====
Sep 29 2021 => New Updated Main List at:
Main Function
Https://docs.google.com/document/d/1eJkgXqbh7dx3uD6XAy8XAANmwfbbVZ5GKb_gbsUdkVs/edit?usp=drivesdk&disco=AAAAcTVrrDYnalnal Needs - Main User Needs - Main Outcomes
===

Users needs scratch pad - June 2021

Definitions

Functional Need:

A statement that describes a specific gap in one's ability, or a specific mismatch between ability and the designed environment or context.

Editor's Note – This definition received consensus of the sub-group on 07/16, and of the Task Force on 07/17/2020.

Intersectional Need:

A statement that describes user needs that result from an individual having more than one functional need simultaneously in a given context.

User Need Statement:

NOTE: By calling this a 'statement' we are answering what the question of what a user need is and proposing an editorial format. At a high level, "What is a user need and how do you write one?"

A description of what a user requires, in context, to achieve a goal or complete a task.

An affordance of content in a specific context that enables a person to achieve a goal or complete a task.

[Operable] => Users can control their => Content orientation / Orientation in a space

New updated FAST - User Needs List

NOTE: This list doesn't strictly follow the 'statement' format - but can be abstracted into statements.

EXAMPLES:

- Users can perceive content.
- Users can control time-sensitive content.

(List with mappings in spreadsheet)

[Perceivable]

- Users can perceive:
    - Content
    - Controls (or objects role, system state and other properties)
    - Changed content
    - Semantic structure
- Users can perceive changes to:
    - a control (or objects role, system state and other properties)
    - content (SPA, tablist, Ajax)
- Users can customize content

[Operable]

- Users can operate controls
    - Without Duration requirement
    - Adjust Duration requirement
    - Without Physical movements
        - (With assistive technology +Jake => Jeanne)
        - With limited / specific movement (? +Jake)
- Users can navigate content
    - (with speech input +Jake => Jeanne)
    - (aphasia for speech-controlled devices +Jake => Jeanne)
- Users can control their:
    - Content orientation
    - Orientation in a space

[Understandable]

- Users can understand:
    - Content

        - Structure
        - Navigation
        - Controls (or objects role, system state and other properties)
        - Changed content
    - Users can find help information about how to use the content
    - Users can identify their position:
        - In content
        - In context
        - In a process
        - In a space
    - ...
    - Users can orient themselves in immersive or augmented environments
    - Instructions for accessible interaction (+Josh)
    - Understanding available interactions (+Josh)
    - Users need to associate text with the speaker (+Jake => Jeanne / Perceivable)

[Personalization]

- Users can customize (or request):
    - Content
    - Context
    - Settings
- Users get customized (via platform):
    - Content
    - Context
    - Functionality
- Users can find help information about:
    - how to use the content
- Users can control:
    - Time-sensitive Content
    - Time-sensitive Tasks
    - Time-based media (including dynamic values, EQ, volume)
- Users personalization preferences:
    - Are honored by content authors
    - Are not compromised by security
    - Do not compromise privacy
- Users can, device independently:
    - Interact
    - Input data
    - Route and control output

[Discoverability]

- Users can discover:
    - new content

    - new context (+Jake => Tobias Christian Jensen)
- Users can recover from errors
- Users can avoid errors

[Distractions and Inflictions]

- Users can: (not interrupted)
    - focus attention
    - direct attention
    - shift attention
- Users are not harmed:
    - Physically (to self or others within a physical environment)
    - Neurologically
- Users are not *purposely* (+Jake => Suzanne Taylor)
    - Mislead
    - Stressed
    - Shocked
- Users can avoid:
    - Personal risk
- Users privacy is:
    - Preserved
- Users are aware of:
    - Alerts

Functional Needs – Expanded

Editor's Note – This is a living document or draft until reviewed for consensus by several W3C groups.

This master list of functional needs and the list of working resources was ported to @@ on 8 October 2020. Changes made here should be made there as well.

