

AIRENA

Real Drones / Virtual shooting

A new attraction for resorts, clubs, and entertainment venues

PROPRIETARY AND CONFIDENTIAL INVESTOR PRESENTATION

The Problem

Resorts, clubs, and entertainment venues need new attractions that drive guest engagement and revenue **without costly, permanent build-outs**

Fresh

new attractions

Flexible

installations

Premium

experiences



KEY INSIGHT

**Unused space can be
transformed into a
high-energy game arena**

Instantly | Safely | Profitably

The Product

Airena is a portable drone-shooting game we own and operate

The Space

Indoor or outdoor amenity
No permanent installation
20x20x12 ft minimum footprint

The Experience

Shooting sports sims
Arcade-style games
Themed content

The Operation

Open case - launch
Play - return - recharge
Quick reset between sessions

The Revenue

Guests pay \$10-15 per 10 minute session
Venue gets 20% rev share
Subscriptions and skill packages available

Why This Is New

It's NOT

- VR
- A Shooting Range
- A Conventional Shooting Sim

It IS

- Real objects flying in real space
- Drones and game tech – no live ammo, target debris, or excessive noise
- Realistic hit detection and controller form factors

Physical

Real drones flying in real space

Social

Play together, not in isolation

Dynamic

Multiple scenarios, balanced gameplay

Why Now

This wasn't viable five years ago

Technology Convergence

- Reliable indoor/outdoor flight control
- Battery energy density
- Component costs down ~50%

Market Timing

- Rising demand for experiential play
- Venue pressure for flexible amenities
- Indoor ops FAA-exempt — launch immediately

Technology, demand, and regulatory clarity have converged
Indoor is viable today, outdoor is opening up

Business Model

Session

\$10-15

per player per 10-minute session
(players pay directly via app)

Net Revenue Split

80%	20%
Airena	Venue

Airena owns and operates all units
Net Revenue is revenue after operator salaries

Key Advantages

- Rapid setup and breakdown – no permanent infrastructure required
- Airena owned-and-operated model reduces sales friction
- Venues carry no operational burden

Why Venues Say Yes

\$0

Upfront Cost

No capital investment required for venues

<15 minutes

Initial Setup Time

Deploy and play same day

\$\$\$

Premium Pricing

High-margin attraction

High

Repeat Play

Multiple game modes keep guests coming back

Unit Economics (Indoor)

Per unit · FAA-exempt · No RPIC required · Conservative baseline

\$173K

Gross Revenue

\$145K

Net Revenue

\$106K

Operating Income

61.6%

Operating Margin

Assumptions

Avg. revenue per play	\$12
Slots per session	4
Sessions per hour	5
Avg. session yield rate	40%
Actual plays per hour	8
Active hours per day	6
Operating days per year	300
Venue share	20% (rev – staff)
Staff	Operator (\$20/hr)
System cost	\$10,000

Annual P&L per Unit

Revenue	\$172,800
Venue Share (20%)	(\$27,360)
Net Revenue	\$145,440
Staff (Operator)	(\$36,000)
Maintenance & Consumables	(\$3,000)
Operating Income	\$106,440
Operating Margin %	61.6%
System Cost	\$10,000
Hardware Payback	1.1 months

FAA-exempt · No RPIC required indoors · 40% session yield rate

PROPRIETARY AND CONFIDENTIAL

Unit Economics (Outdoor)

Per unit · RPIC required · Higher price point · Conservative baseline · Waiverless

\$227K

Gross Revenue

\$194K

Net Revenue

\$128K

Operating Income

56.5%

Operating Margin

Assumptions

Avg. revenue per play	\$14
Slots per session	4
Sessions per hour	5
Avg. session yield rate	45%
Actual plays per hour	9
Active hours per day	6
Operating days per year	300
Venue share	20% (rev – staff)
Staff	FAA Cert. Operator (\$35/hr)
System cost	\$12,000

Annual P&L per Unit

Revenue	\$226,800
Venue Share (20%)	(\$32,760)
Net Revenue	\$194,040
Staff	(\$63,000)
Maintenance & Consumables	(\$3,000)
Operating Income	\$128,040
Operating Margin %	56.5%
System Cost	\$12,000
Hardware Payback	1.1 months

RPIC required outdoors · Higher yield offsets higher staffing · 57% session yield rate

Path to Scale

Indoor first. Debug the system. Build the FAA case. Expand outdoor.

