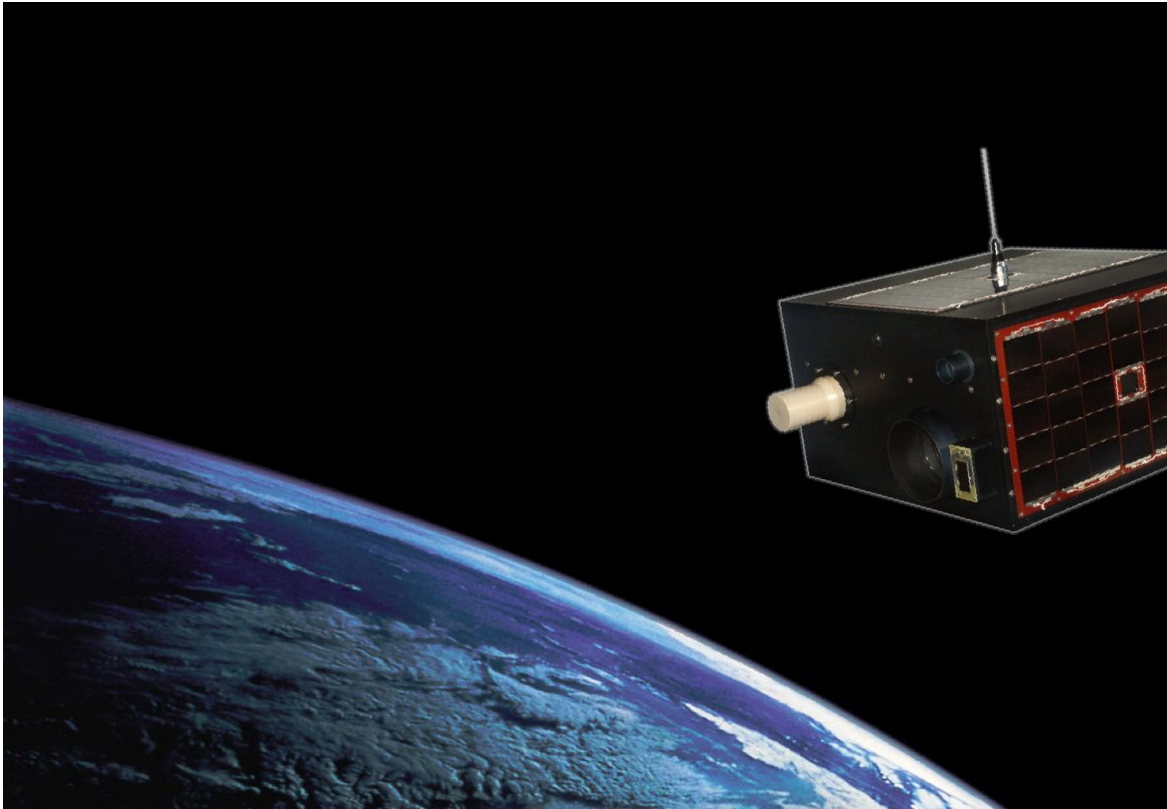


# Berlin Space Technologies

Small Satellites Made in Berlin



Matthias Buhl, Björn Danziger, Tom Segert

Berlin Space Technologies GmbH

Berlin Space Technologies is:

An expert for low cost and COTS based small satellite technology building on the TUBSAT™ heritage .

Focussed on commercial missions mainly for export and training programs.



- ✓ All major sub-systems produced in-house
- ✓ Missions: LAPAN-TUBSAT, LAPAN-Orari, LAPAN-A2
- ✓ Technology Transfer and Education in Cooperation with TU Berlin

# Berlin Space Technologies

Where to find us



BST facilities in Berlin Adlershof

625m<sup>2</sup> labs and offices in WISTA ZMM (Zentrum Mikrotechnik & Materialien)

