



Pangea Chat

Learn a language while texting your friends

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Accessibility Conformance Report

Pangea Chat: Web Application

Based on VPAT® Version 2.5

Name of Product/Version: Pangea Chat web application, version 5.0.0

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Product Description: Pangea Chat is a web application for learning a new language through conversation, with built-in reading and writing support.

Scope. This report covers the **Pangea Chat web application**, which offers the same functionality as the native iOS and Android clients and serves as a complete option on its own. The native clients are addressed in a separate forthcoming report.

Accessibility assurance process. Pangea Chat is under active development, including an ongoing redesign of the primary navigation. Accessibility is maintained through a standing, layered program:

- **By design.** Accessibility is considered at every step of design and development; each interactive element is authored with a name and role as it is built.
- **Every deploy.** Automated axe-core audits, a source-level check that every control and image across the codebase carries an accessible name, and deterministic keyboard and page-title checks run in continuous integration against the staging build, and a violation fails the build. A non-gating contrast sampler also flags candidates for review on each run.
- **Monthly.** A supplementary, tool-assisted review covers what automation cannot gate: contrast over imagery, focus order and visibility, motion, and screen-reader-proxy navigation.

- **Quarterly.** A manual assistive-technology review with a real screen reader, keyboard-only operation, and a contrast and zoom pass.
- **On request.** An independent third-party audit, commissioned for institutional buyers on request and planned once the interface stabilizes.

This program keeps the report aligned with the shipping application on each release.

Evaluation Methods Used: The ratings in this report are produced by the process above. In summary:

- Automated WCAG 2.1 Level A and AA auditing with axe-core, scoped to the application's accessibility (semantics) layer, plus deterministic keyboard and page-title checks, enforced in continuous integration against the staging build. Authenticated coverage spans the landing, email-login, world map, chat list, settings panel, profile, and the settings learning and security sub-pages with zero violations. A source-level check additionally enforces, across the entire codebase, that every interactive control and image has an accessible name or is explicitly marked decorative.
- Internal accessibility engineering review and ongoing product quality assurance. Defects that ordinary testing exposes, such as keyboard traps, missing focus indicators, and unclear labels, are caught and fixed in the regular development cycle; this is the basis for the Supports ratings on those criteria. Where a defect surfaces only under a dedicated assistive-technology pass, such as the reading and focus order on the authenticated workspace, it is rated accordingly and tracked in the roadmap.
- Manual assistive-technology review (screen reader, keyboard, contrast and zoom), in progress and not yet complete across all surfaces.

Known coverage gaps: some settings sub-pages (devices and notifications) and a font-size slider retain Flutter-web framework violations, and the analytics tabs and the add-course flow are not yet under automated audit. These and the remaining gaps are in the Remediation Roadmap.

A note on the technology. The web client renders to a single HTML canvas. Accessibility is therefore authored element by element into an accessibility (semantics) layer rather than inherited from native HTML markup. This is why contrast and the actual screen-reader experience require human review, while names and roles can be verified automatically.

Applicable Standards/Guidelines:

- Web Content Accessibility Guidelines (WCAG) 2.1, Levels A and AA
- Revised Section 508 (2018), 36 CFR Part 1194, Appendices A, C, and D

Conformance Levels (terms used in this report):

- **Supports:** the functionality meets the criterion without known defects.
- **Partially Supports:** some functionality meets the criterion; known or unverified gaps remain.
- **Does Not Support:** the majority of the functionality does not meet the criterion.
- **Not Applicable:** the criterion does not apply to this product.
- **Not Evaluated:** the criterion has not been assessed (used only where noted; permitted here for Level AAA, which is out of scope).

Disclaimer. This report is provided for informational purposes and represents a good-faith self-assessment as of the report date. It is not a warranty. Accessibility is an ongoing effort, and this report will be revised as the evaluation completes and remediation lands.

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WCAG 2.1 Report

Conformance is reported against WCAG 2.1 Success Criteria at Levels A and AA.

