

# Recent status of CubeSat development as the UNISEC-Global activity: Korea

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18 November, 2014

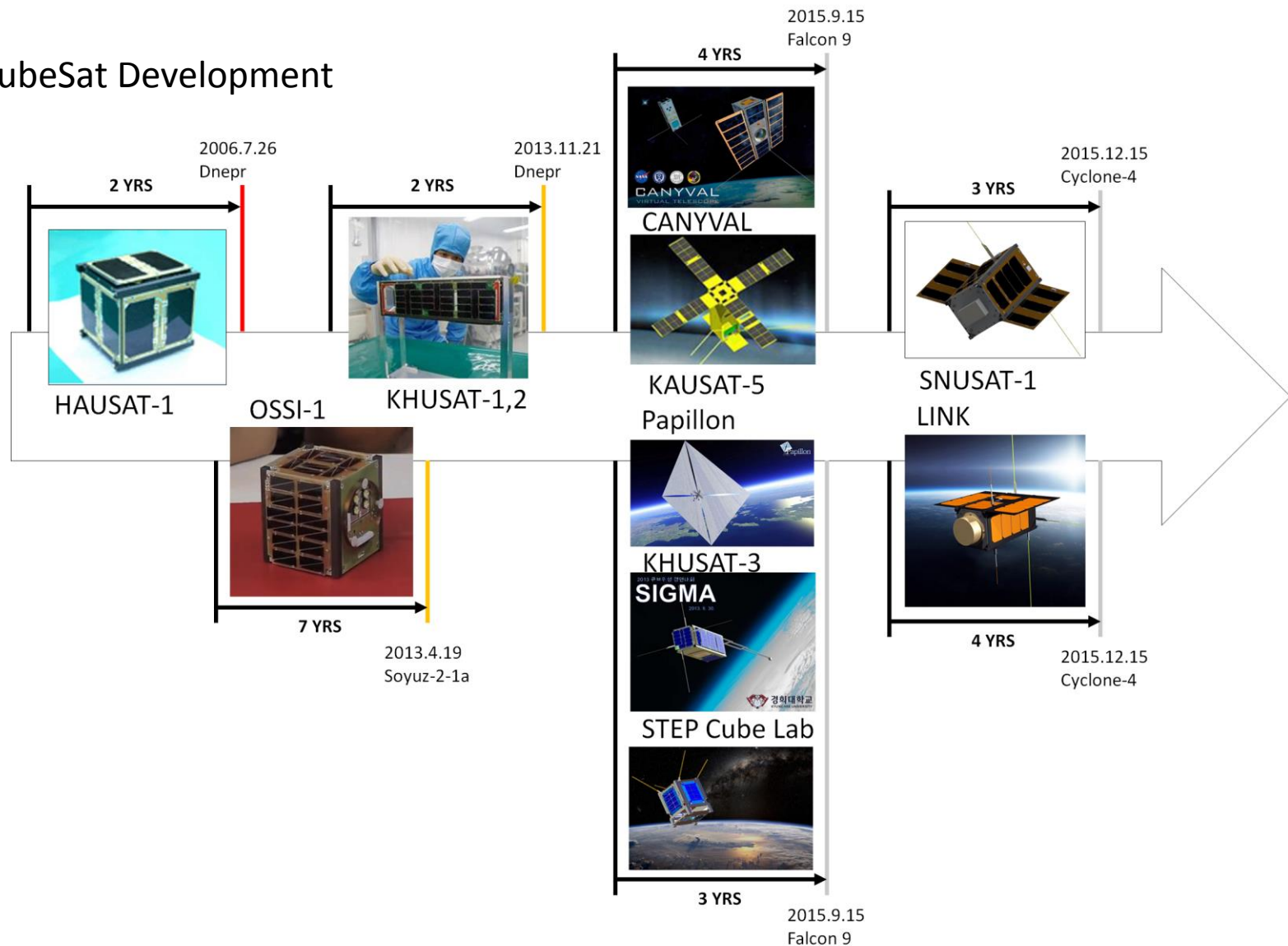


# Agenda

- CubeSat Activity of Korea: A Glance
- Current CubeSat Activities in Korea
- Approaching UNISEC-Global in Korea

