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Retconning Accessibility Standards with ARIA-AT

Chris Cuellar | Open Source Summit '26

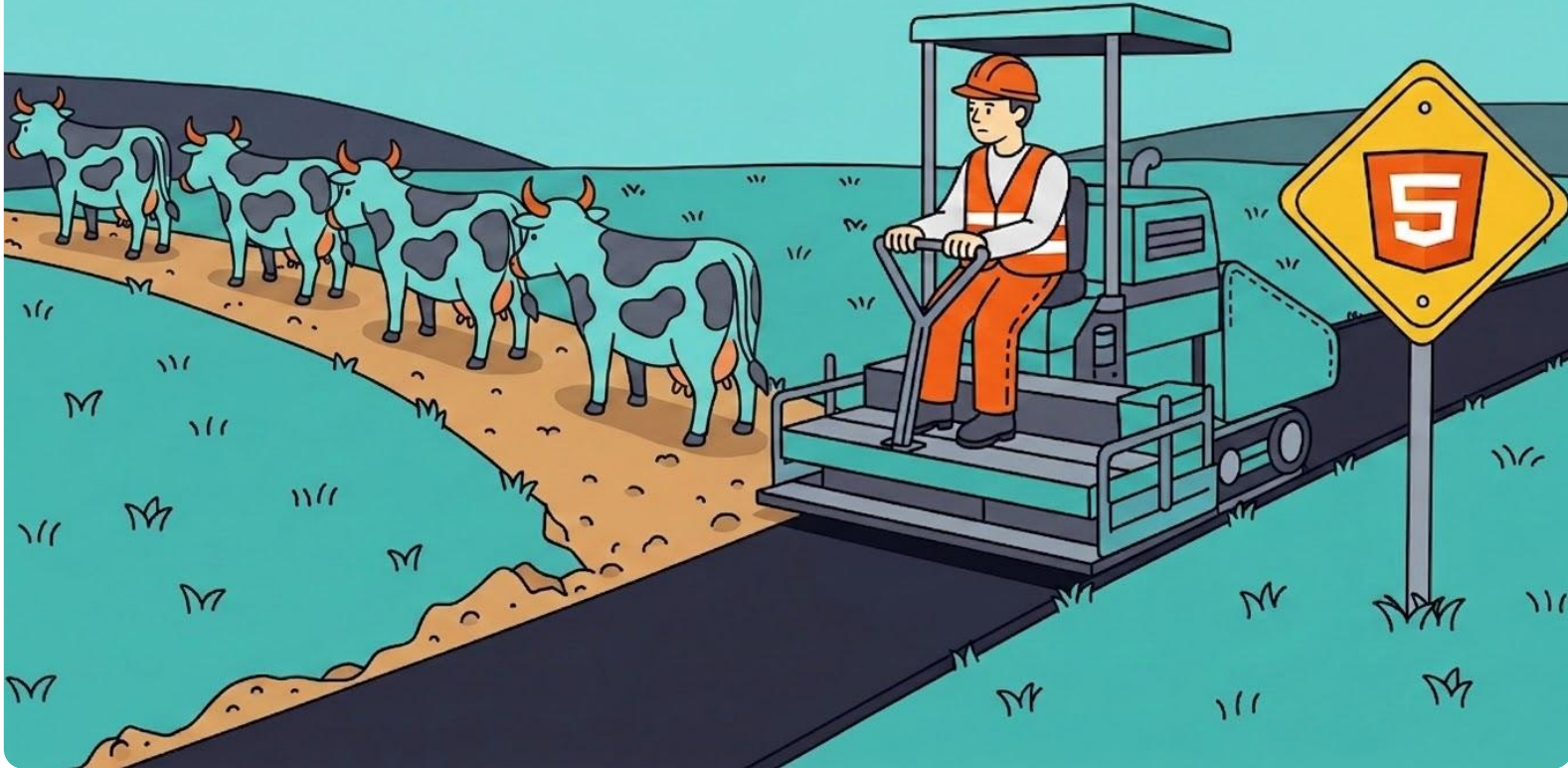
Tech Standards = Filling In The Plot Holes



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HTML Standards = Paving the Cowpaths



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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.