PHASE 1

NOW

Indoor First

Profitable from Day One

60-65% operating margin, 1-month hardware payback

Full System Validation

Flight control, scoring, hit detection, session management

No FAA Barriers

Indoor ops are exempt — launch immediately

Operational Data

Builds the safety record and ConOps needed for outdoor waivers

PHASE 2

NEXT

Outdoor Premium

Premium Pricing

\$36-72 per session, 75-80% incremental margin

Resort Differentiation

Outdoor drone shooting is a first-of-kind venue amenity

FAA Part 107

Compliant with ultra-lightweight drones ($\leq 250\text{g}$)

Brand Expansion

Outdoor visibility drives awareness and walk-up demand

PHASE 3

UPSIDE

Waiver-Enabled Scale

Multi-Drone Ops

One RPIC supervising multiple drones simultaneously

Reduced Staffing

Lower human-per-drone ratio expands margins

Higher Throughput

More sessions per day at outdoor venues

Built on Phase 1 Data

Indoor ops history is our strongest waiver evidence

Indoor is our launch engine and our FAA evidence. Outdoor is the bigger market. Waivers are upside, not a dependency.

Team

Deep experience building and scaling venue-based technology platforms



Greg Easley

Strategy & Product

Serial entrepreneur with 6 startups and 4 exits. Deep expertise in venue operations and scaling entertainment businesses from concept to multi-location rollout. Proven playbook for logistics, staffing, and partner management.



Bo Lasater

Product & Technology

Veteran of video game production, AI systems, and real-time software platforms. Leads AirenA's game design, autonomous flight software, and player experience. Background in connected systems and information architecture.



Aike Müller

Hardware & Software

IoT innovator with global manufacturing experience spanning consumer electronics and connected devices. Architects AirenA's hardware stack—from custom drone builds and charging systems to ground control stations and sensor arrays.



Max Benzian

Product & UX

Experienced in consumer apps and hospitality operations with deep venue industry relationships. Leads go-to-market strategy, venue partnerships, and revenue growth. Understands what resort and entertainment operators need.

Expertise: Hospitality | Live Entertainment | Video Games | Connected Systems

Advisors

Industry leaders in unmanned systems, entertainment technology, and defense



Seth Crofton

Gaming Business Development & Partnerships

Specialist in multi-channel product integration across toys, publications, and video to drive revenue and market share. Planning committee member for IITSEC under NDIA for the Serious Games Showcase & Challenge and DSET (UK). Advises on defense simulation and gaming applications—connecting AirenA to serious games and DOD training ecosystems.



Angela Costello

Communications & UAS

78-time award-winning communications strategist and licensed pilot for manned and unmanned systems. Harvard MBA. Instrumental in creating Virginia's Unmanned Systems Center and the Advanced Air Mobility Multi-State Alliance. Holds patents in interactive VR and aerial display systems. Brings deep FAA, DOD, and public safety drone industry relationships.



Greg Vavoso

Aerospace & Defense

Aerospace engineer at Northrop Grumman with expertise in defense systems and advanced propulsion. University of Virginia graduate with experience across multiple defense contractor roles in systems engineering. Brings technical depth in complex systems integration and defense-grade engineering standards—valuable for AirenA's autonomous flight systems and safety certification.

Go-To-Market

Beachhead Customers

High-end resorts and destination hotel properties

Indoor-first — controlled, FAA-exempt environments

Premium guests

Strong amenity spend

Team has executive network

Sales Motion

Single-region rollout (pilot cluster)

Direct sales to GMs / ops directors

60-90 day pilot

Conversion to annual placement

Early Goal: 3-5 Pilot Venues

Indoor pilots validate system and build operational data for outdoor FAA compliance

Progress to Date

- **Experiential Platform Software**

The hardware and software that delivers the actual drone shooting experience. It is up and running as a Software-in-the-Loop (SITL) Simulator. Allows us to test complete system in software. Most components transferable to hardware. This is codebase for complete system going forward

- **Drone Hardware**

Reference drone with PX4 stack up and running, Can be controlled by QGC and MavROS2 ground control stations. The production drones will be smaller, but will run same "brains" as this drone.

