

## DEFENSE INDUSTRIAL BASE ASSESSMENT: U.S. Space Industry 'Deep Dive'



### SCOPE OF ASSESSMENT

The U.S. Department of Commerce, Bureau of Industry and Security (BIS), Office of Technology Evaluation (OTE), in coordination with the U.S. Air Force, the National Aeronautics and Space Administration (NASA), and the National Reconnaissance Office (NRO), is conducting a defense industrial base survey and assessment of the U.S. space industry. Your organization has been identified as a direct and/or indirect supplier of products and/or services to the U.S. Government for space-related applications.

The principal goal of this effort is to assess the health of the U.S. space industrial base in order to identify cost, schedule, and technical risks that may exist within the industrial base that could impact the lifecycle of current or future programs. The data will also be used to understand the multi-tier structure of the U.S. space industry, its interdependencies, and the commonality of suppliers and products across programs and agencies. Through the data collected in this survey, agencies will be better informed to develop targeted planning, acquisition, and investment strategies to ensure the ability of the industry to support critical defense and civil missions and programs. Traditionally, the U.S. Government has had limited visibility into the issues and challenges facing the lower tiers of the space industrial base.

This survey is designed to provide an opportunity for organizations of all sizes and business types to help the U.S. Government and industry better understand the unique issues that organizations face on a daily basis to remain competitive domestically and internationally. Moreover, this survey can be utilized to highlight your organization's unique skills and capabilities. This information will not only allow for better planning by agencies, but it will also inform areas where government resources may be utilized, beneficial information may be distributed, and policy/regulatory changes may be recommended.

### RESPONSE TO THIS SURVEY IS REQUIRED BY LAW

A response to this survey is required by law (50 U.S.C. app. Sec. 2155). Failure to respond can result in a maximum fine of \$10,000, imprisonment of up to one year, or both. Information furnished herewith is deemed confidential and will not be published or disclosed except in accordance with Section 705 of the Defense Production Act of 1950, as amended (50 U.S.C App. Sec. 2155). Section 705 prohibits the publication or disclosure of this information unless the President determines that its withholding is contrary to the national defense. Information will not be shared with any non-government entity, other than in aggregate form. The information will be protected pursuant to the appropriate exemptions from disclosure under the Freedom of Information Act (FOIA), should it be the subject of a FOIA request.

Notwithstanding any other provision of law, no person is required to respond to nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number.

### BURDEN ESTIMATE AND REQUEST FOR COMMENT

Public reporting burden for this collection of information is estimated to average 14 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information to BIS Information Collection Officer, Room 6883, Bureau of Industry and Security, U.S. Department of Commerce, Washington, D.C. 20230, and to the Office of Management and Budget, Paperwork Reduction Project (OMB Control No. 0694-0119), Washington, D.C. 20503.

**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

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**Important Note:**  
 The drop-down menus in Sections 3-6 are crafted to your responses. In order for them to work properly, you must complete Sections 3-6 in order.

Section I GENERAL INSTRUCTIONS	
A.	Your organization is required to complete this survey using an Excel template, which can be downloaded from the U.S. Department of Commerce, Bureau of Industry and Security (BIS) website. At your request, survey compliance staff will e-mail the Excel survey template directly to your organization. For your convenience, a PDF version of the survey is available on the BIS website to aid internal data collection. DO NOT submit the PDF version of your organization's response to BIS.
B.	Respond to every question. Surveys that are not fully completed will be returned for completion. Use comment boxes to provide any information to supplement responses provided in the survey form. Make sure to record a complete answer in the cell provided, even if the cell does not appear to expand to fit all the information.  <b>DO NOT COPY AND PASTE RESPONSES WITHIN THIS SURVEY.</b> Survey inputs should be made manually, by typing in responses or by use of a drop-down menu. The use of copy and paste can disrupt the data collection process. If your survey response is corrupted as a result of copy and paste responses, a new survey will be sent to you for immediate completion.
C.	<b>Do not disclose any classified relationships in this survey form.</b> However, aggregated financials, employment, R&D expenditures, etc. are permitted.
D.	If information is not available from your organization's records in the form requested, you may furnish estimates.
E.	For specific questions or assistance with the Excel survey, e-mail: E-mail is the preferred method of contact.
F.	Upon completion, review and certification of the Excel survey, transmit the survey via e-mail attachment to
G.	For questions related to the overall scope of this Defense Industrial Base assessment, contact:  Brad Botwin, Director, Industrial Studies Office of Technology Evaluation, Room 1093 U.S. Department of Commerce 1401 Constitution Avenue, NW Washington, DC 20230 (202) 482-4060  DO NOT submit completed surveys to Brad Botwin's postal or personal e-mail address; all surveys must be submitted electronically to
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Definitions	
Term	Definition
Authorizing Official	Executive officer of the organization or business unit or other individual who has the authority to execute this survey on behalf of the firm.
Commercial and Government Entity (CAGE) Code	Commercial and Government Entity (CAGE) Code identifies companies doing or wishing to do business with the U.S. Federal Government. The code is used to support mechanized government systems and provides a standardized method of identifying a given facility at a specific location. Find CAGE codes at <a href="http://www.logisticsinformationservice.dla.mil/BINCS/begin_search.aspx">http://www.logisticsinformationservice.dla.mil/BINCS/begin_search.aspx</a>
Component	Any raw material, substance, piece, part, software, firmware, labeling, or assembly which is intended to be included as part of the finished, packaged, and labeled device.
Customer	An entity to which an organization directly delivers the product or service that the facility produces. A customer may be another company or another facility owned by the same parent organization. The customer may be the end user for the item but often will be an intermediate link in the supply chain, adding additional value before transferring the item to yet another customer.
Data Universal Numbering System (DUNS)	A nine-digit numbering system that uniquely identifies an individual businesses. Find DUNS numbers at <a href="http://fedgov.dnb.com/webform">http://fedgov.dnb.com/webform</a> .
Finished Product	Any device, or accessory to any device, that is suitable for use or capable of functioning, whether or not it is packaged or labeled.
Full Time Equivalent (FTE) Employees	Employees who work for 40 hours in a normal work week. Convert part-time employees into "full-time equivalents" by taking their work hours as a fraction of 40 hours.
IR&D	Independent research and development means the cost of effort which is neither sponsored by a grant, nor required in the performance of a contract, and which falls within any of the following three areas: (i) Basic and applied research; (ii) Development, and (iii) Systems and other concept formulation studies.
Manufacturing Material	Any material or substance used in or used to facilitate the manufacturing process, a concomitant constituent, or a byproduct constituent produced during the manufacturing process, which is present in or on the finished device/product.
North American Industry Classification System (NAICS) Code	North American Industry Classification System (NAICS) codes identify the category of product(s) or service(s) provided by your organization. Find NAICS codes at <a href="http://www.census.gov/epcd/www/naics.html">http://www.census.gov/epcd/www/naics.html</a>
Precious Metals	Metals that have high economic value due to their rarity. Most commonly gold, silver, platinum, and palladium.
Product or Service Code (PSC)	Product or Service Code used to report government procurement transactions. To find a PSC, visit <a href="http://www.fpdsng.com/downloads/service_product_codes.pdf">http://www.fpdsng.com/downloads/service_product_codes.pdf</a>
Rare Earth Element	Rare Earth Element is a category that includes numbers 57-71 of the periodic table (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, and ytterbium) as well as yttrium (39) and scandium (21).
Service	An intangible product (contrasted to a good, which is a tangible product). Services typically cannot be stored or transported, are instantly perishable, and come into existence at the time they are bought and consumed.
Single Source	An organization that is designated as the only accepted source for the supply of parts, components, materials, or services, even though other sources with equivalent technical know-how and production capability may exist.
Sole Source	A organization that is the only source for the supply of parts, components, materials, or services. No alternative domestic or foreign suppliers exist other than the current supplier.
STEM	STEM stands for Science, Technology, Engineering and Mathematics.
Supplier	An entity from which your organization obtains inputs. A supplier may be another firm with which you have a contractual relationship, or it may be another facility owned by the same parent organization. The inputs may be goods or services.
United States	The "United States" or "U.S." includes the 50 states, Puerto Rico, the District of Columbia, the island of Guam, the Trust Territories, and the U.S. Virgin Islands.
Utilization Rate	The fraction of an organization's potential output that is actually being used in current production, where potential output is based on a 7 day-a-week, 3x8-hour shift production schedule.

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**Section III****Response Obligations**

Your organization has been identified as a direct or indirect supplier of products and/or services used for space-related activities by the United States Government.

For the purposes of this survey, a product is a tangible good. A service is an intangible item or process, which includes, but is not limited to, distribution, inspection, maintenance, management, material preparation, design, research and development, testing, etc.

A. Is your organization a:

Commercial company/U.S. Government organization/University/Non-profit organization

All organizations have received a letter from the U.S. Department of Commerce, Bureau of Industry and Security requesting their participation in this survey. Some organizations have received an addendum to this letter that contains a list of locations that may be conducting space-related activities.