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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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You are viewing Interop data from a previous year. [View the current Interop Dashboard.](#)

Interop 2025 Dashboard

STABLE

EXPERIMENTAL

97

INTEROP

36

INVESTIGATIONS

99



Chrome
Canary

99



Edge
Dev

99



Firefox
Nightly

99



Safari
Technology
Preview

Is WCAG Enough?

ROBUSTNESS

RELIABLE

PREDICTABLE

FUTURE-
PROOF

INTEROPERABLE



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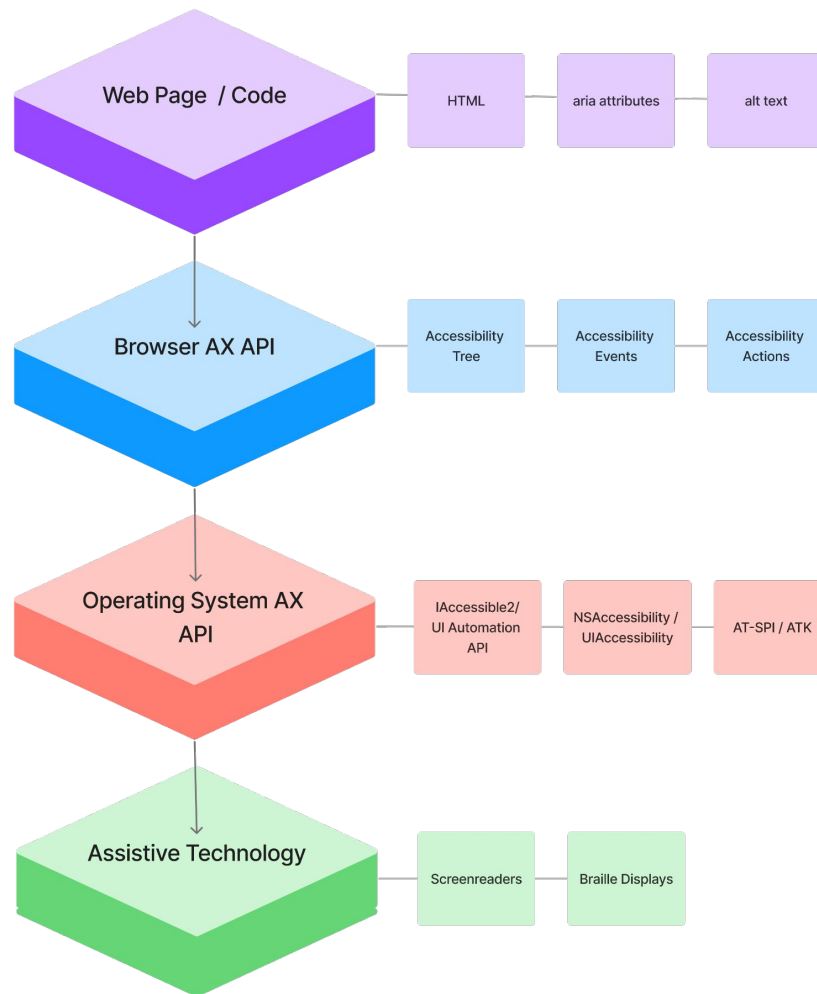
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Accessible products give only some screen reader users good AX some of the time, and that is as good as it gets.

