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| --- |
| TEST CASES     * *IoT anyware* -   https://lh5.googleusercontent.com/d9waw423S9h55LnkeNBrtDPCF3Ws1hTpg2zJW9GYIB_fb86X1xlam67OmKmnzmTksWQTaNhug5vNJwqIbghgs5KdpP95p0I9a6sOI7GCFwHfpuiIuPwtnrFt_GTix17jXJft3ZcC  a |
| Eagle Five (Team number 1) |

June 2015

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Rev. | Description | Date | Author |
| 0.1 | Creation | 11/06/2015 | Jangsu Lee |
| 0.5 | Add Summary section  Categorize defects to below 3 section  - TB-xx : Test Basic Function  - TC-xx : Test Complex Function  - TN-xx : Test Negative to System | 13/06/2015 | Jangsu Lee |
| 0.7 | Remove “Relevant architectural driver”  Add “Pre-Condition” | 14/06/2015 | Jangsu Lee |
| 0.9 | Remove duplicated test case  - TB-05 : Close door automatically  Add test case  - TB-05 : Unlock door while alarm is set  - TB-06 : Mail box register | 16/06/2015 | Jangsu Lee |
| 1.0 | Update “TB-01: Register new user account”  - Length of password is shorter than 8 characters.  Refine and freeze 1.0 release | 17/06/2015 | Jangsu Lee |
| 1.1 | Change *Defect Severity* to *Priority*  Add *“Relevant Functional Requirement, Quality Attribute”* field to each test case | 19/06/2015 | Jangsu Lee |

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# 1. Test summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **PRI** | **Description** | **Pass** | **Fail** | **Remain** |
| **Total** |  |  |  |  | 21 |
| **TB-01** | HIGH | Register new user account |  |  |  |
| **TB-02** | HIGH | Log into the IoT server |  |  |  |
| **TB-03** | HIGH | SA node register. |  |  |  |
| **TB-04** | HIGH | SA node unregister. |  |  |  |
| **TB-05** | HIGH | Update SA node status |  |  |  |
| **TB-06** | HIGH | Determine sensors |  |  |  |
| **TB-07** | HIGH | Turn on/off the light |  |  |  |
| **TB-08** | HIGH | Open/close the door |  |  |  |
| **TB-09** | MED | Set/Get log configuration |  |  |  |
| **TB-10** | MED | View log |  |  |  |
| **TC-01** | HIGH | Turn off light automatically |  |  |  |
| **TC-02** | HIGH | Send emergency message |  |  |  |
| **TC-03** | HIGH | Lock house automatically |  |  |  |
| **TC-04** | MED | Lock house and turn off light automatically |  |  |  |
| **TC-05** | HIGH | Unlock door while alarm is set |  |  |  |
| **TC-06** | HIGH | Mail box register |  |  |  |
| **TC-07** | HIGH | Mail box notification |  |  |  |
| **TN-01** | HIGH | Notify SA node unavailability |  |  |  |
| **TN-02** | HIGH | Authentication fail |  |  |  |
| **TN-03** | MED | Log into server again |  |  |  |
| **TN-04** | MED | Register unproved SA node |  |  |  |

# 2. Test Basic Function

|  |  |
| --- | --- |
| **No. TB-01** | **Register new user account** |
| **Priority** | HIGH |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR01 : Access secured services  QA01 : Security – Authentication & Authorization |
| **Pre-Condition** | User account is not registered. |
| **Test Procedure** | 1. Launch User App to register new account.  2. Select “2.Make Account” menu.  3. Input [email]/[password], then press “Enter”. |
| **Pass/Fail Criteria** | Pass:  User account have to be created successfully.  Possible Failures:  (1) User email is already registered.  (2) Email format is not correct.  (3) Length of password is shorter than 8 characters.  (4) Input format is not correct. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-02** | **Log into the IoT server** |
| **Priority** | HIGH |

