cpo:

1-view external status

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| Name | View External Status |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. Click on the Charging Station lists on the panel. 2. Dashboard shows a list of this CPO charging stations. 3. CPO select a Charging Stations. 4. Dashboard shows all charging port and their type. 5. CPO can see all external status of charging station in top of the page. 6. CPO can see all external status of the port by clicking on the port. |
| Exit Conditions | Information be presented successfully. |
| Exceptions | 1. Charging Stations get disconnected from the network and not be able to send the Charging Point status. 2. The CPMS was down and not able to send the list of Charging Stations to the CPO panel. |

2-view internal status

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| Name | View Internal Status |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. Click on the Charging Station lists on the panel. 2. Dashboard shows a list of this CPO charging stations. 3. CPO select a Charging Stations. 4. Dashboard shows all charging port and their type. 5. CPO can see all internal status of charging station in top of the page. 6. CPO can see all internal status of the port by clicking on the port. |
| Exit Conditions | Information be presented successfully. |
| Exceptions | 1. Charging Stations get disconnected from the network and not be able to send the Charging Points status 2. The CPMS was down and not able to send the list of Charging Stations to the CPO panel |

3-edit current price of energy

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| Name | Edit current price of energy |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. CPO go to price setting in the dashboard. 2. Dashboard shows the whole list of price that CPO save for different type of sockets and their type of energy. 3. CPO can save the new price for the a socket with plus icon. 4. CPO can edit a price by clicking on the pen button. |
| Exit Conditions | CPO click on save/cancel button. |
| Exceptions | 1. The price was not valid. E.g., negative value. 2. eMSP was not able to update the database. |

4-select DSO to acquire energy

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| Name | Select DSO to acquire energy |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. CPO go to DSO section in the CPMS dashboard. 2. CPO can see all of DSOs name and their prices. 3. CPO can request them by clicking on forward button to send a request. 4. After that DSO accept CPO request, CPMS shows a notification that DSO accept your request. |
| Exit Conditions | DSO accept to provide energy for CPO and the CPO update the eMSP database successfully. |
| Exceptions | 1. DSO is not available 2. DSO does not accept to provide energy for CPO 3. eMSP was not able to update the database. (Database error, infrastructure problem and so on) |

5-select kind of getting energy

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| Name | Select kind of getting energy |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. CPO go to list of charging point. 2. Dashboard shows list of CPO all charging stations. 3. CPO by clicking on internal status of specific charging point can see the whole internal status of charging point. 4. CPO can change the power source of one socket from battery to DSOs energy. 5. CPMS can handle this situation when battery are drained and automatically change to DSO energy. 6. CPO can set preferred Energy in top of the page in the dropdown. This causes the fact that CPMS can automatically use DSO after that use batteries or reverse. |
| Exit Conditions | 1. DSO accept to provide energy for CPO if the DSO has been selected. 2. CPO update the eMSP database successfully. |
| Exceptions | 1. DSO is not available. 2. DSO does not accept to provide energy for CPO. 3. eMSP was not able to update the database. |

6-view location of charging station

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| Name | View location of a charging station |
| Actor | CPO |
| Entry Conditions | The CPO has already Logged to the CPMS dashboard in successfully. |
| Events Flow | 1. CPO go to list of charging point. 2. Dashboard shows list of CPO all charging stations. 3. CPO click on eye icon in front of any item of the list. 4. Dashboard shows the location of the charging station near to Internal Status button External Status button. |
| Exit Conditions | Charging Station information, including the location be shown successfully. |
| Exceptions | 1. Sub systems including CPMS and eMSP not be available. 2. The eMSP database was not responding (for instance, because of the heavy load) |

User:

* Register

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| --- | --- |
| Name | Register |
| Actor | End user |
| Entry Conditions | End user open the application |
| Events Flow | 1. End user selects to register 2. End user fill all the blank fields. 3. End user click on register button. 4. The system sends an email to his/her. 5. End user confirms his/her email. 6. The system allows him/her to login. |
| Exit Conditions | The end user is registered in the app. |
| Exceptions | 1. End user doesn’t check the policies checkbox. 2. End user doesn’t fill all the fields. In this case, application shows warning. 3. the email address already exist in the system. In this case, application warns him/her to login. |

* Login

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| --- | --- |
| Name | Login |
| Actor | End user |
| Entry Conditions | 1. End user open the application. 2. He/She already registered. |
| Events Flow | 1. End user select login button. 2. End user enter email addresses as user name password to login. 3. End user click on login button. |
| Exit Conditions | The system allows the user to login. |
| Exceptions | 1. End user enters the wrong username. 2. End user enters the wrong password.   In both cases, system warns him/her that user with this data not found. |

