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USACE / NAVFAC / AFCEC / NASA **UFGS 28 08 10 (May 2016)**

Preparing Activity: USACE **New**

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021
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05/16

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SECTION 28 08 10

ELECTRONIC SECURITY SYSTEM ACCEPTANCE TESTING
05/16

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NOTE: This guide specification covers the requirements for acceptance testing of electronic security systems. An electronic security system includes all equipment, components, control systems, devices, and associated software used to secure facilities and assets through intrusion detection, access control, and video assessment and surveillance.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be as a Criteria Change Request (CCR)..
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PART 1 GENERAL

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NOTE: When this specification is used, it will be in conjunction with UFGS 28 10 05 ELECTRONIC SECURITY SYSTEMS (ESS).

For Air Force projects, use this specification in conjunction with applicable Air Force testing policy and standards.
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1.1 SUMMARY

This specification defines the process and procedures for initial acceptance testing of electronic security systems (ESS) to include intrusion detection, access control and video as well as associated power and communications. Requirements to plan, conduct, and document all testing activities are covered along with the Government responsibility to witness testing and review and approve submittals. During the course of the acceptance test, demonstrate that, without exception, the completed and integrated ESS complies with the contract requirements.

1.2 DEFINITIONS

The Government Representative is a qualified individual given specific authority to witness system acceptance testing and evaluate the results.

1.3 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

1.4 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Test Plan; G[, [_____]]

SD-06 Test Reports

Draft Test Report

Final Test Report; G[, [_____]]

SD-07 Certificates

Qualifications

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

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NOTE: Adjust years of experience required for the Test Director, Operator, and Technician to reflect the size and complexity of the ESS.

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1.5.1.1 General

The Test Director, Operator, and Technician must have prior experience with the specific equipment, hardware and software installed under the

contract.

1.5.1.2 Test Director

The Test Director must have at least [five] [_____] years of hands-on ESS experience to include any combination of design, installation, testing and maintenance.

1.5.1.3 Operator

The Operator must have at least [two] [_____] years of hands-on experience installing and maintaining ESS workstations to include both hardware and software. The Operator must be capable of demonstrating all workstation features and capabilities.

1.5.1.4 Technician

The technician must have at least [two] [_____] years of hands-on experience installing and maintaining ESS field equipment to include sensors, card readers, cameras, local processors, and communications equipment. The Technician must be capable of demonstrating all features and capabilities of ESS field equipment. Qualifications may be met by the individual experience of one technician or by the combined experience of a team of technicians.

[1.5.1.5 Test Intruder

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NOTE: Include the qualifications for a test intruderonly if the project includes intrusion sensors that are activated by: 1) an intruder moving through a volumetric or linear detection pattern or 2) an intruder climbing a fence. These sensors include passive infrared, active infrared, microwave, buried ported coaxial cable, and fence-mounted stain-sensitive or fiber optic cable. Insert the allowable height and weight range to match the design basis threat for the project. Be aware of the security classification of the design basis threat. If intruder height and weight are classified, do not include these values in this specification. Provide classified information to the Contractor through authorized channels.

If there is no design basis threat for the project, use the default height and weight range which corresponds to the average height and weight of a US male in the 20 - 29 year old age bracket.

For Army projects, contact the Electronic Security System Mandatory Center of Expertise (ESS MCX) for assistance in determining requirements for the Test Intruder. ESS MCX email address is AskESSMCX@usace.army.mil

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The purpose of the test intruder is to activate intrusion sensors in a realistic and repeatable manner. The test intruder must be between 1780 to 1830 mm [70] [_____] and [72][____] inches tall and weigh between 80 to

85 kg [175] [____] and [190] [_____] pounds. The test intruder must possess sufficient physical strength, agility, and endurance to perform movements required for intrusion testing. These movements may include, but are not limited to, walking, running, crawling, jumping, and climbing.

]PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 TEST PLAN

Clearly establish the scope for ESS testing prior to beginning testing. Submit a Test Plan that addresses the following topics:

3.1.1 Personnel

Identify the Test Director, Operator, Technician, [Test Intruder], and any other personnel that will be performing test activities.

3.1.2 Equipment

List all equipment that is required to support testing. State the purpose of each piece of equipment. Describe equipment that will be used to enable voice communications between the monitoring location and the field.

3.1.3 Procedures

Provide a step-by-step procedure for conducting each functional test. Describe actions and expected results. Ensure that functional test procedures address performance standards described in contract specifications.

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NOTE: Example ESS functional test procedures may be downloaded from
http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/for
These are intended to aid the Contractor in preparing test plans.
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Download example procedures from
http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphic
and review for applicability and completeness. Adapt example procedures to meet specific project requirements and develop additional ones as needed. Follow TEST-MASTERTP0023-005 for Air Force projects.

3.1.4 Special Provisions

Discuss any special test provisions such as facility access, safety, integration with existing systems, and coordination with other work.

3.1.5 Test Logs

Provide logs for recording all data from functional testing and burn-in testing.

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NOTE: Example ESS test logs may be downloaded from http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/for These are intended to aid the Contractor in preparing test plans.

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Download example logs from http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphic and review for applicability and completeness. Adapt example logs to meet specific project requirements and develop additional ones as needed.

3.1.6 Schedule

Provide an overall schedule that includes all testing milestones.

