



The 7th NANO-SATELLITE SYMPOSIUM

and

The 4th UNISEC-Global Meeting

18-23 OCTOBER 2016, KAMCHIA, BULGARIA

Micro/nano/pico Satellites: Innovations in Architecture, Technologies and Players

Group 1: The role of small satellite in the future of Earth Observation

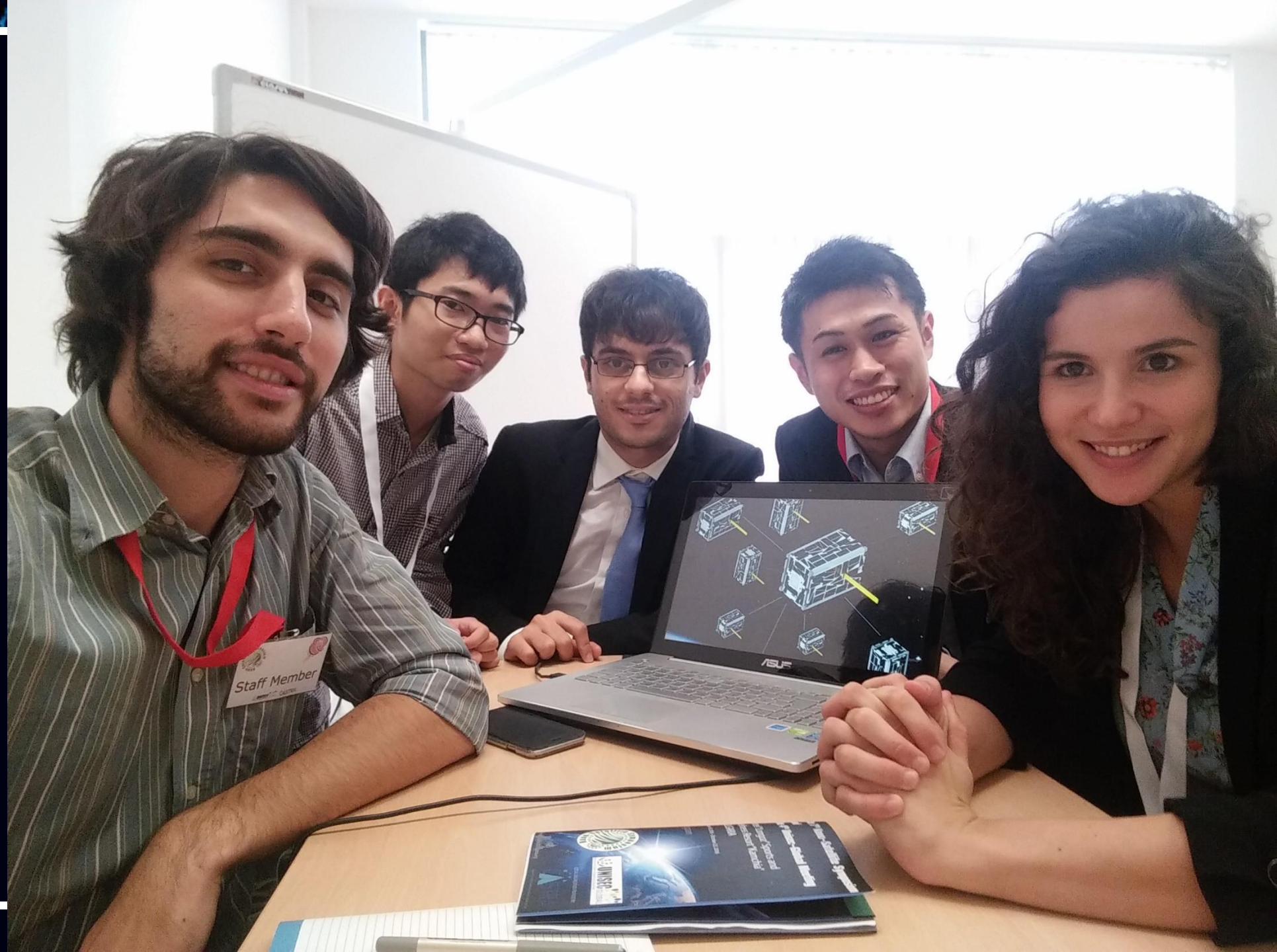
Main Outlines

Presenter: Bogdan Konstantinov

Group Discussion number 1

Topic: The role of small satellite in the future of Earth Observation

- Ernest Constantine (Institut Teknologi Bandung - Indonesia)
- Alice Pellegrino (Sapienza - University of Rome - Italy)
- Lorenzo Arena (Sapienza - University of Rome - Italy)
- Bogdan Konstantinov (UNISEC Bulgaria, Technical University of Sofia - Bulgaria)
- Shoho Togo (Tokyo Gakugei University - Japan)



