



**Tunisia Chapter**

**Geoscience and Remote Sensing Society**

1

# **GRSS Pilot initiative for Tunisia: A consortium for capacity building in CubeSats**

**April 15, 2023**

**Riadh Abdelfattah**

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1. GRSS in Tunisia,
2. Pilot initiative by GRSS
3. Capacity building in CubeSats

## Tunisia Chapter

# 1. GRSS in Tunisia

1. Since 2013, GRSS Ambassador
2. Creation of the Tunisia Chapter 2019
3. We are now 142 active GRSS members (15/04/2023), among which 137 student members, among which 116 from SUP'COM.





Tunisia Chapter

# 1. GRSS in Tunisia

## 4. Organization of M2GARSS 2020



## Tunisia Chapter

# 1. GRSS in Tunisia

5. Best Chapter Excellence Award 2021

6. 2021 IEEE GRSS Regional Leader Award: the chair of the Tunisia chapter



*IEEE Geoscience and Remote Sensing Society  
2021 Chapter Excellence Award*

*is presented to*

*Tunisia Section Chapter*

*This award is a clear recognition of the outstanding activities carried out in 2020.*

  
David Kunkke  
President, GRSS

  
Mauro Dalla Mura  
Chair, GRSS Chapters Committee



July 2021



**2021 IEEE GRSS Regional Leader Award**



**Prof. Riadh Abdelfattah**  
**University of Carthage, Tunisia**

*For his outstanding contributions and services in  
the MENA Region*

igarss



## 2. Pilot initiative by GRSS

1. Initiatives must address areas of importance meriting a GRSS investment.
2. Initiative leads must coordinate proposals with the respective VP or Director prior to submission.
  - ✓ **Who can lead a pilot initiative:** The initiative lead must be an active IEEE and GRSS member in good standing.
  - ✓ **Who can submit a pilot initiative:** Only VPs, Directors, the President, EVP, CFO, and Past Presidents can submit proposals (It was Global Activities (GA) in our case).
  - ✓ **Important Initiative Information:** Target funding level is \$5K-\$20K per proposal.



## Tunisia Chapter



### IEEE Geoscience and Remote Sensing Society (GRSS) - Administrative Committee (AdCom) Organization - January 2023

#### Executive Committee



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**Exec Vice-President**  
Saibun Tjuatja



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**Past President**  
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- **Image Analysis and Data Fusion:** Ronny Hänsch, Claudio Persello, Gemine Vivone
- **Instrumentation and Future Technologies:** José Márquez-Martínez, Delwyn Moller, Estel Cardellach, Dustin Schroeder
- **Modeling in Remote Sensing:** Nazzareno Pierdicca, Jean Philippe Gastellu-Etchegorry, Rob Sundberg, Tianlin Wang
- **Remote Sensing Environment Analysis, and Climate Technologies:** Irena Hajnsek, Subit Chakrabarti
- **Standards:** Siri-Jodha Khalsa, George Percivall



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- **Special Awards:** David Long
- **Symposium Awards:** Francesca Bovolo
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- **Fellow Evaluation:** Antonio Plaza
- **IDEA Committee:** Victoria Vanthof, TBD



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  - GRSL: Avik Bhattacharya
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- **Industry Liaison:** Ryan Lewis
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- **Asia/Pacific:** Anthony Milne
- **India:** Shiv Mohan
- **Middle East North Africa Region:** Riadh Abdelfattah
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- **Travel Scholarships**
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- **GRSS Educational Webinar Series:** Qihao Weng, Yuel-An Liou
- **Highschool & Undergrad Student Outreach:** Mary Fru, Rosa Correa



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- **IEEE USA Committee Liaison:** TBD
- **IEEE USA Committee on Transportation + Aerospace Policy (CTAP):** Joshua Broadwater
- **IEEE USA Committee on Energy Policy (EPC):** TBD

**Ad Hoc Committee on DEIAB\***  
Heather McNairn (IEEE D&I Representative), TBD

\*Diversity, Equity, Inclusion, Accessibility, and Belonging

April 15, 2023



32nd Virtual UNISEC-Global Meeting

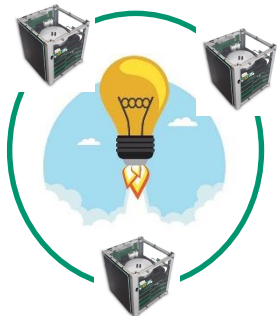


## 2. Pilot initiative by GRSS

3. New strategic educational and industrial initiative in the MENA region for GRSS membership development: “GLOBAL industry and student engagement”,
4. **Objective**: federate the efforts of all the GRSS chapters and ambassadors in the MENA region around a collaborative project.
5. Collaborative project: More commitments from students and young professionals.

