



Toward Establishing UNISEC-Egypt:

Space Engineering Education in

Egypt

Ayman H. Kassem, Mohamed K. Ibrahim,
SSTLab staff



Department of Aerospace Engineering
Cairo University

Outline

- **History.**
- **CanSat Training (CLTP, CLP).**
- **Activities Timeline.**
- **Major Outcomes.**
- **Students Achievements.**
- **UNISEC-EGYPT.**
- **The Future.**

HISTORY

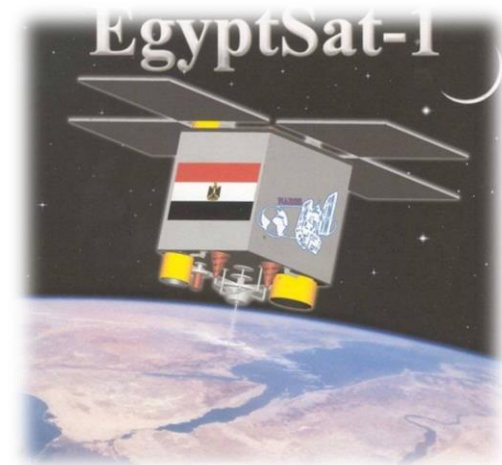
- **Space Education at Cairo University starts officially in 1990 when the department changed from *Aeronautical Engineering* to *Aerospace Engineering*.**
- **Space Education has a boost around 1994, with the establishment of "Egypt's National Authority for Remote Sensing and Space Sciences".**
- **Around year 2000, Prof. Sayed Desoky contacts his colleague from Stanford Prof. Twiggs who offers visiting Egypt and teaching us CANSAT technology.**
- **Unfortunately, the offer was rejected by Egyptian Authorities!**

HISTORY

- A remote sensing satellite EgyptSat1 (165Kg, 7.8 m resolution) program started as a cooperation with the Ukraine and was launched on 17th April 2007.
- A team of Aerospace engineers, under the supervision of Aerospace department faculty members, has joined EgyptSat 1 development.
- Different space courses (graduate and undergraduates) where offers through this period such as:
 - Attitude Dynamics and Control , Mission analysis, orbital Dynamics, Space Structures, Space propulsion, etc.

HISTORY

- Different graduation projects were also executed such as:
 - Moon-Sun Sensor, Gas propulsion thrusters, Solar Cells cruse sun-sensor, Mission Analysis software, Orbital propagator, etc.
- More than 10 master and Ph.D. theses were conducted.
- After stopping of satellite program, space education and research slowed down till three faculty members joined The Japanese Cansat Leader Training Program CLTP.



CLTP

1 Participant from Egypt in CLTP1

2 Participants in CLTP3 •

Total of 3 Participants in CLTP •



First CanSat Training Program (CTP1)



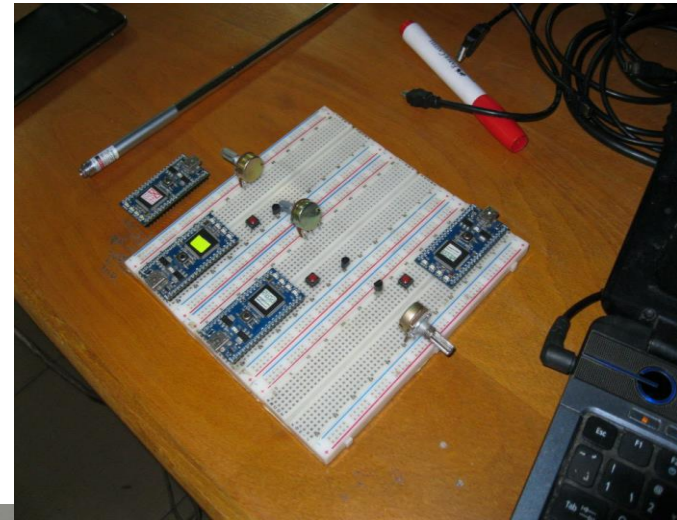
2011

Second CanSat Training Program (CTP2)



