

Meeting Section 508 Electronic and Information Technology Requirements:  
A Toolkit for Ensuring Compliance

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## Toolkit Overview

Working together, EPA's Office of Environmental Information Section 508 Coordinator and Quality Staff developed the Section 508 EIT Toolkit. The intent of the toolkit is to help stakeholders (EPA staff, contractors, developers, etc.) address Section 508 throughout the project life cycle – a critical component of Quality Assurance.

The toolkit provides suggestions, standards, links, and resources to consider or use while planning and developing a variety of projects that involve electronic and information technology (EIT). There is no one size fits all tool that will meet all of your Section 508 needs. Every project has its own technical requirements and considerations. And not all projects involve Section 508. It is important to remember that Section 508 only applies if there is electronic and information technology (EIT).

Mentioning 508 in passing at the beginning or waiting until the last minute of the project only increases the chances that a project will not be 508 compliant. Suppose you were planning to remodel your kitchen in your home. You wouldn't just tell a contractor to start work without some planning and careful consideration of what you want your kitchen to look like when it is finished! You would need to think about your budget, expectations, specifications, timeline, etc. This concept applies to your electronic and information technology services or products, as well. It is not enough to tell a contractor, colleagues, and other stakeholders to make something 508 compliant and just assume it was done. It is our hope that this toolkit will provide you with the resources needed to integrate 508 into your project life cycle from the very beginning.

The Section 508 EIT Toolkit does not replace official federal Section 508 documents and guidelines. Furthermore, this toolkit is intended to be "living document" and updates will take place periodically.

## What is Section 508?

Section 508 of the Rehabilitation Act of 1973 (as amended in 1998) requires all Federal Electronic and Information Technology (EIT) developed, maintained, procured, and used after June 21, 2001 to be accessible to federal employees and members of the public with disabilities. The US Access Board ([www.access-board.gov](http://www.access-board.gov)), an independent federal Agency that focuses on accessibility issues for people with disabilities, is responsible for the Section 508 standards.

Section 508 requirements only apply to "electronic and information technology" or "EIT". Electronic and information technology includes any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information.

Some examples of EIT include, but are not limited to:

- Telecommunication devices (e.g., a telephones, cell phones, pagers)
- Multimedia and Video products (e.g., televisions, VCRs, DVD players, videotaped productions, including content on a CD or DVD or video cassette)
- Web sites (Internet and Intranet) including access to multimedia, documents, etc.
- Services such as Information Documentation and Support (user guides, technical support)
- Desktop or portable computer (e.g., laptops, PCs, PDAs)
- Software or operating system (e.g., word processing application, accounting software, authoring and document presentation tools)
- Electronic office products and equipment (e.g., photocopiers, calculators, fax machines, printers)

Section 508 applies to all EIT even if there are no employees with disabilities in the office, branch, or even an entire Agency. It is important to note that there are exceptions under Section 508 depending on the nature of the project, as well as the technical requirements.

## What is the Link between Section 508 and Quality Assurance?

Ensuring that your product and or service are 508 compliant is a key part of developing deliverables of Quality. To help ensure your products and services are 508 compliant, this toolkit is designed to be compatible with quality management system requirements. When you use this toolkit, apply the ISO 9001 PDCA ("Plan-Do-Check-Act") process model.

Users of the toolkit should follow the four PDCA steps to ensure that the EIT project or service being procured or developed is 508 compliant:

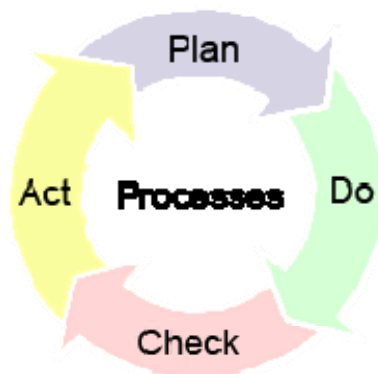
**Plan:** Establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organization's policies

**Do:** Implement the process on program specific activities

**Check:** Monitor and measure processes, products and services against policies, objectives and requirements

**Act:** Take action to continually improve process performance.

PDCA is not just a four-step process that you follow once and then you are done. It is iterative and continues throughout the project's life cycle. The cyclical nature of the PDCA model guides the project towards optimal performance, or for the purposes of this toolkit – 508 compliance.



