

UNISEC-Global Korea activity: Gathering as a consortium

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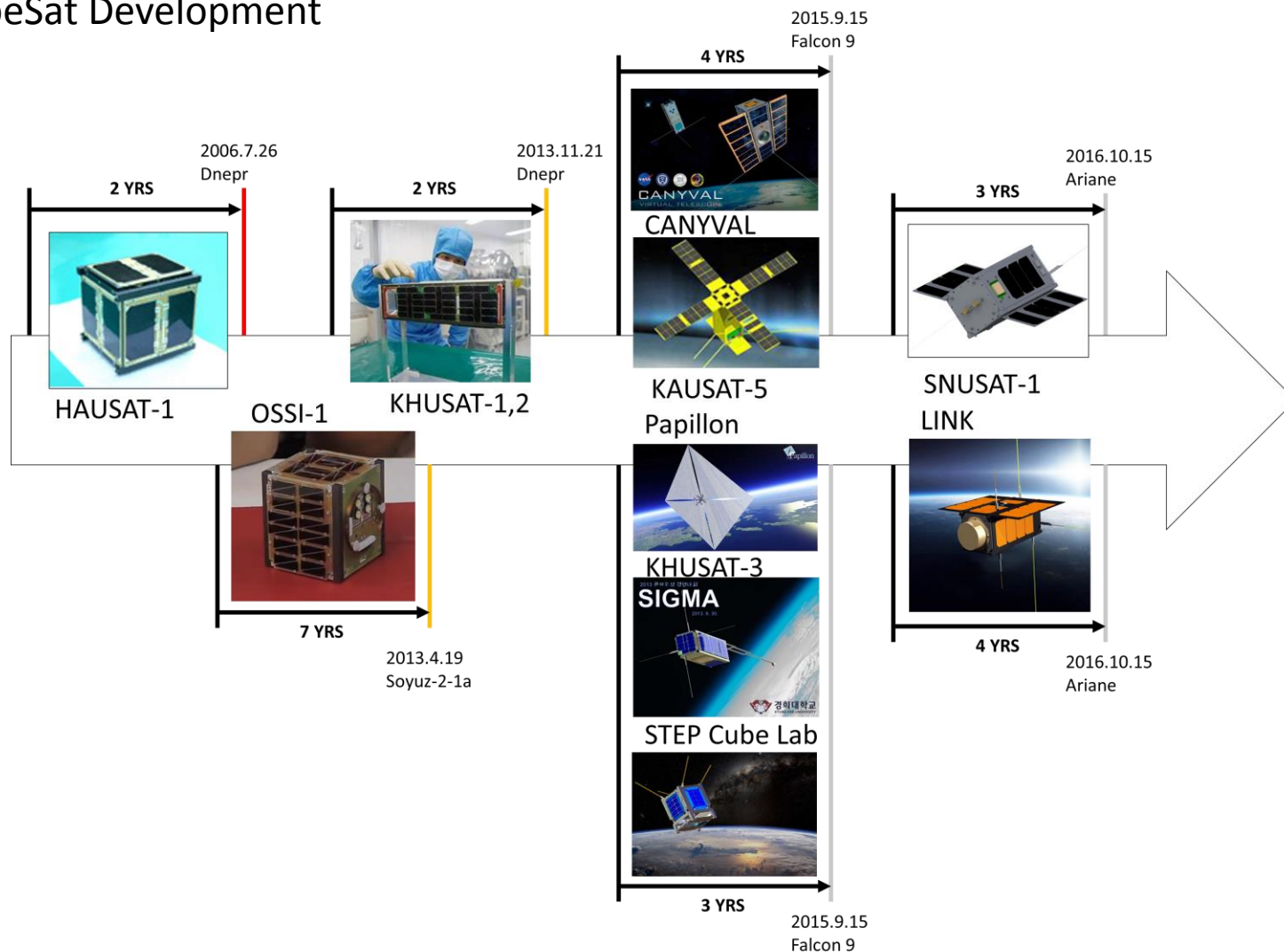