# CubeSat Activity of Korea: A Glance

## CubeSat Development



# CubeSat Activity of Korea: A Glance

## CubeSat Launch

**2006.7.26 Dnepr**

HAUSAT-1

**2013.4.19 Soyuz-2-1a**

OSSI-1

**2013.11.21 Dnepr**

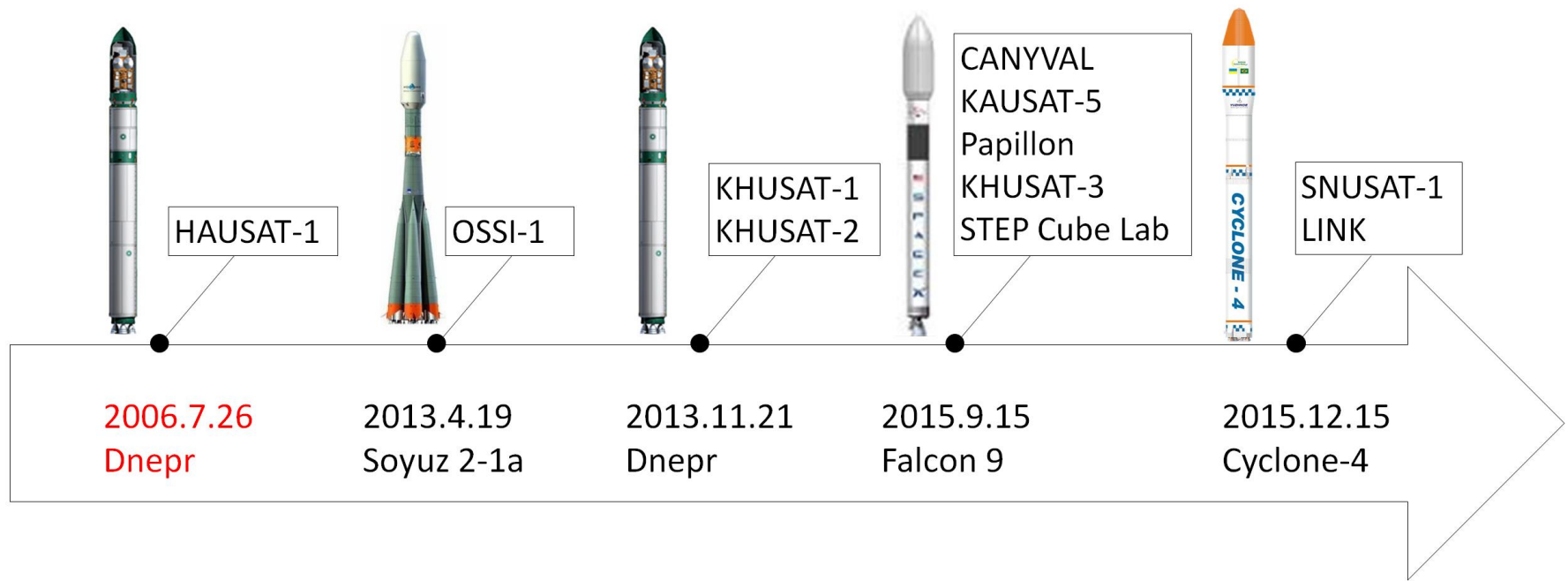
KHUSAT-1, KHUSAT-2

**2015. 9.15 Falcon-9 [Expected]**

CANYVAL, KAUSAT-5, Papillon,  
KHUSAT-3, STEP Cube Lab

