Cordillera RoboTech Challenge 2026

Robotics and Digital Innovation for a Resilient Future

(draft title only)

November 6, 2026
Luna, Apayao

Competition Mechanics

A. Competition Levels

Competition Level	General Description
Beginner	Intended primarily for elementary and junior high school students, as well as first-time participants with limited robotics experience. Challenges under this level shall emphasize fundamental robotics concepts such as basic programming, robot control, sensor use, navigation, and introductory automation.
Advanced/Open	Intended primarily for senior high school, college, and experienced robotics participants. Challenges under this level may involve self-built or substantially modified robots, autonomous operation, advanced programming, artificial intelligence, computer vision, and original robotics or automation projects. Open platforms may be allowed subject to technical inspection and compliance with competition specifications.

Note: *Educational level shall serve as a general guide only. Participants may enter a higher-level category if they meet the technical requirements prescribed for that category. Specific eligibility requirements shall be stated in the mechanics of each competition category.*

B. Competition Categories

Category	Level	Core Format
Erobot Sumo	Beginner	Remote-controlled sumo competition using the Erovoutika robotics kit provided for the event.
Erobot Line Following	Beginner	Autonomous line-following competition using the Erovoutika robotics kit provided for the event.
RC Soccerbot	Beginner	One-on-one remote-controlled robot soccer competition using the Erovoutika robotics kit provided for the event.
Advanced/Open Line Following Robot	Advanced/Open	Self-built/open autonomous line follower; ranking primarily by fastest successful lap. Size limit maximum 25cm x 25cm.
3 kg Autonomous Sumobot	Advanced/Open	Self-built autonomous robot, maximum 3 kg and 20 cm x 20 cm footprint, competing head-to-head on a sumo ring.
Robotics Innovation Showcase / Freestyle	Advanced/Open	Prototype or project exhibition with poster, live demonstration, presentation, and Q&A before judges.

C. Eligibility and Team Composition

- The competition shall be open to students, independent hobbyists, robotics enthusiasts, and other qualified participants who are residents or currently based in the Cordillera Administrative Region (CAR), subject to the eligibility requirements of each competition category.
- Participants may represent a school, college/university, organization, robotics club, company, or may register as an independent team, provided that the participant or team is based in CAR.
- Participants shall compete under either the Beginner or Advanced/Open level, depending on the category entered and its specific requirements.
- Unless otherwise specified under a category, each team shall consist of a maximum of three (3) members and may have one (1) coach, adviser, or team mentor.
- Student participants may be required to present a valid school ID. Participants representing an organization may be required to present appropriate proof of affiliation, such as an organization ID, when applicable.
- Independent participants or teams shall not be required to have a school or organizational affiliation, provided that they satisfy the registration and technical requirements of the category.
- A team may participate in more than one category, provided that each entry separately complies with the requirements of the category and there is no conflict in the competition schedule.
- Only officially registered and confirmed participants shall be allowed to compete.

D. Registration and Entry Requirements

- All participants and teams must complete the official registration process within the prescribed registration period.
- Each team shall register under its chosen competition category and provide the required participant and team information.
- A separate registration shall be required for each robot or project entered in a competition category.
- Teams joining more than one category must register separately for each category entered.
- Registration shall be considered complete only upon confirmation by DOST-CAR.
- The DOST-CAR may limit the number of entries per category based on venue capacity, available equipment, competition schedule, and technical resources.
- Registration may be closed once the maximum number of entries for a category has been reached.
- Substitution or replacement of team members after the registration deadline shall be subject to approval of DOST-CAR.
- Additional documentary or technical requirements may be required depending on the competition category.
- Free Admission!!

E. Technical Inspection and Safety Requirements

- All robots and competition equipment shall undergo technical inspection before being allowed to compete.
- Inspection shall verify compliance with the size, weight, control, power, safety, and other technical requirements prescribed for the specific category.
- Robots that fail to comply with the required specifications shall not be allowed to compete until the identified deficiencies are corrected and the robot passes reinspection.
- The Robotics Competition Committee may conduct additional inspections before or after a match or attempt when necessary.
- Any modification made after initial inspection that may affect compliance with the technical requirements may require reinspection.
- Robots shall not contain parts, materials, mechanisms, or substances that may pose a danger to participants, officials, spectators, or competition facilities.
- Batteries, electrical connections, moving components, and mechanical assemblies shall be properly secured and operated within safe limits.
- The organizers may immediately stop the operation of any robot or project that is considered unsafe.
- Participants shall follow all safety instructions issued by the Robotics Competition Committee.
- Safety violations may result in suspension of an attempt, removal of the robot from the competition area, or disqualification depending on the severity of the violation.

