

Local Chapter Activity Report

at the 8th UNISEC-Global Meeting

Dr. Ayman Kassem
UNISEC-EGYPT



History of Local Chapter Activities

Participation in UNISEC activities starts in 2011 (*Space Science and Technology Lab SSTL*) and the local chapter Established in 2014

- *Participated in CLTP1 (2011), CLTP3(2012), CLTP8(2017).*



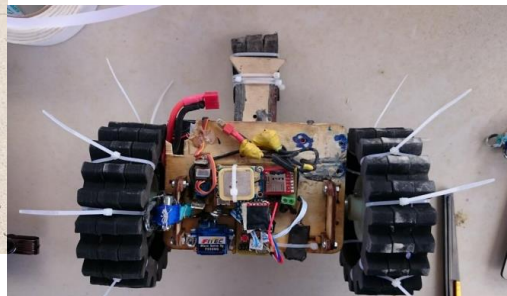
History of Local Chapter Activities

- *Participated in MIC1, MIC2, MIC3, MIC5, MIC6.*
- *Participated in all UNISEC-Global Meetings (2013:2022).*



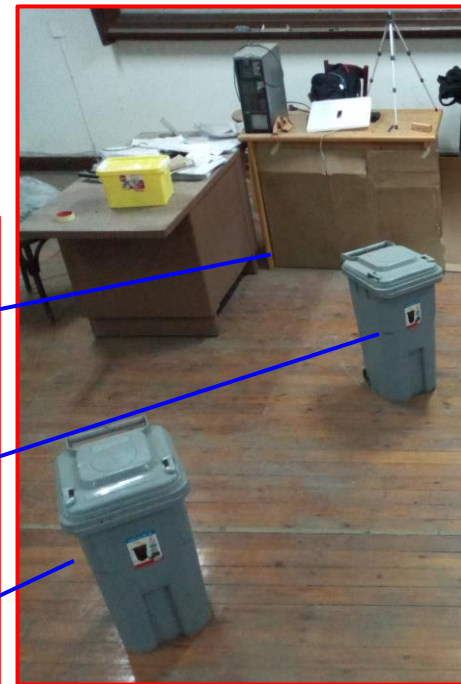
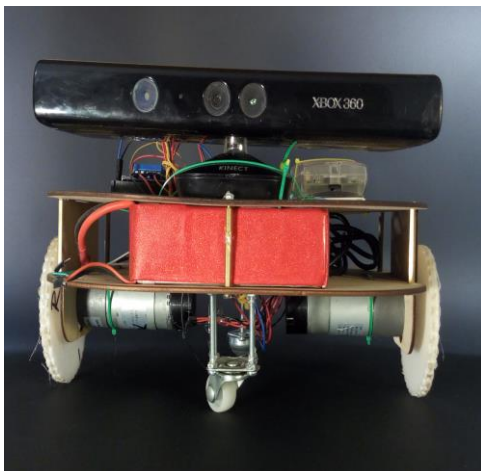
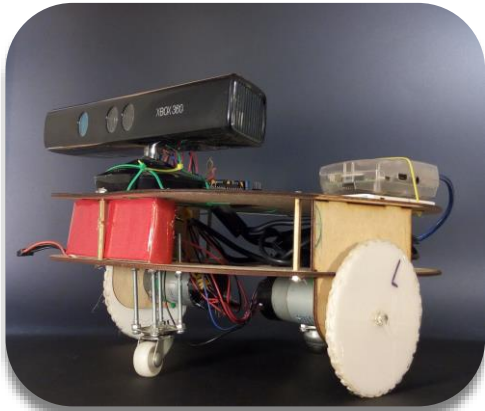
History of Local Chapter Activities

