

AEROSPACE RECOMMENDED PRACTICE

SAE ARP9009

Issued 2006-01

Aerospace Contract Clauses

RATIONALE

This Aerospace Recommended Practice document standardizes, to the greatest extent possible, individual contract Quality requirements for the aerospace industry. These clauses are intended to be used as stand-alone requirements or with ISO 9001:2000 or AS9100 - Aerospace Quality Management System Requirements.

FOREWORD

To assure customer satisfaction, aerospace industry organizations must produce, and continually improve, safe, reliable products that meet or exceed customer and regulatory agency requirements. The globalization of the aerospace industry, and the resulting diversity of regional/national requirements and expectations, has complicated this objective. End-product organizations face the challenge of assuring the quality of, and integrating, product purchased from suppliers throughout the world and at all levels within the supply chain. Aerospace suppliers and processors face the challenge of delivering product to multiple customers having varying quality expectations and requirements.

This document standardizes, to the greatest extent possible, individual contract requirements for the aerospace industry. The establishment of common requirements, for use at all levels of the supply-chain, by organizations around the world, should result in improved quality and safety, and decreased costs, due to the elimination or reduction of organization-unique requirements and the resultant variation inherent in these multiple expectations.

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INTRODUCTION

General:

In order to achieve the intended results in a customer-supplier relationship per clause 7.2 of ISO 9001:2000 there has to be a complete understanding of the expected outcomes in the procurement process of a product, process or service. One of the unintentional effects of multiple organizations, procuring similar items, is that different organizations view the same requirements in different ways. These differing views tend to cause variation on the part of the producer of a product, part, process or service. This recommended practice, takes many of the most common contractual requirements found in the aerospace and defense industries and reduces them to common terms that are clear and when used by procurement activities will reduce the variability on the part of producers in being able to fulfill the requirements. The clauses included in this document should be used "as presented" with very little modification. They may be used as a separate attachment to a purchase order or contract or they may be embedded in a set of standard terms and conditions of an organization's contracts. The 'contract clauses' should be modified or deleted, as required, depending on the type and complexity of the procurement. There is a matrix of associations with other aerospace quality standard requirements include in this document.

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1. SCOPE:

1.1 General:

This SAE Aerospace Recommended Practice (ARP) specifies for quality requirements that are additive to a procurement document or contract, where an organization:

- a. needs to provide additional guidance for suppliers and other organizations in the delivery of products, goods and services in accordance with stated quality demands, and
- b. needs to provide information in addition or in absence of existing quality system requirements to provide the assurance of conformity to customer and applicable regulatory requirements.

NOTE: In this ARP, the term 'product' applies only to the product intended for, or required by, a customer.

1.2 Application:

This Aerospace Recommended Practice is recommended for use by all contracting organizations that externally procure products, parts and services from other organizations. All requirements of this ARP are typically generic and are intended to be applicable to all organizations, regardless of type, size and product provided.

2. NORMATIVE REFERENCE:

The following normative document contains provisions that through reference in this text, constitute provisions of this ARP. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this ARP are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to apply. Members of ISO (**International Organization for Standardization**) and IEC (**International Electrotechnical Commission**) maintain registers of currently valid International Standards. Society of Automotive Engineers maintain registers of currently valid Aerospace Standards.

ISO 9000:2000, Quality management systems - Fundamentals and vocabulary.

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3. TERMS AND DEFINITIONS:

For the purposes of this ARP, the terms and definitions given in ISO 9000 apply.

3.1 Nonconformance:

A condition of any article, material or service in which one or more characteristics do not conform to requirements specified in the contract, drawings, specifications, or other approved product description. Includes failures, discrepancies, defects, anomalies, and malfunctions.

3.2 Rework:

Used when an article can be made to conform to drawing requirements. Detailed instructions must be included or referenced.

3.3 Repair:

Used when the nonconforming article, material or service can be corrected to a usable condition, although its condition will not be identical with drawing/specification requirements.

3.4 Shelf Life:

A predetermined period of time that a material or item retains its original characteristics and operational capacity and is further defined to encompass the Date of Expiration (DOE) and the time span from Date of Manufacture (DOM), Date of Shipment (DOS), Date of Receipt (DOR) or cure date to the installation or application date.

4. CONTRACT CLAUSES:

4.1 Quality Management System Related Contract Clauses:

4.1.1 Quality Management System Requirements:

4.1.1.1 Guidance: For organizations designing, manufacturing, and or conducting critical components, major sub-assemblies, and assemblies of aerospace products the requirements of AS9100 should be utilized.

For organizations providing simple components, standard parts, catalogue items or support services, AS9100 or ISO 9001 should be used.

For organizations providing piece parts, and/or individual items manufactured to a specification/standard, necessary provision shall be individually established to assure the quality of the product that is received.

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For organizations providing maintenance, repair or overhaul of product already placed in service the requirements of AS9110 should be utilized.

For organizations that are distributors of parts or products that go into aerospace products the requirements of AS9120 should be utilized.

