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A collaborative program between the
ADA National Network and the
US Access Board



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We will be testing sound quality periodically

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1



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2



Presenters



David Baquis



Rex Pace

3

Accessible Communication Elements and Features

Session Agenda

- ADA and ABA Standards
Chapter 7 and Additional
- Information and Communications
Technology Access

4

CHAPTER 7

COMMUNICATION ELEMENTS AND FEATURES

5

New ADA and ABA Standards



Based on the Board's ADA-ABA
Guidelines (2004)



2010 Standards - DOJ includes
several additional requirements/
revisions – see www.ada.gov.

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6

Current ADA Standards



**2010 ADA Standards
for Accessible Design
– now only standard**

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Auxiliary Aids and Services - Effective Communications



**Regulatory Sections 35.160 (Title II)
and 36.303 (Title III)**

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Architectural Barriers Act

Covers:

- facilities that are designed, constructed, altered, or leased by, or on behalf of the United States.
- facilities receiving certain types of Federal Financial assistance.

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Current ABA Standards



DOD, USPS, and GSA Standards

Similar standards in effect for all federally funded facilities (except housing)



HUD – UFAS still applies (HUD to update standards)

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10

Online Guidance

www.access-board.gov/ada/



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11

New vs. Existing

- New Construction - building standard
- Planned Alterations of existing facilities
- Requirements for Alterations go to the scope of work
- Path of Travel obligations are in addition to scope of work

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12

CHAPTER 7

Communication Elements & Features:

- Fire Alarm Systems
- Signs
- Telephones
- Detectable Warnings
- Assistive Listening Systems
- ATMs & Fare Machines
- Two-Way Communication Systems

13

Fire Alarm Systems

Where provided, compliance required in:

- Public and Common Use Areas (215.2)
- Employee Work Areas (215.3) – wiring for visual alarms
- Transient Lodging Guest Rooms (215.4)
- Residential Dwelling Units (215.5)
- Alterations Exception (215.2) - compliance required only when system upgraded/ replaced or new one is installed

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14

Fire Alarm Systems

NFPA 72 National Fire Alarm Code (1999 or 2002) – referenced standard

National Fire Protection Association (www.nfpa.org)

2010 Standards - sound level of 110 dB max.

Exception for systems in medical care facilities – accordance with industry practice



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15

Fire Alarm Systems

NFPA 72 covers:

- flash rate & pulse duration
- location - wall & ceiling
- minimum intensity
- larger coverage thru fewer appliances
- many spaces (other than corridors) can be covered by 1 appliance
- synchronization of multiple appliances



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16

Signs

Scope (216):

- Designations for permanent rooms and spaces, exit doors (216.2)
 - both tactile and visual requirements (703.2 Raised Characters and 703.5 Visual Characters)
- Directional and Informational Signs (216.3)
 - only visual requirements (703.5 Visual Characters)

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17

Signs

- Exempt (216.1):
 - temporary signs,
 - building menus, directories, addresses,
 - company names/logos,
 - signs in detention/ correctional areas that are not public use



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18

Signs

Tactile & Visual

"Room 123"

"Restroom"

"Mechanical Room"

"Exit"

"Floor B"

"Ballroom A"

"C. Smith Room"

Visual Only

"Exit →"

"Accounting Department"

"Visitors must sign in"

Exempt

building directory

"Mr. C. Smith, Accountant"

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19

Signs

- Means of Egress (216.4):
 - Exit Doors – tactile and visual, includes exit discharge
 - Areas of refuge – instructions
 - Directional Signs – visual characters
- Parking (216.5) – Section 502.6:
 - Exceptions where 4 or less spaces and assigned residential parking
- Amusement Rides (216.12) – access/locations

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20

Signs

identified where not all
are accessible:

- Entrances (216.6)
- Elevators (216.7)
- Toilet and Bathing Rooms (216.8)
- Check-Out Aisles (216.11)
 - with aisle identification



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21

Signs

Identification of communications features:

- TTYs (216.9)
 - Identification Signs – at TTY
 - Directional Signs – at telephone without TTY and on directional signs
- Assistive Listening Systems (216.10)
 - informing of availability
 - at each required assembly area
 - exception where ticket offices or windows



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Tactile Signs

Scoping (interior & exterior):