- *Participated in ARLISS in 2014, 2015, 2019.*



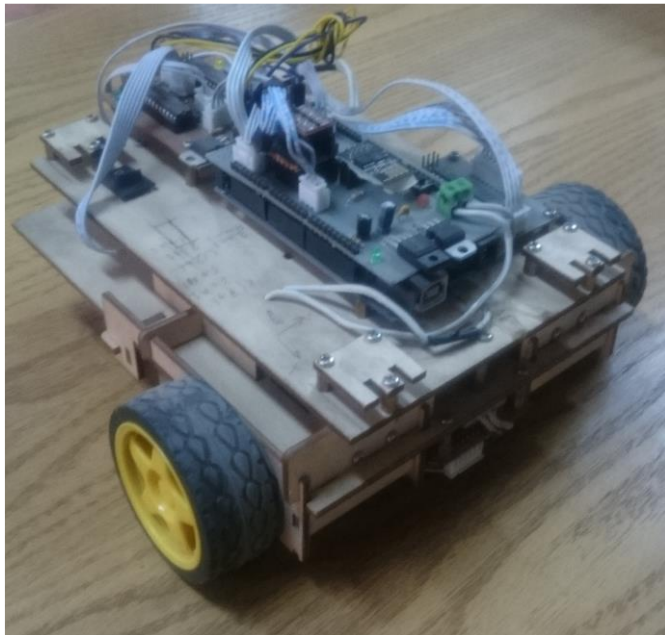
History of Local Chapter Activities

A Simultaneous Localization and Mapping System Using a Stereo-Camera and a Low-Cost Mobile-Robot



History of Local Chapter Activities

Rover formation



(a) $t = 0$ sec



(b) $t = 1.4$ sec



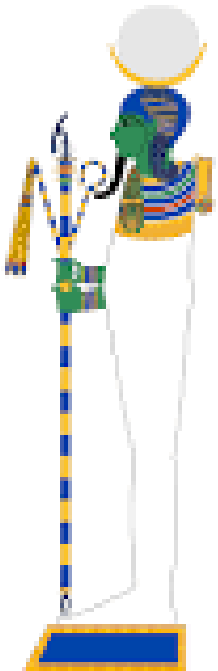
(c) $t = 3.25$ sec



(d) $t = 5$ sec

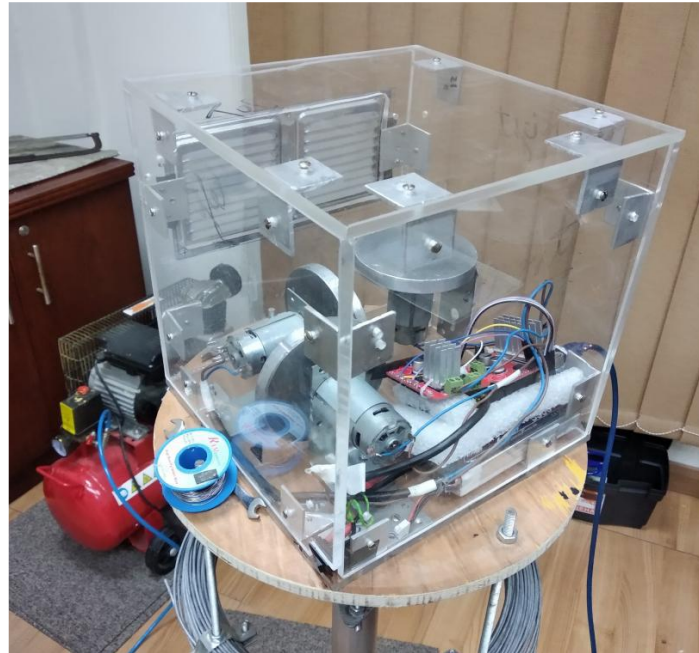
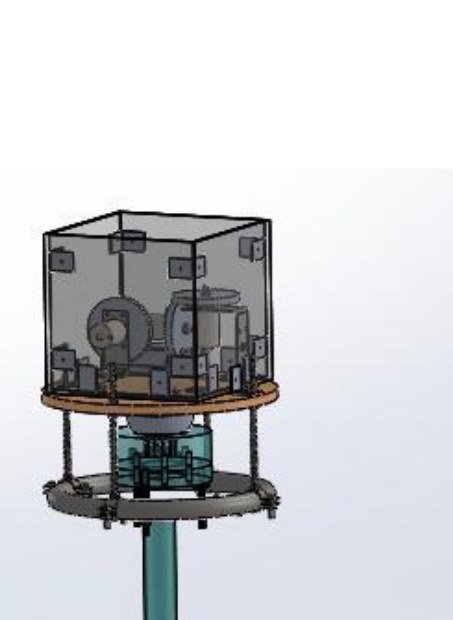
History of Local Chapter Activities