4.1.1.2 AS9100 Clauses: When specifying compliance to AS9100 the clause shall read either:

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9100 Quality Management Systems - Aerospace - Requirements. Independent certification/registration is not required."

or

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9100 Quality Management Systems - Aerospace - Requirements. Independent certification/registration is required under the Aerospace Industry controlled AS9104 process."

Organizations that obtain certification/registration to AS9100 and subsequently changes certification/registration bodies (CRB), loses its registration status, or is put on notice of losing its registration status, shall notify its customer's procuring organization(s) within three days of receiving such notice from the organization's registration body (CRB)."

4.1.1.3 ISO 9001 Clauses: When specifying compliance to ISO 9001 the clause shall read either:

"The organization shall have a quality management system that complies with International Organization for Standardization document ISO 9001 - Quality Management System Requirements. Independent certification/registration is not required."

or

"The organization shall have a quality management system that complies with International Organization for Standardization document ISO 9001 - Quality Management System Requirements. Independent certification/registration is required under the authority of a recognized Accreditation process that is recognized by the International Accreditation Forum (IAF) requirements."

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Organizations that obtain certification/registration to ISO 9001 and subsequently changes certification/registration bodies (CRB), loses its registration status, or is put on notice of losing its registration status, it shall notify its customer's procuring organization(s) within three days of receiving such notice from the organization's registration body (CRB)."

4.1.1.4 AS9110 Clauses: When specifying compliance to AS9110 the clause shall read either:

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9110 Quality Management Systems - Aerospace - Requirements for Maintenance Organizations. Independent certification/registration is not required."

or

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9110 Quality Management Systems - Aerospace - Requirements for Maintenance Organizations. Independent certification/registration is required under the Industry controlled AS9104 process."

Organizations that obtain certification/registration to AS9110 and subsequently changes certification/registration bodies (CRB), loses its registration status, or is put on notice of losing its registration status, shall notify its customer's procuring organization(s) within three days of receiving such notice from the organization's registration body (CRB)."

4.1.1.5 AS9120 Clauses: When specifying compliance to AS9120 the clause shall read either:

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9120 Quality Management Systems - Aerospace - Requirements for Stockists/Distributors. Independent certification/registration is not required."

or

"The supplier shall have a quality management system that complies with Society of Automotive Engineers (SAE), AS9120 Quality Management Systems - Aerospace - Requirements for Stockists/Distributors. Independent certification/registration is required under the Industry controlled AS9104 process."

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Organizations that obtain certification/registration to AS9100 and subsequently changes certification/registration bodies (CRB), loses its registration status, or is put on notice of losing its registration status, shall notify its customer's procuring organization(s) within three days of receiving such notice from the organization's registration body (CRB)."

4.1.2 Calibration System:

4.1.2.1 Guidance: This clause shall be imposed to assure the organization has a compliant calibration system in place to control and validate measuring and test equipment used to assure deliverables meet prescribed customer requirements. This clause may be used as a 'stand alone' requirement or used in conjunction with ISO 9001, AS9100 or AS9110 when requirements stated therein are not sufficient.

4.1.2.2 Clause: "The supplier shall have a documented calibration system that meets the requirements of ISO 10012, 'Quality assurance requirements for measuring equipment', or the American National Standard Institute (ANSI)/National Conference of Standards Laboratories (NCSL) Z540-1, 'General Requirements for Calibration Laboratories and Measuring and Test Equipment' standards".

4.1.3 Configuration Management System:

4.1.3.1 Guidance: Configuration management should be specified to the extent appropriate for the product and/or service being contracted. The main criterion is to select those items whose performance parameters and physical characteristics can be separately managed to achieve the overall end use performance of the item. Other selection criteria, which should be applied, are:

- Criticality in terms of high risks, safety, mission success, etc.;
- New or modified technology, design or development;
- Interfaces with other items;
- Procurement conditions;
- Logistic and maintenance aspects.

For products and services involving detailed configuration control requirements the contract should specify implementation of a fully developed configuration management system, reference ISO 10007 as guidance.

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For products and service that involve software, configuration management requirements for software shall also be identified. This clause may be by itself or used in conjunction with ISO 9001 or AS9100 when those requirements are not sufficient. This clause invokes and details the requirement of AS9100 clause 4.3.

