



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Electronic Dental Record

(EDRI)

EIE Technical Manual

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Preface

The purpose of this manual is to provide technical information about the Ensemble Interface Engine (EIE) package. The EIE package is designed to facilitate data exchange between the Resource and Patient Management System (RPMS) and the Electronic Dental Record (EDR) system and to provide administrators a portal for monitoring and managing the EIE production.

1.0 Introduction

For over a decade, hospitals and health centers of the Indian Health Service (IHS) and numerous tribal health programs have utilized an information system called the Resource and Patient Management System (RPMS). The RPMS is a highly integrated system consisting of some 50 healthcare and administrative applications. Virtually all of these applications directly interact with one or more, and sometimes many, of the other RPMS applications.

During this same period, IHS and tribal dental programs have made use of the RPMS Dental Data System (DDS) as their primary system for maintaining a history of individual patient services; contributing dental data to the RPMS electronic clinical record; producing provider and department workload data; and contributing statistical data to the national data center located in Albuquerque, New Mexico. At many sites, data captured in the DDS has also been utilized in the RPMS Third Party Billing System.

With the replacement of the RPMS Dental Data System with an Electronic Dental Record (EDR), it is required that RPMS applications interact with the EDR to meet the needs of both the Dental Department and the local health program as a whole.

This manual provides IHS site managers with a technical description of the Ensemble Interface Engine (EIE) classes and other necessary information required to effectively manage the system.

All classes are namespaced starting with the letters BADE.

2.0 Orientation

The EIE interface requires no direct user interaction. The only preparation required to run the EIE interface is to install the Ensemble project, assign the appropriate EDR port numbers, and start the production. The interface will run in the background, exchanging data between the two systems.

The EIE management portal can be accessed by entering a specific URL into the web browser. After logging in, the user will be able to manage the EIE production as well as user security.

3.0 Implementation and Maintenance

The EIE system is designed to work with RPMS through Health Level 7 Optimized (HLO) globals and with EDR through transmission control protocol (TCP) connections.

3.1 System Requirements

Module	Minimum Version
Ensemble	2009.1
Internet Explorer	6.0

3.2 Management Portal Resources

Feature	Resource/Privilege Pair Required
Management Portal	BADE_Portal
Start/stop production Change production settings	BADE_Production
View error log	BADE_Errors
View message browser View message detail	BADE_MessageView
Edit and resend message	BADE_MessageResend
View, add, edit, delete users View, add, edit, delete roles	BADE_Security
View, add, edit, delete alert e-mail addresses	BADE_Email

4.0 Menu Options

Menu option	Description
Production Monitor	Displays a dashboard showing information about the state of the production. With the appropriate security level, allows the user to start or stop the production and to modify certain production settings.
Error log	Displays a log of EIE errors and detail about a selected error.
Message Browser	Displays EIE messages and detail about a selected message. With the appropriate security level, allows the user to edit and resend a message.
Manage Users	Displays the users defined in the system. Allows the user to add, edit, and delete users and to assign roles to users.
Manage Roles	Displays the roles defined in the system. Allows the user to add, edit, and delete roles and to assign resources to roles.
Manage E-mail Addresses	Displays the e-mail addresses to which alerts will be sent. Allows the user to add, edit, and delete alert e-mail addresses.

5.0 Classes

5.1 Class List

Class	Namespace
BADE.Adapters.EmailOutbound	ENSRPMS
BADE.Adapters.HLOGlobalInbound	ENSRPMS
BADE.Adapters.HLOGlobalOutbound	ENSRPMS
BADE.AlertEmailAddress	ENSRPMS
BADE.Alerts.AlertLog	ENSRPMS
BADE.DataModel.EmailModel	ENSRPMS
BADE.DataModel.ErrorModel	ENSRPMS
BADE.DataModel.MessageModel	ENSRPMS
BADE.DataModel.ProductionModel	ENSRPMS
BADE.DataModel.RoleModel	%SYS
BADE.DataModel.UserModel	%SYS
BADE.Install	ENSRPMS
BADE.Operations.EmailAlerts	ENSRPMS
BADE.Operations.RPMS	ENSRPMS
BADE.Processes.AlertProcesses	ENSRPMS
BADE.Services.EDR	ENSRPMS
BADE.Services.RPMS	ENSRPMS
BADE.Zen.Application	ENSRPMS, %SYS
BADE.Zen.ErrorLog	ENSRPMS
BADE.Zen.Home	ENSRPMS
BADE.Zen.Login	ENSRPMS
BADE.Zen.ManageEmail	ENSRPMS
BADE.Zen.ManageRoles	%SYS
BADE.Zen.ManageUsers	%SYS
BADE.Zen.MessageBrowser	ENSRPMS
BADE.Zen.ProductionMonitor	ENSRPMS
BADE.Zen.Template	ENSRPMS, %SYS

