



Advancing NASA Supply Chain Resiliency

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Supply Chain Risk Management (SCRM)

Office of Safety and Mission Assurance Directorate (OSMA), NASA Headquarters

Executive for NASA's Supply Chain Resiliency Board (SCRB)

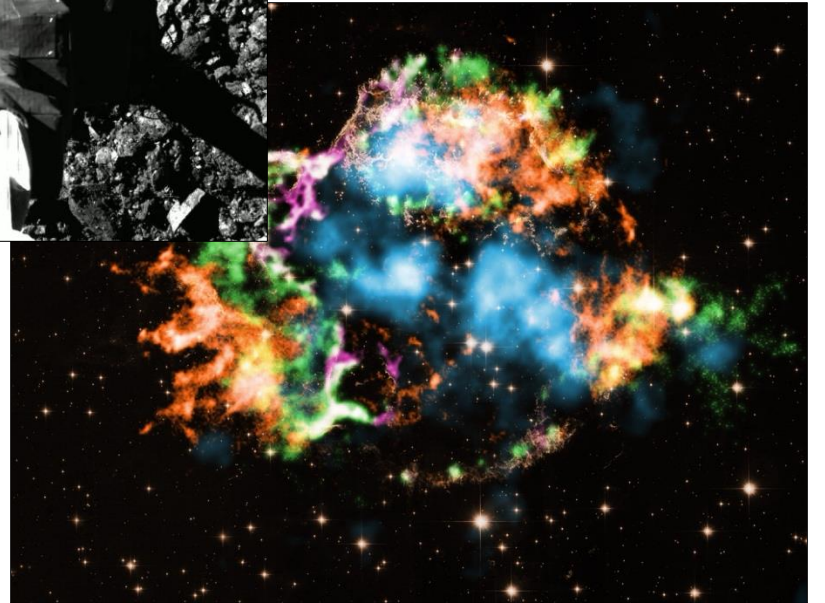
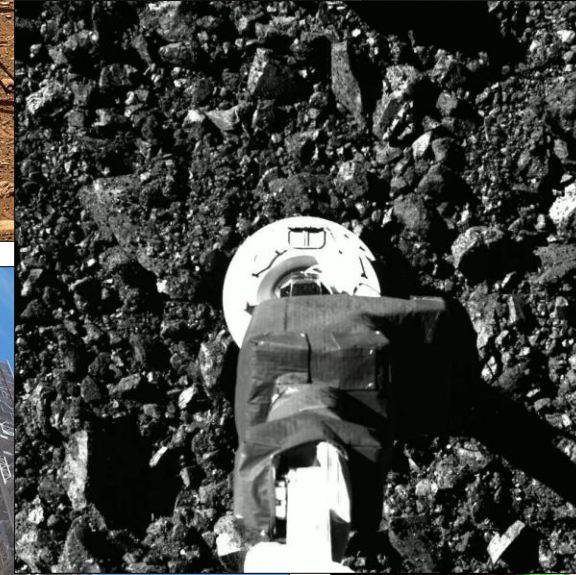
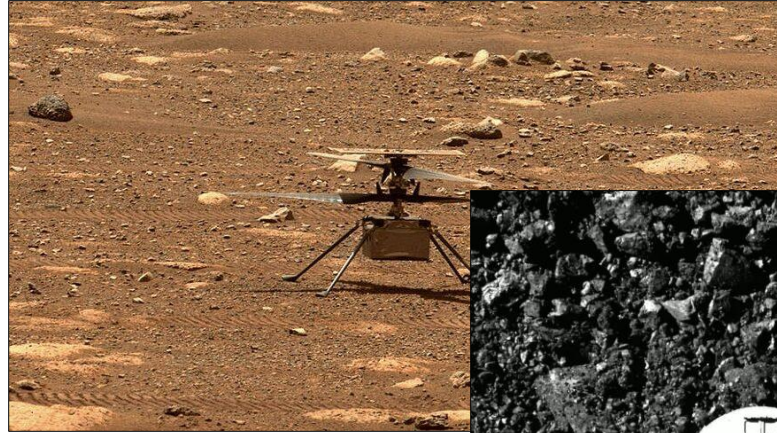


About NASA

[NASA 2024: Onward and Upward | NASA+](#)

