4.1 Cellphone Internal Interface Requirement

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| CIIR001 | Main Activity to User Login |
|  | User Login display itself when user click login in button on main activity |
| CIIR002 | Main Activity User Registration |
|  | User Registration display itself when user click registration button. |
| CIIR003 | Main Activity to Favorite |
|  | Favorite display itself when user click favorite button. |
| CIIR004 | Main Activity to Appliance |
|  | Appliance display itself when use click appliance button. |
| CIIR005 | Main Activity to Chart |
|  | Chart display itself when user click chart button |
| CIIR006 | Main Activity to Account |
|  | Account display itself when user click account button |
| CIIR007 | Appliance Module to Main Activity |
|  | Appliance Module will display child interface when user click a button such as TV , Light … |
| CIIR008 | Chart Module to Main Activity |
|  | Chart module display its child when user want to see his electricity usage |
| CIIR009 | Appliance to Notification |
|  | Appliance will send message to Notification to notify user which event occur. |
| CIIR010 | User Module to Main Activity |
|  | User Module will display itself when user click the to see his profile |
| CIIR011 | Appliance to TV |
|  | TV will show itself to appliance interface when user click TV button |
| CIIR012 | Appliance to Light |
|  | Light will show itself to appliance interface when user click light button |
| CIIR013 | Appliance to Air conditioner |
|  | Air conditioner will show itself to appliance interface when user click Air conditioner button |
| CIIR014 | Appliance to Others |
|  | Other will show itself to appliance interface when user click Others button |
| CIIR015 | Appliance to Add |
|  | Add interface will show itself to appliance interface when user click Add button |
| CIIR016 | Chart to Chart Light |
|  | Chart will get Chart Light’s plot when user wants to see Light’s usage |
| CIIR017 | Chart to Chart AC |
|  | Chart will get Chart AC’s plot when user wants to see AC  ’s usage |
| CIIR018 | User Login to Send |
|  | User Login will make a user login command which get info from user interface.  Command : /Login [email] [password] |
| CIIR019 | User Registration to Send |
|  | User Login will make a user registration command which get info from user interface.  Command : /Register [email] [password] |
| CIIR020 | Favorite to Send |
|  | Favorite will make an appliance on/off command to Send  Command : /ControlAppliance [MC ID] [Device type] [Device ID] [on/off] |
| CIIR021 | Appliance to Send |
|  | Appliance will make a appliance on/off command to Send  Command: ./ControlAppliance [MC ID] [Device type] [Device ID] [cmd] [cm2]  Cmd type:  light:  [on/off]  TV: [on/off/vup/vdown/cup/cdown/0-9/return]  AC:  [on/off/ strength/direction/temperature]  cmd = strength, cmd2 = [auto,weak,normal,strong]  cmd = direction, cmd2 = [auto,0,45,90]  other:  [on/off] |
| CIIR022 | Air Conditioner to ideal temperature |
|  | Ideal temperature display itself when user wants to set air conditioner ideal temperature. |
| CIIR023 | L.A.O to T.P.E |
|  | Light, Air conditioner, Others shows Time setting, Proximity setting, Energy Saver interface when user click button. |
| CIIR024 | Add to Send |
|  | Add will make an appliance added command to Send  Command :  1./AddAppliance [MC ID] [Device type] [Arduino ID] [Device ID] [cmd] [cmd2]  Cmd type:  light:  [motion sensor id]  TV :  [brand]  AC:  [brand]  Cmd2 type:  On  Off  2. /AddMC [MC ID] [email] |
| CIIR025 | Chart Light to Send |
|  | Chart Light send a message to Send to tell him: I want plot data!!!  Command : /Chart [MC ID] [Device Type] |
| CIIR026 | Chart AC to Send |
|  | Chart AC send a message to Send to tell him : I want plot data!!!  Command : /Chart [MC ID] [Device Type] |
| CIIR027 | Receive to Chart Light |
|  | Receive send Light usage data to Chart Light to plot.  Data include time usage , price of electricity  Command : /ChartInfo [device number] [devic1e id 1] [hour 1]…. |
| CIIR028 | Receive to Chart AC |
|  | Receive send AC usage data to Chart AC to plot.  Data include time usage , price of electricity  Command : chartInfo [device number] [device id 1] [hour 1]…. |
| CIIR029 | T.P.E.I to Send |
|  | Time, Proximity, Energy Saver, Ideal Temperature make command to Send to tell user’s setting.  Time command : timeSetting [MC ID] [Device type] [Device ID] [day] [start] [day] [end]  Proximity command : /proximitySet [applianceID] [distance]  Energy Saver command : energySaver [MC ID] [Device type] [Device ID] [duration]  Ideal Temperature commands : idealTemperature [MC ID] [Device type] [Device ID] [temperture] |
| CIIR030 | Receive to T.P.E.I |
|  | Receive notify the Time, Proximity, Energy Saver, ideal Temperature when main controller have done the mission.  Notification message : notification [MC ID] [Device type] [Device ID] [cmd]  Cmd type:  light:  [on/off]  AC:  [on/off]  other:  [on/off] |
| CIIR031 | Profile to Send |
|  | Profile will send message to send when user changes his password.  Command : changePassword [current password] [new password] |

4.3 Cell phone Cloud Server Internal Interface Requirement

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| CSIIR001 | Send to User Login |
|  | Send will send command to Server User login to tell server I want to Login |
| CSIIR002 | Send to new account |
|  | Send will send command to Server new account to tell server I want to create a new account. |
| CSIIR003 | Send to Server Router |
|  | Send will send commands to Server Router to tell server who am I and what I want to do. |
| CSIIR004 | Sever router to receive |
|  | Receive notification from router and send to cellphone. |
| CSIIR005 | Bluetooth to internet connection |
|  | Command: sendWifi [network name] [password] |

3.1 Cellphone External Interface Requirement

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| CEIR001 | User to Main Activity |
|  | User do all activities through main activity page which will be continuing changed when user click a button or some. |
| CEIR002 | User to Notification |
|  | Notification do all notification things which user can know what happen in his home. |