F1. Erobot Sumo Category

Participants / Team

- Intended primarily for elementary and junior high school students and first-time robotics participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser.
- Only one team member shall operate the robot during a match.

Robot / Kit Requirements

- The competition shall use the prescribed Erovoutika robotics kit provided for the event.
- All teams shall use the same standard kit configuration to ensure a level playing field.
- Teams may adjust and calibrate allowable settings such as motor response, alignment, controller sensitivity, and other prescribed parameters..
- Each robot shall undergo technical inspection before competition.

Match Mechanics

- Two robots shall compete inside the designated sumo ring.
- Robots shall start from the positions designated by the referee.
- Each match shall be played on a best-of-three (3) rounds basis.
- Each round shall have a maximum duration of two (2) minutes.
- A round is won when a robot successfully pushes its opponent outside the ring.
- A robot shall be considered out when at least one of its wheels touches the area outside the ring.
- If neither robot scores within the prescribed rounds, a tie-breaker round shall be conducted under the starting arrangement prescribed by the referee.
- The tournament shall use a single-elimination format. The winning team advances to the next stage, while the losing team is eliminated from the competition.
- Match pairings shall be determined through random draw or official bracketing before the start of the competition.

F2. Erobot Line Following Category

Participants / Team

- Intended primarily for elementary and junior high school students and first-time robotics participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser.
- Only registered team members may handle or operate the robot during official attempts.

Robot / Kit Requirements

- The competition shall use the prescribed Erovoutika robotics kit provided for the event.
- The robot shall operate autonomously during an official attempt.
- Teams may adjust and optimize allowable parameters such as sensor calibration, motor speed, control logic, and line-following behavior.
- Each robot shall undergo technical inspection before competition.

Competition Mechanics

- A separate practice/calibration track shall be provided for teams to test and tune their robots before and between official attempts. Practice runs shall not be recorded for ranking.
- Each team shall be allowed three (3) official attempts on the official competition track.
- An official attempt shall begin only after the team declares readiness and the referee gives the start signal.
- Once an official attempt has started, it shall count as one of the team's three attempts, even if the robot leaves the line or fails to complete the course.
- The objective is to complete one (1) full lap of the official track in the shortest possible time.
- An attempt shall be considered valid only if the robot completes the entire course from start to finish.
- If the robot leaves the designated line or fails to complete the course, the attempt shall be recorded as No Time.
- There shall be no checkpoints along the official track.
- The team's fastest valid recorded time shall be used for ranking.
- In case of a tie, the second-fastest valid time shall serve as the first tie-breaker. If the tie remains, the third-fastest valid time shall be used.
- The team with the fastest valid recorded time shall be declared the winner.

F3. RC Soccerbot Category

Participants / Team

- Intended primarily for elementary and junior high school students and first-time robotics participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser.
- Only one (1) registered team member shall operate the robot during a match.

Robot / Kit Requirements

- The competition shall use the prescribed Erovoutika robotics kit provided for the event.
- All teams shall use the same standard robot configuration.
- The robot shall be remote-controlled during the match.
- Hardware modifications shall not be allowed unless specifically permitted under the technical specifications.
- Teams may adjust allowable settings such as motor response, steering behavior, controller sensitivity, and other prescribed parameters.
- The quality of calibration, control, and match strategy shall serve as the primary competitive factors among teams.
- Each robot shall undergo technical inspection before competition.