Mission Directorates

- Aeronautics Research
- Exploration Systems Development
- Space Operations
- Science
- Space Technology





A World of Risks Threaten Supply Chains

Trends / conditions driving risks include:

- Globalization of markets, technology and industry with supply chains operating across geographical, political, social, cultural and economic environments
 - Supply chains yield advantages and exposure to risks
- Competition and conflicts (e.g., U.S. - China rivalry, Russian invasion of Ukraine)
- Climate change

Dynamic interplay of a wide array of risk types can disrupt supply chains, such as:

Natural Disasters / Hazards

Human-Made Disasters / Hazards

Geopolitical & Economic Events

Regulatory Actions

Litigation

Enterprise Management

Financial Capabilities

Workforce Shortages

Cyberattacks

Disease Pandemics

Reputational / Political

Product / Service Security

Transportation / Logistics

Foreign Influence / Dependency

Diminishing / Sole Sources

Fragile Supplier

New Risk Types: "Unknown Unknowns"

Limited Visibility into Supply Chains = Unknown Risk Exposure



Strategic Situation

- NASA missions rely upon transnational supply chains of commercial, non-profit and government organizations and the U.S. industrial base to develop and operate complex, high-value and innovative systems for the nation
 - Dynamic array of **technical, business, economic, security, and climate risks** threaten to disrupt or deny the **timely, affordable** provisioning of **products and services** as required for mission success
- Administration policy
 - Executive Order 14005, Ensuring the Future is Made in All of America by All of America's Workers (1/25/2021)
 - ... the United States Government should maximize the use of goods, products and materials produced in, and services offered in, the United States.
 - Executive Order 14017, America's Supply Chains (2/24/2021)
 - The United States needs resilient, diverse and secure supply chains to ensure our economic prosperity and national security.
 - United States Space Priorities Framework (12/2021)
 - the United States will ... strengthen the resilience of supply chains across the nation's space industrial base.
 - Executive Order 14123, White House Council on Supply Chain Resilience (6/21/2024)
 - The Council shall coordinate and promote Federal Government efforts to strengthen long-term supply chain resilience and American industrial competitiveness



About the OSMA SCRM Program

Launched October 2019

- Program Mission:
 - Advance strategy, policy, processes and capabilities to assure resilient supply chains for NASA mission performance
 - Holistic, multidisciplinary approach to implementing integrated, collaborative and sustainable solutions
- Program Goals:
 - Build Supply Chain Visibility and Insight
 - Optimize Government Contractor Quality Assurance
 - Use Established Risk Management Processes
 - Establish SCRM Mindset and State-of-the-Market Capabilities
- Key Initiatives:
 - SCRM Policy, Processes and Partnerships
 - **Agency-level Supply Chain Resiliency Board**
 - **Supply Chain Visibility Reporting** by prime contractors (Data Requirements Description)
 - **Industrial Base and Supply Chain Risk Management (SCRM) Strategy and Status** requirement (NPR 7120.5F / NASA Space Flight Program & Project Management Requirements)
 - Supply Chain Insight Central (SCIC) information and analysis services platform
 - Supply Chain Research & Analysis





Supply Chain Resiliency Board (SCRB)

Charter Highlights¹

- Support the Acquisition Strategy Council (ASC) and the Chief Acquisition Officer (CAO) in advancing Agency strategy, policy, processes, capabilities, and organizational culture for (1) the pro-active assessment and management of supply chain and industrial base risks and opportunities to assure resilient NASA mission performance, and (2) the fulfillment of applicable U.S. Government policy and statutory requirements.
- Assess, formulate, and recommend courses of action and solutions for review and decision-making by member organizations, the ASC, the ASC Chair and/or the CAO.
- Assess, submit, and report on risks and associated mitigations as part of the NASA Enterprise Risk Management process.
- Support NASA-level coordination, review and decision-making pertaining to NASA strategy, policy, initiatives, and actions, including matters involving legislation, public laws, executive orders, and strategic stakeholders.
- Make decisions on board recommendations, actions, and activities.

