AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 11

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
P00005	See Block 16C		

6. ISSUED BY CODE	NRCHQ	7. ADMINISTERED BY (If other than Item 6) CODE	

US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
MAIL STOP TWFN-07B20M
WASHINGTON DC 20555-0001

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(x)	
		9A. AMENDMENT OF SOLICITATION NO.

CENTROID PIC INC
ATTN RAMPRASAD SAMPATH
3877 GRAND VIEW BLVD
LOS ANGELES CA 900664414

9B. DATED (SEE ITEM 11)

x	10A. MODIFICATION OF CONTRACT/ORDER NO.
	31310021C0009

CODE ZHMGJ9EC59G8	FACILITY CODE	10B. DATED (SEE ITEM 13)
		05/05/2021

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers   ☐ is extended   ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
N/A

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) FAR 52.243-3 CHANGES - TIME-AND-MATERIALS OR LABOR-HOURS

E. IMPORTANT   Contractor   ☐ is not   ☒ is required to sign this document and return _____ 1 _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this task order modification is to: 1) increase the level of effort and revise the statement of work to add two within-scope tasks, Task 4 (Perform an Independent Verification and Validation of SACADA-2) and Task 5 (Develop Promotional Materials); 2) incorporate travel CLIN for ▮▮▮▮ and 3) increase the exercised task order ceiling by ▮▮▮▮ from ▮▮▮▮ to ▮▮▮▮. Refer to continuation pages for specific changes to the contract.

Contract Obligated Amount: ▮▮▮▮ (Unchanged)
Contract Exercised Ceiling: ▮▮▮▮ (Changed)
Contract Base and All Options Ceiling: $878,500.00 (Changed)
Exercised Period of Performance: 05/05/2021 - 05/04/2024 (Unchanged)
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect .

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
	MONIQUE B. WILLIAMS

15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		██████████████ (Signature of Contracting Officer)	09/23/2022

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)
Prescribed by GSA FAR (48 CFR) 53.243

NAME OF OFFEROR OR CONTRACTOR
CENTROID PIC INC

ITEM NO. (A)	SUPPL ES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Ultimate Period of Performance (including options): 05/05/2021 - 05/04/2026 (Unchanged) Period of Performance: 05/05/2021 to 05/04/2024				

Section B - Supplies or Services/Prices was revised as follows.

NRC Local Clauses Incorporated by Full Text

Summary of Clause Changes:

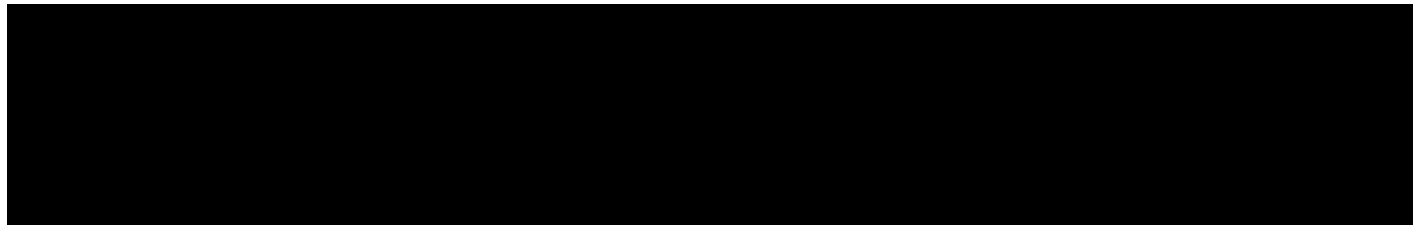Clause titled **CONSIDERATION AND OBLIGATION- LABOR-HOUR CONTRACT** is incorporated as follows:
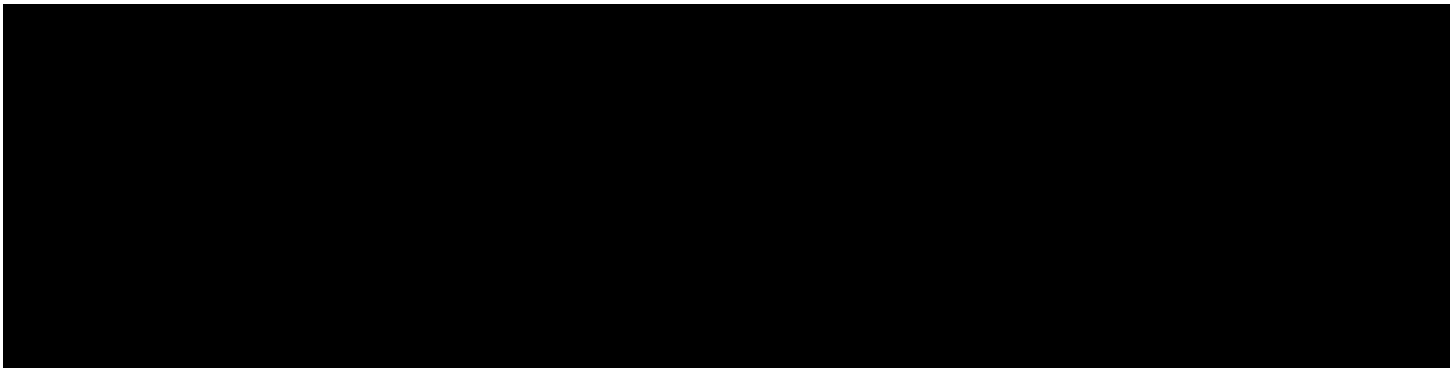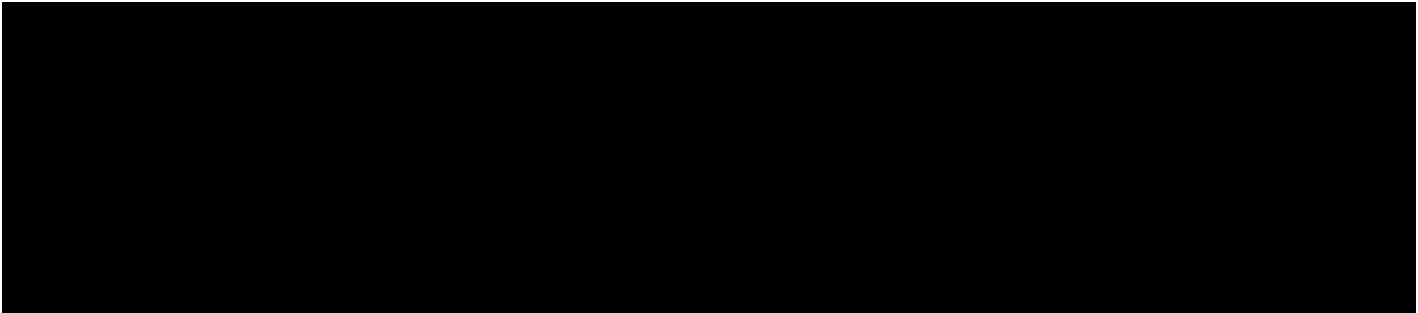
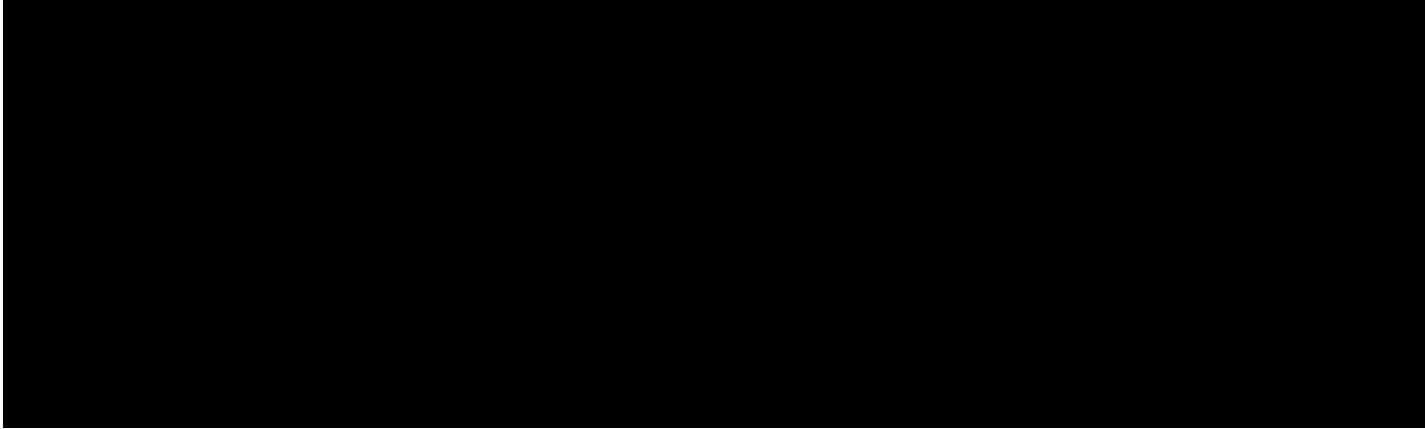**CONSIDERATION AND OBLIGATION- LABOR-HOUR CONTRACT**

(a) The ceiling price to the Government for full performance under this contract is ▮▮▮▮▮▮ (Base Period).

