



Improving CERN Web Login Accessibility

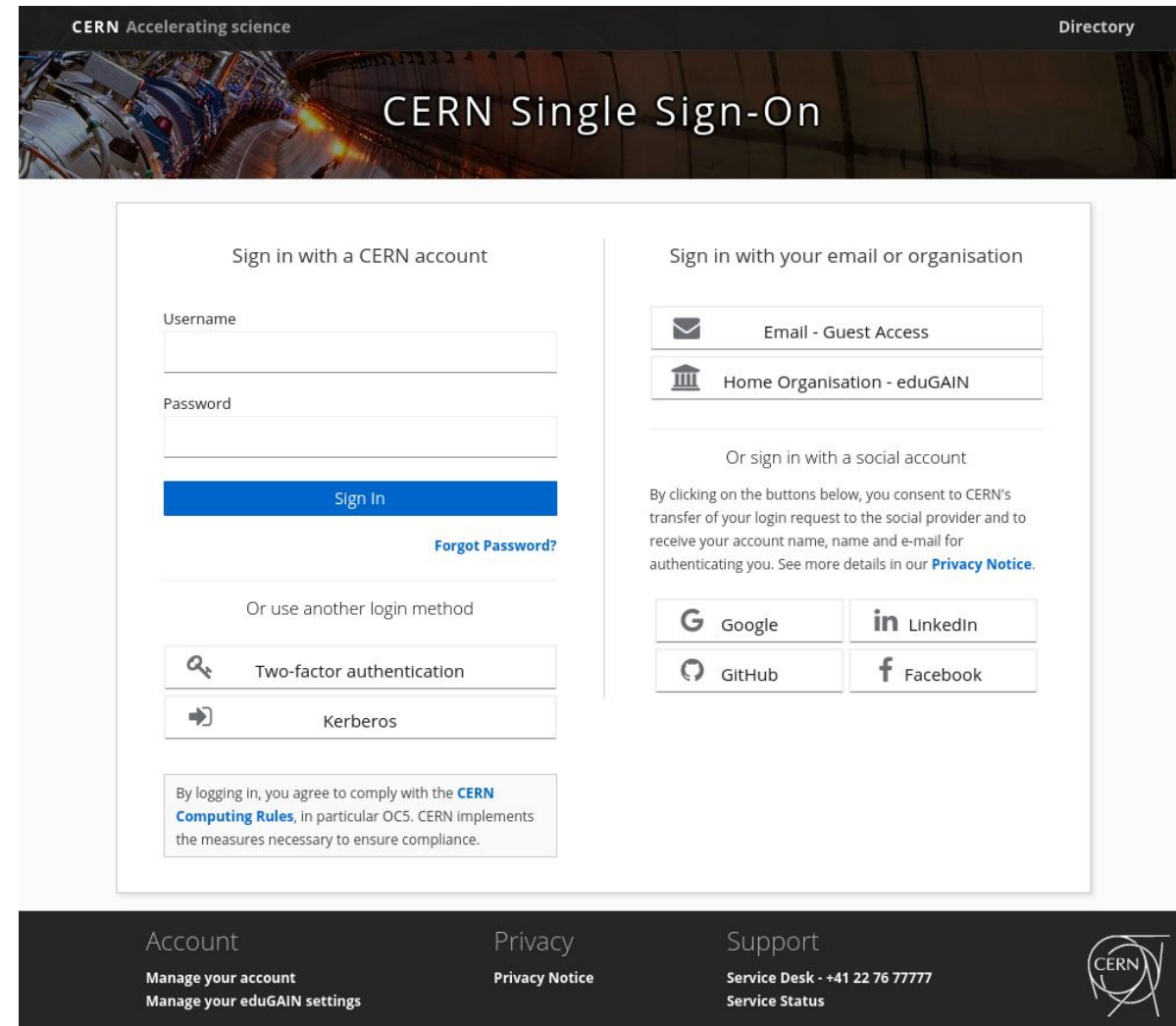
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15/08/2023