**2015.12.15 Cyclone-4 [Expected]**

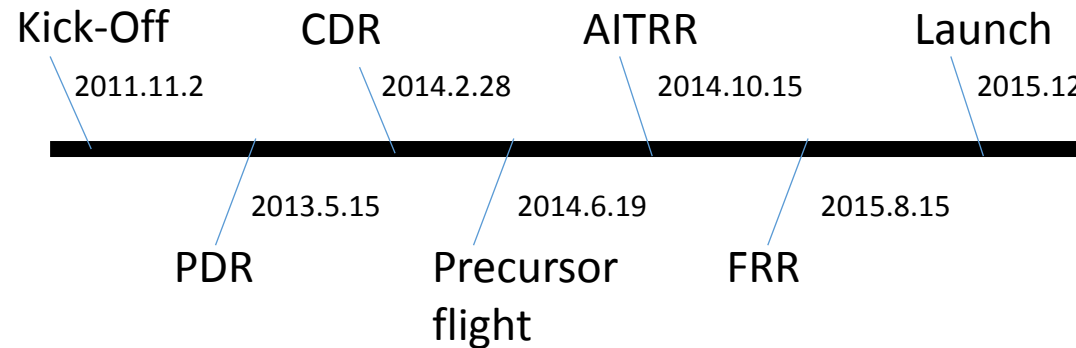
SNUSAT-1, LINK



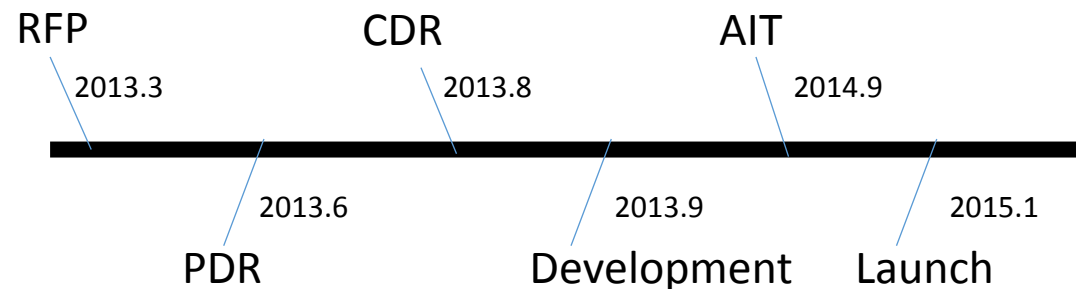
# CubeSat Activity of Korea: A Glance

## CubeSat Activity

### ESA Authorized and Advised



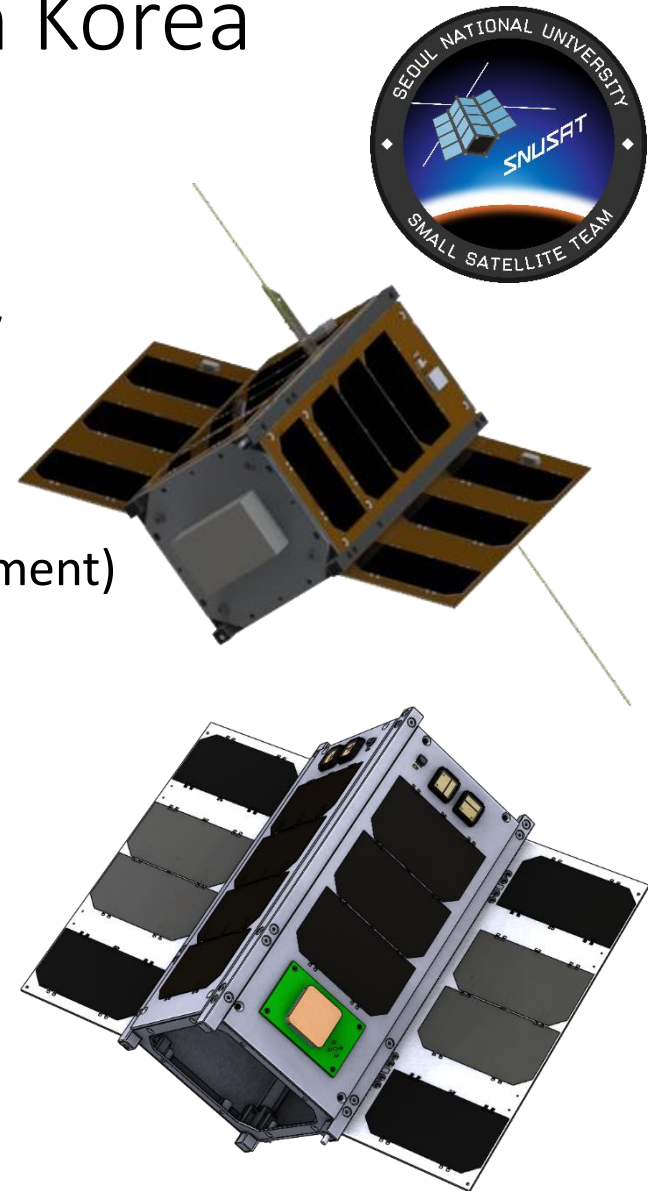
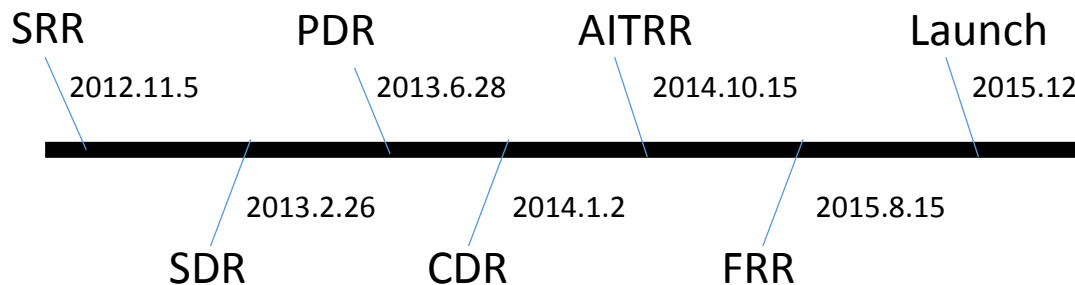
### KARI Authorized and Advised



