

IEEE ITSS New Initiatives Projects Final Report Template (2025)

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New Initiatives Project Title:

F1Tenth Autonomous Racing Competition at IEEE IV 2025

Project Duration:

Enter as Month/Year to Month/Year. For example: 03/2025-12/2025

Planning, preparation, on-site execution during IEEE IV 2025, and post-event wrap-up

- Planning started in January 2025
- Initial preparation and project kickoff in March 2025
- Selection and qualifications of teams in April 2025
- Purchase of material in May 2025
- Orientation session for the teams in June 2025
- On-site execution during IEEE IV 2025 in June 2025
- Post-event wrap-up and shipping of platform to the next team in August 2025
- Planning and publicity for the upcoming edition in November 2025

Approved Total Budget:

Enter as \$12345.67.

USD 40,000.00

Project Goal and Short Descriptions:

Include the project goal and short descriptions of the project.

The goal of this initiative was to organize and deliver the F1Tenth Autonomous Racing Competition as an integral, high-impact component of IEEE IV 2025, while ensuring full alignment with IEEE ITSS strategic objectives in education, global outreach, membership growth, and conference value creation.

The competition provided a hands-on, real-world testing environment for autonomous driving algorithms using standardized 1:10 scale vehicles. It enabled students and early-career researchers to validate research concepts under competitive conditions, while facilitating direct interaction with senior researchers, industry experts, and IEEE ITSS leadership.

A key objective was to lower participation barriers by providing targeted financial support to IEEE ITSS-affiliated teams. In total, 8 teams were supported through travel and participation grants, allowing geographically diverse teams to attend IEEE IV 2025 and compete. This support directly addressed inclusivity, diversity, and global participation goals of the Society.

The initiative was executed without adding financial or logistical burden to the IEEE IV organizing committee. All major infrastructure, logistics, and operational costs were covered through the approved IEEE ITSS New Initiatives budget, with purchased assets retained for reuse at future IEEE IV conferences.

Completed Project Tasks and Milestones:

Include completed project tasks and milestones.

Competition Planning and Coordination

- Formation of the organizing and supervisory committee
- Alignment with IEEE IV 2025 local organizers and venue management
- Finalization of competition format, rules, safety procedures, and schedule

Team Selection and Support Allocation

- Evaluation of applicant teams based on technical readiness, IEEE ITSS membership, and geographic diversity
- Selection of 8 teams for financial support
- Allocation of travel and participation grants

Procurement and Logistics

- Rental and setup of competition venue, racetrack infrastructure, and audio-visual equipment
- Deployment of timing systems, networking, and shared computing resources
- Coordination of catering, supplies, and on-site operational needs

Event Execution at IEEE IV 2025

- On-site setup and testing sessions
- Official competition runs and jury evaluation
- Awards ceremony and public engagement during the conference

Post-Event Wrap-Up

- Collection of results, media assets, and feedback
- Storage of reusable equipment for future events
- Preparation of final reporting and financial reconciliation

Report on Budget Usage:

Include main categories of your budget spending and approximated amount.

The total approved budget was USD 40,000. The actual expenditures are detailed below with updated, more granular transparency on how funds were spent, explicitly identifying beneficiaries and purposes.

1. Venue, Facilities & Race Preparation – USD 2,500

This category covered direct costs related to the physical preparation and operation of the race environment. Expenses included racetrack preparation materials, safety-related items, temporary track modifications, and essential consumables required to prepare and maintain the competition area throughout the event. These costs ensured safe, uninterrupted race execution over the two competition days.

2. Merchandise, Awards & Visibility Materials – USD 1,500

Funds were used for participants and volunteer shirts, race stickers, trophies, and certificates. These items supported participant recognition, volunteer identification, and IEEE ITSS visibility during the event, contributing to a professional and well-branded competition presence.