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| **Relevant**  **Function Requirement**  **Quality Attribute** | FR01 : Access secured services  FR02 : Discover SA nodes  QA01 : Security – Authentication & Authorization |

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| --- | --- |
| **Pre-Condition** | User account is registered in advance. |
| **Test Procedure** | 1. Launch User App to register new account.  2. Select “1.Log in” menu.  3. Input [email]/[password], then press “Enter”. |
| **Pass/Fail Criteria** | Pass:  (1) Log into the server successfully.  (2) App shows the SA nodes list belonging to the user.  Possible Failures:  (1) Email is not registered.  (2) Email/password is not correct.  (3) Input format is not correct |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-03** | **SA node register** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR08 : Register SA nodes  QA02 : Security – Unauthorized SA node register |

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| --- | --- |
| **Pre-Condition** | User is aware of serial number of SA node.  SA node is not registered in advance.  User logged into the server in advance. |
| **Test Procedure** | 1. Make sure logged into the server in advance.  2. Select “1.Register SA node” menu.  3. Input [nodeid]/[nickname], then press “Enter”  4. Manipulate SA node to register within 10 minutes. |
| **Pass/Fail Criteria** | Pass:  (1) SA node is registered successfully.  (2) App notifies the node is registered.  (3) App shows updated node list.  Possible Failures:  (1) nodeid is registered already to the server.  (2) SA node is not registered to the server within 10 minutes. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-04** | **SA node unregister** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR08 : Register SA nodes  QA02 : Security – Unauthorized SA node register |

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| --- | --- |
| **Pre-Condition** | SA node is registered in advance.  User logged into the server in advance. |
| **Test Procedure** | 1. Make sure logged into the server in advance.  2. Select “2.Unregister SA node” menu.  3. input [nodeid], then press “Enter”. |
| **Pass/Fail Criteria** | Pass:  (1) SA node is unregistered from the server.  (2) App notifies the node is unregistered.  Possible Failures:  (1) SA node is not in the server.  (2) The user has no permission.  (3) SA node unregister is failed. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-05** | **Update SA node status** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR03 : Determine sensors and control actuators |

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| --- | --- |
| **Pre-Condition** | User logged into the server in advance.  SA node is connected to the system advance. |
| **Test Procedure** | 1. Select SA node to update status. |
| **Pass/Fail Criteria** | Pass:  (1) Current SA node status shows in the view.  Possible Failures:  (1) Status is not matched of current SA node state.  (2) SA node status is not updated. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-06** | **Determine sensors(Humidity/Temperature/Presence)** |
| **Priority** | HIGH |

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| **Relevant**  **Function Requirement**  **Quality Attribute** | FR03 : Determine sensors and control actuators |

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| --- | --- |
| **Pre-Condition** | User logged into the server in advance.  SA node is connected to the system in advance. |
| **Test Procedure** | 1. Select SA node to update status. |
| **Pass/Fail Criteria** | Pass:  (1) Current sensors value show in the view.  Possible Failures:  If the sensor value is not matched with current real value. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-07** | **Turn on/off the light** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR03 : Determine sensors and control actuators |

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| --- | --- |
| **Pre-Condition** | User logged into the server in advance.  SA node is connected to the system in advance.  The light of home is off |
| **Test Procedure** | 1. Select SA node to turn on light.  2. Select “Turn on light”.  3. Make sure light is on.  4. Select “Turn off light”. |
| **Pass/Fail Criteria** | Pass:  The light of home is on then off accordingly. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-08** | **Open/close the door** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR03 : Determine sensors and control actuators |

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| --- | --- |
| **Pre Condition** | User logged into the server in advance.  SA node is connected to the system in advance.  The door of home is closed. |
| **Test Procedure** | 1. Select SA node to open the door.  2. Select “Open the door”.  3. Make sure door is opened.  4. Select “Close the door”. |
| **Pass/Fail Criteria** | Pass:  The door of home is opened then closed accordingly. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TB-09** | **Set/Get log configuration** |
| **Priority** | MED |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR04 : Log user commands and sensor values |