Agenda

- 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 Launches

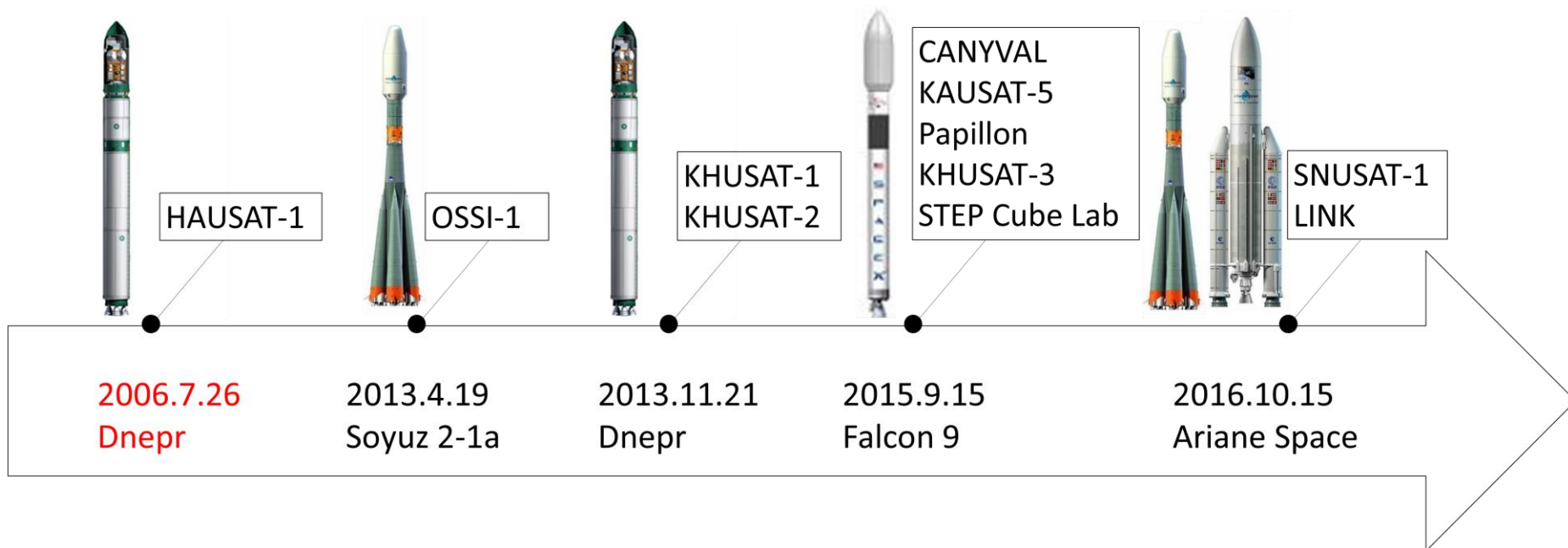
2006.7.26 Dnepr
HAUSAT-1

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

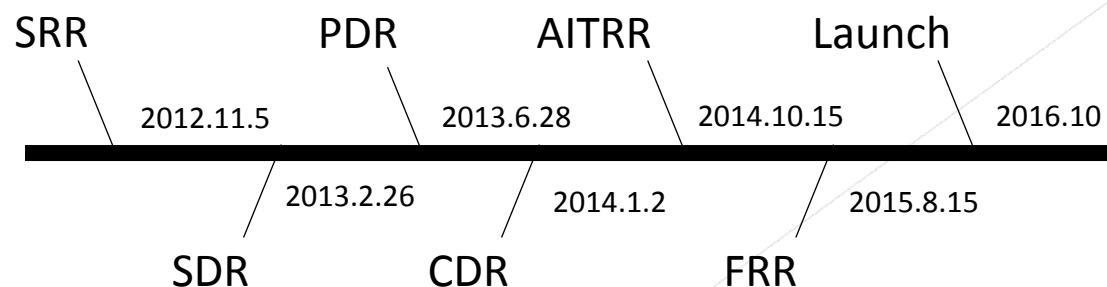
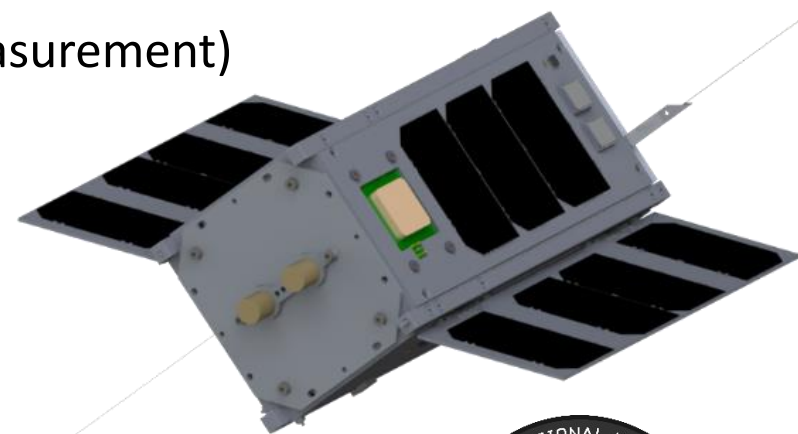
2016.10.15 Ariane Space [Expected]
SNUSAT-1, LINK