- In the KHENSU 1 project a rover for exploring Moon/MARS was designed and manufactured. Participated in the URC (University Rover Challenge-The Mars Society) competition, in 2014



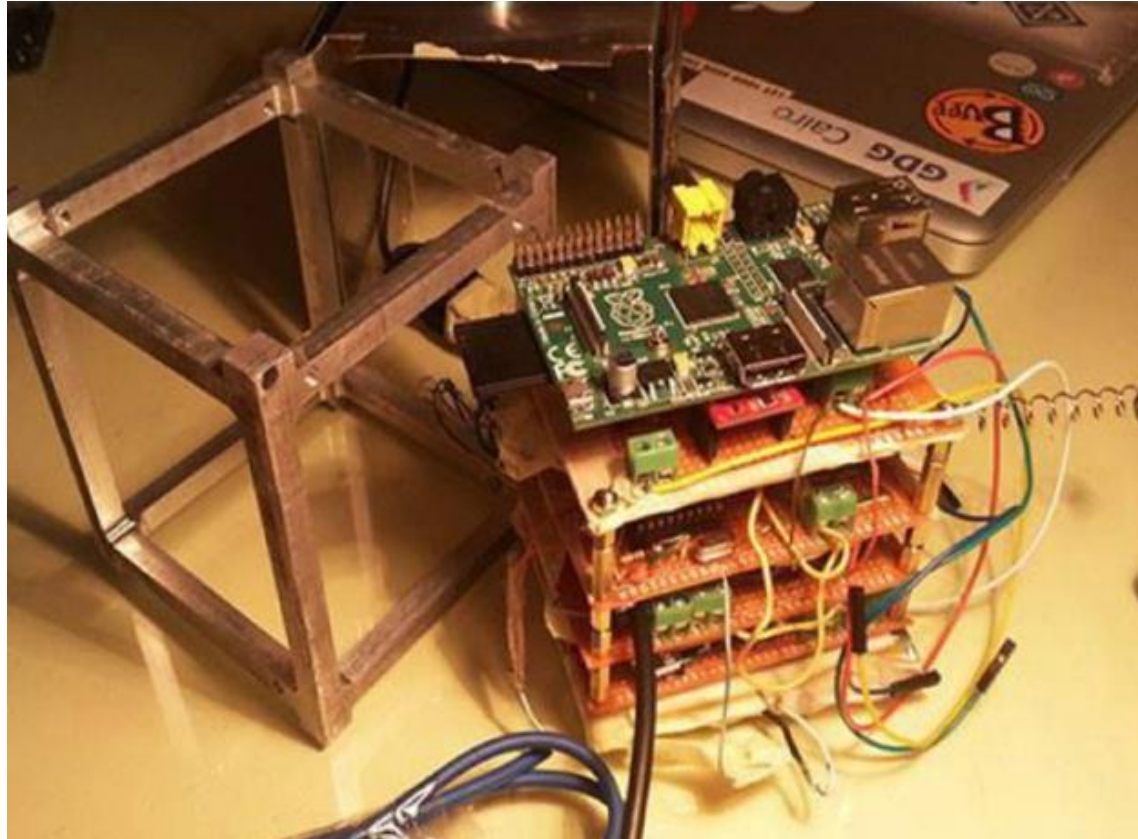
History of Local Chapter Activities

Cairo University Satellite Attitude Control Testbed (CUSACT-1) is a 3-axis stabilized, air bearing-based testbed



