

WCAG 2.1 A and AA Requirements

Name of Product	Pure Portal
URL of Product	https://vbn.aau.dk/en/
Date Last Updated	May 31, 2019
Completed by	Jay Nemchik
Document Description	This document rates the Pure Portal per the W3C WCAG 2.0, 2.1 Level A and Level AA requirements.
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Testing Tools and Methods	Accessibility Bookmarklets Axe for Chrome Color Contrast Analyzer Elsevier Accessibility Checklist: http://romeo.elsevier.com/accessibility_checklist/ Firebug/Code inspection Hands-on keyboard operation NVDA screen reader v2018.1.1 W3C Markup Validation Service W3C WAI Pages Wave Evaluation Tool for Chrome
Document Sections	The review document below includes all WCAG 2.1 A and AA checkpoints and is organized into 6 logical sections: <ol style="list-style-type: none">1. Visuals2. Keyboard3. Headings and Structure4. Labeling5. Multimedia6. Usability7. Mobile User Experience
Pages Covered	Homepage, Find Profiles, Find Research Units, Profile Details, Research Unit Details, Article Details, Advanced Search
Elsevier Accessibility Policy	https://www.elsevier.com/about/our-business/policies/accessibility

WCAG 2.1 Success Criterion	Level	Evaluation
1.1.1 Non-text Content	A	Partially Supports
1.2.1 Audio-only and Video-only (Prerecorded)	A	Supports (N/A)
1.2.2 Captions (Prerecorded)	A	Supports (N/A)
1.2.3 Audio Description or Full Text Alternative	A	Supports (N/A)
1.2.4 Captions (Live)	AA	Supports (N/A)
1.2.5 Audio Description	AA	Supports (N/A)
1.3.1 Info and Relationships	A	Partially Supports
1.3.2 Meaningful Sequence	A	Partially Supports
1.3.3 Sensory Characteristics	A	Partially Supports
1.3.4 Orientation (2.1)	AA	Supports
1.3.5 Identify Input Purpose (2.1)	AA	Supports (N/A)
1.4.1 Use of Color	A	Partially Supports
1.4.2 Audio Control	A	Supports (N/A)
1.4.3 Contrast (Minimum)	AA	Partially Supports
1.4.4 Resize text	AA	Supports
1.4.5 Images of Text	AA	Supports
1.4.10 Reflow (2.1)	AA	Partially Supports
1.4.11 Non-Text Contrast (2.1)	AA	Partially Supports
1.4.12 Text Spacing (2.1)	AA	Supports
1.4.13 Content on Hover or Focus (2.1)	AA	Partially Supports
2.1.1 Keyboard	A	Does not support
2.1.2 No Keyboard Trap	A	Supports
2.1.4 Character Key Shortcuts (2.1)	A	Supports (N/A)
2.2.1 Timing Adjustable	A	Supports (N/A)
2.2.2 Pause, Stop, Hide	A	Supports (N/A)
2.3.1 Three Flashes or Below Threshold	A	Supports (N/A)
2.4.1 Bypass Blocks	A	Supports
2.4.2 Page Titled	A	Supports
2.4.3 Focus Order	A	Supports
2.4.4 Link Purpose (In Context)	A	Partially Supports
2.4.5 Multiple Ways	AA	Supports
2.4.6 Headings and Labels	AA	Supports
2.4.7 Focus Visible	AA	Partially Supports
2.5.1 Pointer Gestures (2.1)	A	Supports (N/A)
2.5.2 Pointer Cancellation (2.1)	A	Supports
2.5.3 Label in Name (2.1)	A	Supports
2.5.4 Motion Actuation (2.1)	A	Supports (N/A)
3.1.1 Language of Page	A	Supports
3.1.2 Language of Parts	AA	Partially Supports
3.2.1 On Focus	A	Supports
3.2.2 On Input	A	Supports

WCAG 2.1 Success Criterion	Level	Evaluation
3.2.3 Consistent Navigation	AA	Supports
3.2.4 Consistent Identification	AA	Supports
3.3.1 Error Identification	A	Supports (N/A)
3.3.2 Labels or Instructions	A	Partially Supports
3.3.3 Error Suggestion	AA	Supports (N/A)
3.3.4 Error Prevention (Legal, Financial, Data)	AA	Supports (N/A)
4.1.1 Parsing	A	Supports
4.1.2 Name, Role, Value	A	Partially Supports
4.1.3 Status Messages (2.1)	AA	Supports (N/A)