Current CubeSat Activities in Korea

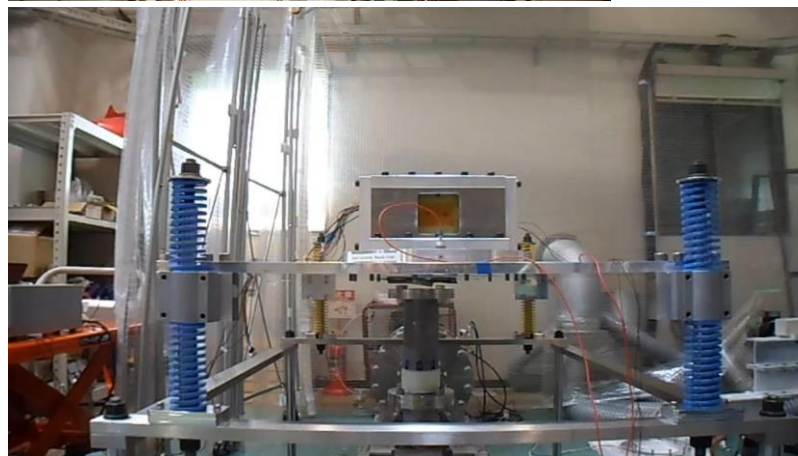
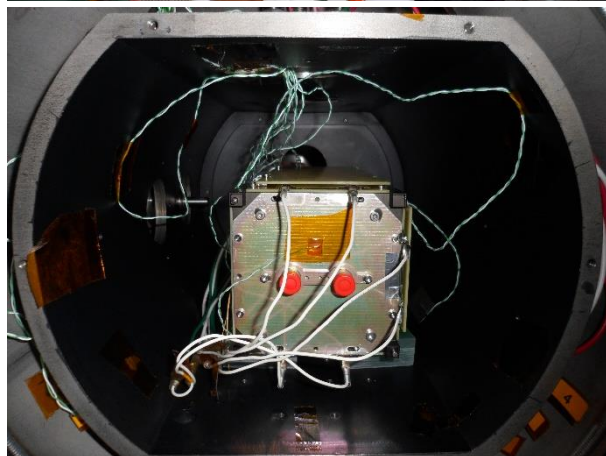
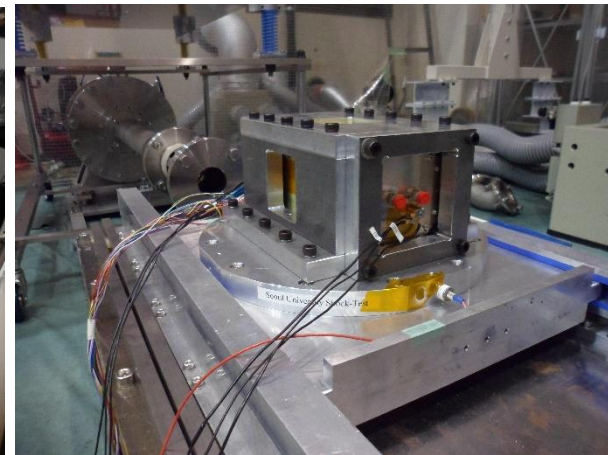
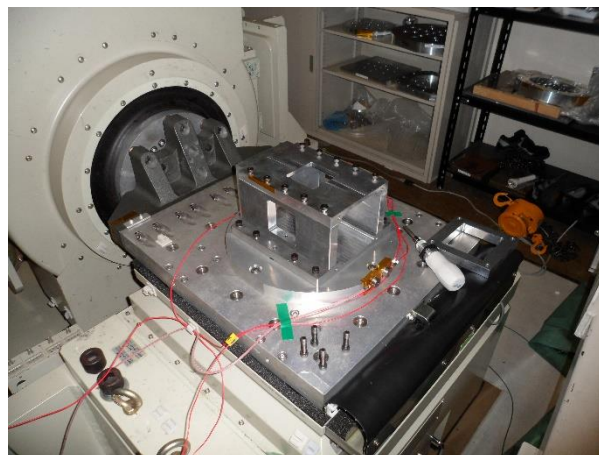
- SNUSAT-1 [2U]

