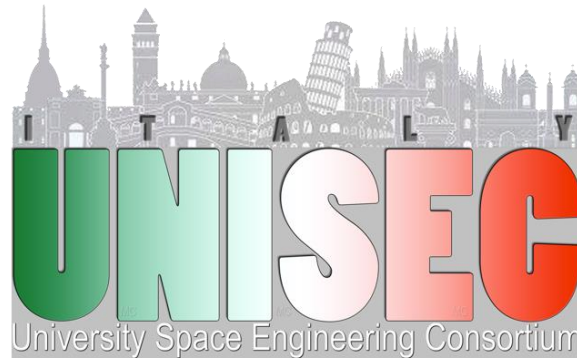


UNISEC ITALY



Presenter: Prof. Fabio Santoni



6th UNISEC Global Meeting
Strasbourg (France), 20th of November 2018



UNISEC Italy Consortium

During the 3rd UNISEC-Global Meeting in Tokyo (July 2015), Italy was accepted as new local chapter



LA SAPIENZA



UNIVERSITY OF BOLOGNA



POLYTECHNIC OF TURIN



TOR VERGATA



UNISEC Italy Activities

Dec 2017

- **5th UNISEC Global Meeting (2-4 December 2017) at the Sapienza's Engineering Faculty in Rome (Italy)**





UNISEC Italy Activities

Dec 2018

- **5th UNISEC Global Meeting (2-4 December 2017) at the Sapienza's Engineering Faculty in Rome (Italy)**

Jan 2018

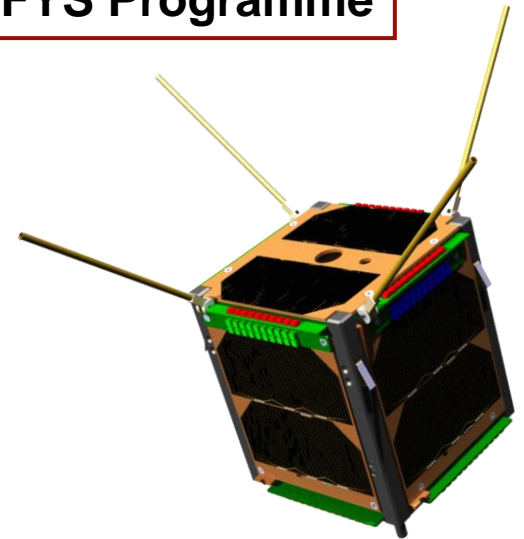
TIANGONG-1 Re-entry Observing Campaign

April 2018

UNISEC Italy Activities

May 2018

- Achievement of the LEDSAT CDR – ESA's FYS Programme



UNISEC Italy Activities

May 2018

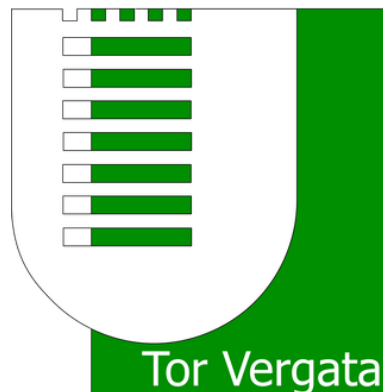
- **Achievement of the LEDSAT CDR – ESA's FYS Programme**
- **Application by the HEMERA Team for the 5th Mission Idea Contest**



UNISEC Italy Activities

May 2018

- Achievement of the LEDSAT CDR – ESA's FYS Programme
- Application by the HEMERA Team for the 5th Mission Idea Contest
- The Italian University of Tor Vergata (Rome) joined UNISEC Italy



UNISEC Italy Activities

July 2018

- Selection notification for the HEMERA at the 5th MIC





UNISEC Italy Activities

July 2018

- **Selection notification for the HEMERA at the 5th MIC**

Sep 2018

- **Start of the development for the fixed Space Debris Observatory for the Gran Sasso facility (Abruzzo, Italy)**



UNISEC Italy Activities

Nov 2018

- Pre-selection of the TARDIS student team for the ESA's BEXUS 28/29 Educational programme



UNISEC Italy Activities

Nov 2018

- Pre-selection of the TARDIS student team for the ESA's BEXUS 28/29 Educational programme
- 6th UNISEC Global Meeting at Strasbourg (France)





