

IRoC-U 2025 FAQ's

1. Can the team members be from different institutes?
A. No, all the team members must be from a same institute. If your university has multiple institutions then, each institution can send one team.
2. What is the eligibility criteria for participation in IRoC-U 2025?
A. Refer the section “Participating Teams” in the rule book IRoC-U 2025.
3. How many teams can apply from a college and who is responsible for selecting the team from a college?
A. Only one team from each institute is permitted to participate in the contest. It is the responsibility of the institute to select the team based on their established criteria. Furthermore, the chosen team must secure an endorsement from the head of the institution, confirming that they are the sole representatives for their institute in the competition. If more than one entry is found from any institute, first submitted proposal shall be entertained for the further rounds and the remaining proposals shall be rejected.
4. Can foreign universities participate in the challenge?
A. The competition is open only for Indian students, studying in Indian institutes recognized by AICTE / UGC.
5. Is it mandatory to be student of any institute?
A. Yes, it is mandatory to be pursuing under-graduation /post-graduation/research student from any recognized Indian institute.
6. Any restriction in Number of team members?
A. The team should consist of minimum of 3 members and maximum of 10 members excluding mentors. They all must be studying from the same Institute.
7. Can 11th and 12th class students participate in the event?
A. No, the event is open for students pursuing (full time and non-sponsored) under graduation/post-graduation/research.
8. When will the registration will get closed?
A. Please visit register/sign-in tab of the website
<https://www.ursc.gov.in/IRoC-U2025/>
9. Where can I register for the event and submit proposal?
A. All teams must complete the registration process on the website. The registration procedure includes:
 - [1] Team login account creation.
 - [2] Filling out the team details and download auto-generated registration form.
 - [3] Download registration form and get it duly certified by the Head of the institute.
 - [4] Upload the softcopy of the certified registration form along with the proposal in .pdf format (Proposal can be of maximum pages:30 with the file size limited to 15 MB).
10. What is the deadline for submission of the proposal report?
A. The final proposal report needs to be submitted by 8:30 pm (IST) 15th Dec 2024.
11. Can a 4th-year student graduating in 2025 still participate in our team?
A. Yes.

12. What is the team strength?
A. The team should consist of minimum of 3 members and maximum of 10 members excluding mentors.
13. What happens if more than one team apply from an institution?
A. Refer FAQ No. 3
14. Is there any fee to be paid for participating in the challenge?
A. There is no payment required to participate in the challenge.
15. Can we use WiFi as a mode of communication between drone and base station for exchange of data?
A. Any type of RF communication with ANAV can be used or built. Hence, WiFi communication also can be used.
16. Can you please provide the dimensions of the actual drone that you are expecting as per the challenge?
A. There are no specific dimension requirements from IROC-U 2025 perspective. But, the team should consider the feasibility of the demonstration with arena size defined in the web portal.
17. Are we allowed to use any sort of GPS modules on the drone for the competition or not?
A. GPS modules cannot be used in the contest.
18. What does an arena mean in this context?
A. The area enclosed by the yellow border, including the yellow border, is referred to as the arena. Please refer Arena illustration shown in the web portal.
19. Is a camera as a payload allowed? If yes, what kind?
A. Camera can be used as payload or sensor. Any type of suitable camera can be selected. However, ensure that, the overall weight of the ANAV shall not exceed 2 kg.
20. Can we utilize an open-source drone firmware like PX4 or ardupilot and then build our algorithm over it for non-GPS based navigation?
A. Open-source drone firmware can be used. However, team can modify/tweak the firmware to implement navigation algorithms indigenously developed by the team.
21. By indigenous software do you mean software developed by Indian developers or developed by us from scratch?
A. In this context, Indigenous means developed by contestants.
22. What is the estimated time of flight?
A. ANAV has to work in flight mode at least for 5 minutes or till it completes all the tasks.
23. Will the arena layout be provided to us like last year?
A. Yes, layout for elimination round will be provided like last year.