Please acknowledge that your organization has:

a) Received this letter with a list of locations that may be conducting space-related activities from the U.S. Department of Commerce, Bureau of Industry and Security.

**AND**

b) Reviewed this list to ensure that all space-related activities at these locations, if relevant, are accounted for in this survey response or series of survey responses.

Acknowledged/Not Acknowledged

If your organization:

a) had over \$200 million in net sales in 2011; and

b) conducts its operations that could have space-related applications in more than one business unit/division,

then you **must provide separate survey responses for each relevant business unit/division**. In the box to the right, indicate whether this survey represents a response for your whole organization or an individual business unit/division.

Note: The entire survey document should be completed at the same level, as indicated by this question.

Whole Organization or Business Unit/Division

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Section 1.a		Organization Information			
Provide the following information for the level at which your organization is responding to this survey (whole company/corporate, business unit/division, facility)					
A.	Respondent Name				
	Business Unit/Division Name (if applicable)				
	Respondent Street Address				
	Respondent City				
	Respondent State				
	Respondent Zip Code				
	Respondent Website				
	Respondent Phone Number				
	Primary DUNS Code for this Level				
Provide the following information for the level immediately above the level at which your organization is responding. If your organization is responding at the whole company/corporate level, as indicated in A, leave the following section blank.					
B.	Organization Name				
	Organization Level:				
	Street Address				
	City				
	State				
	Country				
	Postal Code				
	Primary DUNS Code for this Level				
Provide the following information for your parent company, if applicable. If your parent company has already been identified in A or B above, leave the following section blank.					
C.	Organization Name				
	Street Address				
	City				
	State				
	Country				
	Postal Code				
Primary DUNS Code for Parent Company					
D.	My organization is publicly traded/privately held:				
E.	Point of Contact regarding this survey:				
	Name	Title	Phone Number	E-mail Address	State
Comments					
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**Section 1.b**

**Organization Information (cont.)**

Please provide the following identification codes (see definitions), as applicable, to your organization.

\*Find your organization's Commercial and Government Entity (CAGE) Codes at [http://www.logisticsinformationservice.dla.mil/BINCS/begin\\_search.aspx](http://www.logisticsinformationservice.dla.mil/BINCS/begin_search.aspx)

\*\*Find your organization's North American Industry Classification System (NAICS) codes at <http://www.census.gov/epcd/www/naics.html>

A.	Commercial and Government Entity (CAGE) Code(s)*	<input type="text"/>	NAICS (6-digit) Code(s)**	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Identify the certifications that your organization currently has or is working toward below:					
B.	AMS (specify)	<input type="text"/>	Yes	ISO 14000	<input type="text"/>
	ANSI/ASQC Z1.4	<input type="text"/>	No	ISO TS16948	<input type="text"/>
	ANSI/ESD S20.20	<input type="text"/>	Working Toward	J-STD-001DS	<input type="text"/>
	ANSI/ISO/IEC 17025	<input type="text"/>		MIL-Q-9858	<input type="text"/>
	AS 9100	<input type="text"/>		MIL-STD-45662 A	<input type="text"/>
	DoD 5000	<input type="text"/>		NADCAP (specify)	<input type="text"/>
	ISO 28000	<input type="text"/>		NCLS (specify)	<input type="text"/>
	ISO 9000	<input type="text"/>		SAE AS9003	<input type="text"/>
	ISO 9001	<input type="text"/>		SAE AS9100	<input type="text"/>
	ISO 10012-1	<input type="text"/>		Other (specify)	<input type="text"/>
* AMS (Aerospace Material Specifications)		* NADCAP (National Aerospace and Defense Contractors Accreditation Program)			
* ANSI (American National Standards Institute)		* NCLS (National Clinical Lab Specialist)			
* ASQ (American Society for Quality)		* SAE (SAE International, formerly the Society of Automotive Engineers)			
* ISO (International organization for Standards)					

Comments:

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<b>Section 1.c Organization Information (cont.)</b>				
From the list below, select all applicable business lines your organization currently provides. Select <b>one</b> business line as your "primary business line." Identify all other business lines your organization currently provides as "additional business lines."				
A.	Distribution/brokerage/reseller/retail		Primary Business Line	
	Inspection and quality control		Additional Business Line	
	Integration (product, systems integration)		No	
	Information technology (software, hardware, installation)			
	Maintenance/aftermarket/repair/refurbishing services			
	Manufacturing (including assembly)			
	Manufacturing systems development and management			
	Material finishing (machining, coating, plating, heat treating, etc.)			
	Material preparation (casting, forming, molding, forging, etc.)			
	Product and design engineering (tooling, new processes, etc.)			
	Professional services (legal, accounting, consulting, etc.)			
	Research and development			
	Raw materials provider			
	Testing/evaluation/validation			
Provider of services not specified elsewhere on this list				
B.	Indicate if your organization qualifies as any of the following types of businesses. If "Yes," identify the NAICS code(s) under which you qualify.	Type of Business	Yes/No	NAICS Code(s)
		A small business enterprise (as defined by the Small Business Administration)		
		8(a) Firm (as defined by the Small Business Administration)		
		A historically underutilized business zone (HUBZone)		
		A minority-owned business		
		A woman-owned business		
		A veteran-owned or service-disabled veteran owned business		
Other Type of Small or Disadvantaged Business (specify)				
Comments				

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**Section 2 Mergers, Acquisitions, Divestitures and Joint Ventures**

Identify your organization's five most recent space-related U.S. mergers, acquisitions, and divestitures from 2008 to date, if applicable. Record the merged/acquired organization's name(s) and location, the year the merger/acquisition occurred, and the primary objective of the merger/acquisition.

		Organization Name	Type of Activity	State	Year	Primary Objective
A.	1.		Merger			
	2.		Acquisition			
	3.		Divestiture			
	4.					
	5.					

Identify your organization's five most recent space-related non-U.S. mergers, acquisitions, and divestitures from 2008 to date, if applicable. Record the merged/acquired organization's name(s) and location, the year the merger/acquisition occurred, and the primary objective of the merger/acquisition.

		Organization Name	Type of Activity	Country	Year	Primary Objective
B.	1.		Merger			
	2.		Acquisition			
	3.		Divestiture			
	4.					
	5.					

Identify your organization's current space-related joint venture relationships, including public/private R&D partnerships. Provide the name of the organization/entity involved, indicate whether it is a U.S. or non-U.S. enterprise, and provide a description of the joint venture's purpose (e.g. patent licensing, co-production, product integration, after-market support, etc.).

		Organization/Entity Name	U.S./Non-U.S.	Primary Objective of Relationship
C.	1.			
	2.			
	3.			
	4.			
	5.			

Comments:

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**Section 3.a Space-Related Product and Service Segments**

Your organization will be asked to identify the products and services it manufactures, distributes, and/or provides. For the purpose of this survey, space-related products and services have been divided into 16 general segments, as detailed below. You may skip to the section with the products/services that pertain to your organization, but be sure to review all segments to ensure you do not omit any required information.

Please note that your organization may be indirectly supporting space-related applications even though you may not consider your products and/or services directly space-related. In these circumstances, you must still identify the products and services that you manufacture, distribute, and/or provide in the subsequent section.

Also, products that your organization manufactures in order to integrate into other items (that you do not sell separately to external customers) **should be identified** in the appropriate section. This indicates your organization's capability to manufacture particular products.

If your organization's specific product/service is not listed in our survey, please provide it in the 'Other' boxes provided in the product segment that it most appropriately falls under.

A	Spacecraft & Launch Vehicles
B	Propulsion Systems & Fuels
C	Navigation & Control
D	Communications Systems
E	Space Shielding, Environmental Control/Monitoring, and Life Support
F	Payload Instruments & Measurement Tools
G	Ground Systems
H	Non-Earth Based Surface Systems
I	Power Sources & Energy Storage
J	Electronic Equipment
K	Computer Hardware & Robotics
L	Software
M	Materials, Structures, and Mechanical Systems
N	Manufacturing Tools & Specialty Equipment
O	Services
P	Research & Development

