

Anduril Industries Headquarters

National Security Exposure Assessment

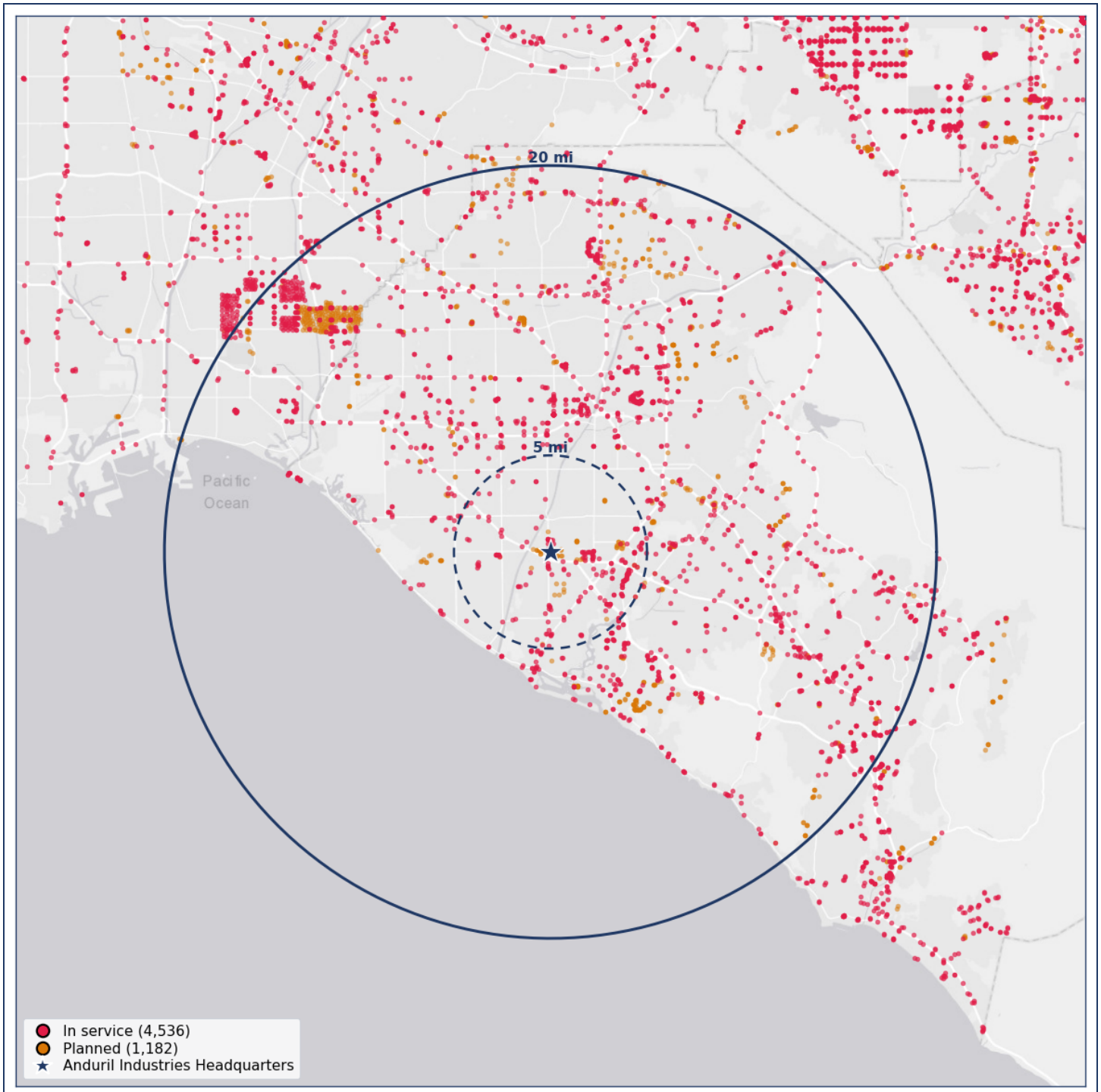
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Executive Assessment

Anduril's headquarters in Costa Mesa is not a typical office park — it is where software, hardware, and mission-operations people work on autonomy systems, including the YFQ-44A / FQ-44 program and SOCOM mission-autonomy work. If the same small group of engineers started showing up together at odd hours, that pattern could hint at a flight-test or production milestone.

This study asks a simple question: if someone drove from a nearby home to a gate and back, would they pass a Flock camera? The numbers are a model of possible drives, not a count of real people.

At 20 miles, about 61.7% of those modeled trips pass a camera. Another 26.2% might pass one, and 11.3% could not be determined. At 5 miles, 63.1% pass a camera, 11.0% might, 8.6% avoid them, and 17.3% could not be determined. This is a model of routes, not proof that anyone was watched.