## What is the difference between Section 508 and providing reasonable accommodations to a person with a disability?

Section 501 and Section 504 of the Rehabilitation Act of 1973 cover reasonable accommodations for an individual with a disability that is either an applicant or already works for the federal government. Section 508 is a different mandate from 501 and 504. Reasonable accommodation is the removal of a work place barrier for people with disabilities to allow them the opportunity to apply for employment, perform the essential functions of a job or, to enjoy equal benefits/privileges of employment. Whereas, Section 508 was enacted to eliminate barriers in information technology.

## How does this toolkit help with Section 508 requirements for EIT?

Use the toolkit when your product or service involves electronic and information technology (EIT). If there is no EIT, then Section 508 does not apply and the toolkit is not applicable. It is important to note that some projects, such as a conference, may involve multiple types of electronic and information technology, so plan accordingly.

Using the PDCA model, the toolkit provides Section 508 standards, example statement of work language, and a variety of resources for different types of electronic and information technology. The toolkit will help you ensure that your project will be Section 508 compliant throughout a project life cycle.

This toolkit will help you:

- Identify and cite the applicable Section 508 standards for your project.
- Clearly communicate with your stakeholders, e.g., project developers, EPA employee, grantee or contractor, about the meaning of 508 compliance for this specific project.
- Maintain a conversation about 508 compliance throughout the project - beginning in the initial research and planning phases and continuing on through the entire life cycle of the product, including multiple checks during the development process.
- Assure the quality of your project for its intended use.

### **What about contracts, purchase orders, micro-purchases and Section 508?**

Section 508 requirements apply to all contracts, purchase requests, and micro-purchases. It is recommended that EPA requiring officials and contracting personnel include a statement about Section 508 and deliverables in contracts above the micro-purchase level of \$3000 along with specific requirements for 508 depending on your technical needs. This will help to ensure that the requirement to purchase accessible EIT is addressed in all EIT-related contracts and purchase orders.

Suggested general Section 508 language:

As described in the Federal Acquisition Regulation (FAR) Part 39 Section 2, the contractor shall provide electronic and information technology (EIT) deliverables that are compliant with applicable Section 508 standards and requirements. For more information about Section 508, please refer to the Access Board site on Section 508 Standards - <http://www.access-board.gov/sec508/standards.htm>. For further information regarding EPA's policy on purchasing accessible EIT, please refer to CIO Policy 2130 (formerly 2100.1) Accessible Electronic and Information Technology. All information technology/information management policies can be found on [www.epa.gov/irmpoli8](http://www.epa.gov/irmpoli8).

Where, how, and when to use this suggested general Section 508 language is addressed in the life cycle project plan outline, described in the "How to Use the Toolkit" section.

### **How to use the Toolkit**

The toolkit has a two phase approach for achieving 508 compliance. Phase one of the toolkit will help you address four fundamental questions regarding Section 508 and EIT. The second phase of the toolkit has two parts – one, a life cycle project plan and two, a checklist of common 508 issues associated with particular types of EIT. The two parts of phase two are meant to work in conjunction. For example, as you develop your project using the appropriate life cycle project plan outline, the checklist can help prompt language you might include in your statement of work or technical direction

#### **Phase One – Getting Started with the Toolkit**

Phase one of the toolkit has four questions that you should ask as you start planning and work. The answers to the following questions will help guide you through the 508 compliance process.

1. Is the product or service electronic and information technology (EIT)?
2. Do any Section 508 Exceptions apply?
3. Will the EIT pose an Undue Burden to the Agency?
4. What Section 508 Standards Apply to the Product or Service?

## Phase Two – Ensuring 508 Compliance for Your Project

### Part One - Life Cycle Project Plan Outline

There are outlines for each different type of EIT product and service covered in the toolkit. What outline you will use depends on the answers from Phase One – Getting Started with the Toolkit. The outlines combine the PDCA model and Section 508 resources. The outlines are designed to help guide the overall iterative life cycle of the project. Below is a general overview of the Life Cycle Project Plan outline format.