3. Support Staff Travel & Jury Operations – USD 5,000

Travel support was provided to **5 experienced staff members** who were essential for competition setup, technical supervision, and jury responsibilities:

- Egypt (1 staff member): Responsible for scaled autonomous car robotics activities in the Middle East and technical race oversight
- Germany (2 staff members): Responsible for organizing and supervising similar national and regional competitions
- Spain (1 staff member): Lead organizer of the F1Tenth competition during IEEE IV 2024, providing continuity and expertise
- Romania (1 staff member): Local organizer providing on-site logistical and operational support

This support ensured technical consistency with previous editions and fair, expert evaluation during the competition.

4. Team Support (Travel & Components) – USD 12,000

A total of **USD 12,000** was allocated to support **8 teams** for travel expenses and the purchase of race-related components, directly enabling participation:

- Spain: 1 team
- Germany: 3 teams
- Hungary: 1 team
- United Kingdom: 1 team
- Switzerland: 1 team
- Romania: 1 team

This funding significantly reduced financial barriers, enabled broader European participation, and supported IEEE ITSS student engagement objectives.

5. Catering for Participants and Staff – USD 9,000

Catering costs covered food and refreshments for participants, staff, volunteers, and jury members across **two full competition days**. Providing on-site catering was critical to maintaining schedule adherence and operational efficiency during intensive race activities.

6. Planning & Publicity Support for IEEE IV 2026 – USD 2,000

These funds were used to support early planning activities and promotional efforts for the continuation of the F1Tenth competition at **IEEE IV 2026**, including coordination meetings, preliminary materials, and visibility actions during IEEE IV 2025.

7. Preparation Materials for IEEE IV 2026 – USD 8,000

This category covered the preparation, refurbishment, and procurement of reusable competition materials to be stored and deployed for **IEEE IV 2026**. Investing in reusable assets improves cost efficiency and sustainability of future IEEE ITSS competitions.

Total Reported Expenditure: USD 40,000

Benefits to the IEEE ITSS:

Include the potential benefits to the growth of IEEE ITSS and its activity areas upon completion of the project (membership, conferences, publications, education, technical activities, standards, and outreach).

This initiative delivered measurable and strategic benefits to IEEE ITSS:

- **Global Outreach:** Participation from teams across multiple countries strengthened IEEE ITSS's international presence and visibility.
- **Membership Growth:** Direct engagement with students and early-career researchers increased awareness of IEEE ITSS and encouraged new memberships.
- **Conference Value:** The competition significantly enhanced the attractiveness of IEEE IV 2025, increasing attendance and engagement.

- **Education & Technical Activities:** Provided a practical, high-impact learning platform aligned with autonomous systems and intelligent transportation research.
- **Industry Engagement:** On-site visibility and media coverage supported future sponsorship and industry collaboration opportunities.

Lessons Learned:

Please include the following points: 1) Assessment of whether your project's objectives and goals are met. 2) Summary of what went right in your project. 3) Summary of what went wrong with your project. 4) Suggestions for improvements.

1. Achievement of Objectives

The project met all stated objectives. The competition was delivered successfully, within budget, and with strong participant and attendee engagement.

2. What Went Well

- Strong international participation and team diversity
- Smooth on-site execution due to early planning and experienced staff
- High visibility and positive feedback from IEEE IV attendees

3. What Could Be Improved

- Earlier confirmation of visa-related travel constraints for some regions
- More standardized post-event data collection from teams

4. Suggestions for Improvement

- Introduce a standardized reporting template for supported teams
- Allocate a small contingency for late travel changes
- Expand structured industry involvement (e.g., technical challenges or mentoring sessions)

NOTE: The Project Final Report must be submitted to the ITSS Vice President for Finance at lingxili@purdue.edu within (30) days upon completion of the project. Further funding requests will NOT be approved until the final report of the prior project is received.

