

**SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS**  
 OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, AND 30

1. REQUISITION NUMBER  
0010576850-0002

PAGE 1 OF 15

2. CONTRACT NO.  
W91QUZ-07-D-0010

3. AWARD/EFFECTIVE DATE  
29-Sep-2014

4. ORDER NUMBER  
BR40

5. SOLICITATION NUMBER

6. SOLICITATION ISSUE DATE

7. FOR SOLICITATION INFORMATION CALL:

a. NAME

b. TELEPHONE NUMBER (No Collect Calls)

8. OFFER DUE DATE/LOCAL TIME

9. ISSUED BY  
 CODE W56HZV  
 INSTAL & VEHICLE SUP CONTRACTING DIV  
 6501 E. 11 MILE ROAD  
 WARREN MI 48397-5000  
 TEL:  
 FAX:

10. THIS ACQUISITION IS  
 UNRESTRICTED OR  SET ASIDE: \_\_\_\_\_ % FOR:  
 SMALL BUSINESS  WOMEN-OWNED SMALL BUSINESS (WOSB)  
 HUBZONE SMALL BUSINESS  ECONOMICALLY DISADVANTAGED WOMEN-OWNED SMALL BUSINESS (EDWOSB) NAICS:  
 SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS  8(A) SIZE STANDARD:

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED  
 SEE SCHEDULE

12. DISCOUNT TERMS  
Net 30 Days

13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)

13b. RATING

14. METHOD OF SOLICITATION  
 RFQ  IFB  RFP

15. DELIVER TO  
 CODE W80SWP  
 CENTER FOR ARMY ANALYSIS  
 PATRICK WOOD  
 6001 GOETHALS RD  
 FT BELVOIR VA 22060

16. ADMINISTERED BY  
 CODE W56HZV  
 INSTAL & VEHICLE SUP CONTRACTING DIV  
 KIM RAMSAY  
 CCTA-HDC-BMS 350  
 DENETTE.K.RAMSAY.CIV@MAIL.MIL  
 WARREN MI 48397-5000

17a. CONTRACTOR/OFFEROR  
 CODE 55RC1 FACILITY CODE  
 IRON BOW TECHNOLOGIES, LLC  
 MELISSA BOYD  
 4800 WESTFIELDS BLVD STE 300  
 CHANTILLY VA 20151-2299  
 TELEPHONE NO. 253-867-1806

18a. PAYMENT WILL BE MADE BY  
 CODE HQ0490  
 DFAS-INDY VP GFEB5  
 8899 E 56TH STREET  
 INDIANAPOLIS IN 46249-3800

17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER

18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a. UNLESS BLOCK BELOW IS CHECKED  SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
<b>SEE SCHEDULE</b>					

25. ACCOUNTING AND APPROPRIATION DATA  
**See Schedule**

26. TOTAL AWARD AMOUNT (For Govt. Use Only)  
**\$68,289.51**

27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1. 52.212-4. FAR 52.212-3. 52.212-5 ARE ATTACHED. ADDENDA  ARE  ARE NOT ATTACHED

27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA  ARE  ARE NOT ATTACHED

28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED.

29. AWARD OF CONTRACT: REF. OFFER DATED . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:

30a. SIGNATURE OF OFFEROR/CONTRACTOR

31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)  
*Heather M Mوندt*

30b. NAME AND TITLE OF SIGNER  
(TYPE OR PRINT)

30c. DATE SIGNED

31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT)  
HEATHER M. MUNDT / CONTRACTING OFFICER  
TEL: 586-282-6506  
EMAIL: heather.m.mundt.civ@mail.mil

31c. DATE SIGNED  
29-Sep-2014

**SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS  
(CONTINUED)**

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
<p><b>SEE SCHEDULE</b></p>					

32a. QUANTITY IN COLUMN 21 HAS BEEN  
 RECEIVED  INSPECTED  ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: \_\_\_\_\_

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
--------------------------------------------------------	-----------	---------------------------------------------------------------------

32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE
	32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE

33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	37. CHECK NUMBER
------------------------------------------------------------------------------------	--------------------	---------------------------------	------------------------------------------------------------------------------------------------------------------	------------------

38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY
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41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT	42a. RECEIVED BY ( <i>Print</i> )		
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE	42b. RECEIVED AT ( <i>Location</i> )	
		42c. DATE REC'D ( <i>YY/MM/DD</i> )	42d. TOTAL CONTAINERS

Section SF 1449 - CONTINUATION SHEET

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Job	\$68,289.51	\$68,289.51

VSAN HP HARDWARE AND VDI  
FFP

Please refer to quote 40503 Version 1 submitted via CHES 26 September 2014.  
See Statement of Work for item descriptions and quantities.