Visuals		
WCAG 2.1 Checkpoint	Supporting Features	Notes
1.1.1: Non-Text Content (A) Provide text alternatives for non-text content (e.g. images)	Partially supports	Most images and icons include text equivalents. Exceptions: Homepage: The main SVG map does not have text alternatives. Find Profiles: As aria-labels and title attributes do not read out on non-interactive content such as a or , the aria-label that precedes the yearly research data for each profile should be changed to hidden text instead. Screen reader only text should be used instead of title attributes for the individual bars of the graph. Profile Details: The Plum SVGs do not have any alternative text. The Research Output/Projects per year canvas graph does not communicate its content to AT. Research Unit Details: The SVG map does not have text alternatives. The Research Output/Projects per year canvas graph does not communicate its content to AT. Article Details: The Plum SVGs do not have any alternative text.
1.3.3: Sensory Characteristics (A) Do not rely on sensory characteristics of components such as shape, size, visual location, orientation, or sound	Partially supports	Most content does not rely on sensory characteristics. Exceptions: Homepage, Research Unit Details, Profile Details: The size of the dots in the SVG map have meaning and it is not communicated in an alternate way to assistive technology.
1.4.1: Use of Color (A) Color is not used as the only visual means of conveying info	Partially supports	Color is not used as the only means of conveying information for most content. Exceptions:

		The links used in the footer are non-underlined text and have a color that is the same as the surrounding text. This link text requires a contrast of at least 3:1 between it and the adjacent text. This also applies to a few of the links on the homepage.
1.4.3: Color Contrast (Minimum) (AA) Text has enough contrast with the background (4.5:1 for small text and 3:1 for large text)	Partially supports	Most text has enough contrast with its corresponding background. Exceptions: All Pages: The placeholder text for the search does not have enough contrast at 2.24:1. Profile Details, Research Unit Details, Article Details: The Plum popup yellow, green, pink, and orange text does not have enough contrast with the white background. Homepage: There is gray text (#777) that just barely does not pass at 4.48:1. Changing the gray to #767676 will pass. Advanced Search: The placeholder text for the text inputs does not have enough contrast at 2.24:1.
1.4.4: Resize Text (AA) Text can be enlarged up to 200% without loss of functionality.	Supports	Text can be enlarged to 200% without loss of functionality.
1.4.5: Images of Text (AA) Text is used rather than images of text, except where the presentation of text is essential, such as logos	Supports	No images of text are used other than for Logos or essential presentation.
1.4.10 Reflow (AA) (2.1) Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for: Vertical scrolling content at a width equivalent to 320 CSS pixels; Horizontal scrolling content at a height equivalent to 256 CSS pixels.	Partially supports	All content is displayed in one scrolling direction for all content. Exceptions: The Search options (gear button) dropdown's contents can be cut off at smaller width dimensions. The dropdowns that appear on the Map SVG buttons can be cut off at smaller width dimensions.
1.4.11 Non-Text Contrast (AA) (2.1) User interact	Partially supports	Most UI components and graphical objects pass the minimum contrast ratio of 3:1. Exceptions:

<p>components and graphical objects have a contrast ratio of at least 3:1 against adjacent color(s).</p>		<p>All Pages: The RSS icon does not have enough contrast with the white background at 2.7:1.</p>
<p>1.4.12 Text Spacing (AA) (2.1) In content implemented using markup languages that support the following text style properties, no loss of content or functionality occurs by setting all the following and by changing no other style property:</p> <p>Line height (line spacing) to at least 1.5 times the font size; Spacing following paragraphs to at least 2 times the font size; Letter spacing (tracking) to at least 0.12 times the font size; Word spacing to at least 0.16 times the font size.</p>	<p>Supports</p>	<p>All content can be adjusted to the minimum text spacing requirements without loss of readability or functionality.</p>
<p>1.4.13 Content on Hover or Focus (AA) (2.1) Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true:</p> <ul style="list-style-type: none"> • Dismissable • Hoverable • Persistent 	<p>Partially supports</p>	<p>There are tooltips that appear on hover and focus that are not hoverable or dismissable.</p> <p>Exceptions: Most Pages: The small fingerprint tooltips are not hoverable or dismissable.</p>
<p>2.3.1: Three Flashes or Below Threshold (A) No more than three flashes in a 1-second</p>	<p>Supports (N/A)</p>	<p>No flashing content exists.</p>

