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Retconning Accessibility Standards with ARIA-AT

Chris Cuellar | Open Source Summit ‘26

Tech Standards = Filling In The Plot Holes

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HTML Standards = Paving the Cowpaths

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ARIA-AT

Today's Testing Snapshot: As of **May 17 2026**, **69,422** interop verdicts for **7,632** AT commands across **1,127** tests enabled by **15** contributors. **814** verdicts collected in the last 90 days.

Enabling Interoperability for Assistive Technology Users

✨ ***Note:*** The **ARIA-AT Project** is managed by the **ARIA-AT Community Group** in coordination with the **Authoring Practices Task Force** of the **ARIA Working Group**. The W3C staff contact is **Daniel Montalvo**.

Today, different screen readers often yield conflicting experiences when presenting a web page, disadvantaging or even excluding some users. These differences also create accessibility design and test barriers for web developers.

On the other hand, browsers are interoperable for people who do not use assistive technologies. That is, different browsers provide equivalent experiences. Browser interoperability facilitates an inclusive web.

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web-platform-tests dashboard

Sign in with GitHub

Latest Run | Recent Runs | ✨Interop 2026✨ | Insights | Processor | About

You are viewing Interop data from a previous year. View the current Interop Dashboard.

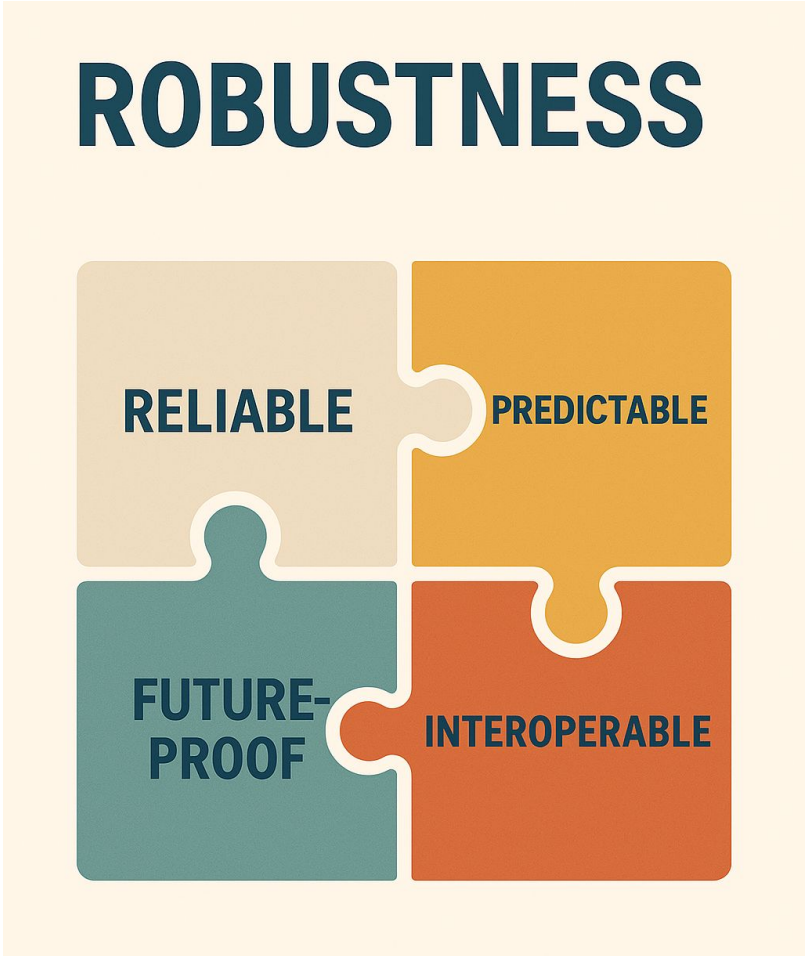
Interop 2025 Dashboard

STABLE | EXPERIMENTAL

97	36
INTEROP	INVESTIGATIONS

99	99	99	99
Chrome Canary	Edge Dev	Firefox Nightly	Safari Technology Preview

Is WCAG Enough?



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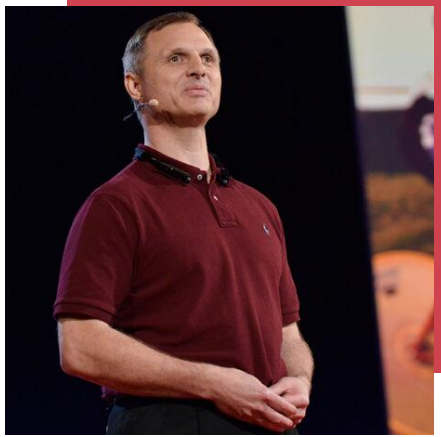

Accessible products give only some screen reader users good AX some of the time, and that is as good as it gets.

