# SUBMISSION OF PROPOSAL UNDER THE SCHEME “IDEA HACKATHON 2022”

**AI-based Vehicle Parking System for Smart Cities**

Submitted to



**Ministry of Micro, Small & Medium Enterprises**

Government of India

INCUBATION

Submitted by

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**Host Institution (HI) Name:**

**Host Institution (HI) State:**

1. **Title of proposed idea/innovation**
2. **Problem identified**

1. **Briefly explain newness/uniqueness of the innovation.**
2. **Concept & Objectives**

* To develop a system for managing existing parking facilities and to make use of the available parking spaces more efficiently.
* To make parking transactions data - driven and reliable using cloud based software

1. **National and International survey status of the problem:**

**International Status:**

**National Status:**

1. **One-page summary about the project**
2. **Impacts to the Society**
3. **Methodology (material, methods, details of work) and the design.**

**Workflow Description**

|  |  |
| --- | --- |
| **Connection** | **Action** |
| 1 | User requests for available parking slots with the client application. |
| 2 | The client application requests server to reply with the available slots currently. |
| 3 | Server sends request to all sensor interfaces to show send any changes in slots availability. |
| 4 | Sensor interface sends frequent signals to all Ultrasonic sensors to check for any free slots. |
| 5 | The signal is sent regarding the slot availability. |
| 6 | The compilation of slots availability is sent to server. |
| 7 | The server maintains a slot availability table and a real time slot information which is used to predict the availability of slots and is then sent to the client. |
| 8 | Client books the required available slot by sending request to server. |
| 9 | An acknowledgment from server of booked slot is sent to client. |
| 10 | After completion of parking a QR code is generated at client application consisting of user information. |
| 11 | The QR code at client application is scanned by QR scanner mounted at parking system. |
| 12 | Sensor interface sends the scanned user information to server and server calculates the final fee amount to be paid. |
| 13 | The server sends the information required for processing payment to the payment system. |

1. **Specify the potential areas of application in industry/market in brief**
2. **Briefly provide the market potential of idea/innovation**
3. **Detailed Business Plan of the proposed Idea to be a product**
4. **Detailed Time Schedule of the Project implementation.**

|  |  |
| --- | --- |
| **Year/Quarter** | **Activities Planned** |
| **Year -1** | |
| ***Quarter -1*** | Field data collection and equipment purchase |
| ***Quarter -2*** | Deployment of hardware and development of application modules |
| ***Quarter -3*** | Testing and debugging of the system in a sample parking lot |
| ***Quarter -4*** | Improvement of core application modules |
| **Year –II** | |
| ***Quarter -1*** | Deployment in a large parking lot |
| ***Quarter -2*** | Testing of the system in real time |
| ***Quarter -3*** | Marketing and market analysis |
| ***Quarter -4*** | Extension to more parking lots |

1. **Outcome of this project**
2. **Budget Details (Please include manpower, equipment, travel, overhead etc.)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **Budget** | | |
|  | **1st Year** | **2nd Year** | **Total** |
| **Salaries/ Wages** | 198000 | 198000 | 396000 |
| **Consumables** | 90000 | 70000 | 160000 |
| **Travel** | 40000 | 40000 | 80000 |
| **Permanent Equipment** | 880000 |  | 880000 |
| **Other Costs (specify if any)** | 50000 | 50000 | 100000 |
| **Total** | **1258000** | **358000** | **1616000** |

**References:**

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