5.2 Classes with Description

Routine	Description
BADE.Adapters.HLOGlobalInbound	EIE adapter reading HL7 messages from the RPMS HLB and HLA global nodes.
BADE.Adapters.HLOGlobalOutbound	EIE adapter writing HL7 messages to the RPMS HLB and HLA global nodes.
BADE.AlertEmailAddress	Persistent class containing the alert e-mail addresses.

Routine	Description
BADE.Alerts.AlertLog	Persistent class containing the alerts that have been sent (via e-mail).
BADE.DataModel.EmailModel	Data model of the BADE.AlertEmailAddress class.
BADE.DataModel.ErrorModel	Data model of the Ens.Util.Log class.
BADE.DataModel.MessageModel	Data model of the Ens.MessageHeader class.
BADE.DataModel.ProductionModel	Data model of various production data.
BADE.DataModel.RoleModel	Data model of the Security.Roles class.
BADE.DataModel.UserModel	Data model of the Security.Users class.
BADE.Install	Contains a method to set up EIE resources and default production settings.
BADE.Operations.RPMS	EIE operation sending HL7 messages to the RPMS system via the BADE.Adapters.HLOGlobalOutbound adapter.
BADE.Processes.AlertProcess	EIE process logging the alert and determining whether to send an e-mail in response to the alert.
BADE.Services.EDR	EIE service receiving HL7 messages from the DENTRIX system.
BADE.Services.RPMS	EIE service receiving HL7 messages from the RPMS system.
BADE.Zen.Application	The Zen application for the EIE management portal.
BADE.Zen.ErrorLog	Zen page for viewing EIE errors.
BADE.Zen.Home	Home page for the EIE management portal.
BADE.Zen.Login	Login page for the EIE management portal.
BADE.Zen.ManageEmail	Zen page for maintaining alert e-mail addresses.
BADE.Zen.ManageRoles	Zen page for maintaining roles and their associated resources.
BADE.Zen.ManageUsers	Zen page for maintaining users and their associated roles.
BADE.Zen.MessageBrowser	Zen page for viewing and resending EIE messages.
BADE.Zen.ProductionMonitor	Zen page for viewing information about the status of the EIE production and for modifying production settings.
BADE.Zen.Template	Zen template providing common page elements to sub-classed pages.

5.3 Method List

5.3.1 BADE.Adapters.HLBGlobalInbound.OnTask

This method reads the HL7 information from the HLB and HLA global nodes. It is invoked from the associated Business Service.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the HL7 message(s) to the business service that initiated the method.

5.3.2 **BADE.Adapters.HLBGlobalOutbound.FileMessage**

This method writes HL7 information into the HLB and HLA global nodes as messages are received. It is invoked from the associated Business Operation.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the HL7 message(s) written to the HLB and HLA global nodes

5.3.3 **BADE.DataModel.EmailModel.%OnOpenSource**

This method instantiates the corresponding BADE.AlertEmailAddress object. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pID: ID assigned to the data controller
 - pConcurrency: Optional flag used when the data source is persistent
 - pSC: Returns the status
- Output Description:
 - Returns the OREF of the instantiated e-mail object

5.3.4 **BADE.DataModel.EmailModel.%OnSaveSource**

This method saves an instance of the data source object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the data source object
- Output Description:
 - Returns the status of the save

5.3.5 **BADE.DataModel.EmailModel.%OnNewSource**

This method creates a new instance of the BADE.AlertEmailAddress object. It is invoked automatically when the associated data controller's createNewObject method is invoked.

- Input Parameter Description:
 - pSC: Outputs the status of the method
- Output Description:
 - Returns the OREF of the new object

5.3.6 **BADE.DataModel.EmailModel.%onDeleteSource**

This method deletes the corresponding BADE.AlertEmailAddress object. It is automatically invoked when the associated data controller's deleteId method is invoked.