4.1.3.2 Clause: "Supplier shall be responsible for controlling/tracking changes to parts and components manufactured to ensure that the end product meets specified functional and physical requirements of the contract. This includes any part or component manufactured to customers' or vendors' drawings, specifications, or special process procedures. The organization and the customer shall document agreements as to the extent of customer involvement in configuration management to be applied to this contract/purchase order. At a minimum, with each shipment, organization shall submit "configuration documents", which define the requirements, designs, build/production and verification for a configuration controlled item. This record shall be signed and dated by an official of the organization's Quality department, and in addition to the aforementioned required information, shall include the following minimum requirements:

- Organization's Contract/Purchase Order number
- Line item number (if applicable)
- Part number (of deliverable item and all traceable/repairable sub-tiered parts)
- Serial number (Traceability as required per contract/purchase order)
- Lot number (Traceability as required per contract/purchase order)
- Drawing number (for Drawings related to deliverable item and all traceable/repairable sub-tiered parts)
- Revision level (baseline configuration of drawing to which hardware was built)
- Engineering order(s) (or equivalent drawing changes as applicable)
- Customer approved deviations and waivers (as applicable)"

4.1.3.3 Deliverable submittal: Configuration Management Plan

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4.1.4 Nonconformance Control and Reporting:

4.1.4.1 Guidance: Requirements for providing data on nonconformances should be specified as a data item deliverable. Where possible, use of an organization's internal tracking and reporting system should be considered. This clause is intended to address nonconformance reporting, and the fact that MRB is not being delegated. This clause would normally be used in a procurement where flow down of a stand-alone problem reporting system requirement does not make sense on a piece part or component level flight hardware or GSE fabrication). This clause is not intended for use on major supplier contracts. Request for MRB authority should be reviewed on a case-by-case basis. This clause is not to be used with AS9100 or ISO 9001 quality systems.

4.1.4.2 Clause: "Per this requirement the **customer grants no authority** to disposition product or process nonconformances to the organization or its sub-tier suppliers. Repair is not allowed under this clause.

The controls and related responsibilities for dealing with nonconforming product shall be defined in a documented procedure. The organization's documented procedure shall also define the responsibility for review and authority for the disposition of nonconforming product and the process for approving personnel making these decisions.

When a nonconformance is discovered, a review process shall be initiated with the identification and documentation of the nonconformance. This review shall be the initial step performed by the organization to determine if the nonconformance needs to be reported to the customer (see below), and to determine if the nonconformance is minor and can be re-worked to a condition that completely conforms to the drawing or specification requirements.

This review does not negate the requirement to identify, segregate, document, and report and disposition nonconformances.

Nonconformances shall be reported to the customer as soon as it is detected and determined not to be re-workable and may be salvageable. When notification is required, notification shall be within 3 working days after the nonconformance is discovered. This requirement applies to all procurements.

Any nonconformance discovered by the organization, on products in their control, shall be documented by the organizations approved method of nonconformance reporting. AS9131 is an acceptable means of reporting. This shall include a detailed description of the nonconformance; location (by drawing reference point, hardware reference point, clock location, etc.); and exact callout of the violation by drawing or specification requirement (including sub-paragraph or illustration number). It shall also list what type of inspection revealed the discrepant condition, and what, if any, subsequent actions were taken prior to disclosure. Dimensional violations shall include "should be" and "is" dimensions, and tool(s) calibration traceability numbers.

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The organization shall ensure that product, which does not conform to product requirements, is identified and controlled to prevent its unintended use or delivery until dispositioned or scrapped after review.”

4.1.4.3 Deliverable submittal: Nonconformance Control Plan and NCR submittals

4.1.5 Flow Down Requirements:

4.1.5.1 Guidance: This clause is imposed when a Quality system is **not** flowed down to the organization or the sub-tier supplier. When specifying the need for customer requirements to be flowed down to lower level suppliers the organization shall determine the applicable requirement for flow down based on the procured product, process or service. This requirement may be included as part of the contract terms and conditions. This clause is not to be use with AS9100 or ISO 9001 quality systems.

4.1.5.2 Clause: “This requirement mandates that all applicable requirements that are invoked or applied to the customer’s purchasing document, including this clause, shall be flowed down to the organization’s sub-tier suppliers.”

4.1.6 Record Retention:

4.1.6.1 Guidance: This requirement shall be flowed down to all levels of configuration managed item. Record retention is expensive, and use of this clause should be based on the future need of data retrieval, and the program risk associated with not having access to the documentation.

The 10-year retention time has been identified as a default requirement, it is subject to modification based on company policy/business need. It is recommended that 10 years be used in most applications, if it is anticipated that heritage information is necessary to support current and future products (for example spare parts usage). If it is determined that 10 years is not the appropriate retention time based on business needs, and/or operational results of the product, then this should be communicated and the retention time adjusted accordingly.

Data item deliverables for the contract should be reviewed to assure that verification data related to spare or unused parts is also addressed if it is anticipated that this data may be required at a later date. The inclusion of screening and qualification data with spare EEE parts is an example.

This clause may be used in conjunction with AS9100 or ISO 9001 quality systems to specify specific retention periods or as a ‘stand-alone’ requirement. This clause invokes the requirement in AS9100 clause 4.2.4.

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- 4.1.6.2 Clause: "Organization and the organization's subcontractors shall maintain verifiable objective evidence of all inspections and tests performed, results obtained and dispositions of non-conforming articles. These records shall be identified to associated articles, including heat and lot number of materials, unit or lot serialization. These records shall be made available to customer and/or government representatives upon request and shall be retained in a safe, accessible location for a period of 10 years after date of delivery or as defined in the contract.