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Section 3.b Products and Services				
Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.				
Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.				
A: Spacecraft & Launch Vehicles				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
A1 Atmospheric probes				
A2 Atmospheric balloon packages				
A3 Communications satellites				
A4 Flyby spacecraft				
A5 Manned spacecraft				
A6 Meteorological satellites				
A7 Navigation satellites				
A8 Orbiter spacecraft				
A9 Satellite or spacecraft buses				
A10 Scientific satellites (excluding meteorological)				
A11 Surface penetrators				
A12 Surface rovers				
A13 Small launch vehicles (<2,000 kg payload)				
A14 Medium launch vehicles (2,000 - 20,000 kg payload)				
A15 Heavy launch vehicles (20,000 - 50,000 kg payload)				
A16 Super-heavy launch vehicles (50,000 kg+ payload)				
A17 Other spacecraft/launch vehicles				
B: Propulsion Systems & Fuels				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
B1 Chambers				
B2 Chemical propulsion systems and their components				
B3 Cold gas propulsion systems and their components				
B4 Cyro fuel transfer systems and management				
B5 Hybrid rocket motors, engines, and their components (including HTPB-based systems)				
B6 Igniters				
B7 Ion propulsion systems and their components				
B8 Liquid rocket motors, engines, and their components				
B9 Non-Toxic Monopropellant propulsion systems and their components				
B10 Nozzles				
B11 Nuclear electric propulsion systems and their components				
B12 Other space-related propulsion systems				
B13 Propellant tanks				
B14 Propulsion operating systems				
B15 Solar electric propulsion systems and their components				
B16 Solid rocket motors, engines, and their components				
B17 Thermal electric propulsion systems and their components				
B18 Thrusters not specified above				
B19 Cutting, lubricating, and hydraulic oils and greases				
B20 Fuels oils				
B21 HTPB (Hydroxy-Terminated Polybutadiene) fuel				
B22 LO2/LCH4 (Liquid Oxygen/Liquid Methane) fuel				
B23 LOX/LH2 (Liquid Oxygen/Liquid Hydrogen) fuel				
B24 Other liquid propellants and fuels - petroleum-based (and constituent ingredients)				
B25 Solid fuels (and constituent ingredients)				
B26 Other space-related fuels				
Comments:				

Section 3.c Products and Services (cont.)				
Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.				
Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.				
C: Navigation & Control				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
C1 Accelerometers				
C2 Altitude determination and control equipment and components				
C3 Altitude determination and control sensors (including altimeters)				
C4 Earth sensors				
C5 Gimbal systems and equipment				
C6 GPS equipment				
C7 Guidance, navigation, and control equipment and components				
C8 Gyroscopes				
C9 Inertial navigations systems				
C10 Reaction/momentum wheels				
C11 Rendezvous and docking systems				
C12 Telemetry equipment and components				
C13 Entry, decent, and landing systems				
C14 Space object capturing systems				
C15 Other space-related navigation and control equipment and components				
D: Communications Systems				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
D1 Antennas/antenna systems				
D2 Communications security/cryptologic equipment				
D3 Delay tolerant networking				
D4 Lunar wireless network				
D5 Optical communications systems and components (excluding fiber optic cables)				
D6 Radar systems and components				
D7 Relay equipment				
D8 Routers				
D9 Signal amplifiers				
D10 Signal converters				
D11 Signal receivers and transmitters				
D12 Star trackers				
D13 Sun sensors				
D14 Transponders				
D15 Other space-related communications equipment and components				
Comments:				

Section 3.d Products and Services (cont.)				
Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.				
Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.				
E: Space Shielding, Environmental Control/Monitoring, and Life Support				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
E1 Ablative armor/plating				
E2 Biocides				
E3 Bonding systems				
E4 CO2 and H2O removal and recovery systems				
E5 Cooling systems				
E6 Cryogenics/cryo-coolers				
E7 Damage protection systems				
E8 Environmental monitoring and				
E9 Heat shields				
E10 Heaters and radiators				
E11 Hygiene and waste removal and recovery systems				
E12 Insulation				
E13 Oxygen supplies				
E14 Oxygen supply systems				
E15 Pressure control equipment				
E16 Radiation shielding systems				
E17 Space safety/abort systems (destruct receivers, escape systems, etc.)				
E18 Space suits and related equipment				
E19 Spacecraft airlocks				
E20 Other space survivability systems or components				
F: Payload Instruments & Measurement Tools				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
F1 Atomic clocks				
F2 Bulk plasma				
F3 Chemical analysis instruments				
F4 Cosmic ray sensors (1 MeV)				
F5 Electric field sensors				
F6 Electrical and electrical properties testing and measurement instruments				
F7 Energetic neutral imaging				
F8 Environmental chambers and related measuring equipment				
F9 Filtered photometers				
F10 Gas chromatograph				
F11 Geophysical instruments				
F12 Heavy atom detectors				
F13 High energy particle sensors (30 KeV - 2 MeV)				
F14 Hyper-spectral detectors				
F15 Infrared detectors				
F16 Large format focal plane arrays				
F17 Low energy particle sensors (100 eV)				
F18 Low noise high frame rate				
F19 LWIR detectors				
F20 Magnetic field sensors and magnetometers				
F21 Meteorological instruments and apparatus				
F22 Microwave detectors				
F23 Miscellaneous laboratory equipment and supplies				
F24 Multi-spectral detectors				
F25 MWIR detectors				
F26 Near-IR invisible detectors				
F27 Nuclear detectors				
F28 Physical properties testing and inspection equipment				
F29 Radiometers				
F30 Single proton detectors				
F31 Spectrometers				
F32 SWIR detectors				
F33 Synthetic apperature radar systems				
F34 Telescopes				
F35 Visible detectors				
F36 X-ray optics				
F37 Other space-related instruments or sensors				
Comments:				

Section 3.e Products and Services (cont.)				
Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.				
Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.				
G: Ground Systems				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
G1		Ground antennas		
G2		Ground-based communications equipment (terminals, relays, etc)		
G3		Ground tracking and control equipment		
G4		Simulation and/or training machines		
G5		Other space-related ground systems		
H: Non-Earth Based Surface Systems				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
H1		Regolith excavation and handling		
H2		Oxygen and water extraction from regolith		
H3		Lunar excavation		
H4		Mineral mapping systems		
H5		Volatile (H, C, N, He) extraction from regolith		
H6		Surface habitation systems and equipment		
H7		Dust management systems (mitigation and removal)		
H8		Dust tolerant connectors		
H9		Other non-Earth based surface systems and equipment		
I: Power Sources & Energy Storage				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
I1		Batteries (lithium ion, nickel hydrogen, nickel cadmium, silver zinc, etc.)		
I2		Electrical converters		
I3		Fuel cell power units and components		
I4		Generators		
I5		Other energy storage devices		
I6		Nuclear fission power systems		
I7		Radioisotope thermoelectric generators		
I8		Radioactive materials for use in power generation		
I9		Solar electrical power systems, equipment, and components		
I10		Transformers		
I11		Wires and cables (electrical)		
I12		Other space-related power sources/energy storage systems		
Comments:				

**Section 31 Products and Services (cont.)**

Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.

Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.

J: Electronic Equipment				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
J1		Application-specific integrated circuits (ASICs)		
J2		Attenuators		
J3		Capacitors		
J4		Circuit boards		
J5		Circuit breakers		
J6		Coils and transformers		
J7		Connectors		
J8		Diodes		
J9		Electrical insulators		
J10		Electron tubes		
J11		Fiber optics (conductors, cables, switches, assemblies, etc.)		
J12		Field programmable gate arrays		
J13		Filters and networks		
J14		Fuses, arrestors, absorbers, and protectors		
J15		Inductors		
J16		Integrated circuits/semiconductors (excluding ASICs)		
J17		Lasers and laser systems		
J18		Lugs, terminals, and terminal strips		
J19		Memory		
J20		Modulators/demodulators		
J21		Non-volatile memory		
J22		Optoelectronic devices and associated equipment		
J23		Oscillators and piezoelectric crystals		
J24		Radiation hardened/tolerant electronics		
J25		Relays and solenoids		
J26		Resistors		
J27		Signal/function generators (radio frequency, microwave, etc.)		
J28		Switches (coaxial, radio frequency, video, etc.)		
J29		Synchros and resolvers		
J30		Transistors		
J31		Traveling wave tubes		
J32		Other space-related electronic equipment		

K: Computer Hardware & Robotics				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
K1		Data handling and input/output storage devices		
K2		Computers and data processing equipment		
K3		Data terminal equipment		
K4		Displays/monitors		
K5		Fault tolerant computing		
K6		High performance super computers		
K7		Robotics and autonomous systems		
K8		High dexterity manipulation systems		
K9		Other computer hardware and robotic systems		

L: Software				
Product Area	Manufacture/Distribute?	Product Description(s)	Sole Manufacturer/Distributor?	Sole Manufactured/Distributed Product(s)
L1		Communications software		
L2		Data mining and knowledge management software		
L3		Environmental control and monitoring software		
L4		Ground system software		
L5		Mission automation and execution software		
L6		Mission planning software		
L7		Modeling, analysis, and visualization software		
L8		Navigation and control software		
L9		Payload instrument software		
L10		Propulsion system operating software		
L11		Simulation software		
L12		Other space-related software		
Comments:				

**Section 3.g**

**Products and Services (cont.)**

Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.

Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.