- Input Parameter Description:
 - pID: ID of the object to be deleted
- Output Description:
 - Returns the status of the delete

5.3.7 **BADE.DataModel.EmailModel.%OnLoadModel**

This method loads the values from the BADE.AlertEmailAddress object into the corresponding properties of the data model. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pSource: OREF of the BADE.AlertEmailAddress object
- Output Description:
 - Returns the status

5.3.8 **BADE.DataModel.EmailModel.%OnStoreModel**

This method saves the values from the data model into the corresponding properties of the BADE.AlertEmailAddress object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:

- pSource: OREF of the BADE.AlertEmailAddress object
- Output Description:
 - Returns the status

5.3.9 BADE.DataModel.ErrorModel.%OnOpenSource

This method instantiates the corresponding Ens.Util.Log object. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pID: ID assigned to the data controller
 - pConcurrency: Optional flag used when the data source is persistent
 - pSC: Returns the status
- Output Description:
 - Returns the OREF of the loaded error log object

5.3.10 BADE.DataModel.ErrorModel.%OnSaveSource

This method acts as a placeholder for any actions to be performed when the data source is saved. It does not save an error to the event log. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource OREF of the data source object
- Output Description:
 - Returns the status of the save

5.3.11 BADE.DataModel.ErrorModel.%OnNewSource

This method creates a new instance of the Ens.Util.Log object. It is invoked automatically when the associated data controller's createNewObject method is invoked.

- Input Parameter Description:
 - pSC Outputs the status of the method
- Output Description:
 - Returns the OREF of the new object

5.3.12 **BADE.DataModel.ErrorModel.%OnDeleteSource**

This method acts as a placeholder for any actions to be performed when the data source is deleted. It does not delete the corresponding Ens.Util.Log object. It is automatically invoked when the associated data controller's deleteId method is invoked.

- Input Parameter Description:
pID ID of the object to be deleted
- Output Description:
 - Returns the status of the delete

5.3.13 **BADE.DataModel.ErrorModel.%OnLoadModel**

This method loads the values from the Ens.Util.Log object into the corresponding properties of the data model. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pSource OREF of the Ens.Util.Log object
- Output Description:
 - Returns the status

5.3.14 **BADE.DataModel.ErrorModel.%OnStoreModel**

This method acts as a placeholder for any actions to be performed when the data model is saved. It does not save the values from the data model into an Ens.Util.Log object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource OREF of the Ens.Util.Log object
- Output Description:
 - Returns the status

5.3.15 **BADE.DataModel.MessageModel.%OnOpenSource**

This method instantiates the corresponding Ens.MessageHeader object. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:

- pID: ID assigned to the data controller
- pConcurrency: Optional flag used when the data source is persistent
- pSC: Returns the status
- Output Description:
 - Returns the OREF of the loaded message header object

5.3.16 **BADE.DataModel.MessageModel.%OnSaveSource**

This method acts as a placeholder for any actions to be performed when the data source is saved. It does not save a message to the message log. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the data source object
- Output Description:
 - Returns the status of the save

5.3.17 **BADE.DataModel.MessageModel.%OnNewSource**

This method creates a new instance of the Ens.MessageHeader object. It is invoked automatically when the associated data controller's createNewObject method is invoked.

- Input Parameter Description:
 - pSC: Outputs the status of the method
- Output Description:
 - Returns the OREF of the new object

5.3.18 **BADE.DataModel.MessageModel.%onDeleteSource**

This method acts as a placeholder for any actions to be performed when the data source is deleted. It does not delete the corresponding Ens.MessageHeader object. It is automatically invoked when the associated data controller's deleteId method is invoked.

- Input Parameter Description:
 - pID: ID of the object to be deleted
- Output Description:
 - Returns the status of the delete

5.3.19 **BADE.DataModel.MessageModel.%OnLoadModel**

This method loads the values from the Ens.MessageHeader object into the corresponding properties of the data model. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pSource: OREF of the Ens.MessageHeader object
- Output Description:
 - Returns the status

5.3.20 **BADE.DataModel.MessageModel.%OnStoreModel**

This method acts as a placeholder for any actions to be performed when the data model is saved. It does not save the values from the data model into an Ens.MessageHeader object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the Ens.MessageHeader object
- Output Description:
 - Returns the status

5.3.21 **BADE.DataModel.ProductionModel.%OnLoadModel**

This method loads various production values into the corresponding properties of the data model. The production state is obtained and translated to a value that will be correctly displayed by the traffic light in the production dashboard. The message counts are obtained from SQL queries for display in the dashboard's speedometers. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
- Output Description:
 - Returns the status

5.3.22 **BADE.DataModel.ProductionModel.GetMessageCount**

This method determines the number of messages sent by RPMS or EDR today.