Goals

The scope of the Functional Needs Subgroup is to draft and achieve a standard consensus based list of the core and intersectional needs of people and include at least the following:

1. **Definition** of (1) functional needs; (2) functional outcomes; and (3) user needs that can be referenced by WCAG3 as well as other W3C groups and documents.
2. Editorial **method** or style guide **for describing** a functional need.
3. **Consider** and account for **needs that have been identified** in and by: current policy and regulatory documents (globally); current W3C documents; existing research; and public comment.
4. Identify where functional needs are or may be **unique to a specific context** (such as while moving) **or specific technology** (such as an XR environment).
5. An **evergreen document** governance model that allows gaps identified by new research to be quickly added to the master list in a manner that facilitates informing all inheriting and derivative documents.

Definitions

Functional Need:

A statement that describes a specific gap in one's ability, or a specific mismatch between ability and the designed environment or context.

Note: The intent is to express the need in a contextual model, as opposed to a lack of ability in a medical model. This is similar to the ICF (International Classification of Functioning – a biopsychosocial model), "outcomes of interactions between health conditions (diseases, disorders and injuries) and contextual factors", focusing on the interactions.

Example: Use without vision.
Note: COGA recommends "use" as simpler and more clear than "usage".

Editor's Note – This definition received consensus of the sub-group on 07/16, and of the Task Force on 07/17/2020.

See: Content Creation Process for Migrating WCAG SC – Part 1, Define User Needs

- List group(s) of people with disabilities and the barriers they experience
- Identify common needs and unique needs

Completion: You are complete when you have a list of groups and the barriers they encounter; a list of the common needs and the unique needs of each group.

Functional Performance Statement (EN 301 549):

A statement intended to describe the functional **performance of information and communication technology** (ICT) enabling people to **locate**, **identify**, and **operate** ICT functions, and to **access** the **information** provided, regardless of physical, cognitive or sensory abilities.
Each describes the performance of the feature or function, and not the performance of a human.
Example: Where **ICT provides** visual modes of operation, some users need **ICT to provide** at least one mode of operation that does not require vision.

User Need:

Definition (high-level) The end goal a user has when embarking on a path or process through digital means.
Definition (low-level) A task the user needs to accomplish.
Example: I need to pay a bill.

Functional Ability: [DRAFT definition]

A notional measure of a person's abilities that may need technological support or augmentation to be able to complete a particular task.

@@

User Accessibility Needs (EN 301 549):

Definition…

Functional Outcome:

A statement that describes a singular objective of a user has been met – usually in the context of a task or overall goal – that may need to name or cite a functional need.

Passive Voice Examples: The headings were perceived. The headings were understood.
Active Voice Examples: Users perceived the headings. Users understood the headings.
Note: this is similar in concept to acceptance criteria, but from the perspective of the user. Plain language recommends active voice. Active voice must consider the plurality of the actors.

Editor's Note – This definition has initial consensus of the sub-group (07/16)

Currently used by the TF until further discussion: See: Content Creation Process for Migrating WCAG SC – Part 2, Write Functional Outcomes

Functional Outcomes are one sentence written in plain language (or as close as you can get) with two clauses:

- The first clause describes the result if the user need is being met.
- The second clause describes how it benefits the user.

Wording suggestion (Janina): Possibility of “modal auxiliary verb” such as “The user can locate information faster because it is organized into chunks.”

As of Aug 2020 functional outcomes are being tracked in Functional Outcomes July 2020

Verb Functions of Basic Human Computer Interaction

Some of the following obtained from or verified within Outline of human–computer interaction [Wikipedia]

Search / Scan
Find / Locate
Perceive / See / Hear / Feel
Identify
Understand
Activate
Operate
Move / Drag / Drop
Copy / Paste / Information Retrieval
Input Text / Type
Zoom / Magnify
Track Movement
Inspect / Analyze / Evaluate

Context

@@

Editor’s Note – This is a working list for continuous review and discussion. Comments from July–August 2020 were addressed in October. Edits and additions have been made.