M: Materials, Structures, and Mechanical Systems				
Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
M1	Bars and rods (specify materials to the right)			
M2	Plates, sheets, etc. (specify materials to the right)			
M3	Pipes and tubes (specify materials to the right)			
M4	Precious metals (specify materials to the right)			
M5	Rare Earth Elements (specify materials to the right)			
M6	Carbon fiber materials			
M7	Other fiber based materials (including rayon, nylon, etc.)			
M8	Composite materials			
M9	Dust resistant coatings			
M10	Optical coatings			
M11	Protective coatings			
M12	Thermal coatings			
M13	Other types of coatings			
M14	Adhesives			
M15	Chemicals			
M16	Gases and pressurants (N, He, etc.)			
M17	Inks			
M18	Resins			
M19	Sealants			
M20	Solvents			
M21	Substrates			
M22	Struts			
M23	Fairings and skirts			
M24	Spacecraft panels			
M25	Cover glass			
M26	Spacecraft windows or window materials			
M27	Beryllium-based structures			
M28	Carbon fiber-based structures			
M29	Composite-based structures			
M30	Other lightweight material-based structures			
M31	Glass fabricated structures not specified elsewhere (glass laminants, nanostructures, etc.)			
M32	Plastic fabricated structures not specified elsewhere (plastic moldings, cellular materials, etc.)			
M33	Rubber fabricated structures not specified elsewhere (moldings, foam, etc.)			
M34	Structures created through additive manufacturing processes			
M35	Bearings			
M36	Castings			
M37	Compressors and vacuum pumps			
M38	Couplings, connectors, and fittings			
M39	Dampers			
M40	Fasteners (screws, nuts, bolts, clips, brackets, rivets, etc.)			
M41	Forgings			
M42	Gaskets (o-rings, washers, etc.)			
M43	Gears and gear boxes			
M44	Hydraulics, valves, actuators, pumps			
M45	Landing gear or systems			
M46	Magnets			
M47	Mirrors			
M48	Precision machined parts			
M49	Pyrotechnics, cartridge and propellant actuated devices			
M50	Semi-finished machined parts			
M51	Specialty storage devices or containers			
M52	Springs and wire forms			
M53	Wire and cables (non-electrical)			
M54	Other materials, structures, or mechanical systems			
Comments:				



**Section 3.h**

**Products and Services (cont.)**

Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.

Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.

**N: Manufacturing Tools & Specialty Equipment**

Product Area	Manufacture/ Distribute?	Product Description(s)	Sole Manufacturer/ Distributor?	Sole Manufactured/Distributed Product(s)
N1 Bending and forming machines				
N2 Boring, broaching, drilling, and tapping machines				
N3 Chemical production machinery				
N4 Clean work stations, controlled				
N5 Computer Numerical Control (CNC) systems				
N6 Electrical and ultrasonic erosion machines				
N7 Filament winding machines				
N8 Forging machinery				
N9 Foundry machinery				
N10 Gear cutting and finishing machines				
N11 Grinding machines				
N12 Hydraulic, pneumatic, and mechanical presses				
N13 Lathes				
N14 Lubrication and fuel dispensing equipment				
N15 Machine tools				
N16 Metal heat treating and non-thermal treating equipment				
N17 Milling machines				
N18 Rocket maintenance, repair, and checkout specialized equipment				
N19 Rolling and drawing machines				
N20 Semiconductor, microcircuit, and printed circuitboard manufacturing machinery				
N21 Space vehicle maintenance, repair, and checkout specialized equipment				
N22 Tooling kits and equipment				
N23 Welding, soldering, riveting and brazing equipment				
N24 Wire and ribbon forming machines				
N25 Other machinery utilized for space-related manufacturing/servicing				
Comments:				

**Section 3.i Products and Services (cont.)**

Identify any of the products or services your organization manufactures, distributes, or provides below. For each product/service area selected, provide a brief description of the specific items your organization manufactures, distributes, or provides. Indicate whether your organization, to the best of your knowledge, is the sole manufacturer/distributor/provider of any specific items in each product/service area. If so, describe them in the appropriate box.

Note: Your organization should focus primarily on "space-related" and/or "space-qualified" products or services in these sections. If you do not know if your products or services are "space-related" and/or "space-qualified," you should indicate all the products or services your organization manufactures, distributes, or provides from the lists in this section.

**O: Services**

Service Area	Provide Service?	Service Description(s)	Sole Provider?	Sole Service(s) Provided
O1 Analysis, fusion, or visualization of data derived from space (including electro-optical imagery, data from satellite sensors, etc.)				
O2 Calibration of space-related equipment				
O3 Coating services				
O4 Commercial satellite operation				
O5 Communications and broadcast services				
O6 Data storage and handling services				
O7 Encryption and secure communication services				
O8 Friction stir welding and spun form domes				
O9 Ground support and operations services				
O10 Heat treatment services				
O11 Information and software assurance (including verification and validation)				
O12 Launch support services				
O13 Logistics services				
O14 Machining services (includes cutting, boring, grinding, etc.)				
O15 Maintenance, repair, and rebuilding services				
O16 Materials testing				
O17 Plating services				
O18 Priming and painting services				
O19 Product assurance, quality control services				
O20 Professional services				
O21 Program management and support services				
O22 Program review/development services				
O23 Provision of data derived from space (including electro-optical imagery, remote sensing, etc.)				

O24	Safety and mission assurance services				
O25	Software and algorithm development services				
O26	Space crew operations and training				
O27	Space launch services				
O28	Space medicine				
O29	Space vehicle handling and servicing				
O30	Space-related design and engineering services				
O31	Specification development services				
O32	Systems engineering				
O33	Testing or inspection of space-related equipment (includes inspection, simulation, vibration testing, acoustics testing, etc.)				
O34	Other space-related services				

**P: Research & Development**

R&D Focus	Provide R&D?	R&D Description	
P1	Communications and navigation		
P2	Entry, descent, and landing systems		
P3	Ground and launch systems processing		
P4	Human exploration destination systems		
P5	In-space propulsion		
P6	Launch propulsion systems		
P7	Materials		
P8	Mechanical Systems		
P9	Modeling, simulation, information technology, and processing		
P10	Nanotechnology		
P11	Payloads, science instruments, and sensor systems		
P12	Propellants and fuels		
P13	Robotics and autonomous systems		
P14	Space power and energy storage		
P15	Space survivability, life support, and habitation systems		
P16	Structures		
P17	Theoretical and scientific R&D		
P18	Thermal management systems		
P19	Other space-related research & development focus		

Comments:

**Section 4**

**Participation in U.S. Government Space Programs**

From the list provided below, identify all the U.S. Government, space-related programs your organization has directly and/or indirectly participated in **since 2008**. Participation includes the manufacture/integration of products, distribution of products, conduct of manufacturing processes on equipment, provision of services, and/or the provision of research & development. Next, list the top five product and/or service codes your organization provides for each program you participate in. The product/service drop-down list is based on your responses to Section X. If your product or service does not appear in the drop-down, ensure that you have identified your organization as a manufacturer or provider of that product or service in Section X.

**If you participate in a space-related program that is not listed below, you may enter it in the 'Other' section at the bottom.** First, identify the relevant agency in the 'U.S. Government Agency' column and then identify the program name in the 'Space Program Name' column.

Not Applicable?

If your organization is not sure of its participation in any U.S. Government space-related programs and have reviewed the list below as confirmation, select "Not Applicable" from the box to the right and skip this section.

Note: For your convenience, you may utilize the built-in filters to isolate particular U.S. Government agencies or programs from the list (press the down facing arrow in the top right corner of the relevant box below).

	U.S. Government Agency	Space Program Name	Participation	Product/Service Code Supporting Space Programs				
				1	2	3	4	5
1	Air Force	ADAP-Advanced Digital Antenna Production	Prime Contractor					
2	Air Force	AEHF-Advanced Extremely High Frequency	Sub-Contractor					
3	Air Force	AEP-Architecture Evolution program	Other Type of Support					
4	Air Force	AFCPT-Air Force Command Post Terminals						
5	Air Force	AFSCN ESD-Air Force Satellite Control Network Electronic Schedule						
6	Air Force	AFSCN ESD-Air Force Satellite Control Network Electronic Schedule						
7	Air Force	AFSCN RBC-Air Force Satellite Control Network Remote Tracking Station Block						
8	Air Force	AFSSS-Air Force Space Surveillance System						
9	Air Force	AFWET-Air Force Wideband Enterprise Terminals						
10	Air Force	AITG-Airborne Integrated Terminals Group						
11	Air Force	ARS-Archival Recorder Systems						
12	Air Force	ARTS-Automated Remote Tracking Station						
13	Air Force	BMEWS-Ballistic Missile Early Warning System						
14	Air Force	CCS- Counter Communications System						
15	Air Force	CCS-C Block 1-Command and Control System						
16	Air Force	CCS-C-Command & Control System-Consolidated						
17	Air Force	DAGR-Defense Advanced GPS Receiver						
18	Air Force	DMSP-Defense Meteorological Satellite Program						
19	Air Force	DSCS-Defense Satellite communications System						
20	Air Force	DSP-Defense Support Program						
21	Air Force	DWSS- Defense Weather Satellite System						
22	Air Force	EELV-Evolved Expendable Launch Vehicles						
23	Air Force	EELV Delta IV-Evolved Expendable Launch Vehicles						
24	Air Force	Eglin Radar						
25	Air Force	Eglin Radar SLEP						
26	Air Force	EPS-Enhanced Polar System						
27	Air Force	FAB-T-Family of Advanced Beyond Line-of-Sight Terminals (Inc 1)						
28	Air Force	GBS DECC Transition-Global Satellite Broadcast System Defense Enterprise Computing Center Transition						
29	Air Force	GBS-Global Broadcast Service						
30	Air Force	GEODSS-Ground-Based Electro Optical Deep Space Surveillance						
31	Air Force	Globus II						
32	Air Force	GMT-Ground Multiband Terminals						
33	Air Force	GPS Block IIF-GPS Block IIF						
34	Air Force	GPS Block IIR-GPS Block IIR						
35	Air Force	GPS IIA						
36	Air Force	GPS IIIA-GPS IIIA						
37	Air Force	HUSIR-Haystack Ultra-Wideband Satellite Imaging Radar						
38	Air Force	JETSS-Joint Execution and Training System for Space						
39	Air Force	JMS-Joint Space Operations Center (JSpOC) Mission System (JMS)						