period, or the flashes are below the defined thresholds		
Keyboard		
WCAG 2.1 Checkpoint	Supporting Features	Notes
1.3.2: Meaningful Sequence (A) The correct reading sequence can be programmatically determined	Partially supports	The correct reading sequence is logical with the DOM order matching the visual order. A few irregularities occur with how screen readers read out text. Exceptions: Profile Details, Research Unit Details, Article Details: The popups for the Plum and Altmetric images cannot be reached and read by screen readers.
2.1.1: Keyboard (A) All functionality is available from a keyboard, except for tasks such as drawing	Does not support	Some content is keyboard operable. Exceptions: All Pages: Activating dropdowns with the enter key causes an unexpected page change on some pages, stopping the user from reaching anything in the dropdowns themselves. Most Pages: The Search scope dropdowns, search options dropdowns, More navigation options dropdowns, Search ordering dropdowns, Page Language dropdown, and Fingerprint dropdowns cannot be dismissed with the Esc key. Homepage: All of the interactive content in the Map SVG cannot be reached by keyboard. Find Research Units: The hierarchy of research units cannot be collapsed or expanded with the keyboard. Profile Details, Research Unit Details: The Fingerprint buttons cannot be activated with keyboard. The interactive portions of the canvas graphs cannot be reached by keyboard. Profile Details, Research Unit Details, Article Details: The popups for the Plum and Altmetric images cannot be activated by keyboard. Advanced Search: Sighted keyboard users cannot reach the popup text for the 'i' icons.
2.1.2: No Keyboard Trap (A) The user can use the keyboard to move through page elements and is not trapped on a particular element	Supports	No keyboard traps exist on any page. Note: Users cannot tab past the Google Map on the Research Unit page using the Firefox browser. Users are recommended to use Google Chrome for the site.
2.1.4 Character Key Shortcuts (A) (2.1)	Supports (N/A)	No keyboard shortcuts are implemented on the site.

<p>If a keyboard shortcut is implemented in content using only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true:</p> <ul style="list-style-type: none"> • Turn off • Remap • Active only on focus 		
<p>2.4.3: Focus Order (A) Users can tab through the elements of a page in a logical order</p>	Supports	Tab order is logical on the site for the most part.
<p>2.4.7: Focus Visible (AA) The page element with the current keyboard focus has a visible focus indicator</p>	Partially supports	<p>Many elements use a good visible focus. Several exceptions exist.</p> <p>Exceptions: All Pages: The Change Language button does not have a visible focus. The Back to Top link does not have a visible focus.</p> <p>Homepage: Recommend using a more contrasting visible focus for the elements within the Search Scope dropdown. The Search magnifying glass should have a visible focus. The "Pure" and "The VBN Team" links in the main content do not have a visible focus.</p> <p>Find Profiles: The Concepts and Time Period links do not have a visible focus. The series of links that appear when expanding the Concepts or Time Period links do not receive visible focus. The A-Z indexing letters need a more contrasting visible focus. The 'X' button to clear certain filters (Concepts, etc.) does not have a visible focus, same with the Clear All button.</p> <p>Find Research Units: The Concepts link does not have a visible focus. The series of links that appear when expanding the Concepts link do not receive visible focus. The A-Z indexing letters need a more contrasting visible focus. The 'X' button to clear certain filters (Concepts, etc.) does not have a visible focus, same with the Clear All button.</p> <p>Profile Details: The button to expand the graph of Projects or Research Output does not have a visible focus. The View Scopus Profile link needs a visible focus. The Plum and Altmetric images do not have a visible focus</p> <p>Research Unit Details: The Plum and Altmetric images do not have a visible focus. The link to expand the graph of Projects, Research Output, or activities does not have a visible focus.</p>

		Article Details: The Plum and Altmetric image does not have a visible focus.
3.2.1: On Focus (A) When a UI component receives focus, this does not trigger unexpected actions.	Supports	Focusable elements do not cause unexpected actions when receiving focus.
Headers and Structure		
WCAG 2.1 Checkpoint	Supporting Features	Notes
1.3.1: Information and Relationships (A) Info, structure, and relationships can be programmatically determined	Supports with exceptions	<p>Good use of headings to appropriately structure content for the most part. HTML5 tags and roles are used in several areas to create landmarks.</p> <p>Exceptions: The footer area does not need a navigation landmark.</p> <p>Homepage: The "Collaborations within the past 5 years" text should be an h2 instead of h3.</p> <p>Find Profiles: The "Selected Filters" text should be a heading (h2).</p> <p>Find Research Units: The secondary navigation should be in a navigation landmark with an aria-label. The "Selected Filters" text should be a heading (h2).</p> <p>Profile Details: The headings beneath Projects, Research Output, and Press/Media should be h3s. The h2 for the Projects and Research Output sections should just encompass the heading text (it currently includes a bunch of unnecessary extra text like the research output data).</p> <p>Research Unit Details: The h2 for the Projects and Research Output sections should just encompass the heading text (it currently includes a bunch of unnecessary extra text like the research output data). Organization Profile should be an h2. The headings beneath Projects, Research Output, and Press/Media should be h3s.</p> <p>Article Details: The h3s on the page should be h2s. The Press/Media and Prizes text should be h3s. The content underneath Press/Media or Prizes should not be headings.</p> <p>Advanced Search: The h3s on the page should be h2s.</p>
2.4.1: Bypass Blocks (A) Users can bypass repeated blocks of content.	Supports	Headings exist and a visible "Skip" links exists, which allow users using Assistive Technology to jump to the different areas of content quickly.
2.4.6: Headings and Labels (AA)	Supports	Headings and labels used are clear and descriptive.

