

ANGULAR
ARCHITECTS

A11y Foundations

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Foundations

- History of accessibility
- Statistics & numbers
- Types of disabilities
- Legal basis (DE, AT, CH)

History of A11y

History – Early 1990s

- Tim Berners-Lee, the inventor of the World Wide Web, envisioned it as a platform for universal access regardless of physical or cognitive abilities

Emergence Of Accessibility – mid 90s

- People with disabilities including those with
 - visual impairments
 - hearing impairments
 - motor disabilities
 - cognitive disabilities
 - ...

found it difficult or impossible to access much of the web

Web Accessibility Initiative (WAI) – 1997

- World Wide Web Consortium (W3C) establishes the Web Accessibility Initiative to address accessibility issues systematically
- WAI develops guidelines and resources to help make the web more accessible to people with disabilities

Web Content Accessibility Guidelines (WCAG) – 1999

- by WAI of W3C
- provides a set of recommendations for making web content more accessible to various disabilities
- 1st version published in 1999
- Version 2.1 – June, 2018 (often-used base for laws)
- **Current** Version 2.2 – October, 2023

Legal & Regulatory Development – 2000s

- Several countries started to enact laws and regulations **mandating accessibility for public sector websites** and, in some cases, for **private sector websites** as well

Assistive Technologies – 2000s

- Simultaneously with the development of WCAG, advancements in **assistive technologies** such as
 - screen readers, Braille
 - screen magnifiers
 - alternative input devices
 - captioning tools
 - ...

improved A11y for users with disabilities

Evolution of the web – 2010s

- JavaScript like **AJAX, SPAs and frameworks** like Angular emerged, posing new challenges but also offering new opportunities
- multimedia, responsive design, mobile apps required ongoing efforts to ensure A11y

Continued Advocacy & Education – 2020s

- A11y **remains an ongoing effort**, with advocacy groups, organizations, developers, designers, and policymakers continuing to work towards making the web more inclusive

Current State – 2025

- A11y has gained significant **attention and importance**, both from **a legal compliance standpoint & as a moral imperative**
- Organizations **increasingly recognize the business benefits of accessible design**, including expanded reach, improved user experience for all users, and compliance with legal requirements

Disabilities statistics

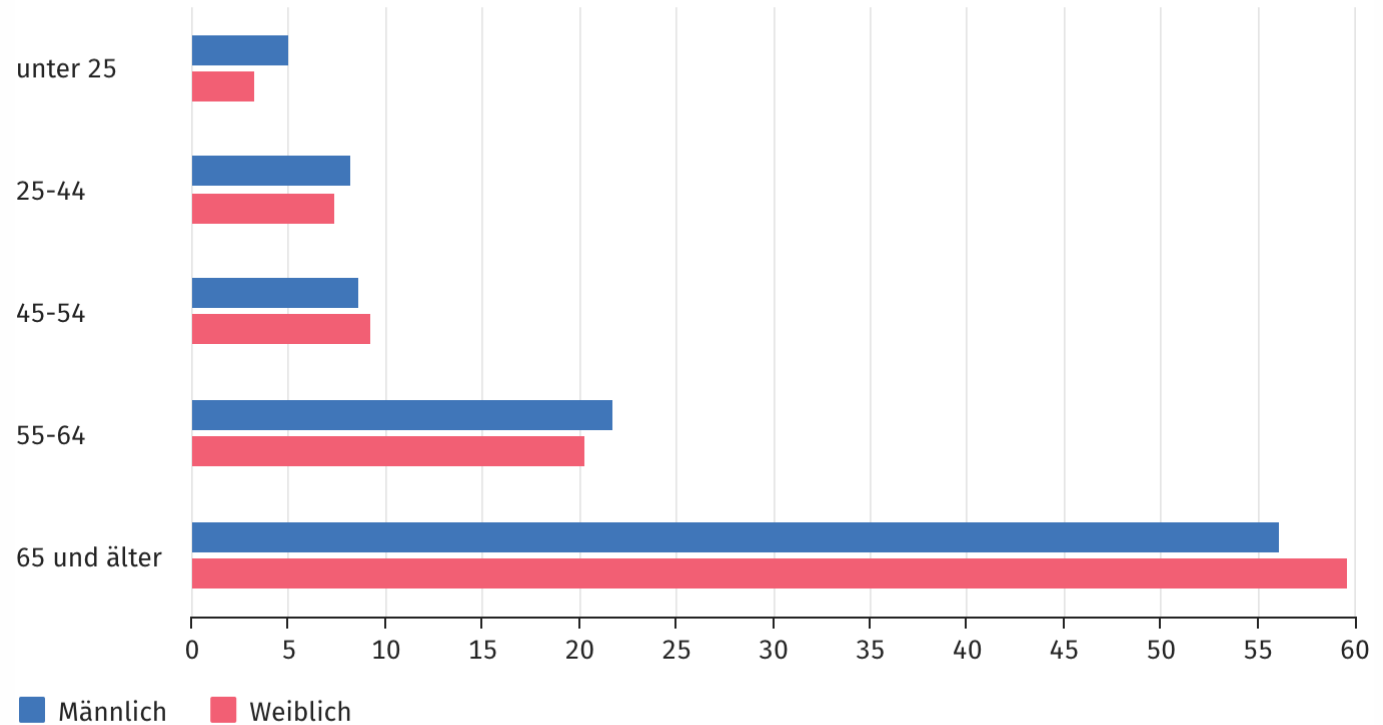
Germany

- 7,8 Mio. (9,4%) severely disabled
- > 10 Mio. (12,7%) officially recognized disab.
- (Statistisches Bundesamt, 2021)
- 18,7 Mio (22 %) aged ≥ 65 (2022)