- Input Parameter Description:

- Service: “RPMS” or “EDR”, corresponding to which system’s message count is to be returned
- Output Description:
 - Returns the number of messages sent from the specified system today

5.3.23 **BADE.DataModel.RoleModel.%OnOpenSource**

This method instantiates the corresponding Security.Roles object. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pID: ID assigned to the data controller
 - pConcurrency: Optional flag used when the data source is persistent
 - pSC: Returns the status
- Output Description:
 - Returns the OREF of the instantiated roles object

5.3.24 **BADE.DataModel.RoleModel.%OnSaveSource**

This method saves an instance of the data source object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the data source object
- Output Description:
 - Returns the status of the save

5.3.25 **BADE.DataModel.RoleModel.%OnNewSource**

This method creates a new instance of the Security.Roles object. It is invoked automatically when the associated data controller’s createNewObject method is invoked.

- Input Parameter Description:
 - pSC: Outputs the status of the method
- Output Description:
 - Returns the OREF of the new object

5.3.26 **BADE.DataModel.RoleModel.%OnDeleteSource**

This method deletes the corresponding Security.Roles object. It is automatically invoked when the associated data controller's deleteId method is invoked.

- Input Parameter Description:
 - pID: ID of the object to be deleted.
- Output Description:
 - Returns the status of the delete.

5.3.27 **BADE.DataModel.RoleModel.%OnLoadModel**

This method loads the values from the Security.Roles object into the corresponding properties of the data model. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pSource: OREF of the Security.Roles object
- Output Description:
 - Returns the status

5.3.28 **BADE.DataModel.RoleModel.%OnStoreModel**

This method saves the values from the data model into the corresponding properties of the Security.Roles object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the Security.Roles object
- Output Description:
 - Returns the status

5.3.29 **BADE.DataModel.UserModel.%OnOpenSource**

This method instantiates the corresponding Security.Users object. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pID: ID assigned to the data controller
 - pConcurrency: Optional flag used when the data source is persistent

- pSC: Returns the status
- Output Description:
 - Returns the OREF of the instantiated users object

5.3.30 **BADE.DataModel.UserModel.%OnSaveSource**

This method saves an instance of the data source object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the data source object
- Output Description:
 - Returns the status of the save

5.3.31 **BADE.DataModel.UserModel.%OnNewSource**

This method creates a new instance of the Security.Users object. It is invoked automatically when the associated data controller's createNewObject method is invoked.

- Input Parameter Description:
 - pSC: Outputs the status of the method
- Output Description:
 - Returns the OREF of the new object

5.3.32 **BADE.DataModel.UserModel.%onDeleteSource**

This method deletes the corresponding Security.Users object. It is automatically invoked when the associated data controller's deleteId method is invoked.

- Input Parameter Description:
 - pID: ID of the object to be deleted
- Output Description:
 - Returns the status of the delete

5.3.33 **BADE.DataModel.UserModel.%OnLoadModel**

This method loads the values from the Security.Users object into the corresponding properties of the data model. It is invoked automatically when the associated data controller is assigned an ID value.

- Input Parameter Description:
 - pSource: OREF of the Security.Users object
- Output Description:
 - Returns the status

5.3.34 **BADE.DataModel.UserModel.%OnStoreModel**

This method saves the values from the data model into the corresponding properties of the Security.Users object. It is invoked automatically when the associated form is saved.

- Input Parameter Description:
 - pSource: OREF of the Security.Users object
- Output Description:
 - Returns the status

5.3.35 **BADE.Install.Installation**

This method performs one-time setup of resources and adapter settings. It is used as part of the installation process.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.36 **BADE.Services.RPMS.OnProcessInput**

This method accepts an HL7, sets some HL7 object information, insures it is a valid HL7 message and passes it along to the RPMS routing engine.

- Input Parameter Description:
 - Inboundmessage: HL7 message object
- Output Description:

- Returns the HL7 message(s) to a business process.

5.3.37 **BADE.Zen.ErrorLog.DisplayDetail**

This method sets the ID of the data controller, which triggers the loading of detail error data into the form.

- Input Parameter Description:
 - Id: ID of the selected error
- Output Description:
 - None

5.3.38 **BADE.Zen.ErrorLog.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.39 **BADE.Zen.Home.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.40 **BADE.Zen.Home.%OnBeforeCreatePage**

This callback method redirects the page to the Production Monitor page. It is invoked automatically before the page is rendered.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.41 **BADE.Zen.Login.DrawTitle**

This method overrides the DrawTitle method of the %CSP.Login class. It causes the login page to display the IHS banner at the top of the page.

- Input Parameter Description:
 - pTitle: Title for the page
- Output Description:
 - Returns the status

5.3.42 **BADE.Zen.ManageEmail.EditEmail**

This method sets the ID of the data controller, which triggers the loading of data into the form.