- Restroom labels (at entry)
- Room numbers/ names (not likely to change)
- Floor levels
- Exit access/discharge
- Areas of Rescue Assistance



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23

Signs

- Exempt (temporary) →
- Visual (informational) →
- Tactile (Room number) →



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24

Tactile Signs

- Raised characters (703.2)
- Grade 2 Braille (703.3)
- Visual access (703.5.1) – finish/contrast
- Pictograms (703.6) – designating room/space

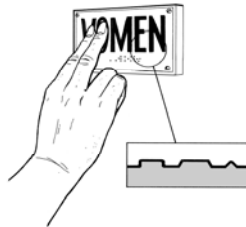


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Raised Characters

- 1/32 minimum depth
- uppercase
- sans serif character
- height and proportion character
- stroke thickness
- character and line spacing



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26

Braille

Figure 703.3.2
Position of Braille

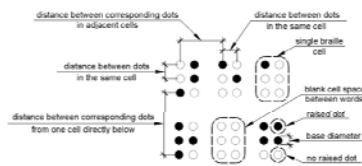


Figure 703.3.1
Braille Measurements

Braille Requirements (703.3)

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27

Tactile Signs

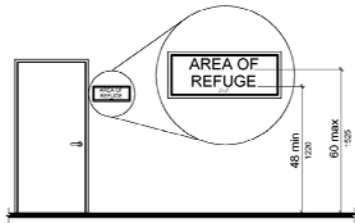
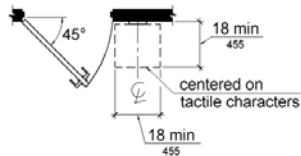


Figure 703.4.1
Height of Tactile Characters Above
Finish Floor or Ground

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Tactile Signs



Location (703.4.2):

- placement at doors
- push side exception for doors with closer and no hold open devices

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29

Visual Signs (703.5)

- "conventional form"
- character proportion & spacing
- character height based on viewing distance
- location (40" min. height)
- stroke thickness
- line spacing
- finish & contrast



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30

Character Style

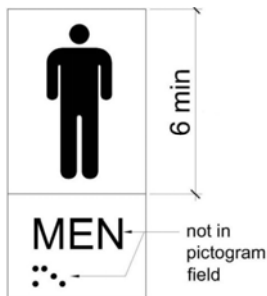
New standards specify “conventional form”.
Prohibited are: Italic, Oblique, Script, highly decorative, or other unusual forms.

Italic *Oblique* *script*
highly decorative
or other *unusual forms*

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31

Pictograms



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32

Symbols of Accessibility



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33

Telephones

Wheelchair Accessible Telephones (217.2) (at least 1 per floor/level, bank, exterior site)

Table 217.2 Wheelchair Accessible Telephones

| Number of Telephones Provided on a Floor, Level, or Exterior Site | Minimum Number of Required Wheelchair Accessible Telephones |
|---|---|
| 1 or more single units | 1 per floor, level, and exterior site |
| 1 bank | 1 per floor, level, and exterior site |
| 2 or more banks | 1 per bank |

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34

Telephones

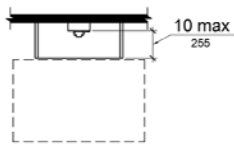


Figure 704.2.1.1
Parallel Approach to Telephone

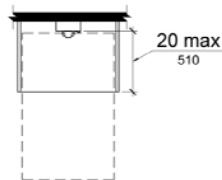


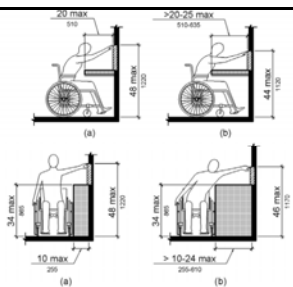
Figure 704.2.1.2
Forward Approach to Telephone

704.2.1 Clear Floor or Ground Space

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35

Telephones

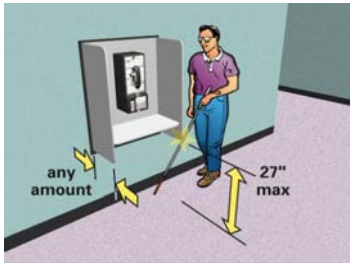


Operable Parts - Chapter 3 Requirements

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36

Telephones



307 Protruding Objects

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37

Telephones – Volume Controls

- volume controls on all public phones (217.3)
- volume control (704.3) –
 - to 20 dB minimum,
 - for incremental a 12 dB minimum intermediate step
 - automatic reset