The organization's records associated with the manufacture of serialized or lot controlled articles will provide for continued traceability of serial numbers or lot number identification through all phases of manufacture, commencing with the raw material and continuing through final acceptance of the end item.

Records held for the required retention period shall not be destroyed without Customer's written concurrence."

4.1.7 Control of Documents:

- 4.1.7.1 Guidance: This requirement is to be invoked when the organization's quality system documentation must be approved by either a government entity (DoD, FAA or NASA) or the customer has need to assure that the quality system has the necessary components and wants to be informed of any changes thereto. This invokes the requirement in AS9100 clause 4.2.3.

- 4.1.7.2 Clause: "Acceptance of this contract/purchase order, will require any changes that are made to the organization's quality system documentation shall be reviewed and approved by the customer and or government prior to being enacted. The exact document(s) that must be approved is subject to agreement between the customer and the organization."

4.2 Customer Specific Contract Clauses:

4.2.1 Right of Access:

- 4.2.1.1 Guidance: To be used when specifying that the customer has a right to access a supplier or subcontractor's facility and source inspection may or may not be a requirement. No shipments are to be held for government or customer inspection unless notification is received by the organization prior to shipment. This requirement may be included as part of the contract terms and conditions. May be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100.

NOTE: Reference Federal Acquisition Regulation 46.

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4.2.1.2 Clause: "Work under this purchase order/contract is subject to government or customer surveillance/inspection at the organization's facilities and sub-tier supplier's facility. If a surveillance/inspection is to be conducted by the government or customer the organization will be notified prior to this event."

4.2.2 Government Source Inspection (GSI):

4.2.2.1 Guidance: Each procurement situation should be evaluated based on the unique attributes involved. Decisions to specify Government Source Inspection (GSI) on contracts should include, but are not limited to the following considerations:

- Inspection Type: Supplies, Services, Research and Development, Construction
- Contract Type: (Fixed Price, Fixed-Price with Retroactive Price re-determination, Fixed-Price Incentive Based or Cost Reimbursement)
- Identification of Contract delivery Risks
- Analysis of each Risk Impact related to Safety, Cost, Schedule, and Performance

Support requirements, operating channels and procedures, and any other requirements must be thoroughly understood prior to transmitting official Letters of Delegation and/or task orders. The information provided within these requirements can apply to subcontracts as well as the prime contract. When there are multiple delegations and/or tasks (including those from other government locations) at a contractor's facility, duplication of effort must be eliminated where possible. The following considerations should also be included when using the formal risk management process in planning surveillance functions.

- a. Contract, subcontract, and purchase order quality requirements.
- b. End-use criticality of suppliers and services.
- c. Current procedures and general operations, particularly those applicable to supplies and services similar to those being procured.
- d. Technical direction to be given to the contractor.
- e. Functions to be delegated or tasked and the performance desired.
- f. Proposed support, including special skills.
- g. Customer surveillance to be accomplished at the contractor's facility by government personnel.

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- h. Channels of communication.
- i. Review of past history of the contractor, results of evaluations of the contractor and contractor's programs (quality assurance, risk management, etc.), known contractor's deficiencies, and contractor's progress in correcting deficiencies.
- j. Unique training and certification requirements.
- k. Re-delegation and flow down of requirements (as applicable).
- l. Interface situations arising from partial delegations or other delegations in the same facility.
- m. Response time for mandatory inspections

May be used as a 'stand-alone' requirement or used in conjunction with ISO 9001 or AS9100.

NOTE: Reference Federal Acquisition Regulation 46.3 and 46.4.

- 4.2.2.2 Clause: "All work on this purchase contract is subject to inspection and test by the government at any time and any place. Government inspection is required on this order prior to shipment from organization's facility. Government inspections performed will be determined by the delegated government inspection representative and may be conducted during processing, fabrication, or final inspection. Upon receipt of this purchase contract, promptly notify the government representative who normally services your plant so that appropriate Government inspection planning can be accomplished. If the government does not service your facility for inspection and/or the area government inspection representative or agency cannot be located, immediately notify the customer.

NOTE: Do not proceed with fabrication/manufacture processing until government mandatory inspection points (GMIPs) are added to organization's manufacturing planning. GMIPs shall not be by-passed unless authorized in writing by the government inspection representative. Organization shall request and include the documents specified in the government delegation, in the shipment.

The government's request for source inspection shall specify the period and method for the advance notification and the Government representative to whom it shall be furnished. Request shall not require more than 2 workdays of advance notification if the government representative is resident in the contractors plant, nor more than 7 workdays in other instances.

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The organization, without additional charge, shall provide all reasonably required facilities and assistance (applicable drawings, specifications, change orders, inspection and/or test equipment) for the U.S. government representative to perform their duties.

The organization shall ensure that government inspection acceptance is evident for every individual GMIP and that completion of government inspection is evident on Organization's shipping document/packing list. Evidence may be the signature of government inspection representative with printed name and office, or application of the representative's stamp.