Introduction

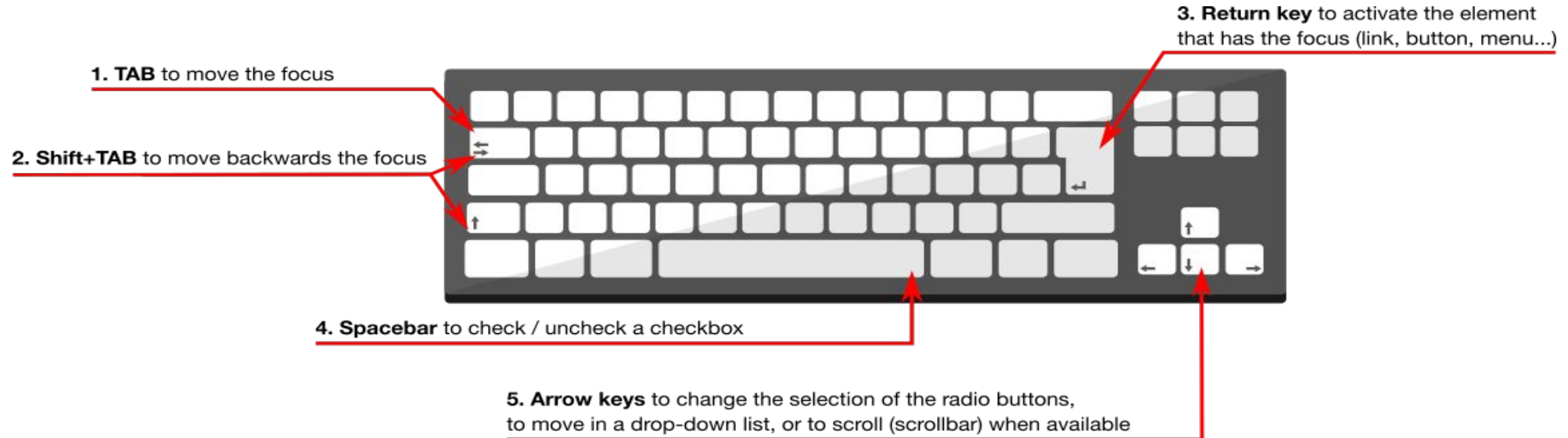
- CERN's Single Sign-On is used by thousands of laboratory staff and researchers to authenticate every day.
- At the moment it needs some improvement in terms of usability for users with disabilities such as limited vision or colour blindness, motor impairment, etc.
- In this project, we address the accessibility needs of the SSO and other related websites run by the authentication team to enhance the overall user experience for all users.



Navigation modes

How people with disabilities navigate websites

- Use of keyboard e.g “tab” key



- Screen readers - communicates the content displayed in audio or braille format e.g Chrome vox, NVDA and JAWS on windows, Voiceover for Mac.
- Voice commands, etc