PDCA Steps	Product or Service
<b>Plan:</b> Establish the objectives and processes	Establish the objectives and processes necessary to deliver results in accordance with EPA’s Section 508 requirements and policies. <ul style="list-style-type: none"> <li>○ Identify type(s) of EIT components. Some projects have multiple EIT, ex. a conference, web-based training, etc.</li> <li>○ Determine if Section 508 Exceptions apply.</li> <li>○ Determine which 508 standards and requirements apply.</li> <li>○ Outline framework of project and identify 508 milestones, standards and requirements for project stakeholders.</li> </ul>
<b>Do:</b> Implement the process	Implement the work needed to complete the project. <ul style="list-style-type: none"> <li>○ Create solicitation bid, if applicable along with suggested general Section 508 language.</li> <li>○ Develop statement of work (SOW) or technical direction (TD) with 508 requirements and milestones.</li> <li>○ Create product.</li> </ul>
<b>Check:</b> Monitor and measure for compliance.	Monitor and measure processes, products and services against policies, objectives and requirements for Section 508 compliance. <ul style="list-style-type: none"> <li>○ Ask questions during development and key project milestones about 508 compliance.</li> <li>○ Periodically test for 508 compliance.</li> <li>○ Use checklists to monitor and measure process.</li> <li>○ Identify if Section 508 Exceptions apply (Commercial Non-Availability or Fundamental Alteration)</li> </ul>
<b>Act:</b> Execute continual improvement	Take action to continually improve process performance. <ul style="list-style-type: none"> <li>○ Check in with the process – asses 508 compliance</li> <li>○ Take additional steps as need to correct potential problems, ex. modify SOW or TD to clarify 508 requirements.</li> <li>○ Manage close out and archive process (documentation) so that others benefit in the future from your work.</li> </ul>
<b>Additional Notes or Resources</b>	This section provides additional background information such as definitions, training, US Access Board guidance, and other tips.

### Part Two – Checklist

Each type of EIT included in the toolkit has a checklist identifying some of the most commonly occurring accessibility 508 issues. The checklist is designed to be used throughout the life cycle project plan to highlight potential 508 issues that are common and can be addressed in project planning, what to look for when testing for 508 compliance, and 508-related questions to ask when communicating with project stakeholders.

This checklist can be used several ways throughout the life-cycle of your project:

- to highlight potential 508 issues that can be addressed during project planning;
- to test (or items to have tested) for 508 compliance; and
- to ask 508-related questions when communicating with project stakeholders.

## Getting Started with the 508 EIT Toolkit

There are four fundamental questions that you should address as you start planning and work. The questions will help you determine if 508 and the use of the toolkit applies to your project.

1. Is the Product or Service Electronic and Information Technology?
2. Do any Section 508 Exceptions Apply?
3. Will the EIT pose an Undue Burden to the Agency?
4. What Section 508 Standards Apply to the Product or Service?

### 1. Is the Product or Service Electronic and Information Technology?

This toolkit is for products or services that are electronic and information technology (EIT) as covered by the definition of EIT) under Section 508. If your product or service is not EIT, you do not need to use this toolkit. In such cases, we suggest that you document that you determined there was no EIT and Section 508 is not applicable for your records.

When there is EIT, make sure you identify if there is more than one type of EIT as there are different standards for different types of EIT. For example, a conference may have a Web site, a conference registration web-based application, presentations, and other types of EIT.

Definition of Electronic and Information Technology as defined by Section 508:

Electronic and information technology includes information technology and any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology. ([Definition of Electronic and Information Technology](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Definitions))  
[<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Definitions>]

In addition to HVAC equipment and medical equipment with embedded technology (refer to definition of EIT), the following electronic and information technology items **does not** fall under Section 508 requirements:

- **Blank** flash cards (also called USB flash, disk drive or memory stick)
- External hard drives
- **Blank** disks, **blank** CDs, **blank** video tapes and **blank** DVDs (content added to these products must be accessible)
- Cables and power cords
- Ethernet cards and hubs
- Switch boxes
- Video splitters

## 2. Do any Section 508 Exceptions Apply?

There are exceptions to the Section 508 standards. Please note that at EPA, you must have approval of the delegated approving authority in your office to claim an exception.

There are several exceptions that may apply to your project. Certain exceptions have specific documentation requirements.

### 2.1. National Security

Section 508 does not apply to any electronic and information technology operated or used by agencies that is directly used for intelligence activities, cryptologic activities related to national security, command of and control of military forces, is an integral part of a weapon or weapons system, or is a system critical to the direct fulfillment of military or intelligence missions.

This exception does not apply to a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications) by agencies involved in intelligence and military activities. For example, software used for payroll, word processing software used for production of routine documents, ordinary telephones, copiers, fax machines, and web applications must still comply with the standards even if they are developed, procured, maintained, or used by an Agency engaged in intelligence or military activities.

If the National Security exception applies, document that this is for National Security. You are finished with the toolkit for this particular project. This exception will not apply to EPA except in rare or unusual circumstances.

### 2.2. EIT located in maintenance space

This exception is frequently called the “back office” exception. EIT products located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with these standards.

