DATA DELIVERY DESCRIPTION - REQUEST FOR DEVIATION (RFD)

This Data Delivery Description (DDD) contains the content and preparation instructions for the data product resulting from the work task specified in the contract.

Requirements:

1. Reference documents. The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.

2. Format and content. The Request for Deviation shall be prepared in contractor format. The RFD content shall be in accordance with the contractor's processes and procedures, or as specified in the contract.

3. Distribution statement. The appropriate distribution statement shall be affixed to the RFD in accordance with the requirements of the contract.

4. Date. Provide the submittal date of the deviation.

5. DODAAC. Provide the DODAAC of the procuring activity, if known.

6. Procuring Activity Number (PAN). Provide the PAN of the procuring activity, if known

7. Originator name and address. Provide the name and address of the contractor submitting the request (inclusion of submitting individual's name is optional

8. Classification. The deviation shall be designated minor, major, or critical in accordance with the following criteria:

   a. Minor. A deviation shall be designated as minor when:
      (1) The deviation consists of a departure which does not involve any of the factors listed in 8b or 8c or
      (2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as minor.

   b. Major. A deviation shall be designated as major when:
      (1) The deviation consists of a departure involving:
         (a) health
         (b) performance
         (c) interchangeability, reliability, survivability, maintainability, or durability of the item or its repair parts
         (d) effective use or operation;
         (e) weight and size; or
         (f) appearance (when a factor) or

(2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as major.

c. Critical. A deviation shall be designated as critical when:
   (1) The deviation consists of a departure involving safety or
   (2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as critical.

9. Designation for deviation.

   a. Model/Type. Provide the model or type designation of the CI for which the request is being submitted. For CSCIs provide the CSCI identification.

   b. CAGE Code. Provide the CAGE Code for the activity originating the deviation.

   c. System designation. The system or top level CI designation or nomenclature assigned by the Government shall be entered, if known.

10. Deviation number. Deviation identification numbers shall be unique for each CAGE Code identified activity. Once a number is assigned, that number shall be retained for all subsequent submissions. Unless otherwise authorized by the Government, deviations shall be separately and consecutively numbered commencing with number one. As an alternative, numbers may be assigned from a separate series for each system that the contractor is producing. The number of characters in the deviation number, dash number, and type identification shall not exceed 32.

11. Configuration baseline affected. Indicate the affected baseline (See MIL-HDBK-61).

12. Are other system/configuration items affected? If yes, provide summary.

13. Title of deviation. Provide a brief descriptive title of the deviation.

14. Contract number and line item. Provide the number(s) of all currently active contract(s) and the affected contract line item number(s) that are affected by the deviation.

15. Procuring contracting officer. Enter the procuring contracting officer's name, office symbol/code, and telephone number applicable to the CI shown in paragraph 18.

16. Configuration item nomenclature. Provide the Government assigned name and type designation, if applicable, or authorized name and number of the CI to which the deviation will apply.

17. Classification of defect (CD).

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a. CD number. If either a Government or contractor's CD applies, enter the number assigned.

b. Defect number. If a CD applies, enter the defect number(s) which correspond(s) with the characteristic(s) from which an authorized deviation is desired.

c. Defect classification. If a CD applies state the proper classification of the defect number(s) entered in paragraph 17b.

18. Name of lowest part/assembly affected. An appropriate descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces".

19. Part number or type designation. Enter the part number(s) of the part(s) named in paragraph 18 or type designation/nomenclature if applicable.

20. Effectivity. Define the effectivity of the proposed RFD by entering, as applicable, the quantity of items affected, the serial numbers of the items affected, or the lot number(s) applicable to the lot(s) affected by the deviation being requested.

21. Recurring Deviation. If this is a recurring deviation, reference the previous correspondence, the request number, and corrective action to be taken in paragraph 27. In addition provide rationale why recurrence was not prevented by previous corrective action and/or accomplished design change.

22. Effect on cost/price. Provide the estimated reduction or price adjustment. If no change in price, cost, or fee, so state with rationale. The request for deviation shall include the specific consideration that will be provided to the Government if this "non-conforming" unit(s) (See FAR Part 46.407) is accepted by the Government.

23. Effect on delivery schedule. State the effects on the contract delivery schedule that will result from both approval and disapproval of the request for deviation.

24. Effect on integrated logistics support, interface, or software. If there is no effect on logistics support or the interface, provide a statement to that effect. If the deviation will have an impact on logistics support or the interface, describe such effects.