Methodologies

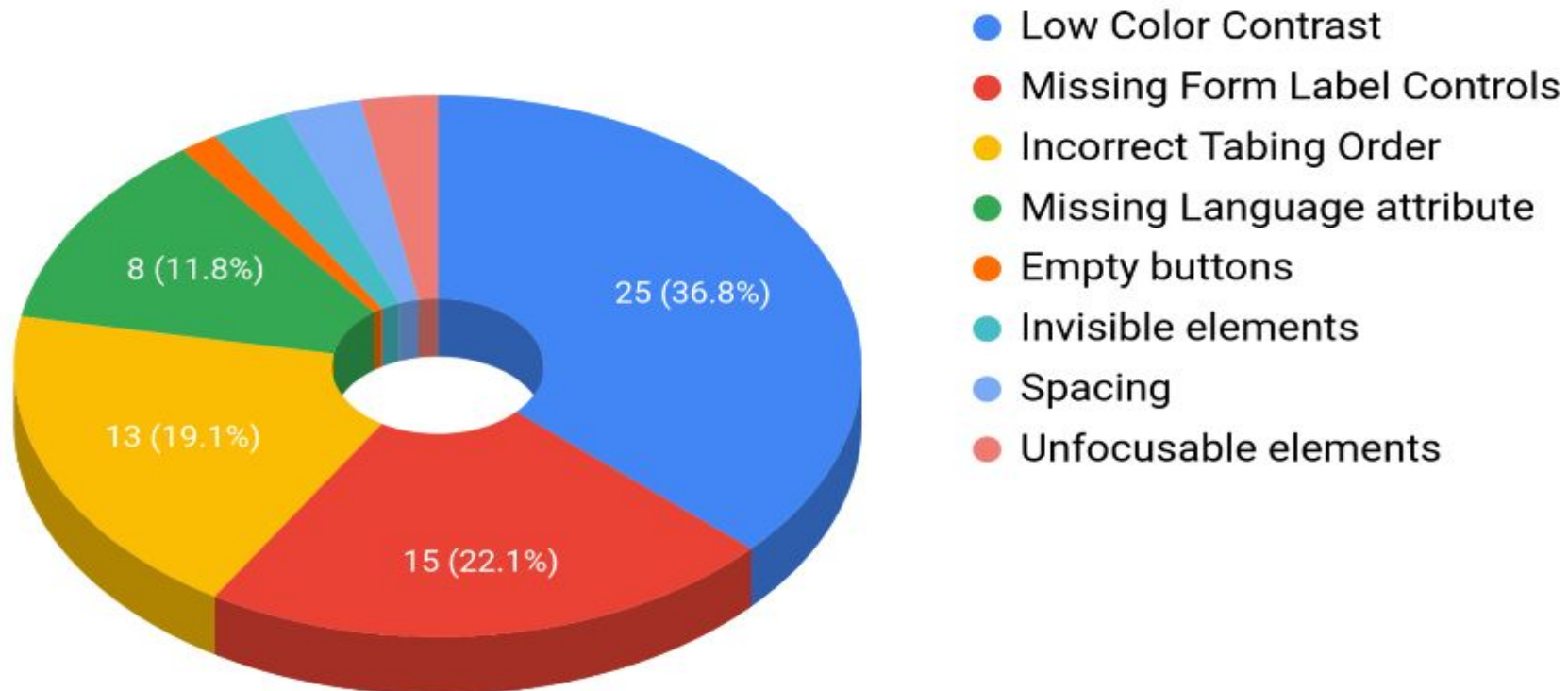
Testing of the SSO

- Web Content Accessibility Guidelines(**level 2(AA)**)
 - **P**erceivable - provide text alternatives for any non-text content
 - **O**perable - all functionality available on keyboard
 - **U**nderstandable - operate and appear in predictable ways
 - **R**obust - maximise compatibility with assistive technologies
- Tabbing(keyboard only)
- Screen reader(listening)
- Web Accessibility Evaluation Tools (WAVE)
- Web Disability Simulator
- Manual Testers (volunteers are welcome)

Issues found

Issues detected on the CERN SSO (68 issues)

SSO Accessibility Issues



Solutions

How the issues detected were fixed(sample)

- **Low Color Contrast**

Username

Password

[Forgot Password?](#)

Increase font weight and make color darker.

Username

Password

[Sign In](#)

[Forgot Password?](#)

Total Color blindness

Username

Password

[Forgot Password?](#)

Email

Password

[Sign In](#)

[Forgot Password?](#)