This exception is often misunderstood as the back office exception truly only applies to areas that are visited on few occasions by service personnel. A telephone closet is an example of a back office and would be eligible for this exception.

If the “back office” exception applies, document that this is EIT located in maintenance space. You are finished with the toolkit for this particular project.

### 2.3. Incidental to a contract

The products a contractor develops, procures, maintains, or uses which are not specified as part of a contract with EPA are not required to comply with these standards. For example, a consulting firm that enters into a contract with an EPA office to produce a report is not required to procure accessible computers and word processing software to produce the report. Similarly, if a firm is contracted to develop a Web site for a Federal Agency, the Web site created must be fully compliant with these standards, but the firm's own Web site would not be covered.

If the “incidental to a contract” exception applies, document that this EIT involved is for the contractor. You are finished with the toolkit for this particular project. However, any deliverables or services that the contractor turns over to EPA must be 508 compliant.



2.4. Commercial Non-Availability

**Requires documentation of market research.**

When procuring a product, EPA shall purchase products which comply with the applicable Section 508 standards if products are available in the commercial marketplace (COTS – commercial-off-the-shelf). If there is no COTS product that meets the applicable 508 technical requirements or cannot be furnished in time to satisfy the Agency's delivery requirements, then the Agency can claim **commercial non-availability** – since an accessible product does not exist at that time. It is important to note that technology advances very quickly and this exception may only apply to a product for a limited time until newer technologies that are accessible are developed.

Agencies cannot claim a COTS product is commercially non-available because no product in the marketplace meets all the standards. If products are commercially available that meets some but not all of the standards, the Agency must procure the product that best meets the standards and the Agency's technical requirements.

Commercial non-availability cannot be applied to products that are developed in response to a federal government solicitation. All the applicable standards would need to be met for such products and services unless other 508 exceptions apply.

2.5. Fundamental Alteration

**Requires documentation of market research.**

**Fundamental alteration** means a change in the fundamental characteristic or purpose of the product or service, not merely a cosmetic or aesthetic change. For example, suppose EPA intends to procure portable pocket-sized pagers for field agents. Adding a large display to a small pager may fundamentally alter the device by significantly changing its size to such an extent that it no longer meets the purpose for which it was intended - to provide a portable communication device which fits in a shirt or jacket pocket. For some of these agents, portability of electronic equipment is a paramount concern. Generally, adding access should not change the basic purpose or characteristics of a product in a fundamental way.

This exception can apply to products that are developed in response to a federal government solicitation. Also, as a product or service is developed for the Agency, certain technological limitations or issues that would require a fundamental alteration may emerge at any time during the project life cycle. You do not always know from the start of a project that claiming the fundamental alteration exception may be necessary.

**For your reference:**

**EPA EIT Approval Procedures**

All purchase requests (PRs) for EIT must be:

- A. Approved by the requesting office's Senior Information Official (SIO), or Approved by the requesting office's Information Management Officer (IMO), Division Director or Branch Chief if the approving authority for acquisition of EIT resources was re-delegated in accordance with Delegation of Authority 1-84 Information Resources Management, Section 4.c.
- B. When EIT to be purchased falls within one of the exceptions outlined in Exceptions, it must be explained in an attachment to the PR.

- C. Undue burden and undue burden class determination cannot be approved below the SIO level (Delegation of Authority 1-84 Information Resources Management, Section 4.d. and EPA Undue Burden and Class Undue Burden Procedures).

Please refer to [CIO Policy 2130.0 Accessible Electronic and Information Technology \(PDF\)](http://www.epa.gov/irmpoli8/ciopolicy/2130.pdf) (6 pp, 116KB) [http://www.epa.gov/irmpoli8/ciopolicy/2130.pdf] and the accompanying procedure [Accessible Electronic and Information Technology Standards, Procedures, and Guidance \(PDF\)](http://www.epa.gov/irmpoli8/ciopolicy/2130-P-S-G-01.0.pdf) (6pp, 44K) [http://www.epa.gov/irmpoli8/ciopolicy/2130-P-S-G-01.0.pdf], and [Delegation of Authority 1-84 Information Resources Management](http://intranet.epa.gov/rmpolicy/ads/dm/1-84_534.htm), [http://intranet.epa.gov/rmpolicy/ads/dm/1-84\_534.htm] for more information about 508 policy at EPA.

### **3. Will the EIT pose an Undue Burden to the Agency?**

EPA does not have to comply with the Section 508 standards if it would impose an undue burden to do so in order to acquire a specific EIT product or service. "Undue burden" has been defined as "significant difficulty or expense." However, the Agency must explain why meeting the standards would pose an undue burden for a given procurement action, and must still provide people with disabilities access to the information or data that is affected. Because the Agency's entire resources are looked at as a whole for justifying an undue burden request, it is not used as an exception very often.