UNISEC Italy Activities

Nov 2018

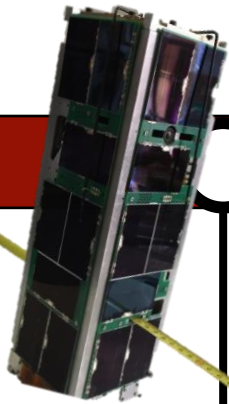
- **Pre-selection of the TARDIS student team for the ESA's BEXUS 28/29 Educational programme**
- **6th UNISEC Global Meeting at Strasbourg (France)**

Dec 2018

- **«5th Space Debris Student Opportunities Workshop» at Sapienza University of Rome (Rome, Italy)**



UNISEC CubeSat Activities

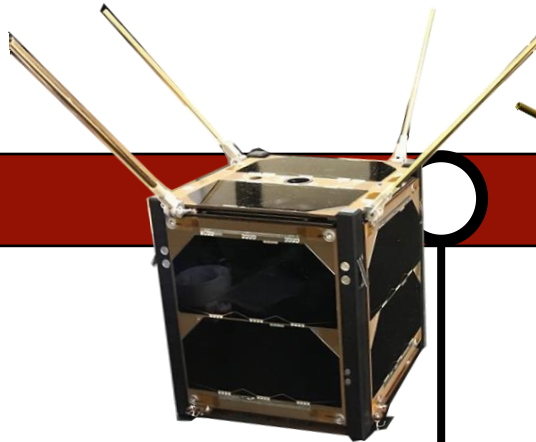


URSA MAIOR

University of Rome La Sapienza
Micro-Attitude In-Orbit Testing

2014 – In orbit

Status: Launched on 23 June 2017



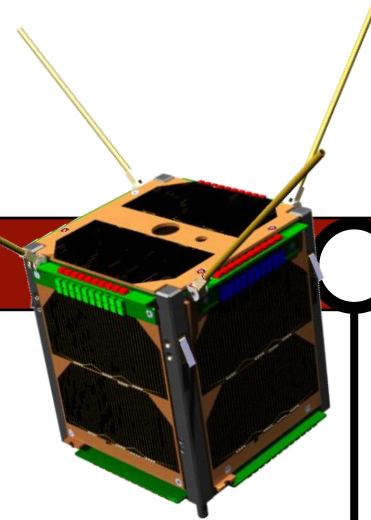
1KUNS-PF

1st Kenyan University
Nano-Satellite – Precursor
Flight

2017 – Deployed by the ISS

Status: Launched by ISS on May
11, 2018

**With University of Nairobi,
Kenya**

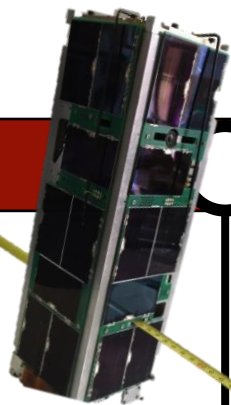


IKUNS-B/LEDSAT

Italian-Kenyan University Nano-
Satellite / LED-based small
SATellite

2017 – Under development

Status: To be launched within 2020



URSA MAIOR

University of Rome La Sapienza
Micro-Attitude In-Orbit Testing

2014 – In orbit

Status: Launched on 23 June 2017



**Developed and qualified
from 2014 to 2016** at the
S5Lab (Rome, Italy)

Primary Payload: CartoSat
Deployed in Sun-Synchronous
orbit with other 30 nanosatellites

Launched on 23 June 2017
on **PSLV-C38**

Deployed with other 30
nanosatellites (part of the QB50
project)



1KUNS-PF

1st Kenyan University



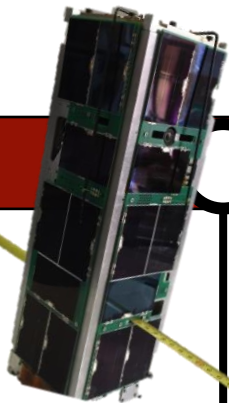
IKUNO-BLEDSAT

Italian-Kenyan University Nano-
Satellite / LED-based small

Still operative in orbit

URSA MAIOR has been
Status: To be launched within 2020
deployed in a Sun-Synchronous
orbit (500 km altitude). It is still
communicating with the S5Lab
team.