What we focused on

FLOCK of DOVES
PLANET LABS

SkySat constellation
Skybox imaging + Google

Facebook Nanosatellite
Constellation

QB50 CubeSats
Constellation

OPTICAL SENSORS

PASSIVE

- **Need of light**
- **Problems in case of clouds coverage**

DEPENDENT

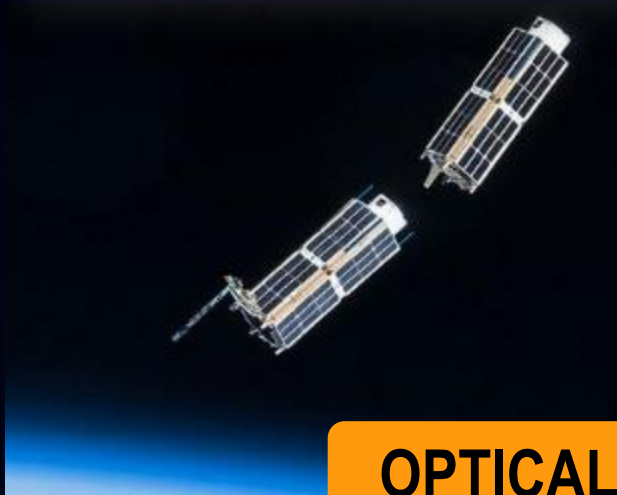
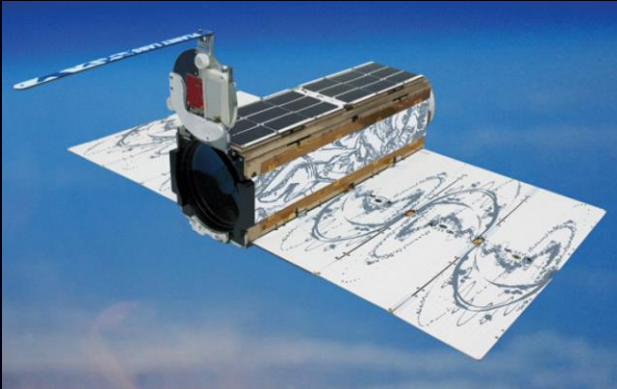
INDEPENDENT

SAR SENSORS

ACTIVE

- **All day**
- **All weather**
- **Need of a huge amount of power**

FLOCK of DOVES PLANET LABS



OPTICAL DOMAIN (5m)