and clean room facilities up to class 1000 on demand



# Berlin Space Technologies

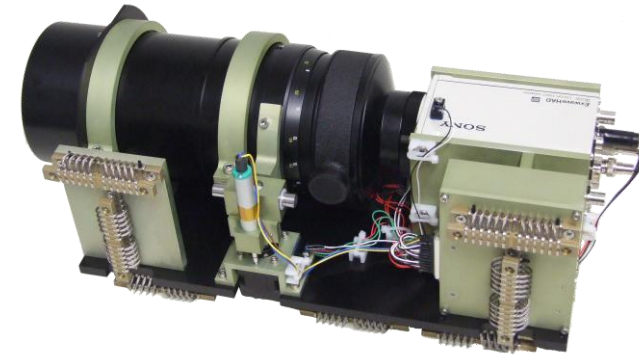
What we offer: Subsystems and Services



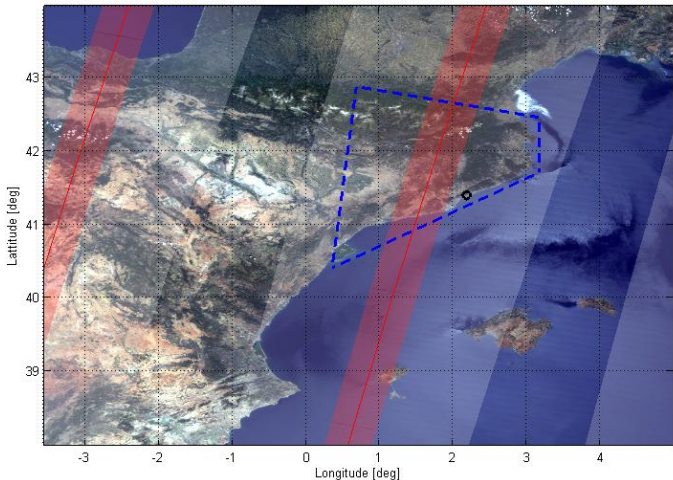
Micro Satellite  
Components



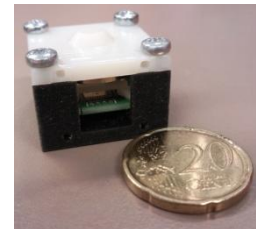
Ground Equipment



Payloads



Mission Operation & Planning

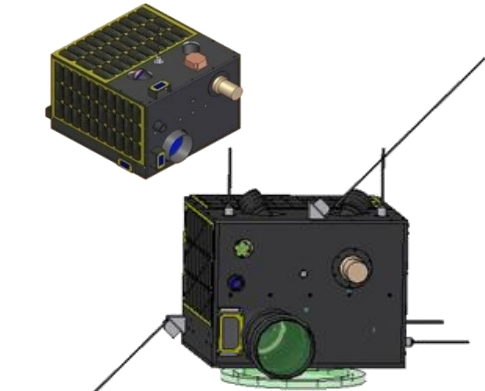


Pico and Nano Satellite  
Subsystems



Berlin Space Technologies is an experienced  
Small Satellite Component Developer

### LAPAN A2 & Orari



4x Reaction Wheels, 4x TMTC, ADIstar, 4x Star Tracker, 8x Solar Panels, Video Camera (EM), Line Scanner (EM) Consultancy

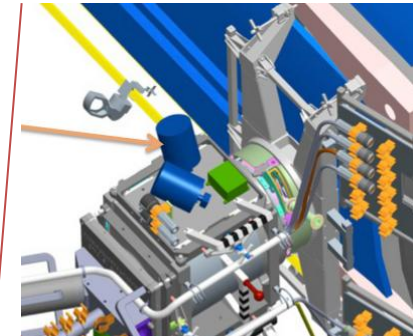
### OrbComm 2nd Gen.



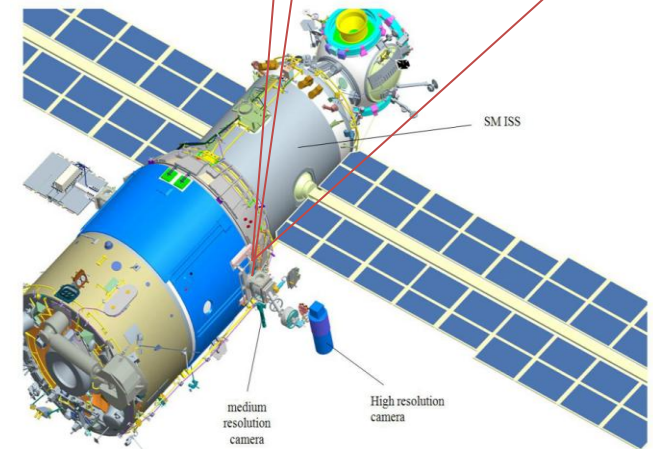
4x Reaction Wheels (EM), Blueprints and IP for 72x Reaction Wheels