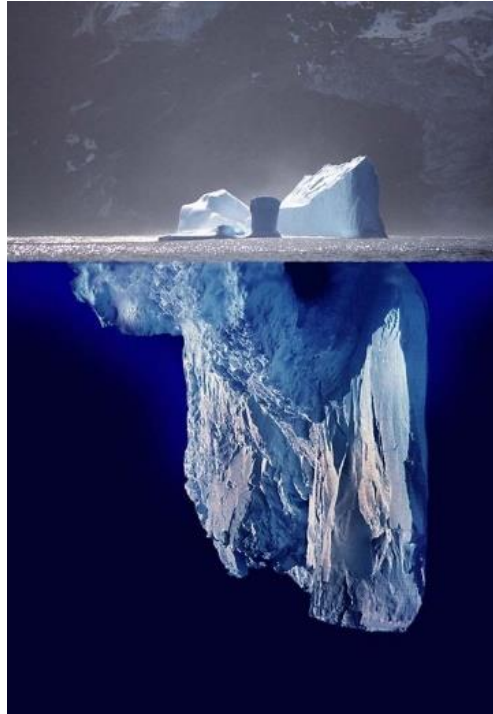
Note: (1) Go to https://nodis3.gsfc.nasa.gov/OPD_Docs/NC_1000_56_.pdf for the charter publicly released on 11/02/2023



Supply Chain Insight Central Information & Analysis Services

Strategy - Operational Since March 2021

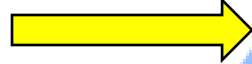
Supply Chains



Industrial Base / Supply Chain
Risks



Build Visibility



Create Shared Insight

WISDOM

KNOWLEDGE

INFORMATION

DATA

SCIC & other information resources

Situational Awareness
&
Foresight



Informed, Pro-
active Decision-
Making

Actions

Strategic

Tactical /
Operational

Enterprise SCRM Risk: limited visibility and insight into supply chains = unknown risk exposure and insufficient information for analysis, planning and management

Key Strategy: systematically bring data and information together to enable pro-active, collaborative SCRM across the agency



Supply Chain Visibility (SCV) Reporting Implementation

Effective Agencywide 6/28/2024



NASA Office of Procurement

Procurement Dispatch Instant Alert

June 28, 2024

Policy

[Supply Chain Visibility \(SCV\) Reporting Implementation Notice](#)

In accordance with the decision of the NASA Supply Chain Resiliency Board (SCRB) to implement Supply Chain Visibility (SCV) Reporting by NASA prime contractors as a key part of agency efforts to pro-actively address U.S. industrial base and supply c...



National Aeronautics and
Space Administration
Washington, DC 20546

Procurement Information Circular

PIC 24-04

July 16, 2024

IMPLEMENTATION OF SUPPLY CHAIN VISIBILITY (SCV) REPORTING (NFS Case 2024-N014)

PURPOSE: Provide instructions to Contracting Officers to implement the approved baseline Data Requirements Description (DRD) for Supply Chain Visibility (SCV) Reporting by NASA prime contractors into NASA contract solicitations and awards for new procurements of products and services for programs / projects on the approved [Agency Mission Program and Project List \(AMPL\)](#) with estimated contract values of \$20 million or more. Requiring organization: Office of Safety and Mission Assurance (OSMA) on behalf of the NASA Supply Chain Resiliency Board.

BACKGROUND: NASA mission programs and projects rely upon the U.S. industrial base and transnational supply chains of commercial, non-profit and government organizations to develop and operate complex, high-value, and innovative systems for the nation. NASA prime contractors and their sub-tier suppliers are subject to a dynamic array of risks which threaten the timely, affordable provisioning of products and services as required for NASA mission success. As part of ongoing efforts to strengthen agency capabilities to proactively recognize, assess and address industrial base and supply chain risks and opportunities the [NASA Supply Chain Resiliency Board \(SCRB\)](#) decided on November 30, 2023 to proceed with the implementation of Supply Chain Visibility (SCV) Reporting by NASA prime contractors. SCV has been coordinated with all Mission Directorates, Agency Leadership and other stakeholders.

