ROBOTX

RobotX 2026 | TeamTime #1

03 December 2025

robotx.org

Welcome to RobotX 2026

Early November | Singapore (Venue TBA)

AGENDA

Edit your name to “Name | Team Name“
For example: Jane | University of RoboNation

WELCOME & MEET THE TEAM
COMPETITION OVERVIEW
WHAT’S NEW IN 2026
PRELIMINARY TASK IDEAS
QUESTIONS

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MEET THE TEAM

AAMIR

Technical Director

JULIANNA

Director of Program Operations

CHERI

Senior Events Manager

ALICIA

Director of Communications & Marketing

LAVERNE

Program Operations Coordinator

ALISON

Support Coordinator

DAVID

Product Manager

JAMIE

Product Design Engineer

MATT

Technical & Product Advisor

YADIRA

Events Assistant

SARAH

Media & Brand Manager

CHRISTINE

Communications Coordinator

EBBIE

President of Pats

COMPETITION OVERVIEW

Autonomy Challenge

Build a System of Systems to showcase multi-domain collaborative autonomous performance.

- *At least one Uncrewed Surface Vessel (USV)*
- *At least one Uncrewed Underwater Vehicle (UUV) and/or an Uncrewed Aerial Vehicle (UAV)*
- *Participation in all three domains is needed to complete the full mission*

Design Documentation

Prepare documentation showcasing system design and competition strategy.

- *Team Website*
- *Technical Design Report*
- *Team Intro Video*
- *Design Presentation (in-person)*
- *System Assessment (in-person)*

ELIGIBILITY

Cross-Domain Integration

Teams must demonstrate real-world of multi-domain autonomous systems in a dynamic, semi-structured environment.

Team Collaboration

Teams may partner across disciplines, campuses, or borders and can formalize those partnerships up to (and during) the event. Joint teams will be treated as a single compeittion entry for scoring and awards.

Team Composition

Teams must be comprised of:

- 75% or more of full-time students, the majority of which are college or high school.
- 25% or less of alumni, industry, academic or government partners.

On-Site Team Members

Minimum of three (3) team members are required on site at the competition for safe operations.

Questions? Submit on Discord.

WHAT'S NEW IN 2026

ONE COHESIVE STORY FOCUSED WITH CROSS-DOMAIN INTEGRATED BEHAVIORS. Storm Response explores the power uncrewed systems play in recovery, resilience, and discovery in disaster relief efforts. Through hands-on missions grounded in post-disaster scenarios, teams will apply technology with purpose – restoring harbor operations, assessing underwater infrastructure, supporting exploration, and unlocking new possibilities.

UPDATED VEHICLE REQUIREMENTS: Teams must prepare a System of System.

CAPABILITY LEVELS:

- **Core:** Fundamental competencies.
- **Advanced:** Sophisticated competencies with real-world relevance.
- **Disruptive:** Transformative competencies pushing the boundary of autonomous systems.

EMPHASIS ON TEAM COLLABORATION

GRANTED PLATFORM APPLICATION

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GRANTED PLATFORM APPLICATION

To lower barriers for participation, teams can request a granted platform through our partnership with Blue Robotics. Platforms available include the BlueBoat and/or BlueROV2, or a stipend equivalent. Teams should prepare to submit an official signed letter of intent from their school/organization. More information can be found here: robotx.org/2026.

- **December 8 |** Platform Grant Round 1 Review
- **December 15 |** Platform Grant Round 1 Results
- **February 2 |** Platform Grant Round 2 Review
- **February 9 |** Platform Grant Round 2 Results

BlueBoat

BlueBoat Bundle:

- BlueBoat
- BaseStation
- Controller

Blue Robotics BlueROV2

BlueROV Bundle:

- BlueROV2 (Acrylic)
- Heavy Configuration Kit
- Standard Tether (50m)
- Lumen Subsea Light (Set of 2)
- Xbox Controller

Questions? Submit on Discord.

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VEHICLE SPECIFICATIONS

Vehicles may be team's own design or commercially available systems, within the required size and weight restrictions (closely aligned with RoboNation's single-domain competitions: RoboBoat, RoboSub, and SUAS).

SYSTEM	WEIGHT	SIZE	NOTES
USV **Uncrewed Surface Vehicle**	UPDATED Less than or equal to: 60 kg (132 lbs)	UPDATED Fit within volume 2 x 1 x 1m (LxWxH)	NOTE: No thrust measurement
UUV **Uncrewed Underwater Vehicle**	UPDATED Less than or equal to: 60 kg (132 lbs)	UPDATED Fit within volume 2 x 1 x 1m (LxWxH)	
UAV **Uncrewed Aerial Vehicle**	Less than or equal to: 7kg (15 lbs)	UPDATED No designated volume restrictions	NOTE: Rotary vehicles only