——— Matt King, ARIA-AT CG Chair

The Four Mile Journey from Web Developers to Screen Reader Users

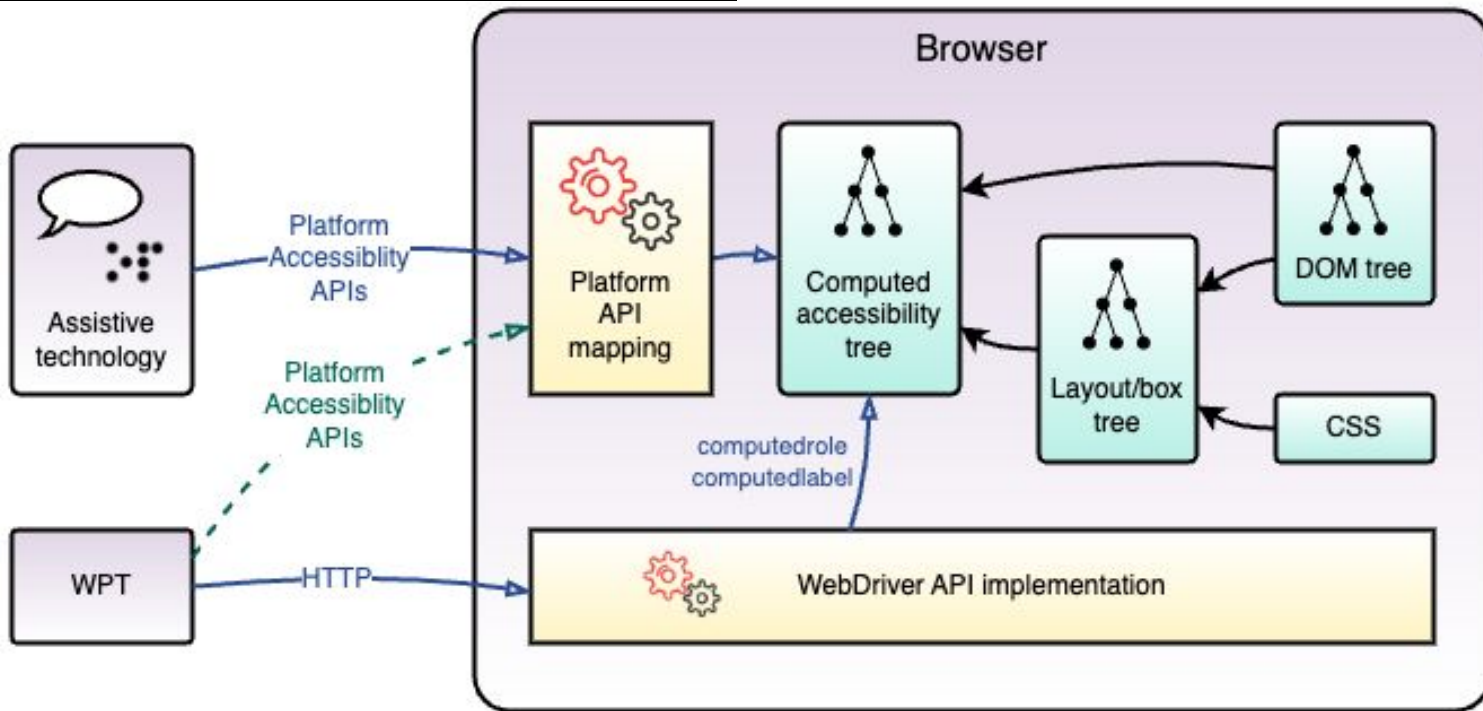


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The AT Testing Surface



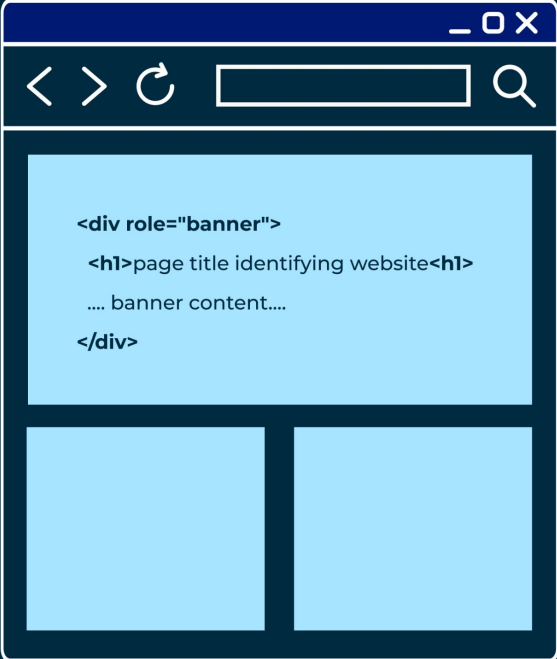
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Mile 1

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

Aria Landmark



The diagram shows a browser window with a dark blue header and a light blue content area. The header contains navigation icons (back, forward, refresh) and a search box. The content area is divided into three sections: a top banner section and two side-by-side content sections below it. The banner section contains the following HTML code:

```
<div role="banner">  
  <h1>page title identifying website</h1>  
  .... banner content....  
</div>
```