25. Description of deviation. Describe the nature of the proposed departure from the technical requirements of the configuration documentation. The deviation or waiver shall be analyzed to determine whether it affects any of the factors listed below. Describe any effect on each of these factors (marked drawings should be included when necessary to provide a better understanding of the deviation):

a. Effect on Product Configuration Documentation or Contract.
   (1) Performance
   (2) Weight-balance-stability (aircraft)
   (3) Weight-Moment (other equipment)

(4) Technical Data
(5) Nomenclature

b. Effect on Operational Employment
(1) Safety
(2) Survivability
(3) Reliability
(4) Maintainability
(5) Service Life
(6) Operating Procedures
(7) Electromagnetic Interference
(8) Activation Schedule
(9) Critical Single Point Failure Items
(10) Interoperability

c. Other Considerations
(1) Interface
(2) Other Affected Equipment/Government Furnished Equipment (GFE)/Government Furnished Parts (GFP)
(3) Physical Constraints
(4) Computer Programs and Resources
(5) Rework of other equipment
(6) System Test Procedures
(7) Warranty/Guarantee
(8) Parts Control
(9) Life Cycle Costs

26. Need for deviation. Explain why it is impossible or unreasonable to comply with the configuration documentation within the specified delivery schedule. Also explain why a deviation is proposed in lieu of a permanent design change.

27. Corrective action taken. Describe action being taken to correct non-conformance to prevent a future recurrence.

28. Signature. The RFD shall be signed by an authorized official representing the contractor submitting the RFD.

DATA DELIVERY DESCRIPTION - NOTICE OF REVISION (NOR)

This Data Delivery Description (DDD) contains the content and preparation instructions for the data product resulting from the work task specified in the contract. This DDD is used in conjunction with an Engineering Change Proposal (ECP). A requirement for ECPs should be contractually imposed in conjunction with this DDD. This DDD may also be used with Specification Change Notices (SCNs). Where NORs are required for changes to paper specifications, a requirement for SCNs may be contractually imposed in conjunction with this DDD.

Requirements:

1. Reference documents. The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.

2. Format and content. The NOR shall be prepared in contractor format. The NOR content shall be in accordance the contractor's processes and procedures, or as specified in the contract.

3. Distribution statement. The appropriate distribution statement shall be affixed to the NOR in accordance with the requirements of the contract.

4. Date. Provide the submittal date of the NOR. Normally this date will be identical to the ECP submittal date.

5. DODAAC. Provide the DODAAC of the procuring activity.

6. Procuring Activity Number (PAN). Provide the PAN of the procuring activity, if known.

7. Originator name and address. Provide the name and address of the contractor submitting the proposed NOR (inclusion of submitting individual's name is optional).

8. CAGE code. Provide the CAGE code of the originator of the ECP.

9. NOR number. Unless the use of a Government assigned number is prescribed, the originator shall either assign a number or enter the document number and new revision letter as the NOR number. When the requirement in the contract identifies the NOR by ECP number, the originator shall attach a dash number (i.e., xxx-1).

10. CAGE Code. Provide the CAGE Code of the original design activity that appears on the document to which the revision applies. If the original design activity is not the current design activity, also enter the CAGE code of the current design activity.

11. Document number. Provide the number of the drawing, standard, specification, list or other document to be revised.

DATA DELIVERY DESCRIPTION - NOTICE OF REVISION (NOR)

12. Title of document. Provide the title of the document to which the NOR applies.

13. Revision letter. Show the existing revision of the document for which the NOR is prepared.

14. Outstanding NORs. Provide the NOR number of all approved unincorporated NORs for the affected document.

15. ECP number. Provide the number of the ECP describing the engineering change which necessitates the document revision covered by the NOR.

16. Configuration item (or system) to which ECP applies. Provide Government assigned system designation (if any); otherwise, enter the name and type designation of the Configuration Item to which the ECP applies.

17. Description of change. Describe the change in detail, giving the exact wording of sentences or paragraphs that are to be added, or that are to replace designated sentences or paragraphs of the current document. State the dimensions, tolerances and other quantitative requirements that are to replace current requirements. Attach a marked print when necessary to clearly explain the desired revision. Use a "From - To" format in the description of the change.