— Matt King, ARIA-AT CG Chair

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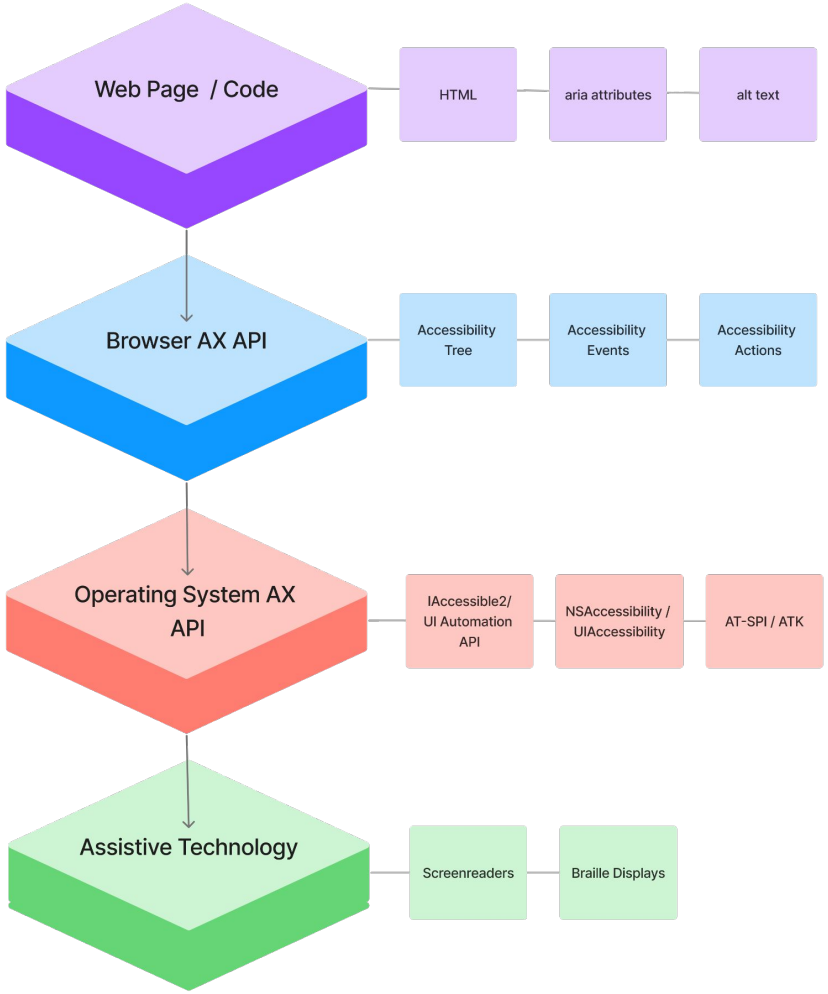
The Four Mile Journey from Web Developers to Screen Reader Users