Aria roles have to be added manually

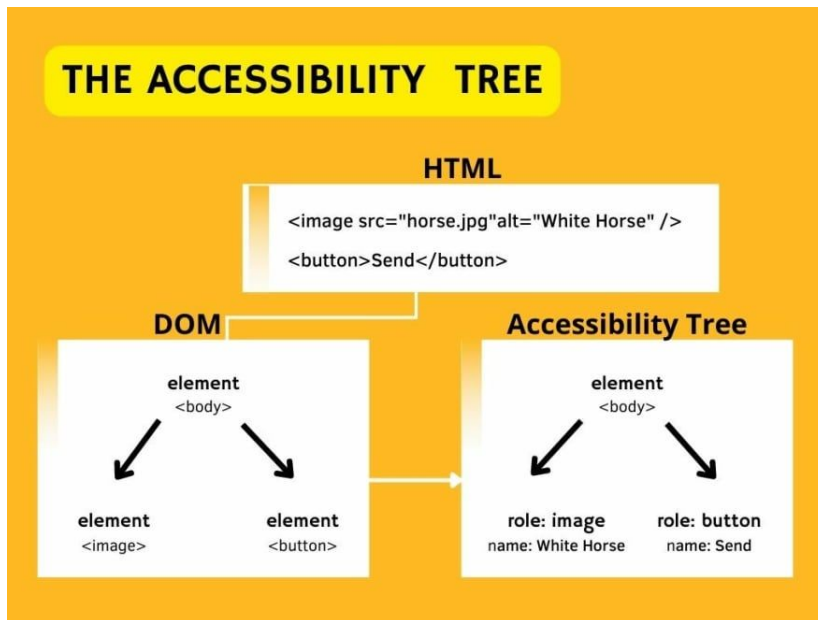


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Mile 2

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

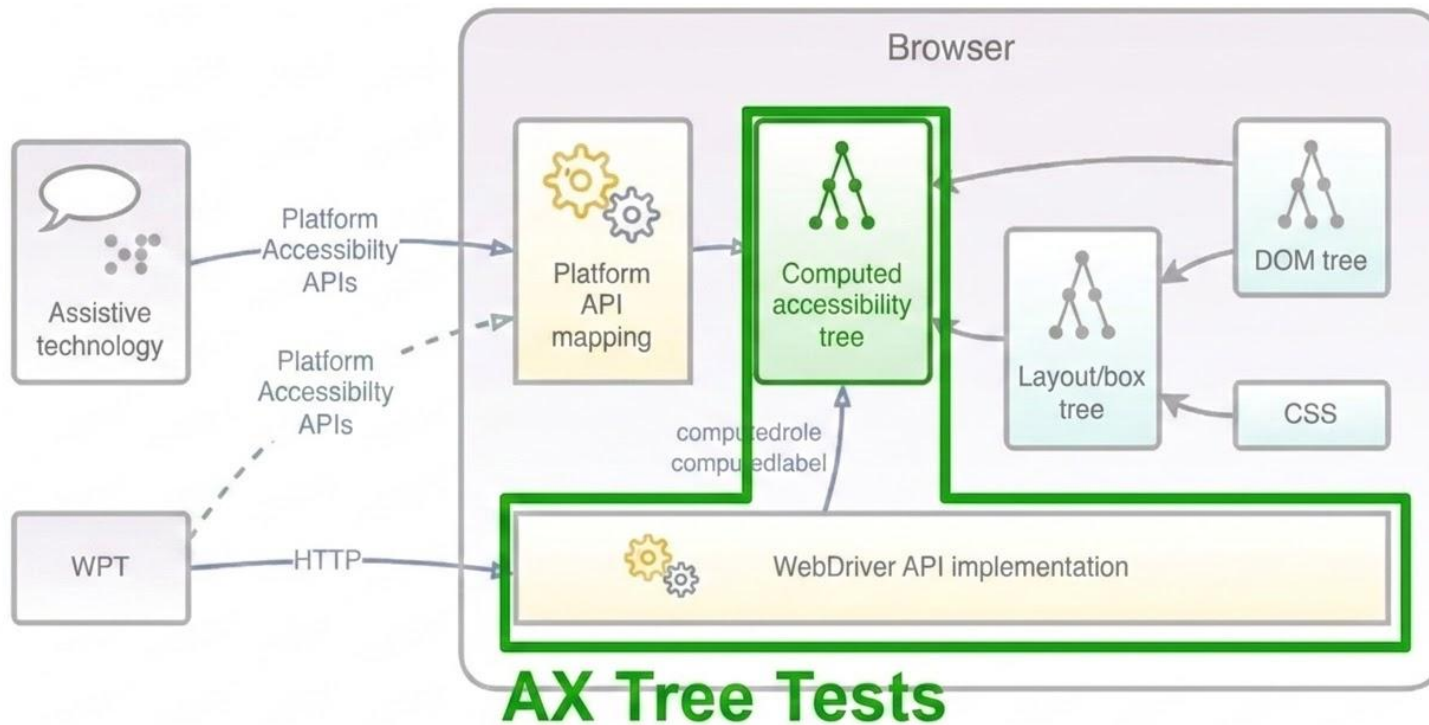