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| --- | --- |
| **Pre-Condition** | User logged into the server in advance. |
| **Test Procedure** | 1. Select “2. Configure” menu  2. Make sure current logging time.  3. Change the logging time  4. Make sure if the logging time is changed correctly |
| **Pass/Fail Criteria** | Pass:  Logging time is changed to user set value.  Possible Failures:  Logging time is not set correctly |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TB-10** | **View log** |
| **Priority** | MED |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR04 : Log user commands and sensor values |

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| --- | --- |
| **Pre-Condition** | Logging time is set 1 hour.  SA node is connected over 1 hour.  User logged into the server in advance. |
| **Test Procedure** | 1. Select “View log” |
| **Pass/Fail Criteria** | Pass:  The view shows user command and SA node response for 1 hour.  The logs have to be of the user.  Possible Failures:  The time of log is not matched with 1 hour.  Any logs not of the user show. |
| **Test Results** |  |
| **Comments** |  |

# 3. Complex Function Test

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| --- | --- |
| **No. TC-01** | **Turn off light automatically** |
| **Priority** | HIGH |
| **Pre-Condition** | Set the automatic turn off light time to 10 minutes. |

|  |  |
| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR07 : Turn off light automatically |

|  |  |
| --- | --- |
| **Test Procedure** | 1. Make sure there is no one in the home. |
| **Pass/Fail Criteria** | Pass:  The light is turned off after 10 minutes.  Possible Failures:  The light is turned off later/before than 10 minutes. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TC-02** | **Send emergency message** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR05 : Send emergency message |

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| --- | --- |
| **Pre-Condition** | Set the alarm.  No one is in the home.  Door is closed.  User logged into the server in advance. |
| **Test Procedure** | 1. Set the house occupied  2. Make sure alarm happens in the user view.  3. Set off the alarm  4. Open the door manually  5. Make sure alarm happens in the user view.  6. Set off the alarm |
| **Pass/Fail Criteria** | Pass:  Alarm happens when the house is occupied.  Alarm happens when the door is opened manually.  Alarm is off when user set off.  Possible Failures:  Alarm doesn’t happen.  Alarm happens not on the conditions.  Alarm is not off when user set off. |
| **Test Results** |  |
| **Comments** |  |

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| --- | --- |
| **No. TC-03** | **Lock house automatically** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR06 : Lock house automatically |

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| --- | --- |
| **Pre-Condition** | The alarm is not set.  The door is open.  Automatic alarm is set to 5 minutes (configurable)  User logged into the server in advance. |
| **Test Procedure** | 1. No one presence in the house for 30 seconds.  2. Make sure User App receives notification message.  3. Don’t respond to the notification for until 5 minutes. |
| **Pass/Fail Criteria** | Pass:  Door is closed and alarm is set.  Possible Failures:  Notification message doesn’t happen.  Notification message happens not on the conditions.  Automatic alarm is set before 5 minutes after notification. |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TC-04** | **Lock house and turn off light automatically** |
| **Priority** | MED |

|  |  |
| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR06 : Lock house automatically  FR07 : Turn off light automatically |

|  |  |
| --- | --- |
| **Pre-Condition** | The alarm is not set.  The door is open.  The light is on.  Automatic alarm is set to 5 minutes (configurable)  Automatic turn off is set to 10 minutes (configurable)  User logged into the server in advance. |
| **Test Procedure** | 1. No one presence in the house for 30 seconds.  2. Make sure User App receives notification message.  3. Don’t respond to the notification for until 5 minutes.  4. Make user the door is closed and alarm is set  5. Wait 4min 30sec |
| **Pass/Fail Criteria** | Pass:  Door is closed and alarm is set after 5 minutes  The light is turned off after 10 minutes  Possible Failures:  Notification message doesn’t happen.  Notification message happens on incorrect conditions.  Door is not locked automatically  Light is not off automatically |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TC-05** | **Unlock door while alarm is set** |
| **Priority** | HIGH |