* View special offers

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| Name | View special offers |
| Actor | End user |
| Entry Conditions | 1. End user open the application. 2. He/she already signed in. |
| Events Flow | 1. End user clicks on today’s offers button. 2. Application shows a page that contains list of all the offers for the user. 3. End user can click on one offer and accept it. |
| Exit Conditions | Accept an offer or decline all offers. |
| Exceptions | He/she doesn’t login to the application. In this case, user must login to the application to see offers. |

* Book a time

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| Name | Book a time |
| Actor | End user |
| Entry Conditions | 1. End user has already Logged in successfully. 2. In the application, user go to charging stations section. |
| Events Flow | 1. End user click on Plus icon to save new booking. 2. End user selects time period what he/she want to book. 3. The application show all charging station that have available port for end user car. 4. End user select one charging station that he/she want. 5. The application ask for what time and how long he/she wants To book. |
| Exit Conditions | End user click on confirm/cancel button. |
| Exceptions | End user enter wrong time period. |

* Edit personal information

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| --- | --- |
| Name | Edit personal information |
| Actor | End user |
| Entry Conditions | 1. End user has already logged in successfully. 2. In the application, user go to edit personal data section. |
| Events Flow | 1. End user click on profile icon. 2. Application show the information about user. 3. End user can change email address, his/her car model, his/her profile photo. |
| Exit Conditions | End user click on save/cancel button. |
| Exceptions | 1. End user enters invalid email address. 2. End user selects image that the volume is more than 5MB. |

* Pay by QR code

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| Name | Pay by QR code. |
| Actor | End user |
| Entry Conditions | 1. End user has already Logged in successfully. 2. Application shows a notification that charging is finish. |
| Events Flow | 1. There is one LCD on that port which user put in the car for charging, after the charging finished it shows the QR code. 2. End user go to payment method section. 3. End user click on QR code scanner to scan that QR code. 4. End user can select to pay with his/her saved cart, third-party application like google pay or apple pay or pay with money that saved to his/her account. |
| Exit Conditions | Payment is successful or error occur in payment. |
| Exceptions | 1. End user select to pay with hid/her account money but there isn’t enough money. 2. End user doesn’t have enough money in his/her bank account. |

* pay by credit cart

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| --- | --- |
| Name | Pay by credit cart |
| Actor | End user |
| Entry Conditions | 1. End user has already Logged in successfully. 2. Application shows a notification that charging is finish. |
| Events Flow | 1. End user click on notification. 2. Application open in car status page. 3. End user see payment alert about payment in top of application. 4. End user click on alert. 5. Application open in payment method page. 6. End user click on credit cart. 7. Application send request to eMSP. 8. eMSP process the request and send response to mobile application of user about deducting money. |
| Exit Conditions | Payment is successful or error occur in payment. |
| Exceptions | End user doesn’t have enough money in his/her bank account. |

* edit credit card information

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| --- | --- |
| Name | Edit credit cart information |
| Actor | End user |
| Entry Conditions | 1. End user has already Logged in successfully. 2. End user go to edit payment method section in the application. |
| Events Flow | 1. Application shows the list of all payment method such as all credit cart and account balance. 2. End user can enter new credit cart for his/her payment by pressing on Plus icon or edit credit card by click on pen icon. 3. End user can edit his/her credit cart information like cart number or cart name and expire date. |
| Exit Conditions | End user click on Save/Cancel button.  If user click on save, he/she must verify his/her cart information. |
| Exceptions | 1. End user enter invalid cart number, expire date or cart name. 2. End user doesn’t verify his/her cart account. |

<!—NEW USE CASE ->

* End User Get Some Suggestion

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| --- | --- |
| Name | End User Get Some Suggestion |
| Actor | End User |
| Entry Conditions | 1. End user has already Logged in successfully. 2. End user go to suggestion section. |
| Events Flow | 1. Give location permission to application. 2. Give calendar permission to application. 3. Enable phones GPS. 4. Enable phones Bluetooth. 5. Application get user location and battery status and send these information to eMSP. 6. After a few seconds, Application shows some suggestion to user. 7. End user can filter those suggestion by travel distance, price, user rating. |
| Exit Conditions | End user confirm or decline one/all suggestion. |
| Exceptions | End user doesn’t give permission to application. |