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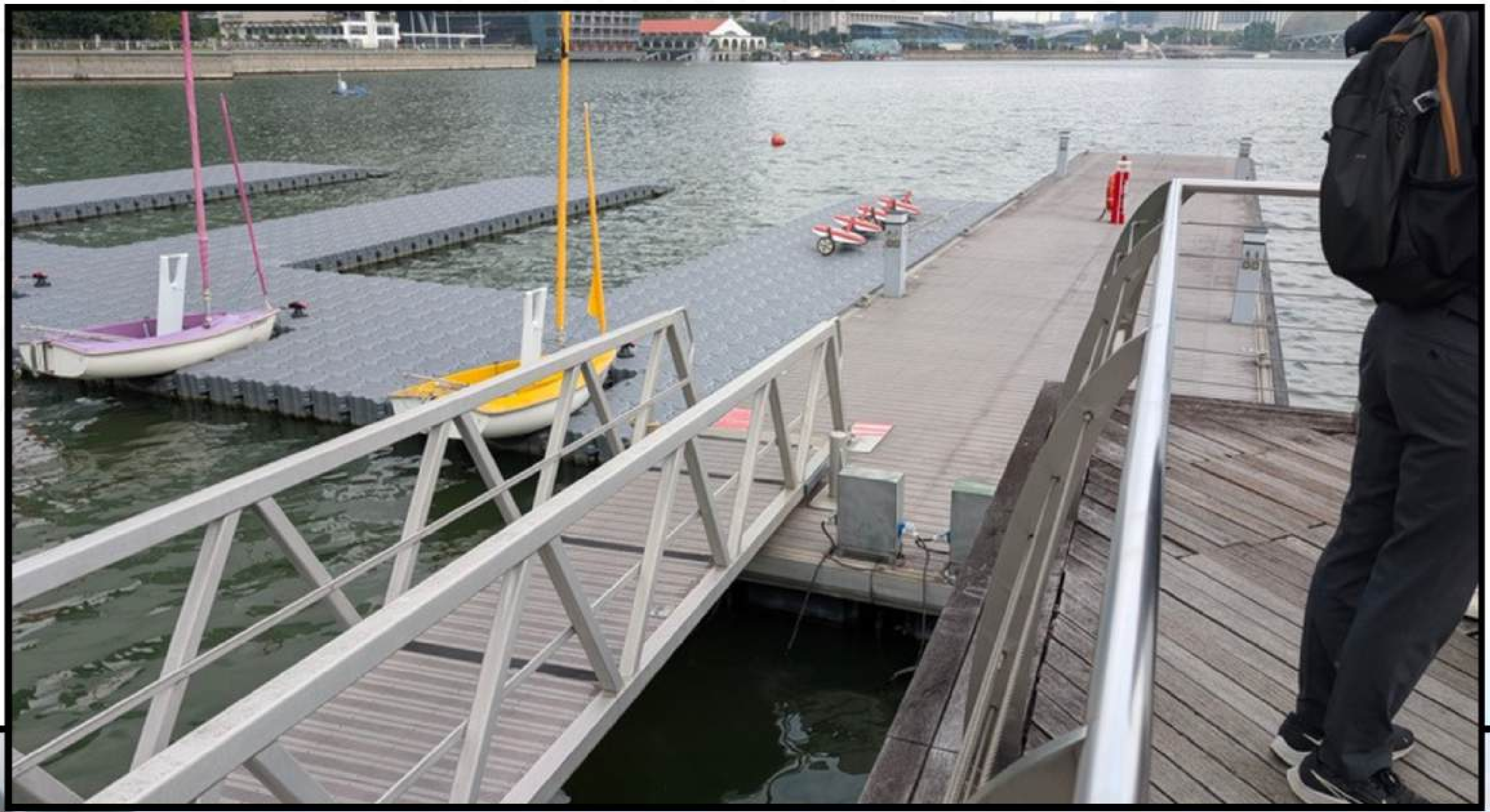
PRELIMINARY VENUE