HEADLINE RESULT · MODELED TRIPS TO A GATE

20 MILES OUT



■ 61.7%	Passes a camera A confirmed camera sits on every plausible road to a gate.
■ 26.2%	Might pass The inventory's rotationAngle is not a true facing: among 72,971 named in-service cameras it matches the road only about 10% of the time (median error 90°) because it stores housing orientation, not travel. The model therefore does not use it to confirm a hit. Named NB/SB/EB/WB cameras take direction from the road, with the name used only to pick which way they watch. Cameras with no compass name are too noisy to confirm, so a nearby pass stays Might pass. A confirmed hit still needs the vehicle on the same corridor, traveling in that monitored direction within 35°.
■ 0.9%	Avoids all cameras No confirmed camera on any plausible road.
■ 11.3%	Couldn't determine Extra driveway or side-road options could not be fully routed, so those trips stay unresolved instead of being guessed.

5 MILES OUT



■ **63.1%** Passes ■ **11.0%** Might pass ■ **8.6%** Avoids ■ **17.3%** Couldn't determine

Couldn't determine is 17.3% here because extra driveway or side-road options could not be fully routed, so those trips stay unresolved instead of being guessed.

Installation Context

Anduril's headquarters remains in Costa Mesa, California. The company publicly describes the site as supporting software and hardware engineering, business development, and mission operations, and earlier headquarters material describes machine shops, laboratories, welding, high-power testing, and hands-on research and development [E125]. This makes the location different from a conventional corporate office: a recurring commuting population may include people who directly integrate software, hardware, autonomy, and customer deployment support.

The company publicly announced YFQ-44A flight testing in 2025 and an initial FQ-44 production contract in 2026. It has also announced selection by U.S. Special Operations Command as a mission-autonomy systems-integration partner [E126, E127]. Those public facts support two distinct scenarios: technical-program inference from the movement of a core integration team and operational warning from the movement of mission-operations personnel.

The study did not identify an engineer, mission-operations employee, government official, program participant, vehicle, test event, or deployment. Anduril's work is distributed across multiple sites, and a vehicle near Costa Mesa does not establish a role or program.

Headquarters-Specific Mission-Assurance Scenarios

Both scenarios require Tier B historical observations and Tier C identity or organizational enrichment beyond the Tier A device inventory and route analysis used in the study.

Scenario 1: Identifying the FQ-44 Mission-Autonomy Integration Team and Inferring a Program Milestone

Assume that a foreign service gains longitudinal plate observations around the Costa Mesa headquarters and identifies a stable cluster associated with autonomy software engineers, flight-test personnel, hardware specialists, mission-systems integrators, security staff, and government program visitors. Because the headquarters publicly combines software, hardware, testing, and mission-operations functions, recurring co-arrival can reveal a core program team more directly than it could at a purely administrative office.

The analyst could establish a baseline for ordinary engineering work, then look for deviations. A sustained period of earlier arrivals, longer attendance, weekend activity, visits by government personnel, and repeated overlap among software, flight-test, and hardware specialists could indicate an integration milestone, test event, production decision, or response to a technical problem. If part of the cluster later disappears from Costa Mesa and appears at another public test or operating location, the movement could reveal a transition from laboratory integration to field evaluation.

The data would not reveal the autonomy code, performance, or test result. It could identify the people who know those details and the approximate moment when the program entered a new phase. That is enough to cue tailored phishing, device compromise, recruitment, observation of supplier facilities, or collection against a narrower technical community.

Operation Anarchist is a close precedent. Reporting based on Snowden documents described U.S. and British intelligence intercepting Israeli military drone and fighter-aircraft video feeds to assess advanced systems, ongoing operations, and possible strike preparations [E119]. The medium differs, but the intelligence objective is the same: exploit external signatures surrounding a sophisticated autonomous or aviation capability to understand when it is active and what stage or operation may be underway.

The study does not show that any FQ-44 participant commuted through the modeled corridors or that a milestone occurred. The scenario requires reliable role attribution, a long baseline, and independent corroboration. It also recognizes that engineering teams and program activity are distributed across Anduril locations.

Scenario 2: Detecting Deployment of a Mission-Operations Team Supporting Special Operations

Anduril publicly describes mission-operations personnel as working alongside customers to plan, deploy, calibrate, test, upgrade, maintain, and train users on fielded systems. The company has also announced a U.S. Special Operations Command mission-autonomy integration role [E127]. A relatively small group performing that work could develop a distinctive movement signature.

Suppose analysts identify vehicles associated with mission-operations engineers, communications or integration specialists, customer trainers, logistics personnel, and a small government evaluation team. A preparatory surge followed by the coordinated disappearance of the core cluster could indicate that personnel had deployed for a field evaluation, operational support task, or urgent integration effort. The return pattern could reveal duration and completion.

The destination might remain unknown. Correlation with exercises, public contract activity, aircraft or cargo movement, and regional crises could narrow the likely customer or mission. The same archive could expose homes and families, allowing an adversary to target the personnel through cyber intrusion, elicitation, coercion, or surveillance while they are away from the protected work environment.

The GRU Unit 26165 campaign provides a direct movement-intelligence precedent. Allied governments reported that the GRU targeted logistics and technology organizations and internet-connected cameras near military installations and border crossings to monitor assistance moving

toward Ukraine [E110]. The campaign shows that a foreign military intelligence service will compromise civilian and commercial infrastructure to track the people and equipment enabling a military capability.

