
# ReSpace/MAPLD 2011

# ReSpace Track Overview

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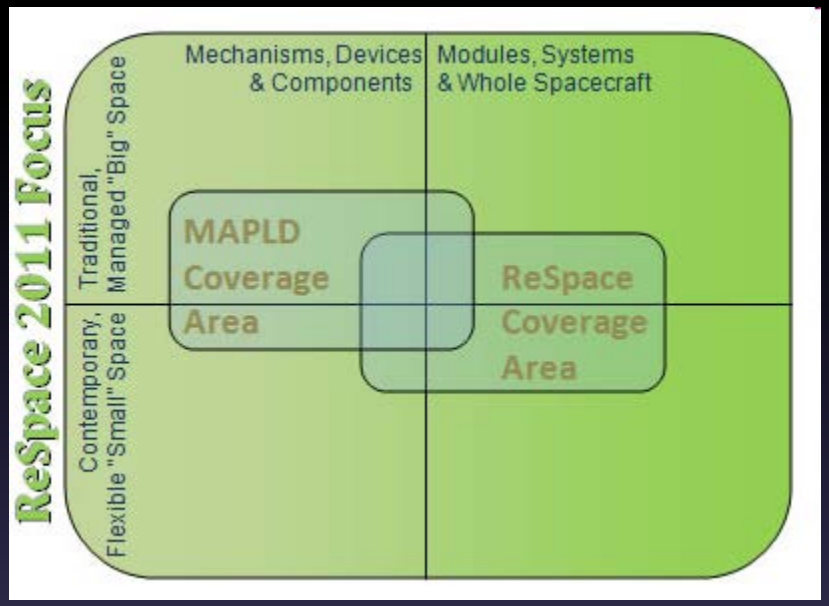
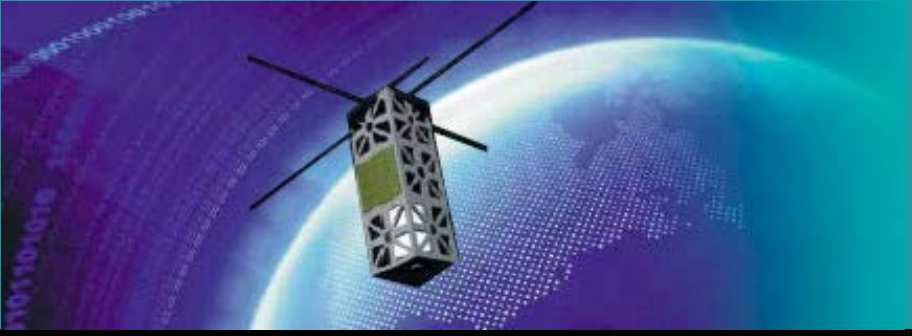
# MAPLD vs. ReSpace Community

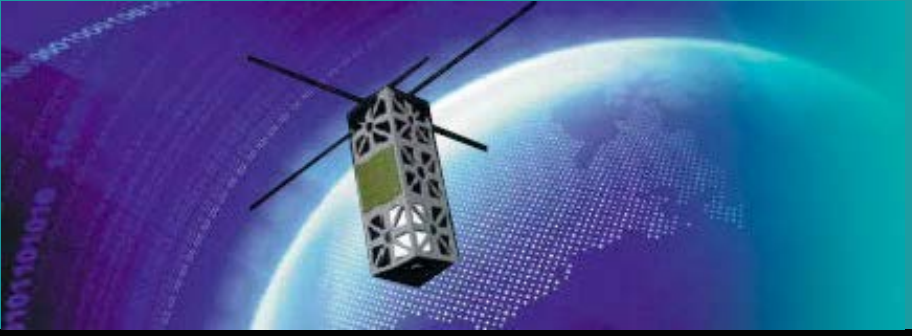



- MAPLD = Conservative (low risk, high reliability, high $ missions)
- ReSpace = Edgy (higher risk, lower reliability, low $ missions)
- Although MAPLD and ReSpace appear to be at opposite ends of the spectra, we do share some common ground.



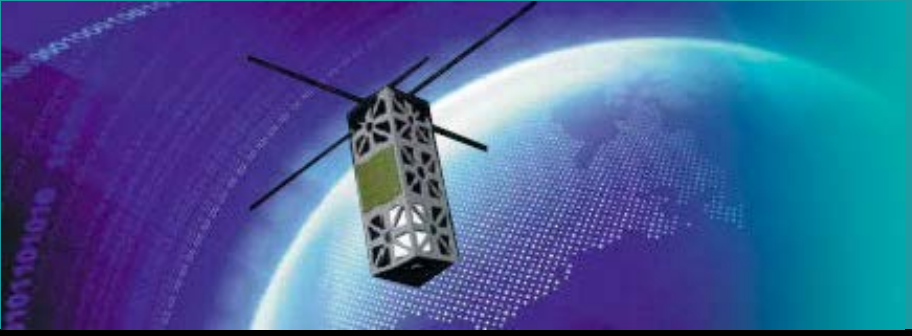
# Rethinking Space Electronics

- ReSpace (Revolutionary Electronics in Space) explores the most effective manner in which new technologies or technologies that are new to space are revolutionizing our business.
- This includes the use of:
  - Novel implementations of commercial electronics that enable the development of increasingly capable, compact and low cost spacecraft.
  - Reconfigurable electronics and microsystems.
- ReSpace addresses the underlying electronics, components, and systems technologies, which enable this revolution.



