



# **Group Discussion #10 Debrief at the 2<sup>nd</sup> UNISEC-Global Meeting**

## **Successfully Launch University Satellites: From Design to Orbit**

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# Discussion Topics

- **Challenges for launching student satellites:**
  - Technical?
  - Programmatic?
  - Regulatory?
  - Other hurdles?
- **Learning from our mistakes**
- **Goal is to create affordable access to space for all student satellites**
  - More than just launching satellites, it is a great learning experience for students of all ages!

# Findings - Technical

- **Think as a whole system**
- **Subsystems may work separately, but not together**
- **Keep the design simple for the first satellite**
- **Amateur Radio Operators can be a big benefit for university students**
- **Understanding failure modes**
- **Things take much longer than expected**

# Findings - Programmatic

- **Look at non traditional sources of resources, testing and comm**
  - Test early and often, long range comm, high altitude balloons
- **Buying components will not solve all your problems, still need to integrate**
- **Make prototypes out of recycled hardware**
- **Legal and safety issues, start early**
  - Radio Frequency
  - Launch Safety
  - Country Ownership
- **Documentation is very important**
- **System engineer is a critical role in the team**
- **Learning process is more important than having a satellite in orbit**