Functional Needs (Master List)

Essential

1. Use without physical harm or risk (to self or others within a physical environment)

Sensory

Vision & Visual

2. Use without vision
    a. Use as blind (born without vision)
    b. Use with blindness (acquired blindness during lifetime)
3. Use with limited vision
    a. Use with limited central vision
    b. Use with limited peripheral vision ·XR·
    c. Use with limited interocular acuity or monocular input
4. Use without color perception
5. Use with limited color perception
6. Use with limited depth perception ·XR·
7. Use with limited orientation or spatial tracking ·XR·
8. Use with photosensitivity (too much or too little)

Hearing & Auditory

9. Use without hearing
    a. Use as Deaf (born with congenital deafness and/or to a deaf family)
    b. Use as deaf (acquired deafness during lifetime after a language was learned)
10. Use with limited hearing
11. Use with limited auditory processing (speech)
12. Use with sensorineural hearing loss (limited frequency range) related to age or Presbycusis (gradual loss over time)

Sensory Intersections

13. Use without vision and hearing
    a. Use without vision from birth then without hearing as acquired
    b. Use without hearing from birth then without vision as acquired
14. Use with vestibular issues
15. Use without spatial auditory awareness or perception (needs diegetic sound) ·XR·

Physical

Mobility

16. Use without mobility
17. Use with limited mobility ·XR·
    a. Use with limited ambulation
    b. Use with temporary or partial paralysis
18. Use with limited reach or range ·XR·8

Motor

19. Use without hands
20. Use without multiple touchpoint gesture
21. Use with limited strength
22. Use without fine point control
23. Use without physical tracking speed
24. Use with tremors

Physical & Sensory Intersections

25. Use with limited kinesthetic perception (orientation, position, weight distribution, movement) ·XR·
26. Use with limited tactile perception, sensory processing, or touch pressure sensitivity
27. Use with chronic pain impacting input or interaction modality, speed and/or frequency

Speech

28. Use without vocalization
29. Use with limited vocalization or volume

Cognitive

Attention

30. Use with limited ability to focus attention
31. Use with limited ability to direct attention
32. Use with limited ability to shift attention

Language & Communication

33. Use with limited ability to comprehend spoken language
34. Use without ability to read
35. Use with limited ability to recognize written language
36. Use with limited ability to comprehend written language

37. Use without ability to write
38. Use with limited ability to correctly write (or type) words and use punctuation
39. Use without understanding symbols
40. Use without understanding metaphors, idioms, euphemisms, or specific dialect of culture or location

Learning

41. Use with limited ability of math and numeric concepts
42. Use with limited compositional skill (simultaneous thinking and input)
43. Use with limited coordinational skill (motoric skills, visual-spatial organizational memory, and social)

Memory

44. Use with limited short-term or working memory
45. Use with limited medium or long-term memory
46. Use with limited sensory memory
    a. Visual
    b. Visuospatial
    c. Auditory

Executive

47. Use with limited planning, organization, sequencing, and execution ability
48. Use with limited emotional control and self monitoring
49. Use with limited judgement

Mental Health

50. Use with debilitating fear or anxiety

Cognitive & Sensory Intersections

51. Use with interocular transfer of visual memory (retrieval based on limited acuity in a single eye)
52. Use with limited phonological or phonemic awareness

Independence

Independence

53. Use without autonomy or agency *
54. Use without privacy *

* NOTE: The purpose of identifying independence as a functional need is for individuals where independence cannot be achieved. Example: a person who has suffered a stroke, is conscious

and aware but otherwise incapable of interacting with technology may need to log into a system or record a decision or authorize an agent to record a decision in their presence. In this case, they lack autonomy and privacy, but a method could be provided to verify the individual consent and the agent authority.

List of Contexts

- @@

Working Resources

1. EN 301 549 Mandate 376 Functional Performance Statements - EN 301 549 ✓ (updated version available)
2. US Access Board - Bruce put a link in the minutes of May 7 ✓
3. US CVAA Performance Objectives ✓
4. JIS X 8341-6: Software Accessibility ✓
5. Cognitive Functions from COGA TF and ETSI - this doc belongs to the COGA TF where they are working on how the breadth of disabilities grouped under COGA can be more granular ✓
6. FAST - Framework for Accessible Specification of Technologies ✓
7. ISO/IEC 29138-1:2018(en) Information technology — User interface accessibility — Part 1: User accessibility needs
8. ISO/IEC Guide 71:2014(en) Guide for addressing accessibility in standards

Editor's Note – ✓ indicates a full list of needs from this resource appears later in this document.