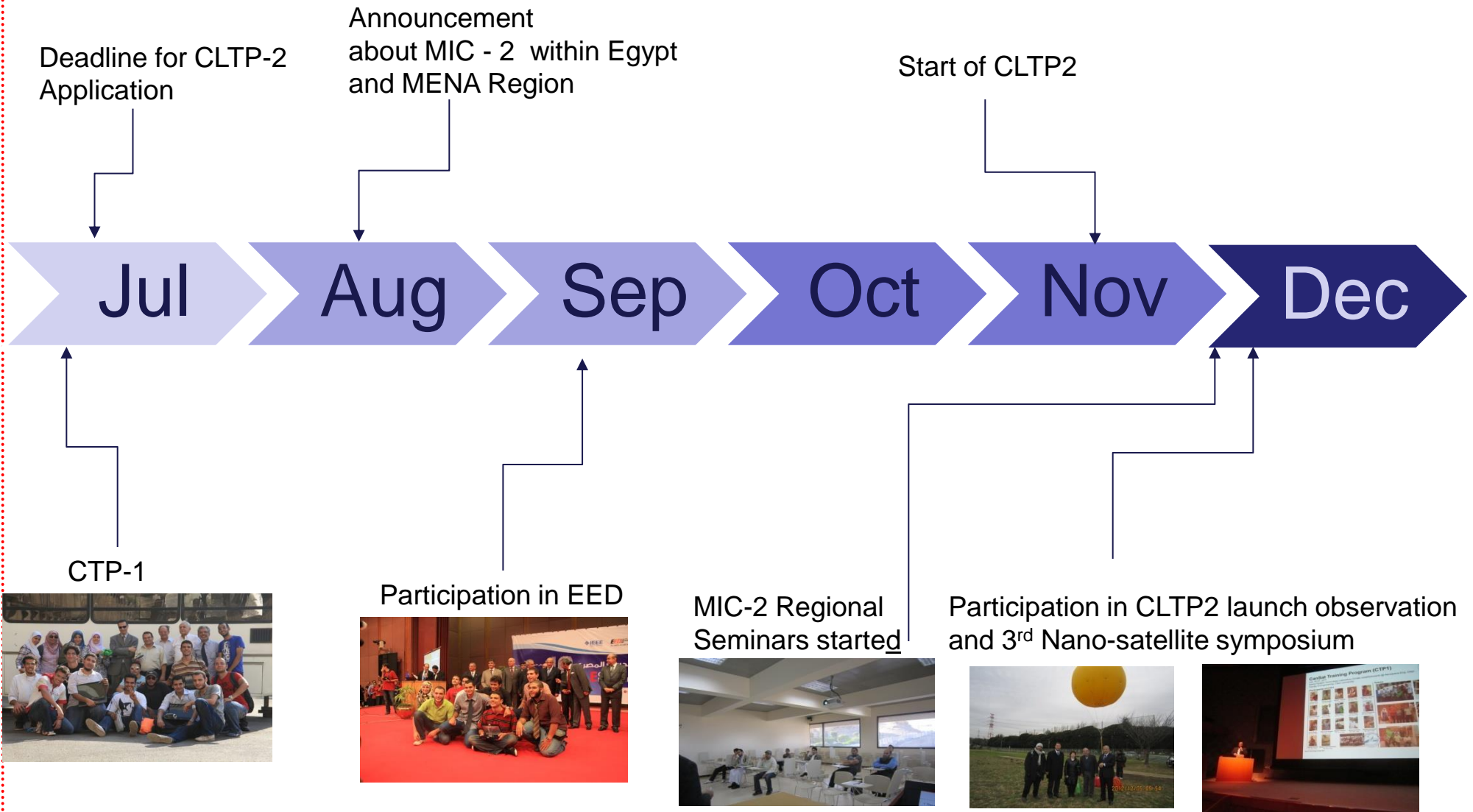
2012

Third CanSat Training Program (CTP3)