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38

Telephones - TTYs

Scoping based on pay phones provided (217.4):

- Banks (217.4.1) – where 4 or more provided - exception for banks within 200 ft.
- Floors and Buildings (217.4.2 & 217.4.3):
 - where 1 provided (public bldg.)
 - where 4 or more provided (private bldg.)
- Exterior Sites (217.4.4) – where 4 or more provided

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39

Telephones - TTYs

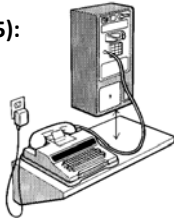
- Rest Stops, Emergency Roadside Stops, and Service Plazas (217.4.5) – where at least one public pay telephone
- Hospitals (217.4.6) – areas serving a hospital emergency room, hospital recovery room, or hospital waiting room
- Transportation Facilities (217.4.7):
 - bus or rail facility entrances
 - airport terminal, concourse, and baggage claim areas

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40

Telephones - TTYs

- Detention and Correctional Facilities (217.4.8) – areas used only by detainees or inmates and security personnel
- Shelves for Portable TTYs (217.5):
 - when bank three or more public pay telephones
 - shelf and outlet (704.5)
 - Exceptions for detention/ correction facilities and phone banks with TTYs



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41

Telephones - TTYs

Technical Provisions:

- Permanently affixed and telephone cord length/ acoustic coupler (704.4)
- Height (704.4.1) – touch surfaces of keypad 24" min. above finish floor
 - Exception where seats are provided
- TTY Shelf (704.5)



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42

Detectable Warnings

Where required:

- Rail platforms (810.5) – 24 inches min. wide and length of public use area of platform (705.2)
- Curb ramps at transit facilities (DOT Rule)
- Curb ramps at Federal Highway Administration funded projects



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43

Detectable Warnings



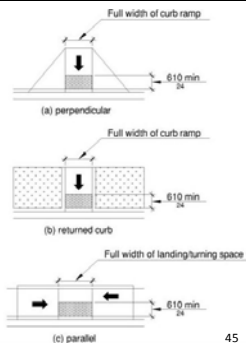
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44

Detectable Warnings – Curb Ramps

DOT and FHWA – 2 foot min.

Public streets & sidewalks – recommend the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (www.access-board.gov)

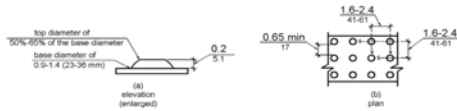


45

Detectable Warnings

Greater range of designs & products allowed

- dome diameter (705.1.1) - range
- spacing (705.1.2) - range
- removed: resiliency/ sound-on-cane contact
- color contrast not integral (705.1.3)



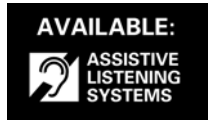
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46

Assistive Listening Systems

Required where (219.2):

- audible communication integral to use of space
- where no audio amplification exception
- courtrooms do not get exception



Not triggered by fixed seating or occupant load

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47

Assistive Listening Systems

Types of Wireless Systems:

- Infrared
- FM Radio Transmission
- Induction Loop



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48

Assistive Listening Systems

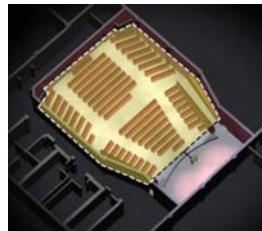


Infrared and FM Systems

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49

Assistive Listening Systems



Induction Loop System

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50

Assistive Listening Systems

219.3 Receivers

Table 219.3 Receivers for Assistive Listening Systems

| Capacity of Seating in Assembly Area | Minimum Number of Required Receivers | Minimum Number of Required Receivers Required to be Hearing-aid Compatible |
|--------------------------------------|--|--|
| 50 or less | 2 | 2 |
| 51 to 200 | 2, plus 1 per 25 seats over 50 seats ¹ | 2 |
| 201 to 500 | 2, plus 1 per 25 seats over 50 seats ¹ | 1 per 4 receivers ¹ |
| 501 to 1000 | 20, plus 1 per 33 seats over 500 seats ¹ | 1 per 4 receivers ¹ |
| 1001 to 2000 | 35, plus 1 per 50 seats over 1000 seats ¹ | 1 per 4 receivers ¹ |
| 2001 and over | 55 plus 1 per 100 seats over 2000 seats ¹ | 1 per 4 receivers ¹ |

¹ Or fraction thereof.