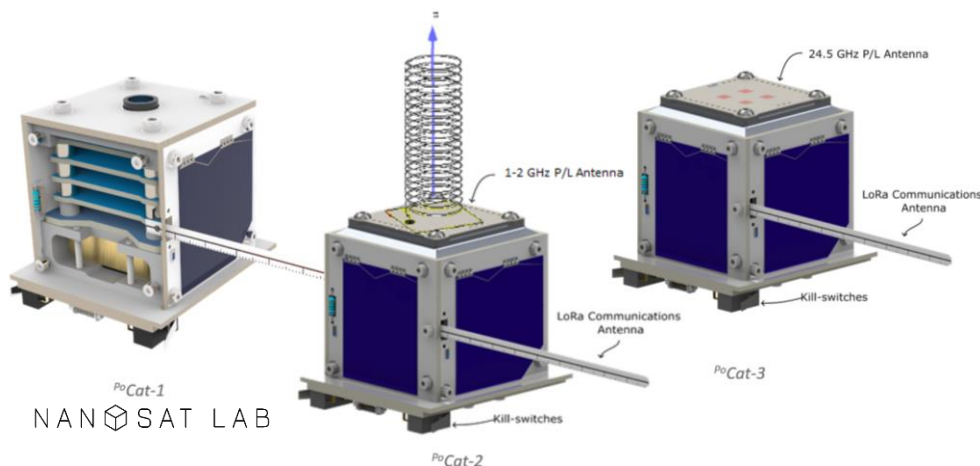
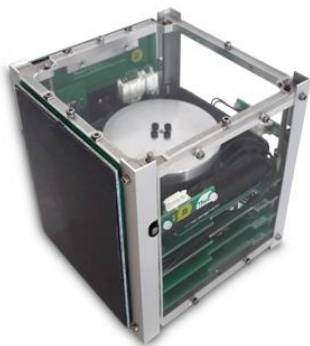


## Tunisia Chapter



## 2. Pilot initiative by GRSS

- ✓ For the long term: the development of a nanosatellite constellation,
- ✓ For the medium term: The IEEE GRSS “Open PocketQube Kit”



- ✓ For the short term: the acquisition and training of educational nanosat simulators