Table 1: Success Criteria, Level A

Criteria	Conformance Level	Remarks and Explanations
1.1.1 Non-text Content	Partially Supports	Interactive controls and images expose accessible names. On the landing, login, world map, chat list, settings, and profile surfaces this is verified by authenticated continuous-integration audits with zero violations. Beyond those surfaces, a source-level check in continuous integration requires every button and image across the codebase to carry an accessible name or be explicitly marked decorative, so naming completeness is enforced rather than sampled. Text alternatives for complex images such as analytics charts, and validation of true screen-reader output, are completing in the manual review.
1.2.1 Audio-only and Video-only (Prerecorded)	Supports	Prerecorded media is published with captions and a transcript as a matter of editorial policy, so a text alternative is available; coverage is verified for currently published media.
1.2.2 Captions (Prerecorded)	Supports	Prerecorded video is published with synchronized captions as a matter of editorial policy; coverage is verified for currently published media.
1.2.3 Audio Description or Media Alternative (Prerecorded)	Supports	A transcript is provided for prerecorded video as a full text alternative; coverage is verified for currently published media.
1.3.1 Info and Relationships	Partially Supports	Form labels and control relationships are exposed in the semantics layer and verified on audited surfaces. Programmatic structure (headings, groups, lists) is authored and not yet verified complete across all surfaces.
1.3.2 Meaningful Sequence	Partially Supports	Reading order follows the visual layout within a given component. The manual review found that on the

Criteria	Conformance Level	Remarks and Explanations
		authenticated workspace the overall reading order does not consistently match the visual sequence (for example, activity content is reached ahead of the primary navigation). On the remediation roadmap.
1.3.3 Sensory Characteristics	Supports	Instructions do not rely solely on shape, size, or location.
1.4.1 Use of Color	Partially Supports	Some status is conveyed with color (for example pin state and grammar tags). Whether every such indicator carries a non-color cue is being confirmed in the manual review.
1.4.2 Audio Control	Supports	Audio (text-to-speech and activity media) is user-initiated; media does not auto-play.
2.1.1 Keyboard	Partially Supports	Most functionality is keyboard operable, and an automated check confirms keyboard reachability on the audited surfaces. The manual review found that some custom map controls, including the route to settings, are reachable by assistive technology but not yet by keyboard tabbing. On the remediation roadmap.
2.1.2 No Keyboard Trap	Supports	No keyboard trap has been observed; keyboard navigation is exercised in ongoing testing and an automated check confirms focus is not pinned to a single node. Traversal of the controls noted under 2.1.1 is being confirmed in the manual keyboard pass.
2.1.4 Character Key Shortcuts	Supports	No single-character key shortcuts are implemented.
2.2.1 Timing Adjustable	Supports	Content is not presented under time limits and sessions are long-lived.
2.2.2 Pause, Stop, Hide	Supports	Decorative animations are brief and self-dismiss; no content moves, blinks, or auto-updates for longer than five seconds, so a pause control is not required.
2.3.1 Three Flashes or Below Threshold	Supports	No content flashes more than three times per second.

Criteria	Conformance Level	Remarks and Explanations
2.4.1 Bypass Blocks	Partially Supports	The application is a single-page canvas; a programmatic bypass mechanism (landmarks or a skip control) is not yet fully implemented. On the remediation roadmap.
2.4.2 Page Titled	Partially Supports	A non-empty document title is present, verified by an automated gate. Distinct per-view titles are not yet set; the title is currently identical across views.
2.4.3 Focus Order	Partially Supports	Focus order is logical within a given component. The same manual review found the overall sequence on the authenticated workspace does not consistently follow the visual order. On the remediation roadmap.
2.4.4 Link Purpose (In Context)	Supports	Controls convey their purpose through their accessible name and visible label.
2.5.1 Pointer Gestures	Partially Supports	The world map uses drag and multipoint (pinch) gestures. Single-pointer alternatives (for example zoom controls) exist for some operations but are not yet verified for all map operations.
2.5.2 Pointer Cancellation	Supports	Controls activate on the up event, which allows cancellation.
2.5.3 Label in Name	Partially Supports	The accessible name matches the visible label, verified by automated auditing on the audited surfaces. Confirmation across the remaining surfaces is pending, consistent with 1.1.1 and 4.1.2.
2.5.4 Motion Actuation	Supports	No functionality is operated by device or user motion.
3.1.1 Language of Page	Supports	The page declares its language. Note the separate gap for language of parts (3.1.2).
3.2.1 On Focus	Supports	Receiving focus does not trigger an unexpected change of context.
3.2.2 On Input	Supports	Changing a setting does not trigger an unexpected change of context.
	Supports	

Criteria	Conformance Level	Remarks and Explanations
3.3.1 Error Identification		Input errors (for example on the login form) are identified in text, exercised in ongoing form testing.
3.3.2 Labels or Instructions	Supports	Form fields provide labels and instructions.
4.1.1 Parsing	Supports	Content is rendered to canvas rather than built from parsed markup, so no parsing errors apply and this criterion is met. (4.1.1 was removed in WCAG 2.2 as always-satisfied for this reason.)
4.1.2 Name, Role, Value	Partially Supports	The central criterion for this canvas application. Names, roles, states, and values are authored into the semantics layer and verified, via authenticated continuous-integration audits, with zero violations on the landing, login, world map, chat list, settings, and profile surfaces. A source-level check additionally enforces, across the entire codebase, that every interactive control and image carries an accessible name. Roles, states, and values on surfaces not yet under automated audit, and true screen-reader output, are validated in the ongoing manual review.