- **Gun Controller Hardware**

Components identified, System design nearly complete. Basic functionality being simulated. Prototype in the works

- **Customer Management Platform**

Core code base and deployment assets available for repurpose from previous project

- **Business Development/ Legal / Talent**

Meetings with regulators and potential team members, vendors and partners underway

THE ASK

\$500K

POST-MONEY SAFE

Use of Funds

Prototype development & safety testing	20%
Hardware & software costs	40%
Pilot deployment & operations	25%
General & administrative	15%
Runway: 10 months to pilots + product-market fit	

APPENDIX



Detailed Information for Due Diligence

Product Snapshot

- Footprint: 25' x 25' x 12' minimum
- Environment: Indoor/Outdoor
- Drones: 6 to 16 per unit
- Guns: 2 – 4 electronic, non-projectile controllers
- Players: 1 – 4 per session
- Session: 10 minutes

How It Works

Players use electronic guns to shoot drones

Drones fly pre-defined patterns within geofence

Hits registered with scoring & feedback

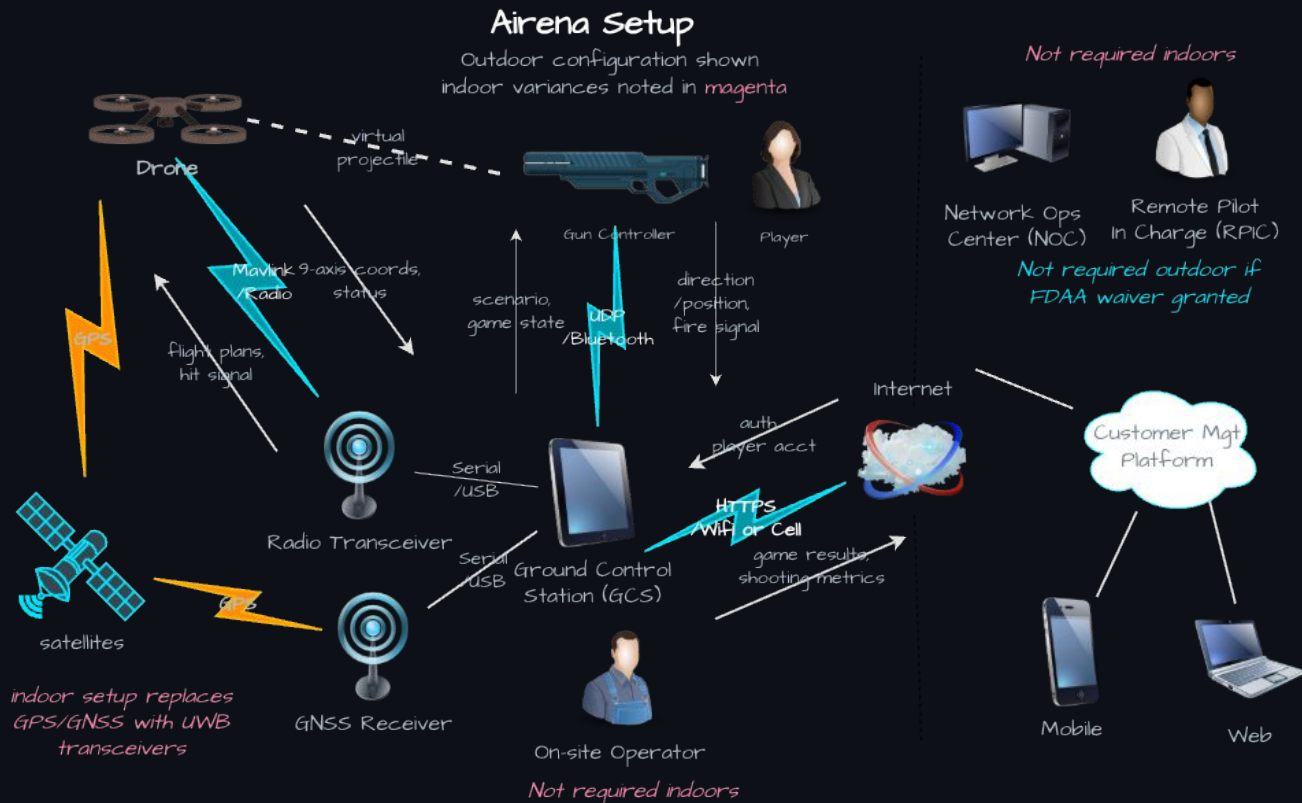
System auto-resets between sessions

Game Formats

Trap/skeet simulations | Swarm games
Boss battles | Time trials | Licensed worlds

All components self-contained in wheeled, ruggedized case

Product Diagram



Regulatory Path to Scale

Airena does not depend on regulatory changes to be viable. Regulatory progress increases scale, flexibility, and margins over time.