The Government shall accept or reject supplies as promptly as practical after delivery, unless otherwise provided in the contract. Government failure to inspect and accept or reject the supplies shall not relieve the Contractor from responsibility, nor impose liability on the Government, for nonconforming supplies.

When manufacturing processing affected by GMIPs is subcontracted by organization, the provisions of this Clause shall be included in the organization's purchase order verbatim.

4.2.3 Customer Source Inspection (CSI):

4.2.3.1 Guidance: This clause should be used when the decision, for any number of reasons, has been made to inspect at the organization's facility. May be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100. This clause invokes the requirements in AS9100 clause 7.4.3.

4.2.3.2 Clause: "Customer source inspection is required prior to shipment of articles from the organization's facility. Upon receipt of this order and prior to commencing work, promptly notify the customer's Procurement Quality Assurance Representative (PQAR) assigned to the organization's facility so the appropriate inspection plan can be coordinated.

In the event that a PQAR does not normally service the organization's facility, immediately notify the customer procurement representative to obtain a point of contact for the appropriate PQAR assignment.

Source inspection shall be conducted by the customer at the organization's facility or where designated in the order. The organization shall notify PQAR office a minimum of 5 working days in advance of the time the articles or materials are ready for inspection or test.

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The Organization shall make available to the PQAR all applicable drawings, specifications, procedures, statements of work, Customer's Order, test software, and changes thereto, related inspection and/or test equipment, and such other information as may be required to satisfactorily perform the inspections and tests required under this Order."

4.2.4 Change Authority:

4.2.4.1 Guidance: This clause is used when any of the listed conditions are critical to product quality. This clause probably should be part of standard terms and conditions. May be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100. This clause invokes the requirements in AS9100 clauses 7.3.7 and 7.5.1.2.

4.2.4.2 Clause: "This procurement is for a product, part or process that is critical in nature to the end item or vehicle. The Organization shall provide in writing advance notification to the Customer of any change(s) to tooling, facilities, materials or processes of the delivered item including sub-tier supplier changes. This includes, but is not limited to, fabrication, assembly, handling, testing, facility location or introduction of a new sub-tier supplier."

4.2.5 Critical Processes:

4.2.5.1 Guidance: Numerous processes performed to support aerospace products can have critical characteristics, and/or be considered a 'specialty process'. However, based on experience, knowledge, and risk considerations, some processes require an additional level of review and control. These are called Designated 'Critical Processes'.

Designated 'Critical Processes' are to be uniquely identified on the print, process specification or similar documentation and should be traceable to manufacturing operations.

Designating a process as "critical" may drive cost and impact schedule and this designation should be reserved for those processes, which have been determined to have high risk and would benefit from such a designation. Use of this clause should be coordinated with the contractor prior to use. May be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100. This clause invokes the requirements in AS9100 clause 7.5.1.2.

4.2.5.2 Clause: This procurement contains customer designated 'critical processes' the organization will notify the customer of proposed changes in process definition and, will obtain approval from the customer prior to implementing the change. Changes affecting processes, production equipment, tools and programs shall be documented. Procedures shall be available to control their implementation. This requirement for notification and approval extends to any sub-contracted operations performed on the defined 'critical processes', by or for the organization."

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4.2.5.3 Deliverable submittal: Process Procedures and Proposed Changes

4.2.6 Government Industry Data Exchange Program (GIDEP):

4.2.6.1 Guidance: Procurements are to be reviewed to determine if participation in the Government-Industry Data Exchange Program (GIDEP) and NASA Advisory Program (NAP) is appropriate. The following factors should be considered in this determination:

Type of Procurement - consider the commodity being purchased; generally contracts involving the manufacturing, distribution, test, and/or operations of critical/complex space flight related hardware/software product or services should require GIDEP reporting. Other types of activities, such as an administrative service support contract, do not require GIDEP reporting.

Acquisition Phase - consider the phase of the program and the utility of the GIDEP and NASA Advisory data to support that phase, generally activities after the conceptual design phase can benefit most from participation.

Dollar Value of Contract - consider the amount of the contract and the benefit to be obtained from participation or the risks of not participating. There is no cost to contractors to participate in GIDEP - There is a cost to review and evaluate information.

Prime contractors often have internal alert systems that provide equivalent exchange of information. Under these circumstances the prime is responsible for flow - down of the equivalent reporting requirements to applicable sub-tier suppliers, and for assuring sub-tier supplier compliance with the requirements.

4.2.6.2 Clause: "The contractor shall participate in the Government-Industry Data Exchange Program (GIDEP) in accordance with the requirements of the GIDEP S0300- BT-PRO-010 and S0300-BU-GYD-010, available from the GIDEP Operations Center, P.O. Box 8000, Corona, California 91718-8000. The contractor shall review all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories and GIDEP Agency Action Notices to determine if they affect the contractor's products/services provided to the customer. For those that affect the program, the contractor shall take action to eliminate or mitigate any negative effect to an acceptable level. The contractor shall generate the appropriate failure experience data report(s) (GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory) whenever failed or nonconforming items, available to other buyers, are discovered during the course of the contract."