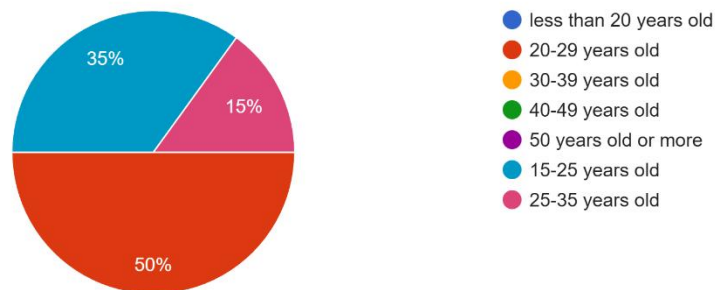
Results from Participant and Attendee Survey

Following the completion of the F1Tenth Autonomous Racing Competition, a post-event survey was distributed to participating teams, support staff, and conference attendees who engaged in the competition. The objective of the survey was to assess participant satisfaction, educational value, organizational quality, and benefits to IEEE ITSS.

Overall, survey results indicated **strongly positive feedback** across all evaluated dimensions. A clear majority of respondents rated the competition as *highly valuable* or *very highly valuable* in terms of hands-on learning, exposure to real-world autonomous driving challenges, and opportunities for technical exchange with peers and experts.

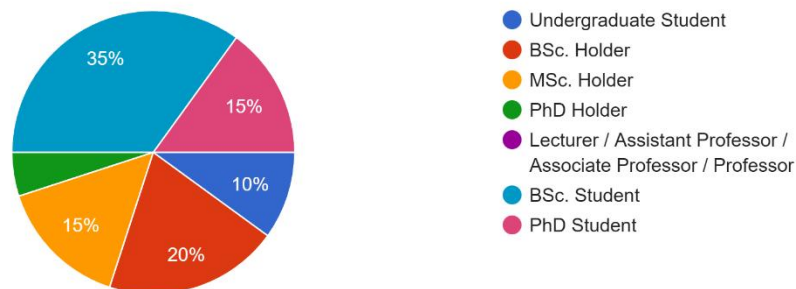
Age Group

20 responses



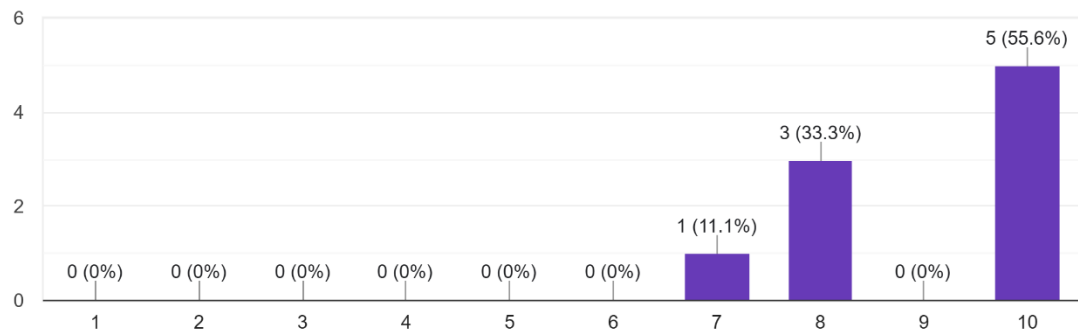
Academic Level

20 responses



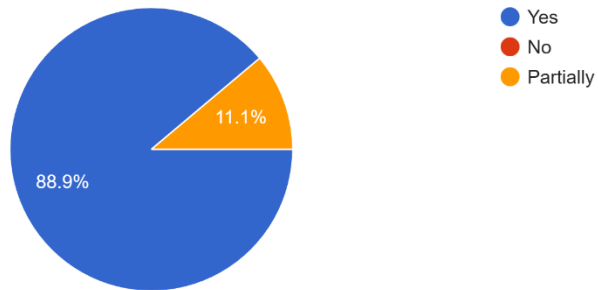
How satisfied were you with your overall RoboRacer experience?

9 responses



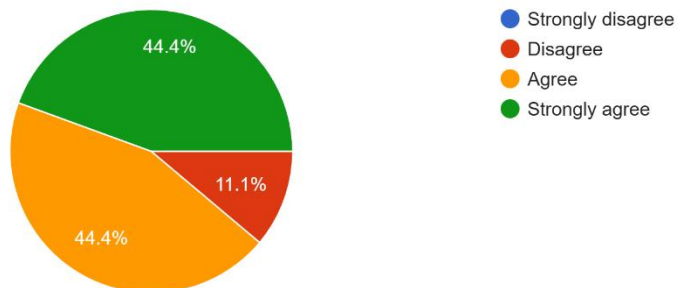
Were rules and guidelines clear and easy to follow?