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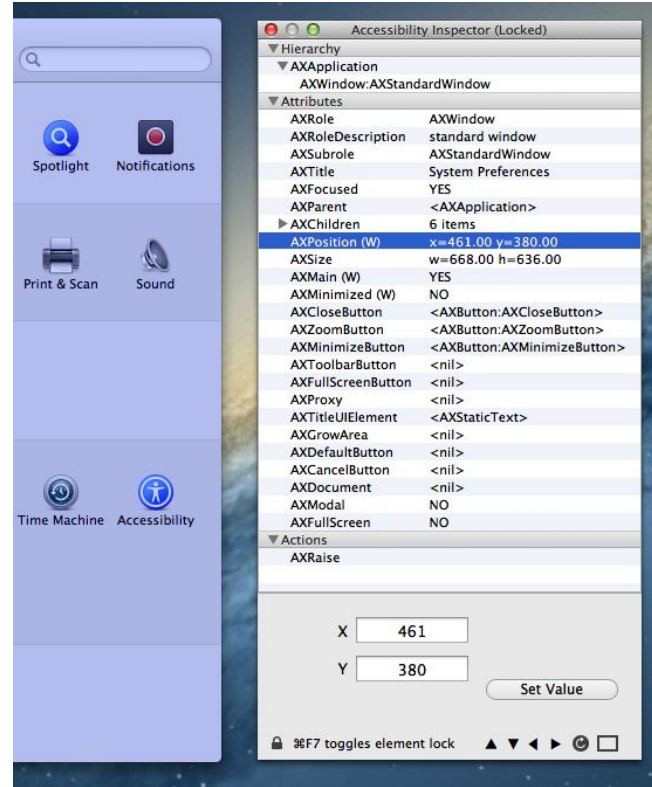


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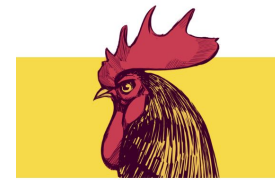
Mile 3

