

OFFICE OF SYSTEMS SAFETY AND MISSION ASSURANCE

**Strategic Implementation Plan
2002**





Introduction

The OSSMA provides management and mission support in the Systems Safety and Mission Assurance (SSMA) disciplines at GSFC. Our goal is to ensure that each mission is conducted to maximize safety and mission success. In addition, the OSSMA provides an independent technical and programmatic assessment function that helps to ensure mission success. These activities support the Safety and Mission Assurance agreements between the Enterprises and Code Q, and fulfill the Center Director's responsibility of program oversight. This Strategic Implementation Plan describes the intended approach to fulfilling these roles. Presented through vision and mission statements, and goals with associated strategies, it describes how the OSSMA will meet the challenge of providing SSMA support in today's environment.



The OSSMA strategic goals support the GSFC Strategic Implementation Plan and are aligned with the Code Q Strategic Plan. Detailed implementation plans are contained in the OSSMA Annual Operating Agreement and its supporting documents, which serve as tools for the management of this organization.

The quest for safety and quality is recognized as being open-ended in nature. Historically in the space flight community, the more resources applied to SSMA support, the better the resulting product. Today's world, however, demands a more flexible approach in all aspects of space mission development and operation. Today's challenge is to tailor SSMA requirements to program risk and criticality. This Plan describes how these challenges will be managed by the OSSMA.

Changing Environment

In recent years, the NASA space flight community has seen a wide range of significant changes. These trends will continue to influence OSSMA strategies. The spectrum of mission styles has grown to include smaller satellites and Principal Investigator mode projects, as well as large international efforts like the Space Station. Project budgets are smaller, and timetables for completion are shorter. The increased use of new technologies and more complex systems inherently add the potential for more risk. These forces have

STRATEGIC IMPLEMENTATION PLAN - 2002



driven the space flight community to reexamine their approaches to every aspect of program implementation.

The OSSMA is committed to a new paradigm focused on customer satisfaction and the development of processes that add significant value toward the achievement of mission success.

Partnering with customers as team members, support is provided in a cooperative setting with the goals of improving customer satisfaction and ensuring efficient and effective SSMA implementation. As team members, OSSMA personnel facilitate the achievement of project objectives. Rather than simply specifying SSMA requirements, and overseeing compliance, requirements are now developed and tailored in consultation with customers to meet specific program and mission objectives. The varied nature of each mission, considering risk, criticality, cost, schedule, and operational life, defines a specific set of objectives that require a unique SSMA approach. The OSSMA supports the development of mission-specific, launch range safety requirements, ensuring mission safety and launch range compliance while minimizing the cost to the mission.

Tailoring of mission assurance requirements and continuous improvement are key aspects of the OSSMA Strategic Implementation Plan. SSMA products and services are customized to provide the most value in meeting program objectives and mission constraints. Continuous improvement ensures that the OSSMA will meet the increasing need for greater efficiency in the provision of SSMA products and services.

In response to our changing environment, the OSSMA is adding processes and practices to broaden the scope and effectiveness of SSMA support to projects. Systems Engineering, Requirements Development, and Risk Management are new processes, owned by the OSSMA, which support formal management of areas, recently identified as critical to mission success. The OSSMA has enhanced GSFC Systems Safety by leading the documentation and conduct of both the Mishap reporting and NASA Safety Reporting System processes. The OSSMA manages the Knowledge Management process, in conjunction with the Lessons Learned Information System, where new approaches to the capture and utilization of project experience are being defined and implemented. Project development schedules, constrained by the availability of space flight hardware, are now supported by the OSSMA, which manages the National Resource for Reliable Flight Hardware initiative on behalf of the NASA Administrator.



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The OSSMA is on a mission to be a leading edge provider of SSMA support to GSFC and the NASA community. This Strategic Implementation Plan defines our envisioned path towards that goal, and is focused on customer satisfaction, mission success, and the development and implementation of effective products and services.

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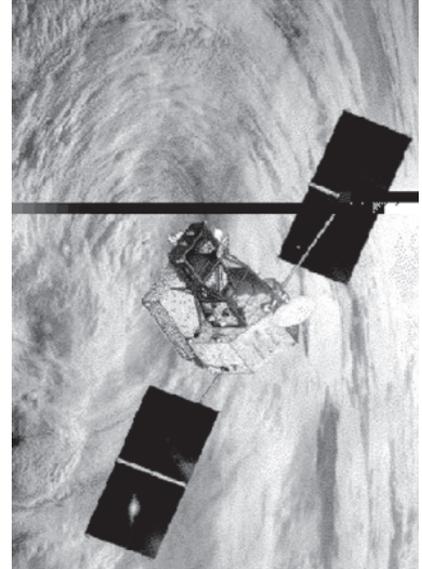


VISION

The OSSMA is a key element in ensuring mission safety and mission success.