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51

Assistive Listening Systems

219.3 Receivers

Exceptions:

- multiple assembly areas under one management – total number of seats in building
- induction loop not required to have hearing-aid compatible receivers

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52

Assistive Listening Systems

Technical Provisions:

- Receiver Jacks (706.2)
- Receiver Hearing-Aid Compatibility (706.3)
- Sound Pressure Level. (706.4)
- Signal-to-Noise Ratio (706.5)
- Peak Clipping Level (706.6)

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53

ATMs and Fare Machines

Access to 1 of each type at each location (220)

- speech output
- privacy
- input controls
- display screen
- Braille instructions (for speech mode)



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54

ATMs and Fare Machines

- Clear Floor or Ground Space (707.2) – exception for drive up only machines
- Operable Parts(707.3):
 - comply with 309 – side reach
 - differentiated by sound or touch without activation unless clear or correct key provided
 - 309 exceptions for drive up only machines

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55

ATMs and Fare Machines

- Privacy (707.4) – same degree of privacy
- Speech Output (707.5)
 - speech enabled machine
 - headsets and handsets
 - Exceptions – security, advertisements, and speech synthesis
 - User Control (707.5.1)
 - Receipts (707.5.2)



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56

ATMs and Fare Machines

- Input (707.6)
 - Input Controls (707.6.1) – tactilely discernible issues
 - Numeric Keys (707.6.2) – keypad layout
 - Function Keys (707.6.3)
 - Contrast (707.6.3.1)
 - Tactile symbols (707.6.3.1)



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57

ATMs and Fare Machines

- Display Screen (707.7) – exception for drive up machines
 - Visibility (707.7.1) – from 40 inches above the center of the clear floor space
 - Characters (707.7.2) – sans serif font, minimum height, and contrast
- Braille Instructions (707.8) – instructions for initiating speech mode

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58

Two-Way Communication Systems



Where provided to gain admittance to a building or facility or to restricted areas within a building or facility (230).

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59

Two-Way Communication Systems

Technical Provisions:

- both audible and visual signals (708.2)
- handset cord length (708.3)
- residential dwelling unit systems (708.4)

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60

Two-Way Communication Systems

Technical Provisions:

Residential Dwelling Unit systems:

- common use/public system interface - voice and TTY communications (708.4)
- dwelling unit system interface - phone jack supporting voice and TTY communications (708.4)

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61

OTHER REQUIREMENTS FOR COMMUNICATION ELEMENTS AND FEATURES

62

Transient Lodging Guest Rooms

Table 224.4 Guest Rooms with Communication Features

| Total Number of Guest Rooms Provided | Minimum Number of Required Guest Rooms With Communication Features |
|--------------------------------------|--|
| 2 to 25 | 2 |
| 26 to 50 | 4 |
| 51 to 75 | 7 |
| 76 to 100 | 9 |
| 101 to 150 | 12 |
| 151 to 200 | 14 |
| 201 to 300 | 17 |
| 301 to 400 | 20 |
| 401 to 500 | 22 |
| 501 to 1000 | 5 percent of total |
| 1001 and over | 50, plus 3 for each 100 over 1000 |

Communication features no longer required in all mobility access rooms - at least 1, no more than 10% (224.5)

63

Transient Lodging Guest Rooms

- Alarms (806.3.1) – Fire Alarm Systems (702)
- Notification Devices (806.3.2)
 - incoming telephone calls
 - door knock or bell
 - notification devices not connected to visual alarm signal
 - telephone volume control
 - outlet within 48" of telephone



64

Residential Facilities

New section:

- Recognize coverage by HUD 504 regulations
- 5% wheelchair accessible (233.3.1.1)
- 2% communication access features (233.3.1.2)



65

Residential Facilities

- Building Fire Alarm System (809.5.1)
 - alarms appliances (702) – when part of building system (809.5.1.1)
 - visual alarm activation – building fire alarm system (809.5.1.2)
- Smoke Detection System (809.5.2)
 - NFPA 72 (1999 or 2002 edition)
 - visual alarm activation (809.5.2.1)

