

20th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)
Space Technology and System Management Practices and Tools (3)

Author: Dr. Jacopo Frassini
NATO Centre of Excellence for Military Medicine, Italy, jacfrassi@virgilio.it

A MILITARY MEDICAL SUPPORT FRAMEWORK FOR THE SUSTAINMENT OF THE SPACE
DOMAIN

Abstract

With the London Declaration in 2019, NATO Heads of State and Government declared Space as the Alliance's "fifth domain" of operations (alongside land, sea, air and cyberspace). The current mission for the Allied Space Forces is to maintain awareness of the Earth's orbit, where satellites relay core services for the functioning of our societies and need to be protected by accidental or deliberate damage. The Space Domain is a physical environment that has always been under continuous pressure of technological innovation and human ambitions. The Artemis program series will drive the international cooperation to extend human presence to the Moon during this decade and to Mars during the next decade. Exploration of the solar system away from Earth is led by civilian agencies and is not in the focus of the military. However, exploration will leave a volume of space behind that can become a dangerous terrain for uncontrolled exploitation by non-governmental and hybrid initiatives (i.e., tourism, scientific/commercial/industrial undertakings...), generating new safety requirements for the launching States. Consequently, the mission for the military may be forced to adapt to new trends. Relatively to the medical support challenge and in line with the UN Treaties and Principles on outer space, we propose a framework based on the Maritime Search and Rescue model where multinational military assets can peacefully contribute to providing a safe and secure environment as space becomes more and more populated. New medical services need early planning of about 8-10 years to deliver acceptable standards of care in sufficient quality and quantity. Additionally, medical capabilities and practices could require innovative approaches to perform in remote, unfamiliar, and hazardous environments, incorporating evolving technologies and applying unprecedented solutions. Longstanding and solid multinational military organizations such as NATO can accomplish high interoperable standards of readiness and preparation in economy of scale for a sustainable collective space medical infrastructure.