DATA DELIVERY DESCRIPTION - ENGINEERING CHANGE PROPOSAL (ECP)

This Data Delivery Description (DDD) contains the content and preparation instructions for the data product resulting from the work task specified in the contract. This DDD is used in conjunction with a Notice of Revision (NOR). A requirement for NORs, as applicable, should be contractually imposed in conjunction with this DDD.

Requirements:

1. Reference documents. The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.

2. Format and content. The Engineering Change Proposal shall be prepared in contractor format.

3. Supporting data. In addition to the information required below, the ECP shall include supporting data. Formal ECPs shall be supported by drawings and other data (e.g., Logistic Support Analysis (LSA) data, detailed cost proposal data, test data and analyses) as specified in the contract to justify and describe the change and to determine its total impact including assessments of changes to system operational employment characteristics. When a life cycle cost and/or operation and support cost model has been included in the contract, the ECP shall also include the costs expected to result from the implementation of the change into all future production and spare items projected to be procured for the program. Also for all projected operation and support costs for operation of the total inventory of items by the Government. A summary of any testing done to validate concepts or new technology to be employed in the proposed engineering change shall be presented in the supporting data. Details of such test data shall be provided if it is vital to the decision regarding acceptance of the change.

4. Distribution statement. The appropriate distribution statement shall be affixed to the ECP in accordance with the requirements of the contract.

5. Date. Provide the submittal date of the ECP or of the revision to the ECP.

6. Procuring Activity Number (PAN): Provide the PAN of the procuring activity, if known.

7. DODAAC. Provide the DODAAC of the procuring activity, if known.

8. Originator name and address. Provide the name and address of the contractor submitting the ECP.

9. Designate as either Class I or II. Proposed changes that do not meet the criteria for Class I shall be designated as Class II. The engineering change shall be Class I if:

   a. The Functional Configuration Documentation (FCD) or Allocated Configuration Documentation (ACD) is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances:
      (1) Performance.
      (2) Reliability, maintainability or survivability.
      (3) Weight, balance, moment of inertia.
      (4) Interface characteristics.
      (5) Electromagnetic characteristics.
      (6) Other technical requirements in the specifications.

   NOTE: Minor clarifications and corrections to FCD or ACD shall be made only as an incidental part of the next Class I ECP NOR, unless otherwise directed by the Government.

   b. A change to the Product Configuration Documentation (PCD) will affect the FCD or ACD as described in paragraph 9a or will impact one or more of the following:
      (1) Government Furnished Equipment (GFE).
      (2) Safety.
      (3) Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers or training devices/ equipment/software.

(4) Configuration to the extent that retrofit action is required.
(5) Delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts.
(6) Preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number.
(7) Interchangeability, substitutability, or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-reparable subassemblies.
(8) Sources of CIs or repairable items at any level defined by source-control drawings.
(9) Skills, manning, training, biomedical factors or human-engineering design.

c. Any of the following contractual factors are affected:
(1) Cost to the Government including incentives and fees.
(2) Guarantees or warranties.
(3) Deliveries.
(4) Scheduled milestones.

10. Justification code. Provide a justification code that is applicable to a proposed Class I engineering change. The justification code is not required for Class II ECPs. If more than one of the following codes are applicable, the one which is the most descriptive or significant shall be assigned to the ECP.

a. Interface. Code B shall be assigned to an engineering change proposal for correction of a deficiency which will eliminate interference or incompatibility at an interface between CIs.

b. Compatibility. Code C shall be assigned to an engineering change to correct a deficiency with the following characteristics:
(1) The need for the change has been discovered during the system or item functional checks or during installation and checkout and is necessary to make the system or item work.
(2) By assigning the compatibility code the contractor is declaring that the effort required to accomplish the change is considered to be within the scope of the existing contract except for changes caused by the Government.
(3) Contractual coverage completing the formal documentation of the engineering change will not reflect an increase in contract price for the corrective action in production and to delivered items in-warranty or otherwise stipulated in the contract.

c. Correction of deficiency. Code D shall be assigned to an engineering change which is required to eliminate a deficiency, unless a more descriptive separate code applies. Such separate codes are used to identify deficiencies of the nature of safety, interface, or compatibility.

d. Operational or logistics support. Code O shall be assigned to an engineering change which will make a significant effectiveness change in operational capabilities or logistics support.

e. Production stoppage. Code P shall be assigned to an engineering change which is required to prevent slippage in an approved production schedule. This code applies when production to the current configuration documentation either is impracticable or cannot be accomplished without delay.

