Praecursor Wearable Computing System

Public Technical Overview — Version 1.0 | October 2026 | Project status: Concept / Research / Planning

Project maturity statement. This document describes proposed research directions and engineering concepts. Unless expressly identified otherwise, it does not report verified prototypes, tested performance, established feasibility, or products available for purchase.

A proposed distributed wearable computer - not simply a pair of augmented-reality glasses. The architecture distributes display, coordination, power, inputs, haptic feedback, software and external-device connections across modular devices. It is intended to be local-first, open and progressively testable.

Status and interpretation

This overview describes an unbuilt or unvalidated project architecture from internal R&D planning. It does not imply a prototype, tested performance, safe-to-use hardware, or market-ready product. Proposed architecture and validation criteria may change.

Core system concept

- The proposed core stack combines Lucid Lenses for display and sensing, Wrist Hub for wearable coordination, Smart Band for connected energy and resource expansion, and PL AR Gloves for input and feedback.
- The Wrist Hub and Smart Band form the intended primary wearable compute/control base. The separate Lucid Hub handheld is an optional high-capability companion, not required for the core AR system.
- Desktop computers, personal servers and other devices may provide optional heavier processing, local storage or synchronization when available.

Lucid Lenses: display and environmental interface

- The lenses are proposed as an AR visual surface for anchored windows, contextual overlays, local workspace panels, media and compatible device information.
- The hardware specification considers displays, cameras/sensors, microphones and audio, connectivity, power budgets and wearable comfort as research domains rather than finalized components.
- The first evaluation path uses ordinary desktop displays and existing AR hardware before any custom lens fabrication. Optical clarity, field of view, latency, heat, battery life and fit require measured validation.

Wrist Hub and Smart Band roles

- The Wrist Hub coordinates wearable pairing, notifications, quick controls, routing, connection management,

sensor data and user approval prompts. Cellular support is a contemplated option, not a guaranteed capability.

• The Smart Band is a screenless connected module, rather than a separate watch. Its early proposed responsibilities include additional battery capacity and compute expansion, with storage and later acceleration subject to feasibility.

• Power sharing, thermal constraints, mechanical coupling and failure/reconnection behavior remain unresolved engineering tasks that affect realistic integration.

PL AR Gloves and interaction

• The gloves are proposed to combine hand/gesture sensing, muscular-signal sensing (EMG), and haptic response. The specification also explores TENS-based feedback and secondary tactile mechanisms.

• Gesture recognition, voice control, ordinary wearable UI input and permissions are complementary pathways; no single sensor modality must be the universal control method.

• TENS/electrical stimulation and on-body electrodes require conservative safety engineering, exclusion conditions, user controls and appropriate specialist review before any human trials. This overview does not authorize or describe stimulation setups.

Software, devices and local-first operations

• Lucid OS AR Shell is the envisioned spatial interface; shared device hooks and local sync would eventually connect named devices without mandatory cloud accounts.

• DreamScript is a future permission-aware automation layer; PL Creators Suite is a possible creator-workflow surface. These integrations remain proposals, not presently implemented wearable features.

• The architecture anticipates controlled views or commands for scanners, environmental anchors, sensors, rovers and drones. Hardware control must have explicit authorization and independent safety boundaries.

Spatial workspace and user experience

• An early workspace would prioritize anchored panels, simple application controls, notifications and sensor/status views rather than claiming immersive full-scene spatial computing.

• Future modes might support object manipulation and creator work, but precision input, tracking, computing load and optical limits must be resolved experimentally.

• Interaction needs usable fallbacks when gloves, voice, radios or other components are unavailable.

Planned progression and validation

• The source roadmap moves from specification and an AR software mockup to tests with existing glasses, glove feasibility research, Wrist Hub/Smart Band test units, then an integrated local AR loop.

• Later phases consider device hooks, sync, external equipment, custom lens planning, advanced gloves and speculative Dream Display concepts, followed by reproducible documentation.

• Validation must document latency, tracking reliability, battery/thermal behavior, pairing/recovery, privacy, safe-state behavior, accessibility and user ergonomics. No integrated demonstrator or validated battery benchmark is currently claimed.

Open questions, safety and publication boundaries

• The largest constraints include display optics, safe lightweight power delivery, thermal comfort, secure local pairing, gesture reliability and interfaces between independently evolving modules.

• Open hardware and documentation are long-term intentions. Proposed materials, firmware boundaries and interfaces can change as experiments expose practical constraints.

• No electrical stimulation operating details, unpublished security implementation, private manufacturing drawings or unsupported specifications are released here.

Source acknowledgment: Adapted and paraphrased from Praecursor Labs internal project research and architecture documents. Source specifications remain internal; this published overview does not replace them.

Publication: Version 1.0 · October 2026 · Praecursor Labs · Project status remains research/planning. Future revisions may update scope as evidence becomes available.