PHASE 1

Indoor First (Now)

- FAA-exempt
- One onsite operator
- Multiple drones per session
- High throughput, strong margins
- Primary revenue engine



PHASE 2

Outdoor Premium

- FAA Part 107 compliant
- PIC or Operator + RPIC
- Ultra-lightweight drones ($\leq 250\text{g}$)
- Electronic safety boundaries
- Limited sessions, premium pricing
- Incremental revenue & brand expansion



PHASE 3

Waiver-Enabled Scale

- FAA-approved multi-drone ops
- Reduced staffing per venue
- Expanded outdoor throughput
- Margin and footprint expansion

Indoor-first approach — viable today, scalable tomorrow

Phase 1 — Indoor Deployment

FAA-exempt · Scalable · Profitable from Day One

Regulatory

- FAA does not regulate indoor drone operations
- No Part 107 certification required
- No RPIC or Visual Observer (VO) needed

Staffing

- One onsite Airena operator per unit
- Safety briefing and session orientation
- Battery swapping and equipment handling
- Session turnover and guest flow management
- Immediate shutdown authority

Safety by Design

- Indoor-safe drones (protected props, low-mass)
- Software-defined geofenced flight volume
- Physical separation between drones & players
- Speed limits and collision-aware flight control
- Fail-safe: loss of signal → controlled descent
- Emergency stop available at all times

Insurance

- Standard commercial general liability
- Venues named as additional insured
- No aviation rider required

Indoor deployment enables: multiple drones per session · high throughput · repeat play · predictable costs · strong unit economics

Phase 2 — Outdoor Deployment

Premium, Limited · FAA Part 107 · Selective Venues

Regulatory

- Outdoor operations governed by FAA Part 107
- Airenna acts as operator of record
- Venues carry no regulatory burden

Operational Constraints (no waivers)

- Limits on number of drones in-flight
- Defined play windows (not all-day flight)
- Software-defined flight volumes

Required Role

Onsite Operator must be FAA certified

- FAA Part 107 certified
- Maintains visual line of sight
- Handles batteries, safety, and crowd control
- Authority to pause or terminate play
- Responsible for flight operations

Note: FAA certified operator can be remote and service multiple locations, but doing so would require onsite operators as well.

Lightweight Aircraft ($\leq 250\text{g}$)

- Drones $\leq 250\text{g}$ (battery + payload included)
- $\leq 250\text{g}$ = FAA Category 1 for ops over people
- No physical ballistic barrier required
- Electronic / software-defined safety zones
- Reduced kinetic energy, injury risk, and insurance

Staffing: Onsite operator in Phase 1 economics · RPIC shared across units · Outdoor sessions priced at premium to absorb compliance cost

Phase 3 — Waiver-Enabled Expansion

Upside · Not a dependency · Scale accelerator

Target Waivers

- §107.35 — Multiple small unmanned aircraft operations
- §107.31 — Expanded visual line-of-sight constructs

What the Waiver Enables

- One RPIC supervising multiple drones simultaneously
- System-level autonomy as the primary safety mechanism
- Reduced human-per-drone supervision ratio
- Expanded outdoor throughput and improved margins

Requirements

- Proven operational history
- Documented safety performance
- Formal ConOps and risk-mitigation plans
- Software-enforced geofencing and fail-safe systems
- Use of $\leq 250g$ aircraft to strengthen FAA safety case

Timing

- Waivers pursued after pilot deployments
- Treated as a scale accelerator — not a dependency

Waivers are upside, not a prerequisite. Airena builds operational history now to strengthen future waiver applications.

