RESOURCES AND PATIENT MANAGEMENT SYSTEM

Electronic Dental Record

(EDRI)

EIE Technical Manual

Version 1.0
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Office of Information Technology (OIT)
Division of Information Resource Management
Albuquerque, New Mexico
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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

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<td>Error log</td>
<td>Displays a log of EIE errors and detail about a selected error.</td>
</tr>
<tr>
<td>Message Browser</td>
<td>Displays EIE messages and detail about a selected message. With the appropriate security level, allows the user to edit and resend a message.</td>
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<tr>
<td>Manage Users</td>
<td>Displays the users defined in the system. Allows the user to add, edit, and delete users and to assign roles to users.</td>
</tr>
<tr>
<td>Manage Roles</td>
<td>Displays the roles defined in the system. Allows the user to add, edit, and delete roles and to assign resources to roles.</td>
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<td>Displays the e-mail addresses to which alerts will be sent. Allows the user to add, edit, and delete alert e-mail addresses.</td>
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5.0 Classes

5.1 Class List

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<td>Contains a method to set up EIE resources and default production settings.</td>
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<tr>
<td>BADE.Operations.RPMS</td>
<td>EIE operation sending HL7 messages to the RPMS system via the BADE.Adapters.HLOGlobalOutbound adapter.</td>
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<tr>
<td>BADE.Processes.AlertProcess</td>
<td>EIE process logging the alert and determining whether to send an e-mail in response to the alert.</td>
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</table>

### 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 deleteld 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:
Electronic Dental Record (EDRI) Version 1.0

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− 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 “Þ”). 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:**
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:
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 $c(13,10)$ that the browser may have inserted between segments with
$c(13)$.

- 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.
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).

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