D.R.D.O. SASE's UAV Fleet Challenge

High-Prep Event (400 Points)

Problem Statement:

The teams are supposed to develop a UAV fleet that can fly outdoors over a grassy land. The UAV should be able to take flight autonomously and land in the same way too. It should be developed by the teams themselves and using a commercially available drone would lead to disqualification.

The teams are required to spot a target amongst a clutter of different objects spread randomly over a grassy land and subsequently communicate the location of the target to their remaining two drones using swarm technology only. Using any other kind of technology will lead to disqualification. The participants must make sure that the drone functions in an autonomous way and the max number of manual overrides is limited to 3 per team. Maximum team size is up to 10 members.

Details:

- The target shall be 15cm x 15cm x 15cm cuboid of green colour
- Multirotor UAVs are supposed to be developed
- Minimum three and maximum of four UAVs are to be developed

Judging Criteria

Evaluation will be based on

- Presentation
- Technical Design Report
- On-field evaluation of the working of UAVs

Each team will be given a total of 25 minutes in which 15 minutes will be given to on-field evaluation and 10 minutes for presentation. Presentation should cover aspects related to technical design and the impact of the solution developed.

UAVs will be judged on the basis of the following criteria:

- Quality of task performed by the UAVs
    - Time taken to perform the task
    - Accuracy of Detection
    - Quality of the UAVs developed
    - Swarm Technology Precision
- Economic Feasibility of solution developed
- Novelty/innovation of the solution proposed

The event is categorised as High Prep and shall yield a maximum of 400 points towards overall tally. Minimum Qualifying score : 150 points out of 400

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Mid-Evaluation Report

A mid-evaluation report containing the abstract of the idea in not more than 4 pages, has to be emailed at interiittech@iitr.ac.in by November 14, 2019.
The mid-evaluation report shall comprise of 100 points.

Rules and Regulations

A maximum of 10 participants shall be awarded participation/merit certificate. A maximum of 4 student from team will be allowed to present during tech meet. An Interdisciplinary team of people from different backgrounds is preferred.

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