

Reference No. :- **IDEATN014810****1. Details of Incubatee:**

<b>1.1 Details of the Host Institute (HI)</b>	Mahendra Engineering College , Mahendra Engineering College (Autonomous),Mahendhirapuri, Mallasamudram - 637503.Tamilnadu, India. , 04288288610 , principal@mahendra.info , 9994227916	<b>1.2 Name of the Business Incubator (BI)</b>	Dr Visvanadhan , TBI Manager , coe@mahendra.info , 9976261014
<b>1.3 Category of the Incubatee</b>	Student	<b>1.4 Incubatee Name</b>	Dharshini T
<b>1.5 State</b>	TAMIL NADU	<b>1.6 District</b>	SALEM
<b>1.7 Email Id</b>	dharshudharshu411@gmail.com	<b>1.8 Mobile Number</b>	9344126716
<b>1.9 Category</b>	OBC	<b>1.10 Gender</b>	Female
<b>1.11 Address</b>	5-5/272, Puthu Mariamman Kovil Street, Salem Steel Plant,- 636 013		

**2. Details of Idea:**

<b>2.1 Title of proposed idea/innovation</b>	AI-Enabled Highway Safety Device Informing Guardians in Critical Situations to Prevent Accidents and Highway Hijackings
<b>2.2 Whether the idea involves use of existing intellectual property or not, give brief detail there of</b>	No
<b>2.3 Briefly explain newness/uniqueness of the innovation</b>	The AI-Enabled Highway Safety Device is a cutting-edge project designed to address the pressing issues of road accidents and highway hijackings. This innovative device leverages artificial intelligence (AI) and real-time communication technology to enhance safety measures on highways. The primary objective of this project is to promptly inform guardians, parents, or family members in critical situations to prevent accidents and mitigate the risks associated with highway hijackings
<b>2.4 Concept &amp; Objective</b>	1 The AI-Enabled Highway Safety Device aims to detect accidents instantly and report them in real-time to the concerned guardians, parents, or family members. This enables quick response and timely assistance to those involved in the accident. 2. The device is equipped with advanced algorithms to detect suspicious activities indicative of a highway hijacking attempt. It promptly notifies guardians, allowing them to take necessary action to protect their loved ones. 3. The project seeks to integrate an automated emergency response mechanism that triggers appropriate actions in case of accidents or hijacking events. This could include notifying emergency services, sharing GPS location data, and establishing communication channels. 4. The device will have a user-friendly interface, ensuring ease of use for drivers and passengers. Intuitive controls and clear instructions will enable quick access to emergency features.
<b>2.5 Specify the potential areas of application in industry/market in brief</b>	The AI-Enabled Highway Safety Device will be developed through the following points. Gather relevant data on highway accidents and hijacking incidents to understand the common patterns and factors associated with these events. Build sophisticated AI models using machine learning algorithms to recognize patterns of accidents and identify potential highway hijacking scenarios. Integrate the device with real-time communication technology, enabling instant alerts to guardians and family members via SMS, email, or mobile applications. Implement GPS tracking capabilities to share accurate location information during emergencies, facilitating swift assistance.

<b>2.6 Briefly provide the market data for the potential idea/ innovation</b>	By promptly alerting guardians about accidents, immediate assistance can be provided, potentially preventing further injuries or fatalities. The devices capability to detect and notify guardians of highway hijacking attempts may act as a deterrent, discouraging potential criminals. The project will contribute to overall highway safety by reducing response times and improving emergency communication.		
<b>2.7 Name and details of Mentors</b>	Dr.S.M.Kamali Professor and Asst.Director- Research Department Electrical and Electronics Engineering, Annapoorana Engineering College(Autonomous), Salem, Tamilnadu,India 636308	<b>2.8 Experience and Qualification of Mentors</b>	Dr.S.M.Kamali,M.E.,Ph.D., Professor and Asst.Director- Research 27 years of teaching experience
<b>2.9 Contact Details of Mentors</b>	Mobile: 9443477637 Email:kamalinalladuraimail.com	<b>2.10 Current Development Status of innovation</b>	Rapid innovation and ongoing research and development activities characterize the current state of AI-enabled traffic safety equipment. Leading automakers and IT firms are making significant investments in AI-driven solutions for road safety, and there are now a number of ADAS products available on the market, including lane-keeping assistance and adaptive cruise control. Nowadays, many automobiles use AI algorithms to avoid collisions and detect pedestrians.
<b>2.11 Expected time of completion of idea</b>	one year	<b>2.12 Idea Sector</b>	Services, Education, Hospitality, Media, Publishing, Entertainment, Design, Wellness, Logistics, Sports and any related sub-sector

**3. Financial requirements:****3.1 Activity-wise break**

<b>Particular/Item</b>	<b>Total idea project cost (Rs. In lakh)</b>	<b>Amount GOI assistance (Rs. In lakh)</b>	<b>Incubatee share (Rs. In lakh)</b>
Technology related Expenditure towards machine usage charges etc., Electricity charges, Procurement of raw material , testing/Calibration charges, other charges essential for development of idea <b>Max (10.00) lakh.</b>	5.600	5.600	0.000
Charges for mentor/handholding supporting team <b>Max (3.00) lakh.</b>	1.250	1.250	0.000
Travelling Expenses or any other item not covered as above may be allowed as per need for development of the idea <b>Max ( 2.00) lakh.</b>	1.200	1.200	0.000
<b>Total</b>	8.050	8.050	0.000