40	Air Force	LADO-Launch, Early Orbit, Anomaly, & Disposal Operations							
41	Air Force	LIONS-Logistics Information Operations Systems							
42	Air Force	LTRS-Launch Test Range System							
43	Air Force	MAGR-2K-Miniaturized Airborne GPS Receiver 2000							
44	Air Force	MARK IVB-Meteorological Data Station							
45	Air Force	MGUE-GPS User Equipment: Modernized UE							
46	Air Force	Milstar Satellites							
47	Air Force	Milstar/DMU II Terminals							
48	Air Force	Miltar SMCS Satellite Mission Control Subsystem							
49	Air Force	Minotaur-SMC/SDTW Launch Vehicle							
50	Air Force	MMP-Minuteman MEECN Program							
51	Air Force	MMSOC-GSA-Multi-Mission Space Operations Center Ground Support Architecture							
52	Air Force	MOSS-Moron Optical Space Surveillance							
53	Air Force	NAVSTAR MUE							
54	Air Force	NAVSTAR GPS-Navigational Signal Timing and Ranging Global Positioning System							
55	Air Force	NDS-Nuclear Detonation Detection System							
56	Air Force	NPOESS-National Polar-orbiting Operational Environmental Satellite System							
57	Air Force	OAS-Orbital Analysis Systems							
58	Air Force	OCS-GPS Operational Control Segment							
59	Air Force	OCX-Next Generation Operational Control System							
60	Air Force	OSR-Operational Switch Replacement							
61	Air Force	PARCS-Perimeter Acquisition Radar Attack Characterization System							
62	Air Force	PAWS-PAVE Phased Array Warning System							
63	Air Force	RAIDRS-Rapid Attack Identification Detection Reporting System							
64	Air Force	RSLP-Rocket Systems Launch Program							
65	Air Force	RSS-Receiving Set Satellite							
66	Air Force	RSTN-Radio Solar Telescope Network							
67	Air Force	S2E2-SBIRS Survivable Endurable Evolution							
68	Air Force	SBIRS Fixed Sites							
69	Air Force	SBIRS High-Space Based Infrared System							
70	Air Force	SBIRS Mobile Vehicles							
71	Air Force	SBIRS Space Segment							
72	Air Force	SBIRS-Space Based Infrared Systems							
73	Air Force	SBSS Blk10-Space Based Space Surveillance Block 10							
74	Air Force	SCAMP-Single Channel Anti-Jam Man Portable Terminal							
75	Air Force	SMART-T-Secure mobile Anti-Jam Reliable Tactical Terminal							
76	Air Force	SOON-Solar Observing Optical Network							
77	Air Force	Space Fence							
78	Air Force	SSAEM-Space Situational Awareness Environmental Monitoring							
79	Air Force	VTS-A-Vandenberg Tracking Station-A							
80	Air Force	WGS Block I-Wideband Global SATCOM							
81	Air Force	WGS Block II-Wideband Global SATCOM							
82	Air Force	WGS Block III-Wideband Global SATCOM							
83	Army	JTAGS-Joint Tactical Ground Station							
84	NASA	21st Century Ground Systems							
85	NASA	Active Cavity Radiometer Irradiance Monitor Satellite (ACRIMSat)							
86	NASA	Active Sensing of CO2 Emissions over Nights, Days, and Seasons (ASCENDS)							
87	NASA	Advanced Stirling Radioisotope Generator (ARSG)							
88	NASA	AMMOS							
89	NASA	Aqua							
90	NASA	Aquarius							
91	NASA	Astrophysics Explorer Program - Astro-H (SXS)							
92	NASA	Astrophysics Explorer Program - Gravity and Extreme Magnetism (GEMS)							
93	NASA	Astrophysics Explorer Program - Nuclear Spectroscopic Telescope Array (NuSTAR)							
94	NASA	Astrophysics Research Program							
95	NASA	Aura							
96	NASA	Cassini-Huygens							

97	NASA	CLARREO							
98	NASA	CloudSat							
99	NASA	Commercial Crew and Cargo Program							
100	NASA	Commercial Crew Development (CCDev)							
101	NASA	Constellation Program							
102	NASA	Cosmic Origins Program - Herschel Space Observatory							
103	NASA	Cosmic Origins Program - Hubble Space Telescope							
104	NASA	Cosmic Origins Program - Stratospheric Observatory For Infrared Astronomy (SOFIA)							
105	NASA	DESDynI							
106	NASA	Discovery - MESSENGER							
107	NASA	Earth Observing-1 (EO-1)							
108	NASA	Earth Science Multi-Mission							
109	NASA	Earth Science Technology							
110	NASA	EPOXI (Was Deep Impact)							
111	NASA	ExoMars/Trace Gas Orbiter (TGO)							
112	NASA	Exoplanet Exploration Program - Kepler							
113	NASA	Exoplanet Exploration Program - Large Binocular Telescope Interferometer (LBTI)							
114	NASA	GALEX							
115	NASA	Genesis							
116	NASA	Global Precipitation Measurement (GPM)							
117	NASA	Glory Mission							
118	NASA	GRACE							
119	NASA	GRACE FO							
120	NASA	Hayabusa-U.S. (MUSES-C)							
121	NASA	Heliophysics Explorer Program - AIM							
122	NASA	Heliophysics Explorer Program - CINDI							
123	NASA	Heliophysics Explorer Program - IBEX							
124	NASA	Heliophysics Explorer Program - Interface Region Imaging Spectrograph (IRIS)							
125	NASA	Heliophysics Explorer Program - THEMIS							
126	NASA	Heliophysics Explorer Program - TWINS							
127	NASA	Heliophysics Research							
128	NASA	Ice, Cloud, and land Elevation Satellite (ICESat-II)							
129	NASA	International Space Station Program							
130	NASA	James Webb Space Telescope (JWST)							
131	NASA	Jason-1							
132	NASA	Jason-3							
133	NASA	Kepler							
134	NASA	Landsat Data Continuity Mission (LDCM)							
135	NASA	Launch Services Program							
136	NASA	Living with a Star - Radiation Belt Storm Probes (RBSP)							
137	NASA	Living with a Star - Solar Dynamics Observatory (SDO)							
138	NASA	Living with a Star - Solar Orbiter							
139	NASA	Living with a Star - Solar Probe Plus							
140	NASA	Lunar Crater Observation and Sensing Satellite							
141	NASA	Lunar Quest Program - ASPERA-3							
142	NASA	Lunar Quest Program - Dawn							
143	NASA	Lunar Quest Program - GRAIL							
144	NASA	Lunar Quest Program - LADEE							
145	NASA	Lunar Quest Program - Stardust NexT							
146	NASA	Lunar Quest Program - Strofio							
147	NASA	Mars 2018							
148	NASA	Mars Exploration - 2016							
149	NASA	Mars Exploration - MAVEN							
150	NASA	Mars Exploration - MSL							
151	NASA	Mars Exploration - Odyssey							
152	NASA	Mars Exploration - Spirit and Opportunity							
153	NASA	Mars Exploration Rover (MER)							
154	NASA	Mars Global Surveyor							



**Section 5.a**

**Critical Suppliers**

For each Product and Service segment (A-P), identify your organization's critical suppliers. Only identify suppliers that support products/services mentioned earlier in the survey (in Section X). **Each critical supplier should be filled in the Product and Service segment of the product/service they supply** - not the segment their product/service is utilized for. For example: a supplier who provides traveling wave tubes should be identified in segment E: Electronics & Computer Technology for Space.

Once you have located the appropriate segment for a supplier, identify the supplier's name, the product/service area they provide (from the drop-down menu), and a short description of the specific product/service. Next, identify the product/service area that each item supplied is utilized for (this should be one of the products/services your organization manufactures or provides). In addition, identify the city, state, and country of the supplier and whether this supplier is a single and/or sole source of the product/service in question (see definitions). Finally, identify any U.S. Government programs that each supplier and product/service is used to support by your organization, if applicable.

If a supplier provides more than one product/service area, complete the supplier information on two separate rows and alter the product/service area accordingly.

