ACCESS AI

SMART GLASSES PROOF OF CONCEPT

AI vision beyond the phone, without overstating what exists.

A vendor-neutral design for selective, user-triggered camera assistance built on an accessibility-first native Android foundation.

CURRENT STATUS

Design draft - smart-glasses integration is not yet implemented.

Access AI currently has a working Streamlit proof of concept and an active native Android development path. No glasses SDK, continuous capture, obstacle avoidance, or navigation capability is presented as complete.

WORKING NOW

Streamlit POC

Text, recorded voice, spoken answers, and user-triggered still-image analysis.

IN DEVELOPMENT

Native Android

Blind-first onboarding, Android semantics, native text-to-speech, and local preferences.

DESIGN ONLY

Smart glasses

A thin, replaceable hardware adapter after the phone foundation is validated.

Mission: give blind and low-vision users fast, natural access to useful visual information while minimizing unnecessary capture, cloud usage, battery drain, and privacy exposure.

ARCHITECTURE

Build from the phone, not around a hardware vendor

The proposed first glasses milestone keeps the hardware client intentionally thin. The phone or controlled backend owns credentials, request policy, privacy controls, and failure handling. Vendor SDK details stay isolated behind a replaceable adapter.

1

GLASSES

User explicitly triggers one still-frame capture.

2

PHONE / RELAY

Resizes, authenticates, applies limits, and submits the bounded request.

3

AI LAYER

Analyzes only the requested task with explicit uncertainty.

4

USER

Receives concise speech, captions, or phone text.

CORE ENGINEERING BOUNDARIES

Provider credentials

Never place a long-lived OpenAI or other provider key on glasses or in a mobile APK.

Request control

Use request IDs, timeouts, cancellation, limited retries, and deduplication at the relay.

Vendor isolation

Normalize requests, responses, and device capabilities so one hardware SDK does not own the product architecture.

Capture policy

Normal mode is idle. Capture begins only after explicit user action and should be confirmed audibly or tactually.

Retention

Do not create a persistent capture archive by default; ordinary telemetry should exclude image and audio contents.

Output policy

Keep answers concise by default, preserve uncertainty, and let the user request more detail when needed.

WHY THIS MATTERS

A phone-centered, vendor-neutral architecture lets Access AI evaluate hardware on accessibility, camera/audio access, latency, battery behavior, privacy, and cost without rebuilding the core product for every device.

PRIVACY + ACCESSIBILITY

Capture less. Explain uncertainty. Keep control with the user.

LOW-COST + PRIVACY DESIGN

- Use selective still frames instead of continuous video.
- Resize images to the smallest useful resolution; reserve high-detail processing for reading or close inspection.
- Prefer on-device phone speech when its quality and privacy are suitable.
- Do not create a persistent capture archive by default.
- Exclude image and audio contents from ordinary usage telemetry.
- Require explicit capture consent and an obvious recording or capture indicator.

ACCESSIBILITY + SAFETY BOUNDARIES

- Every glasses action should have a phone and screen-reader equivalent.
- Provide a discoverable stop or cancel action with audible confirmation.
- Announce capture, processing, result, failure, and connectivity loss without relying on a visual display.
- Preserve explicit uncertainty for text, medication, hazards, controls, traffic, and navigation-related questions.
- Never represent one camera result as obstacle avoidance or proof that an area is safe.
- Do not silently share captures or location with a caregiver or other person.

PRACTICAL FIRST-USE MODES

READ

One high-quality frame for labels, signs, menus, mail, or documents.

IDENTIFY

One frame plus a focused question about the visible object or control.

DESCRIBE

A concise scene description prioritizing relevant people, obstacles, doors, objects, and spatial relationships.

FIND - LATER

Short, bounded sampling only after privacy, battery, latency, and accessibility behavior are validated.

EVALUATION PLAN

A narrow milestone with clear gates before broader use

The smart-glasses work should begin only after the native Android accessibility foundation is physically validated. Each gate is intended to reduce technical, privacy, safety, and operating-cost risk before the next one begins.

1

VALIDATE ANDROID

Complete eyes-free onboarding, preference persistence, native text-to-speech, and physical TalkBack testing.

2

SEPARATE CONTRACTS

Extract provider-independent request and response contracts without destabilizing the working Streamlit proof of concept.

3

FAKE DEVICE ADAPTER

Test the glasses interface locally with fixture images and simulated device events.

4

SECURE RELAY

Add authenticated relay behavior with cancellation, timeouts, deduplication, and bounded retries.

5

ONE HARDWARE ADAPTER

Evaluate one official vendor SDK behind a feature flag; measure camera/audio access, latency, battery, and accessibility.

6

FIELD VALIDATION

Run privacy, safety, accessibility, and usability testing before any broader availability claim.

CURRENT PROPOSAL BOUNDARY

What Access AI is - and is not - asking a hardware partner to evaluate

- A supported SDK path to camera, microphone, speaker, and user controls.
- A limited technical evaluation focused on selective capture and accessible spoken output.
- No claim of navigation, obstacle avoidance, safety certification, or production readiness.