4.2.6.3 Deliverable submittal: GIDEP Plan and GIDEP Dispositions

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4.2.7 Material Identification, Damage and Count:

4.2.7.1 Guidance: This Clause might be used for assuring proper identification and traceability on standard items in lieu of C of C requirement for purchasing Commercial-Off-The-Shelf (COTS) supplies that have no impact on product performance. This information might also be included in the purchase order terms and conditions section. This clause is not to be used in conjunction with ISO 9001 or AS9100.

4.2.7.2 Clause: "Each article delivered under this Order must be identified with a part number or other identification in agreement with the article ordered. All purchased materials and services are subject to inspection for compliance to this purchase order and all applicable quality clauses. No material or process substitutions, quantity variations or splits from the purchase order may be made without prior written authorization from the Customer."

4.3 Process Type Contract Clauses:

4.3.1 Electrostatic Discharge (ESD) Protection Program:

4.3.1.1 Guidance: When receiving parts that are ESD sensitive and are used in a critical application, then the organization providing the parts should have an ESD protection program in compliance with ANSI/ESD S20.20.

Parts sensitive to voltages less than 100 volts (e.g., unprotected gate oxide devices) require additional controls beyond those specified in ANSI/ESD S20.20 (i.e., double bagging).

When the part is being procured to an existing technical specification, it should be reviewed prior to applying this clause to ascertain the ESD control requirements imposed by the standard to determine if this clause is necessary.

Some military specifications (i.e., MIL-PRF-55182) contain incomplete ESD control requirements that must be further specified by the purchaser. For resistors procured to military specifications, refer to MIL-DTL-39032, Table I, to determine if the resistor being procured is ESD sensitive (ESDS). For other parts, refer to the part specification.

When the ESD sensitivity of a part or assembly is not known or not identified (e.g., inputs/outputs at black box level), the item shall be treated as ESD sensitive.

A copy of the ESD control plan is not recommended for inclusion as a data item deliverable under the contract.

NOTE: This clause is applicable for procurement of ESD sensitive electrical piece parts excluding electrically initiated explosive devices.

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4.3.1.2 Clause: "The organization shall document and implement an ESD Control Program in accordance with ANSI/ESD S20.20, ESD Association Standard for the Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices). Parts must be properly packaged and identified as required in ANSI/ESD-S20.20. All goods will be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, etc., for shipment. The packaging must be clearly labeled to indicate that it contains electrostatic sensitive goods. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive."

4.3.1.3 Deliverable submittal: ESD Protection Program Plan

4.3.2 Foreign Object Damage:

4.3.2.1 Guidance: This clause might be used for assuring the prevention, detection and removal of foreign objects during design, manufacture, assembly or shipping of an item. This clause can be used as a 'stand-alone' or can be used in conjunction with AS9100 for amplification of clause 7.5.1.i.

4.3.2.2 Clause: "For articles, particularly components and assemblies susceptible to foreign object damage, the organization shall ensure articles are free from foreign objects and foreign object damage resulting from processing or assembly and packaging operations. Use of NAS 410 standard for guidance is recommended."

4.3.3 Packaging, Handling and Labeling Requirements:

4.3.3.1 Guidance: Packaging requirements must be appropriate to the value and configuration (i.e., physical fragility, size and shape) of each ordered item. Standard industrial practices are acceptable for low value/raw bulk or configured raw materials (i.e., pipe, bar stock, rod, etc.).

The manufacturer's packaging for commercial off-the-shelf (COTS) parts typically provide adequate protect for their product (e.g., computers, hand-held multimeters, test equipment).

Special packaging shall be designated for electrostatic sensitive devices (ESD) and shall meet MIL-DTL-81705 requirements. High-value and build-to-print items (i.e., electronic, electro-mechanical or optical) assemblies shall be packaged per Engineering design requirements if specified. Attention to ESD, foreign object damage (NAS 412-FOD) and physical integrity must also be noted for all products.

May be used as a 'stand-alone' requirement in conjunction with ISO 9001 or AS9100 when invoking clause 7.5.5 of AS9100.

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4.3.3.2 Clause: "The organization shall be responsible for ensuring that items provided under this Contract/Purchase Order are packaged in such a manner that the dimensional integrity is preserved, contamination and corrosion are prevented, and no physical damage occurs. Packaging when specified shall be in accordance with the drawing, appropriate ASTM, MIL, or other applicable customer specified requirement and prevents damage, deterioration, substitution or loss in transit. The organization shall label the exterior of the package to ensure adequate identification of precautions needed to ensure the integrity of the product being shipped. The organization must specify the handling and shipping methods that ensure proper and on-time delivery without damage to the product. The organization shall ensure that special labeling requirements shall also be listed in the appropriate shipping documents and on each package."