Table 2: Success Criteria, Level AA

Criteria	Conformance Level	Remarks and Explanations
1.2.4 Captions (Live)	Not Applicable	The product does not present live audio or video.
1.2.5 Audio Description (Prerecorded)	Partially Supports	Prerecorded video is published with captions and a transcript, and the transcript gives a full text alternative. Dedicated audio description (spoken narration of on-screen visuals) is not separately provided, so this is a gap only where a video conveys information visually that the audio does not.
1.3.4 Orientation	Supports	Content is responsive and is not locked to a single orientation.
1.3.5 Identify Input Purpose	Partially Supports	Programmatic input-purpose (autocomplete) metadata is not yet confirmed for canvas-rendered fields. Under review.
1.4.3 Contrast (Minimum)	Partially Supports	Color choices follow the design system. An automated sampler screenshots labeled nodes and flags low-ratio candidates, but it cannot reliably distinguish text from non-text glyphs on the canvas, so its output is review triage rather than a verdict. A manual contrast audit, seeded by those candidates, is in progress.
1.4.4 Resize Text	Partially Supports	The canvas scales with browser zoom to 200% in ongoing testing without apparent loss of content or function; formal confirmation at the target threshold is pending the manual low-vision pass.
1.4.5 Images of Text	Supports	Text is rendered as text rather than as images of text, with limited exceptions such as logos.
1.4.10 Reflow	Partially Supports	The layout is responsive down to mobile widths in ongoing testing, with content reflowing without two-axis scrolling; formal confirmation at the target thresholds is pending the manual low-vision pass.
1.4.11 Non-text Contrast	Partially Supports	

Criteria	Conformance Level	Remarks and Explanations
		Contrast of controls and meaningful graphics has not yet been systematically verified; the automated sampler's candidates (see 1.4.3) seed the manual audit in progress.
1.4.12 Text Spacing	Partially Supports	Behavior under user text-spacing overrides has not yet been verified. Under review.
1.4.13 Content on Hover or Focus	Partially Supports	Tooltips and hover/focus content are used; dismissible, hoverable, and persistent behavior has not yet been fully verified.
2.4.5 Multiple Ways	Supports	Content is locatable in multiple ways: search, the world map, and section navigation.
2.4.6 Headings and Labels	Partially Supports	Labels and headings are descriptive on the audited surfaces. Programmatic heading structure is not yet complete across all surfaces, consistent with 1.3.1.
2.4.7 Focus Visible	Partially Supports	A visible focus indicator is present on the keyboard-tested surfaces. Full verification is pending the manual keyboard pass, and a focus-outline alignment issue in nested list items is on the remediation roadmap.
3.1.2 Language of Parts	Does Not Support	Mixed first-language and target-language content, and AI-generated content, are not yet programmatically language-tagged. On the remediation roadmap.
3.2.3 Consistent Navigation	Supports	Navigation is presented consistently across the application.
3.2.4 Consistent Identification	Supports	Components with the same function are identified consistently.
3.3.3 Error Suggestion	Supports	Where input errors are detected, suggestions are provided to help the user correct them.
3.3.4 Error Prevention (Legal, Financial, Data)	Supports	Purchase and account actions include confirmation steps before they take effect.
4.1.3 Status Messages	Supports	Status messages such as loading, success, and error notices are exposed as programmatic live regions in the shared dialogs that render them (the loading and error

Criteria	Conformance Level	Remarks and Explanations
		dialogs and the login flow), so screen readers announce them without moving focus.

Table 3: Success Criteria, Level AAA

Not Evaluated. Pangea Chat does not claim WCAG 2.1 Level AAA conformance, and Level AAA criteria were not assessed for this report.

Revised Section 508 Report

Notes: As a web application, Pangea Chat's conformance with the Revised Section 508 software and web provisions is established by the WCAG 2.1 Level A and AA report above. The chapters below report the functional performance criteria and the remaining software and support provisions.