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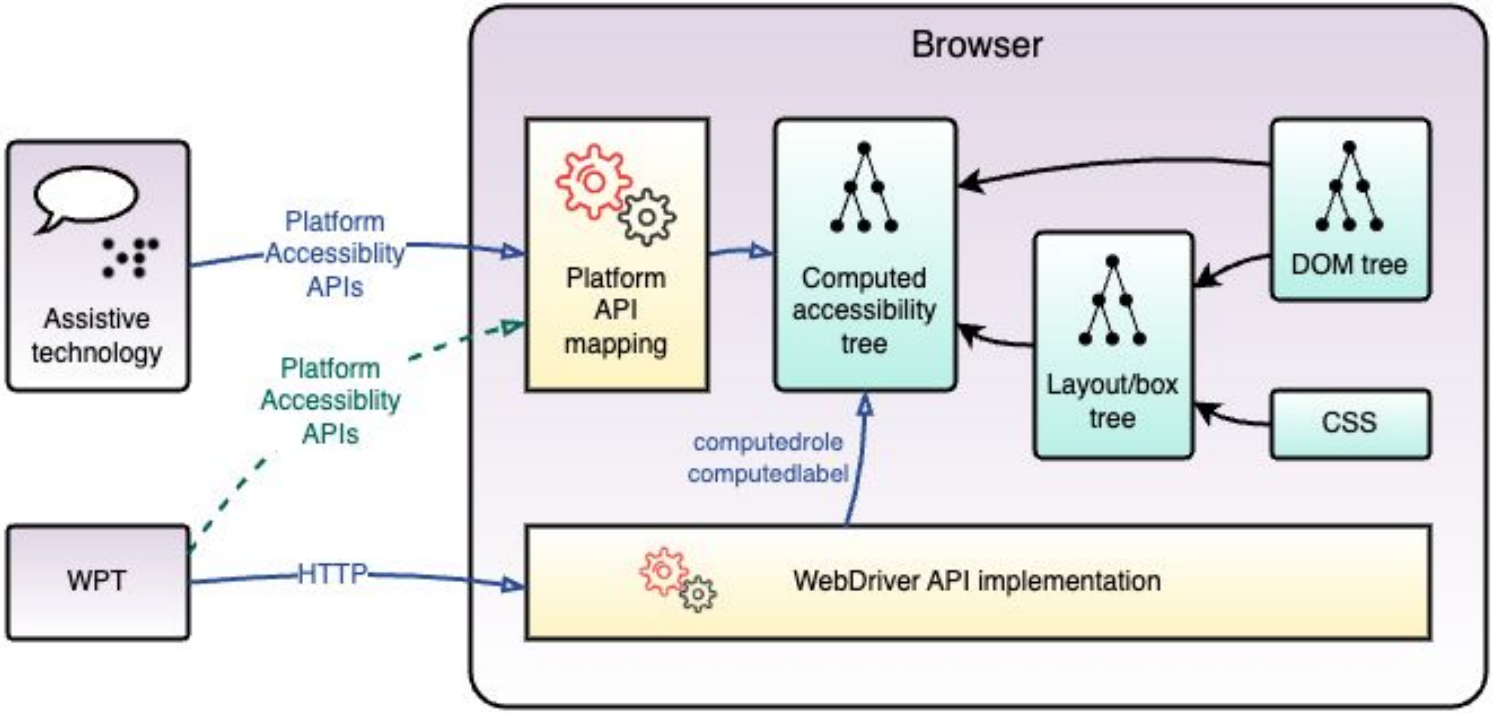
The AT Testing Surface



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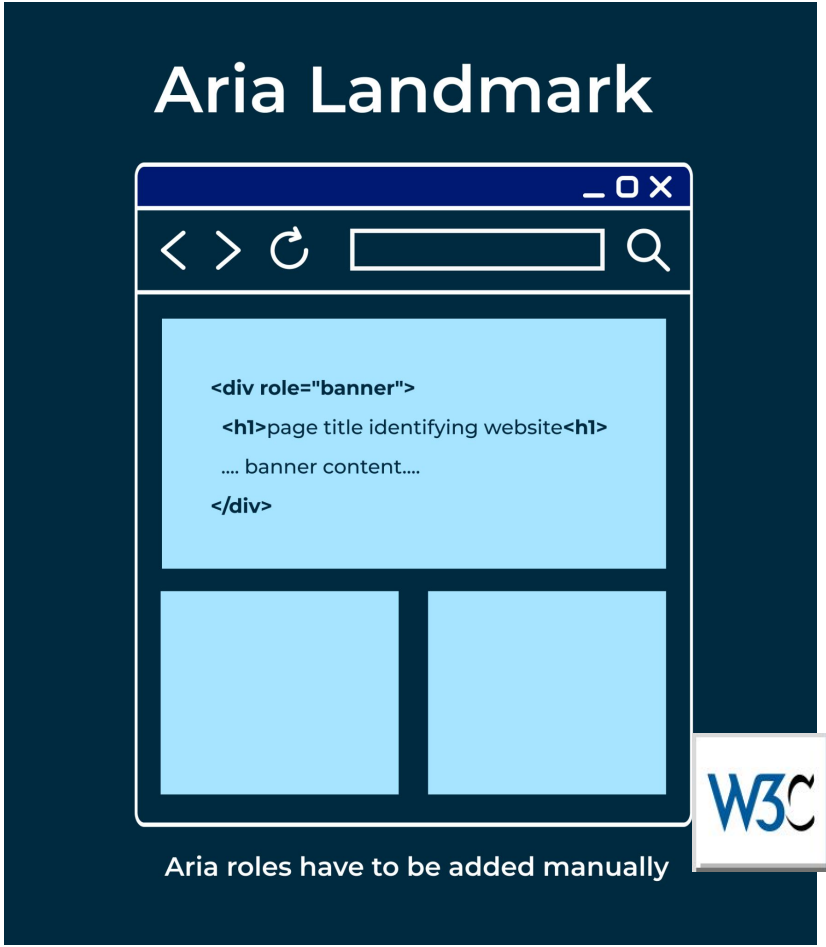
Mile 1

Web Developer implements AX requirements (ARIA roles/attributes).