# Current CubeSat Activities in Korea

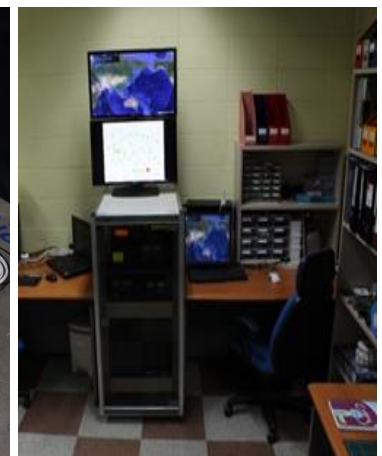
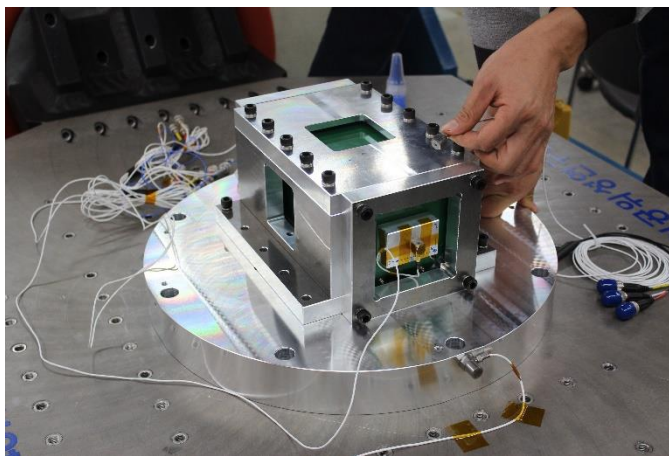
- SNUSAT-1 [2U]

- University: Seoul National University
- Kick-off: November 5, 2012
- Mission:
  - QB50 Science (FIPEX: Oxygen Measurement)
  - FDIR Tech-Demo
- ADCS: 3-Axis Stabilization
- Funding: NRF (EU-FP Related)
- Time Schedule



# Current CubeSat Activities in Korea

- SNUSAT-1 [2U]



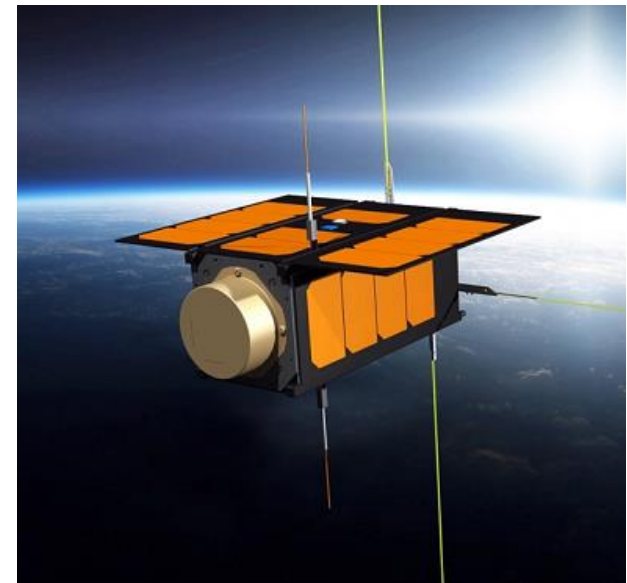
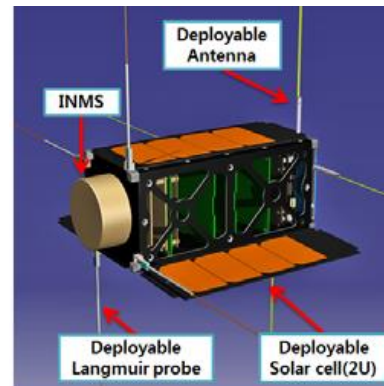
# Current CubeSat Activities in Korea