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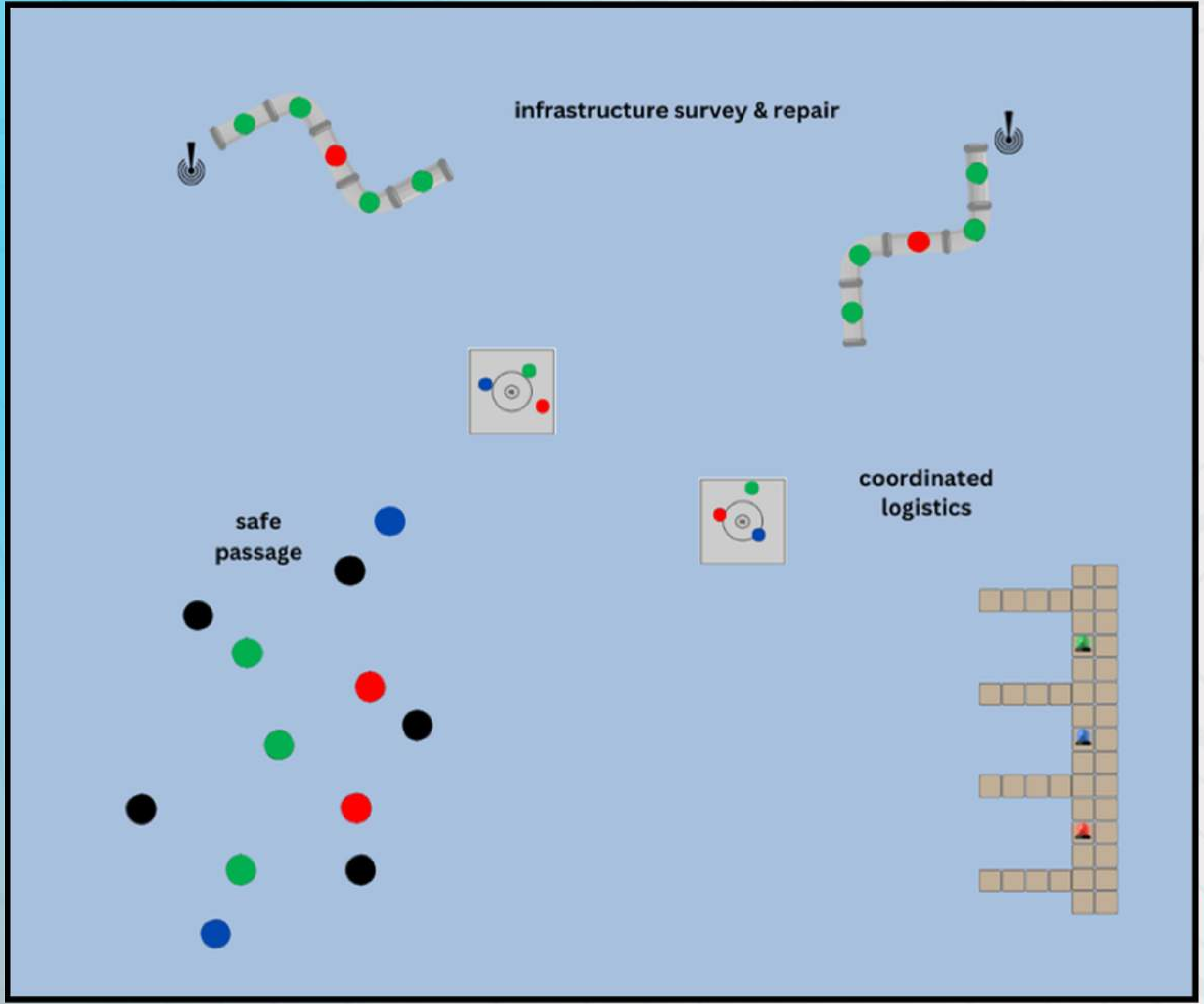
Pre-Event Deadline: Mid-August 2026

PROOF OF READINESS

- Teams must complete and pass Proof of Readiness for each domain in which they will compete.
- Videos will be reviewed within 1 week of submission, teams will receive a pass/fail, including any necessary follow-up questions.
- Teams are permitted to keep submitting attempts up until the close of the submission window.

SYSTEM	MANEUVER	SAFETY SYSTEM	SUBMISSION
USV **Uncrewed Surface Vehicle**	Autonomous navigation: (a) Start 9.8 ft (3m) behind the Gate, (b) pass through the Gate, (c) circle around the Marker, and (d) pass back through the Gate.	Safety overview: (a) kill switch demo and diagram (b) harness (lift/tow points) (c) Mode indicator (auto, manual, kill) (d) Comms heartbeat message/System overview [tentative]	1. Video: Proof of USV Readiness (< 5 min) 2. Supporting Photos/Videos
UUV **Uncrewed Underwater Vehicle**	Autonomous navigation: (a) Start 9.8 ft (3m) behind the Gate, (b) Submerge and pass through the Gate, (c) circle around the Marker, and (d) pass back through the Gate.	Safety overview: (a) kill switch demo and diagram (b) harness (lift/tow points) (c) Mode indicator (auto,manual,kill) (d) Positively buoyant	1. Video: Proof of UUV Readiness (< 5 min) 2. Supporting Photos/Videos
UAV **Uncrewed Aerial Vehicle**	Autonomous proof of flight (a) takeoff, (b) autonomous flight 1+ miles, waypoints, and turn radius, (c) landing	Safety overview: (a) Water safety system (stays on water surface) (b) Mode indicator (auto,manual,kill) [tentative] Proof of Pilot Competence (a) Manual Takeoff to Above 50ft AGL (b) Manual Flight to/from Point > 1000ft from Safety Pilot (c) Manual Landing (d) Proof of Registration (e) Pilot license(s)	1. Video: Proof of Flight Readiness (< 5 min) 2. Video: Proof of Pilot Competence (< 3 min) 3. Supporting Photos/Videos

PRELIMINARY TASKS



Communications & Reporting

All systems must be capable of receiving and transmitting messages between each system and the competition server.