Headings and labels are clear and consistent.		
3.1.1: Language of Page (A) The language of the page is specified	Supports	The language is defined as lang="en".
3.1.2: Language of Parts (AA) Specify the language of text passages that are in a different language than the default language of the page.	Partially supports	There can be instances of various research output (publications, activities, etc.) or filtering options that can be in a different language than the page default, but they are not marked with a lang attribute.
4.1.1: Parsing (A) Use valid, error-free HTML	Supports	HTML and CSS passes concerning these 4 specific criteria: (i) elements have complete start and end tags, (ii) elements are nested according to their specifications (iii) elements do not contain duplicate attributes (iv) any IDs are unique, except where the specifications allow these features. The reviewer found no violations using the aXe tool for Chrome/Firefox.

Labeling

WCAG 2.1 Checkpoint	Supporting Features	Notes
1.3.5 Identify Input Purpose (AA) (2.1) The purpose of each input field collecting information about the user can be programmatically determined when: The input field serves a purpose identified in the Input Purposes for User Interface Components section; and the content is implemented using technologies with support for identifying the expected meaning for form input data.	Supports (N/A)	There are no fields for which the autocomplete attribute applies.
2.4.2: Page Titled (A) The page has a title describing its topic or purpose	Supports	Titles change dynamically based on the current page and are descriptive.

<p>2.4.4: Link Purpose (In Context) (A) The purpose of each link can be determined from the link text or surrounding context.</p>	Partially supports	<p>Most links used have an identifiable purpose from the link text or surrounding context.</p> <p>Exceptions: All Pages: The "back to top" link does not have link text.</p> <p>Most Pages: The Plum image links need link text that describes the link destination, not just a title.</p>
<p>2.5.3 Label in Name (A) (2.1) For user interface components with labels that include text or images of text, the name contains the text that is presented visually.</p>	Supports	<p>Most user interface components have the visible label as the first part of the programmatic label.</p>
<p>3.2.4: Consistent Identification (AA) UI components used across the web site are identified consistently on every page.</p>	Supports	<p>UI components are consistent across the site in terms of HTML implementation and labelling.</p>
<p>3.3.1: Error Identification (A) Input errors are clearly marked and described to the user.</p>	Supports (N/A)	<p>No input errors are possible with the search implementation.</p>
<p>3.3.2: Labels and Instructions (A) Items requiring user input are clearly labeled or have clear instructions.</p>	Partially supports	<p>Most input areas have clear labels which are programmatically assigned.</p> <p>Exceptions: Advanced Search: The text inputs do not have labels. The radio buttons need a group label.</p>
<p>3.3.3: Error Suggestion (AA) When the user makes an input error, give suggestions for valid input.</p>	Supports (N/A)	<p>There are no forms on the site that would give error suggestions.</p>
<p>4.1.2: Name, Role, Value (A) For all UI components, the name, value, and role can be programmatically determined.</p>	Partially supports	<p>Most UI components communicate their state programmatically.</p> <p>Exceptions: All Pages: When using aria-expanded, the attribute must be placed on the activating link or button (currently it is being incorrectly used on the expanding content). The Select Language link should be a button. All content that expands or collapses content or shows a dropdown should be a button element or use role="button". The RSS button needs a label.</p>