2013

2011 Activities Timeline



2012 Activities Timeline

MIC2 Seminars



TEDx Show



CLTP3 Start

Application Deadline
For CLTP3

Application
Deadline for MIC2



CTP-II



AUC Students Competition



Seminar and Panel
Discussion about
Establishing
UNISEC-Egypt



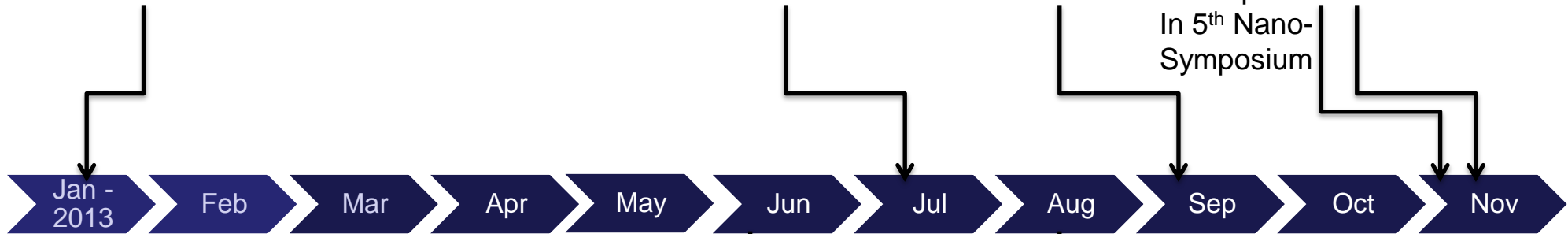
Participation in EED-12



2013 Activities Timeline



CTP3



Participation Siemens-
Middle east competition

Participation in UN
Symposium in Daubi

Participation in
PreMIC3

Participation
In 5th Nano-
Symposium

Participation in RAST 2013
Symposium in Istanbul

Three capstone projects
Affiliated to SSTLAB

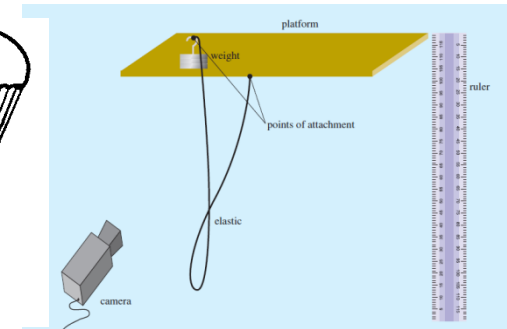
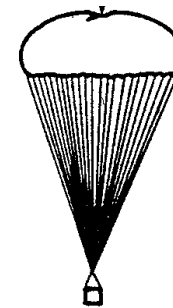
Participation in
EED 2013

Iran Int'l Cansat
Competition
ICC2013



Major Outcomes

- CanSat allows introducing interesting teaching modules with more design and hardware contents.



- We start getting the best Engineering students in Egypt after changing the stereotype idea of:
“Aerospace students are book worms and never have fun”

Major Outcomes

- Advanced Graduation projects:
 - Students get more acquainted with electronics (microcontroller, sensors).
 - They start working on more advanced topics and trying new ideas



Rover Back CanSat



BBM CubeSat



Octocopter

Students Achievements

2011



EED – 1st Place

2012



EED – 1st Place



AUC– 1st Place



EED

2013



EED– 1st Place



**3rd IRAN INT'L
CANSAT COMP.
7th Place From 150**

Outreach

- PortSaid TEDx Session (2012).

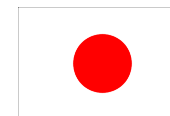


- Several TV shows. (2012-2013).



UNISEC-EGYPT

Seminar and Panel Discussion about establishing
UNSEC-Egypt (July 4, 2012)



ALEXANDRIA
University



UNISEC-EGYPT

During the first meeting it was agreed that:

- Mailing list was established to disseminate important information.
- To hold a second workshop in 2013 to allow each institute to present its capability.
- Explore the legal issues related to establish NGO UNSEC-EGYPT.
- Due to the current political situation things delayed.
- We are aiming at Alexandria university (the second top university in Egypt after Cairo University)

Future Plan

- **Continuing CanSat Education (CTP4, CTP5,....)**
- **Competing nationally and internationally (EED, ARLISS, MIC, etc.).**
- **CubeSat (beyond BBM).**
- **Establishing UNISEC-EGYPT.**

Thank you

Ready for Questions