Competitive Context

Location-Based Entertainment

Laser tag	Fixed buildout, high capex	VR arcades	Isolating, low throughput
Axe throwing	Low replay depth	Mini golf/go-karts	Space-intensive
Golf simulators	High cost, limited appeal	Topgolf	Massive footprint, expensive
Drone racing	Spectator-focused, not turnkey		

Why Airena Wins

- Portable, no buildout, fast setup
- Physical + social (not isolating)
- Premium pricing and high throughput
- Replayability: multiple game modes
- Owned & operated = low friction for venues

Risks & Mitigations

Key Risks

- Costly regulations
- Hardware wear & tear
- Battery management
- Operational complexity
- Copycat entrants

Mitigations

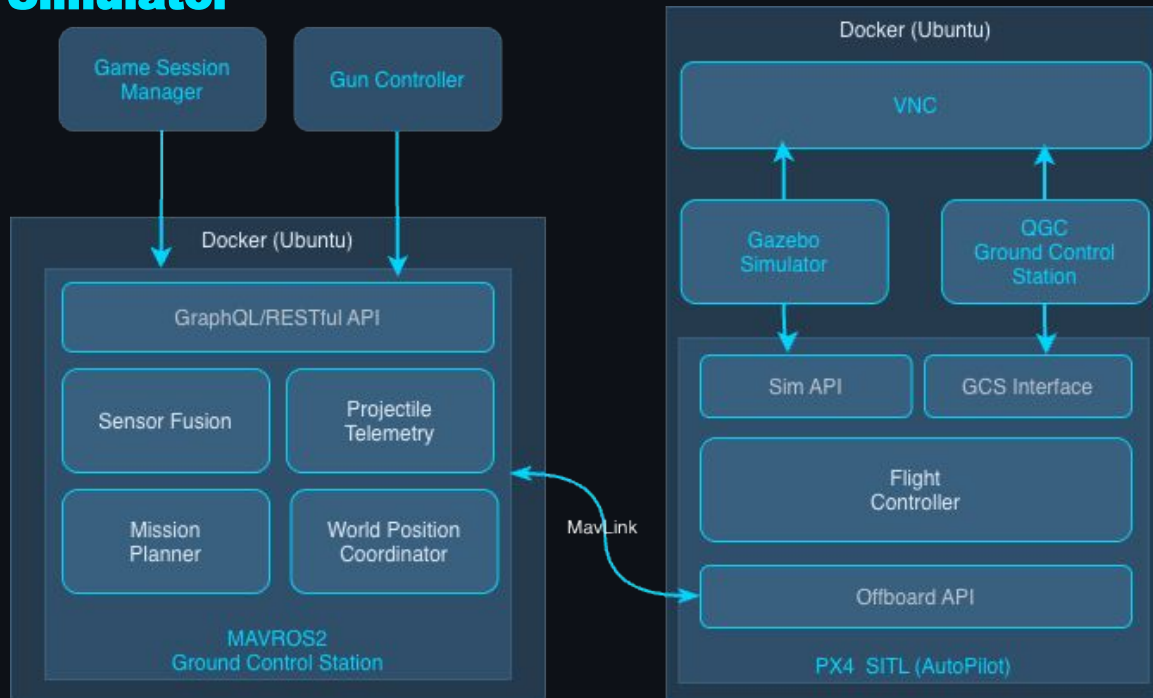
- Pre-approved suppliers, regulatory conversations
- Modular drone design + rapid swap
- Remote monitoring + centralized ops
- Focus on venue turnkey ops + customer self service
- Patents + first-mover learning curve in live operations

Defensibility comes from execution, not patents

Operational know-how, venue relationships, game library, and customer data compound over time