Mission Task 1: Safe Passage

A random path is generated for the system of systems to discover, report, and navigate a safe pathway to begin the survey and relief mission.

Mission Task 2: Infrastructure Survey & Repair

An underwater pipeline is located, surveyed, and “repaired” with a magnetic probe.

Mission Task 3: Coordinated Logistics

The System of Systems coordinates a delivery of a colored tin to a delivery platform, showcasing reporting, docking, and payload delivery.

Questions? Submit on Discord.

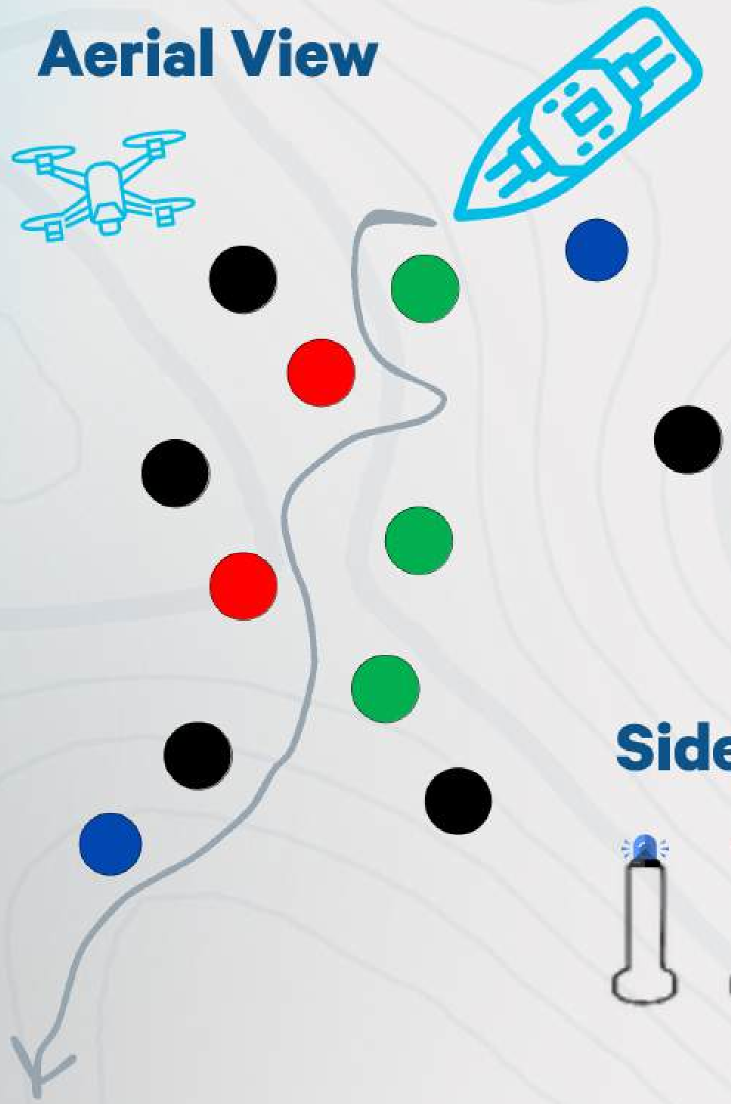
TASK 1

Safe Passage

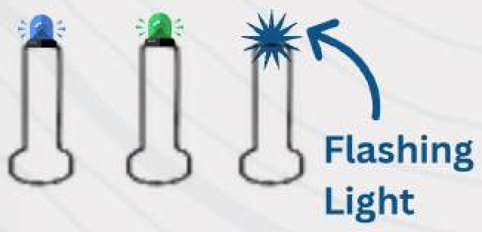
The maritime systems must safely enter the recovery area in order to begin survey and relief efforts. There are hazards to surface and underwater vessels, represented by buoys in the transit area. Light beacons on top of the buoys will represent elements of the mission.

At the start of a run, a random path is generated and defined as a safe path.

Aerial View



Side View



Core: The UAV must conduct a flyover of the area and report the location of the start and end points of the safe passage.

- A flashing BLUE light indicates safe entry point.
- A solid BLUE light indicates safe exit point.

The USV and/or UUV must then transit safely through the passage, as indicated by red and green indicators.

- Pass GREEN markers to port.
- Pass RED markers to the vessel's starboard.
- Avoid contact with all markers.

Advanced: UAV must complete Core Tier, and successfully report RED/GREEN locations to competition server and USV for execution.

The USV or UUV must use data to successfully navigate path (buoy colors will NOT be visible to the USV).