The Costa Mesa study did not identify a mission-operations team or observe a deployment. The scenario requires historical observations, reliable attribution, and corroboration. Customer visits, flexible work, rentals, shared vehicles, and unrelated engineering activity remain confounders.

Combined Significance

The first scenario concerns technical-program intelligence: movement can identify the people and timing behind a new autonomous aircraft capability. The second concerns operational warning: the disappearance of a mission-operations team can indicate that a fielded capability is being deployed or evaluated. Together, they show why an integrated engineering and mission-operations headquarters can expose both development milestones and real-world operational support.

Primary Reachability Findings

Modeled route-coverage estimate, reported for both scopes with its uncertainty ranges.

Field	5-mile near-base	20-mile primary
Result label	V7 modeled estimate	V7 modeled estimate
Publication status	Modeled estimate (4 caveats)	Modeled estimate (3 caveats)
Headline channel	robust_lattice	robust_lattice
Primary H0 U/C/P/R	11.7%/74.1%/11.9%/2.3%	1.2%/69.5%/27.8%/1.6%
Robust H0/H1/H2 U/C/P/R	8.6%/63.1%/11.0%/17.3%	0.9%/61.7%/26.2%/11.3%
H0 validation	single-reviewer check	single-reviewer check

The complete modeled result record for both scopes - all sensitivity intervals, gate/direction/range sweeps, camera-cluster influence, modeling caveats, seeds, and SHA-256 hashes - is in the V7 Modeled Result Record under Evidence and Reproducibility below.

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **-10.5** percentage points; separate robust H0/H1/H2 lattice **-7.7** percentage points. These channels answer different questions and are not averaged. [L41]

Legislative Significance

Anduril demonstrates that sensitive-site protections should extend to modern defense-technology campuses where software, hardware, test, and mission-operations personnel work in the same location. Longitudinal ALPR data can expose a technical team before a program is public and can reveal the deployment of the personnel who integrate that technology with operational users.

Legislators should consider heightened retention, search, sharing, breach-notification, and vendor-security controls around designated defense research and mission-operations campuses, with consultation from the Department of Defense and industrial-security authorities. Controls should focus on minimizing historical pattern analysis without publicly disclosing route gaps.

Four Reported Vulnerabilities

Finding	Observed condition	Evidence boundary	Disclosure and remediation status	Source(s)
1	An active ArcGIS Default API key was hardcoded in a public development/demo asset and repeated key material was found across development assets.	The validation establishes key scope and private item grants; it does not prove that every granted item was read or altered by another party.	Reported 2025-06-11; remediation reported 2025-07-01.	L2, L5, L8, L20
2	FlockSafety development application and module-federation bundles were served before the correct authentication boundary.	The bundles expose application logic, routes, models, and permission concepts; frontend visibility does not prove anonymous access to every backend or production record.	Reported 2025-11-13 with follow-ups on 2025-11-14 and 2025-11-19; no closure or remediation detail appears in the disclosure record.	L2, L5, L11-L13
3	Planner/Beefeater endpoints issued ArcGIS and Google mapping credentials before login, including a production-scope path used to obtain the analyzed export.	Wire records prove anonymous HTTP 200 token responses and establish provenance; they do not prove every downstream service permitted every operation.	Reported 2025-11-13 with follow-ups on 2025-11-14 and 2025-11-19; no closure or remediation detail appears in the disclosure record.	L2, L14, L15, L37

Finding	Observed condition	Evidence boundary	Disclosure and remediation status	Source(s)
4	FlockNova application bundles were served before the correct access boundary and revealed search, pivot, fusion, and client-side permission assumptions.	The exposed code establishes application structure and data-source concepts; it does not establish that every modeled backend endpoint lacked authorization or that every modeled dataset was populated.	Reported 2025-12-05; no reply or remediation detail appears in the disclosure record.	L2, L4, L35

The findings are distinct but composable. Findings 2 and 4 exposed the vocabulary and architecture of search, alerting, mapping, and fusion workflows. Findings 1 and 3 exposed two different credential failures: a static production-scoped ArcGIS key and a pre-login credential-issuance path. Finding 3 supplied the provenance for the production map-point export used here. The combination supports a conclusion about systemic credential and environment-boundary weakness during the research period, while remaining narrower than a claim of universal platform compromise [L2, L8, L37].

The disclosure record also cannot establish a negative. Responsible reporting and a known remediation date for Finding 1 do not prove that no other person accessed the exposed surfaces, just as the absence of a returned closure notice for Findings 2 through 4 does not prove that they remain exploitable today. The reports preserve the observed condition, collection date, and known response status so that legal and technical reviewers can distinguish evidence from present-tense assumptions.

Methodology

Research and Data Basis

This assessment follows four separate disclosures involving credentials, development assets, environment boundaries, and a data-fusion application. A public development artifact contained an active ArcGIS credential; other development bundles exposed application structure before the expected access boundary; a Planner/Beefeater path issued production-scope mapping credentials before login; and FlockNova bundles exposed the structure of a broader fusion and search environment [L2, L4, L5, L8, L37]. None of those findings alone proves universal backend access. Together, they justified examining what sensitive geospatial information became available and what defensive questions it could support.