4.3.4 Sampling Plans:

4.3.4.1 Guidance: This requirement is to be invoked when the organization's sampling inspection methodology must be approved by either a government entity (Defense, Aviation or Space Authority) or the customer has need to assure that the sampling plan has statistical validity and is properly constructed to offer the necessary level of risk acceptable for the products being produced. May be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100. This invokes the requirement in AS9100 clause 8.2.4.

4.3.4.2 Clause: "Acceptance of this contract/purchase order requires the organization to submit any sampling plans used for product acceptance to the customer for approval prior to use. This requirement is applicable to the organization and to the organization's sub-tier contractors. Sampling is not permitted until the sampling plans have been approved."

4.4 Required Documentation Contract Clauses:

4.4.1 First Article Inspection:

4.4.1.1 Guidance: First article inspection is typically required for instances when a production run will be performed, and subsequently all articles will not be fully inspected. May be used to perform conformity inspection documentation for the FAA.

For design/development programs, such as build of a single spacecraft or prototype hardware, the inspection, test, and engineering verification that is conducted during design development meets the intent of a first article inspection. For these types of activities this contract clause should not be used. This contract clause may be used in conjunction with ISO 9001 or AS9100 and invokes the AS9102 requirement that is not a requirement of AS9100.

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- 4.4.1.2 Clause: "The organization is required to perform first article inspection on the items in this contract/purchase order. First article inspections shall be in accordance with AS9102. The inspection records and data shall be per AS9102 and shall identify each characteristic and feature required by design data, the allowable tolerance limits, and the actual dimension measured as objective evidence that each characteristic and feature has been inspected and accepted by the organization's quality and/or inspection function. When testing is required, the parameters and results of the test shall be recorded in the same manner.

The first article inspection report must show evidence of acceptance by the organization's quality assurance representative. The first article(s) shall be produced on production equipment and using processes which will be utilized on production runs.

Additionally, the organization shall perform subsequent FAI(s) per the requirements of AS9102 (i.e., following every major tooling, every design change, and subsequent to any evident quality degradation for a specified part or article).

Records of all first article activity will be documented as required in AS9102, treated as quality/acceptance records, and made available to the customer if requested."

NOTE: When imposing a first article inspection clause, one or more of the following should be specified (reference AS9102):

Sub a DELIVERY OF FIRST ARTICLE INSPECTION RECORDS:

"The organization shall provide 1 reproducible copy of the first article records and first article report accompanied by variables data with the initial shipment."

Sub b RETENTION OF FIRST ARTICLE:

"The organization shall retain the first article(s) item as objective evidence and make them available to the customer upon request. Disposal of the first article item is prohibited until authorized by customer in writing."

Sub c DELIVERY OF FIRST ARTICLE:

"The organization is required to identify and deliver the first article item to customer for verification, as part of the contract/purchase order, prior to the shipment of any balance of said contract/purchase order, unless otherwise specified."

Sub d SOURCE INSPECTION OF FIRST ARTICLE:

"The customer's source inspection is to witness the first article inspection, or specific details of the first article inspection, as necessary."

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4.4.2 Special Process Certification:

4.4.2.1 Guidance: A 'Special Process' is defined as any process for production and service provision where subsequent monitoring or measurement cannot verify the resulting output. This includes any process where deficiencies become apparent only after the product is in use or the service has been delivered. Examples may include, but are not limited to, Heat Treat, Nondestructive test or inspection, chemical or metallic coatings (e.g., anodize, passivation), welding, unique or uncommon processes. This contract clause may be used 'stand-alone' or in conjunction with ISO 9001 or AS9100.

4.4.2.2 When specifying that a special process certification information must be provided for each product or deliverable one of the following clauses shall be invoked:

a. Option 1 - Certification of Special Process - Approved by supplier or Customer

"Fulfillment of this contract requires performance of special processes. Special processes shall be performed only by sources that have been surveyed and qualified/approved, by the organization and/or the customer. The organization shall provide to the customer upon request all documentation showing evidence of qualification of special processes and/or certification to perform special manufacturing, assembling, and test processing as required by the contract. The organization may elect to use only customer-approved sources.

A special process certification shall be provided with each shipment of item(s) delivered on this contract. Special Process Certifications may be in supplier format and shall include the following:

- Customer's Order number
- Part number(s)
- Serial and/or lot numbers, of the hardware processed (if applicable,)
- Material process specification and revision
- Objective evidence demonstrating compliance with the applicable process, (i.e., temperature charts and
- Hardness test results for heat treatment, destructive test results, etc.)
- A certification stating the special process was performed per the applicable drawing/specification requirements.
- Organization's name and address

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- When special processor is other than the Organization, provide a certification of compliance from the special processor stating the special process was performed per the applicable drawing/specification requirements. Certifications must include the processor's name, address and be signed and dated by a company official.
- Each certification must be signed and dated by a company official of the Organization and/or Processor attesting to the acceptance of the processes performed to the required specification(s).