The following items are implemented and effective as of June 28, 2024 to support and assure the incorporation of SCV Reporting requirements into NASA procurements as applicable:

Supply Chain Visibility (SCV) Reporting

Supply Chain Visibility Reporting Requirements

EFFECTIVE DATE: 06/28/2024

Key Links

[Procurement Information Circular \(PIC\) 24-04: Implementation of SCV Reporting](#)

[2020 NASA Technology Taxonomy](#)

[Agency Mission Program & Project List](#)

[NASA Form 1634 Contracting Officer's Representative - COR / Alternate COR Delegation](#)

[NASA Form 1707 Special Approvals and Affirmations of Requisitions](#)

[NASA Supply Chain Resiliency Board Charter](#)

[Supply Chain Insight Central \(SCIC\) Information and Analysis Services](#)

[Supply Chain Visibility \(SCV\) Reporting -Prime Contractor User Registration](#)

Welcome to NASA's internal site for Supply Chain Visibility (SCV) Reporting Requirements!

NASA mission programs and projects rely upon the U.S. industrial base and transnational supply chains of commercial, non-profit and government organizations to develop and operate complex, high-value, and innovative systems for the nation. NASA prime contractors and their sub-tier suppliers are subject to a dynamic array of risks which threaten the timely, affordable provisioning of products and services as required for mission success. Accordingly, as part of ongoing efforts to strengthen agency capabilities to pro-actively recognize, assess and address industrial base and supply chain risks and opportunities the [NASA Supply Chain Resiliency Board \(SCRB\)](#) authorized in November 2023 the implementation of the baseline Data Requirements Description (DRD) for SCV Reporting. The effective date for the agencywide implementation of the SCV Reporting DRD is June 28, 2024.

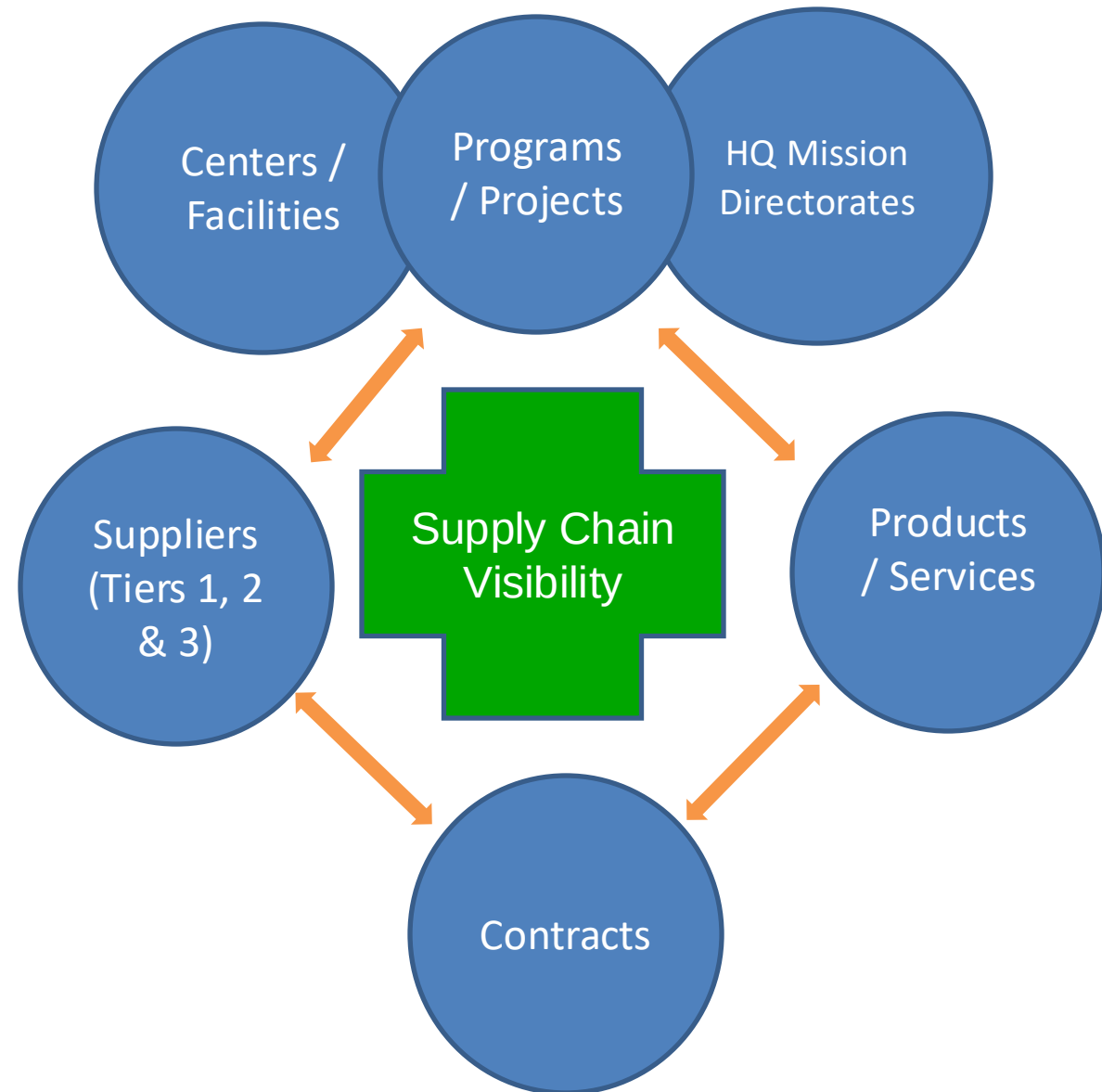
The purpose of this site is to provide the current SCV Reporting requirements along with supporting guidance and assistance to implement and monitor the reporting and produce the visibility key to assuring the resiliency of supply chains for NASA mission performance.