The Program Office or Region purchasing the EIT must provide an undue burden justification. The justification must be reviewed and approved by the requiring office's SIO as per the CIO Policy 2130.0 Accessible Electronic and Information Technology.

### **4. What Section 508 Standards Apply to the Product or Service?**

The Section 508 standards are designed to make sure that not one single perceptual sense or ability is required to accomplish a task and to provide an alternative for a person to use a different sense or ability when using electronic and information technology.

Example: Typically, most people navigate through a Web site or software with a mouse, but the alternative for someone with vision or dexterity impairments may be the use of the keyboard to navigate and execute commands.

Certain 508 standards either always apply or need to be considered, while other standards only apply depending on the project. It is a good idea to look over all of the standards and make sure you have considered everything.

#### **508 Standards that always apply or need to be considered:**

##### [1194.31 Functional Performance Criteria.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Functional)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Functional>)

1. One mode of operation and information retrieval that does not require user vision
2. One mode of operation and information retrieval that does not require visual acuity greater than 20-70
3. One mode of operation and information retrieval that does not require user hearing
4. When audio information is important or use of product, at least one mode of operation and information retrieval that does not require user hearing shall be provided in an enhanced auditory fashion.
5. One mode of operation and information retrieval that does not require user speech
6. One mode of operation and information retrieval that does not require fine motor control or simultaneous actions

##### [1194.41 Information, Documentation, and Support.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Information>)

End-Users with disabilities shall have access at no additional charge to:

1. Product support documentation
2. Description of the accessibility and capability features of products in alternate formats or alternate methods upon request
3. Support services that accommodate communication needs of users with disabilities

**The Section 508 Standards that may apply:**

**Please note that because there are many standards for each section, they are not listed here.**

**Please use the links provided to get the complete list of the standards.**

[1194.21 Software applications and operating systems.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Software>)

Operating systems and application software programs; also includes software that may come bundled with other products like copiers, handheld devices, phones, etc.

[1194.22 Web-based intranet and internet information and applications.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Web>)

Web sites (the information content and the associated applications and plug-ins) and web-based interfaces to other E&IT products or systems. The standards apply only to Federal Internet and Intranet sites.

[1194.23 Telecommunications products.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Telecommunications>)

Devices including wired, analog and digital wireless, and internet based products.

[1194.24 Video and multimedia products.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Video>)

Audio/visual equipment (legacy analog and digital systems) as well as the audio/visual content on Web sites, video programs, narrated slide productions, and computer generated presentations.

[1194.25 Self contained, closed products.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Self>)

Kiosks, information transaction machines, copiers, printers, calculators, fax machines, and similar types of products.

[1194.26 Desktop and portable computers.](#)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Desktop>)

Keyboards and other mechanically operated controls, touch screens use of biometric forms of identification, and ports and connectors.

## Life Cycle Project Plan Outline: Web Sites and Web-based Applications

Here are some tools to help with planning and checking for 508 compliance on web sites and web based applications. Please remember that every project is different and some projects must address multiple types of EIT and 508 standards. It is important to note that the checking the items on the checklist does not mean that your project is officially 508 compliant. This information serves as guidance to achieve 508 compliance but is by no means a prescription. These tools list common issues and things to look for during the life cycle development of a web site.

Use this outline to help guide you throughout the rest of the life cycle of your web site or web-based application. This outline is designed to help guide the overall iterative life cycle of the project. Using the outline will help guide you determine what steps, actions, etc may be appropriate to ensure 508 compliance for your web site or web-based application. Use this outline in conjunction with the Web Sites and Web-based Applications Checklist.

### **Plan: Establish the objectives and processes necessary to deliver results in accordance with EPA's Section 508 requirements and policies.**

- Identify EIT components for this Web site or web-based application.
- Determine if there are any exceptions.
- Determine which 508 standards and requirements apply. 508 standards apply to Internet and Intranet sites.