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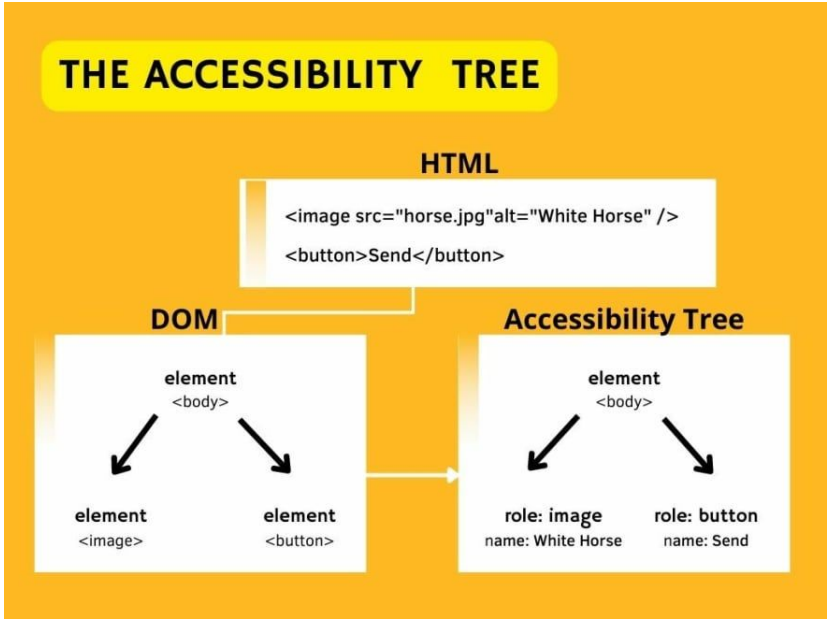
W3C WAI-AA WCAG 2.2

Mile 2

Browser engineers make accessible view of HTML content (Browser AX tree).



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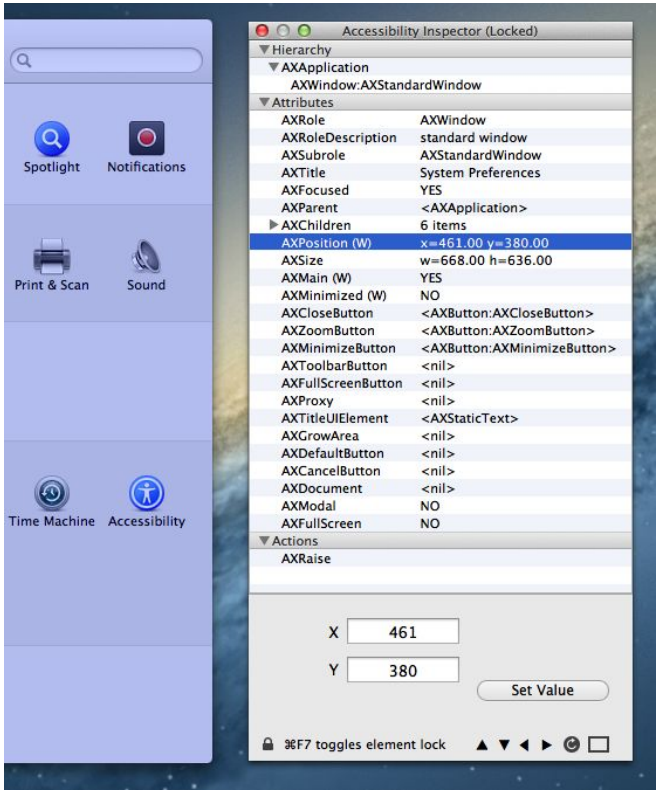
Browser
Assistive technology
Platform Accessibilty APIs
Platform API mapping
Computed accessibility tree
DOM tree
Layout/box tree
CSS
Platform Accessibilty APIs
computedrole
computedlabel
WPT
HTTP
WebDriver API implementation
AX Tree Tests

Mile 3

Operating system engineer provides accessibility pipes (AX API's).