### Earth Video Camera on ISS

2x Star Tracker, 6x Gyros



*Location on the ISS*



### Aalto-1



Complete ADCS solution

### LAPAN TUBSAT



Assembly Integration Test, Operation, Training

LEOS-30



LEOS-50



LEOS-100



Common Avionics



**New Market:  
Universities**

Customer Request for Lower Prices

**Existing Markets:  
Developing Nations**

Customer Request for  
Sustainability

**New Market:  
Operational Missions**

Customer Request for Higher Performance

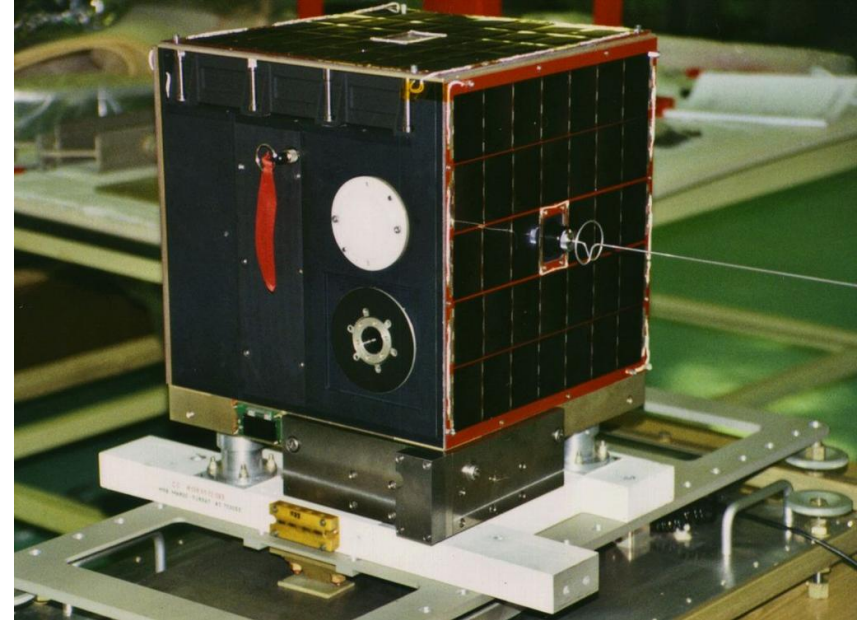
Satellite	Main Payload	Mass	Launcher	Launch Date	Operational Status
LAPAN-TUBSAT	Earth Observation (Video)	56 kg	PSLV	Jan. 10, 2007	Operational
MAROC-TUBSAT	Earth Observation (Image)	47 kg	Zenit	Dec. 10, 2001	Operational
DLR-TUBSAT	Earth Observation (Video)	45 kg	PSLV	May 26, 1999	Last contact: Spring 2009
TUBSAT-N/N1	S&F Communication	8 kg, 3kg	SHTIL	July 7, 1998	Mission Ended (Reentry)
TUBSAT-B	Earth Observation	45 kg	Tsyklon	Jan. 25, 1994	Lost contact after 39 days
TUBSAT-A	S&F Communication	35 kg	Ariane-4	July 17, 1991	Last contact: Spring 2007

## Technical Specifications:

- 47kg, 32x34x36cm<sup>3</sup>
- SSO: 1000 km
- 4 NiH<sub>2</sub> battery cells, 12Ah, 10V
- 4 Silicon Solar Panels
- Payload: S-Band
- TCTM: UHF



