Lockheed Martin Headquarters

National Security Exposure Assessment

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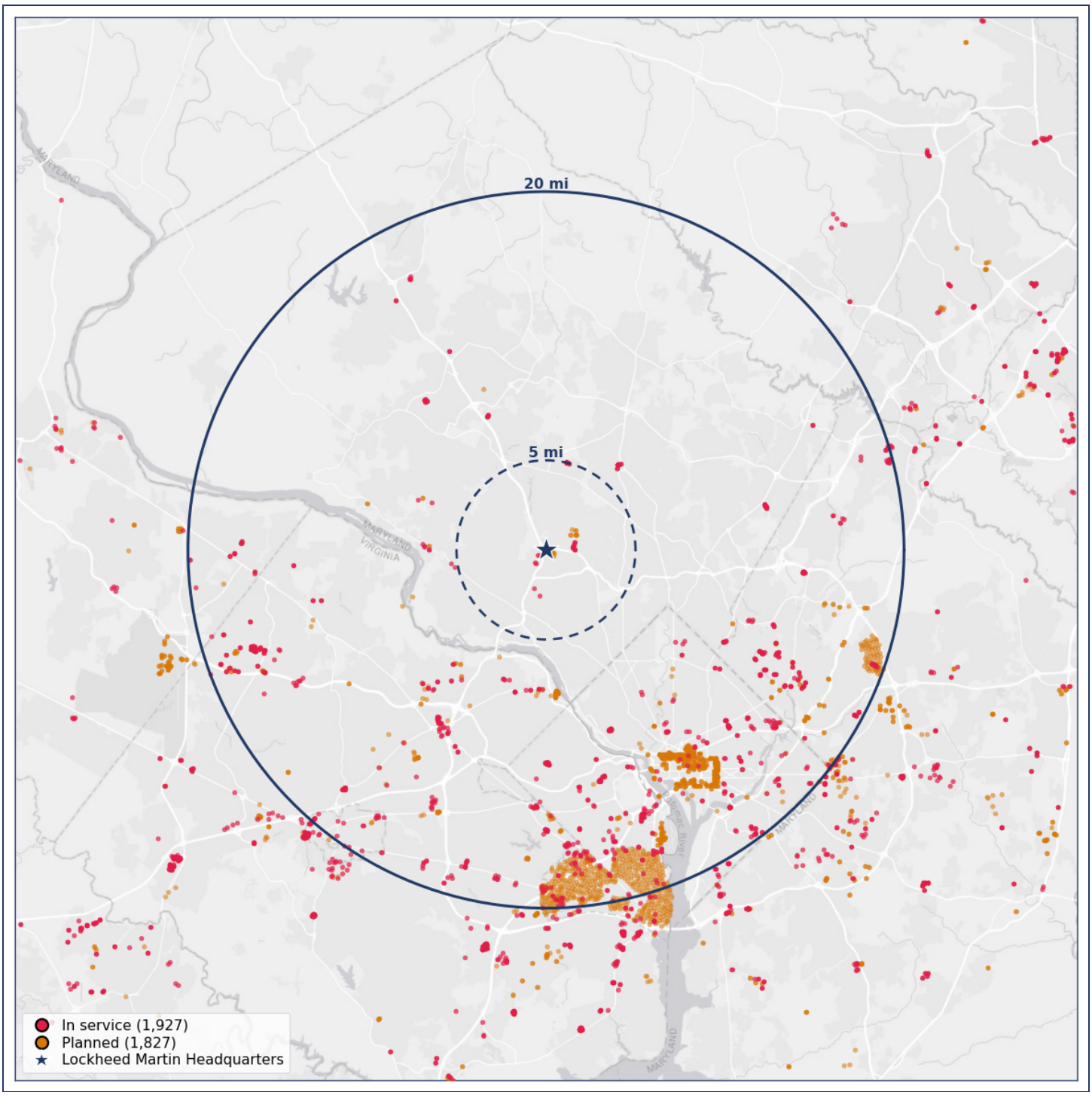

Executive Assessment

Lockheed Martin’s headquarters in Bethesda is the corporate office for a company that builds the F-35, strategic missiles, and much of the U.S. space architecture. The actual factories are elsewhere; the people who review those programs still come here. Rare overlap of corporate leaders, Navy strategic-program officials, and outside specialists could mark a Trident II or F-35 program review.

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 15.6% of those modeled trips pass a camera. Another 61.7% might pass one, 11.0% avoid them, and 11.7% could not be determined. Closer in, at 5 miles, only 1.1% have a confirmed camera on every road — a large share stay in “might pass” because the camera’s facing could not be confirmed. This is a model of routes, not proof that anyone was watched.

HEADLINE RESULT · MODELED TRIPS TO A GATE

20 MILES OUT

15.6% **Passes a camera**
A confirmed camera sits on every plausible road to a gate.

61.7% **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°.

11.0% **Avoids all cameras**
No confirmed camera on any plausible road.

11.7% **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

1.1% Passes **65.7%** Might pass **19.3%** Avoids **13.9%** Couldn't determine

Might pass is 65.7% here because rotationAngle is not a reliable facing, so unnamed or poorly oriented cameras stay in this bucket instead of counting as a hit. **Couldn't determine is 13.9% here because** no complete legal route to a reviewed gate could be established for these trips.

Installation Context

Lockheed Martin's principal corporate office is in Bethesda, Maryland. The company publicly organizes its work across Aeronautics, Missiles and Fire Control, Rotary and Mission Systems, and Space [E128]. Program execution is distributed across many facilities, so this assessment does not treat the Bethesda campus as a production plant or assume that every employee or visitor supports a sensitive program.