f. Cost reduction. Code R shall be assigned to an engineering change which will provide a net total life cycle cost savings to the Government, but which is not being submitted pursuant to the Value Engineering clause of the contract. The savings in life cycle cost should include all effects on cost and price for the effort and requirements covered by the contract(s) currently in effect for this contractor, plus the costs resulting from necessary associated changes in delivered items, and logistics support.

g. Safety. Code S shall be assigned to an engineering change for correction of a deficiency which is required primarily to eliminate a hazardous condition. When this code is assigned, a system hazard analysis shall be included with the ECP. (See MIL-STD-882)

h. Value engineering (VE). Code V shall be assigned to an engineering change that will effect a net life cycle cost reduction and which is submitted pursuant to the VE clause of the contract.

11. Priority. A priority shall be assigned to each Class I ECP based upon the following definitions. Class II ECPs do not require a priority assignment. The proposed priority is assigned by the originator and will stand unless the Government has a valid reason for changing the priority.

    a. Emergency (E). Shall be assigned to an engineering change proposed for any of the following reasons:
       (1) To effect a change in operational characteristics which, if not accomplished without delay, may seriously compromise national security;
       (2) To correct a hazardous condition which may result in fatal or serious injury to personnel or in extensive damage or destruction of equipment. (A hazardous condition usually will require withdrawing the item from service temporarily, or suspension of the item operation, or discontinuance of further testing or development pending resolution of the condition.); or
       (3) To correct a system halt (abnormal termination) in the production environment such that CSCI mission accomplishment is prohibited.

    b. Urgent (U). Shall be assigned to an engineering change proposed for any of the following reasons:
       (1) To effect a change which, if not accomplished expeditiously, may seriously compromise the mission effectiveness of deployed equipment, software, or forces; or
       (2) To correct a potentially hazardous condition, the uncorrected existence of which could result in injury to personnel or damage to equipment. (A potentially hazardous condition compromises safety and embodies risk, but within reasonable limits, permits continued use of the affected item provided the operator has been informed of the hazard and appropriate precautions have been defined and distributed to the user.); or
       (3) To meet significant contractual requirements (e.g., when lead time will necessitate slipping approved production or deployment schedules if the change was not incorporated); or
       (4) To effect an interface change which, if delayed, would cause a schedule slippage or increase cost; or
       (5) To effect a significant net life cycle cost savings to the Government, as defined in the contract, through value engineering or through other cost reduction efforts where expedited processing of the change will be a major factor in realizing lower costs.
       (6) To correct unusable output critical to mission accomplishment;
       (7) To correct critical CI files that are being degraded; or
       (8) To effect a change in operational characteristics to implement a new or changed regulatory requirement with stringent completion date requirements issued by an authority higher than that of the functional proponent.

    c. Routine (R). Shall be assigned to a proposed engineering change when emergency or urgent is not applicable.

12. ECP designation.

    a. Model/Type. Provide model or type designation of the CI for which this proposal is being submitted. For Computer Software Configuration Items (CSCI), enter the CSCI identification number.

    b. CAGE code. Enter the CAGE code for the activity originating the ECP.

    c. System designation. The system or top-level CI designation or nomenclature assigned shall be entered, if known.

13. ECP number. Provide an ECP number. Once an ECP number is assigned to the first submission of a change proposal, that number shall be retained for all subsequent submissions of a change proposal. One of the following methods of assigning ECP numbers may be used unless otherwise stated in the contract:

    a. ECP numbers shall run consecutively commencing with number 1, for each CAGE Code identified activity, or ECP numbers may be assigned in a separate series for each system that the contractor is producing
    b. When an ECP is split into a basic ECP and related ECPs, the basic ECP shall be identified with the number prescribed above and each related ECP shall be identified by the basic number plus a separate dash number. The number of characters in the ECP number, dash number, type, and revision identification shall not exceed 32.
    c. Other systems may be used provided the ECP number is unique for any CAGE Code identified activity, and the 32 character limitation is not exceeded.