The production ArcGIS export captured on December 14, 2025 contains 335,701 records spanning multiple device types and statuses; it is not a count of simultaneously active cameras. The status fields record 214,073 `inService`, 83,427 `inPlanning`, 38,190 decommissioned, and 11 unknown records. The route study loads detection-eligible `inService` and `inPlanning` records and preserves a separate `inService`-only floor. The `active` integer is not the study filter [L14, L15].

Exposed application materials model plate and vehicle search, camera selection, hit history, alerts, people-search paths, map layers, CAD and AVL concepts, Raven/audio sensors, device access, and identity-adjacent fusion permissions [L4, L11-L13, L35]. Flock's patent describes a dynamic surveillance and object-query architecture, but a patent describes claimed architecture rather than proving deployment of each patented capability [E37]. The report therefore separates observed code and export fields from product descriptions and hypothetical intelligence use.

The counterintelligence and mission-assurance concern arises because employees, contractors, government counterparts, visitors, and partners use public roads outside the site's controlled perimeter. The occupied-housing frame is a standardized residential-distribution proxy; it does not identify where anyone associated with Anduril Industries Headquarters lives, establish an employment relationship, or estimate actual commute volume.

Longitudinal location information can expose associations and patterns that isolated observations do not. Supreme Court decisions concerning long-term GPS tracking and historical location records provide relevant policy and legal context without deciding the legality of this vendor, dataset, or study [E20, E21]. The constitutional and privacy implications belong in legal and policy review, not in unsupported declarations that every collection or search is unlawful.

My analytical judgment is that commercial growth and procurement convenience must not displace United States national-security, counterintelligence, force-protection, constitutional, and public-accountability obligations. That is a normative conclusion, not evidence that profit caused a particular breach or that a specific customer misused data.

Estimand and Synthetic Origins

The V7 primary estimand is the occupied-housing-weighted distribution across unobserved, confirmed exposure, possible exposure, and unresolved model under one predeclared, camera-blind H0 access-and-route policy. H0 defines the pinned origin, eligible unchanged saved gates, 5/20-road-mile frame, final per-leg scope, and primary conditional result. Every in-frame sampled weight remains in the four-class denominator; proven out-of-frame origins are excluded before sampling, while frame-unknown, unresolved-model, and artifact-error states remain explicit.

Each directed outbound and return leg must be no more than the declared radius. A qualifying round trip can therefore approach 10 miles in the 5-mile scope or 40 miles in the 20-mile scope. This is not a total-round-trip cap of 5 or 20 miles.

H1/H2 remain identity-keyed alternative access policies used only for the separate robustness lattice and fixed-H0-gate access sensitivity. H1/H2 cannot rescue a failed H0, set the primary status, change H0 frame membership, or contribute cameras to the H0 result. The two channels are co-located and never averaged [L41].

Reviewed 24/7 Gates

The paired study used Gate 1 and Gate 2 as the reviewed gate set. Only gates treated during setup as continuously open to authorized traffic are eligible. A part-time, visitor-only, commercial-only, or schedule-limited gate would create a modeled route that disappears outside its operating window, so including it as continuously available would overstate practical access. The gate decision concerns availability, not secrecy; coordinates and identifiers remain in the unredacted annexes.

The same gate set was used at both radii. The saved study state also contained 0 analyst-defined road blocks. Gates and blocks are inputs rather than outputs. A high or low unobserved rate does not validate the gate review, so an installation reviewer should read the exact saved identifiers and artifact warnings when judging whether the modeled access assumptions match local practice.

Cameras, Roads, and Routing

The V7 route and gate policy receives no camera coordinates, encounter results, or camera-derived costs. It uses the frozen routing and inventory assumptions bound into the completed cohort (`valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6`). Outbound and return routes are legal directed requests and are evaluated independently against the declared per-leg scope.

Camera encounters remain geometry, corridor, bearing, lifecycle-status, and capture-model inferences rather than observed plate reads. The H0 point channel retains direction and spatial/grade sensitivity separately. Camera influence is computed by physical camera cluster so colocated compute/support records are not counted as independent roadside sensors. Planned-device and in-service-only status variants remain sensitivity evidence rather than claims of confirmed real-world operation [L41].

Why Five and Twenty Miles

To preserve comparability across the multi-site assessment, the analysis applies the same five-road-mile near-site scope and twenty-road-mile primary scope used for military installations. The twenty-mile distance was originally selected from DoD Manual 4165.63 as a transparent commuting-area

approximation [E49]. At Anduril Industries Headquarters, it functions only as a standardized sensitive-site catchment. It is not a claim about employee residences, commute norms, company or laboratory policy, or the location of any real worker.

Five miles isolates the immediate approach area. Twenty miles adds the broader occupied-housing stratum while retaining every near-site draw and route unchanged. Reporting both shows how the modeled observation surface changes with a wider road network without converting the sample into an employee or visitor estimate.