66

Residential Facilities

- Interconnection (809.5.3) –visual alarms
- Prohibited Use (809.5.4) – visual alarms cannot be used for any other purpose
- Dwelling Unit Primary Entrance (809.5.5)
 - Notification (809.5.5.1) – hard-wired electronic doorbell with visual signal
 - Identification (809.5.5.2) – identifying visitor without opening door, 180 degree minimum view

67

Elevators

Communication Features Addressed

- Elevators and Limited-Use/Limited-Application Elevators (407 & 408)
- Private Residence Elevators (409) – emergency communications

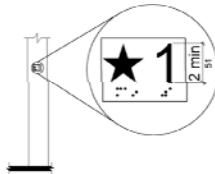


Figure 407.2.3.1
Floor Designations on Jambes of
Elevator Hoistway Entrances

68

CLASSROOM ACOUSTICS

- Voluntary consensus standard for acoustics in classrooms - ANSI/ASA S12.60
- Acoustical Society of America (www.acousticalsociety.org)
- Access Board's Rulemaking (www.access-board.gov/acoustic/)

69

Information and Communications Technology (ICT)

70

Our world consists of:

- **Architectural environment**
- **Technological environment**

71

**With regard to technology,
the Access Board promulgated:**

- Guidelines for Section 255 of the Telecommunications Act
- Standards for Section 508 of the Rehabilitation Act
- Assists Election Assistance Commission in development of voting systems guidelines

72

Accessible Voting



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73

Section 508

- Rehabilitation Act
- Federal departments and agencies
- ICT procured, developed, used and maintained
- Undue burden
- Exceptions
- Types of equipment covered
- Product support documentation and help desk support services

74

Section 255

- Telecommunications Act
- Telecommunications manufacturers
- Telecommunications equipment
- Readily achievable
- Types of equipment covered
- Consideration of accessibility and inclusion of people with disabilities

75

Two Drivers of IT Accessibility



76

Why 508?

- Surge over the past 20 in development of ICT and our use of it
- Federal government spends billions on IT annually (buying power)
- Increases employment of people with disabilities
- Improves access to government services
- Increases availability of accessible products

77

Enforcement

- 255 complaints directed to the FCC (Federal Communication Commission)
 - 255 remedies can include hearings and fines
- 508 complaints directed to specific agencies responsible for their ICT
- Right to private civil action also available under 508
 - 508 remedy is injunctive relief (fix the problem)

78

Results of compliance

- Communication, information and physical access to technology
- Benefits to people with vision, hearing, speech, dexterity and cognitive disabilities

79

Hear, See, Feel Accessibility



80

Health Information Kiosks

- Tactilely discernible keys
- Audio jack for privacy
- Timed responses provide an alert and means of extending time



81

Fingerprint Biometrics



82

Accessibility complements Accommodation

- Accommodation can be assistive technology (AT)
- Accessibility (508 and 255) refers to the technological environment (IT) in which the AT operates
- Example: screen readers (AT) can be used to understand and help operate accessible software (IT)

83

Accessible Websites

- Navigate via a keyboard
- Text equivalents for pictures
- Captions for videos
- Identifies row and column headers

84

CAPTCHA



Audio CAPTCHAs help visually impaired individuals

85

Product evaluation

- No federal certification of products or approval of testing labs and consultants
- No government-wide best practices in test methods
- Some agencies have their own testing centers (e.g., SSA, ED, VA)
- Don't rely exclusively on evaluation and repair tools (for web)
- Develop a testing program and budget for it!

86

508 Refresh (draft) includes:

- Provisions supporting video communication (sign language)
- Proposal to harmonize with Web Content Accessibility Guidelines (WCAG)
- Provision on telephone clarity (not just volume gain)
- Provision for preservation of accessibility information

87

Resources

- Buy Accessible Product and Services Directory: www.buyaccessible.gov
- FCC: <http://apps.fcc.gov/accessibilityclearinghouse/>
- Section 508 Standards: <http://www.access-board.gov/sec508/standards.htm>
- W3C Web Content Accessibility Guidelines: <http://www.w3.org/TR/WCAG20/>

88

Is a mouse covered by 508?



89

Questions?

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90



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91

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92