Previous Silver Work

Map of Functional Needs to WCAG SC - EN 301 549 Annex B
https://docs.google.com/spreadsheets/d/1W5CSvU4XxWXNneu4ibokjcYUCsG386xL1rGOiTrDvt8/edit?usp=sharing

Disabilities
https://docs.google.com/spreadsheets/d/12wcZh1SgnL52Sz6gYHoLKyWQi5viAMv28kmgnOv06-k/edit?usp=sharing

https://www.w3.org/WAI/GL/task-forces/silver/wiki/Disabilities_for_Inclusion

Bruce Bailey shared from AccessBoard and GSA

Mapping of WCAG 2.0 to 508 Functional Performance Criteria
https://section508.gov/content/mapping-wcag-to-fpc

W3C Notes and Resources on Needs

Media Accessibility User Requirements [2015] (MAUR)

§1 Summary of Accessible Media Requirements by Type of Disability

1.1 Visual: Blindness
1.2 Visual: Low vision
1.3 Visual: Atypical color perception
1.4 Auditory: Deafness
1.5 Auditory: Hard of hearing
1.6 Auditory & Visual: Deaf-blind
1.7 Physical impairment
1.8 Cognitive disabilities

XR Accessibility User Requirements [2020] (XAUR)

§4 User Needs and Requirements ·XR·

4.2 A user of assistive technology
4.3 A person with a physical disability
4.4 Users with cognitive and learning disabilities
4.5 A user with limited mobility
4.6 A user with limited mobility
4.7 Color blind users
4.8 Screen magnification users
4.9 Screen magnification users
4.10 A blind user
4.11 A deaf or hard of hearing person
4.12 People with Cognitive Impairments

4.13 Users with cognitive impairments
4.14 A screen magnification user
4.15 A deaf-blind user communicating via a RTC application
4.16 Users with physical disabilities or cognitive and learning disabilities
4.17 Users with vestibular disorders, Epilepsy, and photo sensitivity
4.18 Deaf and hard of hearing users
4.19 Users with vision impairments

High level use cases [2020] (ARIA-AT)

"Situation of Struggle"

Framework for Accessible Specification of Technologies (FAST) [2020]

§2 Collected User Needs

- Content perceivable in form other than produced by author
- Enable direct perception of output for people with wide range of perception disabilities
- On-request location indicator
- Adjustability of output
- User can navigate content effectively
- Meaning conveyed by style perceivable to users that is presented through color to be also presented in another way that does not rely on color.)
- Input is device independent
- Enable input for users with wide range of abilities
- User can manage distractions
- User can avoid personal risk
- Important alerts can reach the user quickly
- Users can discover content on the page
- Support users with instructions (@@overlaps with understand, avoid confusion)
- Users can understand content, navigation, and available interactions
- Users are not confused
- Do not require specific physical characteristics (non-web? Handedness, having hands, etc.)
- Avoid errors
- Recover from errors
- Complete time-sensitive tasks
- Support efficient usage
- Don't override accessibility features

Making content usable for people with cognitive and learning disabilities (Content Usable) [2020]

§2.4 User Stories
See also: Resources » Persona Links

Memory
- short-term and working memory difficulties
- short and medium term memory impairment
- weak memory
- memory impairment

Attention
- attention impairment

Executive Function
- difficulty with organization, typing, and putting letters and numbers in the right order
- often makes mistakes or touches the wrong thing
- weak executive function
- executive function impairment

Language
- weak language processing skills
- mild language impairment
- language impairment

Learning
- learning disability

Communication
- complex communication needs
- sensitivities that can be triggered by content

Numeric
- does not understand numerical concepts
- struggle with numerical concepts

Note: *Executive functions are a set of cognitive processes that are necessary for the cognitive control of behavior: selecting and successfully monitoring behaviors that facilitate the attainment of chosen goals.* Wikipedia

[How People with Disabilities Use the Web]

[Accessibility Requirements for People with Low Vision]

[Mobile Accessibility: How WCAG 2.0 and Other W3C/WAI Guidelines Apply to Mobile]

Functions [Coga Working Document]

[Usage with more granular cognitive disabilities – see COGA's Cognitive Functions from COGA TF and ETSI] (Silver Content, March 2020)
Usage with vestibular disorders
Usage with limited depth perception
Usage with intersectional needs

§ COGA Functions

Memory

- Working Memory
- Short-Term Memory
- Long-Term Memory
- Visual Memory
- Visuo-spatial Memory
- Auditory Memory (memory for sound patterns and others)

Executive Functions

- Emotional Control and Self-Monitoring
- Planning / Organization and Execution
- Judgement.