14. Type. For Class I ECPs, indicate either a "P" for preliminary, or "F" for formal. A Class I ECP shall be preliminary if it meets the criteria below.

    a. A preliminary change proposal is one that is submitted to the Government for review prior to the availability of the information necessary to support a formal ECP. It shall include a summary of the proposed change, its impact on related areas, and a justification. Examples are to furnish the Government with available information in order to permit:
       (1) A preliminary evaluation relative to the merits of the proposed change (e.g. installation of a proposed change for the purpose of evaluation and testing prior to making a final decision to proceed with a proposed change); or,
       (2) A determination regarding the desirability of continuing expenditures required to further develop the proposal.
       (3) To provide alternative proposals; or
       (4) To supplement a message relative to an emergency or urgent priority ECP when it is impracticable to submit a formal ECP within 30 calendar days; or
       (5) To obtain Government approval to proceed with software engineering development prior to the development of the actual coding changes.

    b. A formal ECP is the type, which provides the engineering information and other data in sufficient detail to support formal change approval/contractual implementation.

15. Revision. If an ECP is being revised, enter the proper identification of the revision, i.e., R1 for the first revision; R2, R3, etc. for subsequent revisions. (The date submitted (paragraph 5) shall be the date of the revised ECP.)

16. Baseline affected. Indicate the baseline(s) affected (see MIL-HDBK-61).

17. Other systems/configuration items affected. If other systems/configuration items are affected indicate whether the effect on other systems or CIs requires the submittal of related Class I ECPs. Supply details in paragraphs 33a and c.

18. Specifications affected. If specifications cited in the contract are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter, and the NOR number of the NOR being submitted with the ECP, shall be provided.

19. Drawings affected. If drawings are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter, and the NOR number of the NOR being submitted with the ECP, shall be provided.

20. Title of change. Provide a brief title to identify the component or system affected by the ECP. For example: F-18 Aircraft Air Turbine Start Connector Backshell Replacement; AN/AYK-14(v) CP-1502/CP-1503 Reconfiguration to CP-1799; (CSCI name) Block Update.

21. Contract number(s) and line item(s). Provide the number(s) of all currently active contract(s), and the affected contract line item number(s), at the originating CAGE-coded activity that are affected by the engineering change.

22. Procuring contracting officer. Provide the procuring contracting officer's name, office symbol/code, and telephone number applicable to the CI shown in paragraph 21.

23. Configuration item nomenclature. Provide the assigned name and type designation the CSCI name and number, if applicable, or authorized name and number of the CI(s) affected by the ECP.

24. Is the CI in production? If "yes", provide information as to whether deliveries have been completed on the contract(s). This data is not always applicable to software. If not applicable, so indicate.

25. All lower level items affected.

    a. For hardware, an appropriate, complete descriptive name of the part(s) shall be provided as well as the quantity of the part(s). Additionally, applicable NSNs shall be provided.

b. For CSCI's, provide the name and identifier of each lower level CI and computer software unit affected.

26. Description of change. The description of the proposed change shall include the purpose and shall be given in sufficient detail to adequately describe what is to be accomplished. It shall be phrased in definitive language such that, if it is repeated in the contractual document authorizing the change, it will provide the authorization desired. Supporting data may be provided to the extent necessary to clearly portray the proposed change. If the proposed change is an interim solution, it shall be so stated.

27. Need for change. Provide an explanation of the need for the change to include specifically identifying the benefit of the change to the Government. The nature of the defect, failure, incident, malfunction, etc. substantiating the need for the change shall be described in detail. Full utilization shall be made of available failure data. If a new capability is to be provided, improvements in range, speed, performance, endurance, striking power, defensive or offensive capabilities, etc. shall be described in quantitative terms. Correspondence establishing requirements for the change and any testing accomplished prior to the submission shall be identified and summarized. If the ECP is needed to correct maintenance/ logistics problems, that fact will be included with sufficient detail to identify the issues. If the ECP is being submitted as a response to a request for ECP or Government direction, cite that authority herein.

28. Production effectivity by serial number.

    a. For hardware, provide the estimated production effectivity point for the production items including serial number, or other item identification (e.g., block or lot number) as approved by the Government. In determining the effectivity point for the proposed change, consider, in addition to the time factors, the availability of all support elements affected and the most economical point of introduction consistent with all the salient factors involved. The earliest production incorporation is not necessarily the singular or most important factor in the establishment of a proposed change effectivity point. The effectivity point shall be based on concurrent availability of all logistics support elements and materials affected by the change to the item.

    b. For CSCI's, identify the CSCI version number, if known, into which the change will be incorporated. Where applicable, the effectivity of the end item CI and vehicle (aircraft, tank, ship, etc.) into which the capability represented by the new version of the software is proposed to be incorporated, shall also be provided. If the impact of the ECP merits the release of a new software version include a recommendation to this effect. Serial numbers may be used in lieu of version numbers if approved by the Government.