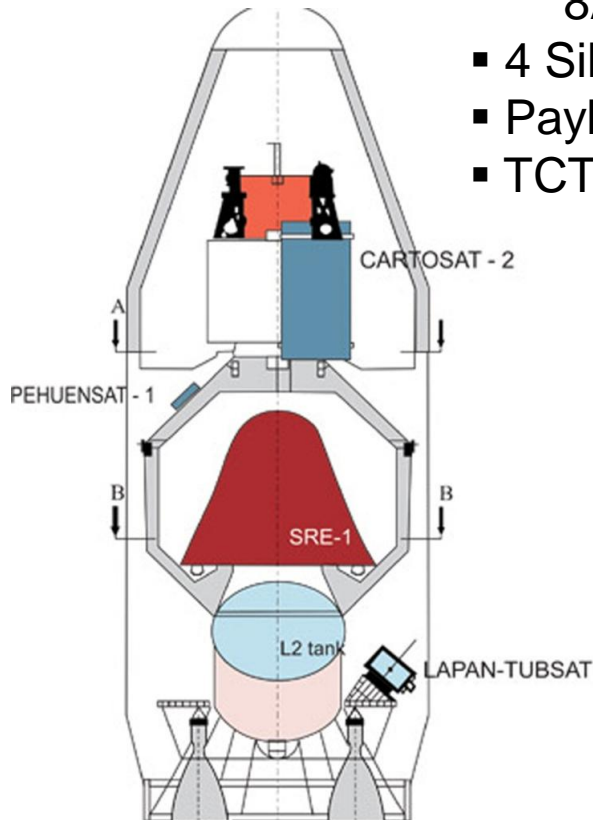
**Etna, Sicily, 26.March 2003**





## Technical Specifications:

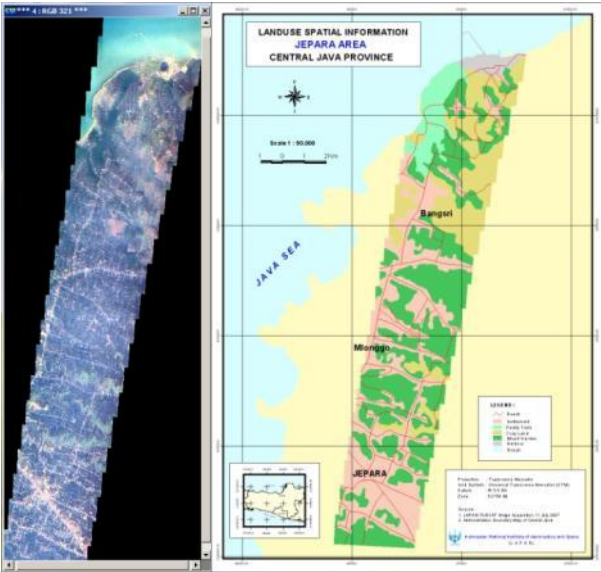
- 56kg, 45x45x27cm<sup>3</sup>
- SSO: 625 km
- 5 NiH<sub>2</sub> Battery Cells, 8Ah, 12.5V
- 4 Silicon Solar Panels
- Payload: S-Band
- TCTM: UHF



Capture of  
The Palm, Dubai

# Berlin Space Technologies

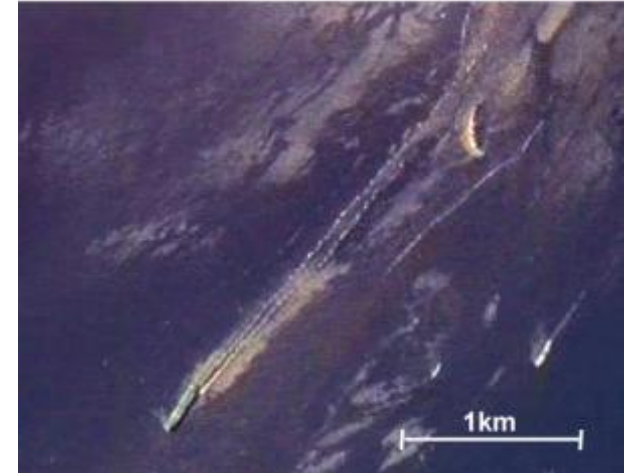
## Heritage: Applications



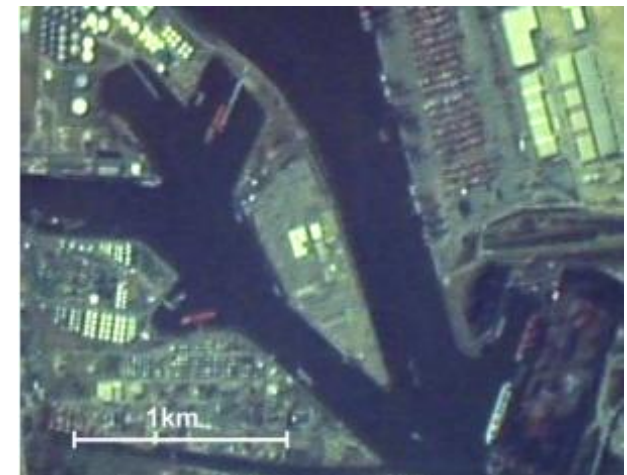
Map Generation of Remote Areas (Indonesia)



Detection of Illegal Deforestation in Borneo



Maritime Surveillance in the North Sea



Due to its precise ACS the BST Small Satellites are suitable for earth observation missions with up to 1.5m Resolution.

# The End

Contact:

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