Progress to Date

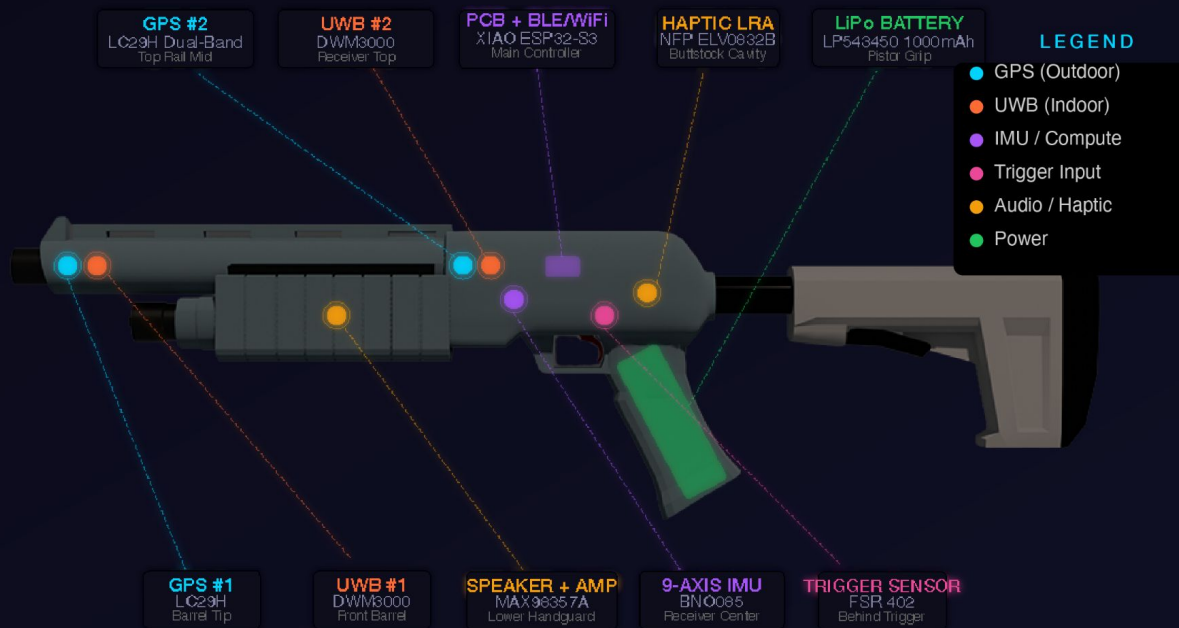
Full SITL Simulator



Full simulator running complete core game loop: MAVROS2 GCS with mission planning, sensor fusion, world position coordination → MavLink → PX4 SITL flight controller with Gazebo sim and QGC GCS. Most components transfer directly to production hardware.

Progress to Date

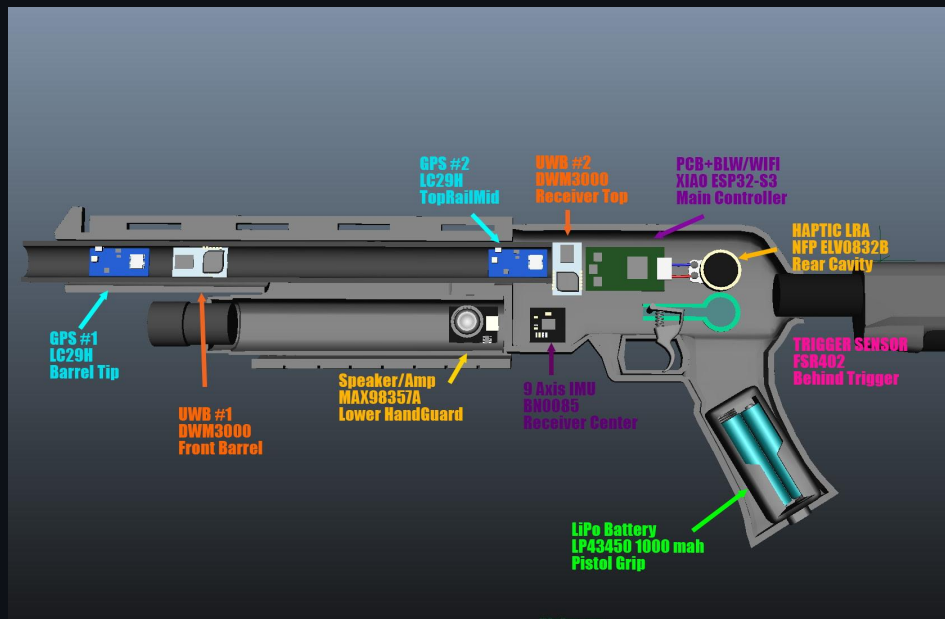
Gun Controller - Component Layout



Custom gun controller: ESP32-S3 main PCB, dual GPS (indoor UWB + outdoor GNSS), 9-axis IMU, trigger sensor, haptic feedback actuator, LiPo battery. Component layout designed for ergonomic rifle form factor with all sensors embedded.

