

Empowering America's Frontline Workforce with AI-Powered Expert Guidance through Wearable Technology



The Crisis: When the Expert Leaves, the Knowledge Leaves

According to Embarcadero Labs, 73% of operational knowledge in America's frontline industries lives only in the heads of workers and manuals—not in any system. When a skilled shift manager quits, a top technician retires, or a lead worker moves on, everything they know about running a safe, efficient operation leaves with them. The average frontline worker in food service, retail, and facilities management stays just 3.5 years—yet the cost of replacing and retraining that worker can exceed \$15,000.

Traditional training can't keep up with today's demand. Classroom instruction is slow to scale, limited by location, and often divorced from the realities of the job. Meanwhile, the most experienced experts are anchored to one site—unable to provide real-time guidance to the many junior workers who need support across distributed locations. And when shifts end without documenting what was learned, hard-won insights walk out the door, turning everyday experience into permanent knowledge loss.

Unlocking the Wearable Developer Ecosystem

With the launch of the developer preview of the Meta Wearables Device Access Toolkit, developers now have access to a centralized hub for learning, building and testing integrations for AI glasses. Together, these continued investments by Meta represent an important step toward a new computing era – one making advanced, intuitive devices appealing and accessible to all.

Why AI Glasses From Meta Empower America's Frontline Workforce

This solution is only possible with a wearable device built for the demands of field work. AI glasses from Meta are the first device to make this vision a reality at scale:

- **Hands-Free Operation:** Workers cannot stop to consult a phone while handling tools, food, or cleaning equipment. The AI glasses maintain workflow and safety simultaneously.
- **First-Person Perspective:** The camera gives remote experts the exact viewpoint of the worker—critical for accurate, real-time guidance across any task.
- **All-Day Wearability:** Water resistance and an 8-hour battery life for the Ray-Ban Meta Gen 2, the AI glasses handle a full shift in most environments.
- **Premium Hardware:** Provide developers with a robust, consumer-ready wearable platform—enabling them to build prototypes and innovate quickly with high quality video/audio capture, and an all-day form factor designed for real-world use.
- **Accessible High-Quality Tech:** AI glasses from Meta deliver high-quality video and audio at a consumer price point—making AI-guided operations economically viable for the small businesses and frontline operators that form the backbone of America's service economy.

Industries Served

RESTAURANTS & QSR HOSPITALITY FACILITIES
MANAGEMENT CLEANING & JANITORIAL INDUSTRIAL &
SUPPLY CHAIN FIELD SERVICES

The Solution: Expert-on-Demand by Embarcadero Labs

Embarcadero Labs' Expert-on-Demand platform turns every job execution into permanent institutional intelligence. Seasoned experts remotely train, guide, and support junior workers through complex physical tasks—in real time, hands-free, from anywhere. Standard operating procedures (SOPs) are delivered as step-by-step audio guidance, while the system creates an irrefutable audit trail that supports both the worker and the business.

The platform operates with two complementary intelligence layers. The Live Brain delivers real-time transcription, object identification, step-by-step guidance, and supervisor monitoring. The Recorded Brain archives every execution as a queryable knowledge base—automatically generating compliance reports, training modules, and invoices with zero paperwork.

Expert-on-Demand: The Prototype in Action

The Three Moments of Intelligence

Through the developer preview of the Meta Wearables Device Access Toolkit, the Expert-on-Demand delivers a complete end-to-end workflow through a session:

1. **Before the Job**—SOP Ingestion: Upload any SOP—paper, PDF, voice memo, or video. AI converts it into a dynamic, step-by-step guided experience delivered instantly to workers via the glasses, mobile app, or messaging platforms.
2. **During the Job**—Live Guidance & Real-Time Support: The worker follows step-by-step audio instructions hands-free. Edge AI identifies objects in real time, verifies each SOP checkpoint, and flags deviations instantly. Supervisors can also provide support from any location via a live feed.
3. **After the Job**—The Recording Becomes the AI Brain: Every completed job becomes a permanent, queryable knowledge base. Compliance reports and invoices are auto-generated in under 2 minutes. The knowledge stays with the business—even when the expert moves on.

Prototype: End-to-End in Under Two Minutes

Embarcadero Labs has built and deployed a working prototype of Expert-on-Demand with full AI glasses integration. The complete workflow—from SOP selection to compliance report to invoice—runs end-to-end on the platform today:

- **AI-Verified SOP Completion:** Edge AI detects each checkpoint in real time and flags deviations instantly, creating an irrefutable audit trail that protects workers and companies alike.
- **Remote Expert Multiplication:** One expert simultaneously guides multiple workers across

different sites—multiplying their impact without travel or scheduling constraints.

- **Automated Compliance & Invoicing:** A full compliance dossier and invoice are auto-generated in under 2 minutes—zero paperwork, zero admin.
- **Living Knowledge Base:** Every execution is archived as a queryable AI brain—available for future training, audits, and onboarding of new workers at any location, forever.

Driving Economic & Workforce Impact

Expert-on-Demand shows how the developer preview of the Meta Wearables Device Access Toolkit is unlocking new wearable experiences—delivering measurable economic value while strengthening and scaling the workforce.

- **Workforce Resilience:** Helps frontline industries—food service, hospitality, facilities, and industrial sectors—retain and share on-the-job expertise, supporting a more consistent, capable workforce across a labor base of 30M+ Americans.
- **Small Business Enablement:** Makes AI-guided training attainable for the small businesses that power the American service economy.
- **Domestic Innovation:** A U.S.-built, U.S.-deployed platform that strengthens national workforce productivity and supports scalable, homegrown innovation across frontline industries.
- **Production-Ready:** Deployed in real-world environments and designed to transfer across multiple industries—ready to scale with the right policy support.

