UAVBuzz report:

A two-day workshop was arranged by IEEE AESS chapter on 26th November and 3rd December "UAVBuzz: Practical Approach to Build UAV" on Brac University premises in association with BRACU Dichari and IEEE RAS chapter. The main objective of this event was to enlighten the attendees with the introductory concept of drone designing. The speaker of this event was MD Mojammel Hoque Shourabh, Mechatronic engineer of TigerIT Bangladesh,LTD, MD. Firoz Wadud, Team Leader of BRACU DICHARI and Jahir Uddin, research assistant of BRAC University. The Chapter Advisor of IEEE AESS Brac University Student Branch Chapter Abdulla Hil Kafi was present as the chief guest of this workshop.

Unmanned Aerial Vehicles(UAVs), widely known as drones, are robotic aircrafts that do not require any human on board to maneuver it. Rather, they can navigate autonomously or be controlled remotely. Unmanned Aerial Vehicles have a plethora of uses, ranging from agriculture to surveying. They can be used to monitor crop health and collect data remotely over large expanses of land and terrain that might be hard to reach. Drones also have proved to be quite indispensable when it comes to photography and filmmaking, be it for still aerial shots of the concerned subject or to give the audience a different vantage point in cinema. Recently, drones are also being used for deliveries, a move bound to revolutionize the landscape for online shopping. From being used almost exclusively for military operations, UAVs have made a space for itself among hobbyists too. So, when it comes to its applications, our imagination, individual and collective, is truly the only determinant. However, in this workshop with the cooperation of the BracU Dichari Team, we managed to see how UAVs can be used in humanitarian tasks. BracU Dichari includes a drone which works in conjunction with a rover to aid in disaster management. The European Robotics League participant can, in the team's words, "traverse through the rough terrains, conduct different tests and do mapping of the surroundings along with detecting obstacles" through the conjoint twin efforts of the drone and the rover.

The instructor MD Mojammel Hoque Shourobh is a former Satellite Operation Engineer of Brac University. Presently, he is working as a Mechatronics Engineer at TigerIT Bangladesh LTD. Another instructor was Md. Firoz Wadud who is a Drone Pilot. Also, an Autonomous Team Lead of BracU Dichari. Finally, Jahir Uddin is a Research Assistant at Brac University and the Project Engineering Manager of BracU Dichari.

The instructors spoke about different uses, the equipment required and the basic designing concept concerning unmanned aerial technology throughout the both sessions. The session focused on the basics of drone designing instead of going through the deep concepts because the main target of this workshop was to attract the participants in this drone industry. On the first day, instructor Md Firoz Wadud explained the uses and the parts selection process. He gave a short description of each component. However, the speaker MD Mojammel Hoque Shorabh emphasized the selection process for proller. He explained how the propeller size might affect the flight of the drone. Afterward, the final speaker Jahir Uddin went through the software required to operate the drone. Finally, the first day ended by taking questions from each individual and addressing them. On the second day, the

instructors focused on the working procedure of drones. They talked about image processing, image classification, image detection and image tracking. The type of drone determines the required process of image processing. Besides, they added that in case of rotating objects, image processing is not applicable. Therefore, tags are used to identify them. Moreover, they gave some ideas on autonomous flight , obstacle avoidance and remote sensing. They gave brief descriptions on topics like waypoint navigation , GIS mapping, Raspberry PI, YOLO etc. In addition to that, they shared their valuable views on data preparation, mission planning and flight plan. On top of that, the guest speaker   Zareef Jafar   discussed the topic Astronomy. He talked briefly on radio astronomy, X Ray astronomy and astronomy research groups. Lastly, the instructor resolved all the queries of the participants.

The workshop started around 5 pm and continued until 7 pm. Participants had to register beforehand to attend this workshop. But, the registration process was open to all. The instructor addressed all the questions from the crowd throughout the whole workshop.At the end of the workshop, the presenter showed her gratitude to the instructors for investing their valuable time on this workshop. Finally, this lively session came to an end.