

DATA ITEM DESCRIPTION			Form Approved OMB No. 0704-0188	
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1. TITLE Installation and Acceptance Test Plan (IATP)		2. IDENTIFICATION NUMBER DI-QCIC-80154A		
3. DESCRIPTION / PURPOSE 3.1 The IATP is the overall plan and procedures for installation and testing of a telecommunications system. The IATP provides a basis for testing physical and functional aspects to confirm technical compliance.				
4. APPROVAL DATE (YYMMDD) 940125	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) F/CSPO-PGLB	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE	
7. APPLICATION / INTERRELATIONSHIP 7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract. 7.2 This DID is applicable to acquisitions of telecommunications equipment. 7.3 This DID supersedes DI-QCIC-80154 and DI-QCIC-80155.				
8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER F6985		
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference documents.</u> The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions shall be as specified in the contract. 10.2 <u>Format and content.</u> The IATP shall contain the following: 10.2.1 <u>Title page.</u> The title page shall contain the following information: a. Title. b. Contract Data Requirements List (CDRL) data item number. c. Base name. d. Identification of project. e. Contract number. f. Contractor. g. Date. <p style="text-align: right;">(Continued on Page 2)</p>				
11. DISTRIBUTION DISTRIBUTION STATEMENT A: Approved for public release, distribution is unlimited.				

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10.2.2 Table of contents. The table of contents shall identify all paragraphs and the corresponding page number.

10.2.3 Introduction. The IATP shall include an introduction which contains the following:

- a. A description of the overall project.
- b. A flowchart of consecutively numbered events identifying installation and acceptable activities, and interrelationships for each installation location. The introduction shall include a brief description of each numbered event.
- c. The scope of what is to be inspected or tested and to what extent in terms of preshakedown, shakedown, operational, system interoperability, type I (pre-installation), type II (installation), or type III (acceptance) testing.
- d. A description of any special tests such as bit error rate, Integrated Services Digital Network (ISDN) related tests, network related tests, return loss measurements, computer checkout, site adaptation, interfaces, and adjustments or alignment checks.
- e. Roles and responsibilities of all major participants including government, associate contractors, vendors, and local telco personnel.
- f. Milestones and scheduling to identify installation phases and expected start and completion of system inspection and testing. The schedule shall begin at installation start, cover pre-cutover installation testing and post-cutover acceptance testing, and finish with system commissioning.
- g. Security guidelines (if applicable).
- h. Types of reports required to flag problems and recommended: (1) preparer, (2) method of transmission, (3) frequency, and (4) distribution addresses.
- i. Procedures for emergency reporting of problems or waivers.

10.2.4 Part 1, inside plant. Part 1 shall apply to the inside plant or switch portion and shall contain the following sections:

10.2.4.1 Master test list. The master test list shall list all tests to be performed in the order they are to be accomplished as outlined in the flowchart of installation. Each central office and remote switching terminal location shall have a separate list. This listing shall include the following:

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- a. Building location where testing is to be accomplished.
- b. Equipment Performance Specification (EPS) reference.
- c. Test title.
- d. Documentation location within this plan.
- e. Equipment location designator and nomenclature (if applicable).

10.2.4.2 Test validation sheets. Sheets that will be used to document individual tests shall include the following:

- a. Item number.
- b. Test title.
- c. Equipment location designator and nomenclature (if applicable).
- d. Reference of the test procedures to be used and EPS references.
- e. Expected results, required measurements, and space for actual measurements and annotations.
- f. Pass or fail block for each piece of equipment tested.
- g. Space for remarks.
- h. Space to describe circuit pack failures including:
 - (1) Circuit pack number.
 - (2) Circuit pack location.
 - (3) Test procedure section and paragraph.
 - (4) Description of failure.
- i. Government and contractor witness initials block for each separate testable requirement.
- j. Blocks for government and contractor signatures and date.

10.2.4.3 Test procedures. This section shall detail step-by-step test procedures to include observations, parameters, expected test results, and equipment or personnel safety warnings and hazards.

10.2.4.3.1 Pre-shakedown tests. This section shall contain instructions for ensuring that the installation is properly completed. Pre-shakedown instructions shall describe the following:

- a. Physical inspection to:
 - (1) Determine the completeness of the installation.
 - (2) Check the condition of the equipment.
 - (3) Verify the specified placement of the equipment.
 - (4) Insure that the installation meets required safety standards.

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b. Mechanical and electrical preliminary measurements to verify the proper mounting of equipment and to confirm the adequacy and stability of the voltage, frequency and other characteristics of the primary power.

c. Preliminary equipment alignments and adjustments needed after confirmation of compliance with the installation specifications and before the shakedown, operational, and system interoperability tests.