MISSION

To develop and implement leading edge Safety Management, Systems Management, and Mission Assurance practices, including software independent verification and validation, that provide efficient and effective support to GSCC and Agency-wide programs and projects.



OSSMA STRATEGIC GOALS

Goal 1

Provide Systems Safety and Mission Assurance support to GSCC projects that is integrated throughout the project life cycle.

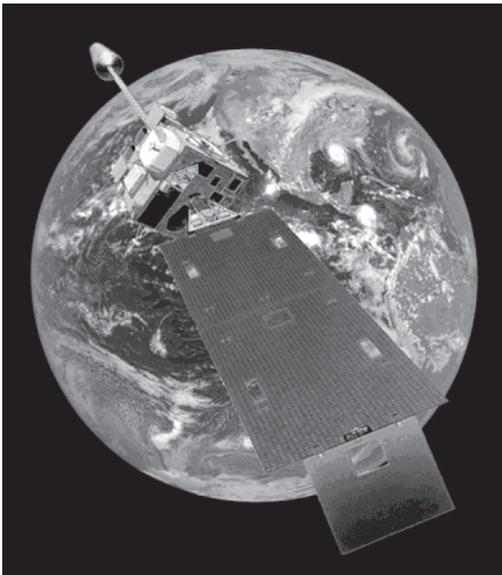
STRATEGIES

- Provide expertise to the project at the earliest phases of the program to enhance up-front planning and effective implementation.
- Develop and provide tailored, project-specific support for the management of risk associated with program implementation.
- Define processes that effectively meet specific customer requirements and deliver services in an increasingly efficient manner.
- Perform contractor and product surveillance using insight and oversight modes as appropriate.
- Provide support to operational projects to give better feedback on quality and design issues, and improve the reliability of current operations and future missions.



Goal 1 (Continued)

- Focus on customer requirements and customer satisfaction by:
 1. Participating as fully integrated members of the project team.
 2. Working with the project and launch range to develop tailored requirements which define an optimal SSMA program; and
 3. Effectively executing the SSMA disciplines as part of the systems engineering process.
 4. Lead the Center in adopting a culture of “Safety is Everyone’s Responsibility,” in the performance of all Center activities.



Goal 2

Provide systems management leadership to assure rigor in the formulation and discipline in the execution of GSFC programs and projects.

STRATEGIES

- Develop policies and guidelines for systems management.
- Conduct independent technical and programmatic assessment for the Goddard New Business Committee, Program Management Council, and Center Director.
- Provide processes and tools to facilitate the capture and dissemination of knowledge to enhance mission success.

- Lead the center process of developing and implementing effective, efficient safety processes.

Goal 3

Provide leadership in SSMA technology and policy development for the Center and the Agency.

STRATEGIES

- Support technology development and infusion.
- Conduct assurance technology programs to characterize emerging developments and potential applications to enhance the future NASA implementation of SSMA.



Goal 4

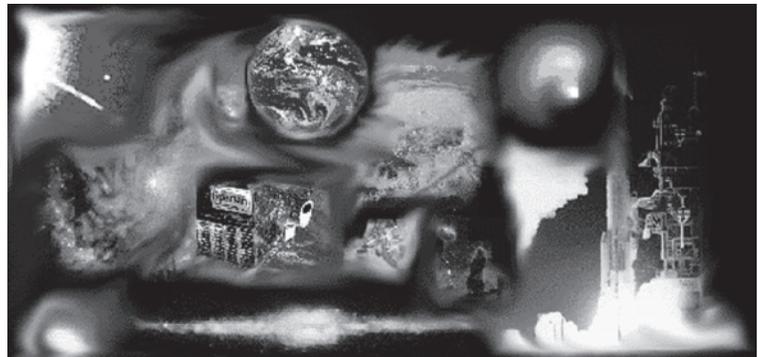
Enhance the Nation's technological and scientific literacy by sharing the information and knowledge that result from the performance of Goddard's mission.

STRATEGIES

- Support community outreach by sharing information and knowledge obtained from the performance of SSMA activities with the public.
- Provide workmanship training to elements of the aerospace community.
- Provide a national resource for the assured availability of reliable flight hardware.
- Provide knowledge, tools, information, and resources to electronic parts specialists in the aerospace community.

Goal 5

Accomplish the OSSMA mission through a vital and effective workforce.



STRATEGIES

- Provide training, hardware, software, and LAN tools, to equip personnel to provide the best possible support.
- Ensure that employees understand the values, roles, and contributions of their work by conducting all-hands meetings with employees, Director of session with Offices, and having Office heads report on accomplishments.

Goal 6

Provide a value-added IV&V implementation function for the Agency.

STRATEGIES

- Work with Agency projects to manage and implement Independent Verification and Validation (IV&V), on their mission-critical software.
- Perform, sponsor, and evaluate IV&V related research and tools development.



GSFC Code 300 Home Page
<http://arioch.gsfc.nasa.gov/>



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