Delivery Location/POC:

Mr. Patrick Wood  
Center of Army Analysis  
6001 Goethals Road Suite 102  
Fort Belvoir, VA 22060-5230  
703-806-5234

All terms and conditions of CHES contract W91QUZ-07-D-0010 apply to this  
delivery order.

FOB: Destination

PURCHASE REQUEST NUMBER: 0010576850-0002

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NET AMT \$68,289.51

ACRN AA \$68,289.51  
CIN: GFEB001057685000001

STATEMENT OF WORK

Statement of Work

PROPERTY OF THE UNITED STATES GOVERNMENT  
COPYING, DISSEMINATION OR DISTRIBUTION OF THESE DRAWINGS, PLANS OR  
SPECIFICATIONS TO UNAUTHROIZED USERS IS PROHIBITED  
PROPERLY DESTROY DOCUMENTS WHEN NO LONGER NEEDED  
DO NOT REMOVE THIS NOTICE

**Hardware Equipment for Virtual Storage Area Network (VSAN) and Virtual Desktop  
Infrastructure (VDI)**

**1. BACKGROUND**

The Center of Army Analysis (CAA) requests the purchase of hardware equipments to expand storage and compute capacities.

## 2. OBJECTIVE

Expand CAA's network storage in order to keep up with the growing demand for network storage by adding a VSAN storage structure which will also allow CAA to support thin client processing.

## 3. SCOPE

The contractor shall provide, deliver and warrant the below in part 3.1.

### 3.1 SPECIFICATION

Line #	Qty	Item #	Manuf. Part #	Item Description	Manufacturer
1	3	14458274	665554-B21	CTO HP DL380P GEN8 Server HP Servers	HP Servers
2	3	17056131	715217-L21	CTO Processor, Gen8 Xeon E5-2660 v2 FIO Kit HP Server Accessories	HP Server Accessories
3	24	16338348	708641-B21	CTO 16GB PC3-14900 DDR3 SDRAM Upgrade Kit HP Server Accessories	HP Server Accessories
4	3	16358904	715217-B21	Processor, Xeon 10C E5-2660 v2 2.2GHz / 25MB / 95W for DL380p Gen8 HP Server Accessories	HP Server Accessories
5	24	16338348	708641-B21	CTO 16GB PC3-14900 DDR3 SDRAM Upgrade Kit HP Server Accessories	HP Server Accessories
6	6	16343198	717971-B21	480GB SATA 6Gb / s Value Endurance SFF 2.5" SC Enterprise Value Solid State Drive HP Server Accessories	HP Server Accessories
7	30	13753079	652589-B21	900GB SAS 6Gb / s 10K rpm SFF 2.5" SC Enterprise Hard Drive w / 3-year Warranty HP Server Accessories	HP Server Accessories

8	3	1387755 7	631681- B21	CTO 2GB P-series Flash Backed Write Cache for Select HP Servers HP Server Accessories	HP Server Accessories
9	3	1737050 0	728987- B21	CTO Ethernet 10GB 2P 571SFP+ Adapter HP Server Accessories	HP Server Accessories
10	3	1737050 0	728987- B21	CTO Ethernet 10GB 2P 571SFP+ Adapter HP Server Accessories	HP Server Accessories
11	3	1484671 0	615732- B21	CTO Ethernet 1Gb 2-port 332T Adapter HP Server Accessories	HP Server Accessories
12	3	1645600 2	728993- B21	FIO Ethernet 10GB 2P 571FLR-SFP+ Adapter HP Server Accessories	HP Server Accessories
13	6	1688305 5	748287- B21	1200W CS Platinum Hot Plug P / S Kit Hewlett Packard Commercial PCs	Hewlett Packard Commercial PCs
14	3	1395177 0	663478- B21	CTO 2U SFF BB Rail Kit Gen8 HP Server Accessories	HP Server Accessories
15	3	5619822	U4555E	HP Startup ProLiant DL38x Service HEWLETT PACKARD - SIN:132-12. This item is also available on GSA Contract	Hewlett Packard
16	3	U2GC1 E		HP Foundation Care Service - 3 Year Extended Service - 24 x 7 x 4 Hour - On-site - Maintenance - Parts & Labor - Electronic and Physical Service	HEWLETT PACKARD