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

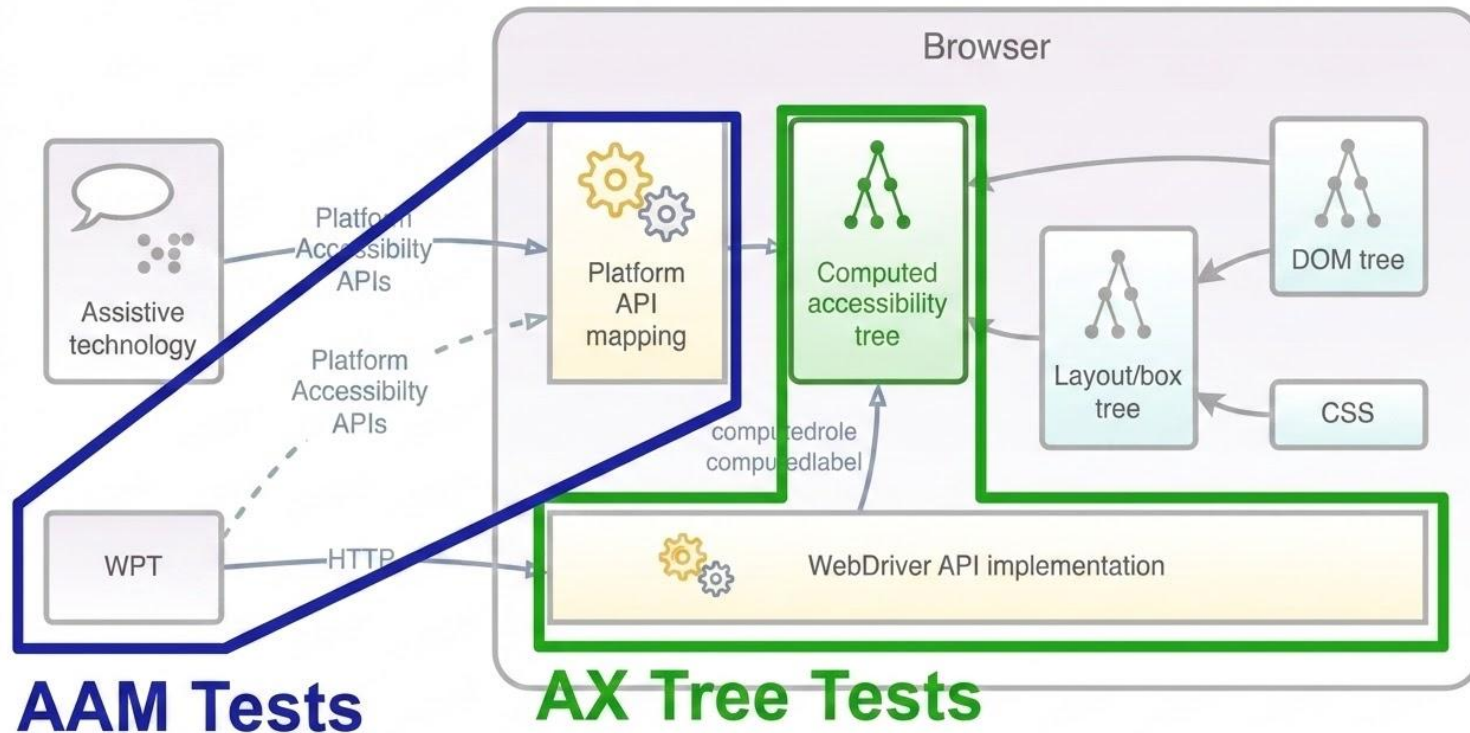


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Mile 4

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



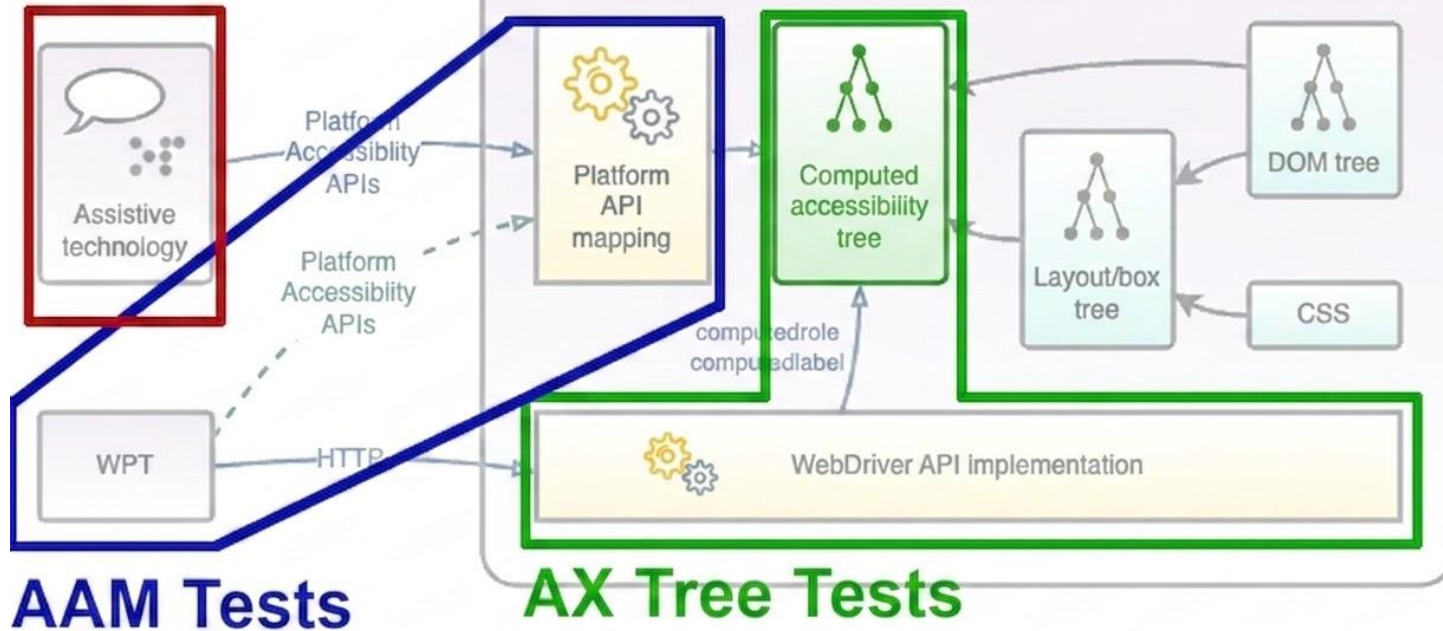
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AT Driver



