

Invitation for Papers

IEEE Transactions on Field Robotics

Special Issue on

XPRIZE Rainforest Competition

The \$10m XPRIZE Rainforest competition's goal was to autonomously survey a square kilometer of remote rainforest in under 24 hours. The winning team needed to "develop technologies to rapidly and comprehensively survey rainforest biodiversity and use that data ... to benefit both biodiversity and forest communities." During the semi-finals in Singapore and the finals near the Igarapé community in the Brazilian Amazon, teams encountered extreme environments including high temperatures and humidity, dense foliage that affected communication, limited power sources, and challenging topography. Teams needed to develop solutions to overcome these issues as well as meet requirements for reliability, robustness, and transportability.

The new IEEE Transactions on Field Robotics (T-FR) announces a special issue on the XPRIZE Rainforest Competition to explore how teams were able to use robotics and other automation to address data collection for the challenge.

We invite papers that describe the application of robotic systems towards the XPRIZE Rainforest competition (specifically the 24h data collection period) including a discussion of overall system design and approach, detailed hardware and software design, experimental results both in the competition and leading to the competition, best practices, and levels of autonomy.

Papers for this special issue must provide technical descriptions of systems and results and analysis of experimentation in the field. Lessons learned in the development and operation are pertinent to the discussion.

The T-FR encourages multimedia content, and this issue seeks media illustrating operation in the field as well as any open source software and public datasets related to the data collection phase of the competition. This special edition is not intended as a place to discuss the biodiversity results or methods to analyze the data beyond a brief description.

Planned Publication Schedule

~~December 20, 2024~~ March 1, 2025: Manuscript submission cutoff
May 20 - July 20, 2025: Reviews returned; manuscript revisions completed
July 20 -August 20, 2025: Publication decisions and articles published online
August 20, 2025: Special issue website finalized linking all articles

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