

Winning the New Space Race Starts with Cyber

By Lt. Col. Marouane “Mar1” Balmakhtar, USSF, Winter 2026

Getting to space is cheaper and more accessible than ever before, and a new kind of global race has begun. This isn't science fiction; it's happening right now. The nation that figures out how to securely build and operate in this new environment will have a lasting strategic advantage. During my time as a DARPA Service Chiefs' Fellow, the most important lesson I learned was just how urgently we need to act.

My mission at DARPA was to focus on a critical, and often overlooked, aspect of this new era: (“Space Cyber”). My job was to make sure we were building our new presence in space with security baked in from the start, not bolted on as an afterthought. I worked to raise awareness that you can't just apply old IT solutions to space systems; the challenges are unique. I identified key cyber programs that could be adapted for both ground terminals / stations and space vehicles in orbit and pushed to use the lessons from our own offensive cyber tools to make our critical space infrastructure more hardened.

The bottom line is we can't afford a future where our space assets are a messy patchwork of different hardware and software that are difficult to defend. We need a common playbook (“a government reference framework”) or the like that ensures every new space system is built from the ground up to be resilient and survivable against evolving cyber threats. But strategy is only half the battle. Real progress happens when you connect the right people. I spent my time building bridges between the program managers (and their teams of innovators) at DARPA and the operators in the Space Force. At industry events like the [spaceNEXT](#) conference, it was clear that private companies are eager for DARPA's leadership.

By fostering trust and communication, we achieved a (potentially) tangible win: identifying a viable funding path to validate a satellite system software stack prototype developed by MIT LL (and operated by AFRL) leveraging DARPA's formal methods program. [I came to DARPA as an ambassador for the Space Force, but I leave as a champion for both.](#) This fellowship serves as a vital link between DARPA's incredible innovation and the real-world needs of the warfighter. We are at the very beginning of building a new Space (Cyber) ecosystem. To get it right, we need to bring our entire community together - from military operators to startups and industry leaders. This experience has empowered me to be a better leader and translator in that effort, ensuring the brilliant work happening at DARPA becomes our nation's lasting strategic advantage in space.