- SNUSAT-1 [2U]



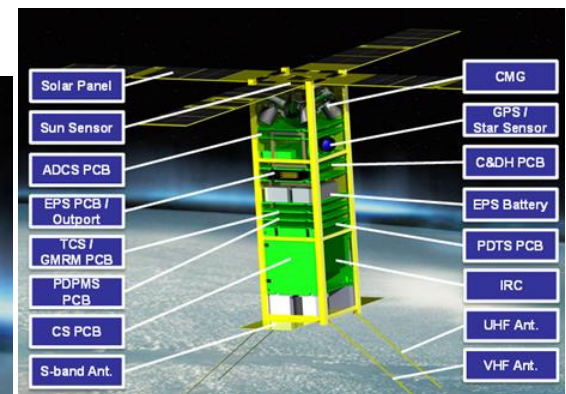
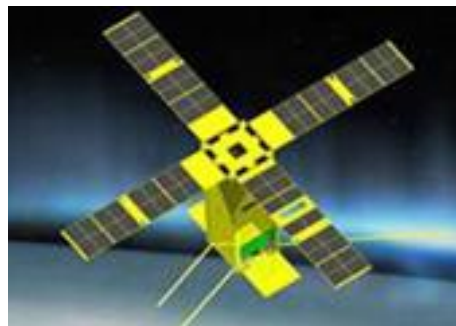
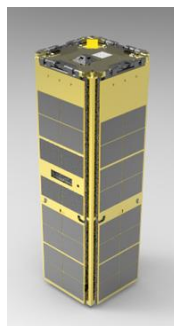
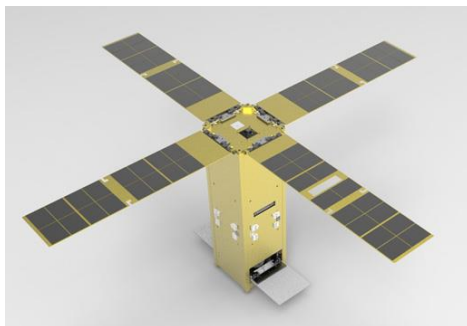
# Current CubeSat Activities in Korea

- LINK [2U]
  - University: Korea Advanced Institute of Science and Technology
  - Mission:
    - QB50 Science (INMS: Spectrometry)
    - Langmuir Probe
  - ADCS: Spin Stabilization
  - Funding: 2012 CubeSat Competition



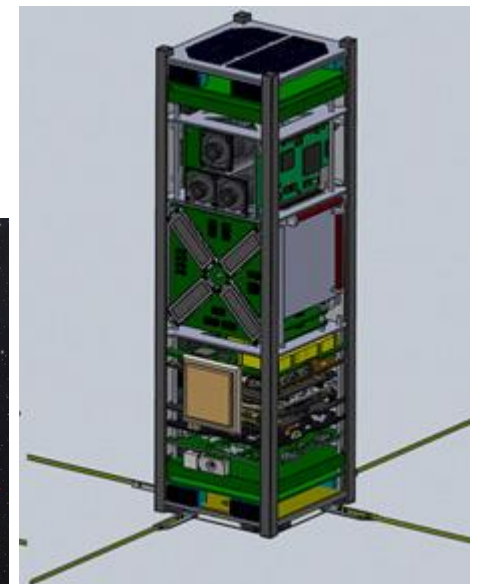
# Current CubeSat Activities in Korea

- KAUSAT-5 [3U]
  - University: Korea Aviation University
  - Mission:
    - Infrared Imaging
    - Geiger Muller Tube
  - Mission Lifetime: 1 Year
  - Orbit: 720 km, 97.73°
  - Funding: 2012 CubeSat Competition