AAM Tests

AX Tree Tests

AX Tree ≠ AT User Experience

[CONTACT US](#)

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WORKER-OWNED TECH CONSULTANCY

```
Elements Console Sources Network Performance Memory Application Security >>
RootWebArea "A Worker-Owned Tech Consultancy - Bocoup" focusable: true
  url: https://www.bocoup.com/
  ▼ banner ""
    link "Skip To Main Content" focusable: true url: https://www.bocoup.com/#main-content
    ▼ navigation ""
  ▼ main "" focusable: true focused: true
    ▼ heading "WORKER-OWNED TECH CONSULTANCY"
      StaticText "WORKER-OWNED TECH CONSULTANCY"
      image "Bocoup's company logo, which is a hand illustrated rooster in red, yellow and brown, with purplish hues in the brown. The illustration was made by the Boston based artist Billy Nunez in 2009. The rooster's name is Bob."
      url: https://www.bocoup.com/_next/image?url=%2F_next%2Fstatic%2Fmedia%2Fbob-1.dec7ad52.png&w=750&q=75
      StaticText "WE PARTNER WITH TECH COMPANIES, NONPROFITS, AND OTHER INSTITUTIONS ON PROJECTS TO DEVELOP WEB STANDARDS, SOFTWARE TOOLS, AND DIGITAL PROJECTS. OUR TEAM IS UNIQUELY POSITIONED TO BUILD TECHNOLOGIES THAT RESIST CAPTURE, SAFEGUARD PRIVACY, AND INTEROPERATE INTENTIONALLY."
      StaticText "We are a multicultural team of product and standards developers working with partners on engineering projects that align with our mission and values. We are committed to making tech spaces safer for marginalized people in our projects and on our team."
    ▼ heading "Why Bocoup"
    ▼ region "" roledescription: carousel
```

Styles Computed Layout **Accessibility** >>

Show accessibility tree

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

▼ Name: "WORKER-OWNED TECH CONSULTANCY"

- aria-labelledby: Not specified
- aria-label: Not specified
- Contents: "WORKER-OWNED TECH CONSULTA..."
- title: Not specified

Role: heading
Level: 1

▼ Source Order Viewer

No source order information available



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THE SCREEN READER INTEROPERABILITY GAP – A HIDDEN SYSTEMIC BARRIER

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.

THEN:

No standardized accessibility semantics across platforms.

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



NOW:

ARIA has defined ~150
standardized semantics.