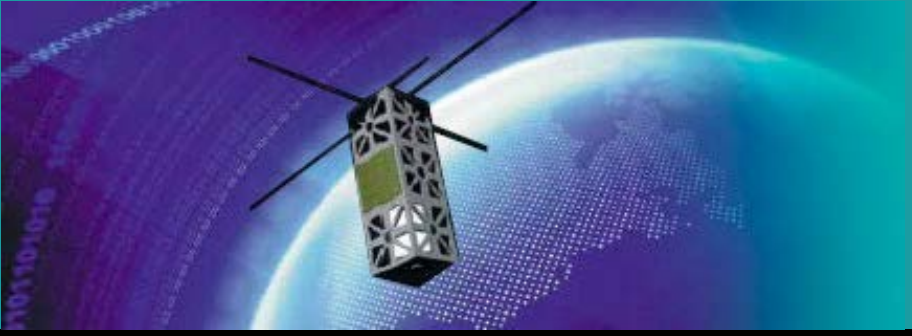
# Rethinking Space Electronics cont.

- ReSpace takes a look at bold operational concepts:
  - Novel approaches to space effects mitigation
  - Implementing “big” missions with small spacecraft (imaging, radar, etc.)
  - Systems engineering and design tools capable of demonstrating the lifetime cost, reliability, and performance impact of reconfigurable microsystems on spacecraft and constellations.
- Practical modularity and innovative modules:
  - Space Plug-and-Play (SPA) and related standards
  - Physical standards and interface standards
  - New compact spacecraft modules for attitude determination and control
  - Power generation and energy storage solutions
  - Software defined radios



# 2011 Session Overview

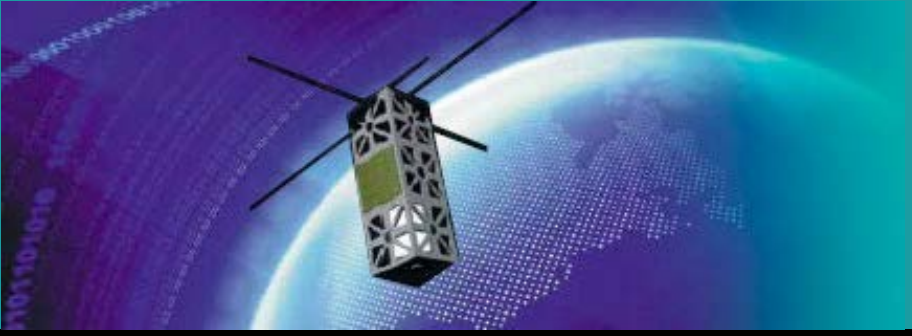
- Session A: Onboard Processing
  - Multicore systems, commercial processors and DSPs, etc.
  - Creating more efficient, scalable architectures
  - Integration of electronics hardware with software
- Session B: New Technologies
  - RHBD components and their applications
  - Extreme environment tolerant electronics
  - Miniaturized electronics for space
- Session C: Missions and Systems
  - Interplanetary use of small satellites
  - Reconfigurable and shape-changing systems
  - System Design using Space Plug-and-Play (SPA)



# ReSpace Track Structure

| Session | Title | Time | Session Chairs |
|---|---|---|---|
| A (Combined) | Onboard Processing | Wed 8:00–10:20AM | Mr. Rafi Some, Jet Propulsion Laboratory<br>Dr. Yutao He, Jet Propulsion Laboratory |
| B | New Technologies | Wed 1:00-5:25PM* | Mr. Anthony Lai, Ensign-Bickford Aerospace and Defense Company<br>Dr. Jim Lyke, Air Force Research Laboratory |
| C | Missions and Systems | Thur 8:00-11:20AM | Dr. Steve Horan, NASA Langley Research Center<br>Dr. Adrian Stoica, Jet Propulsion Laboratory |

* Note that Session B will end 25 minutes early than stated in the program.



# Presentation Update

- Session B will end 25 minutes early than stated in the program.
- The last presentation from ReSpace Session B, “Reconfigurable Space Weather and Space Situational Awareness (SSA) System Leveraging New Technology Detectors” has been moved to Session C to replace “Modular Latvian Nano Satellite VENTA-1 with the Payloads from Germany, Luxembourg, Sweden and the USA” due it’s cancellation.


# Lunch will be served next in the Ballroom

MAPLD Session A begins after lunch at

1 pm