UNISEC CubeSat Activities

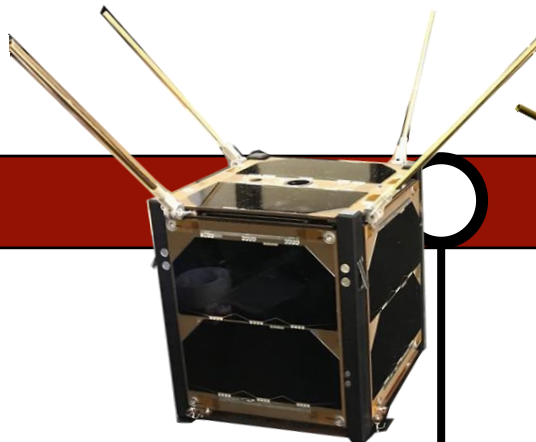


URSA MAIOR

University of Rome La Sapienza
Micro-Attitude In-Orbit Testing

2014 – In orbit

Status: Launched on 23 June 2017

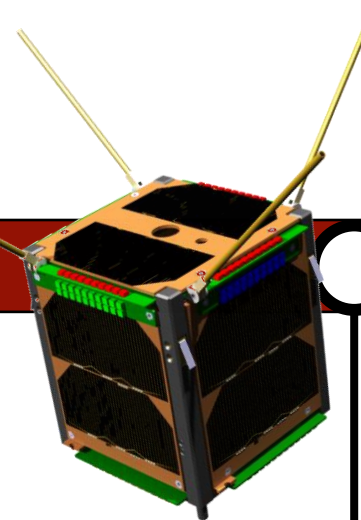


1KUNS-PF

1st Kenyan University
Nano-Satellite – Precursor
Flight

2017 – Deployed by the ISS

Status: Launched by ISS on May
11, 2018

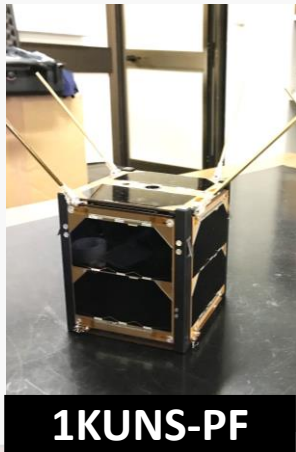


IKUNS-B/LEDSAT

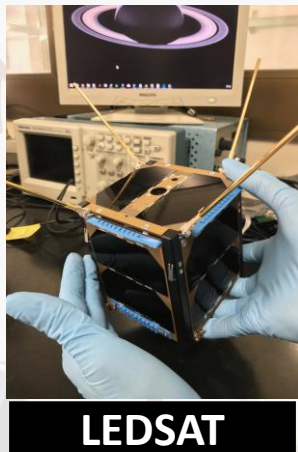
Italian-Kenyan University Nano-
Satellite / LED-based small
SATellite

2017 – Under development

Status: To be launched within 2020



1KUNS-PF



LEDSAT

1KUNS-PF and **LEDSAT** share many features of the design.

In fact, 1KUNS-PF represent a Precursor Flight for the IKUNS project nano-satellites, allowing to test components and sub-units that will fly on LEDSAT.

1KUNS-PF has been developed between **June** and **December 2017** by the joint student satellite team, in collaboration with the **University of Nairobi**

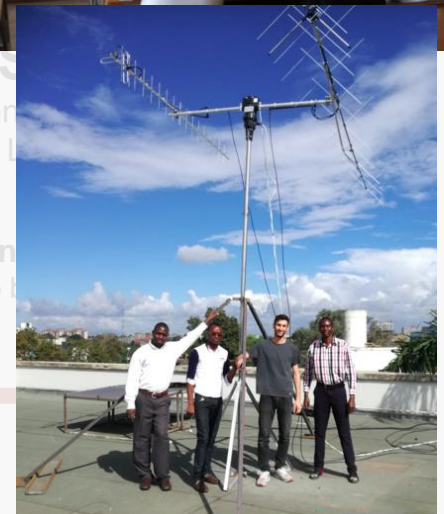
It is the first CubeSat participating in the joint **UNOOSA/JAXA KiboCUBE Nano-Satellite Programme**, and the first CubeSat developed by the **Republic of Kenya**

2014 – In orbit
Status: Launched on 23 June 2017

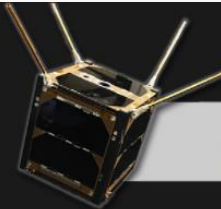
2017 – Deployed by the ISS
Status: Launched by ISS on May

2017 – Un
Status: To

Deployed by the ISS on May 11th, 2018
Mission results: <https://1kuns-pf.ns0.it>




1KUNS_PF mission web-site




1KUNS-PF

1st Kenya University Nano Satellite - Precursor Flight

UNIVERSITY OF NAIROBISAPIENZA
UNIVERSITÀ DI ROMA

[Home](#) [Mission Timeline](#) [Images](#) [Tracking](#) [Decoding](#) [Contact us](#)

First beneficiary of
KiboCUBE



Images



1KUNS-PF
University of Nairobi
Sapienza University of Rome


1KUNS-PF (1st Kenya University Nano-Satellite – Precursor Flight) is a 1-U CubeSat developed by **University of Nairobi** with the technical support of **Sapienza University of Rome**. It is the first beneficiary of the **United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo) “KiboCUBE”**. After being launched on-board the **Space-X Dragon CRS-14** mission, it was deployed from the **International Space Station** on **May 11th, 2018**. It is currently operational in orbit.