- Input Parameter Description:
 - Id: ID of the selected e-mail address
- Output Description:
 - None

5.3.43 **BADE.Zen.ManageEmail.DeleteEmail**

This method asks the user for confirmation, then invokes the data controller's deleteId method, which triggers the deletion of the data model object and the corresponding e-mail address object.

- Input Parameter Description:
 - Id: ID of the selected e-mail address
- Output Description:
 - None

5.3.44 **BADE.Zen.ManageEmail.SaveEmail**

This method invokes the form's save method, which triggers the saving of the e-mail address.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.45 **BADE.Zen.ManageEmail.NewEmail**

This method invokes the data controller's createNewObject method, which triggers the instantiation of a new data model object and a new e-mail address object.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.46 **BADE.Zen.ManageEmail.UpdateAlertOp**

This method updates the alert e-mail business operation's adapter "Recipient" and "Cc" settings whenever an e-mail address is added, modified, or deleted.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.47 **BADE.Zen.ManageEmail.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.48 **BADE.Zen.ManageEmail.ClearSelection**

This method clears any selection from the e-mail type box. If the box is not cleared, Zen appears to select an option for the user but throws an error if the user accepts Zen's selection. Clearing the box of any selection forces the user to make a selection.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.49 **BADE.Zen.ManageRoles.EditRole**

This method sets the ID of the data controller, which triggers the loading of data into the form.

- Input Parameter Description:
 - Id: ID of the selected role
- Output Description:
 - None

5.3.50 **BADE.Zen.ManageRoles.FixID**

This method fixes the IDs of certain roles. Three characters of IDs containing “%d” get converted to a single character by JavaScript (e.g. “%de” becomes “P”). This method reverses the conversion.

- Input Parameter Description:
 - Id: ID to be fixed
- Output Description:
 - Returns the corrected ID

5.3.51 **BADE.Zen.ManageRoles.DeleteRole**

This method asks the user for confirmation, then invokes the data controller’s deleteId method, which triggers the deletion of the data model object and the corresponding roles object.

- Input Parameter Description:
 - Id: ID of the selected role
- Output Description:
 - None

5.3.52 **BADE.Zen.ManageRoles.NewRole**

This method invokes the data controller’s createNewObject method, which triggers the instantiation of a new data model object and a new role object.

- Input Parameter Description:
 - None
- Output Description:

- None

5.3.53 **BADE.Zen.ManageRoles.SaveRole**

This method invokes the form's save method, which triggers the saving of the role.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.54 **BADE.Zen.ManageRoles.SaveRoleRecord**

This method performs client-side logic to save the role object. If the role is successfully saved, then SQL tables are granted and revoked based on which resources the role holds. The SQL tables are necessary for the Zen table panes to be able to run the queries that populate them.

- Input Parameter Description:
 - Newrole: Flag specifying whether the method is saving a newly created role or an existing role
- Output Description:
 - Returns an error message, or nothing if successful

5.3.55 **BADE.Zen.ManageRoles.GetAvailableResources**

This method returns a comma-delimited list of all the resources the role does not currently hold. This list is used to populate the Available Resources select box.

- Input Parameter Description:
 - Id: ID of the role
- Output Description:
 - Returns comma-delimited list of available (not currently held) resources

5.3.56 **BADE.Zen.ManageRoles.GetAssignedResources**

This method returns a comma-delimited list of all the resources the role currently holds. This list is used to populate the Assigned Resources select box.

- Input Parameter Description:

- Id: ID of the role
- Output Description:
 - Returns comma-delimited list of assigned (currently held) resources

5.3.57 BADE.Zen.ManageRoles.PopulateResourceBoxes

This method populates the Available Resources and Assigned Resources select boxes and resets the Permission check boxes.

- Input Parameter Description:
 - Id: ID of the role
- Output Description:
 - None

5.3.58 BADE.Zen.ManageRoles.PopulateAvailResources

This method populates the Available Resources select box.

- Input Parameter Description:
 - Id: ID of the role
- Output Description:
 - None

5.3.59 BADE.Zen.ManageRoles.PopulateAssignedResources

This method populates the Assigned Resources select box.

- Input Parameter Description:
 - Id: ID of the role
- Output Description:
 - None

5.3.60 BADE.Zen.ManageRoles.ResetPermissionBoxes

This method resets the Permission check boxes to their default values.