29. Effect on production delivery schedule. State the estimated delivery schedule of items incorporating the change, either in terms of days after contractual approval, or by specific dates contingent upon contractual approval by a specified date. If there will be no effect on the delivery schedule, so state.

30. Retrofit.

    a. Recommended item effectivity. When the contractor recommends that the engineering change be accomplished in accepted items by retrofit, the quantities and serial (or lot) numbers of accepted items in which the change is proposed to be incorporated by retrofit shall be provided. Such statement regarding items currently in production shall be based upon the estimated approval date of the ECP.

    b. Ship/vehicle class affected. When the delivered CI is installed in one or more ship/vehicle classes, enter the identification of such classes.

    c. Estimated kit delivery schedule. State estimated kit delivery schedule by quantity and date. When special tooling for retrofit is required for Government use, provide the dates of availability of tools, jigs, and test equipment required in conjunction with the kits to accomplish the change.

    d. Locations or ship/vehicle numbers affected. State the location(s) where retrofit is to be accomplished. If retrofit is to be accomplished in ships (or in vehicles for which the serial numbers are not shown in paragraph 30b), enter the ship hull numbers or vehicle numbers.

NOTE: The appropriate information shall be provided for CSCI changes that are to be incorporated as part of a hardware or equipment change; and implemented per a hardware retrofit schedule, or where the fielded version of the software is to be replaced.

31. Estimated costs/savings under contract. Provide the total estimated costs/savings impact of the ECP on the contract for the subject CI. Savings shall be shown in parentheses.

32. Estimated net total costs/savings. Provide the total estimated costs/savings impact of the basic and all related ECPs, including other costs/savings to the Government. Savings shall be shown in parentheses.

33. Effects on Functional/Allocated Configuration Identification. This information is to be provided only if the proposed change affects the system specification or the item development specification(s). If a separate product function specification is used, effects on such specification of changes proposed after the Product Baseline has been established shall be described as required.

    a. Other systems affected. Provide only if other systems/configuration items are affected as indicated in paragraph 17.

    b. Other contractors/activities affected. Identify other contractors or Government activities that will be affected by this engineering change.

    c. Configuration items affected. Enter the names and numbers of all CIs, maintenance and operator training equipment, and support equipment affected.

    d. Effects on performance allocations and interfaces in system specification. Describe the changes in performance allocations and in the functional/physical interfaces defined in the system specification.

    e. Effects on employment, integrated logistic support, training, operational effectiveness, or software.
        (1) For hardware, describe the effects of the proposed change on employment, deployment, logistics, and/or personnel and training requirements which have been specified in the approved system and/or CI specifications, including any changes or effects on the operability of the system. In particular, there shall be an entry detailing any effect on interoperability.
        (2) For CSCIs, the following information shall be entered as applicable to the degree of design development of the CSCI at the time of ECP submission:
            (a) Identify any required changes to the data base parameters or values, or to data base management procedures;
            (b) Identify and explain any anticipated effects of the proposed change on acceptable computer operating time and cycle-time utilization;
            (c) Provide an estimate of the net effect on computer software storage; and,
            (d) Identify and explain any other relevant impact of the proposed change on utilization of the system.

34. Effects on configuration item specifications. The effect of the proposed change on performance shall be described in quantitative terms as it relates to the parameters contained in the CI development specifications. (See MIL-STD-961)

35. Developmental requirements and status.

    a. For hardware, when the proposed engineering change requires a major revision of the development program (e.g., new prototypes, additional design review activity, tests to be reaccomplished), the nature of the new development program shall be described in detail, including the status of programs already begun.

    b. For CSCIs, identify the scheduled sequence of computer software design and test activities which will be required. ECPs initiated after preliminary design which affect the FBL and/or the ABL shall identify, as appropriate, significant requirements for computer software redesign, recoding, repetition of testing, changes to the software engineering/test environments, special installation, adaptation, checkout, and live environment testing. In addition, the specific impact of these factors on approved schedules shall be identified. The impact of the software change on the hardware design and input/output cabling shall also be detailed.