Progress to Date

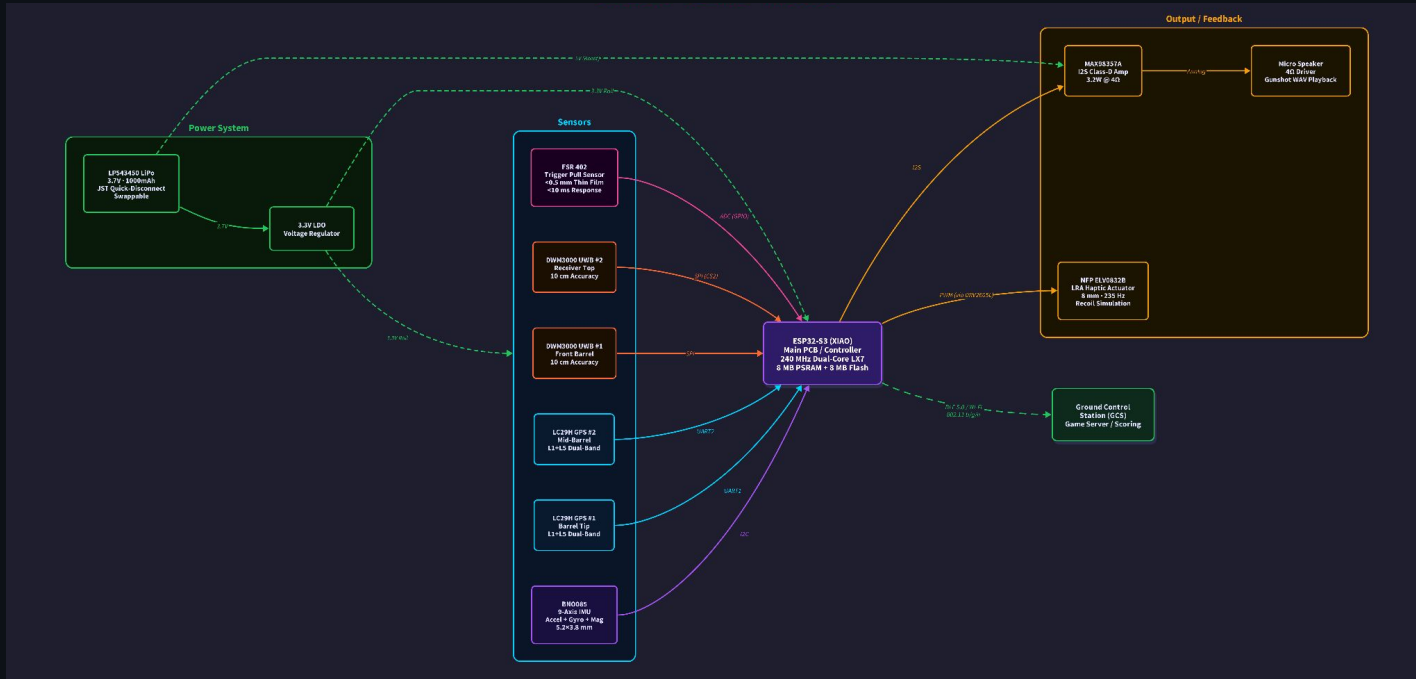
Gun Controller - Component Layout Detail



Custom gun controller: ESP32-S3 main PCB, dual GPS (indoor UWB + outdoor GNSS), 9-axis IMU, trigger sensor, haptic feedback actuator, LiPo battery. Component layout designed for ergonomic rifle form factor with all sensors embedded.