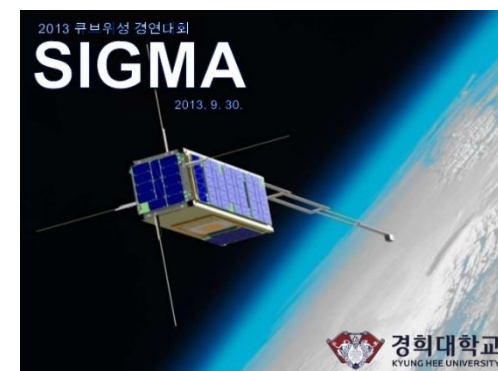
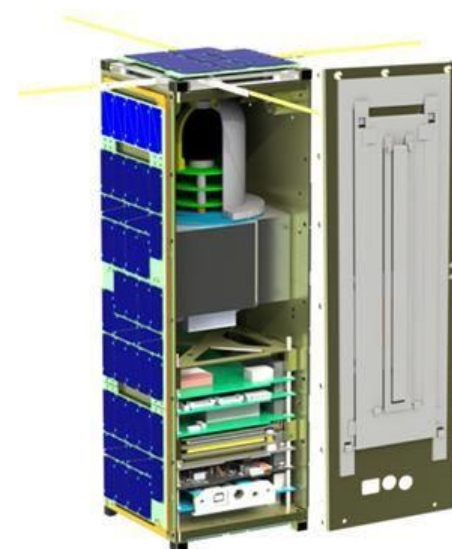
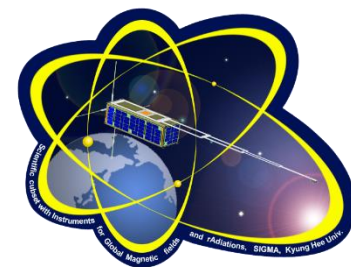
# Current CubeSat Activities in Korea

- CANYVAL [3U]
  - University: Yonsei University
  - Mission:
    - Space Telescope: Vision Alignment Experiment
  - Mission Lifetime: 3 Months
  - Orbit: 600 km,  $27.172^\circ$
  - ADCS: Spin Stabilization
  - Funding: 2012 CubeSat Competition



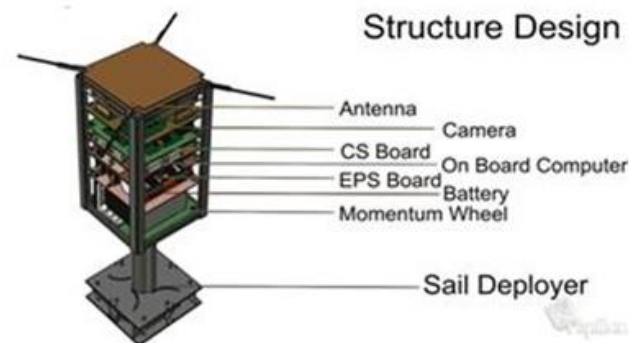
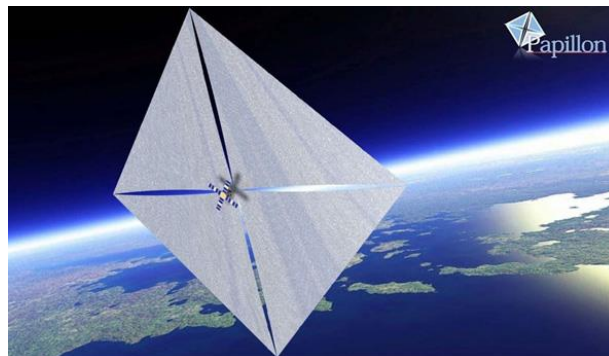
# Current CubeSat Activities in Korea

- KHUSAT-3 (SIGMA) [3U]
  - University: Kyung Hee University
  - Mission:
    - Measure global magnetic field and radiation
      - TEPC - Radiation Detector
      - Magnetometer
  - Mission Lifetime: 3 Months
  - Orbit: 650 ~ 800 km, 90°
  - Mass: < 6 kg
  - ADCS: Spin Stabilization
  - Funding: 2013 CubeSat Competition