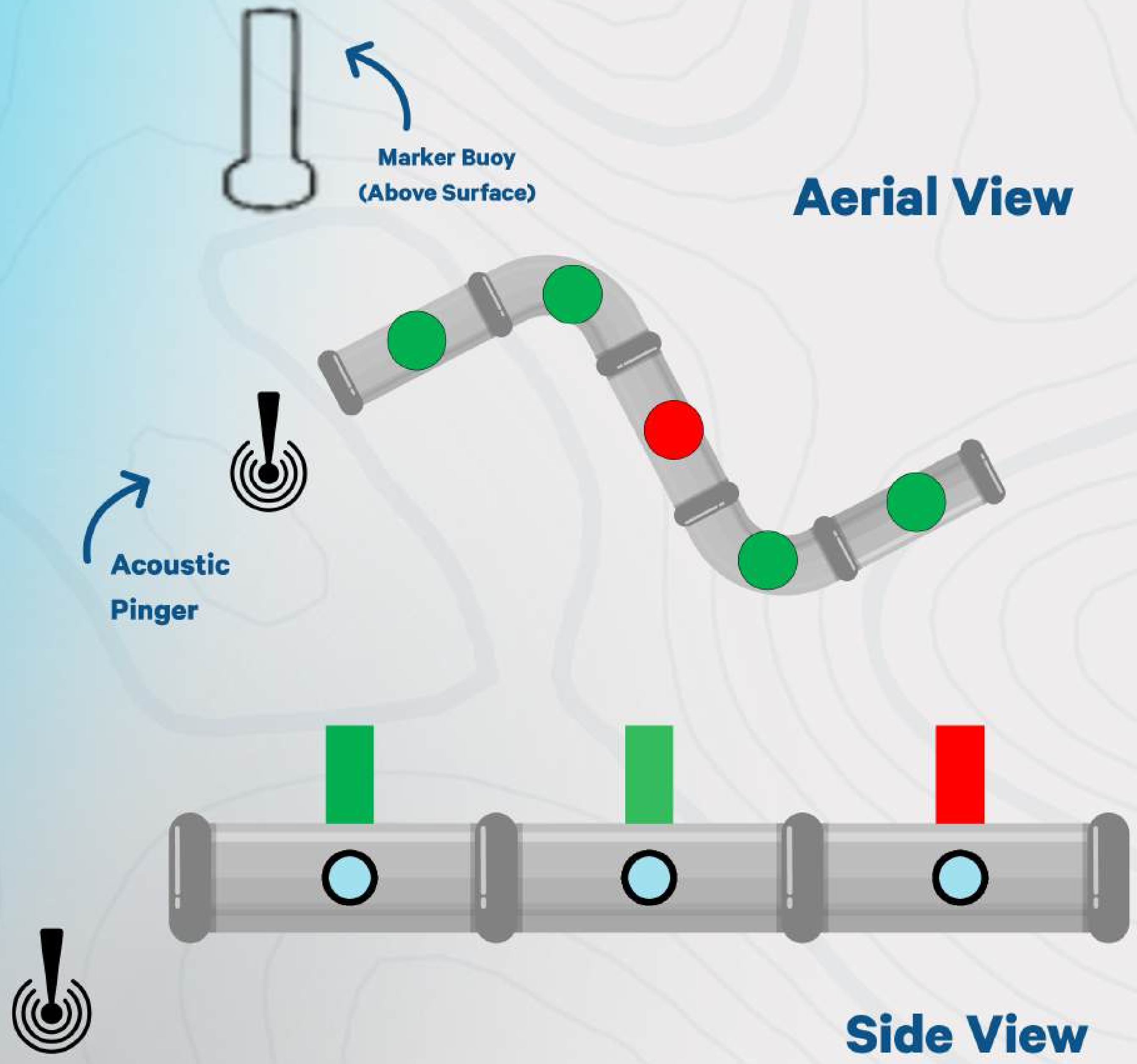
Disruptive: Adding to Advanced Tier, the UAV must remain on station to guide the USV or UUV because safe passage buoy indicators may change mid-run, forcing the systems to communicate and adapt.

TASK 2

Infrastructure Survey & Repair

An underwater pipeline needs to be surveyed and repaired.

At the start of a run, a random pattern is generated for the pipeline.



Core: UUV locates the active acoustic pinger, follows pipeline, reports sequence of lights, and tags the red light(s) with a magnetic probe.

- There are two pipelines, one with an active acoustic pinger indicating the pipeline to be surveyed.
- Once the probe is placed, the pipeline will notify the competition server and the light color will change.