10.2.4.3.2 Shakedown tests. This section shall include procedures for determining whether the equipment meets the performance specifications in the installed environment and to detect and eliminate marginal parts and material before the operational and system interoperability tests.

10.2.4.3.3 Operational tests. This section shall include procedures for performing the tests required to demonstrate that all equipment is performing within the prescribed specifications during precutover installation test. This section shall include a block diagram of the facility clearly defining signal wave forms, voltage levels, digital message formats, tolerances, etc., at all interfaces. This section shall describe, in sequential order, the types and purpose of tests which comprise the overall operational test, such as group tests, equipment tests, basic facility tests, simulated tests, computer program tests (including site adaptation) and live tests. This section includes test tables, with step-by-step procedures, for operational tests. Table column headings and contents shall be as follows:

a. Step. Individual steps of the test procedures in numerical sequence.

b. Test setup. All information pertaining to switch and control settings of the facility, test equipment, and external Communications-Computer Systems (C-CS) equipment, special inter-cabling and other data related to the implementation of the step, except the actions contained in the "action" column.

c. Action. The point of test of display (underlined for emphasis) and the action or actions to provide the response described under the "normal indication" column.

d. Normal indication. The normal indication to be observed (such as DC and AC voltages, currents, and wave forms) at the point of test or display underlined in the "action" column. Acceptable tolerances with all wave form indications. When the indication is a wave form other than a continuous sine wave, the wave form shall be a legible photograph or line drawing prepared from the photograph or observation. Pertinent amplitudes, pulse widths, rise and fall times, (with acceptable tolerances) shall be from the illustration and test equipment control setting information provided in the "test setup" column.

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e. Authority. The document name, number, chapter, and paragraph containing the authority for the value or description of the normal indication.

f. Notes. Explanatory notes, cautions and references, as appropriate.

10.2.4.3.4 System interoperability tests. This section shall include procedures for performing the tests required to demonstrate that all equipment is performing within the prescribed specifications during an in-service system interoperability test. Format and content are described in 10.2.4.3.3.

10.2.4.3.5 Performance tests. This section shall contain a test sheet for recording all failures and outages reported during the performance test. It shall contain a section for recording all system failures and replaced components during the performance test. Test sheets shall note the start of the consecutive testing period.

10.2.5 Part 2, outside plant and premise equipment. Part 2 shall apply to the outside plant and premise equipment portion and shall contain the following sections.

10.2.5.1 Master test list. The master test list shall list all inspections and tests to be performed during the pre-installation, installation, and acceptance period of the distribution system. The list shall be in type I (pre-installation), type II (installation), and type III (acceptance) sequence. The listing shall include the following information:

- a. Sequence order (type I, type II, type III).
- b. Inspection or test to be performed and the equipment item to be tested.
- c. EPS reference.
- d. Page number of validation sheet within the plan.
- e. Test equipment to be used.

10.2.5.2 Inspection procedures. This section shall detail step-by-step pre-installation, installation, and acceptance inspection procedures. This includes observations, what to inspect on each item, references to be used during inspection, notes, cautions, safety warnings, and hazards.

10.2.5.3 Test procedures. This section shall detail step-by-step pre-installation, installation, and acceptance test procedures. This includes observations, parameters, expected test results or measurements, necessary test equipment, notes, cautions, safety warnings, and hazards.

10.2.5.4 Inspection validation sheets. Sheets that will be used to document individual inspection accomplishment shall include the following:

- a. Item inspected (i.e., manhole, cable, terminal).

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- b. Pass or fail block.
- c. Space for recording the results of the inspection.
- d. Reference of the inspection procedures to be used.
- e. Space for recording corrective action, if required.
- f. Government and contractor witness initial block.
- g. Blocks for government and contractor signatures and date.
- h. Space for remarks.

10.2.5.5 Test validation sheets. Sheets that will be used to document individual test accomplishment shall include the following:

- a. Main cable number, fiber optic link or equipment tested.
- b. Individual pair number, with separate block for tip and ring or individual fiber, as applicable.
- c. Test title.
- d. Test equipment used.
- e. Pass or fail block.
- f. Reference of the test procedures to be used.
- g. EPS reference.
- h. Required measurements with space for actual measurements and annotations.
- i. Space to describe discrepancies.
- j. Space to describe cause of discrepancies.
- k. Space to describe corrective actions.
- l. Government and contractor witness initial block.
- m. Blocks for government and contractor signatures and date.
- n. Space for remarks.

10.2.6 Appendices. An appendix shall reference source material contained in open literature or contract deliverables.