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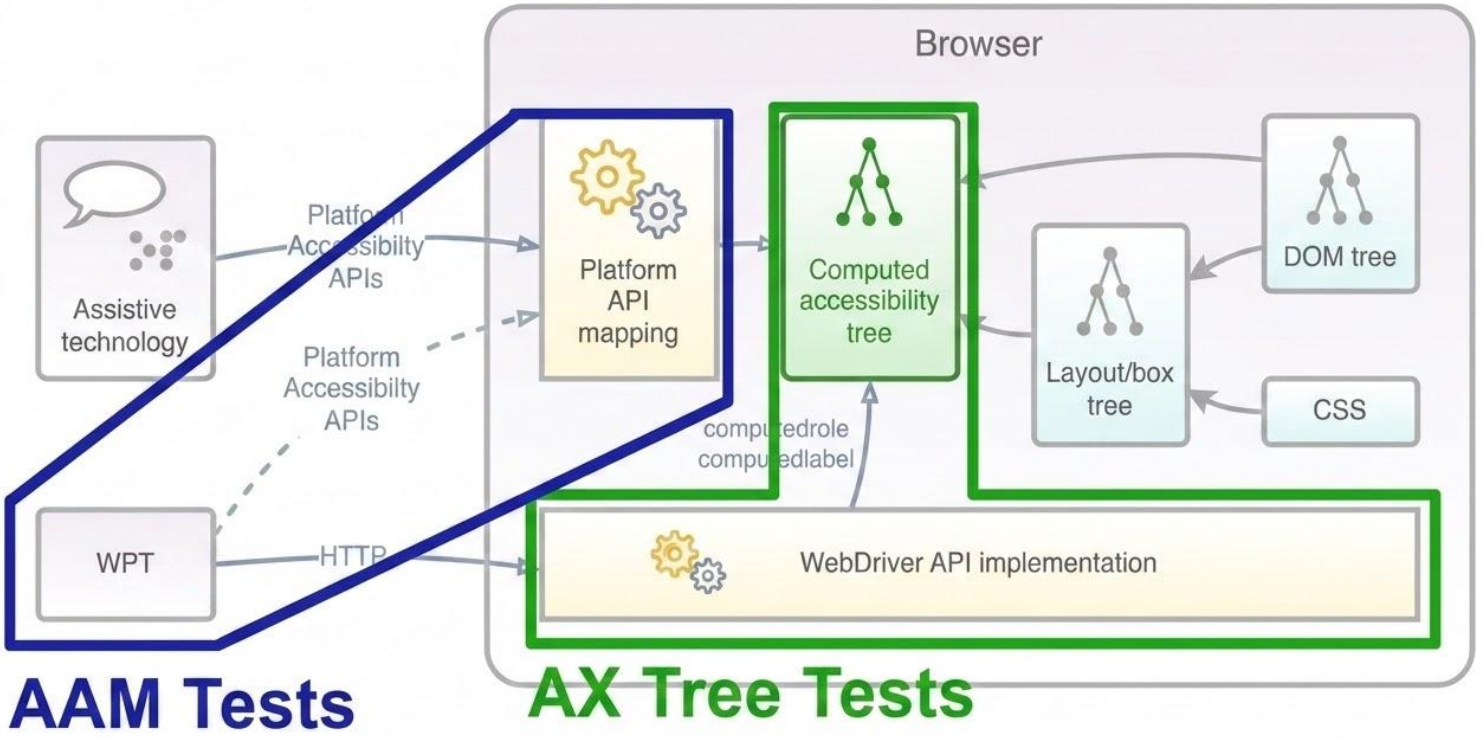
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AAM Tests
AX Tree Tests

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Mile 4

AT developer translates to speech, braille, and sends back key presses and mouse clicks.