History of Local Chapter Activities

Cube Sat



History of Local Chapter Activities

- *Held CanSat Training Program once or twice a year (2014:2021).*



History of Local Chapter Activities



| CTPx | Number of students |
|--------|--------------------|
| CTP 1 | 17 |
| CTP 2 | 9 |
| CTP 3 | 10 |
| CTP 4 | 9 |
| CTP 5 | 12 |
| CTP 6 | 10 |
| CTP 7 | 13 |
| CTP 8 | 19 |
| CTP 9 | 15 |
| CTP 10 | 22 |
| CTP 11 | 34 |
| CTP 12 | 68 |
| CTP 13 | 93 |

331 trainee

History of Local Chapter Activities

- *Held CanSat Training Program once or twice a year (2014:2021).*



History of Local Chapter Activities

- *workshops about space projects for school students (STEM)*



UNISEC-Egypt Activities in 2021-22

**Number of

- Member Universities: 2 -but participating universities : 5
- Students: 22
- Professors: 3
- Others (RA): 2

- *Participate in pre-MIC8.*
- *CubeSat KIT EGSA.*

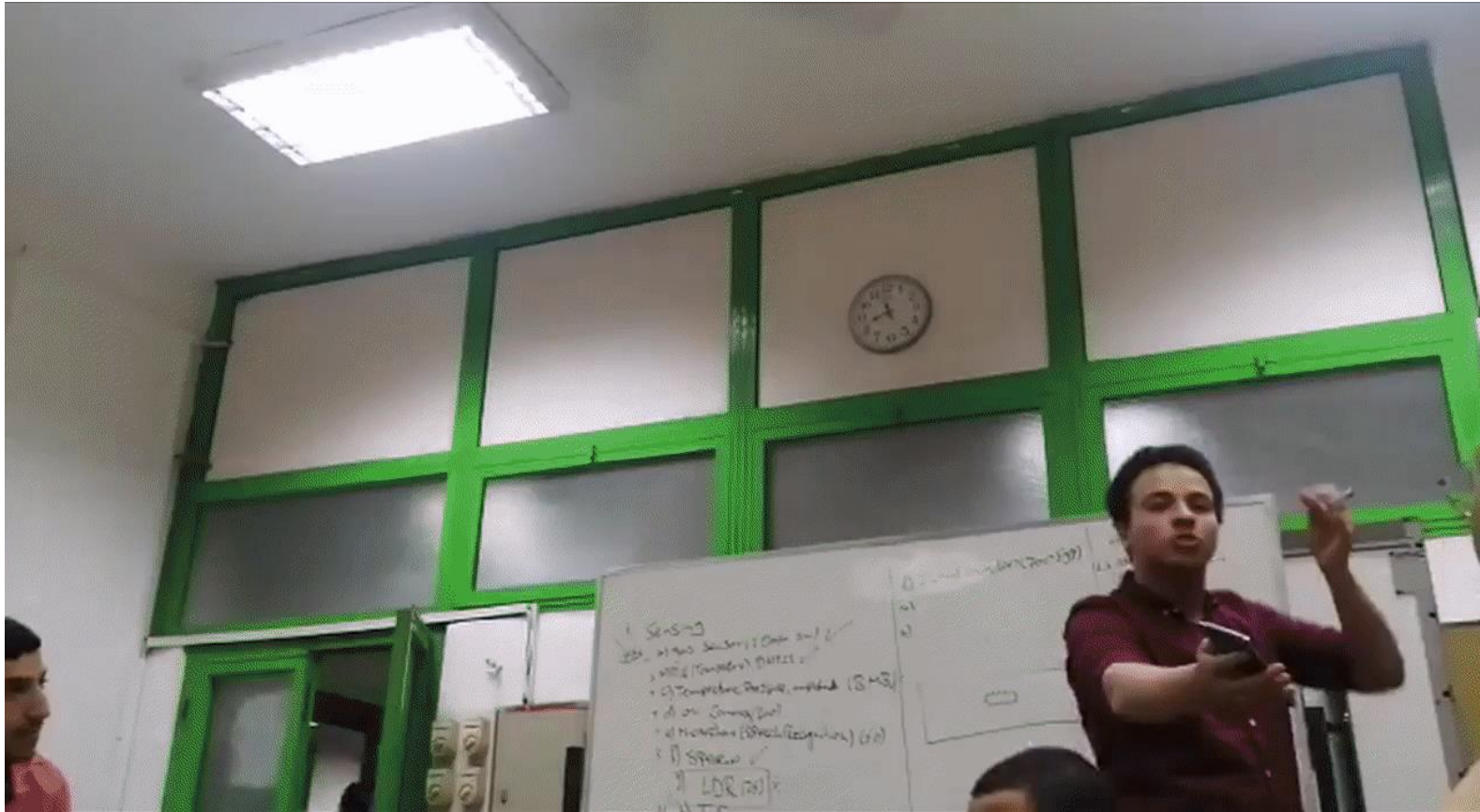


UNISEC-Global Activities in 2021-22

- *Held Lean CubeSat Training Program (LCTP1) 2022.*

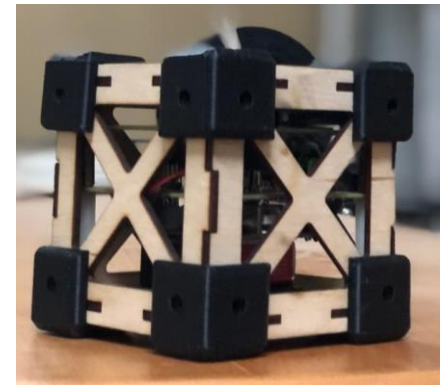
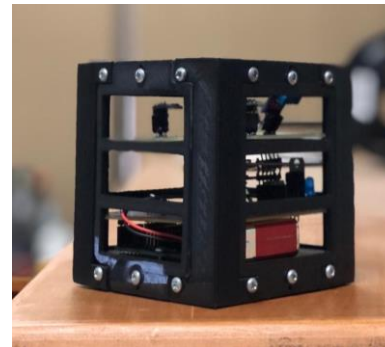
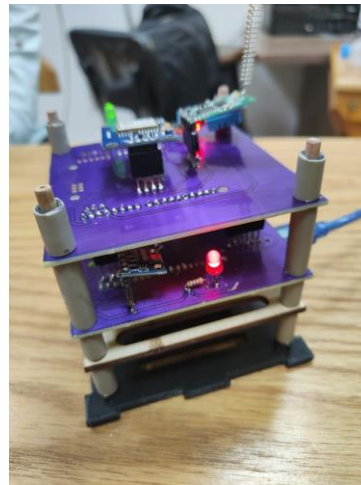
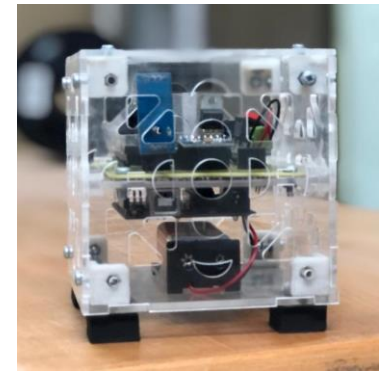
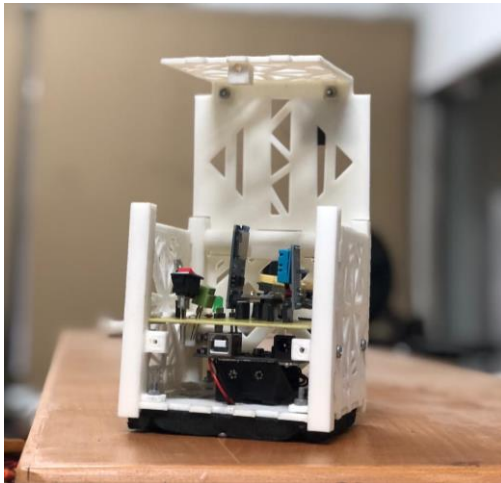


