

Private-Public-Partnership

International Network

Synergies between universities and industry are becoming more and more important for the development of universities in general. In the field of aerospace engineering this is not only true for regional partnerships, but in particular for European and international co-operations. With the Stuttgart Small Satellite Program the Institute of Space Systems will be able to enforce existing partnerships and establish new ones.

Unique Study Program

Students will have the unique chance to get hands-on experience by working on real satellite projects already during their studies. With this experience alumni from the Institute of Space Systems have excellent opportunities for their careers. Moreover, the quality of lectures increases through external lecturers from industry and research facilities.

Benefits For All Partners

Industrial partners benefit from this structure not only by having access to a pool of students with a hands-on education, but also the qualification of newly developed components is feasible for a low price on a university mission.

In conclusion, all partners - students, industry, research organisations and the university - will benefit from this kind of program.

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Program Management

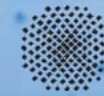
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Institut für Raumfahrtssysteme
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Steinbeis-Transferzentrum
Raumfahrt



Universität Stuttgart



**You DREAM
We REALIZE !**

**Stuttgart
Small Satellite
Program**



Institute of
Space Systems

STUTTGART SMALL SATELLITE PROGRAM

The longterm goal of this program is to develop, integrate and launch several small satellites. On one hand, demonstrating of new technologies is a major objective of all missions. On the other hand, earth observation, astronomical investigations as well as lunar exploration will be conducted. While the first mission - Flying Laptop - is currently being built and will be launched at the end of this decade, three more missions are already under development. All missions will be built and operated in house at the Institute of Space Systems where the necessary facilities already exist or are currently being constructed. The pictures at the bottom show some of the infrastructure.

Missions

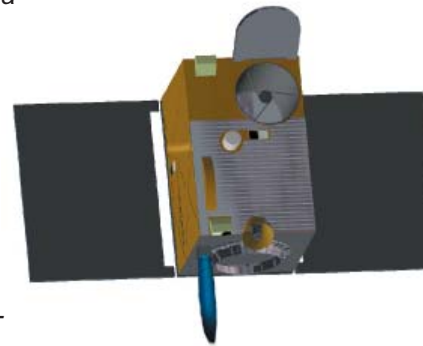


FLYING LAPTOP

Size: 60 x 70 x 85 cm
 Mass: ~ 100 kg
 Payload: Camera systems for RGNIR & TIR, Panoramic camera, Ka- & Ku-band antenna
 Technology demonstration:
 FPGA-on-board computer, GPS-experiment, High accurate ACS system
 Earth observation:
 BRDF measurement, Precipitation measurement

PERSEUS

Size: 54 x 57 x 85 cm
 Mass: ~150 kg
 Payload: Electrical propulsion, UV-Spectrometer (120-180 nm, R ~ 1000)
 UV-Astronomy:
 Variables (novae, supernovae, cataclysmic variable)
 Technology demonstration:
 Electrical propulsion: Arcjet thruster (100mN), MPD thruster (1mN)



and Facts

REENTRY MISSION CERMIT

Size: 120 x 80 x 60 cm (konical)
 Mass: < 200 kg
 Payload:
 Thermal protection, Hot structures, Aerothermodynamics.
 Collecting flight data for simulation validation,
 Testing of guidance navigation and control system

LUNAR MISSION BW1

Size: 1 x 1 x 1 m
 Mass: < 250 kg
 Payload: Camera systems for RGBNIR & TIR, Panoramic camera, Ka-Band antenna, Dust & Meteor detection
 Lunar and cislunar remote sensing,
 Technology demonstration beyond LEO