Solutions

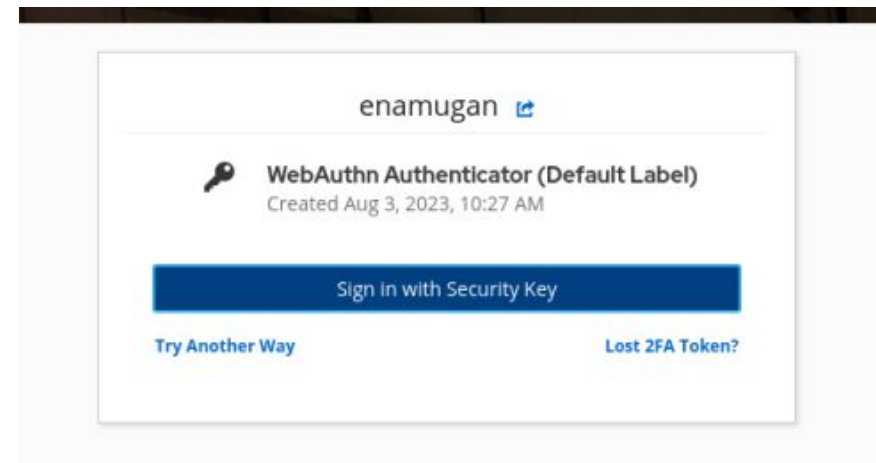
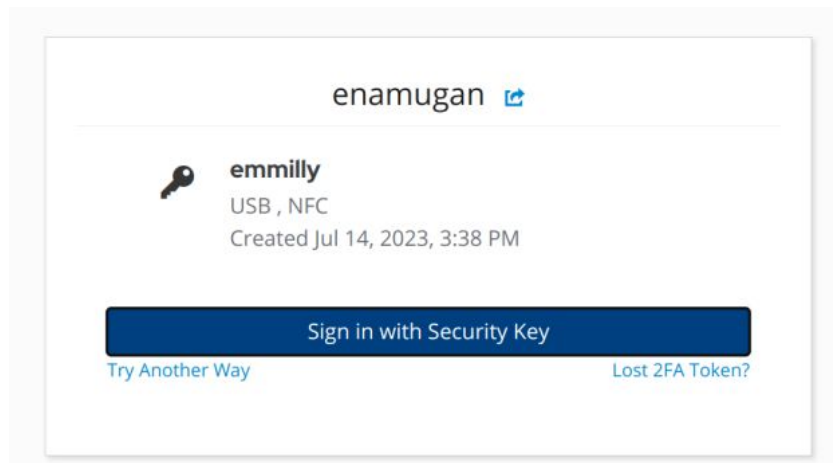
How issues found were fixed

- **Missing language attributes**

Add lang="en" to html tag

Indicates to the screen reader the language it should pronounce the content in.

- **Spacing**



Overall

• Before

WAVE powered by WebAIM

Styles: OFF ON

Summary

1 Errors	5 Contrast Errors
4 Alerts	3 Features
13 Structural Elements	11 ARIA

View details >

Sign in with a CERN account

Username

aria *aria-invalid=""*

Password

aria *aria-invalid=""*

Forgot Password?

Sign In

Or use another login method

- Two-factor authentication
- Kerberos

By logging in, you agree to comply with the CERN Computing Rules, in particular OCS. CERN implements the measures necessary to ensure compliance.

Code

• After

WAVE powered by WebAIM

Styles: OFF ON

Summary

0 Errors	0 Contrast Errors
0 Alerts	4 Features
13 Structural Elements	13 ARIA

View details >

Congratulations! No errors were detected! Manual testing is still necessary to ensure compliance and optimal accessibility.

Sign in with a CERN account

Username

aria-label="Enter your CERN Username"

aria *aria-invalid=""*

Password

aria-label="Enter your password"

aria-invalid=""

Sign In

Forgot Password?

Or use another login method

- Two-factor authentication
- Kerberos

By logging in, you agree to comply with the CERN Computing Rules, in particular OCS. CERN implements the measures necessary to ensure compliance.

Code

Conclusion



4 issues are already in production.



Over 56/66 issues have already been committed to development infrastructure and will be included in production in the coming months.



Some issues may not be visible for users without impairments, but hold significant impact for those who do, so addressing them is essential to ensuring an inclusive and accommodating experience for all users.



Thank you

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