For the purposes of this survey, a supplier may be, but does not have to be, considered critical if it:

- a) Is used to support multiple U.S. Government programs;
- b) Is a sole and/or single source supplier;
- c) Contributes a significant portion to the end product's value;
- d) Provides a product/service that has a long lead-time; and/or
- e) Meets any other criteria for criticality that your organization utilizes.

**A: Spacecraft & Launch Vehicles**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**B: Propulsion Systems & Fuels**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**C: Navigation & Control**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**D: Communications Systems**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Comments:



**Section 5.b**

**Critical Suppliers (cont.)**

For each Product and Service segment (A-P), identify your organization's critical suppliers. Only identify suppliers that support products/services mentioned earlier in the survey (in Section X). **Each critical supplier should be filled in the Product and Service segment of the product/service they supply** - not the segment their product/service is utilized for. For example: a supplier who provides traveling wave tubes should be identified in segment E: Electronics & Computer Technology for Space.

Once you have located the appropriate segment for a supplier, identify the supplier's name, the product/service area they provide (from the drop-down menu), and a short description of the specific product/service. Next, identify the product/service area that each item supplied is utilized for (this should be one of the products/services your organization manufactures or provides). In addition, identify the city, state, and country of the supplier and whether this supplier is a single and/or sole source of the product/service in question (see definitions). Finally, identify any U.S. Government programs that each supplier and product/service is used to support by your organization, if applicable.

If a supplier provides more than one product/service area, complete the supplier information on two separate rows and alter the product/service area accordingly.

For the purposes of this survey, a supplier may be, but does not have to be, considered critical if it:

- a) Is used to support multiple U.S. Government programs;
- b) Is a sole and/or single source supplier;
- c) Contributes a significant portion to the end product's value;
- d) Provides a product/service that has a long lead-time; and/or
- e) Meets any other criteria for criticality that your organization utilizes.

**E: Space Shielding, Environmental Control/Monitoring, and Life Support**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**F: Payload Instruments & Measurement Tools**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**G: Ground Systems**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**H: Non-Earth Based Surface Systems**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Comments:

**Section 5.c**

**Critical Suppliers (cont.)**

For each Product and Service segment (A-P), identify your organization's critical suppliers. Only identify suppliers that support products/services mentioned earlier in the survey (in Section X). **Each critical supplier should be filled in the Product and Service segment of the product/service they supply** - not the segment their product/service is utilized for. For example: a supplier who provides traveling wave tubes should be identified in segment E: Electronics & Computer Technology for Space.

Once you have located the appropriate segment for a supplier, identify the supplier's name, the product/service area they provide (from the drop-down menu), and a short description of the specific product/service. Next, identify the product/service area that each item supplied is utilized for (this should be one of the products/services your organization manufactures or provides). In addition, identify the city, state, and country of the supplier and whether this supplier is a single and/or sole source of the product/service in question (see definitions). Finally, identify any U.S. Government programs that each supplier and product/service is used to support by your organization, if applicable.

If a supplier provides more than one product/service area, complete the supplier information on two separate rows and alter the product/service area accordingly.

For the purposes of this survey, a supplier may be, but does not have to be, considered critical if it:

- a) Is used to support multiple U.S. Government programs;
- b) Is a sole and/or single source supplier;
- c) Contributes a significant portion to the end product's value;
- d) Provides a product/service that has a long lead-time; and/or
- e) Meets any other criteria for criticality that your organization utilizes.

**I: Power Sources & Energy Storage**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**J: Electronic Equipment**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**K: Computer Hardware & Robotics**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**L: Software**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Comments:

**Section 5.d**

**Critical Suppliers (cont.)**

For each Product and Service segment (A-P), identify your organization's critical suppliers. Only identify suppliers that support products/services mentioned earlier in the survey (in Section X). **Each critical supplier should be filled in the Product and Service segment of the product/service they supply** - not the segment their product/service is utilized for. For example: a supplier who provides traveling wave tubes should be identified in segment E: Electronics & Computer Technology for Space.

Once you have located the appropriate segment for a supplier, identify the supplier's name, the product/service area they provide (from the drop-down menu), and a short description of the specific product/service. Next, identify the product/service area that each item supplied is utilized for (this should be one of the products/services your organization manufactures or provides). In addition, identify the city, state, and country of the supplier and whether this supplier is a single and/or sole source of the product/service in question (see definitions). Finally, identify any U.S. Government programs that each supplier and product/service is used to support by your organization, if applicable.

If a supplier provides more than one product/service area, complete the supplier information on two separate rows and alter the product/service area accordingly.

For the purposes of this survey, a supplier may be, but does not have to be, considered critical if it:

- a) Is used to support multiple U.S. Government programs;
- b) Is a sole and/or single source supplier;
- c) Contributes a significant portion to the end product's value;
- d) Provides a product/service that has a long lead-time; and/or
- e) Meets any other criteria for criticality that your organization utilizes.

**M: Materials, Structures, and Mechanical Systems**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**N: Manufacturing Tools & Specialty Equipment**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**O: Services**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

**P: Research & Development**

Supplier Name	Product Area Provided by Supplier	Product Description	Product Area Supplied Product is Utilized For	Supplier City	Supplier State (if applicable)	Supplier Country	Single/Sole Supplier?	U.S. Government Program Supported		
								1	2	3
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Comments:

**Section 6**

**Top Customers**

Identify your organization's top 20 U.S. and non-U.S. direct **space-related customers** by sales for the 2008-2011 period. Indicate the type of customer, their location, and whether or not you compete with the customer at any level of your business. Finally, identify the top five products and/or services your organization provided to each customer.

If your organization does not have any space-related customers, you may skip this section.

**Top U.S.-Based Customers**

	Customer Name	Type of Customer	Customer City	Customer State	Competitor?	Product/Service Codes Provided to Customer				
						1	2	3	4	5
1.		U.S. Government Defense								
2.		U.S. Government Non-Defense								
3.		Commercial								
4.		University								
5.		Non-profit organization								
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
16.										
17.										
18.										
19.										
20.										

**Top Non-U.S. Based Customers**

	Customer Name	Type of Customer	Customer City	Customer Country	Competitor?	Product/Service Codes Provided to Customer				
						1	2	3	4	5
1.		Government Defense								
2.		Government Non-Defense								
3.		Commercial								
4.		University								
5.		Non-profit organization								
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
16.										
17.										
18.										
19.										
20.										

Comments:

**Section 7**

**Top Competitors**

Identify your organization's leading U.S. and non-U.S. competitors for **space-related products and/or services**. Indicate their name, the type of competitor, location, and corresponding Product and Service Segment relating to the competition. Note: U.S. Government agencies and centers may be considered competitors.

If your organization does not have competitors for space-related products and/or services, you may skip this section.

U.S. Competitors				Product/Service Segment		
Competitor Name	Type of Competitor	State	1	2	3	
1.						
2.						
3.						
4.						
5.						

  

Non-U.S. Competitors				Product/Service Segment		
Competitor Name	Type of Competitor	Country	1	2	3	
1.						
2.						
3.						
4.						
5.						

B. Has your organization been adversely impacted by competition from Federally Funded Research and Development Centers (FFRDCs) and/or U.S. Government agencies? Explain below. If this question is not applicable to your organization, select "Not Applicable" from the box to the right.

Comments:

**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

**Section 8.a**

**Manufacturing Operations**

Section 8 asks questions related to your organization's manufacturing operations.

If your organization manufactures one or more of the products in Section 3, you must complete this section.

If your organization has not identified itself as a manufacturer of any of the products in Section 3, select "Not Applicable" in the box to the right. You may then skip this section and proceed to Section 9.

**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

Section 8.b		Manufacturing Operations	
A.	Estimate your organization's current "Make/Buy" ratio. In other words, estimate the percentage of dollars spent for work done by your organization's employees ("Make" percentage) vs. the dollars spent for work done by outside contractors ("Buy" percentage). Note: "Make" includes internal company purchasing.	Make %	
		Buy %	
B.	Does your organization maintain an inventory for space-related components, manufacturing materials, and/or finished products? (See definitions)	Components and Manufacturing Materials/Finished Products/Both/None	
	On average, what is the normal supply level of space-related finished, manufactured products normally kept in inventory?	Months	
	On average, what is the normal supply level of space-related components and manufacturing materials products normally kept in inventory?	Months	
C.	What is the average amount of time it takes to approve or officially certify a supplier for space-related applications, assuming one was available?	Month Ranges	
D.	Does your organization use any of the elements identified below in its space-related production process or as a component of final products? Identify each.		
	Aluminium		Praseodymium
	Antimony		Rare Earth Phosphors
	Carbon graphite		Rare Earth Polishing Agent
	Copper		Samarium
	Dysprosium		Samarium-Cobalt Magnets
	Europium		Tantalum
	Gadolinium		Terbium
	Gold		Tin
	Mercury		Titanium
	Neodymium		Tungsten
	Neodymium-Iron-Boron Magnets		Yttrium
	Other Rare Earth Oxide or Chemical (specify)		Other Rare Earth Metal or Alloy (specify)
	E.	Identify whether your organization's space-related operations have been adversely impacted by any of the following factors related to the elements identified above. Explain your response, identifying the specific elements concerned.	
Factor		Yes/No	Explain
Increase in U.S. demand			
Increase in non-U.S. demand			
Decrease in U.S. availability			
Decrease in non-U.S. availability			
Sharp changes in market price			
Other (specify)			
F.	Estimate the capacity utilization rate (see definitions) for your organization from 2008-2011.	2008	
		2009	
		2010	
		2011	
	Estimate the minimum level of capacity utilization necessary to keep your production costs from changing disproportionately to order volume. Explain your response below.		
Comments:			