- Input Parameter Description:
 - None
- Output Description:

- None

5.3.61 **BADE.Zen.ManageRoles.DrawResourceBoxes**

This method generates the HTML code for displaying the Available Resources and Assigned Resources select boxes.

- Input Parameter Description:
 - pSeed: Seed value that is passed in by Zen. Unused
- Output Description:
 - Returns the status

5.3.62 **BADE.Zen.ManageRoles.SelectSome**

This method moves the selected options from one of the Resources select boxes to the other.

- Input Parameter Description:
 - Frombox: Reference to the box from which the resources are being moved
 - Tobox: Reference to the box into which the resources are being moved
- Output Description:
 - None

5.3.63 **BADE.Zen.ManageRoles.SelectAll**

This method moves all of the options from one of the Resources select boxes to the other.

- Input Parameter Description:
 - Frombox: Reference to the box from which the resources are being moved
 - Tobox: Reference to the box into which the resources are being moved
- Output Description:
 - None

5.3.64 **BADE.Zen.ManageRoles.UpdateResourceList**

This method updates the hidden comma-delimited list of resources the role will be assigned. This list is built from the options in the Assigned Resources select box.

- Input Parameter Description:

- None
- Output Description:
 - None.

5.3.65 **BADE.Zen.ManageRoles.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.66 **BADE.Zen.ManageUsers.DisplayEnabledCell**

This method converts the value of Enabled from “0” or “1” to “N” or “Y” for display in the cell.

- Input Parameter Description:
 - pTable: The table pane object containing the cell. Unused
 - pName: The cell’s text value. Unused
 - pSeed: Seed value that can be sent to the method. Unused
- Output Description:
 - Returns the status

5.3.67 **BADE.Zen.ManageUsers.EditUser**

This method sets the ID of the data controller, which triggers the loading of data into the form.

- Input Parameter Description:
 - Id: ID of the selected user
- Output Description:
 - None

5.3.68 **BADE.Zen.ManageUsers.DeleteRole**

This method asks the user for confirmation, then invokes the data controller's deleteId method, which triggers the deletion of the data model object and the corresponding user object.

- Input Parameter Description:
 - Id: ID of the selected user
- Output Description:
 - None

5.3.69 **BADE.Zen.ManageUsers.NewUser**

This method invokes the data controller's createNewObject method, which triggers the instantiation of a new data model object and a new user object.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.70 **BADE.Zen.ManageUsers.SaveUser**

This method invokes the forms save method, which triggers the saving of the user.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.71 **BADE.Zen.ManageUsers.SaveUserRecord**

This method performs client-side logic to save the user object.

- Input Parameter Description:
 - Newuser: Flag specifying whether the method is saving a newly created user or an existing user
- Output Description:
 - Returns an error message, or nothing if successful

5.3.72 **BADE.Zen.ManageUsers.GetAvailableRoles**

This method returns a comma-delimited list of all the roles the user does not currently hold. This list is used to populate the Available Roles select box.

- Input Parameter Description:
 - Id: ID of the user
- Output Description:
 - Returns comma-delimited list of available (not currently held) roles

5.3.73 **BADE.Zen.ManageUsers.GetAssignedResources**

This method returns a comma-delimited list of all the roles the user currently holds. This list is used to populate the Assigned Roles select box.

- Input Parameter Description:
 - Id: ID of the user
- Output Description:
 - Returns comma-delimited list of assigned (currently held) roles

5.3.74 **BADE.Zen.ManageUsers.PopulateRoleBoxes**

This method populates the Available Roles and Assigned Roles select boxes.

- Input Parameter Description:
 - Id: ID of the user
- Output Description:
 - None

5.3.75 **BADE.Zen.ManageUsers.PopulateAvailRoles**

This method populates the Available Roles select box.

- Input Parameter Description:
 - Id: ID of the user
- Output Description:
 - None

5.3.76 **BADE.Zen.ManageUsers.PopulateAssignedRoles**

This method populates the Assigned Roles select box.

- Input Parameter Description:
 - Id: ID of the user
- Output Description:
 - None

5.3.77 **BADE.Zen.ManageUsers.DrawRoleBoxes**

This method generates the HTML code for displaying the Available Roles and Assigned Roles select boxes.

- Input Parameter Description:
 - pSeed: Seed value that is passed in by Zen. Unused
- Output Description:
 - Returns the status

5.3.78 **BADE.Zen.ManageUsers.SelectSome**

This method moves the selected options from one of the Roles select boxes to the other.