Progress to Date

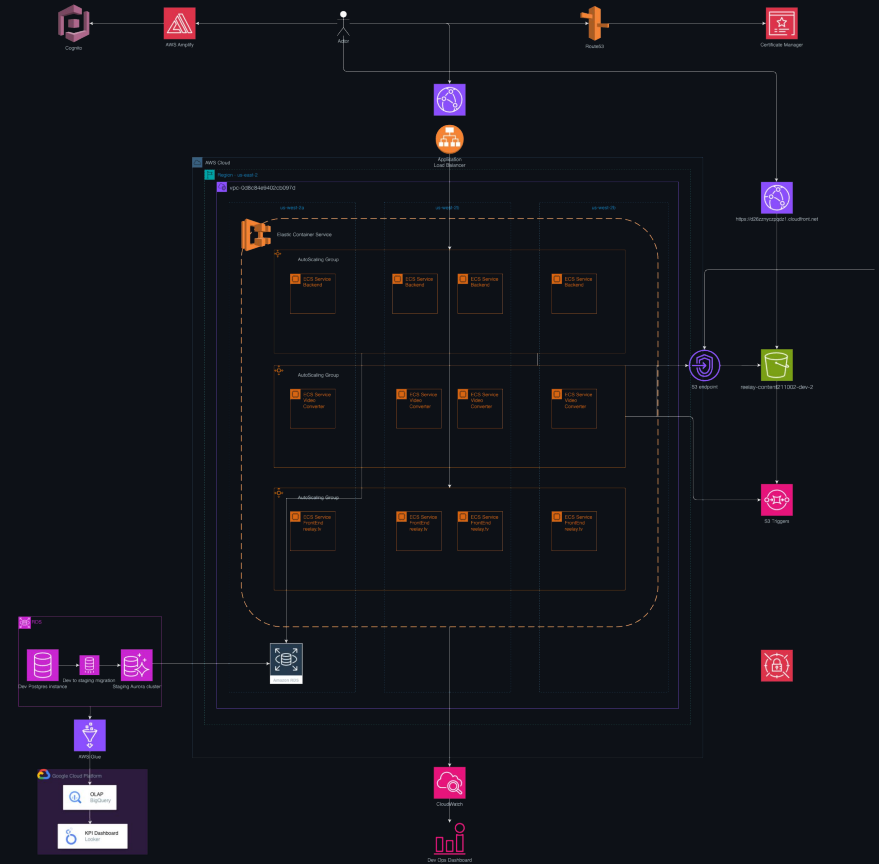
Gun Controller - System Diagram



Gun controller system architecture: ESP32-S3 hub connects power system, 6 sensor inputs (trigger, UWB, GPS, IMU), and output/feedback subsystem (audio amp, haptic actuator). Communicates with Ground Control Station for real-time scoring.

Customer Management Platform

- iPhone, Android, responsive web
- Registration/authentication - multi-modal
- Payments - QRC, mobile pay, CC, etc
- Scheduling
- Customer-facing performance analytics
- Offers engine
- Robust backend - scalable, performant, reliable, observable



Use of Funds (Details)

Prototype Development & Safety Testing

20%

Fabricate custom controller PCBs with IMUs, haptics, and Bluetooth | Rapidly prototype protective drone cages and ergonomic controller shells | Stress test fail-safes and kill switches in high-interference environments | Optimize system latency to under 30ms to prevent motion sickness

Hardware & Software

40%

Acquire PX4-compatible quadcopter fleet with centimeter-level RTK GPS | Deploy ruggedized GCS tablets connected via low-latency local networks, radio transceivers | MavROS application for world coordinate tracking, mission creation, path deconfliction, hit detection | Game engine for session management | Build MAVLink middleware and cloud backend for real-time game control

Pilot Deployment & Operations

25%

Install high-tensile spectator netting and barriers for flight zone safety | Staff licensed remote pilots and on-site operators for event management | Manage high-capacity charging stations for continuous event uptime | Secure rugged flight cases for safe transport of equipment

General & Administrative

15%

Secure comprehensive aviation and general liability coverage | Draft liability waivers and file patents for unique game mechanics | Fund software licenses, cloud hosting, and marketing for industry events

Runway: 10 months to pilots + product-market fit

Intellectual Property

**U.S. patent app:
64/034,914**

COMPUTER VISION-BASED GUN CONTROLLER WITH INTEGRATED BALLISTICS
AND FEEDBACK
Lasater, 2026

**U.S. patent app:
63/860,186**

DRONE SHOOTING SIMULATION SYSTEM WITH VIRTUAL PROJECTILES,
Lasater, 2025

**U.S. patent app:
63/856,306**

SHOOTING SIMULATION SYSTEM WITH IMMERSIVE DISPLAY
Lasater, 2025

**Nederlands patent
app: RMBG001**

HAPTIC FEEDBACK ACTUATOR FOR REALISTIC FIREARM SIMULATION
USING ADAPTIVE ELECTROMAGNETIC MASS TECHNOLOGY
Müller, 2025