



# IEEE Tunisia Section RAS Chapter

PRESENTS ITS TSYP 11 TECHNICAL CHALLENGE

## InnovateSafe Road

Welcome to "InnovateSafe Road," where innovation meets road safety! We're thrilled to have you join our challenge aimed at shaping the future of safer transportation.

### SCOPE & TOPIC :

Imagine a world where road safety reaches unprecedented levels, traffic accidents are exceedingly rare, and the roads become havens of security for all. The "Revolutionizing Road Safety" challenge calls upon participants to conceive groundbreaking startup ideas that harness the potential of advanced technologies, including Artificial Intelligence (AI), the Internet of Things (IoT), and computer vision, to tackle the critical issue of traffic accidents.

Participants are encouraged to explore and propose inventive solutions within the following realms:

1. **Intelligent Traffic Management:** Develop AI-powered traffic management systems that dynamically adjust traffic flow to optimize safety and efficiency.
2. **Predictive Analytics:** Utilize AI-driven predictive analytics to foresee hazardous scenarios and proactively take preventive measures.
3. **IoT-Enabled Vehicle Communication:** Create IoT-enabled vehicle-to-vehicle (V2V) communication systems that enable instant collision avoidance and real-time safety alerts.
4. **Computer Vision Solutions:** Leverage computer vision technology to enhance pedestrian and cyclist safety by detecting and reacting to potential hazards.
5. **Autonomous Vehicle Integration:** Explore how autonomous vehicles can contribute to a safer road environment by reducing human errors and enhancing situational awareness.

### PROBLEM:

In this competition, we invite brilliant minds and visionary creators to address a pressing global concern: road safety.

Despite advancements in automotive engineering, traffic accidents remain a significant threat to human lives and well-being. We seek solutions that will not only drastically reduce accidents but also create an environment where drivers, pedestrians, and passengers can move about with the utmost confidence in their safety. Join us in this mission to redefine car safety, push technological boundaries, and chart a course toward a future where the roads are safer than ever before.

### GOALS:

Your mission is to craft a groundbreaking startup idea that leverages the power of smart solutions—such as Artificial Intelligence (AI), the Internet of Things (IoT), and computer vision—to address the critical issue of traffic accidents.

Your challenge is to create an innovative and technical solution that not only reduces the frequency of accidents but also transforms the way we perceive road safety.

Your startup idea should encompass a comprehensive approach that seamlessly integrates advanced technologies to predict, prevent, and respond to potential accidents in real time.

Whether it's intelligent traffic management systems that dynamically adjust traffic flow, AI-driven predictive analytics that foresees hazardous scenarios, or IoT-enabled vehicle-to-vehicle

communication that ensures instant collision avoidance.

your solution should push the boundaries of what's possible.

Picture a world where vehicles and infrastructure collaborate harmoniously to create an ecosystem of safety, benefiting everyone on the road. As you stand in this innovation valley, the spotlight is on you to present an idea that not only disrupts the norm but revolutionizes how we think about road safety.

Your startup concept should not only address the technical challenges but also consider the scalability, usability, and ethical implications of your solution. Now, seize the stage and shape the future of road safety with your visionary startup idea.

## INSTRUCTIONS & DELIVERABLES:

SBs interested in participating must fill out the form by the application deadline, and submissions after the deadline will not be considered.

Each registered team is required to submit a comprehensive Github repository that outlines their innovative solution. this repository should contain a detailed readme file explaining the repo's content, as well as describing the project. The repo should be well organized, containing any code, CAD, schematics, pictures, resources, or any files relevant to the project.

any added value such as Kaggle notebooks in the case of AI applications is appreciated.

you must Prepare a 5-minute presentation that highlights your project's innovation, feasibility, and potential impact. Ensure your presentation aligns with the challenge themes and problem statement.

While not mandatory, presenting a working prototype or pilot project during your presentation can strengthen your proposal's feasibility and practicality.

## SUBMISSION

Each team must submit their work through:

- a presentation to be submitted as a file (if .pptx) or as a link with shared open access.
- Github repository
- Any added value (exp : Kaggle)

Deliverables are highlighted above, and submitted by filling out this form.

## RULES AND CRITERIA

This challenge is for SBs only, Any SB can participate in this challenge, each SB is represented by one team, with a maximum of 4 participants per team

### Technical Requirements:

- Submissions must be technically feasible within the current state of technology.

### Prototypes/Demos:

- Participants are encouraged to create prototypes or proof of concepts to showcase their solutions, prototypes don't have to be physical or limited to hardware and can be in the form of simulations.

### Pitching Duration :

- 5 minutes + 2 minutes Q&A

### Pitching Language:

- French
- English

**Maximum Participants per Team/SB : 4**

## SCORING

**Total score: 20 points**

- Pitch & Presentation: **4pts**
- Proof of concept:(prototype) **4pts**
- Project Architecture, quality of technical solution and technologies used: **5pts**
- Startup Model (BMC, Market Potential ...) **5pts**

**Bonus: 2 points**

- Yp (graduate student grade)member in the team: **1pts**
- RAS member in the team: **1pts**

## WINNERS

- **Number of winners :** 3 Best Teams
- **Prize:** all 3 Best teams will be awarded a certificate in their Student Branch's name.

**DEADLINE FOR SUBMISSION:**  
**10/12/2023 at 23:59 PM**

For more information contact :

CHAIR:	Wael Jaballah	• <a href="mailto:madihaneifar@ieee.org">madihaneifar@ieee.org</a>
TREASURER :	Ahmed Aoudidi	• <a href="mailto:ahmedaoudidi@ieee.org">ahmedaoudidi@ieee.org</a>
VICE CHAIR:	Khaled Khnissi	• <a href="mailto:khaled.khnissi@ieee.org">khaled.khnissi@ieee.org</a>