#### 4. DELIVERY LOCATION / POC

Mr. Patrick Wood  
Center of Army Analysis  
6001 Goethals Road Suite 102  
Fort Belvoir, VA 22060-5230  
703.806.5234

[patrick.a.wood8.civ@mail.mil](mailto:patrick.a.wood8.civ@mail.mil)

Technical POC: Same as above

FOB: Destination

## 5. PERIOD OF PERFORMANCE

**All** items **must** be delivered within 30 days of contract award.

30 Days from Award POP

## 6. INVOICE

In accordance with DFARS 252.232-7003, Electronic Submission of Payment Request, please submit all invoices using the Wide Area Work Flow (WAWF) online database system. To become a registered user, go to <https://wawf.eb.mil>. Additionally, training for WAWF, may be obtained by visiting <http://wawftraining.com/>.

POC for invoice certification and payment:

Mr. Patrick Wood

## INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

CLIN	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
0001	Destination	Government	Destination	Government

## DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
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0001 30-OCT-2014 1 CENTER FOR ARMY ANALYSIS W80SWP  
 PATRICK WOOD  
 6001 GOETHALS RD  
 FT BELVOIR VA 22060  
 FOB: Destination

## ACCOUNTING AND APPROPRIATION DATA

AA: 0212014201420200004434313100030001900 6100.9000021001  
 AMOUNT: \$68,289.51  
 CIN GFEB001057685000001: \$68,289.51

## CLAUSES INCORPORATED BY REFERENCE

52.204-7	System for Award Management	JUL 2013
52.229-1	State and Local Taxes	APR 1984
52.232-37	Multiple Payment Arrangements	MAY 1999
52.233-1	Disputes	MAY 2014
52.243-1	Changes--Fixed Price	AUG 1987
52.247-34	F.O.B. Destination	NOV 1991
52.249-1	Termination For Convenience Of The Government (Fixed Price) (Short Form)	APR 1984
52.249-8	Default (Fixed-Price Supply & Service)	APR 1984
252.211-7003	Item Unique Identification and Valuation	DEC 2013
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	JUN 2012

## CLAUSES INCORPORATED BY FULL TEXT

52.201-4000 TACOM-WARREN OMBUDSPERSON Jan 06

Information regarding the TACOM-Warren Ombudsperson is located at the website  
<http://contracting.tacom.army.mil/acqinfo/ombudsperson.htm>.

52.204-4005 (TACOM) REQUIRED USE OF ELECTRONIC COMMERCE (AUG 2012)

(a) All contract awards, modifications and delivery orders issued by TACOM will be issued electronically. The contractor has the option to receive these actions either via the Worldwide Web (WWW) or Electronic Data Interchange (EDI). Many provisions/clauses that appear "by reference", meaning only clause titles and regulation site are listed; their full texts can be found at the website: <http://farsite.hill.af.mil/>

(b) In order to be eligible to receive an award under this solicitation, the successful offeror must be registered with the Department of Defense (DOD) System for Award Management (SAM). The SAM registration process

may be done electronically at the World Wide Web (WWW) site: <https://www.sam.gov/portal/public/SAM>. (In order to be registered to use EDI, you must use the long form for registration. Certification information, including information on the EDI 838 TPP, must be furnished to the Contracting Officer within 60 calendar days after contract award to complete networking requirements within the Government.)

(c) Worldwide Web Distribution. The contractor will receive an electronic Notice of the Award, Modification, or Delivery Order via e-mail. If you choose the WWW option, you must download the file from the appropriate TACOM webpage:

Warren: [http://contracting.tacom.army.mil/CFDATA/AWARDS/AWARD\\_RPT01.cfm](http://contracting.tacom.army.mil/CFDATA/AWARDS/AWARD_RPT01.cfm)

Rock Island - JMTC: <https://acquisition.army.mil/asfi/>

Red River Army Depot: <https://www.redriver.army.mil/>

Anniston Army Depot: <https://acquisition.army.mil/asfi/>

(d) Electronic Data Interchange. If you choose to receive contract awards, modifications and delivery orders through EDI, they will be delivered electronically via the Federal Acquisition Network (FACNET). Federal Standard Version 3050 of Standard X12 from the American National Standards Institute (ANSI) will be used as the format for these electronic transactions.