The Supply Chain Risk Management (SCRM) program within the NASA Office Safety and Mission



Supply Chain Visibility (SCV) Reporting

- Applicable to \$20m+ NASA procurements of products and services for programs / projects on the Agency Mission Program and Project List
- Limited to specific information on supplier entities within the top three contractual tiers
 - Tier 3: direct suppliers → Tier 2: direct sub-contractors → Tier 1: prime contractors to NASA with tailoring for deeper or more frequent reporting than baseline requirements
- Reporting via NASA's online, secure Supply Chain Insight Central (SCIC) information system to enable integrated data/information management for internal NASA analysis, planning and decision-making at project to enterprise levels





Industrial Base / SCRM Strategy

Project Life-Cycle

NPR 7120.5F (NASA Space Flight Program & Project Management Requirements, effective 8/3/2021) in combination with NPR 8735.2C (Hardware Quality Assurance Program Requirements for Programs & Projects) requires **Industrial Base (IB) and Supply Chain Risk Management (SCRM) Strategy and Status** for Mission Programs and Project

Acquisition Strategy Meeting

Assess key Industrial Base / SCRM factors

System Requirements & Definition Reviews

Preliminary Project Plan

- Industrial Base / SCRM Strategy

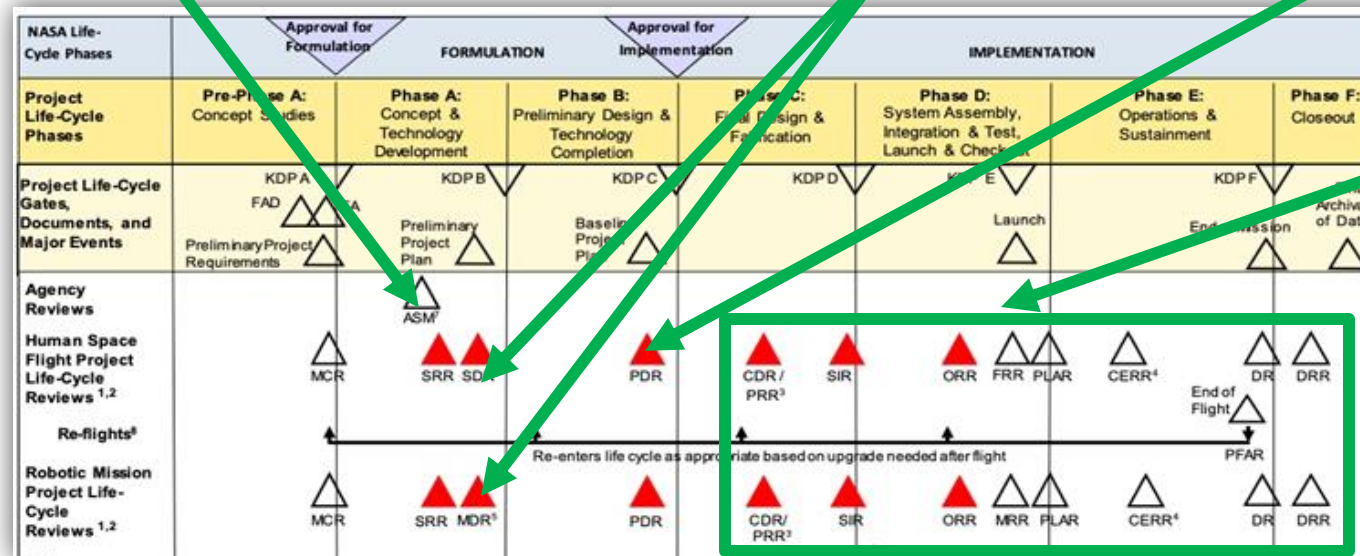
Supply Chain Visibility Reporting by Prime Contractors