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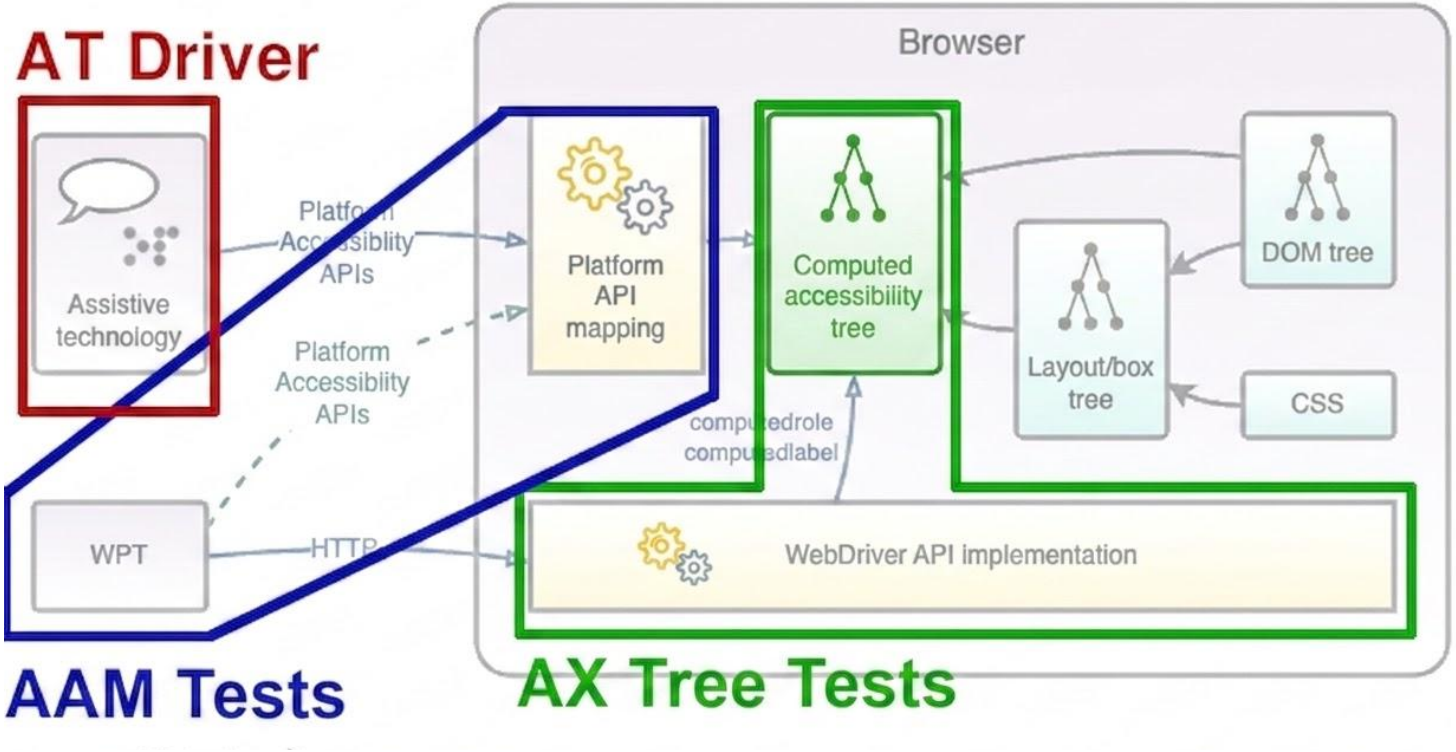
nvaccess

Vispero


AT Driver
Browser
Assistive technology
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HTTP
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AAM Tests
AX Tree Tests