(b) The contract includes direct labor hours at specified fixed hourly rates, inclusive of wages, fringe, overhead, general and administrative expenses, and profit.

c) The amount presently obligated by the Government with respect to this contract is ▮▮▮▮▮▮.

(d) It is estimated that the amount currently obligated will cover performance through December 31, 2022.

(e) This is an incrementally-funded contract and FAR 52.232-22 – "Limitation of Funds" applies.

Summary of Clause Changes:

Clause titled **PRICE/COST SCHEDULE** is incorporated as follows:

PRICE/COST SCHEDULE

TOTAL BASE AND ALL OPITONS CEILING: $878,500.00

*The contractor shall perform Optional Task 3 and continue performance under Option Periods 1 and 2 if authorized by the Contracting Officer via a modification to the contract.

Section C - Description/Specifications was revised as follows.

Summary of Clause Changes:

Clause titled **STATEMENT OF WORK** is incorporated as follows:

STATEMENT OF WORK

C.1   Background

Lack of appropriate and sufficient human performance data has been identified as a key factor affecting human reliability analysis (HRA). Therefore, in 2009 a Staff Requirements Memorandum (SRM-090204B) directed the US Nuclear Regulatory Commission (NRC) staff to develop a database for human reliability analysis (HRA) to collect human performance information for improving the HRA methods and tools used in the NRC's risk-informed applications. To support the SRM and user need, the NRC staff developed the Scenario Authoring, Characterization, and Debriefing (SACADA) database to collect licensed operator simulator training data in 2011.

The initial version of SACADA was established as a database that was hosted on an Idaho National Laboratory (INL) server. Due to security, system maintenance efforts, and connectivity concerns, in 2018 SACADA was re-coded transitioning from the use of SQL server (i.e., SACADA-1) to a MS Windows standalone program (i.e., SACADA-2). The central database in SACADA-1 was replaced by data files. SACADA-2 is installed in the internal network of the participating plants. The collected data is stored locally by the licensee and delivered to the NRC periodically by the plant staff. The software runs on Windows 10 and is coded in C# computer language. SACADA-2 software currently has two modules to collect operator performance information in simulator training and Job Performance Measures (JPMs), which are individual examinations of operators doing a specific task. Currently, SACADA-2 can report performance data on selected individual or crew within a specified time window. Data is exported to an Excel spreadsheet.

The SACADA project is described in ML20339A662. Since 2011, the South Texas Project Nuclear Operating Company (STPNOC) inputted performance data from the operator simulator training data into the SACADA system which has been maintained by INL. There is a need to continue the SACADA-2 operation to support SRM-090204B. This project continues the collaboration with STPNOC and the recruitment of other domestic and international nuclear power plants potentially interested in partnering with the NRC to collect operator performance in simulator training and job performance measures, and enhances SACADA-2's data processing capabilities to inform HRA. NRC anticipates no more than two (2) additional utilities will partner with NRC during the next five years, one of which may be international.

The SACADA-2 software will be at a sound status and operational at time of contract award. Before starting the project, SACADA-2 will go through a thorough software testing, fixing the found bugs, and running at STPNOC's information technology (IT) system. The efforts to maintain SACADA-2's existing functions and supporting the existing user (STPNOC) are expected to be minimum.

C.2   Objective

The objective of this acquisition is to provide continued support to improve and maintain the SACADA-2 software tool.

C.3   Scope of Work/Tasks

The contractor shall provide all resources necessary to accomplish the tasks and deliverables described in this statement of work (SOW).

The task scope includes:
•   Improve SACADA-2 software's functions as directed by the NRC. The new functions include additional modules to collect operator performance information in written exams and actual events.
•   Provide technical support on SACADA-2 software to participating utilities as directed by the NRC COR. The technical support includes, but is not limited to, software installation, debugs, perform cosmetic modifications to the existing software modules to meet user-specific applications; and improving data reporting capabilities.
•   Perform a comprehensive software testing after each major code modifications to ensure proper integral functions of the SACADA-2 software.
•   Support to a new International User, if required. Support includes developing a version of SACADA-2 in a local language other than English and then installing the software. The NRC will provide all the terms used in the SACADA-2 software in the specified local language that need to be translated from English.
•   **Develop promotional materials to assist the NRC in recruiting utility and/or foreign partners to participate in SACADA data collection**.