UNISEC-Global Activities in 2021-22



UNISEC-Global Activities in 2021-22

- *Held Lean CubeSat Training Program (LCTP1) 2022.*



UNISEC-Global Activities in 2021-22

- *Held Lean CubeSat Training Program (LCTP1) 2022.*



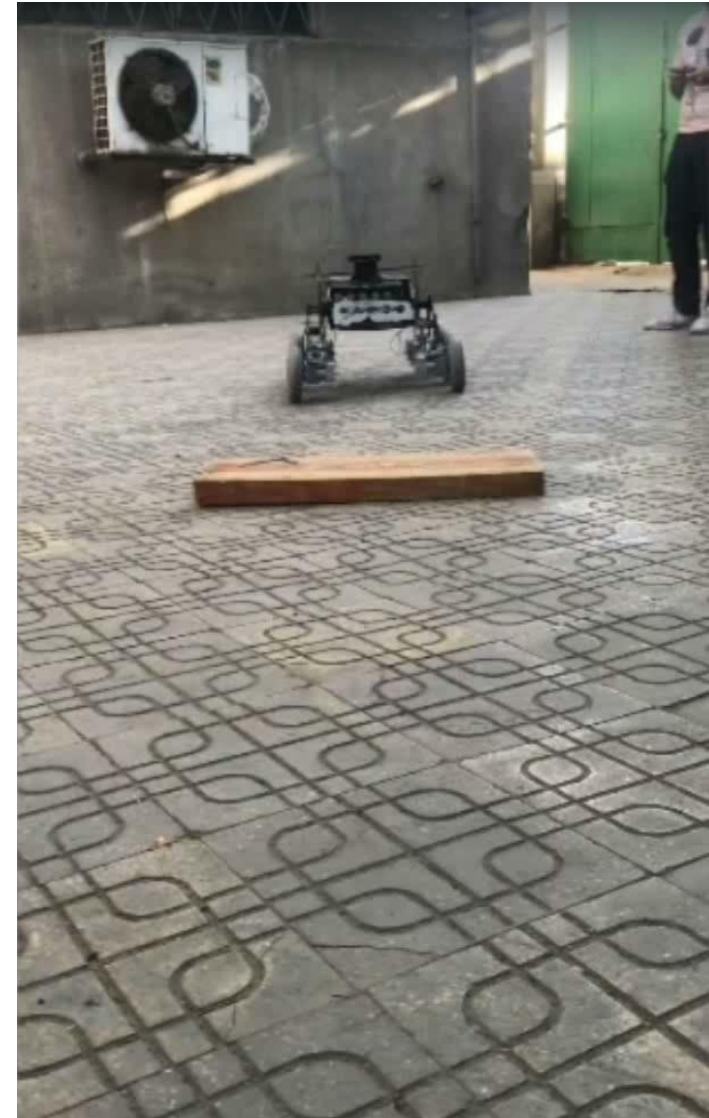
UNISEC-Global Activities in 2021-22

- *Octa flying wing (launching vehicle experiment)*



UNISEC-Global Activities in 2021-22

- *Autonomous Rover.*



Plan for 2022-23 and beyond



- *Add more universities.*
- *Add more students to the team.*
- *Second Lean CubeSat training program.*
- *Continue workshops about space projects for school students (STEM).*
- *Continue research with space robotics (Rovers and eVTOL).*
- *Continue Participating in national and international competitions.*
- *More cooperation with EgSA.*