**Use Case Realization Report - Analysis**

Image result for instant edge logo

**The Enterprise Transformation Platform**

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| Document Reference: | ISS\_IE\_UCRR-A\_2.0 |
| Client: | **I**nstant **E**dge |
| Project: | **I**nstant **E**dge- Manage Operations Module |
| Document Title: | Analysis Model Report |
| Version | 2.0 |
| Date | 5/03/2017 |
| Author | Rameswari Mohanty |
| Approver | Mathias Behne |

**Amendment History:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Version | Review & Approval Form Number | Date | Brief description of amendments and affected pages, paragraph | Author | Reviewer |
| 1.0 | ISS/IE/UCRR-A/1.0 | 10/01/2017 | Initial version | Rameswari Mohanty | Vrinda Gupta |
| 2.0 | ISS/IE/UCRR-A/2.0 | 5/03/2017 | Added Flow routing diagrams | Zhao Pengcheng | Selvaraju Vignesh |

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1. **A****nalysis Model**
   1. **A****nalysis for Maintain Flowfieldcontrol**
      1. **Class Diagram for Maintain Flowfieldcontrol diagram**



1. **Class Diagram for Maintain Flowfieldcontrol**
   * 1. **Collaboration Diagram for Create Flowfieldcontrol diagram**



1. **Collaboration Diagram for Create Flowfieldcontrol**

To commence using the system, **the Architect is required to log-in** and will follow the below steps to create the Flowfieldcontrol :

* The **Architect** selecttheFlow field control option under the configuration on the **MainScreen** to be able to create a flowfieldcontrol.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowfieldcontrolController** to start the create process
* The **FlowfieldcontrolController** displays **Flowfieldcontrol Screen** to allow the **Architect** to input the Flowfieldcontrol field for creation of new flowfieldcontrol
* The **FlowfieldcontrolController** find out **Flow Procedure** from the **List of Flow Model**, and then gets the flow procedure associated with the model and shows on the screen.
* The Architect selects the procedure and search the flow field group in the screen.
* The **FlowfieldcontrolController** finds the flowfield group from the flowfieldgroup list and displays on the screen.
* The **Architect** enters the new **flowfieldcontrol** details on the screen and saves**.**
* The **FlowfieldcontrolController** checks if the **flowfieldcontrol** exists in the flow procedure it shows error**.**
* If the **flowfieldcontrol** doesn’t exists a new **flowfieldcontrol** is created and added to the flow procedure**.**
  + 1. **Collaboration Diagram for Delete Flowfieldcontrol diagram**



1. **Collaboration Diagram for Delete Flowfieldcontrol**

To commence using the system, **the Architect is required to log-in** and will follow the below steps to delete the Flowfieldcontrol :

* The **Architect** selecttheFlow field control option under the configuration on the **MainScreen** to be able to create a flowfieldcontrol.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowfieldcontrolController** to start the create process
* The **FlowfieldcontrolController** displays **Flowfieldcontrol Screen** to allow the **Architect** to input the Flowfieldcontrol field for creation of new flowfieldcontrol
* The **FlowfieldcontrolController** find out **Flow Procedure** from the **List of Flow Model**, and then gets the flow procedure associated with the model and shows on the screen.
* The Architect selects the procedure and selects the flowfieldcontrol to be deleted and press delete.
* The **FlowfieldcontrolController** finds the flowfieldgroup and deletes it.
* The **FlowfieldcontrolController** removes the **flowfieldcontrol** from the corresponding **flow procedure** and display success message on the screen**.**
  + 1. **Collaboration Diagram for Modify Flowfieldcontrol diagram**



1. Collaboration Diagram for Modify Flowfieldcontrol

To commence using the system, **the Architect is required to log-in** and will follow the below steps to create the Flowfieldcontrol :

* The **Architect** selecttheFlow field control option under the configuration on the **MainScreen** to be able to create a flowfieldcontrol.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowfieldcontrolController** to start the create process
* The **FlowfieldcontrolController** displays **Flowfieldcontrol Screen** to allow the **Architect** to input the Flowfieldcontrol field for creation of new flowfieldcontrol
* The **FlowfieldcontrolController** find out **Flow Procedure** from the **List of Flow Model**, and then gets the flow procedure associated with the model and shows on the screen.
* The Architect selects the procedure and search the flow field group in the screen.
* The **FlowfieldcontrolController** finds the flowfieldgroup from the flowfieldgroup list and displays on the screen.
* The **Architect** updates the **flowfieldcontrol** details on the screen and saves**.**
* The **FlowfieldcontrolController** checks if the **flowfieldcontrol** exists in the flow procedure it shows error**.**
* If the **flowfieldcontrol** exists the new information in the  **flowfieldcontrol** is updated**.**
  1. **Analysis for Maintain Flowtype**
     1. **Class Diagram for Maintain Flowtype diagram**



