Group Discussion #4
at the 1st UNISEC-Global Meeting

Successfully Launching University Satellites: From Design to Orbit

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Discussion Topics

• Open discussion!

• Hurdles 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!
Technical Hurdles

• Understanding Launch Requirements
  – What do the Launch Vehicles expect?

• Simple vs Complex Payloads?
  – Understanding your technical objectives
  – Crawl -> Walk -> Run -> Orbit

• Analysis vs Testing?
  – What is the right balance for analysis and environmental testing?

• Systems engineering and satellite integration
Programmatic Hurdles

• Funding
  – Traditional vs Non-Traditional Sources

• Satellite Lifecycle
  – Build, test, launch, operate a satellite in a student’s academic career is the Goal

• Documentation and Procedures
  – Required by the launch vehicle
  – What is the right balance for building hardware and writing procedures?
  – Few students like documentation, however it is necessary for a sustainable program
Regulatory Hurdles

• Country Ownership Declaration
  – What happens when your country does not have an official Space Agency

• Orbital Debris

• Radio Frequency Licensing
  – Can be very confusing
Other Hurdles

• Any specific challenges
Learning From Our Mistakes

• Underestimating Timelines
  – Our 1st satellite, we had our subsystems working in 1 year, took 1 more year to get all subsystems to work properly together

• Country Ownership Declaration

• Working through LV and Primary SC timelines

• Development without firm launch
  – Unknown orbit and environment, must be flexible

• Anything else?
Goals for Discussion Group

• Understand issues facing university satellite programs
• Reduce challenges for universities through a collaborative environment
• End 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!
Vision of UNISEC-Global - 2020-100

• “By the end of 2020, let’s create a world where university students can participate in practical space projects in more than 100 countries”

When several UNISEC-xxx have been established, let’s establish a new organization “UNISEC-Global” to support UNISEC-local chapters