Limitations and Non-Claims

This is a model over dated deployment, Census, and road snapshots. Occupied housing is a residential-distribution proxy, not a Anduril Industries Headquarters workforce or visitor roster; it does not weight origins by employer, role, clearance, shift, measured traffic, public transit use, remote work, or actual residential location.

Camera location and status fields can be incomplete, stale, planned, duplicated, moved, or differently interpreted. OpenStreetMap roads and address points can omit valid travel or include obsolete topology. Gate or access-point availability and site geometry depend on analyst review. The route engine models corridor exposure and a geometric field of view; it does not model optical character recognition probability, weather, plate condition, device uptime, retention, customer sharing, legal process, or whether a backend user queried a record.

A V7 unobserved H0 classification is a conditional modeled-policy result: under the frozen H0 access, gate, routing, inventory-status, and capture rules, the legal directed round trip had no qualifying modeled encounter. It is not a share of people, drivers, commuters, households, actual trips, or empirical camera reads. The separate robust lattice and access, gate-choice, direction, spatial/grade, range, deployment-status, sampling, and camera-cluster sensitivities must remain visible qualifications. Shared roads, neighboring destinations, rental vehicles, ride services, carpools, public transit, and unrelated visitors create substantial alternative explanations at a corporate or research headquarters.

Evidence and Reproducibility

The V7 drafting packet was built from the complete validated cohort for

`anduril_industries_headquarters`. It binds cohort `reachability-v7-audit-92bd2e6a45c3a7c6`, pair `anduril_industries_headquarters-69ae9dac3fe1d0d6`, seed `1276297828`, index SHA-256 `3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b`, five-mile summary SHA-256 `953048e370c3f6f2c24cb09f484361ab5420ac497d9cd992123bbd1fc4abf45b`, and twenty-mile summary SHA-256 `2d80679c7d97889373c631857a2b81e595da248e7455bc79bad1cb9921d640b3`. [L41].

Both scopes retain the primary H0 and robust-lattice partitions, full frame accounting, per-policy outcomes and failures, directed route geometry, modeled camera encounters, split uncertainty intervals, gate-choice sensitivity, physical-camera-cluster influence, frozen source snapshot, and independent QA. All QA flags and warnings remain unsuppressed in the hash-bound V7 snapshot [L41].

The narrative is subordinate to those structured artifacts. If a sentence, table cell, or later export conflicts with a canonical summary or origin-level record, the validated structured record controls and the narrative must be corrected. Joshua Michael independently reviews each material claim, citation, inference, and numerical value as the accountable author.

V7 Modeled Result Record

Modeled route-coverage estimate [L41].

Field	5-mile near-base	20-mile primary
Result label	V7 modeled estimate	V7 modeled estimate
Publication status	Modeled estimate (4 caveats)	Modeled estimate (3 caveats)
V7 cohort	reachability-v7-audit-92bd2e6a45c3a7c6	reachability-v7-audit-92bd2e6a45c3a7c6
Pair ID	anduril_industries_headquarters-69ae9dac3fe1d0d6	anduril_industries_headquarters-69ae9dac3fe1d0d6
Pair seed	1276297828	1276297828
Generated at	2026-08-12T16:39:51.153230+00:00	2026-08-12T16:39:51.153230+00:00
Summary SHA-256	953048e370c3f6f2c24cb09f484361ab5420ac497d9cd992123bbd1fc4abf45b	2d80679c7d97889373c631857a2b81e595da248e7455bc79bad1cb9921d640b3
Routing engine	valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6	valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6
Synthetic draws	1000	2000
Headline channel	robust_lattice	robust_lattice
Primary H0 U/C/P/R counts	117/741/119/23	117/1431/414/38
Primary H0 U/C/P/R	11.7%/74.1%/11.9%/2.3%	1.2%/69.5%/27.8%/1.6%
Robust H0/H1/H2 U/C/P/R counts	86/631/110/173	86/1246/389/279
Robust H0/H1/H2 U/C/P/R	8.6%/63.1%/11.0%/17.3%	0.9%/61.7%/26.2%/11.3%
Direction H0 interval	11.7% to 25.9%	1.2% to 30.5%
Fixed-gate access interval	8.7% to 27.2%	0.9% to 12.2%
Joint interval	8.6% to 36.9%	0.9% to 38.3%