Competition Mechanics

- Matches shall be played one-on-one (1v1) on the designated SoccerBot field.
- The objective is to maneuver the ball into the opponent's goal using the remote-controlled robot.
- Each match shall have a maximum duration of three (3) minutes.
- The first robot to score two (2) goals, or the robot with the higher score at the end of the prescribed time, shall win the match.
- After each goal, the ball shall be returned to the center of the field and play shall resume upon the referee's signal.
- Robots shall start from their designated side of the field.
- The operator shall not touch the robot or ball during active play without the referee's permission.
- If the match ends in a tie, a Golden Goal period shall be conducted. The first robot to score shall win the match.
- If no goal is scored during the Golden Goal period, a penalty shootout shall determine the winner.
- The tournament shall use a single-elimination format.
- Match pairings shall be determined through official bracketing before the competition.

F4. Advanced/Open Line Following Robot Category

Participants / Team

- Intended primarily for senior high school, college, and experienced robotics participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser.
- Only registered team members may handle the robot during official attempts.

Robot / Kit Requirements

- Participants may use Arduino-based, open-platform, or self-built robots, subject to compliance with the prescribed technical specifications and approval during technical inspection.
- The robot shall operate fully autonomously during an official attempt.
- The robot shall not exceed 25 cm × 25 cm in footprint.
- No external control or human intervention shall be allowed once the official run has started.
- Robot dimensions, sensor configuration, power limits, and allowable components shall follow the technical specifications issued by the Robotics Competition Committee.
- Each robot shall undergo technical inspection before competition.

Competition Mechanics

- A separate practice/calibration track shall be provided for teams to test and tune their robots before and between official attempts. Practice runs shall not be recorded for ranking.
- Each team shall be allowed three (3) official attempts on the official competition track.
- An official attempt shall begin only after the team declares readiness and the referee gives the start signal.
- Once an official attempt has started, it shall count as one of the team's three attempts, even if the robot leaves the line or fails to complete the course.
- The objective is to complete one (1) full lap of the official track in the shortest possible time.
- An attempt shall be considered valid only if the robot completes the entire course from start to finish.
- If the robot leaves the designated line or fails to complete the course, the attempt shall be recorded as No Time.
- There shall be no checkpoints along the official track.
- The team's fastest valid recorded time shall be used for ranking.
- In case of a tie, the second-fastest valid time shall serve as the first tie-breaker. If the tie remains, the third-fastest valid time shall be used.
- The team with the fastest valid recorded time shall be declared the winner.

F5. Advanced/Open 3 kg Autonomous Sumobot Category

Participants / Team

- Intended primarily for senior high school, college, and experienced robotics participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser.
- Only registered team members may handle the robot during official attempts.

Robot / Kit Requirements

- Robots may be self-built or open-platform, subject to compliance with the technical specifications issued by the Robotics Competition Committee.
- The robot shall operate fully autonomously during the match.
- The maximum robot weight shall be 3.0 kg.
- Final dimensions and allowable components shall follow the technical specifications issued by the Robotics Competition Committee.
- External control, remote driving, or human intervention during an active match shall not be allowed.
- Devices intended to jam, interfere with, or damage the opponent’s sensors or electronics shall be prohibited.
- Each robot shall undergo technical inspection before competition.

Match Mechanics

- Two robots shall compete inside the designated sumo ring.
- Robots shall start from the positions designated by the referee.
- Each match shall be played on a best-of-three (3) rounds basis.
- Each round shall have a maximum duration of two (2) minutes.
- A round is won when a robot successfully pushes its opponent outside the ring.
- A robot shall be considered out when at least one of its wheels touches the area outside the ring.
- If neither robot scores within the prescribed rounds, a tie-breaker round shall be conducted under the starting arrangement prescribed by the referee.
- The tournament shall use a single-elimination format. The winning team advances to the next stage, while the losing team is eliminated from the competition.
- Match pairings shall be determined through random draw or official bracketing before the start of the competition.

F6. Robotics Innovation Showcase / Freestyle Category

Participants / Team

- The category shall be open to student teams, independent hobbyists, robotics enthusiasts, and other qualified participants.
- Each team may consist of up to three (3) members and one (1) coach/adviser or mentor.
- Each team shall present only one officially registered project per entry.
- The project must contain a substantial contribution from the participating team.

Entry Requirements

Each team shall prepare and present:

- the actual robot, prototype, or working project;
- an A1-size poster/tarpaulin presenting the project information;
- a live demonstration of the project's operation;
- an oral presentation before the Board of Judges; and
- responses to questions during the Q&A session.