Reasoning

- Fluid Reasoning (logical reasoning)
- Mathematical Intelligence
- Seriation
- Crystallized Intelligence
- Abstraction

Attention

- Selective Attention
- Sustained Attention

Language

- Speech Perception
- Auditory Discrimination
- Naming Skills

- Morphosyntax

Understanding Figurative Language

- Similes, personification, oxymorons, idioms, and puns

Literacy

- Speech Perception
- Visual Perception
- Phoneme Processing
- Cross-Modal Association (association of sign and concept)

Other Perception

- Motor Perception
- Psychomotor Perception

Knowledge

- Cultural Knowledge
- Jargon (subject matter)
- Web Jargon and Technology
- Metaphors and Idioms
- Symbols Knowledge (such as icons)
- Mathematical Knowledge

Emotional & Behavioral

- Understanding Social Cues

Communication (in its widest sense)

- Information exchange, spoken, written, symbols, simplification of language

Information Anxiety

- Too much information preventing decision making - information overload

Cognitive Accessibility User Research

First Public Working Draft, January 2015
§4. Research on Cognitive Functions

Executive Functions

- Reasoning
- Crystalized Intelligence
- Attention
- Abstraction

Memory

- Duration based
- Context based
- Awareness based

Language

- Spoken language
- Sign language

- Literacy

Perception

- Visual recognition
- Other sensory perception (auditory, motor, tactile, psychomotor, kinesthetic (body position, weight, or movement), olfactory

Speed

Knowledge

External Resources on Needs

Harmonised European Standard – EN 301 549 v2.1.2 (2018 / 08)

Mandate 376, CEN (Belgium), CENLEC (Belgium), ETSI (France)
EN 301549:2012 “Accessibility requirements suitable for public procurement of ICT products and services in Europe”
EN 301549:2018 “Accessibility requirements for ICT products and services.”
EN 301549:2019 v3.1.1 (2019-06) supersedes 2018.

§4.2 Functional Performance Statements v3.1.1

4.2.1 Usage without vision
4.2.2 Usage with limited vision
4.2.3 Usage without perception of color
4.2.4 Usage without hearing
4.2.5 Usage with limited hearing
4.2.6 Usage with no or limited vocal capability
4.2.7 Usage with limited manipulation or strength
4.2.8 Usage with limited reach
4.2.9 Minimize photosensitive seizure triggers
4.2.10 Usage with limited cognition, language or learning
4.2.11 Privacy

§4.2 Functional Performance Statements v2.1.2

4.2.1 Usage without vision
4.2.2 Usage with limited vision
4.2.3 Usage with limited or no perception of color
4.2.4 Usage with limited or no hearing
4.2.5 Usage without hearing
4.2.6 Usage with limited or no vocal capability
4.2.7 Usage with limited manipulation or strength

4.2.8 Usage with limited reach
4.2.9 Minimize photosensitive seizures
4.2.10 Usage with limited cognition
4.2.11 Privacy

U.S. Electronic Code of Federal Regulations (e-CFR)

Twenty-First Century Communications and Video Accessibility Act (CVAA)
[also reiterated in FCC 11-151, CG Docket No. 10-213, WT Docket No. 96-198, October 7, 2011, page 155]
47 CFR §14.21 - Performance Objectives
(b) Accessible. The term accessible shall mean that:

(1) Input, control, and mechanical functions shall be locatable, identifiable, and operable in accordance with each of the following, assessed independently:

(i) Operable **without vision**. Provide at least one mode that does not require user vision.
(ii) Operable **with low vision and limited or no hearing**. Provide at least one mode that permits operation by users with visual acuity between 20/70 and 20/200, without relying on audio output.
(iii) Operable **with little or no color perception**. Provide at least one mode that does not require user color perception.
(iv) Operable **without hearing**. Provide at least one mode that does not require user auditory perception.
(v) Operable **with limited manual dexterity**. Provide at least one mode that does not require user fine motor control or simultaneous actions.
(vi) Operable **with limited reach and strength**. Provide at least one mode that is operable with user limited reach and strength.
(vii) Operable **with a Prosthetic Device**. Controls shall be operable without requiring body contact or close body proximity.
(viii) Operable **without time-dependent controls**. Provide at least one mode that does not require a response time or allows response time to be by-passed or adjusted by the user over a wide range.
(ix) Operable **without speech**. Provide at least one mode that does not require user speech.
(x) Operable **with limited cognitive skills**. Provide at least one mode that minimizes the cognitive, memory, language, and learning skills required of the user.