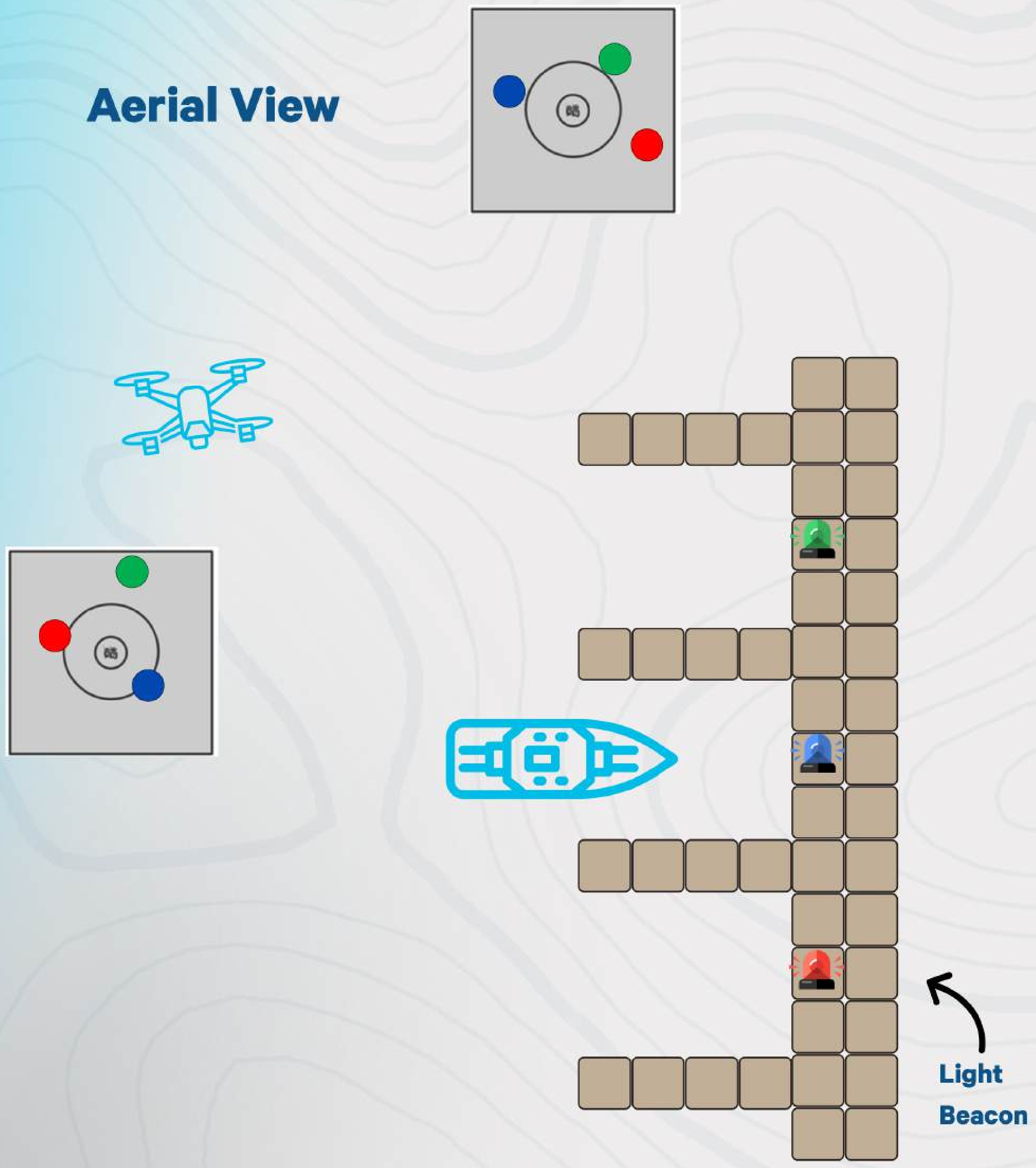
Advanced: UUV must complete Core Tier, but the UAV or USV first locates the surface indication of the start point of underwater pipeline, reporting to the UUV for execution.

The start point will be indicated by a buoy and/or an acoustic pinger. (teams notified in advance of which)

Disruptive: This tier requires systems to operate in all three domains. Once the task activates, either an acoustic or optical indicator will turn on and the UAV or USV must locate the start point of the task, then call in the UUV to complete the base mission. (teams will not be notified of which indicator in advance)

TASK 3

Coordinated Logistics



Core: USV must locate the floating delivery platform and report a color that corresponds with a docking bay.

- UAV must deliver the tin to the correct colored platform. Payload is pre-loaded on UAV.

Advanced: USV must dock in the correct bay and report to the UAV the correct delivery docking bay and that it is ready to receive.

- UAV deploys with tin on board and must deliver the tin to the correct docking bay.

Disruptive: USV must dock in the correct bay and report to the UAV the correct delivery docking bay and that it is ready to receive.

- The correct color for the tin will be given to the USV when it reports successful docking. The USV must report the correct color tin to the UAV.
- The UAV must retrieve the correct colored tin and deliver to the bay in which the USV is/was docked.

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TIMELINE

NOVEMBER 2025

Registration & Grant Application Opens

Start Registration and Grant Application.

- Dec 8 | Grant Round 1 Review
- Dec 15 | Grant Round 1 Results
- Feb 2 | Grant Round 2 Review
- Feb 9 | Grant Round 2 Results

01 APRIL 2026

Registration Deadline

Complete all registration tasks and submit deliverables.

AUGUST 2026

Proof-of-Readiness Submission Deadline

Prior to on-site competition, teams are required to submit Proof of Readiness documentation

SEPTEMBER 2026

Pre-Competition Submission Deadline

Prior to on-site competition, teams are required to submit event information and waivers, and develop design documentation for evaluation.