Thematic Areas

Entries shall demonstrate relevance to at least one of the following:

- **Food Security** – agriculture, food production, post-harvest technologies, food processing, monitoring, smart farming, or related applications;
- **Sustainable Energy** – energy efficiency, renewable energy, energy monitoring and management, or other sustainable-energy applications;
- **National and Community Resilience** – disaster risk reduction, environmental monitoring, public safety, emergency response, climate resilience, infrastructure monitoring, or related applications; or
- **Other S&T and Digital Innovation Applications** demonstrably aligned with the overall RSTW theme.

Presentation and Judging Mechanics

- Each team shall be allotted five (5) minutes for the presentation and live demonstration.
- This shall be followed by a five (5)-minute Question-and-Answer session with the Board of Judges.
- All team members shall be present at their assigned exhibition area during the scheduled judging period.
- The project shall be operational and ready for demonstration when the judges arrive.
- Judges may ask questions concerning the project's design, programming, electronics, mechanical components, system integration, originality, application, limitations, and future development.
- Failure of the project to operate during the demonstration shall affect the score under functionality and technical performance but shall not automatically result in disqualification, unless a safety violation is involved.

F5. Robotics Innovation Showcase / Freestyle Category

Proposed Criteria for Judging

Criterion	Judges Consideration	Weight
Innovation and Originality	Novelty of the idea, creativity of the solution, uniqueness of the approach, and how clearly the project offers something new or improved compared with existing solutions.	25%
Technical Design and Functionality	Soundness of the design, integration of hardware and software, reliability of operation, appropriateness of components and technologies used, and overall technical performance of the system.	25%
Relevance to the RSTW Theme and Potential Impact	Alignment with the RSTW theme, particularly in relation to food security, sustainable energy, resilience, and digital innovation; significance of the problem addressed; and potential benefits to intended users or communities.	20%
Quality of Implementation and Demonstration	Completeness of the prototype, quality of construction and system integration, effectiveness of the live demonstration, consistency of performance, and evidence that the project has been tested.	15%
Presentation and Mastery of the Project	Clarity and organization of the presentation, ability to explain the project's design and operation, understanding of technical concepts, and quality of responses during the Q&A.	10%
Potential for Further Development / Scalability	Feasibility of improving, expanding, replicating, or deploying the project beyond the competition setting, including possible future applications or beneficiaries.	5%

G. Protests, Clarifications, and Appeals

- Clarifications regarding the rules shall be raised only by the registered team representative or designated team member.
- Questions concerning a match, attempt, or judging result must be raised immediately after the concerned match, attempt, or presentation and before the next competition activity begins.
- Initial concerns shall be addressed to the assigned referee or judge.
- If the concern cannot be resolved at that level, the matter may be elevated to the Head Referee or Robotics Competition Committee, as applicable.
- Appeals shall be based only on the official mechanics, competition records, or other verifiable evidence.
- Video recordings from participants or spectators may be considered only at the discretion of the Robotics Competition Committee.
- Once a final ruling has been issued by the Robotics Competition Committee, no further appeal shall be entertained.
- Participants shall observe proper conduct and decorum when raising clarifications or protests.

H. Penalties and Disqualification

- Violations of the competition rules may result in a warning, loss of attempt/round, score deduction, match forfeiture, or disqualification.
- Grounds for disqualification may include:
  - use of prohibited or non-compliant robots, components, or control methods;
  - cheating, tampering, or intentional interference with another team;
  - refusal to comply with technical inspection or safety instructions;
  - unsafe operation of a robot or project; and
  - serious or repeated unsportsmanlike or disrespectful conduct.
- Unsafe robots or projects may be immediately stopped and removed from operation until cleared by the Robotics Competition Committee.
- Penalties shall be imposed by the appropriate referee, judge, or competition official, subject to the competition’s protest and appeal provisions.

I. Awards and Recognition

The top three teams in each competition category shall receive the following awards:

Champion - trophy, certificates and cash prize
1st Runner Up - trophy, certificates and cash prize
2nd Runner Up - trophy, certificates and cash prize

Special awards may be given in selected categories, particularly the Robotics Innovation Showcase / Freestyle Category, subject to approval by the Robotics Competition Committee. For example Best Innovation, Best Technical Design, Best RSTW Theme-Aligned Project