1. Class Diagram for Maintain Flowtype
   * 1. **Collaboration Diagram for Create Flowtype diagram**



1. Collaboration Diagram for Create Flowtype

To commence using the system, **the Architect is required to log-in** and will follow the below steps to create the Flowfieldcontrol :

* The **Architect** selecttheFlow type option under the configuration on the **MainScreen** to be able to create a flowType.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowtypeController** to start the create process
* The **FlowtypeController** displays **FlowtypeScreen** to allow the **Architect** to input the Flowtype field for creation of new flowftype
* The **FlowtypeController** find out **Flowtype** from the **List of Flowtype**, and shows on the screen.
* The Architect enters the details of the new flow type on the screen.
* The **FlowtypeController** checks if the flow type exists displays error message on the screen.
* If the **flowtype doesn’t** exists a new **flowtype** is created and added to the flowtypelist**.**
  + 1. **Collaboration Diagram for Delete Flowtype diagram**



1. Collaboration Diagram for Delete Flowtype

To commence using the system, **the Architect** is required to log-in and will follow the below steps to create the Flowtype :

* The **Architect** selecttheFlow type option under the configuration on the **MainScreen** to be able to delete a flowType.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowtypeController** to start the create process
* The **FlowtypeController** displays **FlowtypeScreen** to allow the **Architect** to select the Flowtype to be deleted
* The **FlowtypeController** find out **Flowtype** from the **List of Flowtype**, and shows on the screen.
* The Architect confirms the deletion of the selected flow Type.
* The **FlowtypeController** delete the **flow type** and removes it from the **flow type list**.
* The **FlowtypeController** displays success message on the screen**.**
  + 1. **Collaboration Diagram for Modify Flowtype diagram**



1. Collaboration Diagram for Modify Flowtype

To commence using the system, **the Architect** is required to log-in and will follow the below steps to modify the Flowtype:

* The **Architect** selecttheFlow type option under the configuration on the **MainScreen** to be able to delete a flowType.
* The control will be sent to the **MainController**. The **MainController** initiates the **FlowtypeController** to start the modify process.
* The **FlowtypeController** displays **FlowtypeScreen** to allow the **Architect** to select the Flowtype to be modified
* The **FlowtypeController** find out **Flowtype** from the **List of Flowtype**, and shows on the screen.
* The Architect updates the details of the selected flow type.
* The **FlowtypeController** display success message on the screen.
  1. **Analysis for Push Notification**
     1. **Class Diagram for Push Notification**



1. Class Diagram for Authenticate Users
   * 1. **Collaboration Diagram for Login diagram**



1. Collaboration Diagram for Login

The precondition for the Log-in function is that the IE Mobile application is launched, the **Login Screen** is displayed and the Log-in option is enabled. The requirements for any **User** to log-in are as follows:

1. The **User** log-in the systems by selecting the Log-in option from the **LoginScreen**. When this occurs, the Login**Screen** instructs **AuthenticationController** to perform login operation.
2. The **AuthenticationController** initiates **IEAuthenticationControl** to perform login operation.
3. The **User** enters username and password into the **LoginScreen**.
4. The **LoginScreen** validates the format of the username and password.
5. If the format is invalid, the **LoginScreen** will display an error message. Repeat the steps to allow entering of userid and password.
6. If the format is valid, the **LoginScreen** will send the entered username and password to the **AuthenticationControl**.
7. The **AuthnticationControl** validates if a valid username and password is entered through searching the user information from **UserList via the IEAuthenticationControl in the Server**. The **UserList** gets the attribute password from the **User** object it is holding.
8. If the username and password are valid, the **IEAuthenticationControl** will return success.
9. If the validation of username and password failed, the **IEAuthenticationControl** will return an error and eventually the AuthenticationController will instruct the **LoginScreen** to display a log-in failure message. Repeat the steps to allow entering of userid and password.
10. If the validation of username and password is successful, the **AuthenticationController** will instruct the **LoginScreen** to display a successful message.

The following exceptions have been identified:

**Log-in Failed**. This is handled in the standard flow in para (9).

* + 1. **Collaboration Diagram for logout diagram**



1. Collaboration Diagram for logout

The precondition for the Logout function is that the IE Mobile application is launched, the User has logged in. The requirements for any **User** to log-out are as follows:

1. The User selects the logout option in the BrowserScreen.
2. The BrowserScreen instructs the BrowserController of the logout option.
3. The BrowserController invokes the logout method from the AuthenticationController
4. The AuthenticationController performs the logout routines and returns the status to the BrowserController.
5. The BrowserController instructs the BrowserScreen to display the Sucess message.
   * 1. **Collaboration Diagram for Browse Platform diagram**



1. Collaboration Diagram for Browse Platform

The precondition for the Logout function is that the IE Mobile application is launched, the User has logged in. The requirements for any **User** to Browse Platform are as follows:

1. The User selects the logout option in the BrowserScreen.
2. The BrowserScreen instructs the BrowserController of the logout option.
3. The BrowserController invokes the logout method from the AuthenticationController
4. The AuthenticationController performs the logout routines and returns the status to the BrowserController.
5. The BrowserController instructs the BrowserScreen to display the Success message.
   1. **Analysis of Deregister for Push Notifications**
      1. **Class Diagram for Deregister for Push Notifications diagram**



1. Class Diagram for Deregister for Push Notifications
   * 1. **Collaboration Diagram for Deregister for Push Notifications diagram**



1. Collaboration Diagram for Deregister for Push Notifications

The precondition for the Log-out function is that the User has successfully logged-in to PRMS. The requirements for any **User** to log-out are as follows:

1. The **User** selects the Log-out option from the **Browser Screen**.
2. The system instructs the AuthenticationController to perform logout routines.
3. The AuthenticationController sends the IEDeviceToken to the IEDeviceControl to deregister device
4. The IEDeviceControl reads the User from the UserList to get all devices for the User.
5. The Corresponding Device is read for the user and removed.
6. The IEDeviceControl sends success response to the AuthenticationController.
7. The AuthenticationController finishes the routine and instructs the Browser screen to display success.
   1. **Analysis of register for Push Notifications**
      1. **Class Diagram for register for Push Notifications diagram**



1. Class Diagram for Register for Push Notifications
   * 1. **Collaboration Diagram for Register for Push Notifications diagram**



1. Collaboration Diagram for Register for Push Notifications

The precondition for the Register for Push Notifications function is that the User has successfully logged-in to IE mobile app. The requirements for any **User** to Register for push notifications are as follows:

1. The **User** logsin from the **Login Screen**.
2. The System sends the FCM token to the IEDeviceControl to register it against a User.
3. The IEDeviceControl reads the User from UserList.
4. A new Device is created for the User and is saved in the UserDevices List.
5. IEDeviceControl sedns the success response to the LoginScreen and instructs the LoginScreen to display success.
   * 1. **Collaboration Diagram for Register with FCM diagram**



1. Collaboration Diagram for Register with FCM

The precondition for the Register with FCM function is that the User has allowed Remote Notifications for the Instant Edge Mobile App. The requirements for any **User** to Register with FCM are as follows:

1. The **User** opens the App and starts the registering routine.
2. The Login Screen is displayed and the Device token is generated by the AuthenticationController and sent to the Google's FCM Server.
3. The FCM Server saves the Device token against the App (registered) and generates a FCM token for the App.
4. The AuthenticationController retrieves the FCM token and saves it for future registration for push notifications with the Instant Edge server.
   * 1. **Collaboration Diagram for Send Notification diagram**



1. Collaboration Diagram for Send Notification

The precondition for the Send Push Notification function is that the **User** has logged in and allowed Remote Notifications for the Instant Edge Mobile App. The requirements for Instant Edge Platform to **Send Notification** are as follows:

1. The **IEPlatform** triggers a notification on any configured action.
2. The **FCMEndPoint** instructs the **IEDeviceControl** to send notification to respective users with the payload it mentions.
3. The **IEDeviceControl** reads the device of user and reads the **FcmToken** of the device from the **UserDevice**.
4. The **IEDeviceControl** proceeds to build the **FcmMessage** using the **FcmToken**, payload and other parameters and ends by sending the notification out.
   1. **Analysis of Routing incident**
      1. **Class Diagram for routing incident**

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* + 1. **Collaboration Diagram for Routing Incident**



The precondition for the Log-in function is that the IE Mobile application is launched, the **Login Screen** is displayed and the Log-in option is enabled. The requirements for any **User** to log-in are as follows:

1. The **User** log-in the systems by selecting the Log-in option from the **LoginScreen**. When this occurs, the Login**Screen** instructs **AuthenticationController** to perform login operation.
2. The **AuthenticationController** initiates **IEAuthenticationControl** to perform login operation.
3. The **User** enters username and password into the **LoginScreen**.
4. The **LoginScreen** validates the format of the username and password.
5. If the format is invalid, the **LoginScreen** will display an error message. Repeat the steps to allow entering of userid and password.
6. If the format is valid, the **LoginScreen** will send the entered username and password to the **AuthenticationControl**.
7. The **AuthnticationControl** validates if a valid username and password is entered through searching the user information from **UserList via the IEAuthenticationControl in the Server**. The **UserList** gets the attribute password from the **User** object it is holding.
8. If the username and password are valid, the **IEAuthenticationControl** will return success.
9. If the validation of username and password failed, the **IEAuthenticationControl** will return an error and eventually the AuthenticationController will instruct the **LoginScreen** to display a log-in failure message. Repeat the steps to allow entering of userid and password.
10. If the validation of username and password is successful, the **AuthenticationController** will instruct the **LoginScreen** to display a successful message.