#### **508 Standards that always apply:**

[1194.31 Functional Performance Criteria.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Functional)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Functional>)

[1194.41 Information, Documentation, and Support.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Information)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Information>)

#### **Determine what 508 Standards may apply:**

[1194.21 Software applications and operating systems.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Software)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Software>)

[1194.22 Web-based intranet and internet information and applications.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Web)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Web>)

[1194.24 Video and multimedia products.](http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Video)

(<http://www.section508.gov/index.cfm?FuseAction=Content&ID=12#Video>)

- Outline framework of project and identify 508 milestones, standards and requirements for project stakeholders (ex. set 508 testing milestones).
- Make room in project budget for 508 considerations (e.g., development of captions for audio/visual multimedia on the web site)
- Refer to appropriate toolkit checklists (each EIT type) throughout the life cycle for 508 issues to address during project development.

### **Do: Implement the work needed to complete the project.**

- If applicable, create solicitation bid. Include general Section 508 contract language and 508 standards for the EIT types identified during the planning phase.
- Develop detailed technical requirements for your Statement of Work (SOW) or technical direction (TD), project plan, or other applicable documentation that that addresses Section 508. Include 508 standards for the EIT types identified during the planning phase (above). Refer to the checklists in the toolkit for TD suggestions.
- If there is multimedia, determine if it requires captions or a transcript.
  - Captions and transcripts provide the content as well as acoustic information such as descriptions of background sounds, and other important audio cues and context. Ex. Rumbling thunder, roaring water, fire crackling, no audio, or the use of the musical symbols to indicate music.
  - Captions are used when multi-media contains visual and acoustical information.

- Transcripts can be used when only acoustical information is provided, e.g., a MP3 or radio broadcast. Transcripts are also used to create captions, but it is not appropriate to just give a transcript on a web site or as a document or package with the multimedia.
- If you need captions for multimedia, decide if you want to use open or closed captions.
  - Closed captions means that the user can turn on the captions on their TV, VCR, DVD, Web site or computer.
  - Open captions means that the captions are automatically enabled and everyone can benefit immediately without having to turn the captions on.
- Develop and approve the content used in alt text for images. Approving alt text is an inherent government function and needs to be approved by EPA staff.
- Determine if you will be using forms, tables and other potentially complicated elements. Some of this information may not be capable of being fully accessible. In such cases, plan to provide alternative formats on the web site. Ex. You have a complex map and table on the web site with data. Provide the source file that has the data for accessibility.
- Refer to appropriate toolkit checklists (each EIT type) throughout the life cycle for potential action items. Not all items on the checklist will apply to the project.
- Follow additional EPA requirements for Web sites. This toolkit covers 508 only.

**Check: Monitor and measure processes, products and services against policies, objectives and requirements for Section 508 compliance throughout development.**

- Ask questions about 508 compliance.
  - During development ask “How are you/we making the project 508 compliant?”
  - At key project milestones ask “what was done to make this 508 compliant?”
- Periodically test for 508 compliance.
- Use checklists to monitor and measure process.
- Watch for complex components or issues during development that might require the consideration of Fundamental Alteration exception.
- Test all the executable buttons, features, etc. as changes are made to the site!

**Act: Take action to continually improve process performance.**

- Routinely use checklist to make sure that 508 standards are being addressed during development.
- Fix any problems before acceptance, delivery, or completion.
- Keep in contact with project/service stakeholders via e-mail, phone, etc. to make sure they have what they need such as the transcript to make captions, the alt text language for graphics, training, etc.
- Ask for clarification from stakeholders when needed.
- Document information about how 508 standards have been met.
- Manage, close out and archive project and 508 documentation. Others may be able to use this “historical” information when developing similar projects.

**Additional Notes or Resources: Additional background information such as definitions, training, US Access Board guidance, and other tips.**

- All additional EPA policies, procedures, standards, and guidance for Internet sites are found at [www.epa.gov/webguide/standards](http://www.epa.gov/webguide/standards).
- The Office of Public Affairs offers training on “Section 508, Accessibility and Web Design”. Some 508 standards are taken care of automatically by using the EPA template. The template is required for most EPA pages. This training is free, open to staff and contractors, and offered throughout the year. The training schedule and presentation is also available on the [www.epa.gov/webtraining](http://www.epa.gov/webtraining)
- Guide to the Section 508 Standards (Access Board):
  - 1194.21 Software applications and operating systems.  
<http://www.access-board.gov/sec508/guide/1194.21.htm>

- 1194.22 Web-based intranet and internet information and applications.  
<http://www.access-board.gov/sec508/guide/1194.22.htm>
- 1194.24 Video and multimedia products.  
<http://www.access-board.gov/sec508/guide/1194.22.htm>

## Checklist: Web Sites and Web-based Applications

This checklist identifies some of the most commonly occurring 508 accessibility issues for Web site and Web-based applications. Every web page is different – you may not need to address each item in the checklist. It may help to use the Life Cycle Project Plan Outline ([http://intranet.epa.gov/isc/surftest/508/internet-new/procurement/508\\_compliance\\_toolkit\\_web\\_apps.htm#lifecycle](http://intranet.epa.gov/isc/surftest/508/internet-new/procurement/508_compliance_toolkit_web_apps.htm#lifecycle)) to help you determine which checklist items may apply. This checklist can be used several ways throughout the life-cycle of your project:

- to help plan during project planning;
- to test for 508 compliance; and
- to communicate with project stakeholders about the 508 compliance.