36. Date by which contractual authority is needed. Provide the date contractual authority is required in order to maintain the established schedule for:

    a. Production

    b. Retrofit

37. Effects on product configuration documentation, logistics and operations. Certain information required may have been supplied in paragraphs above or does not apply to computer software. When this information has already been supplied, a cross-reference to such information will be adequate.

    a. For hardware, if any specific logistic interoperability factors are affected, provide information detailing the possible impact on the operational configuration.

    b. For CSCIs, the software engineering and test environments are usually not affected by changes in the product configuration of a CSCI. Provide information about the status of the software redesign and retesting effort. There shall also be a review of the intent to document CSCI impacts in these areas.

38. Effect on product configuration documentation or contract. The effects on the approved CI product specifications shall be described by reference to the NORs or other enclosure(s) which cover such proposed text changes in detail. The effects on drawings, when not covered previously shall be described in general terms. Address nomenclature change when applicable. The effects on performance, weight-balance-stability, weight-moment, shall also be provided when applicable.

39. Effect on acquisition logistics support (ALS) elements. The effects of the engineering change on logistic support of the item shall be provided. These effects shall be explained in detail. The information required shall indicate the method to be used to determine the integrated logistic support plans and items which will be required for the support of the new configuration as well as retrofitting previously delivered items to the same configuration. The following shall be covered as applicable:

    a. Effects on schedule and content of the ALS plan.
    b. Effect on maintenance concept and plans for the levels of maintenance and procedures.
    c. System and/or CI logistics support analysis (LSA) tasks to be accomplished and LSA data requiring update wherever it exists in the contract. (MIL-PRF-49506)
    d. Extension/revision of the interim support plan.
    e. Spares and repair parts that are changed, modified, obsoleted or added, including detailed supply data for interim support spares. NOTE: Failure to include detailed supply data will delay ECP processing.
    f. Revised or new technical manuals.
    g. Revised or new facilities requirements and site activation plan.
    h. New, revised, obsoleted or additional support equipment (SE), test procedures and software. For items of SE and trainers which require change, furnish a cross reference to the related ECPs, and for any related ECP not furnished with the basic ECP, furnish a brief description of the proposed change(s) in SE and trainers.
    i. Qualitative and quantitative personnel requirements data which identify additions or deletions to operator or maintenance manpower in terms of personnel skill levels, knowledge and numbers required to support the CI as modified by the change.
    j. New operator and maintenance training requirements in terms of training equipment, trainers and training software for operator and maintenance courses. This information should include identification of specific courses, equipment, technical manuals, personnel, etc. required to set up the course at either the contractor or Government facility.
    k. Any effect on contract maintenance that increases the scope or dollar limitation established in the contract.
    l. Effects on packaging, handling, storage, and transportability resulting from changes in materials, dimensions, fragility, inherent environmental or operating conditions.

40. Effect on operational employment. The effects of the engineering change of CI utilization shall be provided. Quantitative values shall be used whenever practicable and are required when reliability and service life are impacted. Survivability includes nuclear survivability. The effects of the change proposal on safety, maintainability, operating procedures,

electromagnetic interference, activation schedule critical single point failure items, and interoperability shall also be provided, if applicable.

41. Other considerations. The effects of the proposed engineering change on the following shall be identified:

    a. Interfaces having an effect on adjacent or related items, (output, input, size, mating connections, etc.).
    b. GFE or Government Furnished Data (GFD) changed, modified or obsoleted.
    c. Physical constraints. Removal or repositioning of items, structural rework, increase or decrease in overall dimensions.
    d. Software (other than operational, maintenance, and training software) requiring a change to existing code and/or, resources or addition of new software.
    e. Rework required on other equipment not included previously which will effect the existing operational configuration.
    f. Additional or modified system test procedures required.
    g. Any new or additional changes having an effect on existing warranties or guarantees.
    h. Changes or updates to the parts control program.
    i. Effects on life cycle cost projections for the configuration item or program, including projections of operation and support costs/savings for the item(s) affected over the contractually defined life and projections of the costs/savings to be realized in planned future production and spares buys of the item(s) affected.

42. Alternate solutions. When applicable, provide a summary of the various alternative solutions considered, including the use of revised operation or maintenance procedures, revised inspection or servicing requirements, or revised part replacement schedules. The contractor shall provide an analysis of the alternatives, identify the advantages and disadvantages inherent in each feasible alternative approach, and show the reasons for adopting the alternative solution proposed by the ECP. When contractor's analysis addresses new concepts or new technology, supporting data shall be presented with the proposal to authenticate the trade-off analysis.