Chapter 3: Functional Performance Criteria

Criteria	Conformance Level	Remarks and Explanations
302.1 Without Vision	Partially Supports	Screen-reader support is authored and verified on audited surfaces; completeness across all surfaces, and the reading order on the authenticated workspace, are pending. Prerecorded video provides a transcript; dedicated audio description is the remaining media item. See WCAG 1.1.1, 4.1.2, 1.2.3, 1.3.2, 2.4.3.
302.2 With Limited Vision	Partially Supports	Zoom, reflow, and contrast have not yet been fully verified. See WCAG 1.4.3, 1.4.4, 1.4.10.
302.3 Without Perception of Color	Partially Supports	Some indicators use color; non-color cues are being confirmed. See WCAG 1.4.1.
302.4 Without Hearing	Supports	Most content is text, and prerecorded video provides captions. See WCAG 1.2.2.
302.5 With Limited Hearing	Supports	See 302.4.
302.6 Without Speech	Supports	No operation requires user speech.
302.7 With Limited Manipulation	Partially Supports	Keyboard operation is broadly supported, though some custom map controls are not yet keyboard-reachable; map gestures also need single-pointer alternatives for all operations. See WCAG 2.1.1, 2.5.1.
302.8 With Limited Reach and Strength	Supports	No operation requires particular reach or strength.

Criteria	Conformance Level	Remarks and Explanations
302.9 With Limited Language, Cognitive, and Learning Abilities	Partially Supports	The product is designed as a learning aid with consistent navigation; plain-language and error-support features vary by surface.

Chapter 4: Hardware

Not Applicable. Pangea Chat (web) is software with no hardware components.

Chapter 5: Software

Criteria	Conformance Level	Remarks and Explanations
501.1 Scope	See WCAG	The web application is software; the WCAG 2.1 Level A and AA report above applies.
502 Interoperability with Assistive Technology	Partially Supports	The application exposes an accessibility (semantics) layer to platform assistive technology; name, role, value, and state are provided on audited surfaces and are being completed across all surfaces. See WCAG 4.1.2.
503 Applications	Partially Supports	Respect for platform user preferences (for example reduced motion) is partial. Note 503.4 below.
503.4 Caption and Audio Description Controls	Partially Supports	Captions are provided for prerecorded video through the standard player controls. Dedicated audio description, and its controls, are not separately provided. See WCAG 1.2.2, 1.2.5.
504 Authoring Tool	Not Applicable	Pangea Chat is not an authoring tool.

Chapter 6: Support Documentation and Services

Criteria	Conformance Level	Remarks and Explanations
	Partially Supports	This Accessibility Conformance Report documents accessibility and compatibility features; dedicated

Criteria	Conformance Level	Remarks and Explanations
602 Accessibility and Compatibility Documentation		end-user accessibility documentation is limited and planned.
603 Support Services	Partially Supports	Support is available via the published contact; an accessibility-specific support process is being formalized.

Appendix: Remediation Roadmap

This roadmap lists the work that will move “Partially Supports” and “Does Not Support” criteria toward full support, grouped by priority. Sequencing is proposed and will be confirmed against the product roadmap. Accessibility is treated as a procurement gate for institutional adoption.

Priority 0: Near term

- With accessible naming enforced codebase-wide by a source-level continuous-integration check, complete the remaining programmatic structure (roles, groups, headings) and text alternatives for complex images such as analytics charts across all surfaces, validated by extended automated coverage and a manual screen-reader pass, and bring the analytics tabs, add-course flow, course panels, and chat rooms under automated audit. (WCAG 1.1.1, 1.3.1, 2.4.6, 2.5.3, 4.1.2; Section 508 502, 302.1)
- Conduct a color-contrast and non-text-contrast audit against the design tokens and remediate. (WCAG 1.4.3, 1.4.11; Section 508 302.2)
- Correct the reading and focus order on the authenticated workspace so the screen-reader and keyboard sequence follows the visual layout. (WCAG 1.3.2, 2.4.3; Section 508 302.1)
- Complete keyboard operability of the remaining custom controls, including the world-map cluster’s route to settings. (WCAG 2.1.1; Section 508 302.7)

Priority 1: Next

- Prerecorded activity video already ships with captions and a transcript. Where a video conveys information visually that the audio does not, add audio description (or confirm the transcript covers it) and its player control. (WCAG 1.2.5; Section 508 503.4)
- Programmatically tag language of parts for mixed first-language and target-language content and for AI-generated content. (WCAG 3.1.2)
- Expose input-purpose (autocomplete) metadata on form fields. (WCAG 1.3.5)
- Confirm reflow, text resize, and text spacing at the target thresholds. (WCAG 1.4.4, 1.4.10, 1.4.12)

Priority 2: Following

- Complete the full manual assistive-technology pass across all primary journeys and update this report’s ratings.

- Implement a bypass mechanism or landmarks and distinct per-view titles. (WCAG 2.4.1, 2.4.2)
- Provide single-pointer alternatives across all world-map operations. (WCAG 2.5.1)
- Correct focus-indicator alignment for nested list items. (WCAG 2.4.7)

Separate track

- Publish a native iOS and Android Accessibility Conformance Report, following manual VoiceOver and TalkBack evaluation.