The supplier shall retain all records associated with the selection and approval of supplier approved special process providers. Per contract or regulatory agency requirements, these records shall be made available to the Customer and/or regulatory agencies upon request. The supplier shall notify the Customer prior to destruction of records relative to this contract."

b. Option 2 - Use of Nadcap approved special processes

"Fulfillment of this contract requires performance of special processes. Special processes shall be performed only by sources that have been surveyed and qualified/approved, by Nadcap (National Aerospace and Defense Contractors Accreditation Program). The organization shall provide to the Customer upon request all documentation showing evidence of qualification of use of Nadcap approved special processes.

A special process certification shall be provided with each shipment of item(s) delivered on this contract. Special Process Certifications may be in supplier format and shall include the following:

- Customer's Order number
- Part number(s)
- Serial and/or lot numbers, of the hardware processed (if applicable)
- Special process specification and revision
- A certification stating the special process was performed per the applicable drawing/specification requirements.
- Nadcap Approval
- Organization's name and address

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- When special processor is other than the Organization, provide a certification of compliance from the special processor stating the special process was performed per the applicable drawing/specification requirements. Certifications must include the processor's name, address, Nadcap approval and be signed and dated by a company official.
- Each certification must be signed and dated by a company official of the Organization and/or Processor attesting to the acceptance of the processes performed to the required specification(s).

The supplier shall retain all records associated with the selection and approval of supplier approved special process providers. Per contract or regulatory agency requirements, these records shall be made available to the Customer and/or regulatory agencies upon request. The supplier shall notify the Customer prior to destruction of records relative to this contract."

c. Option 3 - Certification of Special Process - Approved by Customer only

"Fulfillment of this contract requires performance of special processes. Special processes shall be performed only by sources that have been surveyed and qualified/approved by the customer. The organization shall provide to the customer upon request all documentation showing evidence of qualification of special processes and/or certification to perform special manufacturing, assembling, and test processing as required by the contract.

A special process certification shall be provided with each shipment of item(s) delivered on this contract. Special process certifications may be in supplier format and shall include the following:

- Customer's order number
- Part number(s)
- Serial and/or lot numbers, of the hardware processed (if applicable)
- Material process specification and revision
- Objective evidence demonstrating compliance with the applicable process (i.e., temperature charts and
- Hardness test results for heat treatment, destructive test results, etc.)
- A certification stating the special process was performed per the applicable drawing/specification requirements.

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- Organization name and address
- When special processor is other than the organization, provide a certification of compliance from the special processor stating the special process was performed per the applicable drawing/specification requirements. Certifications must include the processor's name, address and be signed and dated by a company official.
- Each certification must be signed and dated by a company official of the organization and/or processor attesting to the acceptance of the processes performed to the required specification(s).

The supplier shall retain all records associated with the performance of special processes. Per contract or regulatory agency requirements, these records shall be made available to the customer and/or regulatory agencies upon request. The supplier shall notify the customer prior to destruction of records relative to this contract."

4.4.3 100 percent Inspection Reporting:

4.4.3.1 Guidance: This might apply when specifying that attribute inspection information must be provided for each product or deliverable item, purchasing machined parts to print, low volume, or when lot acceptance would not be applicable. Example: Typical report would be a CMM report. This clause is not to be used in conjunction with ISO 9001 or AS9100.

4.4.3.2 Clause: "The organization shall submit 1 reproducible copy of all inspection documentation stamped by the responsible inspector showing 100% inspection for all characteristics noted on the drawings, for all parts submitted under this contract/purchase order."

4.4.4 Shipping Documents:

4.4.4.1 Guidance: When shipping documentation must be provided for each product or deliverable this clause is specified, Packaging requirements clause is also needed (4.3.4). This may already be included in the contract terms and conditions. This contract clause may be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100.

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4.4.4.2 Clause: "Organization shall furnish Commercial Shipping Documents/Packing List, capable of being photographically reproducible through two additional reproductions, showing the following (as applicable):

- P.O. Number
- Part Number(s)
- Description
- Qty ordered
- Qty shipped
- Lot/Date Code/serialization (as applicable)
- Any handling constraints or cautions such as, but not limited to:
- Optics; open only in clean room environments.
- ESD sensitive items, open only at approved ESD workstation.
- Moisture sensitive components, open/store only in humidity controlled area.
- Shock sensitive components (shock monitoring should be specified if required)."

4.4.5 Certificate of Compliance - Products:

4.4.5.1 Guidance: When specifying that a Certificate of Conformance (C of C) must be provided for each product or deliverable, the organizations or suppliers format should be considered acceptable as long as it contains the information noted in the clause. When the government is making acceptance, additional provisions of certification of conformance may apply. This contract clause may be used as a 'stand-alone' requirement or in conjunction with ISO 9001 or AS9100.

NOTE: Reference Federal Acquisition Regulation section 52.246-15.