Specific Tasks
As directed by the Contract Officer's Representative (COR), the contractor shall perform the below tasks. Due to actual operational considerations, the COR may alter initial technical direction to perform a task.

Task 1   Improve SACADA-2 Software Functions

As directed by the COR, the contractor shall expand the SACADA-2 software to include additional modules to collect operator performance information in written exams and actual events. The COR will provide technical information for the contractor to use in developing the two modules. The contractor shall participate in meetings with the COR, NRC Technical Staff, and NRC industry partner(s) to design the functionality of new modules. The contractor shall develop the new modules based on information received from the COR and from meetings. NRC and industry partner(s) will review the new modules. The contractor shall revise the new modules to incorporate comments by industry partner(s) and NRC received from the COR.

Several versions of the new modules maybe required. Once the new module is developed, the contractor shall perform comprehensive software testing to ensure the new modules achieve their objectives and do not affect the existing SACADA-2 functions.

The contractor shall deliver all source codes, installation packages and updated Programmers Manual to the NRC in accordance with the schedules specified in Section C.7.

Task 2   Provide Technical Support

As directed by the COR, if the NRC establishes a SACADA collaboration agreement with new domestic user(s), the contractor shall install SACADA-2 software in a user's computer or network system. The COR will coordinate with the new users for the contractor to perform the installation.
When installing SACADA-2 software in a user's computer or network system, the contractor shall follow the user's security controls to protect SACADA-2 data and minimize the changes to the codes of the SACADA-2 software. The NRC expects minor changes (cosmetic changes, not functional) to the existing SACADA-2 may be needed to support new user(s) (e.g., modify the cover of the job performance measures (JPM) module to reflect the user's logo and job titles, etc.), but no major change to the SACADA-2 code.

As directed by the COR, the contractor shall provide technical support to domestic and any international user that may include, but not limited to, fixing the found bugs, and improving data reporting capabilities.   Any requests the contractor may receive from the users shall be forwarded to the COR for approval prior to starting work.

The contractor shall deliver all source codes, installation packages and updates to the Programmers Manual to the NRC in accordance with the schedules specified in Section C.7.

Task 3   Support to an International New User (OPTIONAL)

This task shall only be exercised via a modification to the contract, if the NRC establishes a SACADA collaboration agreement with a new international user. The contractor shall develop a foreign language version of SACADA software for a collaborator that is a foreign organization who needs to have the organization's home language version of SACADA in order to collect data. As directed by the COR, the contractor shall develop a version of SACADA-2 of the specified local language. The NRC will coordinate with the foreign collaborator to provide the foreign translations to the contractor. The contractor shall use the provided translations to create the foreign language version of the SACADA-2 software. The contractor shall also provide support for installing and running SACADA-2 software in the new international user's IT system as described in Task 2.

Task 4   Perform an Independent Verification and Validation of SACADA-2

The objective of the task is for SACADA-2 to meet minimum software quality standard requirements. The contractor shall develop a plan for SACADA-2 to meet a specified software standard that is agreed upon with the COR. The contractor shall perform verification and validation (V&V) on SACADA-2 in accordance with the approved test plan and as directed by the COR, fix the issues identified in the V&V to meet the standard requirements. The contractor shall participate in meetings with the COR to inform NRC

on the status in meeting the standard requirements and the V&V progress. COR approval is required prior to fixing the issues identified in the V&V process. The contractor shall prepare documentation of meeting the software quality standard requirements.

Task 5 Develop Promotional Materials for SACADA-2

The contractor shall solicit NRC's input to develop video clips in MP4 format to provide an introduction on SACADA-2 software and "how to perform" on SACADA-2's functions (e.g., how to add, remove, or change an operator or operating team, and how to develop a simulation scenario). All video clips should have (1) a transcript of the words in the video clip in MS Word format, (2) a thumb nail of the video clip in JEPG format, and (3) the title of video clip (shown on the top of the MS Word file of item 2). The "how to perform" video clips shall cover all functions of simulator data module and Job Performance Measures module. After accepted by the COR, the COR will provide a BOX link for the contractor to upload these video clips and associated materials to the BOX. The contractor shall create folders in the BOX and each folder only store information related to a video clip.