- 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



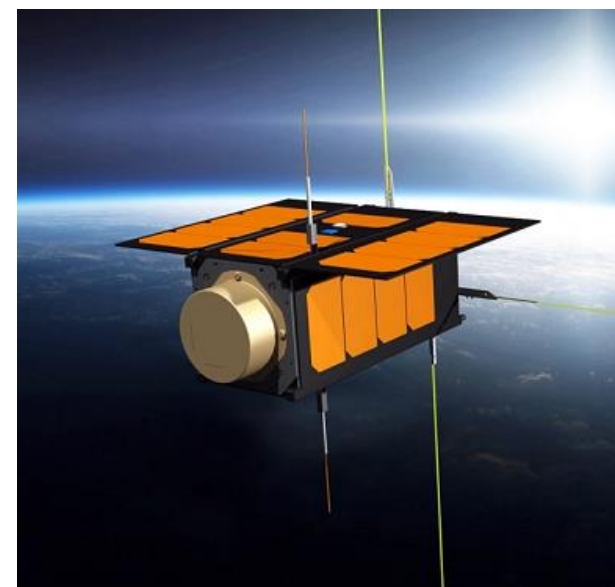
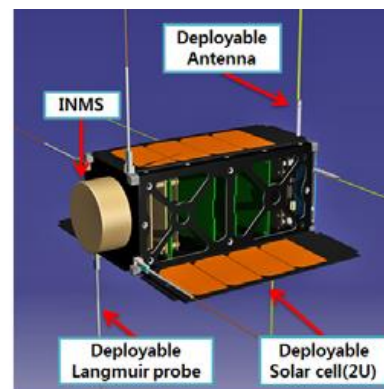
Current CubeSat Activities in Korea

- SNUSAT-1 [2U]



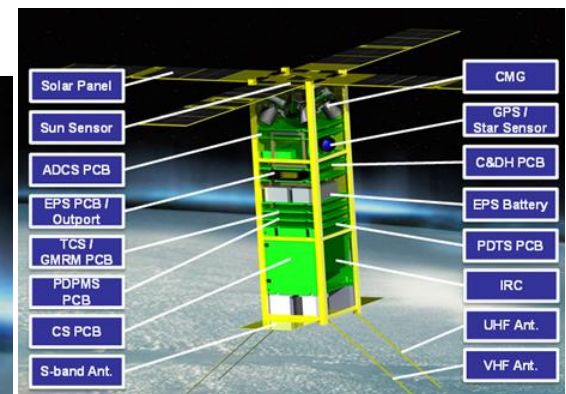
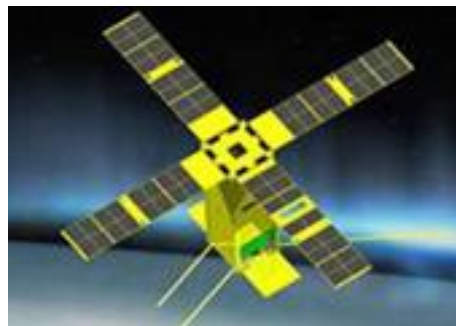
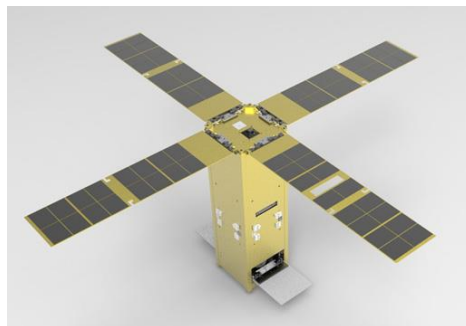
Current CubeSat Activities in Korea