NOVEMBER 2026

RobotX Challenge

Specific competition dates and selected venue will be announced soon.

STAY UPDATED

ALL THINGS ROBOTX

For all the latest information and updates for the competitions season, visit the RobotX website!

robotx.org/2026

DATA SHARING

Join the community-driven project created to increase collaboration between teams and address the never-ending quest for test data. All new teams receive invitations. Contact competitions@robonation.org for questions.

robotx.org/data-sharing/access

DISCORD

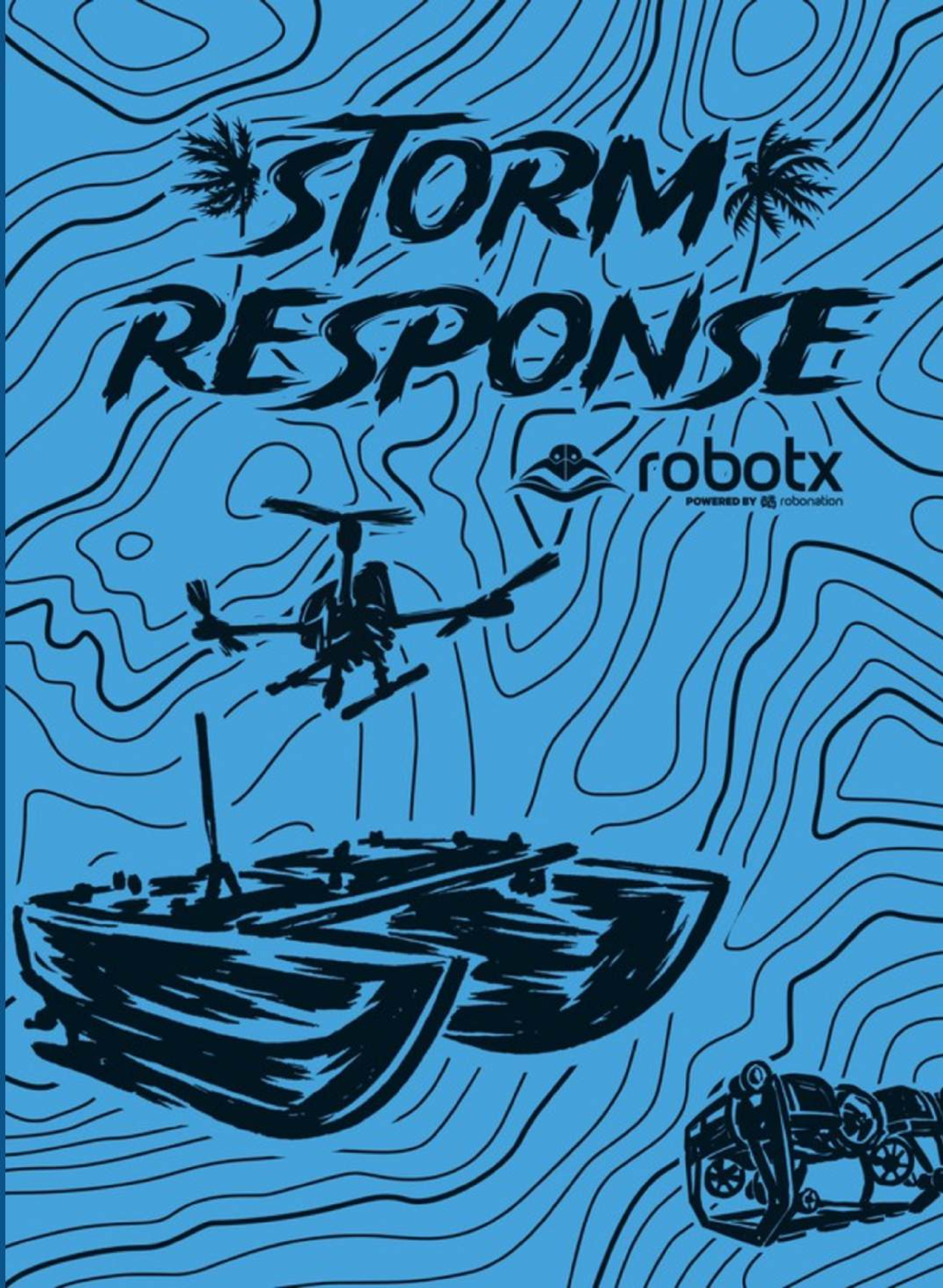
Stay connected and updated with the RobotX Discord. Scan the QR code to get started!

JOIN TODAY!

- Scan the QR code
- Select the RobotX role
- Turn on notifications!