24. For the emergency call off mode, do you expect a physical button or for it to be hard-coded into the flight computer?
- A. Emergency call off mode is more essentially required during flight mode and hence must be able receive command during any abnormal behaviour of flying craft. Once it receives the command, it must gradually descend and land. ANAV should be hardcoded with SAFE mode as per the rule book. In case if ANAV is not able to switch to safe mode, the same shall be achieved by sending a command through a physical button on base station or by sending a command from base station.
25. What will be the maximum slope of landing?
- A. Slope may not exceed 5 degrees, in the identified safespots.
26. Can we add an industry mentor after the first round?
- A. One internal and external mentor is permitted for the contest. After registration, neither modification of team nor inclusion of mentor/team members is allowed.
27. Whether team members can be from different institutes?
- A. No, all the team members must be from a same institute. If your university has multiple institutions then, each institution can send one team.
28. Is it permissible to use a flight computer on my personal computer (PC) to process navigation data?
- A. Yes, teams may use base station / remote pc for data processing. But during the tasks of the challenge, no manual intervention is allowed.
29. Are we allowed to use Martian surface image availability while preparing the solution?
- A. The arena described by IROC-U 2025 may or may not be identical to the Mars terrain in all aspects. Hence, we cannot guarantee the proposed method will work on the described arena.
30. Is it sufficient for the drone to identify safe landing spots and navigate directly to them? Additionally, if mapping is implemented, can the drone initially explore the area to identify safe zones before planning its route?
- A. The navigation techniques to meet the contest objective will be designed by the team.
- So, the techniques
1. that it is sufficient for the drone to identify safe landing spots and navigate directly to them,
 2. If mapping is implemented, the drone can initially explore the area to identify safe zones before planning its route.
- are allowed.
31. The arena where the drone flies, would it have obstacles which are above 3m?
- A. There are no obstacles above 1 m from the mean surface of arena.
32. Are we allowed to use flight controller pixhawk 4 which have built in hover and return to home functions?
- A. The team can use flight controllers available in market. Open-source drone firmware can be used. However, team can modify/tweak the firmware to implement navigation algorithms indigenously developed by the team. The teams are not allowed to preload any arena details/map before the flight during the challenge. Arena scanning, mapping, identification and navigation is to be done in real time during the challenge.

33. What should be the maximum height to which the UAV should fly while in arena or hovering?
- A. The maximum height of flight or hovering is limited between 10 m to 15 m. However, the exact height will be provided after the announcement of arena details. ANAV can hover at heights between 3 m to the maximum height allowed.
34. Is the weight constraint of 2kg includes the on-board battery too?
- A. ANAV overall weight including all flight elements (including battery) must be less than or equal to 2 kg.
35. Would it be appropriate to use sensors like LiDAR, Optical Flow sensors, or Distance sensors in this context?
- A. Sensors like, LIDAR, Optical flow, Distance sensors on-board are allowed on ANAV.
36. Clarification regarding usage of pseudolite or reflector arrays?
- A. Pseudolite and reflector arrays are not allowed to be used in the arena, as they are not available on the mars surface. IROCU 2025 challenge is to develop navigation techniques under similar conditions.

37. Can students receive sponsorship from the external agencies?

- A. Teams should strictly follow and adhere to the General rules and regulations detailed in section 8 of IROCU Rule book. Teams may receive sponsorship and display sponsor logos under the following conditions:
1. Placement Restrictions: Sponsor logos are not permitted on the ANAV.
 2. Approved Usage: Logos may only be featured on apparel, such as T-shirts, caps, and similar wearable items.
 3. Advertising Limitations: Sponsors are prohibited from displaying banners or engaging in promotional advertising related to the Challenge.

Violations of these terms may result in disqualification or other appropriate penalties/actions.

38. Can Teams be modified after registration date?

- A. Addition or removal or replacement of team member is not allowed after registration date.

39. Can teams different components during Qualification round or further rounds, from the components proposed during Preliminary round?

- A. Yes, subjected to proper reasoning. The same may be brought to notice of IROCU 2025 organizing team.

40. Do the teams need to build arena for qualification round?

- A. No. Refer to section 9.2, IROCU 2025 rule book for qualification round tasks.