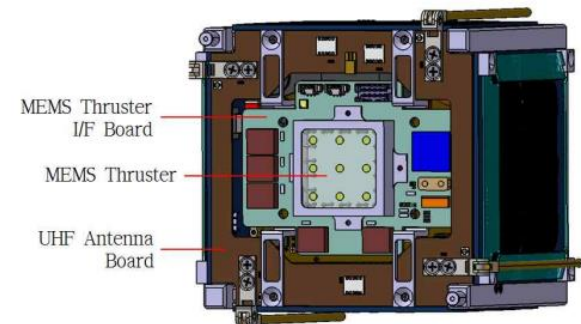
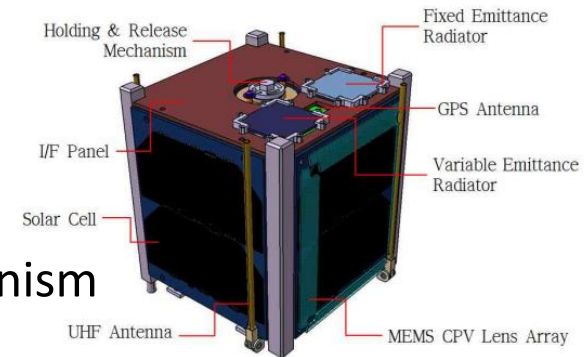
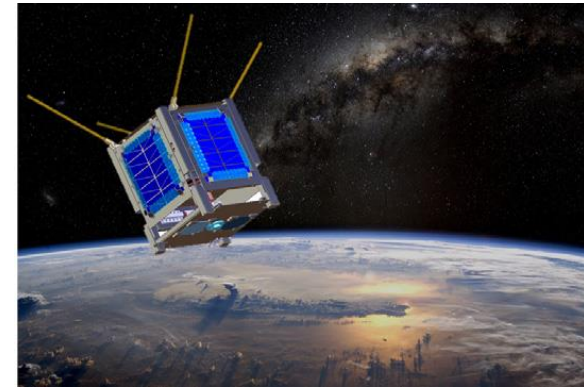
# Current CubeSat Activities in Korea

- PAPILLON [3U]
  - University: Chungnam University
  - Mission:
    - Solar Sail Deployment
  - Mission Lifetime: 1 Year
  - Orbit: 700 km, 98.193°
  - ADCS: Spin Stabilization
  - Funding: 2013 CubeSat Competition