		<p>Most Pages: Search suggestions are not announced to assistive technology. The Fingerprint buttons should be given role="button".</p> <p>Homepage: The gear button for more search options is not labelled. The gear button for more search options should also be a button element. The "More" link in the navigation should have a better aria label (aria-label="More navigation options"). The Search scope button needs a label describing its purpose as well as the current option.</p> <p>Find Profiles: The Concepts and Time Period links should have aria-expanded, they also should be buttons. The 'X' buttons to remove search filters and the Clear All link should be buttons.</p> <p>Find Research Units: The Concepts link should have aria-expanded, and also be a button. The 'X' buttons to remove search filters and the Clear All link should be buttons. The expand/collapse hierarchy buttons will need labels if they become keyboard operable.</p> <p>Profile Details: The links to expand the Project and Research Output graphs should have aria-expanded and should be buttons. The larger fingerprint buttons need a proper label, similar to the label given to the small fingerprint buttons in the Research Output area. The "More" link in the sub-navigation should have a better aria label (aria-label="More Profile Options").</p> <p>Research Unit Details: The links to expand the Project and Research Output graphs should have aria-expanded and should also be buttons. The larger fingerprint buttons need a proper label, similar to the label given to the small fingerprint buttons in the Research Output area. The "More" link in the sub-navigation should have a better aria label (aria-label="More Profile Options").</p> <p>Article Details: The ARIA 1.1 best practices for Tabs should be followed.</p>
<p>4.1.3 Status Messages (AA) (2.1) In content implemented using markup languages, status messages can be programmatically determined through role or properties such that they can be presented to the user by assistive technologies without receiving focus.</p>	<p>Supports (N/A)</p>	<p>There are currently no status messages used on the site.</p>
Multimedia		
WCAG 2.1 Checkpoint	Supporting Features	Notes

1.2.1: Audio-only or Video-only (Prerecorded) (A) Provide alternatives for pre-recorded audio-only or video-only content.	Supports (N/A)	No pre-recorded audio-only or video-only content was reviewed.
1.2.2: Captions (Prerecorded) (A) Provide captions for pre-recorded audio	Supports (N/A)	There is no pre-recorded audio on the site.
1.2.3: Audio Description or Media Alternative (Prerecorded) (A) Provide alternatives for pre-recorded synchronized audio/video	Supports (N/A)	There is no pre-recorded synchronized audio/video on the site.
1.2.4: Captions (Live) (AA) Provide captions for live audio in synchronized audio/video.	Supports (N/A)	There is no live audio in synchronized audio/video.
1.2.5: Audio Description (Prerecorded) (AA) Provide an audio description of pre-recorded video.	Supports (N/A)	There is no pre-recorded video on the site.
1.4.2: Audio Control (A) Audio can be paused and stopped, or the audio volume can be changed.	Supports (N/A)	There is no audio content on the site.
2.2.2: Pause, Stop, Hide (A) Users can stop, pause, or hide moving, blinking, scrolling, or auto-updating information.	Supports (N/A)	There is no moving, blinking, or scrolling content.
Usability		
WCAG 2.1 Checkpoint	Supporting Features	Notes
2.2.1: Timing Adjustable (A) Users are warned of time limits shorter	Supports (N/A)	There is no time limit for the site.

than 20 hours and time limits can be turned off or extended		
2.4.5: Multiple Ways (AA) More than one way is available to navigate to other web pages.	Supports	Users can reach all pages in the system using the global navigation. Content pages can be reached through the global nav or homepage.
3.2.2: On Input (A) Changing the setting of a checkbox, radio button, or other UI component does not trigger unexpected changes in context.	Supports	User inputs do not cause unexpected actions.
3.2.3: Consistent Navigation (AA) Navigation menus are in the same location and order on every web page.	Supports	Navigation menus are consistently in the same place and in same order.
3.3.4: Error Prevention (Legal, Financial, Data) (AA) For web pages with legal or financial commitments, input can be reviewed and corrected before final submission, and submissions can be reverted.	Supports (N/A)	No data submissions on the site require legal or financial commitments. No data submissions allow for a users' profile to be deleted.

Mobile User Experience

WCAG 2.1 Checkpoint	Supporting Features	Notes
1.3.4 Orientation (AA) (2.1) Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is essential.	Supports	Content is not restricted to a single display orientation.
2.5.1 Pointer Gestures (A) (2.1) All functionality that uses multipoint or	Supports (N/A)	There is no content on the site that requires multipoint or path-based gestures.

<p>path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.</p>		
<p>2.5.2 Pointer Cancellation (A) (2.1) For functionality that can be operated using a single pointer, at least one of the following is true:</p> <ul style="list-style-type: none"> • No Down-Event • Abort or Undo • Up Reversal • Essential 	<p>Supports</p>	<p>All content that can be operated with a single pointer can be undone or is performed on the up-event.</p>
<p>2.5.4 Motion Actuation (A) (2.1) Functionality that can be operated by device motion or user motion can also be operated by user interface components and responding to the motion can be disabled to prevent accidental actuation, except when:</p> <ul style="list-style-type: none"> • Supported Interface • Essential 	<p>Supports (N/A)</p>	<p>There is no content on the site that is activated by motion or actuation.</p>