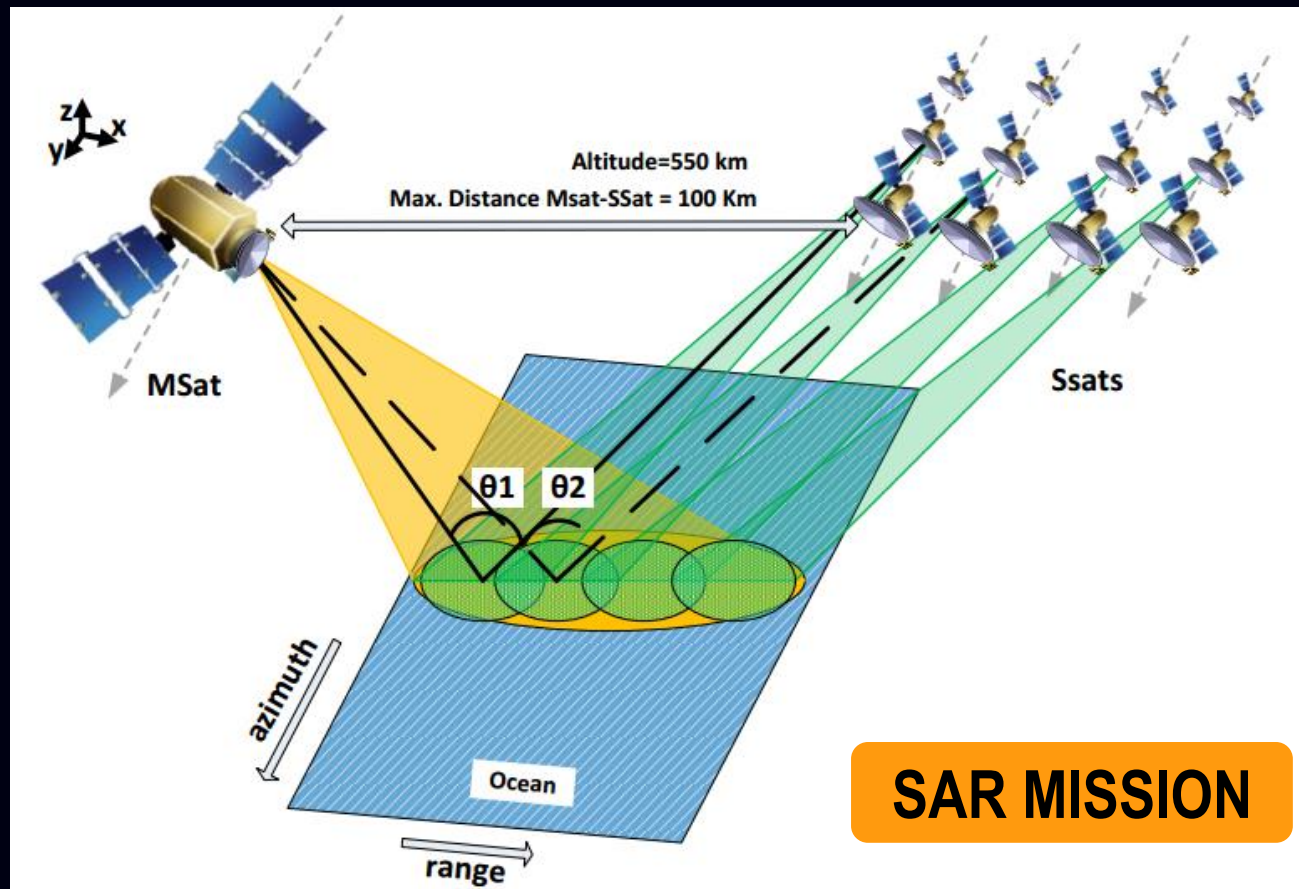
INDEPENDENT

Decreased revisit time

Better data

What is next?

TOPMEX-9



SAR MISSION



DEPENDENT

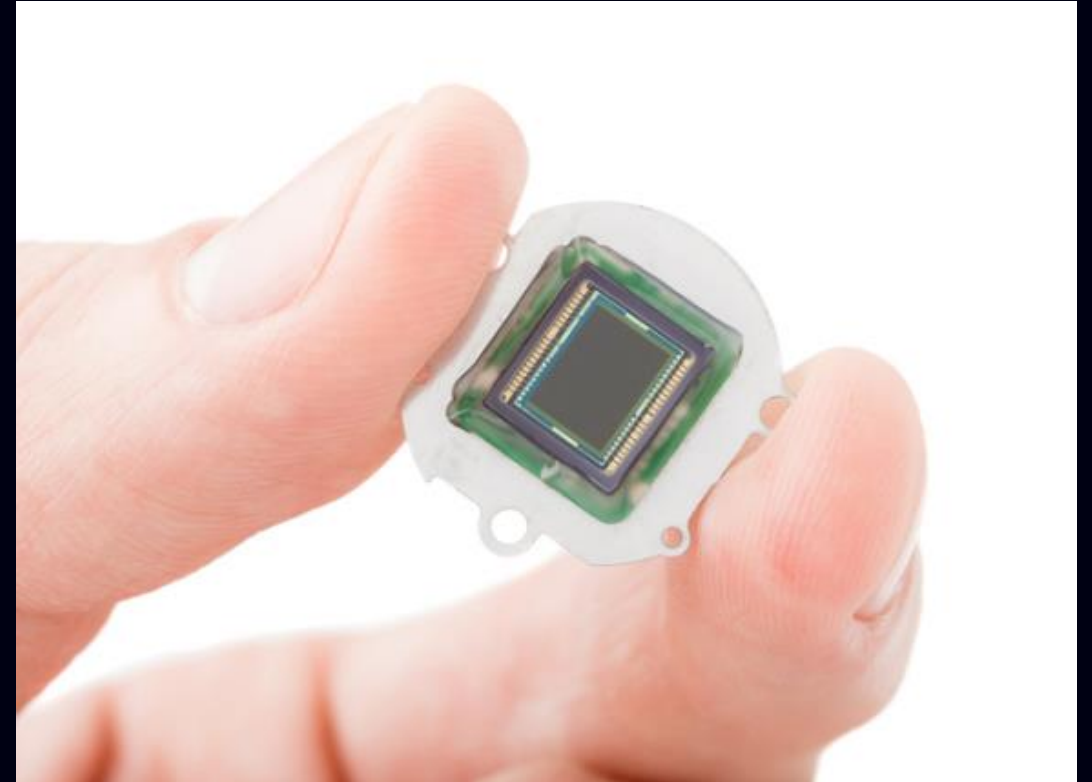
Msat: master (TX)

Ssats: slaves (RX)

HYPERCUBES®

Main features

- No need to download raw data
- Optimization of the downlink channel
 - Better link margin



ON-BOARD DATA PROCESSING

Thank you!