(1) You must complete the EDI 838 Trading Partner Profile, and must agree (i) to subcontract with a DoD certified VAN or Value Added Service (VAS) provider, or (ii) to become DoD certified as a Value Added Network (VAN). The EDI 838 Trading Partner Profile is contained in the basic SAM registration form and includes portions of the registration form which are titled "Optional".

(2) You must select a VAN from the official DoD approved list. DoD Certified VANs are listed at <http://www.acq.osd.mil/dpap/ebiz/VANs.htm>. If your VAN is later removed from the official list, or if you voluntarily drop your initially selected VAN, then you must switch to a VAN that remains on the official DoD approved list. You must maintain an active account on a DoD approved VAN for the entire duration of the contract, beginning no later than the 60th day after award.

(e) Unless otherwise specified elsewhere in the contract, all data items you are required to provide under this contract must be submitted electronically. Please go to the following webpage for <http://contracting.tacom.army.mil/acqinfo/ebidnotice.htm>

(f) Additional information can be obtained by sending a message to: [usarmy.detroit.acc.mbx.wrn-web-page@mail.mil](mailto:usarmy.detroit.acc.mbx.wrn-web-page@mail.mil) or by calling (586) 282-7059.

[End of Clause]

52.211-4000 (TACOM) MARKING OF SHIPMENT

(JUL 2008)

All packages must be marked with the contents and TACOM Contract/Order Number.  
Failure to properly mark all shipments may result in delayed payment and possible rejection of invoices and/or shipments.

[End of Clause]

52.213-4010 (TACOM) ADDITIONAL GENERAL CLAUSES

(FEB 1997)

The following three FAR clauses apply to this purchase order, in addition to the other clauses contained in, or cited in, the document:

1. CHANGES-FIXED-PRICE (AUGUST 1987)

52.243-1

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in any one or more of the following:

(1) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the Government in accordance with the drawings, designs, or specifications.

(2) Method of shipment or packing.

(3) Place of delivery.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made, obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

(End of Clause)

2. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (APRIL 1984)

52.249-1

The Contracting Officer, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the rights, duties, and obligations of the parties, including compensation to the Contractor, shall be in accordance with Part 49 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of Clause)

3. DEFAULT--FIXED-PRICE SUPPLY AND SERVICE (Apr 1984)

52.249-8

The Contracting Officer, by written notice, may terminate this contract, in whole or in part, for failure of the Contractor to perform any of the provisions hereof. See referenced FAR cite for full provision.

(End of Clause)

## 52.232-4000(TACOM) CONTRACTING OFFICER'S AUTHORITY

(APR 2006)

The Contracting Officer is the only person authorized to approve additions or changes in any of the requirements under any contract, resulting from this solicitation, notwithstanding any provisions contained elsewhere in this contract, the said authority remains solely in the Contracting Officer. In the event that the contractor effects any change at the direction of any person other than the Contracting Officer, such change shall be solely at the risk of the contractor. (See General Provision, entitled: "Notification of Changes," FAR 52.243-7 or paragraph (c) of FAR 52.212-4).

[End of Clause]

## 52.232-4007

## WIDE AREA WORK FLOW (WAWF), CODES, AND DESIGNATED ACCEPTORS (AUG 2012)

The contractor shall use WAWF to electronically process invoices for payment and receiving reports. The contractor shall register to use WAWF and take the Web-based training at <https://wawf.eb.mil>. Direct any questions relating to the system and vendor training to the Ogden Help Desk at 866-618-5988.

To properly route an invoice and receiving report through WAWF, the contractor shall indicate the following when prompted:

1. Select the appropriate type of invoice as indicated below. **It is imperative that contractors select the proper type of invoice.** Improper selection of an invoice type will result in the delay of a payment or the rejection of an invoice submittal.

  X   **Invoice and Receiving Report Combo (Supplies)**

Use for contracts that are entirely for supply requirements or for contracts that are predominantly for supply requirements but also includes minimal service line items.

       **Invoice 2-in-1 (Services)**

Use for contracts that are entirely for service requirements.