The Rehabilitation Act, Section 508 Functional Performance Criteria

Appendix C to Part 1194 – Functional Performance Criteria and Technical Requirements
Chapter 3, 302 Functional Performance Criteria

302.1 **Without Vision**. Where a visual mode of operation is provided, ICT shall provide at least one mode of operation that does not require user vision.
302.2 **With Limited Vision**. Where a visual mode of operation is provided, ICT shall provide at least one mode of operation that enables users to make use of limited vision.
302.3 **Without Perception of Color**. Where a visual mode of operation is provided, ICT shall provide at least one visual mode of operation that does not require user perception of color.
302.4 **Without Hearing**. Where an audible mode of operation is provided, ICT shall provide at least one mode of operation that does not require user hearing.
302.5 **With Limited Hearing**. Where an audible mode of operation is provided, ICT shall provide at least one mode of operation that enables users to make use of limited hearing.
302.6 **Without Speech**. Where speech is used for input, control, or operation, ICT shall provide at least one mode of operation that does not require user speech.
302.7 **With Limited Manipulation**. Where a manual mode of operation is provided, ICT shall provide at least one mode of operation that does not require fine motor control or simultaneous manual operations.
302.8 **With Limited Reach and Strength**. Where a manual mode of operation is provided, ICT shall provide at least one mode of operation that is operable with limited reach and limited strength.
302.9 **With Limited Language, Cognitive, and Learning Abilities**. ICT shall provide features making its use by individuals with limited cognitive, language, and learning abilities simpler and easier.

Mapping of WCAG 2.0 to Functional Performance Criteria — US Access Board

The mapping in the table relates each WCAG SC to the disabilities that may be impacted by non-conformance.

ISO 9241-171:2008 Ergonomics of human-system interaction

Part 171: Guidance on software accessibility (JIS X 8341-6: Software Accessibility)
§D2 Sensory Functions
- D.2.1 Vision
  - D.2.1.1 Individuals who are unable to see
  - D.2.1.2 Individuals with low vision
- D.2.2 Hearing
  - D.2.2.1 Individuals who are unable to hear
  - D.2.2.2 Individuals with a reduced ability to hear
- D.2.3 Tactile

§D.3 Neuromusculoskeletal and movement-related functions
- D.3.1 General
- D.3.2 Individuals with limitations in motor activity
- D.3.3 Physical size and reach
- D.3.4 Speech disabilities

§D.4 Mental functions
- D.4.1 General
- D.4.2 Limitations on attention
- D.4.3 Limitations on memory
- D.4.4 Limitations on the mental functions of language

§D.5 Individuals with other disabilities
- D.5.1 Allergy
- D.5.2 Other functional limitations

§D.6 Multiple body function effects

ISO/IEC 29138-1:2018(en) Information technology — User interface accessibility

Part 1: User accessibility needs §3.10 User Accessibility Needs
[SOURCE: ISO/IEC Guide 71:2014, 2.4]

ISO/IEC Guide 71:2014(en) Guide for addressing accessibility in standards

Part 7: Human Abilities & Characteristics
[Requires Purchase]

ISO/IEC 24756 Information technology — Framework for specifying a common access profile (CAP) of needs and capabilities of users, systems, and their environments

Part 6.6: Modalities and Modality Specific Information

Visual
Auditory
Tactile
Olfactory

Neurophysiological

There can be modality-specific; capacities-specific; and processing-specific information.

