



UAS NMIMS MPSTME, NMIMS Shirpur 2018-19

1. 16th AUVSI SUAS Competition (Maryland USA, June 2018)

Past year a total of 69 teams participated from all over the globe, the maximum participation this competition had ever witnessed in its history of 16 years. This year's mission task was to employ our UAV to locate a person stuck in forest fire, and to suppress the fire by releasing water around him. Team UAS NMIMS from MPSTME, Shirpur campus stood 5th in the world and first among all Indian teams in 16th AUVSI SUAS 2018 competition. Team also won \$3050 as prize barrel for the various task which were successfully completed and accomplished. Team consisting of 16 student members stood 5th in overall rankings, 4th in Flight Readiness Review (FRR) ranking, 8th in Mission Demonstration ranking and 20th in Journal Paper ranking. Team has beaten top colleges of the world such as Harvard, Stanford, Technion, IIT Bombay and many other teams.



2. MEHAR BABA SWARM COMPETITION (New Delhi, January 2019)

MEHAR BABA SWARM COMPETITION was organized by the INDIAN AIR FORCE, that aimed at achieving collaborative swarm behavior of the drones. The IAF faces many challenges while carrying out HADR operations, hence it promotes innovative solutions such as unmanned aerial vehicles or drones as the first response to such search and rescue (SAR) mission.

The team opted for a full system plan. That included autonomous docking and charging of the fleet of drones, collaborative swarm behavior and payload delivery system, high quality digital aerial surveillance and human detection & smart payload distribution system while carrying out HADR operations.

After the acceptance of the proposal of the full system the team was invited to Delhi IAF base to discuss the full system that included a presentation and briefing about each module of the full system (docking, swarming, human detection etc).

The team stood amongst the top 30 teams around INDIA and brushed shoulder with big commercial giants such as TATA DEFENCE, L&T and other potential student teams.

UAS NMIMS still works on swarm fleet development and have carried out guided flights autonomously.



3. AERO INDIAN DRONE OLYMPICS 2019 (Bangalore, February 2019)

The DRONE OLYMPICS held this year was an addition to the AERO INDIA air show conducted once in 2 years. The event included a set of preliminary rounds and a final round that were conducted to check the overall performance of the drone ranging from endurance to payload capacity and communication capabilities were exploited. The payload system which the team had developed had a capacity of 4 kg and an endurance of 30 mins with a range of 4 km flight.

The team was invited to JAKKUR AERODROME for the preliminary rounds where safety inspection and other parameters were checked. The team passed the safety pilot evaluation with flying colors and were the second team to have cleared all the safety inspections. The payload system outperformed the competitors due to its heavy lifting capabilities and greater endurance that completed the mission in under 20% of battery usage. The UAV performed autonomous delivery of the package during the final air show and covered a range of 2km. The final air show on 21st February, 2019 was covered by many national news channels which have featured the team's UAV and an interview of one of the team member. Also, the team was the first team to fly their UAV for the payload drop challenge at the finals which displayed sheer confidence on the system they had developed.

The team stood amongst the top 5 competitors in the payload challenge, and was one of the few capable of delivering and dropping payload autonomously.