2. Use the following DoDAAC (Department of Defense Activity Address Code) codes when prompted:
  - Your firm's CAGE Code: 55RC1
  - Issue and Admin DoDAAC Code: W56HZV
  - Ship-To DoDAAC Code: W80SWP
  - Accept-By DoDAAC Code: W80SWP
  - Payment DoDAAC Code: HQ0490
3. Include the **Purchase Request Number** as specified in each Contract Line Item Number (CLIN). This number can be found at the bottom of the extended description of each CLIN. **NOTE:** The purchase request number may be different for each CLIN. PR 0010576850-0002
4. Indicate the proper **Unit of Measure** as specified in each CLIN. Failure to indicate the proper Unit of Measure will lead to vendor pay issues. JOB
5. Indicate the following **Acceptor, Alternate Acceptor, and Contract Specialist** when the WAWF system prompts for "additional e-mail submission" after clicking "Signature".

- Primary Acceptor Name: Patrick Wood
- Primary Acceptor e-mail: patrick.a.wood8.civ@mail.mil
  
- Contract Specialist Name: Kim Ramsay
- Contract Specialist e-mail: denette.k.ramsay.civ@mail.mil

To track the status of an invoice, in WAWF click on the link, "Pay Status" (myInvoice-External link) found under the tab named "Lookup" or by going to <https://myinvoice.csd.disa.mil/index.html>. If the payment office indicated in the contract is Columbus, direct any payment related questions to the Defense Finance Accounting Services (DFAS) Columbus at 800-756-4571. If the payment office is other than Columbus, contact the contract administrator for the customer service phone/fax numbers.

[End of clause]

52.239-4002 (TACOM) SECTION 508 CONFORMANCE (MAY 2010)

Under Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d), federal agencies must give disabled employees and members of the public access to electronic information that is comparable to the access available to others. Section 508 requires that federal agencies' electronic and information technology (EIT) be accessible to people with disabilities. All EIT products and services purchased under this contract must conform to the Section 508 law by meeting all applicable accessibility standards.

The applicable accessibility standards are indicated in the Statement of Work and/or CLINs. See below for the list of accessibility standards. Only the standards referenced in the Statement of Work and/or CLINs apply to this contract.

Section 508 Accessibility Standards

1194.21 Software applications and operating systems.

(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.

(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.

(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.

(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.

(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.

(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.

(g) Applications shall not override user selected contrast and color selections and other individual display attributes.

(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.

(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.

(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

(l) When electronic forms are used, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

#### 1194.22 Web-based intranet and internet information and applications.

(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

(d) Documents shall be organized so they are readable without requiring an associated style sheet.

(e) Redundant text links shall be provided for each active region of a server-side image map.

(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

(g) Row and column headers shall be identified for data tables.

(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

(i) Frames shall be titled with text that facilitates frame identification and navigation.

(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with 1194.21(a) through (l).

(n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

(o) A method shall be provided that permits users to skip repetitive navigation links.

(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

#### 1194.23 Telecommunications products.

(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.

(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.

(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.

(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.

(e) Where provided, caller identification and similar telecommunications functions shall also be available for

users of TTYs, and for users who cannot see displays.

(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.

(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.

(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.

(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.

(k) Products which have mechanically operated controls or keys, shall comply with the following:

(1) Controls and keys shall be tactilely discernible without activating the controls or keys.

(2) Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.

(3) If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.

(4) The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

#### 1194.24 Video and multimedia products.

(a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.

(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.

(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

#### 1194.25 Self contained, closed products.

(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.

(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

(c) Where a product utilizes touch screens or contact-sensitive controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).

(d) When biometric forms of user identification or control are used, an alternative form of identification or

activation, which does not require the user to possess particular biological characteristics, shall also be provided.

(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.

(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.

(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.

(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

(j) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following:

(1) The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length.

(2) Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.

(3) Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.

(4) Operable controls shall not be more than 24 inches behind the reference plane.

#### 1194.26 Desktop and portable computers.

(a) All mechanically operated controls and keys shall comply with 1194.23 (k) (1) through (4).

(b) If a product utilizes touch screens or touch-operated controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).

(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.

#### 1194.31 Functional performance criteria.

(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are blind or visually impaired shall be provided.

(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired shall be provided.

(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for assistive technology used by people who are deaf or hard of hearing shall be provided.

(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.

(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for assistive technology used by people with disabilities shall be provided.

(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.

#### 1194.41 Information, documentation, and support.

(a) Product support documentation provided to end-users shall be made available in alternate formats upon

request, at no additional charge.

(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.

(c) Support services for products shall accommodate the communication needs of end-users with disabilities.

(End of Clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://farsite.hill.af.mil>

(End of clause)