**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

**Section 9**

**General Business Operations**

A.	Does your organization maintain an internal preferred sub-contractor/supplier program? If "Yes," what percentage of suppliers have preferred status?			Preferred Program?	
				Percentage:	
B.	Does your organization have a formal sub-contractor/supplier evaluation program? If "Yes," identify what factors your organization utilizes for these evaluations below.				
	Ability to manage sudden changes in requirements/demand			Ownership changes	
	Expectation of future business			Quality of products/services provided	
	Location and geo-political risks			Single/sole sourcing	
	On-cost delivery			Sub-contractor/supplier financial health	
	On-time delivery			Terms of Payment	
	Other (specify)			Other (specify)	
C.	From the drop-down below, identify the top three support operations that present challenges when utilizing outside/third-party suppliers for space-related operations. Explain each. Challenges may include lack of qualified vendors, pricing, quality issues, environmental regulations, etc.				
	Type of Business Support Operation		Explanation of Challenges		
Comments:					
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>					



Section 10 Relationship with the U.S. Government			
To the best of your knowledge, identify any U.S. Government agencies your organization directly and/or indirectly supports from the list below. For each, indicate whether this support is space-related, non-space related, or both.			
Agency		Agency	
Central Intelligence Agency (CIA)	Space-related	National Geospatial-Intelligence Agency (NGA)	
Defense Advanced Research Projects Agency (DARPA)	Non-space related	National Oceanic and Atmospheric Administration (NOAA)	
Director, Defense Research and Engineering (DDR&E)	Both	National Aeronautics and Space Administration (NASA)	
A. Department of Energy (including the National Nuclear Security Administration)	Do Not Support	National Reconnaissance Office (NRO)	
Federal Aviation Administration (FAA)		National Security Agency (NSA)	
Missile Defense Agency (MDA)		U.S. Air Force (including the Space and Missile Systems Center and AFRL)	
Other (specify)		U.S. Army (including the Space and Missile Defense Command)	
Other (specify)		U.S. Navy (including the Office of Naval Research and Naval Research Laboratory)	
Other (specify)		Other Department of Defense Organizations	
B.	Does your organization consider itself dependent upon <b>current U.S. Government space-related programs</b> for its continued viability? Explain your response below.		
C.	Estimate the percentage range of compatibility of your current U.S. Government space-related product/service lines with current commercial space applications, if applicable.		% ranges
D.	Estimate the percentage range of compatibility of all your space-related product/service lines (U.S. Government- and commercial) to your non-space related product/service lines, if applicable.		% ranges
E.	Is your organization <b>capable</b> of providing specialty, low-volume or one-time, space-related products/services to the U.S. Government at a reasonable cost, while maintaining your current business operations?		
	Is your organization <b>willing to</b> provide specialty, low-volume or one-time, space-related products/services to the U.S. Government at a reasonable cost, while maintaining your current business operations?		
	Are there steps that the U.S. Government can take to make the provision of specialty, low-volume or one-time, space-related products and services more attractive to your company? Explain your response below.		
F.	Does your organization have effective avenues through which you are able to present innovative products, services, and technologies to the U.S. Government? Explain your response below.		
G.	Has your company ever received a rated order (DO or DX) from a U.S. Government agency? A rated order means a prime contract, a subcontract, or a purchase order in support of an approved program issued in accordance with the provisions of the Defense Priorities and Allocation System (DPAS) regulations (15 CFR part 700).		
Comments:			
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>			

Section 11.a		Demand and Production			
A.	On a scale from 1 to 5, what is your organization's vulnerability to large variability of <b>U.S. Government demand</b> for space-related products/services over time? (1 = no vulnerability; 5 = very high vulnerability). Explain your reasoning below. If this is not applicable to your company, select 'Not Applicable' from the drop-down.				
B.	On a scale from 1 to 5, what is your organization's vulnerability to large variability of <b>commercial demand</b> for space-related products/services over time? (1 = no vulnerability; 5 = very high vulnerability). Explain your response below. If this is not applicable to your company, select 'Not Applicable' from the drop-down.				
C.	From the list below, select the potential impacts a sudden decrease in direct and/or indirect U.S. Government space-related demand would have on your organization:				
	Decreased capital expenditures		Pursuit of new product lines		
	Decreased research & development expenditures		Pursuit of other non-U.S. customers		
	Disproportionate reduction in sales revenue		Pursuit of other U.S. customers		
	Elimination of all participation in U.S. Government contracts		Reduced participation in U.S. Government contracts		
	Increased product/service costs		Reduction or elimination of particular product lines		
	Loss of company viability or solvency		Sale of key production equipment		
	Loss of personnel with key skills		Other (specify)		
	Other (specify)		Other (specify)		
	Comments:				
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>					

Section 11.b		Demand and Production (cont.)	
A.	Has variability of demand from U.S. Government organizations for space-related products/services <b>adversely impacted</b> your organization's desire to continue to directly or indirectly serve these customers? Explain your response below.	Significantly/Somewhat/Not at All/Not Applicable	
B.	From 2008-2011, indicate if your organization experienced an increase, decrease, or no change in space-related customer demand for the following activities that you provide, if applicable. Explain your response below.		
	Distribution/brokerage/reseller/retail	Increase in demand	
	Inspection and quality control	Decrease in Demand	
	Integration (product, systems integration)	No change	
	Information technology (software, hardware, installation)	Not applicable	
	Maintenance/aftermarket/repair/refurbishing services		
	Manufacturing (including assembly)		
	Manufacturing systems development and management		
	Material finishing (machining, coating, plating, heat treating, etc.)		
	Material preparation (casting, forming, molding, forging, etc.)		
	Product and design engineering (tooling, new processes, etc.)		
	Professional services (legal, accounting, consulting, etc.)		
	Research and development		
	Raw materials provider		
	Testing/evaluation/validation		
Other services not specified elsewhere on this list			
Comments:			
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>			

**Section 12**

**Sales**

Provide your organization's 2008-2011 U.S. and non-U.S. sales information and projected 2012-2016 sales trend information. Calendar year data is preferred. Estimates are acceptable.

Note: **Ensure your source of sales data is consistent with your response to Section X, Question X.** In other words, if you have declared this to be a Division/Business Unit-level response, this section should contain Division/Business Unit-level data.

Source of Sales Data:		
Reporting Schedule:		

"U.S." means U.S. domestic sales; "Non-U.S." means export sales from U.S. locations		Record in \$ Thousands, e.g. \$12,000.00 = survey input \$12									
		2008		2009		2010		2011		2012-2016	
		U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
A.	Total Sales, all Customers (in \$)										
B.	Total Non-Government Sales <small>(as a % of part A)</small>										
C.	Total Government Sales <small>(as a % of part A)</small>										
D.	Total Space-Related Sales (in \$)										
E.	U.S. Government Space-Related, Defense Sales <small>(as a % of part D)</small>										
F.	U.S. Government Space-Related, Non-Defense Sales <small>(as a % of part D)</small>										
G.	Commercial Space-Related Sales <small>(as a % of part D)</small>										

Comments:	
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**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

**Section 13.a****Financials**

Report select line items from your organization's financial statement for years 2008-2011. From the drop-down indicate whether the reported income statement and balance sheet select line items are Business Unit/Division or Corporate/Whole Organization financials.

Note: **Universities should not provide financial information.** Please skip to Section X.

Note: **Ensure your source of sales data is consistent with your response to Section X, Question X.** In other words, if you have declared this to be a Division/Business Unit-level response, this section should contain Division/Business Unit-level data.

Source of Financial Line Items:					
Reporting Schedule:					
Income Statement (Select Line Items)		Record in \$ Thousands, e.g. \$12,000.00 = survey input of \$12			
		2008	2009	2010	2011
A.	Net Sales (and other revenue)				
B.	Cost of Goods Sold				
C.	Total Operating Income (Loss)				
D.	Earnings Before Interest and Taxes				
E.	Net Income				
Balance Sheet (Select Line Items)		Record in \$ Thousands, e.g. \$12,000.00 = survey input of \$12			
		2008	2009	2010	2011
A.	Cash				
B.	Inventories				
C.	Total Current Assets				
D.	Total Assets				
E.	Total Current Liabilities				
F.	Total Liabilities				
G.	Retained Earnings				
H.	Total Owner's Equity				
Comments:					
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>					

<b>Section 13.b</b>		<b>Financials (cont.)</b>
Use the space below to qualify with narrative any anomalies, transactions, or non-recurring events reflected in your financial statement line items, e.g. reporting restatement, merger and acquisition, Chapter 11, SEC investigation, etc.		
A.	2008	
B.	2009	
C.	2010	
D.	2011	
Comments:		
<b>BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act</b>		

**Section 14.a Research and Development**

Record your organization's total research and development (R&D) dollar expenditures and the percentage of total R&D expenditures for all operations at this survey's reporting level. Then, indicate both the type of R&D performed, by percent allocation, and your organization's R&D funding sources, by percent of total R&D dollars sourced.

