SWAP Forum 2026

Space Electronics for Commercial and Government Systems

Shaping the Future of Space Technologies Through Strategic Partnerships and Coordinated Stakeholder Investments

Link: https://na.eventscloud.com/ereg/newreg.php?eventid=890043&

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Texas A&M University – Bush School DC
1620 L Street NW
Washington, DC 20036

The **Microelectronics Commons Southwest Advanced Prototyping (SWAP) Hub** invites leaders from government, industry, academia, and the national laboratory community to participate in the **2026 SWAP Forum: Space Electronics for Commercial and Government Systems**. This two-day forum will bring together stakeholders across the space electronics ecosystem to examine the opportunities and challenges associated with developing next-generation microelectronics for both commercial and government space missions.

The Challenge

The rapid evolution of the commercial space industry is transforming the way advanced electronic technologies are developed and deployed. Commercial systems are driven by large-scale markets where success depends on rapid innovation, low cost, scalability, and short product development cycles. Conversely, Department of War (DoW) and other space systems of national interest typically must satisfy fundamentally different requirements. These systems are expected to operate reliably in harsh radiation environments, survive contested operating conditions, maintain trusted and secure operation, and support mission lifetimes measured in decades rather than years.

Historically, many government space programs have relied upon commercial technologies as the starting point for specialized mission-specific solutions. While this approach has enabled the adoption of some advanced semiconductor technologies, it has also resulted in highly customized systems that often fail to capitalize on the continuous innovation occurring within the commercial marketplace. Consequently, many government space programs progress through isolated development efforts, with each new program creating unique solutions rather than benefiting from an evolving commercial technology ecosystem.

As semiconductor technologies continue to advance toward heterogeneous integration, advanced packaging, chiplet-based architectures, and increasingly sophisticated design methodologies, the opportunity exists to fundamentally rethink how resilient space electronics are developed, qualified, and transitioned into operational systems.

Forum Objectives

The 2026 SWAP Forum will provide a collaborative environment for open discussion among government agencies, commercial technology developers, system integrators, researchers, and end users. Participants will explore strategies for bridging the gap between commercial innovation and government mission requirements while accelerating the transition of emerging technologies into operational space systems.

Discussions will address questions including:

- How can commercial-off-the-shelf (COTS) technologies and custom radiation-hardened components be effectively integrated through chiplet-based heterogeneous architectures?
- How can advances in semiconductor technology, circuit architectures, and advanced packaging be leveraged while mitigating the risks associated with deployment in harsh space environments?
- How can stakeholders capitalize on emerging capabilities in radiation-aware modeling and design, rapid prototyping, advanced packaging, and qualification testing to accelerate technology transition?
- What ecosystem is needed to support continual technology refresh, modular upgrades, and resilient system architectures across future government and commercial space platforms?

The forum will also highlight the growing national capabilities being established through the Microelectronics Commons program to enable rapid prototyping, qualification, manufacturing, and deployment of next-generation space electronics. (See, for example, https://microelectronics.asu.edu/capabilities-and-tools/)

Desired Outcomes

The SWAP Forum is intended to foster meaningful dialogue that leads to actionable outcomes. Specifically, participants will work toward:

1. **Identifying opportunities for strategic public-private partnerships** that strengthen the domestic space electronics ecosystem.
2. **Defining pathways for coordinated investments** that leverage government, industry, academic, and MEC Hub resources (e.g., SWAP) to deliver resilient, affordable, and rapidly deployable space systems.
3. **Advancing efficient design, prototyping, and qualification methodologies** that reduce development timelines while maintaining high levels of performance and reliability.
4. **Identifying technical, organizational, and policy barriers** that impede technology transition and developing recommendations to strengthen collaboration across stakeholders.

Who Should Attend

The forum is intended for representatives from:

- Department of Defense and other federal agencies (NRO, DOE/NNSA, DOC/NIST, etc.)
- NASA and civil space organizations
- Commercial space companies
- Semiconductor manufacturers and advanced packaging providers
- Prime contractors and system integrators
- National laboratories
- Universities and research institutions
- Microelectronics Commons participants
- Technology transition and acquisition organizations

Join the Conversation

The future of resilient space electronics depends upon coordinated investments, strategic partnerships, and an ecosystem capable of rapidly transitioning emerging technologies into mission-ready systems. The 2026 SWAP Forum

provides a unique opportunity to help define that future by bringing together the organizations shaping the next generation of commercial and government space capabilities.

We encourage your participation in this important discussion and look forward to your contributions.

2026 SWAP Forum Organizing Committee
Microelectronics Commons
Southwest Advanced Prototyping (SWAP) Hub
Tempe, Arizona

Contact
Hugh Barnaby
Arizona State University
Email: **hbarnaby@asu.edu**