DARPA's
Robotic Servicing of Geosynchronous Satellites (RSGS) Program
and the National Space Policy

RSGS strongly supports the National Space Policy of 2010, which may be found at: https://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf

Below are the relevant excerpts of the National Space Policy of 2010 that are addressed by RSGS. Underlined phrases are the pertinent RSGS contributions:

"Consistent with these principles, the United States will pursue the following goals in its national space programs:

- **Energize competitive domestic industries** to participate in global markets and advance the development of: satellite manufacturing; satellite-based services; space launch; terrestrial applications; and increased entrepreneurship.
- **Strengthen stability in space** through: domestic and international measures to promote safe and responsible operations in space; improved information collection and sharing for space object collision avoidance; protection of critical space systems and supporting infrastructures, with special attention to the critical interdependence of space and information systems; and strengthening measures to mitigate orbital debris.
- **Increase assurance and resilience of mission-essential functions** enabled by commercial, civil, scientific, and national security spacecraft and supporting infrastructure against disruption, degradation, and destruction, whether from environmental, mechanical, electronic, or hostile causes.
- **Pursue human and robotic initiatives** to develop innovative technologies, foster new industries, strengthen international partnerships, inspire our Nation and the world, increase humanity's understanding of the Earth, enhance scientific discovery, and explore our solar system and the universe beyond."

"In pursuit of this directive's goals, all departments and agencies shall execute the following guidance:

Foundational Activities and Capabilities

- **Strengthen U.S. Leadership In Space-Related Science, Technology, and Industrial Bases**. Departments and agencies shall: conduct basic and applied research that increases capabilities and decreases costs, where this research is best supported by the government; encourage an innovative and entrepreneurial commercial space sector; and help ensure the availability of space-related industrial capabilities in support of critical government functions.

Preserving the Space Environment and the Responsible Use of Space

- Pursue research and development of technologies and techniques, through the Administrator of the National Aeronautics and Space Administration (NASA) and the Secretary of Defense, to mitigate and remove on-orbit debris, reduce hazards, and increase understanding of the current and future debris environment

Assurance and Resilience of Mission-Essential Functions

The United States shall:

- Assure space-enabled mission-essential functions by developing the techniques, measures, relationships, and capabilities necessary to maintain continuity of services;
    - Such efforts may include enhancing the protection and resilience of selected spacecraft and supporting infrastructure;
- Develop and exercise capabilities and plans for operating in and through a degraded, disrupted, or denied space environment for the purposes of maintaining mission-essential functions; and
- Address mission assurance requirements and space system resilience in the acquisition of future space capabilities and supporting infrastructure."

Commercial Space Guidelines

The term "commercial," for the purposes of this policy, refers to space goods, services, or activities provided by private sector enterprises that bear a reasonable portion of the investment risk and responsibility for the activity, operate in accordance with typical market-based incentives for controlling cost and optimizing return on investment, and have the legal capacity to offer these goods or services to existing or potential nongovernmental customers. To promote a robust domestic commercial space industry, departments and agencies shall:

- Purchase and use commercial space capabilities and services to the maximum practical extent when such capabilities and services are available in the marketplace and meet United States Government requirements;
- Modify commercial space capabilities and services to meet government requirements when existing commercial capabilities and services do not fully meet these requirements and the potential modification represents a more cost-effective and timely acquisition approach for the government;
- Actively explore the use of inventive, nontraditional arrangements for acquiring commercial space goods and services to meet United States Government requirements, including measures such as public-private partnerships, hosting government capabilities on commercial spacecraft, and purchasing scientific or operational data products from commercial satellite operators in support of government missions;
- Develop governmental space systems only when it is in the national interest and there is no suitable, cost-effective U.S. commercial or, as appropriate, foreign commercial service or system that is or will be available; [commercial services do NOT have the RSGS repair and inspection capabilities]

- Refrain from conducting United States Government space activities that preclude, discourage, or compete with U.S. commercial space activities, unless required by national security or public safety; [addition of upgrade modules via RSGS is being studied by US Air Force under the Space Enterprise Vision; commercial services do not provide this capability]
- Cultivate increased technological innovation and entrepreneurship in the commercial space sector through the use of incentives such as prizes and competitions;
- Ensure that United States Government space technology and infrastructure are made available for commercial use on a reimbursable, noninterference, and equitable basis to the maximum practical extent" [RSGS will do this via cooperative research and development agreements with qualified and interested US companies]

National Security Space Guidelines

The Secretary of Defense and the Director of National Intelligence, in consultation with other appropriate heads of departments and agencies, shall:

- Develop, acquire, and operate space systems and supporting information systems and networks to support U.S. national security and enable defense and intelligence operations during times of peace, crisis, and conflict;
- Ensure cost-effective survivability of space capabilities, including supporting information systems and networks, commensurate with their planned use, the consequences of lost or degraded capability, the threat, and the availability of other means to perform the mission;
- Reinvigorate U.S. leadership by promoting technology development, improving industrial capacity, and maintaining a robust supplier base necessary to support our most critical national security interests;
- Develop and implement plans, procedures, techniques, and capabilities necessary to assure critical national security space-enabled missions. Options for mission assurance may include rapid restoration of space assets and leveraging allied, foreign, and/or commercial space and nonspace capabilities to help perform the mission;
- Maintain and integrate space surveillance, intelligence, and other information to develop accurate and timely SSA. SSA information shall be used to support national and homeland security, civil space agencies, particularly human space flight activities, and commercial and foreign space operations;
- Improve, develop, and demonstrate, in cooperation with relevant departments and agencies and commercial and foreign entities, the ability to rapidly detect, warn, characterize, and attribute natural and man-made disturbances to space systems of U.S. interest; and
- Develop and apply advanced technologies and capabilities that respond to changes to the threat environment."

SUMMARY

RSGS supports numerous critical capabilities required by the National Space Policy, particularly to enhance space security. It also provides this unique technology to US industry and strengthens US economic competitiveness in space.

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Dr. Brad Tousley, DARPA Tactical Technology Office Director (Bradford.Tousley@darpa.mil; 703-526-2722)