Note: If your organization's annual Total R&D Expenditures and Total R&D Funding Sources do not match, explain the discrepancy in the comment box.

Note: **Ensure your source of R&D data is consistent with your response to Section X, Question X.** In other words, if you have declared this to be a Division/Business Unit-level response, this section should contain Division/Business Unit-level data.

Source of R&D Data:					
R&D Reporting Schedule:					
R&D Expenditures		Record \$ in Thousands, e.g. \$12,000.00 = survey input of \$12			
		2008	2009	2010	2011
A.	1. Total R&D Expenditures				
	2. Basic Research (as a percent of 1)				
	3. Applied Research (as a percent of 1)				
	4. Product/Process Development (as a percent of 1)				
	5. Total of 2 - 4 (must equal 100%)	0%	0%	0%	0%
	6. % of Total R&D Expenditures relating to space-related business lines				
R&D Funding Sources		Record \$ in Thousands, e.g. \$12,000.00 = survey input of \$12			
		2008	2009	2010	2011
B.	1. Total R&D Funding Sources				
	2. Internal/Self-Funded/IRAD (as a percent of 1)				
	3. Total Federal Government (as a percent of 1)				
	4. Total State and Local Government (as a percent of 1)				
	5. Universities - Public and Private (as a percent of 1)				
	6. U.S. industry, venture capital, non-profit (as a percent of 1)				
	7. Non-U.S. investors (as a percent of 1)				
	8. Other (specify)				
Comments:					

**BUSINESS CONFIDENTIAL - Per Section 705(d) of the Defense Production Act**

Section 14.b		Research & Development (cont.)		
A.	Have your organization's R&D expenditures been adversely impacted by reductions in U.S. Government space-related spending?	Significantly Impact/Moderate Impact/Little Impact/No Impact/Not Applicable		
B.	Do you anticipate your organization's R&D expenditures to be adversely impacted in the future by reductions in U.S. Government space-related spending? Explain your response below.	Significantly Impact/Moderate Impact/Little Impact/No Impact/Not Applicable		
C.	Identify the number of <b>space-related</b> Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) contracts your organization has participated in by phase since 2008.			
		Phase I	Phase II	Phase III
	SBIR Contracts			
	STTR Contracts			
D.	Has your organization had difficulty in securing private funding in order to successfully bring <b>space-related</b> research and development projects to market? If "Yes," explain below.			
Comments:				



**Section 15 Capital Expenditures**

Record your organization's capital expenditures corresponding to the select categories for all operations at this survey's response level.

Note: **Ensure your source of capital expenditure data is consistent with your response to Section X, Question X.** In other words, if you have declared this to be a Division/Business Unit-level response, this section should contain Division/Business Unit-level data.

Source of Capital Expenditure Data:					
Capital Expenditure Reporting Schedule:					
Capital Expenditure Category		Record in \$ Thousands, e.g. \$12,000.00 = survey input of \$12			
		2008	2009	2010	2011
A.	Total Capital Expenditures				
B.	Machinery, Equipment, and Vehicles (as a percent of 1)				
C.	IT, Computers, Software (as a percent of 1)				
D.	Land, Buildings, and Leasehold Improvements (as a percent of 1)				
E.	Other (specify)				
F.	Other (specify)				
G.	% of Total Capital Expenditures relating to space-related business lines				
C.	Have your organization's capital expenditures been adversely impacted by reductions in U.S. Government space-related spending?				Significantly Impact/Moderate Impact/Little Impact/No Impact/Not Applicable
D.	Do you anticipate your organization's capital expenditures to be adversely impacted in the future by reductions in U.S. Government space-related spending? Explain your response below.				Significantly Impact/Moderate Impact/Little Impact/No Impact/Not Applicable
Comments:					

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**Section 16.a**

**Employment**

Record the total number of full-time equivalent (FTE) employees in your **U.S.-based operations** for the 2008-2011 period. Then, estimate the percentage of these employees that perform the professional occupations indicated in parts b-j. Next, estimate the percentage of your employees that work on space-related applications, followed by those who perform functions that are STEM-related (see definitions).

Do not double count personnel who may perform cross-operational roles. Estimates are encouraged.

Note: **Ensure your source of employment data is consistent with your response to Section X, Question X.** In other words, if you have declared this to be a Division/Business Unit-level response, this section should contain Division/Business Unit-level data.

Source of Workforce Data:						
Reporting Schedule:						
A.	Professional Occupations		2008	2009	2010	2011
	a.	Total Full Time Equivalent (FTE) Employees	#	#	#	#
	b.	Administrative, Management, & Legal Staff	%	%	%	%
	c.	Facility & Maintenance Staff				
	d.	Information Technology Professionals				
	e.	Marketing & Sales				
	f.	Engineers, Scientists, and R&D Staff				
	g.	Production Line Workers				
	h.	Testing Operators, Quality Control, & Support Technicians				
	i.	Other (specify)				
	j.	Other (specify)				
B.	Estimate the percentage of your employees that currently work on space-related products/services:				%	
C.	Estimate the percentage of your employees that perform functions that are STEM-related:				%	
Comments:						

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**Section 16.b Employment (cont.)**

Provide the number of your organization's current staff that fall within the functions and age ranges listed in the table below.

Note: Non-U.S. citizens include Green Card and H1-B Visa Holders.

		< 30 Years Old	30 to 40 Years Old	40 to 50 Years Old	50 to 60 Years Old	> 60 Years Old
A.	a. U.S. Citizens - Engineers, Scientists, and R&D Staff					
	b. Non-U.S. Citizens - Engineers, Scientists, and R&D Staff					

B.	For your organization, identify the top professional occupations that are the most difficult to hire and retain.	Difficult to Hire	Difficult to Retain

C. How many vacancies for positions related to technical production and/or design-related work does your organization currently have that remain unfilled? Please explain any difficulties in filling their vacancies below.

D. Identify any unique space-related skills and/or competencies that your organization may have. Identify the general type of skill and/or competency from the drop-down menu then describe it in the right hand box.

		Type of Skill or Competency	Explanation
D.	1.		
	2.		
	3.		
	4.		
	5.		

Comments:

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**Section 17**

**Obstacles Affecting Long-Term Viability**

Identify the top five issues and challenges affecting the long-term viability of your organization's product line(s) or service(s). Select five of the issues/challenges below, ranking them 1 to 5, with 1 being your top concern.			
A.	Barriers to entry in the commercial space market		Pension Costs
	Buy American Act Waivers		Proposed cuts to U.S. Government space programs
	Counterfeit Parts		Proximity to Customer
	Domestic Competition		Proximity to Supplier
	Environmental Regulations/Remediation		Qualifications/Certifications
	Export Controls/ITAR Regulations		R&D Costs
	Foreign Competition		Skills Retention
	Foreign Subsidies/Import Restrictions		Taxes
	Government Acquisition Process		U.S. Material Availability
	Government Purchasing Volatility		U.S. Supplier Reliability
	Government Regulatory Burden		Variability of Demand
	Healthcare		Other (specify)
	Non-U.S. Material Availability		Other (specify)
	Non-U.S. Supplier Reliability		Other (specify)
Labor Costs		Other (specify)	

There are many federal and state government programs and services available to assist your organization to better compete in the global marketplace. If your organization would like more information regarding these government programs, select the specific areas of interest below. The Commerce Department will follow-up with your organization regarding your selections.			
B.	Manufacturing technology development (including acquiring, licensing, and/or commercializing federally developed technologies)		Product/service development (including manufacturing standards, processes, and practices)
	R&D programs		Financing (access to capital, loans, etc.)
	Technology transfer		Training opportunities
	Business development (joint ventures, new markets, etc.)		Patents and trademarks
	Export opportunities		Energy and environmentally conscious manufacturing
	Export licensing (ITAR/EAR)		Government procurement guidelines and e-commerce
	Marketing assessments skills		Other (specify)

Comments:

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**Section 18****Certification**

The undersigned certifies that the information herein supplied in response to this questionnaire is complete and correct to the best of his/her knowledge. It is a criminal offense to willfully make a false statement or representation to any department or agency of the United States Government as to any matter within its jurisdiction (18 U.S.C.A. 1001 (1984 & SUPP. 1197))

Organization Name

Organization's Internet Address

Name of Authorizing Official

Title of Authorizing Official

E-mail Address

Phone Number and Extension

Date Certified

In the box below, provide any additional comments or any other information you wish to include regarding this survey assessment.

How many hours did it take to complete this survey?

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