Field	5-mile near-base	20-mile primary
Spatial H0 interval	8.9% to 13.9%	0.9% to 2.5%
Gate reselection diagnostic	fixed 11.3%; reselected 11.2%; absolute difference 0.1 pp	fixed 1.1%; reselected 1.1%; absolute difference 0.0 pp
H0 gate near-tie sensitivity	60s: 2.5% disagreement weight; 120s: 20.6% disagreement weight; 300s: 21.4% disagreement weight	60s: 0.2% disagreement weight; 120s: 27.7% disagreement weight; 300s: 27.9% disagreement weight
H0 range sensitivity U/C/P/R	75ft: 12.9%/73.2%/11.6%/2.3%; 150ft: 11.7%/74.1%/11.9%/2.3%; 250ft: 7.1%/74.2%/16.4%/2.3%	75ft: 1.3%/66.9%/30.3%/1.6%; 150ft: 1.2%/69.5%/27.8%/1.6%; 250ft: 0.7%/69.9%/27.8%/1.6%
H0 direction sensitivity U/C/P/R	25deg: 11.7%/74.1%/11.9%/2.3%; 30deg: 11.7%/74.1%/11.9%/2.3%; 35deg: 11.7%/74.1%/11.9%/2.3%; 40deg: 11.7%/74.1%/11.9%/2.3%; 45deg: 11.7%/74.1%/11.9%/2.3%; 60deg: 11.7%/74.1%/11.9%/2.3%	25deg: 1.2%/69.5%/27.8%/1.6%; 30deg: 1.2%/69.5%/27.8%/1.6%; 35deg: 1.2%/69.5%/27.8%/1.6%; 40deg: 1.2%/69.5%/27.8%/1.6%; 45deg: 1.2%/69.5%/27.8%/1.6%; 60deg: 1.2%/69.5%/27.8%/1.6%
Deployment-status sensitivity U/C/P/R	declared_policy: 11.7%/74.1%/11.9%/2.3%; in_service_only: 12.7%/72.3%/12.7%/2.3%	declared_policy: 1.2%/69.5%/27.8%/1.6%; in_service_only: 1.3%/64.3%/32.9%/1.6%
Physical-camera-cluster influence	maximum removal shift 7.2 pp; 1 material cluster	maximum removal shift 2.2 pp; 0 material clusters
H0 validation	single-reviewer check	single-reviewer check
Modeling caveats	1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O)2. primary H0 unresolved weight is 2.300%3. fixed-gate access-policy interval spans 18.500 pp4. one or more physical camera clusters exceed the influence materiality limit	1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O)2. primary H0 unresolved weight is 1.579%3. fixed-gate access-policy interval spans 11.382 pp
QA and artifact warnings	None	None

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **-10.5** percentage points; separate robust H0/H1/H2 lattice **-7.7** percentage points. These channels answer different questions and are not averaged. [L41]

Reachability Results

Five-Mile Near-Base Scope

Publication state: Modeled estimate (4 caveats).

The 5-mile primary H0 channel contains 1,000 draws on the full in-frame sampled denominator: 117 unobserved (11.7%), 741 confirmed exposure (74.1%), 119 possible exposure (11.9%), 23 unresolved model (2.3%). The separate robust H0/H1/H2 lattice reports 86 unobserved (8.6%), 631 confirmed exposure (63.1%), 110 possible exposure (11.0%), 173 unresolved model (17.3%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 11.7% to 25.9%; fixed-H0-gate access 8.7% to 27.2%; joint 8.6% to 36.9%; spatial/grade-H0 8.9% to 13.9%. These are distinct sensitivity results and are not averaged. Candidate-frame accounting:

```
{ "all_saved_gates_evaluated": true,
  "certificate_artifact_path": "frame_classification.json", "certificate_artifact_sha256":
  "dcb7b391dfb1ce09f80cf7db02d8cb0fb12d123b89f6b15d9f0aa46da72e1a0b", "classifier_contract": "h0-
  all-saved-gates-directed-per-leg-frame-v1", "classifier_version": 1, "closure":
  { "count_matches_source": true, "weight_matches_source": true }, "count_by_status":
  { "frame_unknown": 0, "near": 5443, "outer": 51558, "proven_out_of_frame": 58686 },
  "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count":
  115687, "source_weight": 1736771.0000000007, "weight_by_status": { "frame_unknown": 0.0, "near":
  95025.00000000003, "outer": 865159.6666666663, "proven_out_of_frame": 776586.3333333343 },
  "weight_semantics": "pre_sampling_occupied_housing_candidate_weight" }. Sampled-frame accounting:
  { "count_by_status": { "artifact_error": 0, "frame_unknown": 0, "in_frame": 1000,
  "proven_out_of_frame": 0 }, "rate_by_status": { "artifact_error": 0.0, "frame_unknown": 0.0,
  "in_frame": 100.0, "proven_out_of_frame": 0.0 }, "source_count": 1000, "source_weight":
  95024.9999999989, "weight_by_status": { "artifact_error": 0.0, "frame_unknown": 0.0, "in_frame":
  95024.9999999989, "proven_out_of_frame": 0.0 } }.
```

Modeling caveats: 1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O) 2. primary H0 unresolved weight is 2.300% 3. fixed-gate access-policy interval spans 18.500 pp 4. one or more physical camera clusters exceed the influence materiality limit **QA and artifact warnings:** None [L41]

Twenty-Mile Primary Scope

Publication state: Modeled estimate (3 caveats).

The 20-mile primary H0 channel contains 2,000 draws on the full in-frame sampled denominator: 117 unobserved (1.2%), 1,431 confirmed exposure (69.5%), 414 possible exposure (27.8%), 38 unresolved model (1.6%). The separate robust H0/H1/H2 lattice reports 86 unobserved (0.9%), 1,246 confirmed exposure (61.7%), 389 possible exposure (26.2%), 279 unresolved model (11.3%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 1.2% to 30.5%; fixed-H0-gate access 0.9% to 12.2%; joint 0.9% to 38.3%; spatial/grade-H0 0.9% to 2.5%. These are distinct sensitivity results and are not averaged.