Germany

Schwerbehinderte Menschen nach Alter 2021

Anteil an allen Schwerbehinderten je Geschlecht in %



Personen mit Signierung des Geschlechts "divers" und "ohne Angabe" (§ 22 Absatz 3 PStG) werden ab dem Berichtsjahr 2021 aus Gründen der statistischen Geheimhaltung per Zufallsprinzip dem männlichen oder weiblichen Geschlecht zugeordnet.

Austria

- 1,34 Mio. (18,4%) permanently disabled
 - 1 Mio. (14,1%) problems with mobility
 - 216k (3,0%) problems with vision
 - 157k (2,1%) problems with hearing
 - 60k (0,8%) mental illness / learning disabilities
- (Statistik Austria, 2015)

Types of disabilities

Classic disabilities

- Mobility (14,1% AT)
- Vision (3,0% AT)
- Hearing (2,1% AT)
- Mental / learning disabilities (0,8% AT)

Other disabilities

- Dementia (2% DE)
- Non-native speakers (20% DE / 24% AT)
- Reading/spelling weakness (12% DE / 10% AT)
- Parents (just 1 hand 😊)

Legal basis

Behindertengleichstellungsgesetz (BGG)

Disability Equality Act

- DE – May 1st 2002
- prevent discrimination against people with disabilities
- ensure the equal participation of people with disabilities in life in society
- enable them to lead a self-determined lifestyle

Barrierefreie-Informationstechnik-Verordnung (BITV 2.0)

Barrier-free Information Technology Regulation

- DE V1.0 2002 based upon WCAG 1.0 by WAI
- All public web services must be accessible
 - since December 31st 2005
- 2011 (BITV 2.0) & 2019 updates – WCAG 2.0
 - since March 22nd 2012

Barrierefreiheitserklärung

Accessibility Statement

- own page (like imprint / data protection)
 - link placed in footer
- machine readable
- mention national law
- name all contents that aren't yet accessible
- examples
 - <https://www.bundesfinanzministerium.de/Web/DE/Meta/Erklaerung-Barrierefreiheit/erklaerung-barrierefreiheit.html>
 - <https://www.bmf.gv.at/public/barrierefreiheitserklaerung.html>

European Accessibility Act 2025 (EAA)



- EU directive from April 2019 (!)
 - Europäisches Gesetz zur Barrierefreiheit (EGB)
- regulations for the accessible use of certain products and services such as
 - terminals
 - ticket machines in public transport systems
 - payment terminals and cash machines
 - products
 - computers
 - mobile phones
 - services
 - e-commerce (online shops, everything that creates contracts)
 - e-books

Barrierefreiheitsstärkungsgesetz (BFSG)

Accessibility Strengthening Act



- DE – July 2022 national application of the EAA
- All private web services must be accessible too
 - Starting from June 28th 2025 all new products & services
 - immediately applicable for online services like shops
 - up to 5 years for migration of existing products
 - up to 15 years for migration of ticket machines / terminals
- Includes online services like banking & shops
- Small bus. (<10 emp. or <2 M. € sales) excluded
- <https://www.digitalmanufaktur.com/blog/barrierefreiheitsstarkungsgesetz-2025-was-onlineshops-jetzt-tun-mussen>

Barrierefreiheitsgesetz (BaFG)

Accessibility Act

- AT – June 2023 national application of the EAA
- All private web services must be accessible too
 - Starting from June 28th 2025 all new products & services
 - up to 5 years for migration of existing services & products
 - up to 20 years for migration of ticket machines / terminals
- Includes online services like banking & shops
- Small bus. (<10 emp. or <2 M. € sales) excluded
- Ref: <https://www.wko.at/ce-kennzeichnung-normen/informationen-zum-barrierefreiheitsgesetz>

A11y Standard (eCH-0059)



– CH

- Version 1.0 – Aug. 2007
- Version 2.0 – Feb. 2011
- Version 3.0 – **June 2020**

– Current version

- Inspired by EU's EAA
- Also based upon **WCAG 2.1**

The background is an abstract composition. The upper portion features a bright purple sky with soft, white, cloud-like textures. Below the sky, a series of dark, thin lines radiate from a central point on the horizon, creating a perspective effect that suggests a grid or architectural structure. The lower portion of the image is a solid, deep red color. The overall effect is modern and architectural.

Questions?