#### 4. Other students/Entrepreneurs associated with this project/idea

Name		Aadhar No/Udhyog Aadhar No/Udyam Registration	
Kiruthika Sakthivel		238885XXXXXX	
Renuka Krishnasamy		766255XXXXXX	
Mahalakshmi R		360295XXXXXX	
<b>Ref. No.</b>	INC23CTN035858	<p><b>5. Summary of the idea. This is the section reviewers read to understand the technical solution. Please state the solution clearly. Reviewers may ask: What is the actual technical advancement or improvement provided by this solution?</b></p>	<p>AI is being incorporated into smart infrastructure projects across several regions for traffic management, incident detection, and real-time data analysis, all of which contribute to safer highways. Additionally, research is progressing in fields including autonomous vehicle technology, vehicle-to-infrastructure (V2I) connectivity, and AI-driven preventive maintenance for infrastructure components. In the near future, we may anticipate ongoing advancement and a wider acceptance of AI-enabled roadway safety equipment as legal frameworks change to accommodate these breakthroughs.</p>
<b>6 (a) Is it a new concept?</b>		YES	
<b>(b) Prior art on the concept, if any</b>	no	<p><b>7. Main Problem Being Addressed in the Project (Every solution targets a certain problem. Please use this section to highlight the specific problem the solution addresses. This section can be as short or as long as needed to describe the precise problem the solution addresses)</b></p>	<p>2019 US Patent US10519002B2: This patent, titled AI-based vehicle monitoring and warning system, describes a system that makes use of machine learning and AI to track driving habits, traffic conditions, and vehicle behavior. It provides drivers with real-time warnings to help reduce accidents and improve highway safety. The IEEE Intelligent Transportation Systems Conference (ITSC) has served as a forum for the exchange of research on AI-powered traffic safety equipment.</p>
<b>8. Background for getting the idea?</b>			

<p><b>a. Who is it for?</b></p>	<p>The urgent need to improve traffic safety, decrease accidents, and optimize transportation systems gave rise to the concept for an AI-enabled highway safety device project proposal.</p>	<p><b>b. What will it do?</b></p>	<p>With inspiration from current developments in advanced driver assistance systems (ADAS), traffic management, autonomous vehicles, and smart infrastructure, such a project seeks to use artificial intelligence to provide cutting-edge solutions for highway safety.</p>
<p><b>c. Any unique features? Explain?</b></p>	<p>The IEEE Intelligent Transportation Systems Conference (ITSC) has served as a forum for the exchange of research on AI-powered traffic safety equipment</p>	<p><b>9. How simple or complex will the idea's execution or implementation be? What are the risk factors involved in executing the idea?</b></p>	<p>Such instances highlight the ongoing innovation and development in the area of AI-enabled traffic safety devices, with an emphasis on both patented innovations and contributions from university research</p>
<p><b>10. How soon could the idea be put into operation? (TRL of prototype)</b></p>	<p>8 months</p>	<p><b>11. How much investment would you need for prototyping of the Idea?</b></p>	<p>8 Lakhs</p>
<p><b>12. (a) How do you intend to protect your idea (i.e. your intellectual property or IP)? Status of IPR (if any)</b></p>	<p>apply for patent</p>	<p><b>(b) Related Background This section is used to highlight information that can be used by the reviewers or patent attorney to help put the solution in proper context. You can think of this section as something similar to the introduction section of an academic publication. This section is specifically reserved for other people's work (please include competitive work) as well as your past work that you believe will aid the reviewers in understanding the technical landscape. Data related to or supporting your solution should NOT be in this section, it should be in Section III: "How is this Solution Made and Used."</b></p>	<p>Rapid innovation and ongoing research and development activities characterize the current state of AI-enabled traffic safety equipment. Leading automakers and IT firms are making significant investments in AI-driven solutions for road safety, and there are now a number of ADAS products available on the market</p>

<p><b>13.How is This Project Made and Used: Please describe in as much detail as possible how the innovation is implemented. This includes details on how you actually make, assemble, synthesize, or build the solution and details on how the solution is used once it is made. Reviewers will ask: How does the technical innovation actually work – or – what is the detailed process to achieve the technical innovation? Please help convince the reviewers with supporting statements using as much of the following that is available: your thoughts, logic, supporting literature, and/or experiments.</b></p>	<p>It provides drivers with real-time warnings to help reduce accidents and improve highway safety.</p>
<p><b>Upload Block diagram/ flow chart/ Circuit Diagram/Pictures</b></p>	<p>View/Download</p>
<p><b>Uploaded Minutes of the evaluation Committee</b></p>	<p>View/Download</p>
<p><b><u>Student ID with duration of course and bonafide certificate by HI certifying that the student is currently enrolled in the course</u></b></p>	<p>View/Download</p>



**I declare that:**

1. I have read the entire scheme guidelines and shall abide by all the requirements stipulated therein for seeking financial assistance.
2. I hereby declare that information given above is true to the best of my Knowledge and that I have not withheld/distorted any material fact.
3. Any information/ documents that may be required to be verified shall be provided immediately before the concerned authority.
4. I hereby declare that I have not availed any financial assistance for this purpose from any other scheme from any Central/ State govt. agency.
5. In case the Idea is approved, Host Institute would undertake to make facilities available to carry out the development arrange for the submission of periodic progress reports and other information that may be required by the Ministry.
6. I certify that the accounts of the funds received and spent will be kept and made available on demand, as per scheme guidelines
7. I certify that the funds will be used only for Idea development as per activities defined in Scheme Guidelines & no funds out of this grant will be utilized for any other activity/production purposes.