Ask Me Anything Panel - CyberSecurity and Enterprise Protection
Lead NASA Organization: Science Mission Directorate

National Aeronautics and
Space Administration

Science Mission Directorate
All robotic science projects and missions
Information Security for all small satellites

Impact / Importance
Approximately 10,000 scientists funded
Approximately 100 small satellite projects

Target Audience / Stakeholder
Small / Cube Satellite Community

Challenges & Lessons Learned
1) Adding information security to small resource limited platforms
2) Tailoring existing requirements, capabilities, and solutions

Current Opportunities/Status

Establishing a template for information security requirements, policies, and technical solutions

Status: in progress

Future Plans
1) Establish (or enhance existing) official documentation for the small satellite community at NASA

2) Explore technical and engineering solutions for small platform information security solutions

For more information contact

Reynaldo.Anzaldua@nasa.gov

Ask Me Anything Panel – SmallSat Anomaly Reporting Tool
Lead NASA Organization: NASA Science Mission Directorate and Small Spacecraft Systems Virtual Institute (S3VI)

S3VI – Anomaly Reporting Tool
SmallSat anomaly alert reporting by NASA-funded projects to occur when the anomaly is first noticed or within 24 hours

Impact / Importance
Centralized small spacecraft anomalies reporting across each Center and Mission Directorate

Target Audience / Stakeholder
Programs and projects across NASA mission directorates (anyone with a NASA-funded SmallSat project) NASA center representatives and Small Spacecraft Working Group (SSWG)

Challenges & Lessons Learned
Adoption by the SmallSat community and willingness to submit anomalies on a timely cadence

Current Opportunities/Status

Creates a centralized notification system to complement other reporting systems and processes (only NASA staff have access to posted anomalies)

Future Plans
 - Update the anomaly report template form to link additional documentation after the initial submission. - Center reps and SSWG reps to receive an email notification when an anomaly has been submitted.
- Data analysis will be performed on the anomalies collected to evaluate if there are any noticeable trends to be reported to the NASA SmallSat Community
- Anomaly Alert Process kickoff on August 8.

For more information contact:

Craig Burkhard (Craig.D.Burkhard@nasa.gov)

Communication Licensing Process

Requirement: All Projects (spaceflight, etc.) transmitting in the radiofrequency spectrum regardless of operator (entity with "effective control") shall obtain authorization/licensing from the appropriate regulator:

- NTIA for U.S. Federal (e.g., NASA)
- FCC (U.S. non-Federal controlled system)
- International: appropriate national regulator

Impact: Requirement (law, regulation) (license needed by turnover or integration on launch vehicle – that is, well before launch!)

Audience: All spaceflight missions (regardless of spacecraft size)

Challenges & Lessons Learned

1. Plan your operations before selecting a radio, service provider, or frequency: spectrum use involves technical and operational limits (e.g., bandwidth constraints, power limits) so know what you need to do first since that will help identify candidate bands, communication solutions, etc.

2. Start the process early: contact spectrum personnel, collect all needed data, conduct as much pre-coordination as possible then file "complete" package (not helpful to file "early" if don't have all data or pre-coordinated)

For more information:

NASA Smallsat Spectrum Guidance (some process have been updated since originally prepared)
Targets Program & Project managers and Systems & Sub-system engineers; essentially a "how to" manual of spectrum processes

https://www.nasa.gov/sites/default/files/atoms/files/spectrum_guidance_smallsats_cubesats_2015.pdf

NASA POC William D. Horne (william.horne@nasa.gov)

Ask Us Anything:
CyberSecurity and Enterprise Protection
Anomaly Reporting
Spectrum Authorization

TUESDAY, AUGUST 9

■ 9:45AM MT	**Ask Me Anything Panel #1** — *NASA Small Spacecraft Systems Virtual Institute*	**ESCL 130** (Auditorium)
■ 12:45PM MT	**Ask Me Anything Panel #2** — *NASA Space Technology Mission Directorate*	**ESCL 130** (Auditorium)

FUTURE DIRECTIONS

Cislunar Small Satellites and the Artemis Program — *NASA Headquarters*	**11:05AM MT**
Safe Space Conduct: NASA Best Practices for SmallSats — *NASA Headquarters*	**11:45AM MT**

NASA Short Talks

LOCATION
Fieldhouse Stage /
NASA Hyperwall

https://smallsat.org/conference/nasa-short-talks

TUESDAY, AUGUST 9   3:30PM - 4:30PM MT

NASA Space Technology Mission Directorate Envisioned Future Capabilities for SmallSats
— *NASA Small Spacecraft Technology Program, NASA Headquarters*

NASA Innovative Science Missions — *NASA Science Mission Directorate, NASA Headquarters*

Status of Small Satellite Developments at the Jet Propulsion Laboratory — *NASA Jet Propulsion Laboratory, California Institute of Technology*

CubeSat Launch Initiative Update - Lessons Learned — *NASA Launch Services Program, NASA Kennedy Space Center*

Flying with NASA as a Rideshare Payload — *NASA Launch Services Program, NASA Kennedy Space Center*

The SmallSat Tech Resource You Didn't Know You Needed — *NASA Marshall Space Flight Center*

Ten CubeSats Loose in Deep Space: NASA's Artemis I and Its Smallsat Payloads — *NASA Marshall Space Flight Center*

Technology Educational Satellite-13: The First Experimental Artificial Intelligence/Machine Learning (AI/ML) Nanosat with a Neuromorphic Processor — *NASA Ames Research Center*

5