Preliminary Design Review

Baseline Project Plan

- Industrial Base / SCRM Strategy

Supply Chain Visibility Reporting by Prime Contractors



Ongoing Industrial Base / SCRM Strategy Implementation & Supply Chain Visibility Reporting



SCIC Information & Analysis Services

Operational Since March 2021



Dashboards & Resources

Dashboards
NDC Account Required

Assessments Calendar

CAGE Lookup

NASA Advisories/GIDEP
Notices
Launchpad Account Required

CAAS Quality Assurance
Resource Planning

PRI eAuditNet
User Account Required

SAM GOV
User Account Required

OASIS
User Account Required

Critical At-Risk Industrial
Technology List (CARITL)

Consolidated Screening List
(CSL)

Suppliers

New Supplier

View All

Supplier	Supplier Address	CAGE	UEID	Projects	CARITL Items	Contracts
Search...	Search...	Search...	Search...	Search...	Search...	Search...

Suppliers

Contracts

Supplier Assessments

Products & Services

Supplier Research & Analysis (SRA) Reports

Projects

Dashboards & Resources

Other Supplier Reports

Supplier Overview

Supplier Count: 3830

Supplier Names

☐ GOS-9 (J)
☐ GOS-9 (I)
☐ GOS-T
☐ GOS-U
☐ GOLD
☐ GPM
☐ GTOsat
☐ GUSTO
☐ GXRE (for SAC-B)
☐ HALO
☐ HaloSat
☐ Mission Directorate
☐ Not Associated
☐ HEOMD
☐ SMD

☐ Not Associated
☐ Alabama
☐ Alaska
☐ Arizona
☐ Arkansas
☐ California
☐ Country
☐ Argentina
☐ Australia
☐ Austria
☐ Belgium
☐ Bermuda
☐ SMD

Record Link	Supplier	Project	Center/Facility	Mission Directorate	# of Assessments	# of Analyses	# of Other Reports
	Supplier Names	ICESat-2, Roman, SWFO-L1	GSFC	SMD	0	0	0
					0	1	0
					0	0	0
					1	0	0
					0	0	0
					0	0	0
	Total				3570	190	16

AS9100 Certification / Suppliers

References: 4/25/2023 1:27:43 PM

Search

☐ Certified
☐ Expired
☐ Not Certified

☐ Accurate Machine & Tool Corporation || MADISON, AL || CAGE: n/a
☐ Acquisition Integration LLC || HUNTSVILLE, AL || CAGE: n/a
☐ Aerotech Fasteners Inc || Putnam, CT || CAGE: OTD46
☐ Aerovironment Inc || SIMI VALLEY, CA || CAGE: 35Q59
☐ Air Electro Inc || CHATSWORTH, CA || CAGE: 1E559
☐ Alinabal Holdings Corporation || Milford, CT || CAGE: 31633
☐ Alloy Metals Company LLC || Long Beach, CA || CAGE: 82X64
☐ Amro Fabricating Corp || SOUTH EL MONTE, CA || CAGE: 8V199
☐ Astro Machine Co Inc || Hawthorne, CA || CAGE: 64248

☐ Suppliers Monitored: 784
☐ Suppliers with Updates: 84
☐ Certified: 677
☐ Not Certified: 151