ETSI TR 103 349 V1.1.1 (2016-12)

Human Factors (HF); Functional needs of people with cognitive disabilities when using mobile ICT devices for an improved user experience in mobile ICT devices
§6.2 List of Usage Needs

Focusing attention: usage with limited ability to focus attention.
Directing attention: usage with limited ability to direct attention.
Shifting attention: usage with limited ability to shift attention.
Reading: usage with no ability to read.
Recognising written language: usage with limited ability to recognize written language.
Comprehending written language: usage with limited ability to comprehend written language.
Writing: usage with no ability to write.
Writing correctly: usage with limited ability to correctly write words and use punctuation.
Producing written language: usage with limited ability to produce written language.
Calculating: usage with no ability to calculate.
Understanding simple maths: usage with limited ability to understand simple mathematical concepts.
Making choices: usage with limited ability to make a choice among options.
Interpreting effects of choices: usage with limited ability to interpret the effects of choices taken. Initiating a task: usage with limited ability to initiate a task.
Organising for a task: usage with limited ability to organise for a task.
Carrying out a task: usage with limited ability to carry out a task.
Completing a task: usage with limited ability to complete a task.
Managing time: usage with limited ability to manage time.
Adapting to time demands: usage with limited ability to adapt to time demands.
Receiving spoken language: usage with no ability to receive spoken language.
Understanding spoken language: usage with limited ability to understand spoken language.
Understanding body gestures: usage with limited or no ability to understand body gestures.
Understanding symbols: usage with limited or no ability to understand symbols.
Understanding drawings and photographs: usage with limited or no ability to understand drawings and photographs.
Speaking: usage with limited or no ability to speak.
Producing gestures: usage with limited or no ability to produce gestures.
Recalling from short-term memory: usage with limited ability to recall from short-term memory.
Recalling from long-term memory: usage with limited long-term memory.

IMS Global Learning Consortium – Accessibility Background

§1.5 Nomenclature
§2.1 Disabilities, Functional Limitations, and Accessibility Tips

- 2.1.1 For People Who Are Blind
- 2.1.2 For People with Low-Vision
- 2.1.3 For People with Color Blindness
- 2.1.4 For People Who Are Hard-of-Hearing or Deaf
- 2.1.5 For People with Physical Disabilities
- 2.1.6 For People with Language or Cognitive Disabilities
- 2.1.7 General Accessibility Improvements

IBM Carbon Design System

Overview » §Carbon and Accessibility

- Blind
- Low-Vision
  - Low Acuity
  - Low contrast sensitivity
  - Obstructed Visual Field
  - Retinitis Pigmentosa
- Color Blind
- Deaf and hard-of-hearing users
- Physical disabilities
- Cognitive disabilities
  - Memory
  - Problem solving
  - Attention
  - Reading, linguistic, and verbal comprehension
  - Mathematics
  - Visual comprehension

Disability Research

Classifications

International Classification of Functioning, Disability and Health (ICF) — WHO [2001]

> *The International Classification of Functioning, Disability and Health, known more commonly as ICF, is a classification of health and health-related domains. As* ***the functioning and disability of an individual occurs in a context****, ICF also includes a list of environmental factors.*
> *In ICF, disability and functioning are viewed as outcomes of interactions between health conditions (diseases, disorders and injuries) and contextual factors.*

Disability Compendium

https://disabilitycompendium.org/compendium/2017-annual-disability-statistics-compendium?page=6

Research on Disability

https://researchondisability.org/

U.S. Social Security Administration

https://www.ssa.gov/data/

U.S. Centers for Disease Control and Prevention

https://www.cdc.gov/mmwr/volumes/67/wr/mm6732a3.htm?s_cid=mm6732a3_w

ISO JTC-1

http://www.jtc1access.org/documents/J1N7751.pdf

Audiovisual translation. When modalities merge – Anna Matamala & Pilar Orero

https://www.tandfonline.com/doi/abs/10.1080/0907676X.2012.722656

Disability and Race Studies

A curated collection of readings on intersections of disability and race by CDSA (Critical Disability Studies Association)

https://docs.google.com/document/d/18eRZ6fy766oOyqKmRidvAx9dalfEG955XmJ9obqrV34/edit

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Proposed Tags for Information Architecture

Example Table from Content Creation Template
§2 Tags for Information Architecture (Google Doc)

Example Tag	Sight		
Disability Type	Blindness		
Functional Needs	Without Vision		

Revision History

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April 2020	Initial Draft
May 2020	Added W3C Notes and Resources on User Needs; Definitions
June 2020	Added Content Usable, ETSI TR 103 349, and Disability Resources Initial Draft of Master List
July 2020	Added Section508 and Mapping to WCAG2.0 resources; comment added that consensus reached on Functional Needs definition.