PURCHASE ORDER ATTACHMENT Q-201
SOFTWARE QUALITY SUBCONTRACTOR REQUIREMENTS
TASK DESCRIPTIONS - PURCHASE CATEGORY "A"

1. **SOFTWARE QUALITY PROGRAM**. This attachment establishes the software quality requirements to be applied during the acquisition, development and/or support of software purchase items. The attached Table, Task Description and Tailoring Notes page(s) identify the software quality requirements to be applied for those Software Purchase item(s) and Categories identified below.

   PURCHASE ITEM DESCRIPTION   Category
   1. _____   _____
   2. _____   _____
   3. _____   _____

2. **TAILORING REQUIREMENTS**. An "N" placed in the Purchase Category column indicates there is a note clarifying or modifying the task description in the Table (Attached) for the purchase item(s) associated with this order. Tailoring Notes are tied to the task description by indicating the Purchase Category and associated Task Number.

3. **TAILORING**. Should the Seller determine that further tailoring of the specified software requirements is needed, a written request for such changes must be submitted to the Buyer.

4. **DATA SUBMITTAL**. Seller shall submit required quality documentation, if any, as specified in the Buyer's purchase order and as further clarified in Task Note 18 herein.

5. **INTENDED USE**. It is intended that the Seller use, and augment if necessary, existing internal quality systems to satisfy the requirements of this attachment. This is permissible as long as the applicable policies and procedures do not conflict with any provision of Buyer's order.

6. **CLARIFICATION OF TERMS**. For purposes of this procurement, the following terms are used in the text:
   Seller   Buyer   Seller's Sub-Tier Supplier

7. **ACCEPTANCE**. Acceptance of this purchase order constitutes acceptance of the quality requirements stated herein.

PURCHASE ORDER ATTACHMENT Q-201 (continued)

TABLE

TASK	PO TASK REQUIREMENTS	PURCHASE CATEGORIES		
		A	**B**	**C**
	(Task Descriptions Attached)			
1.	Policy	x	x	
1.1	Software Quality System Self Assessment	x		
2.	Independence	x		
3.	Software Quality Program Plan	x	x	
4.	Corrective Action	x		
5.	Access by Contracting Agency	x	x	
6.	Program Plans and Procedures	x		
7.	Software configuration Management	x	x	
8.	Evaluation of Non-deliverable	x		
9.	Date Media Storage, handling, packaging & shipping	x	x	
10	Formal Reviews and FCA/PCA's	x		
11.	Product Certification	x	x	x
	Other Software Processes	x		
13.	Acceptance Testing	x	x	
14.	Non developmental Software	x		
15.	Supplier Controls	x		
16.	Management Reporting	x		
17.	Evaluation Reports	x		
18.	DATE SUBMITTAL REQUIREMENTS	x	x	

Category A   Developmental software is that being developed under a contract or project by a Seller (contractors or sub tier contractor) per requirements and/or specifications provided by Boeing Satellite Systems or its customer. The software may be deliverable or non-deliverable to a Boeing Satellite Systems customer.

Category B   A Seller's (supplier or sub-tier supplier) software that is being modified per specifications and/or requirements provided by Boeing Satellite Systems or a Boeing Satellite Systems Customer. The changes typically would be functional changes. The software may be deliverable or non-deliverable to a Boeing Satellite Systems customer.

Category C   Commercial Off the Shelf - Software products sold or traded to the general public. Software which is provided by the contractor Government, a third party or is Boeing Satellite Systems-off-the-shelf reusable software. Software quality requirements are not applicable to the supplier or distributor but rather to the control and testing of the software upon receipt by Boeing Satellite Systems.

PURCHASE ORDER ATTACHMENT Q-201 (continued)

NOTES:

Tailoring of Task Descriptions by Purchase Category "A" or "B" to be indicated.

Purchase Item(s) Tailoring Notes:

Added Boeing name 10/12/2000

PURCHASE ORDER ATTACHMENT Q-201 (continued)

The following descriptions define the task identified in the table of purchase order attachment Q-201

1.   Policy The seller shall define and document its policy and objectives for, and commitment to, quality. The seller shall ensure that this policy is understood, implemented and maintained at all levels in the organization.

1.1   Software Quality System. The system shall be reviewed at appropriate intervals by the seller's management to ensure it's continuing suitability and effectiveness. Audits shall be scheduled on the basis of the status and importance of the activity. Audits and follow-up shall be carried out in accordance with documented corrective action procedures. Records of such reviews shall be maintained.

2.   Independence The seller shall define the quality activity resources, responsibility, authority and organizational freedom that permits objective evaluations and the ability to initiate and verify corrective action. Persons conducting evaluations of a product will not be under the control of the product developers. A management representative shall be assigned responsibility for the fulfillment of and assuring compliance with the software quality program requirements.

3.   Software Quality Program Plan. The seller's software quality activities shall be documented in a controlled plan and implementing instructions, when required. The plan shall be the result of the review of the subcontract, and shall address verification of each quality requirement found in the subcontract. The plan shall also address special tools, facilities, or methodologies needed to support or implement the software quality program. The plan shall be mutually agreed upon.

4.   Corrective Action. The seller software quality program shall assure process and product nonconformances are documented in a timely manner, tracked and reported to appropriate levels of management, analyzed for extent and cause, and tacked to closure. Additionally, further processing, installation, or delivery of nonconforming product is controlled until the unsatisfactory condition is corrected.

5.   Access for Contracting Agency Review. The software quality program is subject to review by the buyer and the buyer's contracting agency when applicable. These reviews may be in the form of a joint review where results are agreed to and documented.

        a.   The seller shall provide right of access to all premises where any part of the subcontract is being performed; this includes seller's and seller's sub-tier suppliers' facilities.

        b.   The seller shall make available the software quality records and provide any necessary support for verification when requested.