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

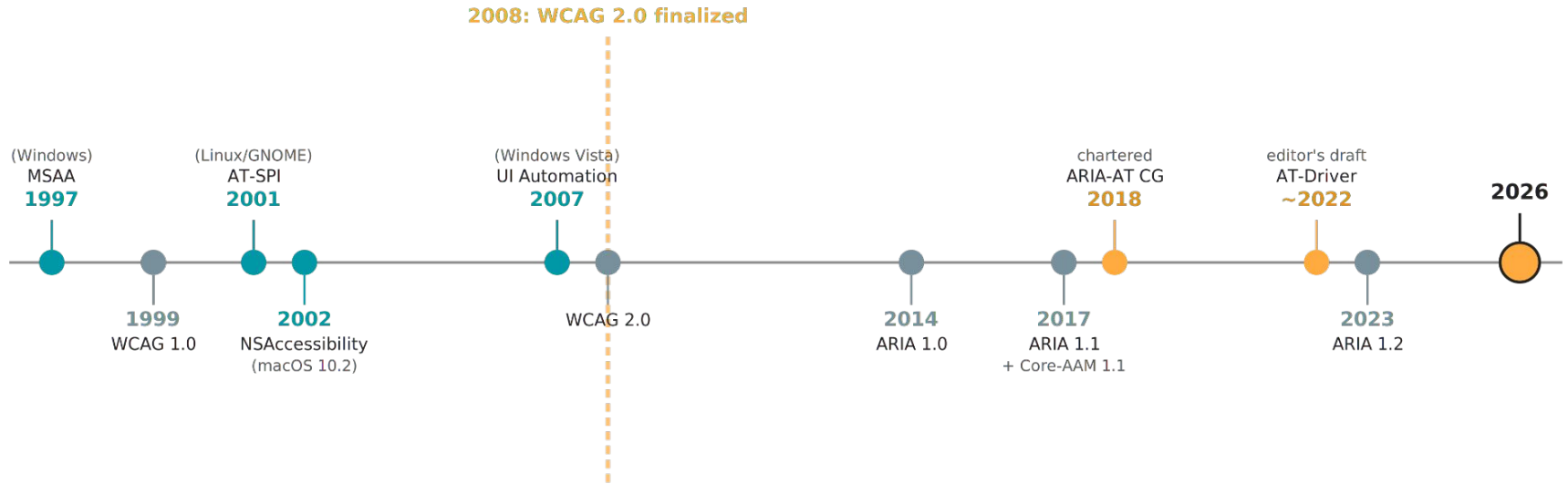


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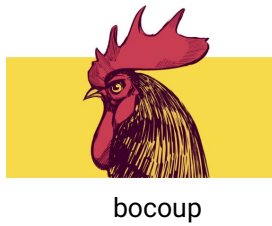
The Story So Far...



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AT Automation via AT-Driver



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

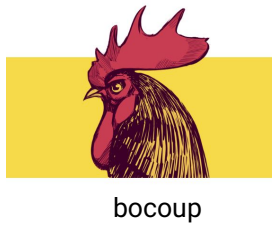


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AT-Driver: Vitals

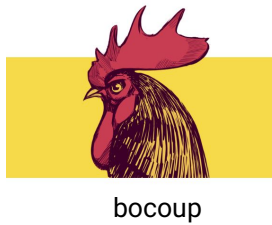
- Chartered under the W3C's Browser Testing and Tools Working Group
- Inspiration from WebDriver BiDi (JSON over WebSockets, "remote end"/"local end" abstractions, "command" and "event" patterns)
- Distinction: these user agents are not web browsers. There is no "browsing session," no "DOM", no "elements,"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

AT-Driver Implementation Status



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 ...



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

Assistive Technology Interoperability Reports

Test Plans

ARIA Features

HTML Features



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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



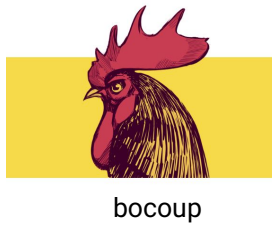
THE SCREEN READER INTEROPERABILITY GAP – A HIDDEN SYSTEMIC BARRIER



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Brett Lewis, Vispero

Bocoup & ARIA-AT in 2026



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

Matt King edited this page on Feb 12, 2023 · [1 revision](#)

Edit

New page



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Instructions for Joining ARIA-AT Community Group

Pages 175

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 you already have a W3C account, fill out the [W3C membership 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](#)

ARIA AT Wiki Pages

- [Home](#)
- [Meetings](#)
- [About ARIA AT](#)
- [Glossary](#)
- [Workshop](#)

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](#)

GET INVOLVED!

