This section describes all interfaces between components, their interaction and their input/output parameters.

For further, detailed explanations about their functioning, dependencies, resources, operations and parameters read the RASD release.

#### Application*↔*Client Interface

##### Components:

* + - * PowerEnJoyServer (Application)
      * Mobile App (Client)

**Communication system**: JAX-RS API (RESTful interface);

**Protocols**: standard HTTPS protocol;

**Application*↔*Database Interface**

##### Components:

* + - * Data Manager (PowerEnJoyServer) (Application)
      * PowerEnjoy DB (Database)

**Communication system**: JPA, JDBC APIs;

**Protocols**: standard TCP/IP protocols;

**Map services**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Zones Management** |  | | |
| Drivers | location  available cars | [Position]  [Car] |
| **Google Maps APIs** |  | | |
| Drivers | address  location | [string]  [Position] |

**Account Manager**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Registration** |  | | |
| Visitors | username  email password license ID  ... | [string]  [string]  [string]  [string] |
| **Login** |  | | |
| Visitors | username/email  password | [string]  [string] |
| **Email Confirmation** | Drivers | password | [string] |
| **Profile Deleting** | Drivers | token  password | [/]  [string] |
| **Profile Editing** | Drivers | new email  new password  new address  ... | [string]  [string]  [string] |

**Notification**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Car Reservation Notification** |  | | |
| Drivers | car location  ETA  car state  ... | [position]  [time]  [boolean] |
| **Bill Ride Notification** |  | | |
| Drivers | time of rent  total amount  discount | [time]  [float]  [float] |

**Ride Manager**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Ride Management** |  | | |
| Drivers | user ID  start location  start time  end time  end location  num of passengers  battery state  bill  … | [int]  [position]  [time]  [time]  [position]  [int]  [float]  [float] |
| **Reservation Update** |  | | |
| Drivers | request status  new request status | [enum]  [enum] |
| **Ride Update** | Drivers | ride status  new ride status | [enum]  [enum] |

**Zone Manager**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Zone Management** |  | | |
| Drivers | car location  discount  car state  ... | [position]  [float]  [boolean] |
| **Zone Update** |  | | |
| Drivers | new zone status | [Zone] |

**Bill Manager**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Bill Management** |  | | |
| Drivers | car location  battery state  num of passengers  time to charge  ... | [position]  [float]  [int]  [time] |
| **PayPal APIs** |  | | |
| Drivers | user email  total amount | [string]  [float] |

**Car Manager**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Involved**  **Users** | **Input/Output**  **Parameters** | [type] |
| *(General)* |  | | |
| *(All)* | token  errors | [/]  [/] |
| **Car Management** |  | | |
| Drivers | car location  car plate  car state  ... | [position]  [string]  [boolean] |
| **Car Update** |  | | |
| Drivers | new car status  new car location  … | [boolean]  [position] |

#### Application*↔*Problem Manager Interface

##### Components:

* + - * Problem Manager APIs
      * Mobile App (Client)

**Communication system**: JAX-RS API (RESTful interface);

**Protocols**: standard HTTPS protocol;

**Data manager**

See subsection of, *”Application↔Database Interface”*.