6.   Program Plans and Procedures. The seller assures the flow down of buyer requirements into management and engineering program plans and implementing practices. The seller assures that all plans required by the buyer are documented, satisfy requirements, are consistent with other program plans, are approved before execution and are maintained.

Added Boeing name 10/12/2000

PURCHASE ORDER ATTACHMENT Q-201 (continued)

7.　Software Configuration Management The seller shall assure the software configuration management process, including the developmental library and its operation complies with the contract and adheres to software plans. This includes but is not limited to:

　　a.　Classification, as required by subcontract, of problems and analysis to identify trends in the problems reported.
　　b.　Provide a mechanism for tracking the status of problems.
　　c.　Assurance that only authorized modifications are made.
　　d.　Changes to documents shall be reviewed and approved by the authorized functions organizations.
　　e.　Accurate identification and documentation of software versions including a description of included changes.
　　f.　Maintenance of records for the life of the contract.
　　g.　The most recent authorized versions of materials under configuration control are clearly identified and are the ones routinely available from the library.
　　h.　Previous version of materials under configuration control are clearly identified and controlled to provide an audit trail that permits reconstruction of all changes made to each configuration item.
　　i.　Controls exercised on the internal distribution of deliverable media and documentation.

7.　Evaluation of Non-deliverable Software. The seller shall evaluate each non-deliverable software item used in the automated manufacturing of deliverable hardware or in the qualification or acceptance of deliverable software or hardware to assure that:
　　a.　Objective evidence exists, prior to its intended use, that it performs required functions.
　　b.　It was placed under internal configuration control prior to its use.

9.　Data Media Storage. Handling. Packaging and Shipping. The seller shall assure compliance with the subcontract and adherence to the software plans and procedures to protect the integrity of the software products to be delivered to the point of destination to prevent damage and deterioration of product.

10.　Formal and Informal reviews and Audits

10.1　Prior to each formal review and audit the seller assures that:

　　a.　Required products are available and all required preparations have been made for contracting agency review-, procedures have been followed and documented evidence of satisfactory completion is available; and that the status of each product is ready for presentation and contracting agency inspection.
　　b.　Following each formal review and audit, the seller assures that all software related action items assigned to the seller have been performed.
　　c.　Deliverable software and documentation has been updated to reflect approved changes scheduled for inclusion by the contracting agency.

PURCHASE ORDER ATTACHMENT Q-201 (continued)

10.2   The seller shall review procedures and processes to assure that software engineering reviews include: objectives, milestones, roles of participants, recording, reporting, a process for corrective action and criteria for moving to the next phase of development.

11.   Product Certification. The seller shall define and agree to method of final certification of all deliverable software and associated documentation to assure that all subcontract requirements have been met, that internal coordination has been conducted according to software plans, and that documentation reflects current status of the product. Product inspection status shall be identified. The seller assures that the data rights provisions are consistent with the subcontract. NOTE: For COTS the seller shall maintain documented, objective evidence that the software and associated documentation meet the purchase order quality requirements.

12.   Other Software Processes. The seller shall assure compliance with subcontract and adherence to plans of all other processes used in software development engineering and management. This may include processes such as peer reviews, integration and test, and software development file's maintenance.

13.   Software Acceptance testing. The seller shall identify all software quality activities related to software acceptance testing. These activities shall include:

   a.   review of test document (plans, specification, procedures, reports, etc.) for adequacy, feasibility, testability, compliance with contractual requirements, and configuration that only authorized changes are incorporated.
   b.   verification that tests are conducted according to approved test plans and procedures and that the software is the correct version.
   c.   the witness of tests and/or certification that test results are actual and valid.
   d.   verify the maintenance of test related documentation that allows test repeatability.
   e.   verifying that any software, test data test files and hardware used as a tool for software testing is identified.
   f.   verifying that the host development environment has been specified.
   g.   verifying that the test procedures include provisions for all approved software functional requirements.

14.   Non-developmental Software. The seller shall have an established procedure for the identification, control, examination, receipt, and accountability of non-developmental software. The procedure shall assure objective evidence exists that the software performs required functions, that data rights are consistent with the subcontract, and it is under internal configuration control before use.

15.   Seller Quality Controls. The seller software quality program shall include provisions for:

   a.   Qualification of software sellers prior to procurement dependent upon the type of product and where appropriate, on previously demonstrated capability and performance.
   b.   Flow down of software quality requirements from this subcontract to their seller.
   c.   Access to seller facilities to evaluate performance to process and product requirements of the seller subcontract and program plans and procedures.

d.   Assure seller developed software and related documentation that is deliverable to the contracting agency satisfies this subcontract's requirements before use.

   e.   Establishment and maintenance of baseline requirements for the software to be developed by the seller.

PURCHASE ORDER ATTACHMENT Q-201 (continued)

16.   Management Scheduling and Reporting. The activities of the software quality plans shall be scheduled to be fully integrated with activities required by the subcontract. Software quality activities shall be performed throughout the software development life cycle to evaluate product and process compliance with plans, practices and implementing procedures. The schedule shall be adhered to for the duration of the subcontract. The seller software quality program shall be a part of management reporting system throughout the life of the subcontract.

17.   Evaluation Reports. Seller quality records shall include at a minimum: evaluation date, participants, criteria, results, and recommended corrective action. Seller quality records shall be maintained to demonstrate achievement of the required quality and effective operation of the quality system. All seller quality records shall be identifiable to the product and the subcontract involved. Quality records shall be stored and maintained for the life of the subcontract and be retrievable to prevent loss.

18.   Data Submittal. Seller shall submit documentation requirements specified in the purchase order or attached notes, if any.

END OF DOCUMENT