- Input Parameter Description:
 - Frombox: Reference to the box from which the roles are being moved
 - Tobox: Reference to the box into which the roles are being moved
- Output Description:
 - None

5.3.79 **BADE.Zen.ManageUsers.SelectAll**

This method moves all of the options from one of the Roles select boxes to the other.

- Input Parameter Description:
 - Frombox: Reference to the box from which the roles are being moved
 - Tobox: Reference to the box into which the roles are being moved
- Output Description:
 - None

5.3.80 **BADE.Zen.ManageUsers.UpdateRoleList**

This method updates the hidden comma-delimited list of roles the user will be assigned. This list is built from the options in the Assigned Roles select box.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.81 **BADE.Zen.ManageUsers.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.82 **BADE.Zen.MessageBrowser.DisplayErrorCell**

This method converts the value of IsError from “0” or “1” to “OK” or “Error” for display in the cell.

- Input Parameter Description:
 - pTable: The table pane object containing the cell. Unused
 - pName: The cell’s text value. Unused
 - pSeed: Seed value that can be sent to the method. Unused
- Output Description:
 - Returns the status

5.3.83 **BADE.Zen.MessageBrowser.DisplayMessage**

This method sets the ID of the data controller, which triggers the loading of data into the form. The method also hides the Resend and Cancel buttons and makes the text box read only so the user cannot edit or resend the message.

- Input Parameter Description:
 - Id: ID of the selected message header

- Output Description:
 - None

5.3.84 **BADE.Zen.MessageBrowser.EditMessage**

This method sets the ID of the data controller, which triggers the loading of data into the form. The method also unhides the Resend and Cancel buttons and makes the text box editable so the user can edit and resend the message.

- Input Parameter Description:
 - Id: ID of the selected message header
- Output Description:
 - None

5.3.85 **BADE.Zen.MessageBrowser.ResendMessage**

This method resends the message, then resets the form.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.86 **BADE.Zen.MessageBrowser.ResendMessageCOS**

This method performs server-side logic for resending a message. The text in the text box is used to construct a new HL7 message, which is then validated and resent.

- Input Parameter Description:
 - Msgtext: The HL7 message text from the text box
 - Msgid: The ID of the original message
- Output Description:
 - Returns a message indicating success or specifying what error was received

5.3.87 **BADE.Zen.MessageBrowser.CancelResendMessage**

This method clears the form and rehides the Cancel and Resend buttons, in response to the user clicking the Cancel button.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.88 **BADE.Zen.MessageBrowser.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.89 **BADE.Zen.MessageBrowser.ReplaceText**

This method replaces all occurrences of a substring of one or more characters within a given string with another string of one or more characters. This method is used to replace the `$(13,10)` that the browser may have inserted between segments with `$(13)`.

- Input Parameter Description:
 - Str: The string in which the replacement will occur
 - Old: The substring to be replaced
 - New: The string to be used as a replacement
- Output Description:
 - Returns the original string with the “old” substrings replaced with their “new” values

5.3.90 **BADE.Zen.ProductionMonitor.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.91 **BADE.Zen.ProductionMonitor.Timeout**

This method refreshes the dashboard meters when the page timer has run out.

- Input Parameter Description:
 - Timer: Page timer, used by the method to restart the timer
- Output Description:
 - None

5.3.92 **BADE.Zen.ProductionMonitor.UpdateMeters**

This method updates the dashboard meters by changing the ID of the data controller.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.93 **BADE.Zen.ProductionMonitor.StProduction**

This method starts or stops the production, depending on its current state.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.94 **BADE.Zen.ProductionMonitor.StProductionCOS**

This method performs server-side logic to start or stop the production, depending on its current state.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.95 **BADE.Zen.ProductionMonitor.%OnAfterCreatePage**

This callback method populates the form values, setting the caption on the start/stop production button, the throttle value, and the interval value. The method is invoked automatically after the page has been created.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.96 **BADE.Zen.ProductionMonitor.SetButtonCaption**

This method sets the button caption to “Start Production”, “Stop Production”, or “Recover Production”, depending on the current state of the production.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.97 **BADE.Zen.ProductionMonitor.SetThrottleText**

This method sets the throttle text box to the current value from the adapter.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.98 **BADE.Zen.ProductionMonitor.SaveThrottle**

This method saves the throttle text box value into the adapter.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.99 **BADE.Zen.ProductionMonitor.SetIntervalText**

This method sets the interval text boxes to the current values from the adapter.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.100 **BADE.Zen.ProductionMonitor.SaveThrottle**

This method saves the throttle text box values into the adapter.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.101 **BADE.Zen.Template.DrawTitle**

This method draws the title bar for the page.