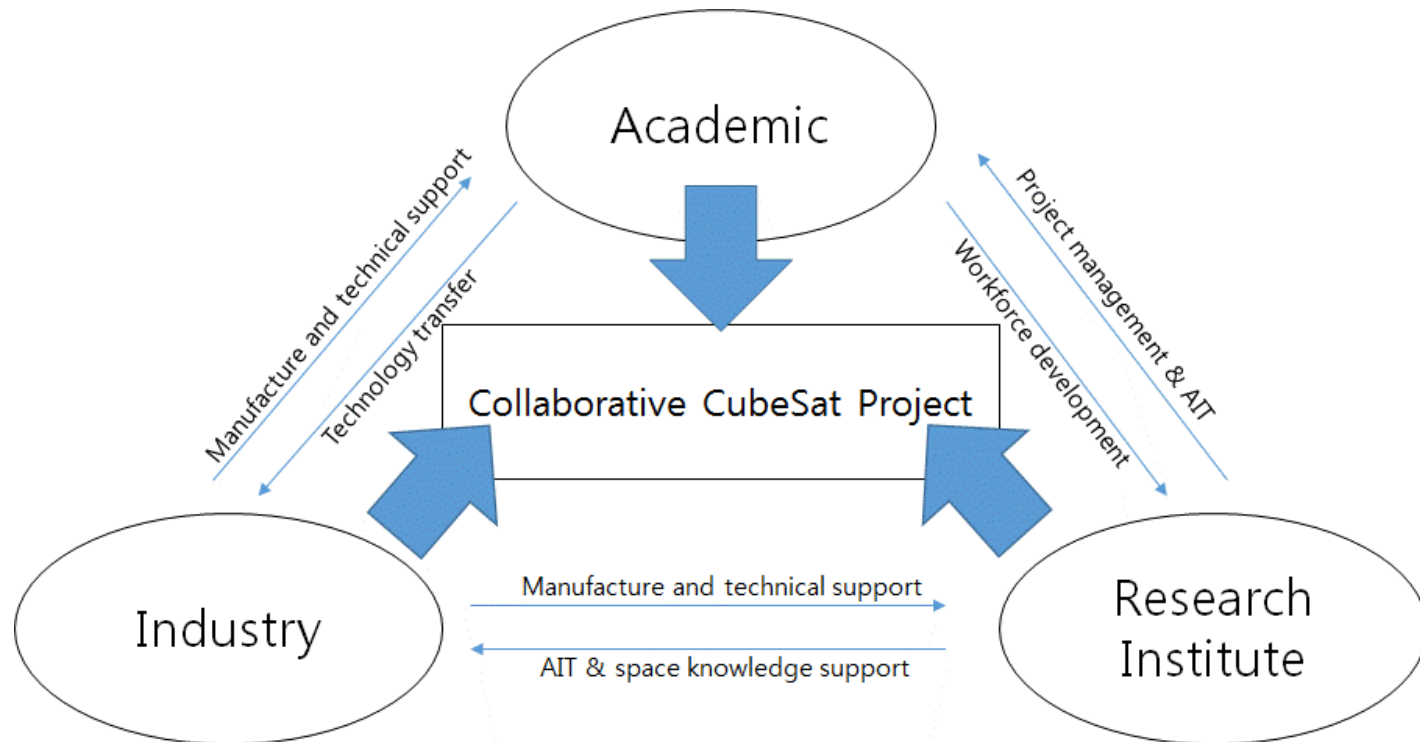
# Current CubeSat Activities in Korea

- STEP CUBE LAB [1U]
  - University: Chosun University
  - Mission:
    - Variable emittance radiator
    - Oscillating heat pipe
    - MEMS solid propellant thruster
    - Concentrating photovoltaic power system
    - Non-explosive holding and release mechanism
  - Mission Lifetime: 1 Year
  - Orbit: 600 km, 97.78°
  - ADCS: Spin Stabilization
  - Funding: 2013 CubeSat Competition



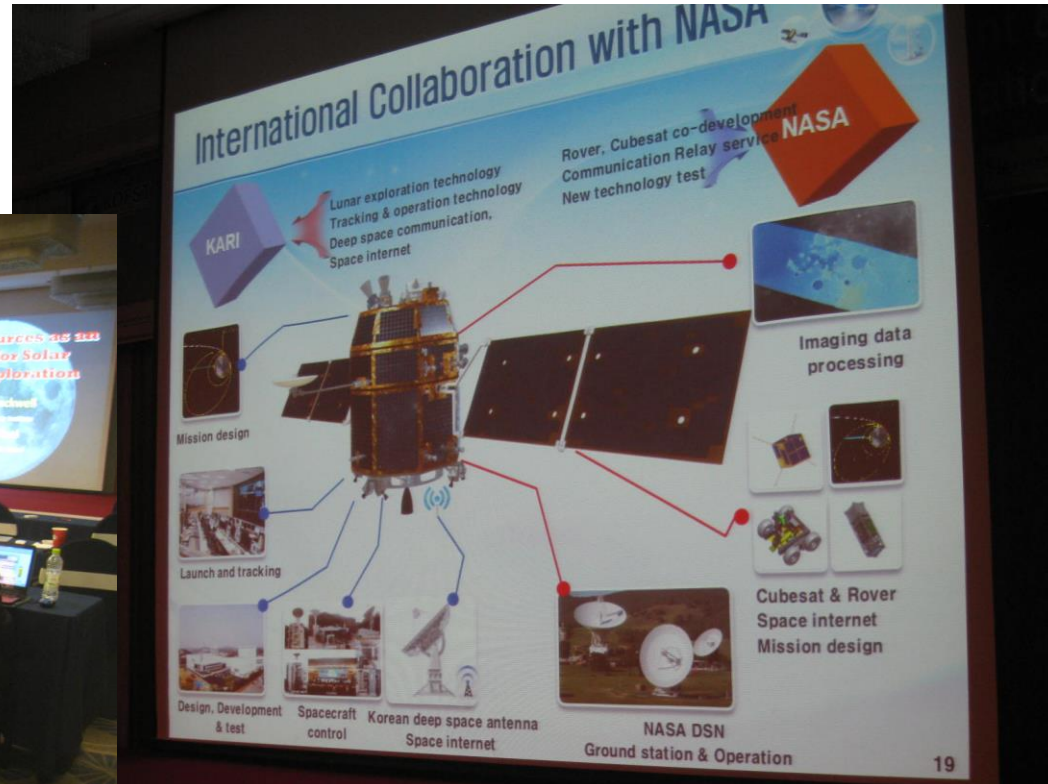
# Approaching UNISEC-Global in Korea

- CubeSat Utilization



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