9 responses



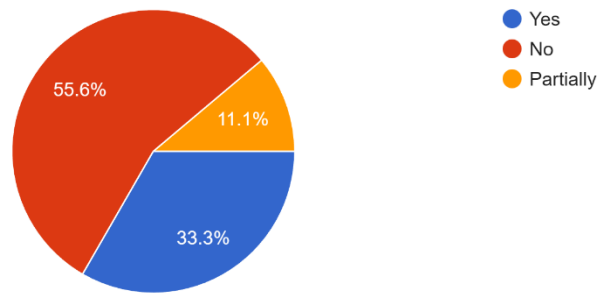
Were the provided hardware/software resources sufficient and reliable?

9 responses



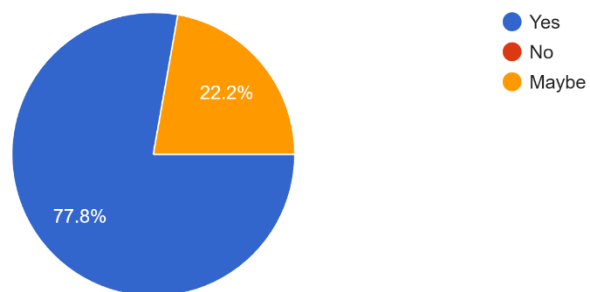
Did your team face significant technical challenges?

9 responses



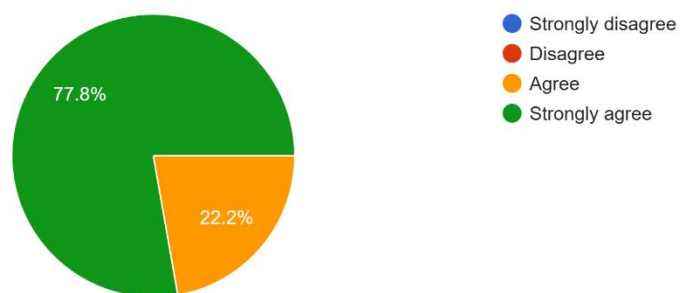
Did participation enhance your autonomous vehicle and robotics skills?

9 responses



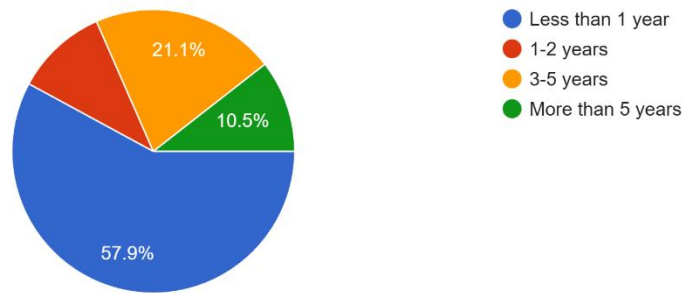
Was the event organizers' support helpful?

