**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 22 October 2022 |
| Team ID | PNT2022TMID51722 |
| Project Name | Project – Smart Solutions for Railways |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through entering password  Registration through Gmail |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | User Login | Login through Email  Login into web by entering the given password |
| FR-4 | User Dashboard | Learn to access the Web UI |
|  | Ticket reservation | Enter the basic train information for verifying availability of trains and tickets.  Fill up the basic travelling passenger’s details after choosing the no. of tickets. |
|  | Payment | By completing the online payment, user will navigate to the confirmation page. |
| FR-5 | User Identification | It generates a unique QR Code for each passenger that is to differentiate between passengers with their personal details. |
| FR-6 | Ticket Validation | By scanning the QR Code, it shows whether the passenger’s ticket is valid or not |
| FR-7 | User data | User’s data get stored in a Cloudant DB |
| FR-8 | Live Location tracking | With the help of IoT based sensors, Live location of the passenger while traveling gets displayed in the Web UI |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | It is about effectiveness, efficiency and the overall satisfaction of the user. |
| NFR-2 | **Security** | The Web UI will only require the registered users to login to it.  It will resist the unauthorized users. |
| NFR-3 | **Reliability** | The service will perform its intended function adequately for a specified period of time, or will operate in a defined environment without failure. |
| NFR-4 | **Performance** | Provider systems must meet the agreed response time performance targets. |
| NFR-5 | **Availability** | Provider systems shall meet the agreed availability targets i.e. service time and/or hours and planned downtime. |
| NFR-6 | **Scalability** | Provider systems shall be designed to accommodate increased volumes, workloads and users. |