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



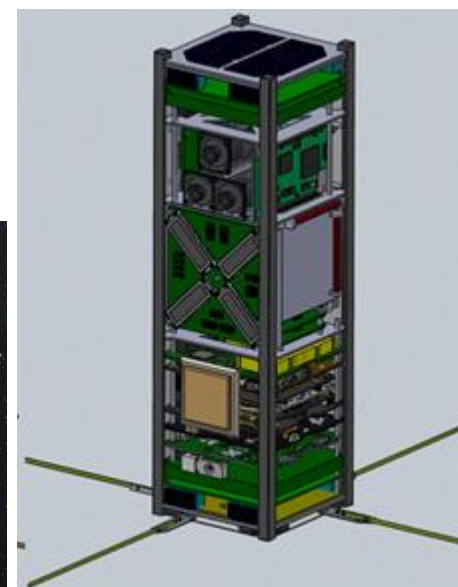
Current CubeSat Activities in Korea

- 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

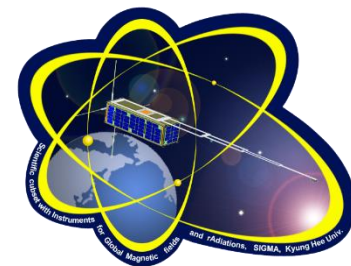


Current CubeSat Activities in Korea

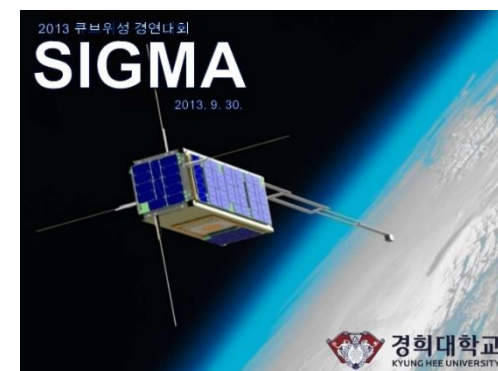
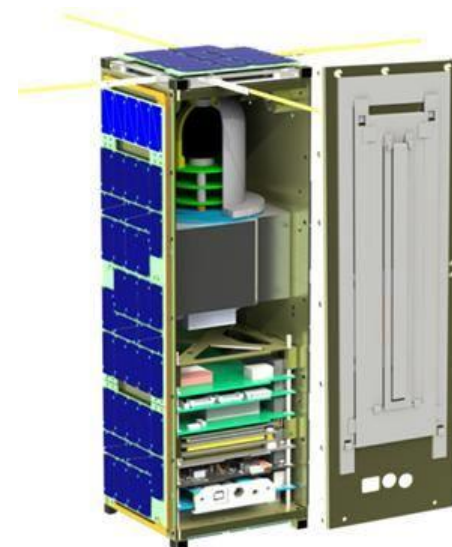
- CANYVAL [3U]
 - University: Yonsei University
 - Mission:
 - Space Telescope: Vision Alignment Experiment
 - Mission Lifetime: 3 Months
 - Orbit: 600 km, 27.172°
 - ADCS: Spin Stabilization
 - Funding: 2012 CubeSat Competition



Current CubeSat Activities in Korea

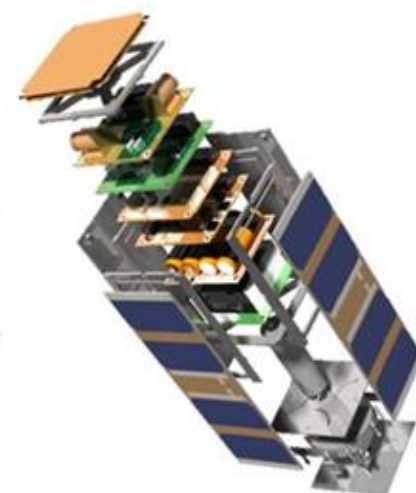
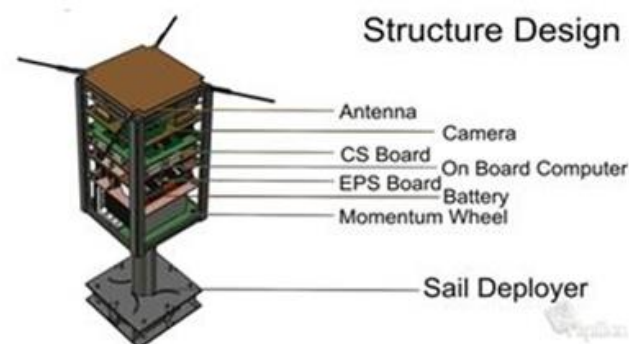
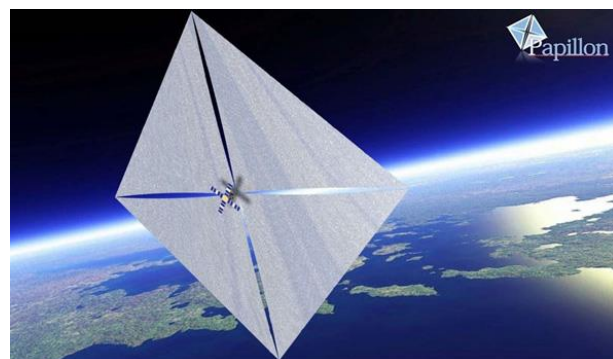