The program is focused on capacity building in aerospace in Kenya, through the development of a complete space mission, after the Kenya Space Agency


Supported by




Kenya Space Agency *agenzia spaziale italiana*



NPC
NATIONAL PLANETARIUM CENTER



ROBOPTICS




1KUNS-PF
University of Nairobi
Sapienza University of Rome

Sardinia and Corsica
June 19, 2018; 08:50 UTC



1KUNS-PF
University of Nairobi
Sapienza University of Rome

Peloponnese
June 23, 2018; 13:22 UTC

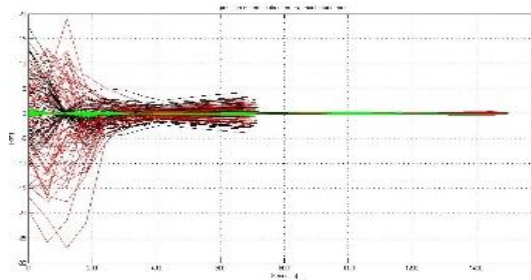
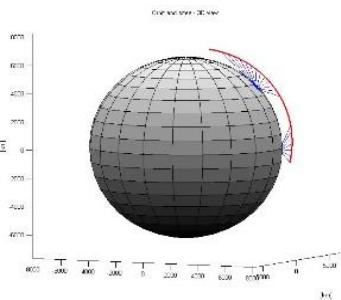


1KUNS-PF
University of Nairobi
Sapienza University of Rome

Space Debris-related Activities

EQUO (Equatorial Observatory for Space Debris)

Continuous tracking of LEO objects
from Italy and Kenya



ALMASCOPE: 2010 Equatorial test campaign



- Telescope - 25 cm f/4 in newtonian configuration
- CCD Kaf1600E sensor , 1024x1536 pixels, each pixel is 9x9 micron (total chipsize 9.2x13.8 mm)
- Mount German equatorial
- The field of view is of about 1 degree



LEO High Inclination tracking from Italy and Kenya (Terminator Shape)



Scientific Optical Network

MITO



LOIANO



SCUDO



SURGE



EDUSCOPE



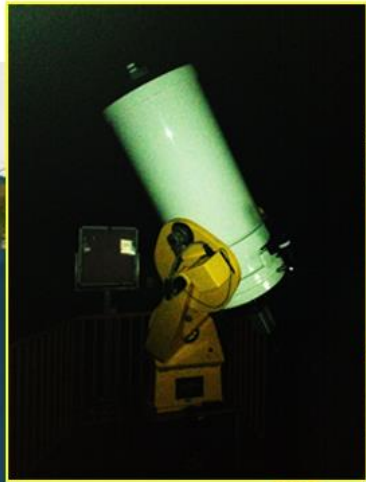
CAMPO CATINO



RESDOS



International Collaborations



ANGELL HALL



ZIMMERWALD



TIRA (RADAR)

MODEST



MAGELLAN



EQUO OG



EQUO OS

International Student Contests and Educational Programme



The 5th

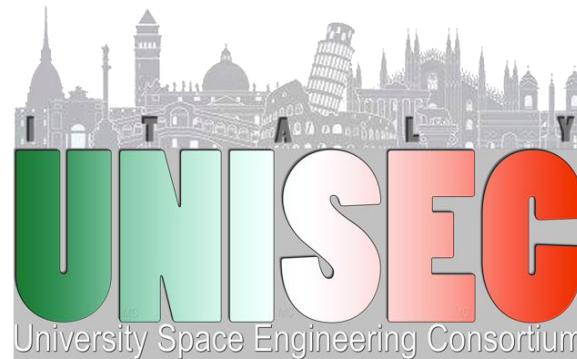
Mission Idea Contest

Micro/Nano Satellites for Global Sustainable Development

International Student Contests and Educational Programme



Questions?



SAPIENZA
UNIVERSITÀ DI ROMA

6th UNISEC Global Meeting
Strasbourg (France), 20 November 2018