## 3. Capacity building in CubeSats

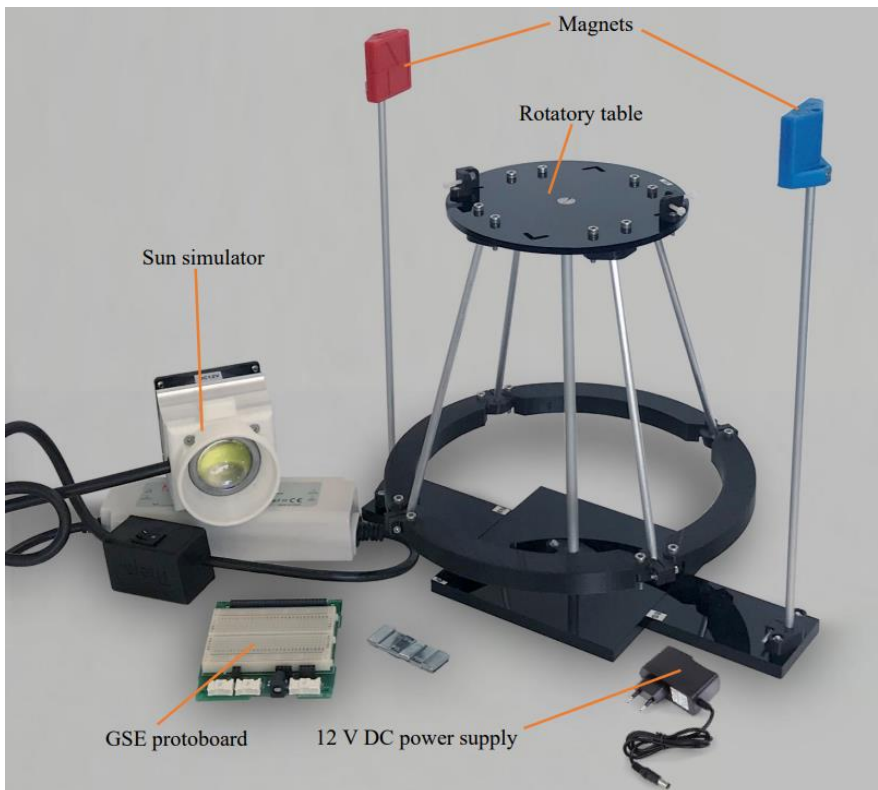
### ✓ The Tunisian consortium

- GRSS member's researchers and engineer's from:
  - The Higher School of Communications of Tunis (SUP'COM) and the Faculty of Sciences of Bizerte, two departments from the University of Carthage,
  - The Faculty of Sciences of Monastir (from the University of Monastir),
  - The Research Center on Microelectronics and Nanotechnologies of Sousse (in the Center of Tunisia)
  - The startup for learning by doing SCIENCIA.