43. Developmental status. When applicable, make recommendations as to the additional tests, trials, installations, prototypes, fit checks, etc., which will be required to substantiate the proposed engineering change. These recommendations shall include the test objective and test vehicle(s) to be used. Indicate the development status of the major items of GFE which will be used in conjunction with the change and the availability of the equipment in terms of the estimated production incorporation point.

44. Recommendations for retrofit. When applicable, make recommendations for retrofit of the engineering change into accepted items with substantiating data, any implications thereto, and a brief description of the action required. Where retrofit is not recommended, an explanation of this determination shall be provided.

    a. Work-hours per unit to install retrofit kits. Show the amount of work which must be programmed for various activities to install retrofit kits. Estimate work-hours to install retrofit kits when weapon system is undergoing overhaul.
    b. Work-hours to conduct system tests after retrofit. Provide the work-hours required to test the system or the item following installation of the retrofit kit.
    c. This change must be accomplished. Where previously approved engineering changes must be incorporated in a specific order in relation to the proposed change, such order should be specified.
    d. Is contractor field service engineering required? If "yes" attach proposed program for contractor participation.
    e. Out of service time. Estimate the total time period from removal of the equipment from operational service until equipment will be returned to operational status after being retrofitted.

45. Effect of this ECP and previously approved ECPs on item. Summarize the cumulative effect upon performance, weight, electrical load, etc., of this ECP and previously approved ECPs when design limitations are being approached or exceeded. Provide consequences of ECP disapproval.

46. Production impact costs. Estimated costs/savings applicable to production of the item resulting from the change. Includes the costs of Redesign of the CIs or Components thereof, of Factory Test Equipment, of Special Factory Tooling, of Scrap, of Engineering Design, of Engineering Data Revision, of Revision of Test Procedures, and of Testing and Verification of Performance of New Items.

47. Retrofit impact costs: Estimated costs applicable to retrofit of the item including installation and testing costs. Includes Retrofit-specific Engineering Data Revision, Prototype Testing, Kit Proof Testing, Purchase of Retrofit Kits for Operational Systems, Preparation of Modification Instructions, Design and Manufacture of Special Tooling for Retrofit, Installation of Kits by contractor personnel, Installation of Kits by government personnel, Testing after Retrofit and Modification, and Testing and Verification of Performance of Government Furnished Equipment/Property (GFE/GFP).

48. Logistics support impact costs: Estimated costs/savings of the various elements of logistics support applicable to the item. Includes Spares/Repair Parts Rework, New Spares and Repair Parts, Supply/Provisioning Data, Support Equipment, Retrofit Kit for Spares, Operator Training Courses, Maintenance Training Courses, Revision of Technical Manuals, New Technical Manuals, Training/Trainers, Interim Support, Maintenance Manpower, and Computer Programs/Documentation.

49. Other costs/savings: Includes estimated costs of interface changes accomplished by other contractor activities. (Do not include costs if the changes are covered by related ECPs by other contractors. Also includes estimated costs of interface changes accomplished by the Government for changes which must be accomplished in previously delivered items (aircraft, ships, facilities, etc.), other interfacing products, and/or retrofit of GFE/GFP, to the extent that such costs are not covered under production, retrofit, or logistics support.

50. Estimated costs/savings summary, related ECPs. Provide a summary of the estimated net total cost impact of both the ECP and any related ECPs and other associated new requirements which are needed to support the modified items broken out by categories described in paragraphs 47 through 50 above.

    a. Prime contractor. The prime contractor shall summarize the costs/savings of all related ECPs for which the contractor is responsible. If there is no system integrating contractor, the prime contractor submitting the basic ECP shall include the costs of related ECPs being submitted by other affected contractors to the extent such information is available.
    b. System integrating contractor. When a system integrating contractor (or coordinating contractor) has contractual responsibility for ECP coordination, the contractor shall summarize the costs of related ECPs of the several primes involved in an interface or interrelated ECP.

51. Milestones. Provide milestones that show the time phasing of the various deliveries of items, support equipment, training equipment, and documentation incorporating the basic and related ECPs. Enter symbols and notations to show the initiation or termination of significant actions. Base all dates upon months after contractual approval of the basic ECP.

52. Signature. An authorized official representing the contractor submitting the ECP shall sign the ECP.