Record Link	Supplier Header	Certificate Status	Standard	Certificate Expiration	Certificate Scope	Certification Body	Supplier Gave Access to Details in OASIS	Organization POC Email	Project
	Supplier Names	Not Certified					No	michelle@lifth-axis.com	
		Certified	AS9100D	03/24/24	Aerospace components machining.	International Standards Authority	No		
		Certified	AS9100D	01/10/26	Manufacturer of machined aircraft parts, laser components and defense parts.	International Standards Authority	No	vic@aandveng.com	JPSS
		Certified	AS9120B	07/19/24	Distribution of high performance interconnect products. Products include: wire, custom cables, connectors, heat shrink tubing, expandable sleeving, and lacing cord to aerospace industry customers. The value added service of kitting.	SGS Knowledge Solutions, A Division of SGS North America Inc.	No	laura.hartley@aep-etsche.com	
		Certified	AS9100D	02/04/24	Manufacture of precision machine parts, tooling, fixtures, sheet metal and complete assemblies for the aerospace, defense and commercial industries	Management Certification of North America	No		JPSS



Supply Chain Research & Analysis

Purpose:

- Build visibility and insight into suppliers / supply chains to enable pro-active SCRM

Approach:

- Holistic analytical framework, business intelligence techniques, robust information sources,
- Non-intrusive to suppliers; internal NASA/USG use only
- Right-sized: profiles → briefings → in-depth reports

Analytics / Dashboards:

- Interactive visual displays with integrated data

Financial Capability Assessments:

- Produce assessments for \$500m+ procurements per NASA FAR 1809.105-1 and for other procurements as requested

U.S. Civil Space Industrial Base Survey:

- Teamed with HQ/Office of Technology, Policy and Strategy and DOC's Bureau of Industry & Security to manage and analyze survey data

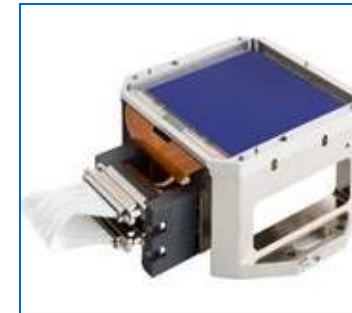
Some Products of interest:



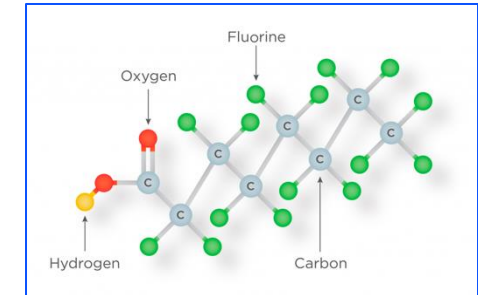
Solar Array



Star Tracker



Charge-coupled device



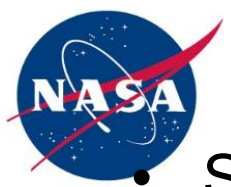
PFAS Chemicals



Lithium-Ion Battery



Bipropellant Thruster Valve



Risky Situations

- Supplier's stage of commercial development
 - Early-stage innovation of products/service and production capabilities → mature products/services and enterprise operations → ongoing investment in production/product/service innovation
- “Micro-Market” niches vs. broad and deep markets
 - Challenging NASA product and service requirements → limited and sole source supply situations
- Supplier's ownership, operations, capital sources and profitability
 - Equity stakeholders (concentrated, diverse), places of production (domestic, foreign) and financial capability
- Supplier's supply chain strategy, planning and complexity
 - Maintaining the “right” mix of in-house design/production and outsourcing of product /service inputs and the fulfillment of requirements throughout the supply chain

Key Objective: timely, affordable and competitive provisioning of products and services as required for successful mission performance within acceptable risk tolerances



Discussion

Ideas, Opportunities or Questions? Contact the OSMA SCRM program:

- Valle Kauniste, Program Executive (valle.j.kauniste@nasa.gov)
- Jonathan Root, Deputy Program Executive (jonathan.f.root@nasa.gov)

An Old Proverb

*For want of a nail the shoe was lost;
For want of a shoe the horse was lost;
For want of a horse the rider was lost;
For want of a rider the battle was lost;
For want of a battle the kingdom was
lost;
And all for the want of a horseshoe
nail.*

Note:

- blue nodes = projects
- orange nodes = suppliers
- Sizing of supplier nodes dependent upon the number of project relationships