3.2 PRE-ACCEPTANCE TESTING

Conduct a complete test of all field equipment, workstations, and central system hardware and software in accordance with the approved Test Plan. The Test Director must be on site to conduct a pre-test inspection and oversee all testing activities. Prior to testing, visually inspect all ESS components and correct workmanship and neatness deficiencies as needed. During the pre-test inspection, verify the accuracy of redline drawings and update drawings as needed. Conduct testing in two phases - functional testing followed by burn-in testing.

3.2.1 Phased Testing

3.2.1.1 Functional Testing Phase

During the functional testing phase, verify system performance in accordance with approved Test Plan. Record results in approved Test Logs, and provide a written explanation of each failure to include cause, corrective action, and retest result. Continue functional testing until all tests have been successfully completed with no unresolved failures.

3.2.1.2 Burn-In Testing Phase

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NOTE: Consider the size and complexity of the ESS installation project when specifying the duration of burn-in testing. For most projects, a burn-in testing duration in the range of 72 to 120 hours will be adequate to evaluate system performance with a reasonable degree of confidence in the results. Consider a 24-hour burn-in testing duration only for a very simple ESS installation involving no more than 25 discrete components. Consider a burn-in testing duration greater than 120 hours for a project with a large number of IDS zones, especially outdoor perimeter zones for which nuisance and false alarms are a concern.

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Begin burn-in testing after successful completion of all functional testing.During the burn-in testing phase, place the ESS in normal operating mode and evaluate system performance for a continuous [24-hour] [72-hour] [120-hour] [_____-hour] period. During this time, the ESS must be fully functional and programmed such that all features can be exercised

and evaluated through normal use. Record all system anomalies in approved Test Logs. Include a description of each anomaly along with any actions taken in response. Immediately correct minor deficiencies observed during the course of testing and continue with burn-in testing. Determine the root cause of any failures and make necessary repairs or modifications to restore full functionality. After a failure is corrected repeat functional tests for components and features associated with the failure, and repeat the entire burn-in testing phase .

3.2.2 Draft Test Report

Prepare and submit a Draft Test Report detailing the results of the testing. Refer to paragraph FINAL TEST REPORT for required content. Include a cover letter signed by the Test Director stating that pre-acceptance testing has been completed and that the system is ready for acceptance testing.

3.3 SYSTEM ACCEPTANCE

Test the ESS in accordance with the approved Test Plan in the presence of the Government Representative to certify acceptable performance. Verify that the total system meets all requirements of the specification and complies with the specified standards.

Begin acceptance testing upon arrival of the Government Representative at the project site. Place the ESS in normal operating mode and evaluate system performance during the testing period. Immediately report any deficiencies observed during testing to the Government Representative and discuss possible causes and corrective measures. Obtain Government approval prior to making any adjustments, repairs or modifications. The Government retains the right to terminate testing at any time the ESS is found to be incomplete or fails to perform as specified. Such termination of acceptance testing constitutes a FAILED system acceptance test.

3.3.1 Preparation

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NOTE: Adjust the notification requirement as needed to accommodate the scheduling needs of the Government Representative. Consider travel planning if the Government Representative's normal duty location is not the project site. Foreign travel may require several weeks advance notice.

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Nofity the Contracting Officer of system readiness [15] [_____] days prior to the expected start date of acceptance testing. Prior to acceptance testing, complete all clean-up and patch work requirements. Ensure that security equipment closets and similar areas are free of accumulation of waste materials or rubbish caused by prior installation work.

3.3.2 Personnel

Ensure that the following personnel are on site to perform test activities: Test Director, Operator, Technician[, and Test Intruder]. Ensure that the Quality Control Manager is on site during acceptance testing.

3.3.3 Visual Inspection

Assist the Government Representative in conducting a visual inspection of ESS equipment and wiring. This inspection will focus on the general neatness and quality of workmanship and compliance with applicable codes and manufacturers' recommended installation methods. Provide a comprehensive listing of installed equipment and software along with a complete set of ESS red line drawings to be used during the inspection. Document deficiencies identified during the inspection.

3.3.4 Functional Testing

Comply with requests from the Government Representative to repeat functional tests performed previously during pre-acceptance testing. The Government reserves the right to request the Contractor to repeat all functional tests or a representative sampling thereof as a means of performance verification. Add all test results to approved Test Logs.

3.3.5 System Activity Reports

Retrieve archived data from the system and provide activity reports as requested by the Government Representative. Reports may address any type of activity to include alarms, portal transactions, and video archives. Assist with analyzing reports to identify trends and anomalies.

3.3.6 Corrective Actions

Correct any deficiencies in coordination with the Government Representative. Maintain a punch list and review status at the end of each day. Work diligently to complete corrective actions the same day that deficiencies are observed. Add deficiencies not corrected on the same day to the rework items list maintained by the Quality Control Manager. Failure to resolve punch list items to the satisfaction of the Government constitutes a FAILED system acceptance test.

3.4 FINAL TEST REPORT

Submit a Final Test Report following the successful completion of acceptance testing to include resolution of all punch list items. Address the following topics in the Final Test Report:

3.4.1 Summary

Provide a chronological summary of all testing. Describe test activities and results in narrative form.

3.4.2 Personnel

Provide a list of all Contractor and Government personnel who participated in the testing.

3.4.3 Test Logs

Provide all completed test logs along with a test log verification signed by the Test Director.

-- End of Section --