|  |  |
| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR03 : Determine sensors and control actuators. |

|  |  |
| --- | --- |
| **Pre-Condition** | Alarm is set.  House door is locked.  User logged into the server in advance. |
| **Test Procedure** | 1. Set the door open.  2. App notifies user to set off alarm first.  3. Set the alarm off.  4. Set the door open. |
| **Pass/Fail Criteria** | Pass:  Door is opened after alarm is off.  Possible Failures:  Door is opened without alarm off. |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TC-06** | **Mail box registration** |
| **Priority** | HIGH |

|  |  |
| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR08 : Register SA node. |

|  |  |
| --- | --- |
| **Pre-Condition** | User is aware of serial number of Mail box.  Mail box is not registered.  SA node is registered in advance.  User logged into the server in advance. |
| **Test Procedure** | 1. Select “1.Register SA node” menu.  2. Input [nodeid]/[nickname], then press “Enter”  3. Manipulate Mail box to register within 10 minutes. |
| **Pass/Fail Criteria** | Pass:  (1) Mail box is registered successfully.  (2) App shows the node is registered.  (3) App shows updated node list.  Possible Failures:  (1) nodeid is registered already to the server.  (2) SA node is not registered to the server within 10 minutes. |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TC-07** | **Mail box notification** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | FR05 : Send emergency message. |

|  |  |
| --- | --- |
| **Pre-Condition** | No mail on the Mail box  User logged into the server in advance. |
| **Test Procedure** | 1. Set a mail to Mail box |
| **Pass/Fail Criteria** | Pass:  User App shown incoming mail notification. |
| **Test Results** |  |
| **Comments** |  |

# 4. Negative to System Test

|  |  |
| --- | --- |
| **No. TN-01** | **Notify SA node unavailability** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | QA03: Availability |

|  |  |
| --- | --- |
| **Pre-Condition** | User logged into the server in advance.  SA node is connected to the system in advance. |
| **Test Procedure** | 1. Make sure SA node is on working.  2. Cut off the internet connection of SA node. |
| **Pass/Fail Criteria** | Pass:  User app notifies SA node unavailability to user in 30 seconds |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TN-02** | **Authentication fail** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | QA01 : Security – Authentication & Authorization |

|  |  |
| --- | --- |
| **Pre-Condition** | User account is registered in advance. |
| **Test Procedure** | 1. Attempt to log into server with wrong password.  2. Repeat Step1 5 times.  3. Apps notifies that the account is blocked and can be re-activated via authorization Email.  4. Check the Email to revive the account.  5. Log into the server. |
| **Pass/Fail Criteria** | Pass:  The account is blocked (Step2).  The account revives (Step4).  Log into the server successfully (Step5). |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TN-03** | **Log into server once again** |
| **Priority** | HIGH |

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| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | QA01 : Security – Authentication & Authorization |

|  |  |
| --- | --- |
| **Pre-Condition** | User logged into the server in advance. |
| **Test Procedure** | 1. Attempt to log into the server with the other device. |
| **Pass/Fail Criteria** | Pass:  Previous session is closed, user cannot perform services on previous device.  New session is started and user can perform services on new device. |
| **Test Results** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **No. TN-04** | **Register unproved SA node** |
| **Priority** | MED |

|  |  |
| --- | --- |
| **Relevant**  **Function Requirement**  **Quality Attribute** | QA02: Security – Unauthorized SA node register. |

|  |  |
| --- | --- |
| **Pre-Condition** | SA node is not registered in advance.  User logged into the server in advance. |
| **Test Procedure** | 1. Attempt to register SA node with unproved random serial number.  2. Wait 10 minutes. |
| **Pass/Fail Criteria** | Pass:  Apps notifies the SA registration fail.  The SA node serial number is swiped in the user account. |
| **Test Results** |  |
| **Comments** |  |