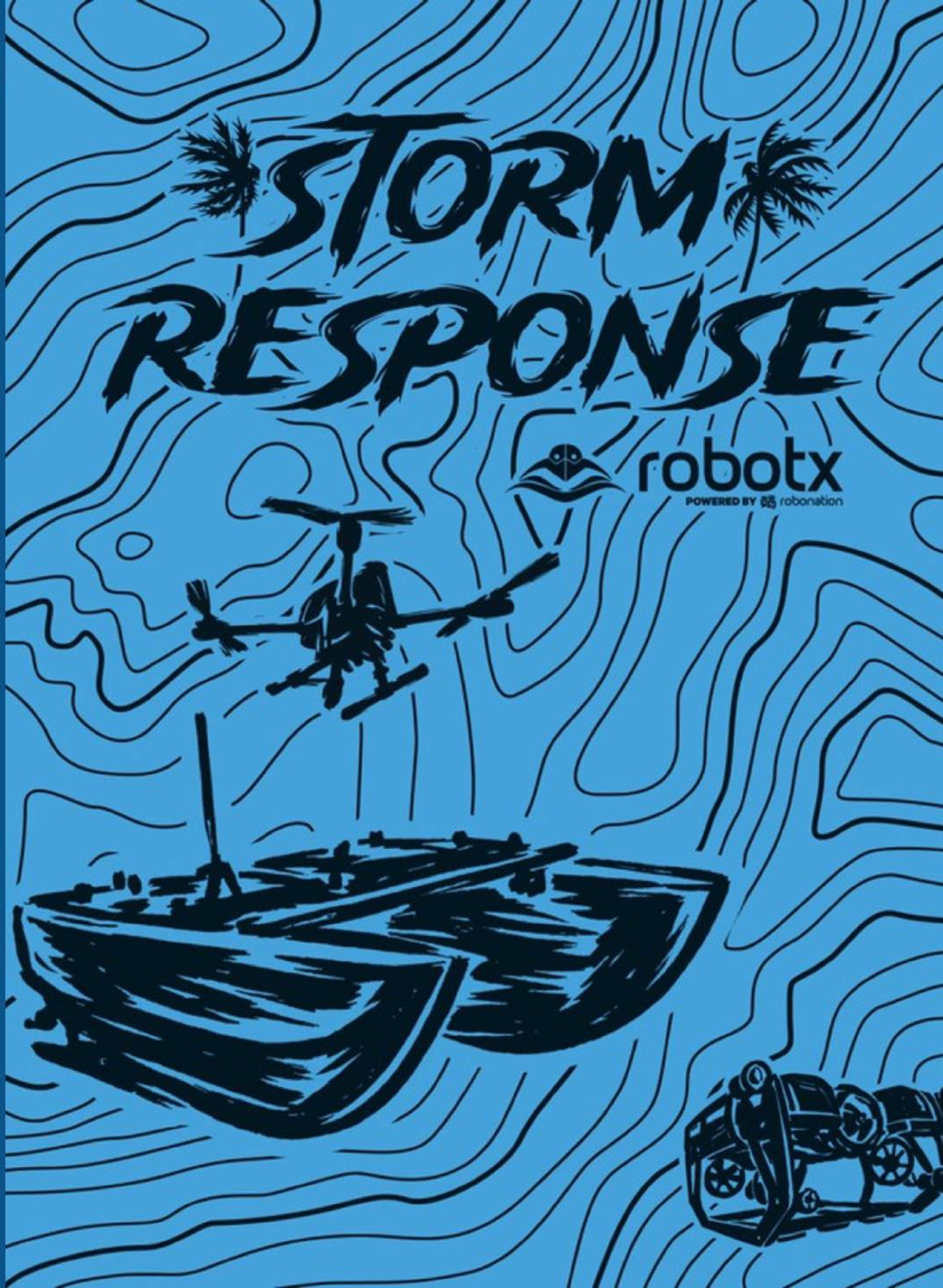
robonation.org/discord

QUESTIONS?



Submitted Questions

- Will the robots physically interact with each other similar to how the drone landed on the boat in previous RobotX? Will the sub need to retrieve items for the boat or a similar task?
- What is the depth at the venue and is the water clear?
- Task 1:
  - Will the buoys extend under the water surface as well? They would have to be quite deep for the UUV to navigate around it. Or can the UUV navigate around the buoys while surfaced above the water line.
  - Will there be additional points if we have both the UUV and ASV navigate through the passage successfully as well?
  - When will the buoy designs be released, and will they be available for sale?
- Task 2:
  - What are the rough dimensions of the pipe segments and how long would they be? Can we expect them to be similar to PVC pipes sizes that were used in past RoboSub competitions for props
- Task 3: *"USV must dock in the correct bay and report to the UAV the correct delivery docking bay and that it is ready to receive."*
  - How would the USV identify which one is the correct docking bay/colour?
- Is remote kill / remote control capabilities needed for the UUV?
- How visible does the mode indicator need to be?



RoboNation is a 501c3 nonprofit organization whose mission is to provide a pathway of hands-on educational experiences that empower students to find innovative solutions to global challenges. Working together with the industry, research and educators, we have grown to include over nine student competitions and programs and engage more than 250,000 students per year.

For more information contact competitions@robonation.org