- Input Parameter Description:
 - pSeed: Seed value. Unused
- Output Description:
 - Returns the status

5.3.102 **BADE.Zen.Template.DrawBreadcrumbs**

This method draws the breadcrumbs (navigation links) in the title pane.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.103 BADE.Zen.Template.DrawMenu

This method draws the drop-down menu in the title pane. Certain options may or may not be available, depending on the user's level of security.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.104 BADE.Zen.Template.%OnDrawHTMLHead

This callback method adds a function to the HTML document to redirect the user to the page corresponding to the selected menu option. The method is called automatically when the head section is being generated.

- Input Parameter Description:
 - None
- Output Description:
 - Returns the status

5.3.105 BADE.Zen.Template.Logout

This method logs the user out.

- Input Parameter Description:
 - None
- Output Description:
 - None

5.3.106 BADE.Zen.Template.COSLogout

This method performs server-side logic to log the user out.

- Input Parameter Description:
 - None
- Output Description:
 - None

6.0 Files and Tables

6.1 File List

There are no files in this package.

6.2 File Access

There is no file access in this package.

6.3 Cross References

There are no cross references in this package.

6.4 Table File

There are no table files in this package.

6.5 Callable Routines

There are no callable routines in this package.

6.6 Published Entry Points

6.6.1 **##class(BADE.Install).Installation()**

This utility is used to set up resources and adapter settings during the installation process.

- Input Parameter: Description
 - None
- Output Description:
 - None

6.6.2 /csp/ensrpms/BADE.Home.cls

This is the main entry point to the EIE Management Portal. Once authenticated, the user will be able to access those pages to which he has access by selecting the option from the drop-down menu.

6.7 Exported Options

There are no exported options in this package.

7.0 Internal Relations

There are no documented internal relations.

8.0 Archiving and Purging

There is no archiving or purging in this package.

9.0 Productions

This section describes how the IHS production processes messages between RPMS and EDR.

9.1 IHS Production

The IHS production within the BADE package transports HL7 messages between the DENTRIX and the RPMS system.

HL7 messages are received from the RPMS system via the HLOGlobalInbound Adapter. It loops through the HLB 'QUEUE' node determining which messages are to be sent to the ReceivingFacility(DENTRIX), by pulling information from the HLB and HLA global nodes. An HL7 message is formed and sent to the calling service. The service receives the HL7 message determines if the message is a valid message (using the BADE.RPMS.HL7 schema). If the message is valid it is sent to the HL7 Routing Engine where the message is routed using the RPMS routing rule. ACK system reply messages from the Dentrix system are stored back into the RPMS HLB and HLA global nodes.

Messages sent from the DENTRIX system to RPMS are being sent real time and the EIE will ACK on the newly received message as it receives the messages. If the HL7 message is valid (using the BADE.EDR.HL7 schema) the EIE places the messages into the HLB and HLA global nodes via the HLOGlobalOutbound adapter. Dentrix does not support system or application ACK messages received from the RPMS system. Any ACK messages generated by RPMSO would be processed by the EIE but currently are not forwarded.

10.0 Documentation Resources

This section describes a few methods to view EIE system technical documentation.

10.1 Class Reference

Class documentation is generated by the EIE for all classes. The reference gives general information about a class, in addition to listing and describing all of the class's properties, parameters, and methods.

To view the class documentation, open the Ensemble Documentation and select *Class Reference* from the menu bar. Select the ENSRPMS or %SYS namespace from the drop-down menu at the top left, then select the class from the left frame.

10.2 Production Configuration

Specific settings for the production may be viewed via the Ensemble Management Portal. In the Ensemble Management Portal, change to the ENSRPMS namespace, then click the *more...* link to get to the Ensemble Productions page. In the row for BADE.IHSProduction, click the *Configure* link to view the production configuration. Clicking on business hosts in the middle frame will display that host's settings in the bottom frame.

11.0 SAC Requirements/Exemptions

There are no SAC requirements or exemptions for this package.

12.0 Templates, Forms, and Protocols

12.1 Print Templates

There are no print templates in this package.

12.2 Sort Templates

There are no sort templates in this package.

12.3 Input Templates

There are no input templates in this package.

12.4 List Templates

There are no list templates in this package.

12.5 Forms

There are no forms in this package.

12.6 Protocols

There are no protocols in this package.

13.0 Glossary

EDR

Electronic Dental Record

EIE

Ensemble Integration Engine

IHS

Indian Health Service

RPMS

Resource and Patient Management System, a series of integrated software components that includes clinical, administrative, and financial functions.

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