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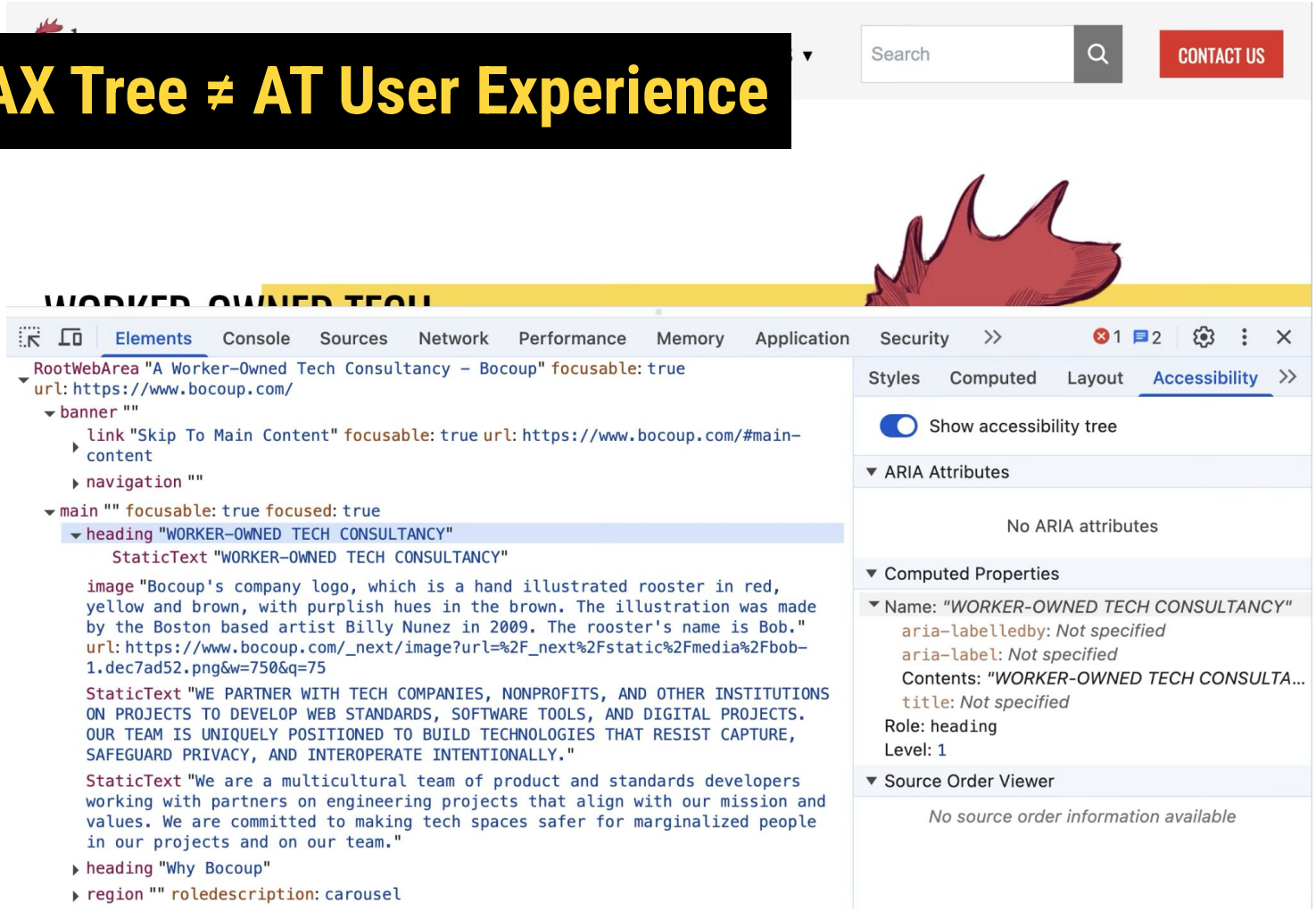
AX Tree ≠ AT User Experience



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Louis Do, AT Specialist

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The cost of incomplete standards has been transferred to users.

Today's "accessible" web is only reliably accessible to users who own multiple screen readers, run multiple devices, and have the technical expertise to switch between them when a site breaks.

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THEN:

No standardized accessibility semantics across platforms.

Screen readers built around hacks: scraping video drivers, parsing the DOM, custom integrations per product.

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NOW:

ARIA has defined ~150 standardized semantics.

AX APIs are required on every modern OS. Screen readers consume standardized input.

The Story So Far…

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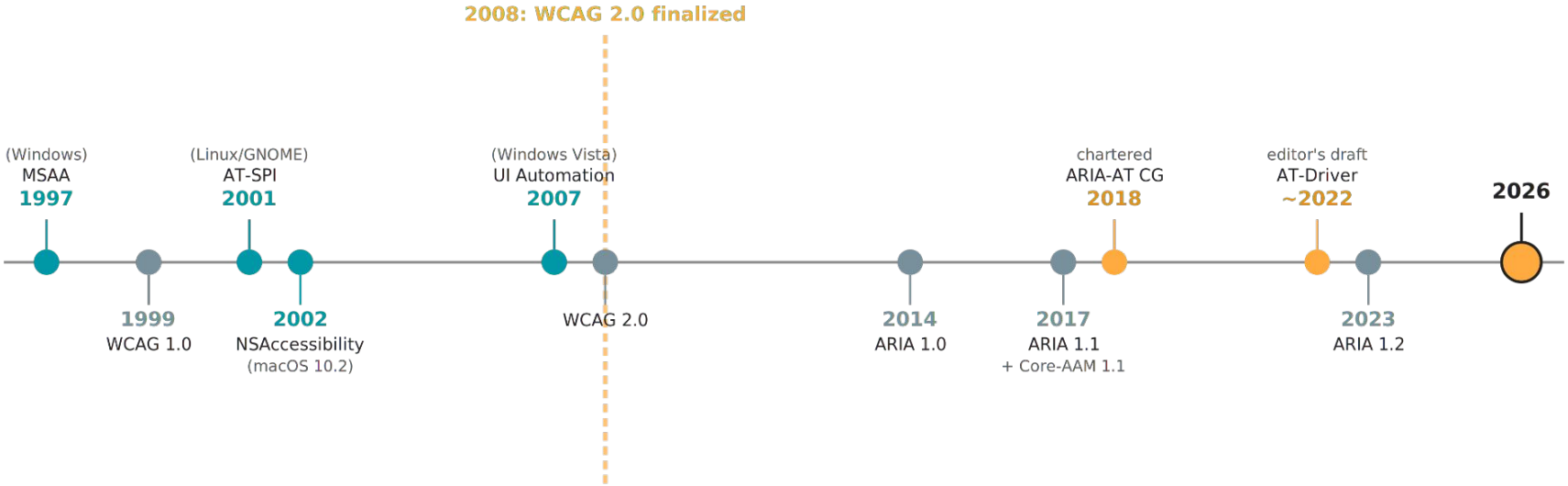