## 3. Capacity building in CubeSats

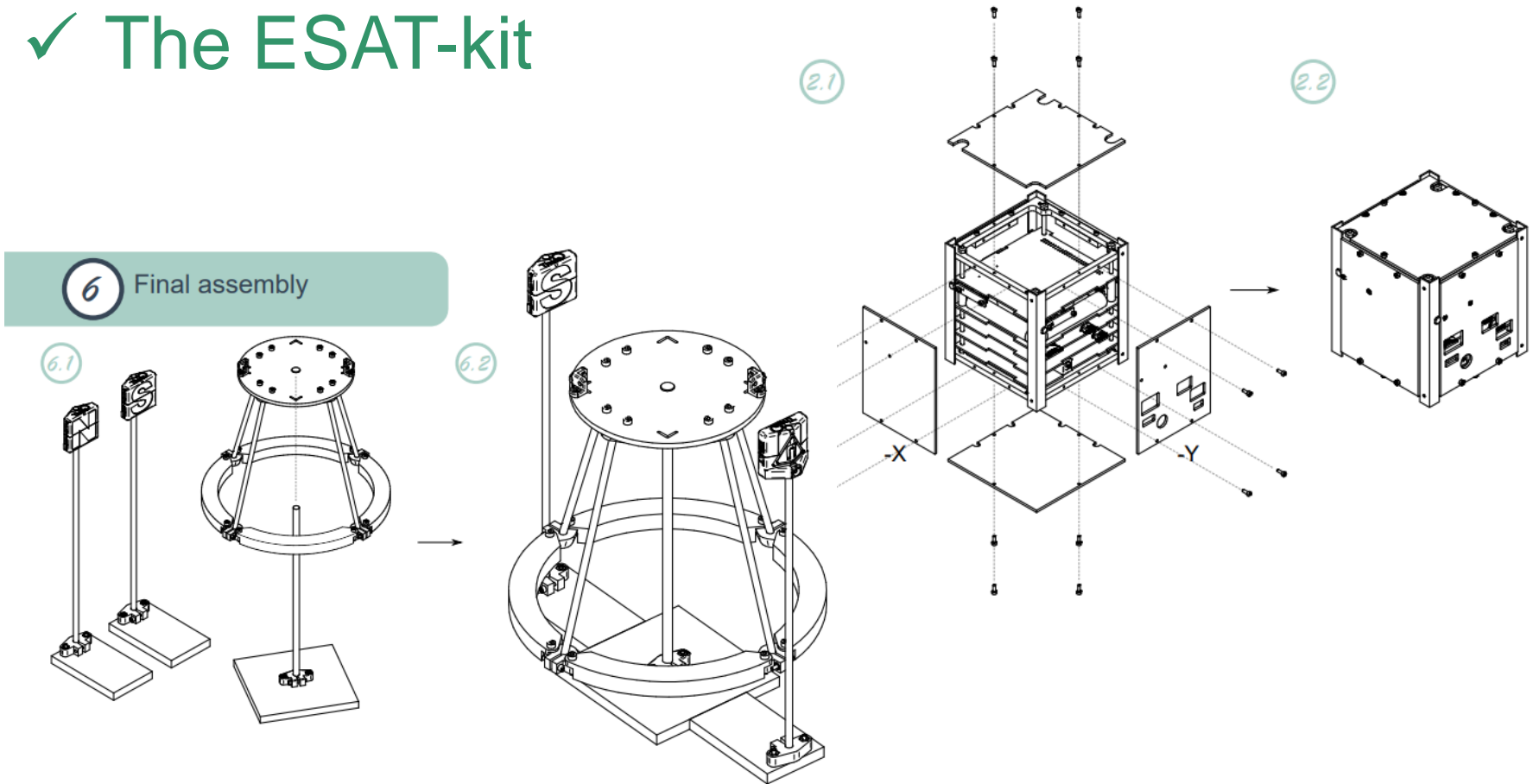
### ✓ The ESAT-kit





## 3. Capacity building in CubeSats

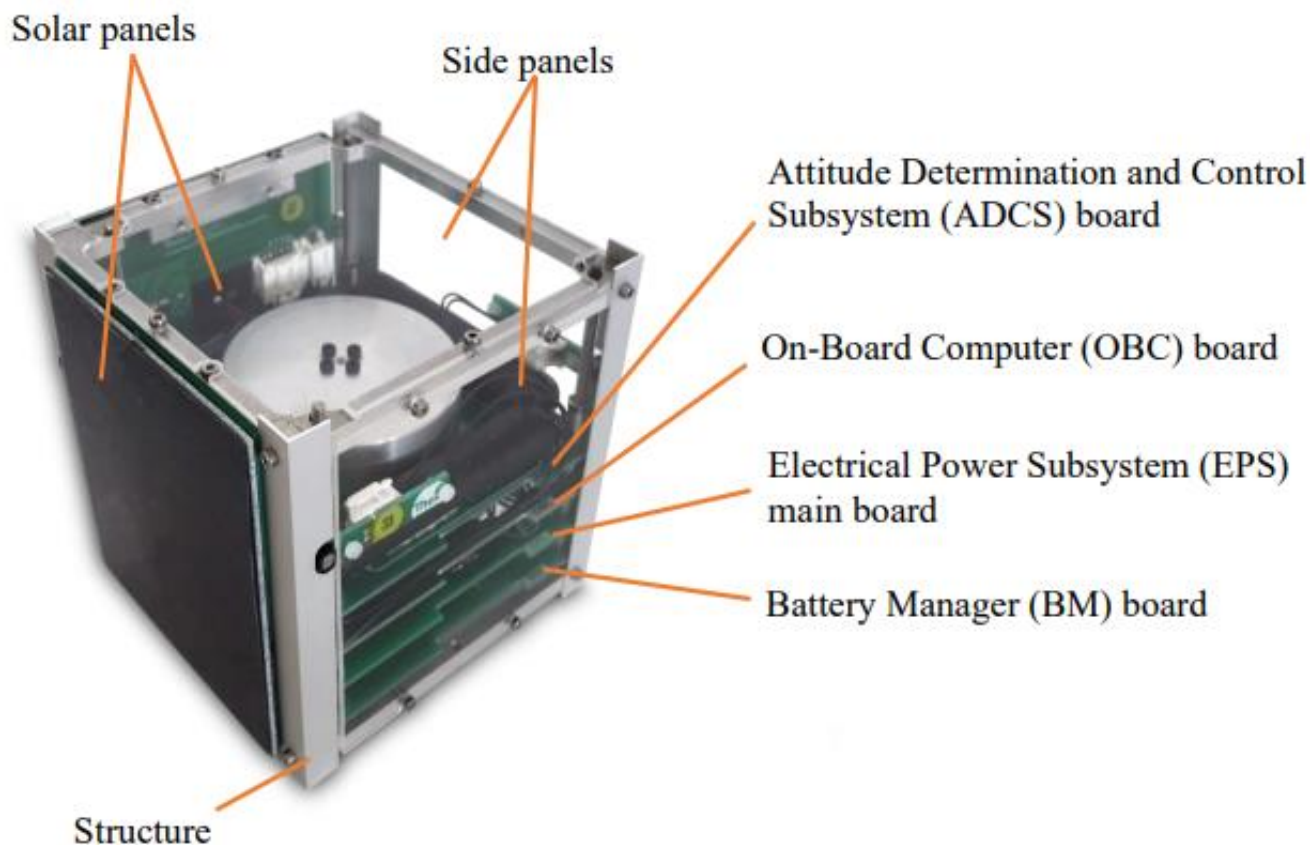
### ✓ The ESAT-kit



Tunisia Chapter

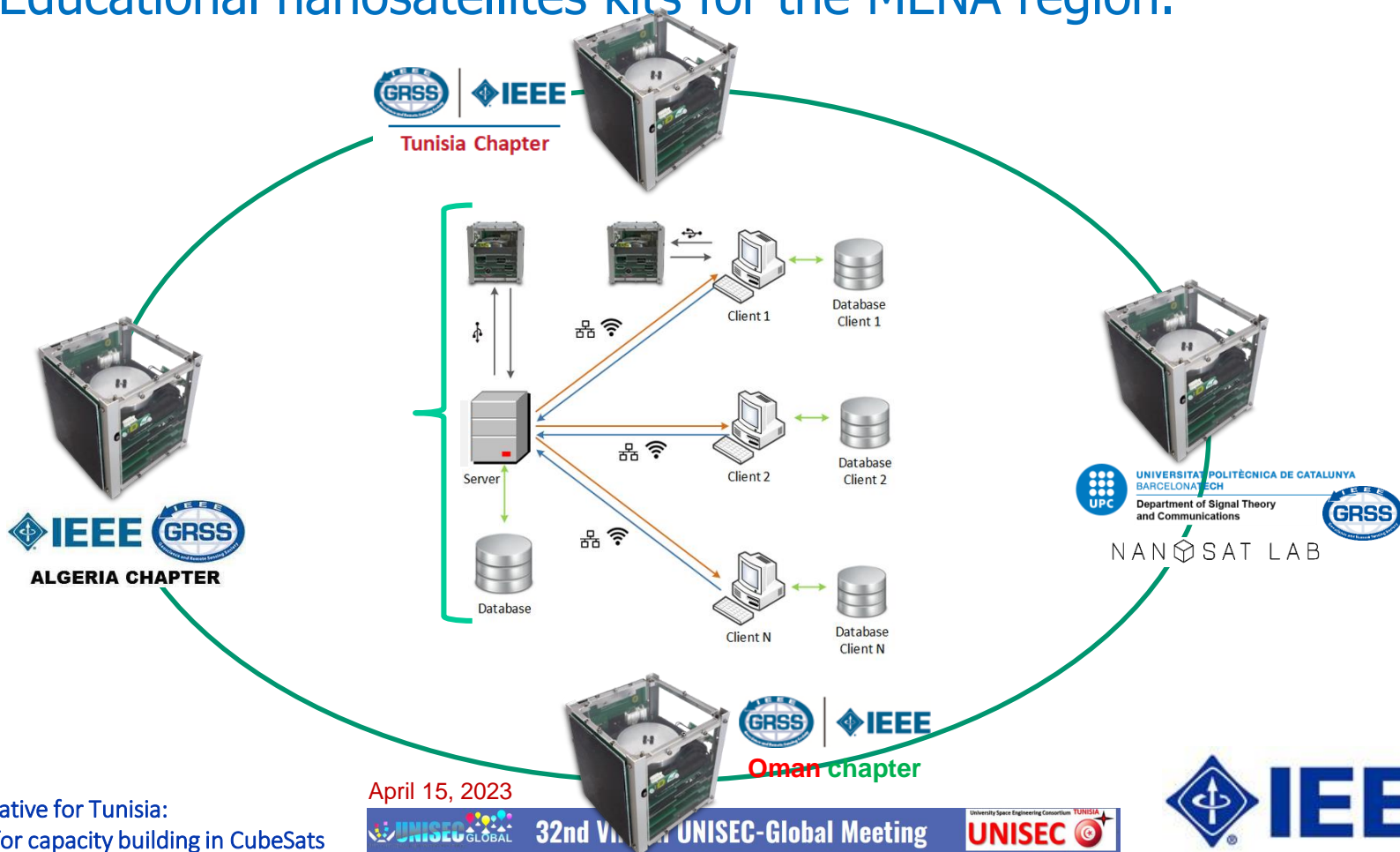
# 3. Capacity building in CubeSats

## ✓ The ESAT-kit



## 3. Capacity building in CubeSats

- October 2022, within the pilot initiative: Acquisition of 3 Educational nanosatellites kits for the MENA region.





## ■ Conclusions

- The GRSS pilot initiative for Tunisia is one action among strategic global activities (GA) launched by GRSS for capacity building,
- It is a multi-disciplinary GRSS initiative for hands-on training in space engineering. It is based on a realistic satellite simulator that offers a wide variety of education activities.
- A consortium of two universities, one research center and one Stratup are piloting the initiative under the lead of the Tunisia chapter.
- It gives students the opportunity to experience the real performance of the different subsystems in a satellite and the interaction between them.