C.4 Required Labor Categories

Personnel working under this contact shall meet the minimum requirements as follows:

Non-Key Personnel

Project Manager: Three or more years of project management experience

Key Personnel (Refer to Section H-8 "Key Personnel")

Software Programmer: Five or more years' experience in C# programming in the Microsoft Visual Studio environment. Intimately familiar with the software architecture and programming details of SACADA-2.

C.5 Reporting Requirements

Monthly Letter Status Report (MLSR)

The contractor shall provide a Monthly Letter Status Report which consists of a technical progress report and financial status report. This report will be used by the Government to assess the adequacy of the resources proposed by the contractor to accomplish the work contained in this SOW and provide status of contractor progress in achieving tasks and producing deliverables. The report shall include contract/order summary information, work completed during the specified period, milestone schedule information, problem resolution, travel plans, and staff hour summary. If no work was performed during the prior month, the contractor shall not prepare and submit an MLSR. Refer to Attachment 1 for MLSR Instructions and Template.

C.6 List of Deliverables

Section Number	Deliverable and Acceptance Criteria	Deliverable Format	Due Date	Submit to
C.3	Source Codes All source codes (including the SACADA-2 software installed in the data provider's computer system and the SACADA-2 software installed at the commercial contractor to host and process the user provided data). Acceptance Criteria: Source codes enable exact duplication of the SACADA-2	CD, DVD or USB or any media agreed to the COR	September 30 of each FY and on the last business day of the period of performance	COR
C.3	Software Installation Packages The latest versions of all software installation packages (including all language versions) in ready-to-install format (e.g., executable format) including the installation packages for all data providers and the data host, (i.e., commercial contractor for this contract) Acceptance Criteria: Includes the latest versions of the SACADA-2	CD, DVD or USB or any media agreed to the COR	Whenever there is significant change to the software determined by the COR, and on the last business day of the period of performance	COR
	installation packages (including all language versions).			

C.3	Revised SACADA Programmer Manual Programmer manual that encompasses all of the SACADA modifications that have taken place from date of contract award. Acceptance Criteria: Manual contains all required information for a new programmer(s) to know the software architect and specifics to modify the software.	Microsoft Word (electronic)	September 30 of each FY and on the last business day of the period of performance	COR
C.3	Test Plan to meet minimum requirements for Software Quality Standard	Microsoft Word (electronic)	Within one month after award of modification	COR
C.3	Documentation of meeting the software quality standard requirements	Microsoft Word (electronic)	Six months after NRC review and approval of Test Plan	COR
C.3	Video Clips	MP4 (video clips), JEPG (thumb nail) and MS Word (title and transcript)	Three months after award of modification	COR
C.5	MLSR	Microsoft Word or Adobe PDF (electronic)	20th day of following Month	COR and CO

C.8   Release of Publications

Any documents generated by the contractor under this contract/order shall not be released for publication or dissemination without CO and COR prior written approval.

C.9   Place of Performance

The work to be performed under this contract will be performed at the contractor facility.

C.10   Contractor Travel

The following travel may occur under this contract:

Two 2-person, 4-day domestic trips

Contractor will be authorized travel expenses consistent with the Federal Travel Regulation (FTR) and the limitation of funds specified in the contract. All travel requires prior written approval from the COR.

C.11 Data Rights

The NRC shall have unlimited rights to and ownership of all deliverables provided under this contract including software source codes and installation packages, reports, recommendations, briefings, work plans and all other deliverables. All documents and materials, to include the source codes of any software, produced under this contract are the property of the NRC with all rights and privileges of ownership/copyright belonging exclusively to the NRC. These documents and materials may not be used or sold by the contractor without prior written authorization from the CO. All materials supplied to the NRC shall be the sole property of the NRC and may not be used for any other purpose. This right does not abrogate any other Government rights.

All SACADA-2 data entered by the SACADA users is proprietary to the data providers. The NRC shall have unlimited rights to access and analyze all of the data. When written consent is provided by the data providers, NRC-specified contractors shall have the right to access and analyze the specified data for NRC when it is within the scope and period of performance of their individual contract with the NRC.

The contractor shall maintain the SACADA-2 and the data contained therein in accordance with the proprietary data requirements of this contract No individual outside of those contractor personnel working on this contract shall have access to the data without the prior written consent of the data provider(s) and the NRC.

C.12 Incremental Development for Software

The Contractor shall use an incremental build model for software development. The Agency defines an incremental build model as a method of software development where the product is designed, implemented, and tested incrementally, with increasing functionality and/or capability added in each increment until the product is finished.

C.13 Section 508 – Information and Communication Technology Accessibility

N/A