9 responses



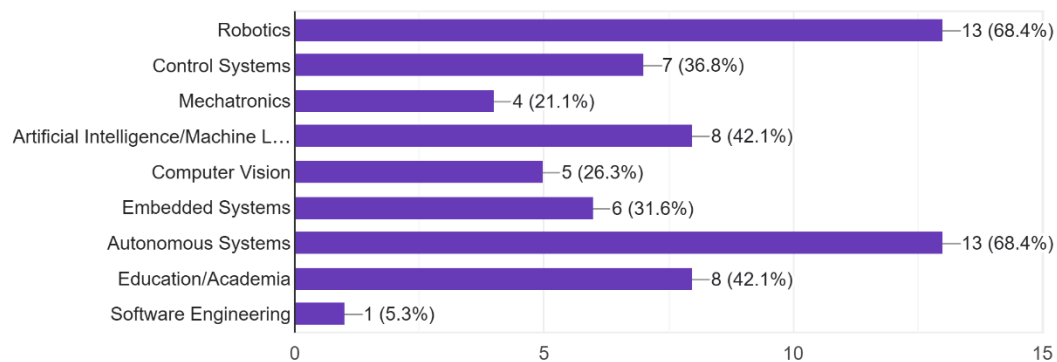
Years of Experience with SVs

19 responses



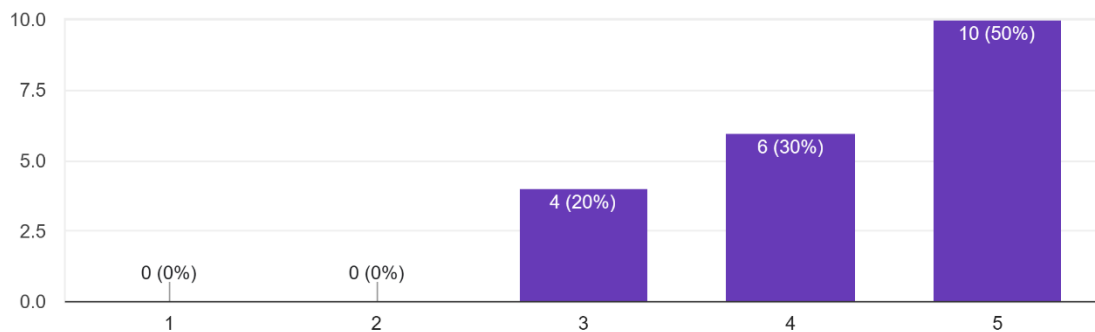
Field of work with SVs (select all that apply):

19 responses



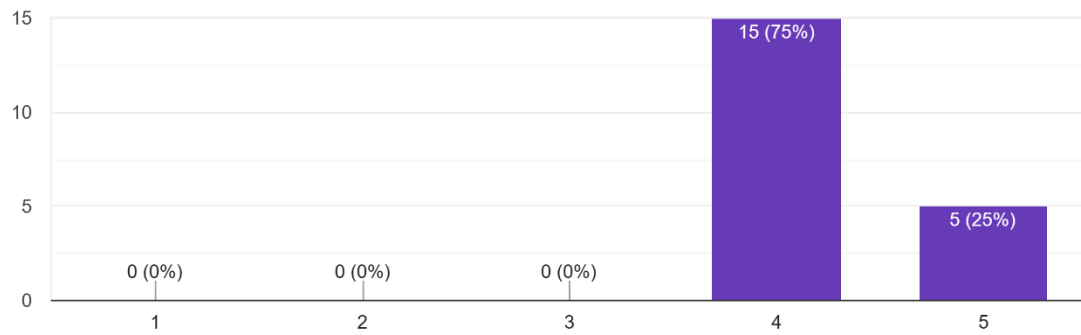
Using scaled vehicle platforms is essential for validating autonomous algorithms before full-scale deployment.

20 responses



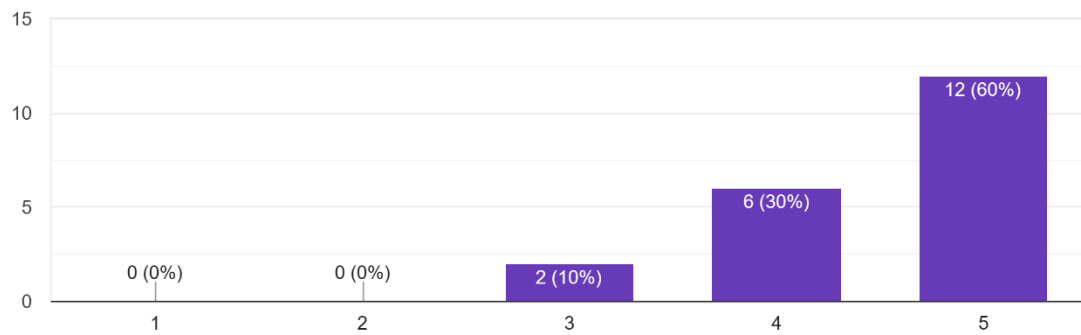
Scaled platforms like RoboRacer provide a realistic and practical environment for algorithm testing.