- Can you use the keyboard instead of the mouse?** Use the keyboard exclusively to navigate through web pages & applications (particularly the tab and enter keys). Are all areas of the screen accessible? Are there keystrokes available for all mouse actions? Are there a minimum number of keystrokes to get to desired areas? Can you execute an action using the enter key without using a mouse?
- Does the cursor move in a logical order or flow?** Use the tab key to check where the cursor moves from one element to the next. The cursor should follow a logical order and not be random, e.g., the cursor should move top to bottom, left to right, or flow according to content.
- Do the elements do what they are supposed to do?** Use the return key after selecting a link or control element (e.g., radio buttons, boxes) to check for the appropriate action. For example, if you select a link, using the return key the link is opened; selecting a folder, opens the folder, etc.
- Is there ALT text for all non-text elements?** Check non-text elements (images, buttons, etc.) for appropriate alt (alternative) text. Alt text is needed when the image provides context or information or links to other areas. Alt text does not need to be provided for images that are for pure decoration, but does require the proper html code (ALT=""). Using this html code (ALT="") will tell the software not to read the graphic and will help the screen reader user. If you are familiar with code, you can look at the html code to check for alt text. If you are not a coder, place the mouse over the graphic or element and check for a box that appears with the text, similar to caption boxes.
- Does the link text explain what the link “does”?** Make sure that links make sense out of context. Avoid the use of “click here” and other vague instructions for links. Ex. Instead of “Click here” for a report use “Read the Report”. People who use screen readers typically listen to all the links first to make sure they want to use the page. “Click Here” provides no context.
- Are there captions for audio and visual elements or transcripts for audio only elements?** If there is audio/visual multimedia, look for an indication that there are captions (symbol “CC”, word “captions” or “text”, etc.). How does the user know that there are captions? Do the captions work? Can you turn them on? Are the captions synchronized with the audio/visual elements? If it is audio only (ex. a radio broadcast or a podcast), look for a transcript (words such as “text”, “transcript”, “transcription”, “script”).
- Is color the only means of identification of elements on a page?** When colors are the only way to identify elements or controls on the screen, persons who are color blind, blind, or have low vision may find the web page unusable. Ex. a web page that directs a user to “press the red button to stop”

should also identify the red button in another way than simply by color. To test for color: view the page on a black and white monitor, or print the page out on a black and white printer. Both methods will show if the removal of color affects the usability of the page.

- Are documents organized so they are readable without requiring an associated style sheet?** Since a style sheet is not required to create basic Web pages, you can just avoid style sheets entirely. But in cases where a style sheet is used, the Web page must be organized so that the information can still be accessed even for browsers that cannot use style sheets. When web developers set up their pages to override user-defined style sheets, people with disabilities may not be able to use those pages. It is critical that designers ensure that their web pages do not interfere with user-defined style sheets. You can avoid using style sheets altogether or you can use "external" style sheets, in which the style rules are set up in a separate file.
  
- Are there server-side image map or client-side image maps?** An "image map" is a picture (often an actual map) on a web page that provides different "links" to other web pages, depending on where a user clicks on the image. There are two basic types of image maps: "client-side image maps" and "server-side image maps." With client-side image maps, each "active region" in a picture can be assigned its own "link" (called a URL or "Uniform Resource Locator") that specifies what web page to retrieve when a portion of the picture is selected. If the web page uses a server-side image map to present the user with a selection of options, then a redundant text link is necessary to provide access to the page for anyone not able to see or accurately click on the map. FYI, at EPA you must use the standard US and regional maps and associated code for displaying information and to link to local information when applicable. The standard maps have the accessibility requirements taken care of for you. The [EPA standard for maps of the US](http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/maps2) is available at <http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/maps2>. If you create other maps, you will need to address this 508 standard.
  
