAME: RPMS DENTAL
ANOTHER ONE:
STANDARD CAPTIONED OUTPUT? Yes//  (Yes)
Include COMPUTED fields: (N/Y/R/B): NO// - No record number (IEN), no Computed
 Fields

NAME: RPMS DENTAL              TYPE: public
 COORDINATOR: USER,ONE
MEMBER: USER,ONE
 ORGANIZER: USER,ONE
```

Figure 4-20: RPMS DENTAL Mail Group

4.0   Sample Installation

This section includes sample installation steps. This is a new package with all new routines, so there should not be anything on the system to be backed up or compared.

Also, no options need to be taken out of service because the components to be added will not be directly added to any options. Be sure to do the menu rebuild, Figure 5-1, because several new menus and options are added.

```
Select Kernel Installation & Distribution System Option:
     Edits and Distribution ...
     Utilities ...
     Installation ...  <- Choose this one
```

Figure 5-1: Installation Options

4.1   Select Kernel Installation and Distribution System Option: Installation

```
   1   Load a Distribution
   2   Verify Checksums in Transport Global
   3   Print Transport Global
   4   Compare Transport Global to Current System
   5   Backup a Transport Global
   6    Install Package(s)
      Restart Install of Package(s)
      Unload a Distribution
```

Figure 5-2: Kernel Installation and Distribution System Option

4.2   Load a Distribution

In Figure 5-3, load the distribution from wherever it resides on the server.

```
Select Installation Option: 1 Load a Distribution
Enter a Host File: c:\temp\bade0100.k

KIDS Distribution saved on May 22, 2009@13:19:36
Comment: IHS DENTRIX Interface v1.0

This Distribution contains Transport Globals for the following Package(s):
 DENTAL/EDR INTERFACE 1.0
OK to continue with Load? NO// y YES

Distribution OK!

Want to Continue with Load? YES//
Loading Distribution...

Build DENTAL/EDR INTERFACE 1.0 has an Environment Check Routine
Want to RUN the Environment Check Routine? YES//
 DENTAL/EDR INTERFACE 1.0
Will first run the Environment Check Routine, BADEEC01

Use INSTALL NAME: DENTAL/EDR INTERFACE 1.0 to install this Distribution.
```

Figure 5-3: Loading a Distribution

4.3   Verify Checksums

Select Item 2 (Figure 5-4) and verify Figure 5-5: Installation Option Install Package. Checksums are listed below.

```
   1   Load a Distribution
   2   Verify Checksums in Transport Global
   3   Print Transport Global
   4   Compare Transport Global to Current System
   5   Backup a Transport Global
   6    Install Package(s)
      Restart Install of Package(s)
      Unload a Distribution
Select Installation Option: 2 Verify Checksums in Transport Global
```

Figure 5-4: Verify Checksums in Transport Global

4.4   Install Package

Select Item 6 and install the package (Figure 5-5). There is an environment check and the package will not install if other patches are missing.

```
Select Installation Option: 6 Install Package(s)
Select INSTALL NAME:  DENTAL/EDR INTERFACE 1.0   Loaded from Distribution
Loaded from Distribution 6/16/09@12:18:27
   => IHS DENTRIX Interface v1.0 ;Created on May 22, 2009@13:19:36

This Distribution was loaded on Jun 16, 2009@12:18:27 with header of
  IHS DENTRIX Interface v1.0 ;Created on May 22, 2009@13:19:36
  It consisted of the following Install(s):
DENTRAL/EDR INTERFACE 1.0
Checking Install for Package DENTAL/EDR INTERFACE 1.0
Will first run the Environment Check Routine, BADEEC01

Install Questions for DENTAL/EDR INTERFACE 1.0

Incoming Files:

  779.2   HLO APPLICATION REGISTRY (including data)
Note: You already have the 'HLO APPLICATION REGISTRY' File.
I will OVERWRITE your data with mine.

Incoming Mail Groups:

Enter the Coordinator for Mail Group 'RPMS DENTAL': USER,ONE OU
 CLINICAL COORDINATOR

Want KIDS to Rebuild Menu Trees Upon Completion of Install? YES// NO

Want KIDS to INHIBIT LOGONs during the install? YES// NO
Want to DISABLE Scheduled Options, Menu Options, and Protocols? YES// NO
Enter the Device you want to print the Install messages.
You can queue the install by enter a 'Q' at the device prompt.
Enter a '^' to abort the install.

DEVICE: HOME//  CONSOLE
 Install Started for DENTAL/EDR INTERFACE 1.0:
       Jun 16, 2009@12:21:42

Build Distribution Date: May 22, 2009

 Installing Routines         Jun 16, 2009@12:21:42

 Running Pre-Install Routine: PRE^BADEEC01
 Installing Data Dictionaries:       Jun 16, 2009@12:21:42

 Installing Data:          Jun 16, 2009@12:21:42

 Installing PACKAGE COMPONENTS:

 Installing SECURITY KEY
 Installing HL LOGICAL LINK
 Installing PROTOCOL
 Installing OPTION
 Installing PARAMETER DEFINITION       Jun 16, 2009@12:21:42


 Running Post-Install Routine: POST^BADEEC01
```

```
 Updating Routine file
 Updating KIDS files
 DENTAL/EDR INTERFACE 1.0 Installed.
         Jun 16, 2009@12:21:42

 NO Install Message sent

Install complete
```

Figure 5-5: Installation Option Install Package

4.5   Checksums

Routine Name	Checksum Value
BADEEC01	2982224
BADEEVNT	6439828
BADEHL1	11928761
BADEHL2	6339802
BADEHL3	16370983
BADEHL4	9278370
BADEHLI	18832086
BADEHLZ	6070181
BADESND	2310088
BADEUTIL	285862
BADEVNT1	9343849

5.0 Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

Phone: (505) 248-4371 or (888) 830-7280 (toll free)

Fax: (505) 248-4363

Web: http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm

Email: support@ihs.gov