20 responses



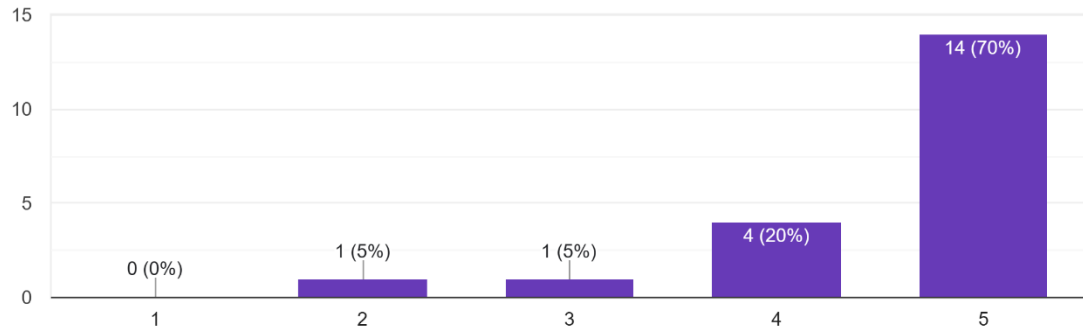
Incorporating scaled vehicles into research improves the overall quality and applicability of the work.

20 responses



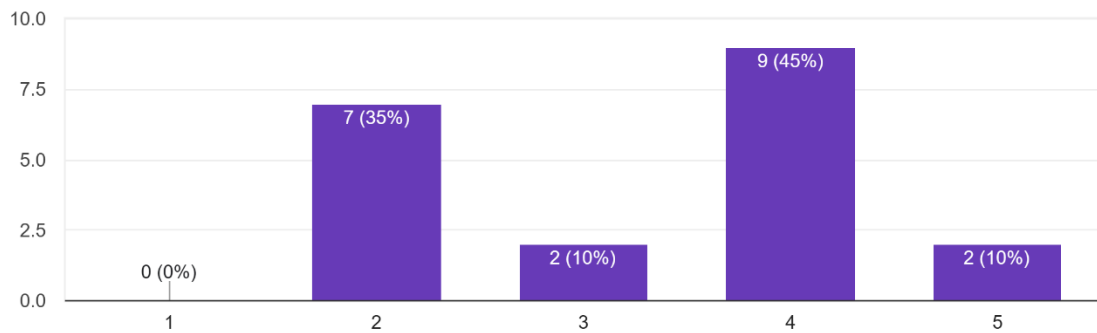
These platforms play a critical role in bridging the gap between simulation and real-world application.

20 responses



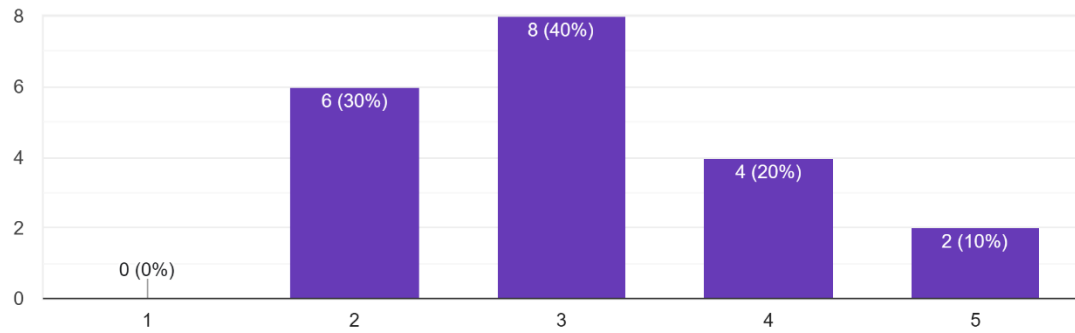
The limited scale of these vehicles restricts the complexity of the scenarios I can test.

20 responses



Hardware reliability and maintenance are recurring issues when using scaled platforms.

20 responses



They provide a controllable and repeatable environment for experimental validation.

20 responses

