Problem 1

Host By: Faculty of IIT Mandi

Preamble to the Problem:

Whenever it comes to our mind about flying, the first object that comes tour mind is UAV(unmanned aerial vehicle) or a drone, the future of many ongoing facilities like delivering products or for surveillance. As you already know that Amazon has already start the testing for drone delivery system, so its needed to develop an effiecient system for these flying objects. One of the major problems in this system is battery, we have to resolve this.

Problem Statement:

You must have heard about UAV path planning in presence of recharging stations. Consider the scenario shown in this link: http://bit.ly/2aS60W5. A UAV starts it trip from the monitoring station with an aim of visiting each of the triangle shaped markers (both yellow and orange). However, the UAV may run out of the battery before finishing its trip and need to recharge it in solar power recharge stations. A trip is "successful" if it can return to the monitoring station (even though it failed to cover all the markers). A score is assigned to every trip and higher the number markers the UAV has covered higher the score is. Yellow markers are given higher weightage while calculating the score. Design an algorithm for UAV that ensures a successful trip and maximizes its overall score (score calculated over several trips).

Testing:

Testing details should be plotted soon.

General Rules:

1. It will be an onsite event.
2. You have to present a working prototype of problem statement.
3. Documentation and video of your model should be mailed to gauravkr.ex12@gmail.com prior to 5th April 2018.Prefer drive links for videos.
4. Decision of the judges will be final.
5. Teams will be judged on the basis of innovation, design, social impact, working condition, reliability.

Team Specifications and Eligibility:

1. Each team can have at most 5 members, individual participation is allowed.
2. Students from different educational institutes can form a team.
3. All students with a valid identity card of their respective educational institutes are eligible to participate.

Prizes: Chance to have an internship with the professors in IIT

Registration: Rs.100

Event Coordinators: Ayush meghwani(95099 25365) Ritwik Saha(7838958076) Gaurav kumar(9587761292)