- KHUSAT-3 (SIGMA) [3U]
 - University: Kyung Hee University
 - Mission:
 - Measure global magnetic field and radiation
 - TEPC - Radiation Detector
 - Magnetometer
 - Mission Lifetime: 3 Months
 - Orbit: 650 ~ 800 km, 90°
 - Mass: < 6 kg
 - ADCS: Spin Stabilization
 - Funding: 2013 CubeSat Competition



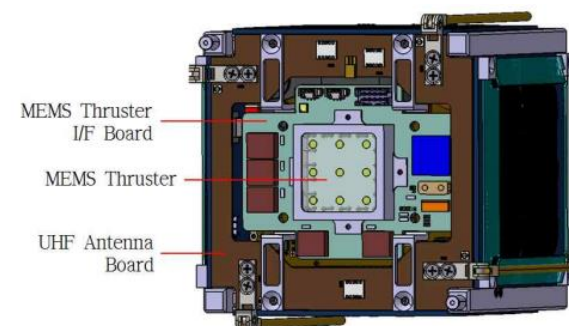
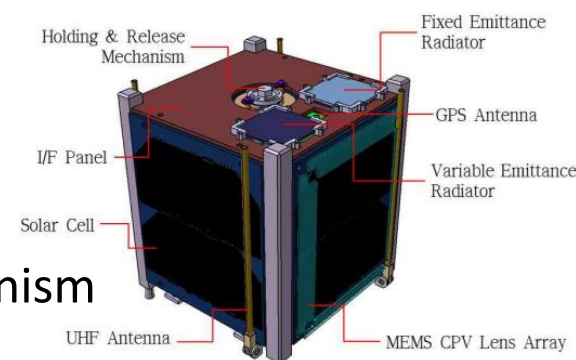
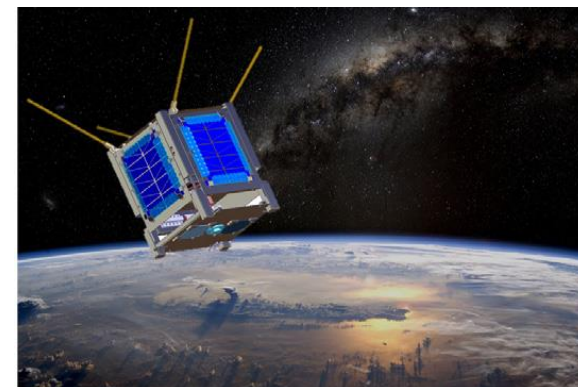
Current CubeSat Activities in Korea

- 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



Current CubeSat Activities in Korea

- CubeSat Competition 2015

- 11 Teams from 9 universities applied
 - Three teams will be selected as finalists
- As more universities are participating in space activities, needs in communication and collaboration is arising more



- SNU Educational CubeSat

- Educational CubeSat system under development
 - Aiming for development by end of August 2015
 - Engineering practice and hands-on experience material

Gathering as a Consortium

- Progress
 - Continuously applying for university conference support
- Challenges
 - Some programs already exists: i.e. CanSat/CubeSat Competition, National University Rocket Association
- Near term plans
 - Form a consortium
 - Get in contact with CanSat/CubeSat Competition, NURA
 - Organize annual meetings
- Long term plans
 - Organize programs such as educational lectures or CLTP
 - Organize a joint space activity within the consortium

Gathering as a Consortium: Vision