AT Automation via AT-Driver

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A standard protocol for introspection and remote control of assistive technology software, using a bidirectional communication channel.

AT-Driver: Vitals

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- Chartered under the W3C's Browser Testing and Tools Working Group
- Inspiration from WebDriver BiDi (JSON over WebSockets, "remote end"/"local end" abstractions, "command" and "event" patterns)
- Distinction: these user agents are not web browsers. There is no "browsing session," no "DOM", no "elements," etc.

AT-Driver Implementation Status

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Name	Maintainer	Tech
NVDA AT Driver Server	Prime Access Consulting & Bocoup	screen reader add-on
macOS AT Driver Server	Bocoup	TTS voice & OS key press simulation
JAWS AT Driver Server	Vispero	screen reader DLL

Since 2018 we have developed ...

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1. Approach to defining AT interop via testing
2. Process for building consensus
3. Repeatable, scalable, automatable test structure/format
4. Testing and reporting platform
5. Integrated JAWS, NVDA, and VoiceOver automation

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Assistive Technology Interoperability Reports

Test Plans | ARIA Features | HTML Features

Test Plan Support Levels

The percentage of 'Must' + 'Should' assertions that are passing for a given combination of assistive technology and browser.

Test Plan	JAWS and Chrome	NVDA and Chrome	VoiceOver for macOS and Safari
Accordion Candidate	99%	97%	86%
Action Menu Button Example Using aria-activedescendant Candidate	91%	96%	64%
Action Menu Button Example Using element.focus() Candidate	91%	96%	67%
Alert Example Candidate	100%	100%	100%
Checkbox Example (Two State) Candidate	100%	93%	81%
Color Viewer Slider Candidate	100%	68%	69%
Command Button Example Candidate	100%	98%	92%
Disclosure Navigation Menu Example Candidate	98%	98%	88%

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The aim of this project is not to make all screen readers the same... We want uniqueness to always shine through while being backed by consistent support.

Isabel Del Castillo Solís, Prime Axis Consultants

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Brett Lewis, Vispero

Bocoup & ARIA-AT in 2026

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- [ ] Increasing Engineering Capacity in the ARIA-AT CG
- [ ] Maturing AT-Driver Towards Candidate Review

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Orca

Orca is a free, open source, flexible, and extensible screen reader that provides access to the graphical desktop via user-customizable combinations of speech and/or braille.

Orca works with applications and toolkits that support the Assistive Technology Service Provider Interface (AT-SPI), which is the primary assistive technology infrastructure for free and open desktops.

How to Join the ARIA AT Community Group

Edit | New page

Matt King edited this page on Feb 12, 2023 · 1 revision

Instructions for Joining ARIA-AT Community Group

The ARIA-AT Community Group is organized within the World Wide Web Consortium (W3C). So, to join, you first need to have a W3C account.

You do not have to be a member of the W3C to join a W3C community group. However, if your employer is a W3C member, it is important that your W3C account is affiliated with your employer.

1. If yo eady ha a W3C nt, fi fill out t W C ur e e form.
2. Next, use your W3C account to request to join the ARIA-AT Community Group.

If you run into any difficulty or have questions, please contact us by sending email to the public ARIA-AT mailing list.

ARIA-AT App Home ARIA-AT Wiki Home Email ARIA-AT

GET INVOLVED!

Pages 175

ARIA AT Wiki Pages

- Home
- Meetings
- About ARIA AT
- Gl ry
- Wor de

Getting Started

- Contributing to the ARIA and Assistive Technologies Project
- How to Join the ARIA AT Community Group
- New member welcome kit

Running and Developing AT Tests

- Running a Test Plan
- Configuring Screen Readers for Testing
- Obtaining Browser and Screen Reader Version Information
- Test Writing Documentation

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