Candidate-frame accounting: {"all_saved_gates_evaluated": true, "certificate_artifact_path": "frame_classification.json", "certificate_artifact_sha256": "dcb7b391dfb1ce09f80cf7db02d8cb0fb12d123b89f6b15d9f0aa46da72e1a0b", "classifier_contract": "h0-all-saved-gates-directed-per-leg-frame-v1", "classifier_version": 1, "closure": {"count_matches_source": true, "weight_matches_source": true}, "count_by_status": {"frame_unknown": 0, "near": 5443, "outer": 51558, "proven_out_of_frame": 58686}, "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count": 115687, "source_weight": 1736771.0000000007, "weight_by_status": {"frame_unknown": 0.0, "near": 95025.00000000003, "outer": 865159.6666666663, "proven_out_of_frame": 776586.3333333343}, "weight_semantics": "pre_sampling_occupied_housing_candidate_weight"}. Sampled-frame accounting: {"count_by_status": {"artifact_error": 0, "frame_unknown": 0, "in_frame": 2000, "proven_out_of_frame": 0}, "rate_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 100.0, "proven_out_of_frame": 0.0}, "source_count": 2000, "source_weight": 960184.6666666492, "weight_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 960184.6666666492, "proven_out_of_frame": 0.0}}.

Modeling caveats: 1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O)2. primary H0 unresolved weight is 1.579%3. fixed-gate access-policy interval spans 11.382 pp**QA and artifact warnings:** None [L41]

Relationship Between the Two Scopes

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **-10.5** percentage points; separate robust H0/H1/H2 lattice **-7.7** percentage points. These channels answer different questions and are not averaged. Each directed outbound and return leg must independently satisfy its declared 5/20-road-mile scope; the total round trip may approach 10/40 miles. An origin with no unchanged saved gate qualifying under H0 is outside that scope before sampling [L41].

References

ID	Source and use in this report
E20	U.S. Supreme Court, Carpenter v. United States opinion, https://www.supremecourt.gov/opinions/17pdf/16-402_h315.pdf - Digital location privacy policy/legal context.

ID	Source and use in this report
E21	Library of Congress, <i>United States v. Jones</i> , 565 U.S. 400, https://www.loc.gov/item/usrep565400/ - GPS tracking/location surveillance policy/legal context.
E37	Flock Group Inc., U.S. Patent No. 11,416,545 B1, “System and Method for Object-Based Query of Video Content Captured by a Dynamic Surveillance Network,” issued Aug. 16, 2022, https://patents.google.com/patent/US11416545B1/en - Flock’s own patent. Confirmed language: a “dynamic surveillance network” that is device-agnostic and ingests video from “unrelated surveillance devices” (neighborhood, residential, business, traffic, portable/mobile cameras); a “dynamic surveillance and object-based query” (DSOQ) server/system; object-based query of video “based on content of the video footage and not just time and location”; attribute profiling of people (“male, female, race,” height/weight/clothing) and vehicles (make/model/color/plate); and “face recognition data points”/facial-similarity feature-vector matching. Used only for the vendor’s own described architecture and intended capability; the report does not claim Flock has deployed any specific patented function, including facial recognition. Accessed 2026-07-13.
E49	U.S. Department of Defense, DoD Manual 4165.63, <i>DoD Housing Management</i> , incorporating Change 3, April 1, 2025, Enclosure 3, section 1.c.(2), https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/416563m.pdf - Official housing-market-analysis guidance: market-area boundaries may use a 20-mile or one-hour peak-traffic commute, with military/public information and installation-command recommendations supporting local adjustment. Used to justify a predeclared 20-road-mile primary reachability scope, not to claim that most personnel at a particular installation live within that distance. Accessed 2026-07-20.
E125	Anduril Industries, “Careers” and “Anduril Announces Major California Expansion with New Long Beach Campus,” https://www.anduril.com/careers and https://www.anduril.com/news/anduril-announces-major-california-expansion-with-new-long-beach-campus - Official confirmation that headquarters remains in Costa Mesa and supports software and hardware engineering, business development, and mission operations. Accessed 2026-08-08.