- Are tables coded properly?** Tables are permitted, but 508 requires that tables be coded according to the rules of the markup language being used for creating tables. Large tables of data can be difficult to interpret if a person is using a non-visual means of accessing the web. Users of screen readers can easily get "lost" inside a table because it may be impossible to associate a particular cell that a screen reader is reading with the corresponding column headings and row names. The 508 standards apply to tables that have two or more logical levels of row or column headers. For more assistance, refer to [US Access Board's guidance for tables](http://www.access-board.gov/sec508/guide/1194.22.htm#(g)) found at [http://www.access-board.gov/sec508/guide/1194.22.htm#\(g\)](http://www.access-board.gov/sec508/guide/1194.22.htm#(g)).
  
- Does your web site have frames?** Frames are not allowed at EPA. Do not use them. For more information, refer to the [EPA Standard on Frames](http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/frames) [<http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/frames>]
  
- Does the screen flicker with a frequency greater than 2 Hz and lower than 55 Hz?** Some individuals with photosensitive epilepsy can have a seizure triggered by displays, presentations, backgrounds, and images that flicker, flash, blink, or rapidly change from light to dark within the range above. Do not use visuals that produce any vivid light-dark differences that change or flash between these rates. If your Web site is generally the same color or brightness without lots of rapid changes, then screen flickering is probably not a concern.
  
- Are there text-only pages for information that cannot be made compliant in any other way?** A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the 508 standards, when compliance cannot be accomplished in any other way. Caution: the content of the text-only page needs to be updated whenever the primary page changes. Ex. a graphic of an org chart, plus a text-only version of the same information.



- Is the script language in a readable fashion for assistive technology users?** Web page developers need to provide script information in a fashion that can be read by assistive technology. When web developers do not put functional text with a script, a screen reader will often read the content of the script itself in a meaningless jumble of numbers and letters. Although this jumble is text, it cannot be interpreted or used. For more assistance, refer to [US Access Board's guidance for scripts](http://www.access-board.gov/sec508/guide/1194.22.htm#(l)) found at [http://www.access-board.gov/sec508/guide/1194.22.htm#\(l\)](http://www.access-board.gov/sec508/guide/1194.22.htm#(l))
  
- Is there a link for software downloads (Applets and Plug-ins)?** Any page with information that requires extra software to be used such as Adobe, Word, Flash, etc. must also post a link to a free download of the software. FYI: in addition to 508 requirements, there are EPA web requirements for linking to PDFs - [EPA PDF Links standard](http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/pdf-linking), found at <http://yosemite.epa.gov/OEI/webguide.nsf/standards-guidance/pdf-linking>.
  
- Are there electronic forms?** For forms designed to be completed on-line, can people using assistive technology access the information, the form elements, and functionality so they can complete and submit the form? For more assistance, refer to [US Access Board's guidance for electronic forms](http://www.access-board.gov/sec508/guide/1194.22.htm#(n)) found at [http://www.access-board.gov/sec508/guide/1194.22.htm#\(n\)](http://www.access-board.gov/sec508/guide/1194.22.htm#(n)).
  
- Is there a way for the user to skip navigation functions/sidebar and go straight to the content?** Check skip navigation links to see if the next tab really bypasses the links and goes to the desired content. (\*EPA Internet web pages using the EPA template already have this feature enabled. Internet pages that are not in the EPA template and Intranet pages need to address these standards)
  
- If a timed-response is used, is the user prompted to request more time?** Web pages, particularly data-entry pages, can be designed so that the page disappears or "expires" if a response is not received within a specified amount of time. If a timed-response is used, how does the user know that time is running out? How does a user indicate that more time is needed when they are prompted that time is starting to run out? This is not a common feature on EPA web pages

Additional assistance on these standards is provided by the US Access Board, the Agency responsible for the Section 508 Standards with their [Guide to the Section 508 Standards for Web sites and Web-based Applications](http://www.access-board.gov/sec508/guide/1194.22.htm). [<http://www.access-board.gov/sec508/guide/1194.22.htm>]

## Appendix A: Additional Section 508 Resources

Training on Section 508

[www.section508.gov](http://www.section508.gov)

[www.access-board.gov](http://www.access-board.gov)

[www.epa.gov/webtraining](http://www.epa.gov/webtraining)

EPA information about Section 508

[www.intranet.epa.gov/accessibility](http://www.intranet.epa.gov/accessibility)

EPA Policy on Section 508

Accessible Electronic and Information Technology Policy <http://www.epa.gov/irmpoli8/ciopolicy/2130.pdf>

Accessible Electronic and Information Technology Procedures

<http://www.epa.gov/irmpoli8/ciopolicy/2130-P-S-G-01.0.pdf>

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