ID	Source and use in this report
E126	Anduril Industries, "Anduril's YFQ-44A Begins Flight Testing for the Collaborative Combat Aircraft Program" and "Anduril Wins Production Contract for U.S. Air Force CCA Program," https://www.anduril.com/news/anduril-yfq-44a-begins-flight-testing-for-the-collaborative-combat-aircraft-program and https://www.anduril.com/news/anduril-wins-production-contract-for-u-s-air-force-cca-program - Public test and production milestones for the FQ-44/YFQ-44A. Accessed 2026-08-08.
E127	Anduril Industries, "Special Operations Command Selects Anduril as Mission Autonomy Systems Integration Partner," March 26, 2025, https://www.anduril.com/news/special-operations-command-selects-anduril-as-mission-autonomy-systems-integration-partner - Public SOCOM integration role; used with Anduril's public mission-operations descriptions. Accessed 2026-08-08.
E119	The Guardian, "Snowden files reveal US and UK spied on feeds from Israeli drones and jets," January 29, 2016, https://www.theguardian.com/world/2016/jan/29/snowden-files-us-uk-spied-feeds-israeli-drones-jets - Reporting on Operation Anarchist, used as precedent for intelligence collection against external signatures of advanced autonomous and aviation systems. Accessed 2026-08-08.
E110	United Kingdom National Cyber Security Centre, "UK and allies expose Russian intelligence campaign targeting western logistics and technology organisations," May 21, 2025, https://www.ncsc.gov.uk/news/uk-partners-expose-russian-intelligence-campaign - Joint-government attribution of camera and technology/logistics targeting to monitor military movement. Accessed 2026-08-08.
L2	Supporting Tools and Docs/ supporting_memoranda/ FlockSafety_Four_Vulnerability_Chain.md ; Supporting Tools and Docs/ supporting_documents/finding_cards/ Finding_01_... - Finding_04_... ; source-evidence: Raw Evidence/Documentation/ My_Four_Vulnerabilities.md - Vulnerability timeline, Cure53-style finding cards, chain framing, remediation status.

ID	Source and use in this report
L4	Supporting Tools and Docs/ supporting_documents/analyses/ FlockNova_Application_Capability_Enumeration. md - Nova search, access-control, and client-side enforcement-gap findings.
L5	Supporting Tools and Docs/ supporting_documents/analyses/ FlockSafety_Dev_Subdomain_Bundle_Enumeration. md - 370-host headline footprint, dev bundle families, and repeated-key evidence.
L8	Raw Evidence/FlockSafety/ flock_hardcoded_api_check.json - Primary validation artifact for key scope and 50 item grants.
L11	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Search_App_Data.md - Search app data model, people-search device pool, plate/vehicle/search workflows.
L12	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Hotlist_App_Data.md - Hotlist, alerts, hit history, and alerting data model.
L13	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Mapped_Attributes.md - FlockOS/map layers and attributes; CAD/AVL, patrol/mobile, body-camera, drone, Raven/audio, and Flock911 surfaces; Flock911 incident-layer state, audio/transcript token classes, per- word start/end timing, selected-event state, and playback/ scrub controls.
L14	Raw Evidence/ArcGIS/ flocksafety_prod_arcgis_data/ analysis_summary.json ; source dump: Raw Evidence/ArcGIS/flocksafety_prod_arcgis_data/ features_*.json - 2025-12-14 ArcGIS export summary: 335,701 records, status/device-family counts from the package feature dump.

ID	Source and use in this report
L15	Raw Evidence/ArcGIS/ flocksafety_prod_arcgis_data/ count_verification.json - Field verification: total/ status breakdown; active=1 (214,233) vs status=inService (214,073) split; confirms scale claims use status , not active .
L20	Raw Evidence/Documentation/ My_Four_Vulnerabilities.md ; P1 - Repository disclosure record and published article for my 53-exposure research, Finding 1 scope analysis, and public ArcGIS corroboration method.
L35	Raw Evidence/Screenshots/ permissions_dronetoo.png ; Raw Evidence/ FlockNova/nova_flockdemo_com/js/ nova_flockdemo_com_App.js - Permission vocabulary including canCaravanSearch , Aerodome access, device tunnels, AVL sharing, nationwide lookup, and ArcGIS sign-in.
L37	Raw Evidence/FlockSafety/ dev_app_flocksafety_com/dev-beefeater ; Raw Evidence/FlockSafety/dev_app_flocksafety_com/ prod-beefeater - Burp XML wire records for Finding 3: anonymous GETs to Beefeater /api/v1/token/esri and /token/google returning HTTP 200 with tokens; no cookie/authorization.
L40	Superseded earlier detailed run; the full per-origin paired study records are retained by the researcher offline for authorized review and are not shipped in this package. - The granular per-origin records (synthetic origins, gates, blocks, selected and attempted routes, blocked-camera observations, outcome records, seeds, and summary hashes) come from an earlier method run. They were removed from the shipped package because they were superseded by the V7 run and contain exact per-origin routes near the installations. The canonical V7 route-coverage estimates and their SHA-256 summary bindings are in L41 and control any transcription conflict.

ID	Source and use in this report
L41	Complete V7 snapshot and staged cohort <code>reachability-v7-audit-92bd2e6a45c3a7c6</code> (index SHA-256 <code>3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b</code>); primary conditional H0 and robust H0/H1/H2 results, methodology, frame accounting, split uncertainty, QA flags and warnings, hashes, and annexes. Canonical source: the hash-bound V7 snapshot at <code>../Supporting Tools and Docs/project_support/planning_and_qa/reachability_v7_audit_development_snapshot.json</code>.

Per-site records

The V7 result for this installation - primary conditional H0 and robust H0/H1/H2 outcomes, frame accounting, uncertainty intervals, QA flags, seeds, and SHA-256 summary bindings - is recorded in the hash-bound V7 snapshot [L41]. The large per-origin staging artifacts (route geometry, frame classification, review packets) are not shipped in this package; the full records are retained by the researcher offline for authorized review [L40].