The headquarters remains counterintelligence-relevant because rare senior-level overlaps can be more informative than routine engineering traffic. Lockheed Martin publicly supports the F-35 global enterprise and the Trident II D5 strategic weapon system. In 2026, the company described D5LE2 work as part of the sea-based leg of the U.S. nuclear triad and identified the National Capital Region among the locations supporting the effort [E129]. The F-35 is likewise a multinational program involving U.S. and allied government participation [E130]. A corporate headquarters is a plausible location for governance, crisis, legal, financial, security, and senior program review even when technical work occurs elsewhere.

The study did not identify an executive, government official, allied representative, employee, supplier, program, or meeting. A vehicle near the headquarters does not establish employment or participation, and shared roads, neighboring properties, pooled vehicles, ride services, rental cars, and visitors create substantial confounders.

Headquarters-Specific Counterintelligence Scenarios

The route study establishes only the modeled surveillance surface. The following scenarios require historical observations and reliable identity, employer, or organizational enrichment that were not obtained.

Scenario 1: Mapping a Trident II D5LE2 Government–Industry Program Review

Assume that a foreign intelligence service obtains years of plate observations around Lockheed Martin's Bethesda headquarters and enriches selected vehicles with reliable links to corporate leadership, Navy strategic-program personnel, National Capital Region offices, outside counsel, security staff, and executives arriving from other Lockheed Martin locations. The service would not need to know the meeting agenda. Its first objective would be to detect a rare overlap among people who normally do not appear at the headquarters together.

Suppose vehicles associated with Lockheed Martin Space leadership, corporate security or legal personnel, Navy program officials, and a small set of technical or acquisition specialists converge within a narrow period. If the pattern recurs around public D5LE2 contract awards, test activity,

congressional developments, or major program decisions, the analyst could infer that a strategic-deterrence review was occurring. The inference might concern schedule pressure, a technical problem, a security incident, an acquisition decision, or a transition milestone; the movement data alone would not reveal which.

Even that limited conclusion has intelligence value. It could cue cyber collection against the participating organizations, surveillance of lower-security off-site meetings, recruitment approaches to a small set of specialists, or technical collection against facilities linked to the program. Repetition could show which individuals bridge corporate leadership, the Navy customer, and distributed program locations.

Britain's reported Royal Concierge program is a direct precedent for this form of association intelligence. Documents disclosed by Edward Snowden described a GCHQ system that monitored hotel reservations at hundreds of hotels to identify foreign diplomats' travel plans and give technical and human-intelligence teams time to prepare additional collection [E114]. The reservation itself did not reveal the substance of a diplomatic meeting. Its value came from identifying who would be present, where, and when.

This study does not show that a D5LE2 review occurred at Bethesda or that any participant was observed. The scenario depends on Tier B history, Tier C enrichment, and corroboration from public or separately collected indicators. It also recognizes that most headquarters traffic would be unrelated to the program.

Scenario 2: Building a Pattern-of-Life File on F-35 and Senior Defense Leadership

A second risk begins with people rather than a meeting. Suppose a foreign service identifies vehicles associated with senior corporate leaders, F-35 enterprise officials, allied representatives, security personnel, or executives who regularly connect the Bethesda headquarters to other government and company locations. Longitudinal observations could reveal normal arrival patterns, recurring off-site meetings, protective arrangements, residences, family vehicles, and deviations from baseline.

The most consequential signal could be convergence. If several senior leaders and government or allied participants appear unexpectedly, the service could infer a program crisis, urgent decision, security issue, or major negotiation. If a protective vehicle or security detail consistently accompanies a particular plate, the service can also learn where official protection begins and ends. Historical records outside the headquarters area may then expose less protected locations where the person can be observed, approached, or targeted through cyber and human-intelligence methods.

The F-35's multinational structure increases the value of relationship mapping. A recurring overlap between a particular allied delegation and a small Lockheed Martin leadership group could disclose which government is participating in a sensitive decision or which program issue has become urgent, even when the meeting content remains protected.

The highest-end precedent is the reported exploitation of Iran's street- and traffic-camera network by Israel. According to Associated Press reporting, camera-derived information helped map senior officials, protective personnel, addresses, routes, parking locations, and occasions when multiple targets were present together [E131]. The case demonstrates that a surveillance system created for domestic purposes can become a foreign leadership-pattern and targeting system.

The Bethesda model did not identify a Lockheed Martin leader or F-35 participant. It describes the risk if a longitudinal vehicle archive were combined with accurate identity and organizational information. The scenario remains subject to major confounders, including shared access roads, visitor traffic, rental cars, and the distributed nature of the F-35 enterprise.

Combined Significance

The first scenario concerns rare association intelligence around the nation's sea-based strategic deterrent. The second concerns persistent identification and pattern-of-life exposure of senior defense-industry and multinational program leadership. Together, they show why a corporate headquarters can be intelligence-sensitive even when most engineering and production occur elsewhere: the rare overlap of decision-makers can reveal which issue has reached the highest level, while the same movement archive can expose the people involved outside protected facilities.

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 (4 caveats)
Headline channel	robust_lattice	robust_lattice
Primary H0 U/C/P/R	20.2%/1.4%/72.2%/6.2%	12.4%/18.6%/65.5%/3.5%
Robust H0/H1/H2 U/C/P/R	19.3%/1.1%/65.7%/13.9%	11.0%/15.6%/61.7%/11.7%
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 **-7.8** percentage points; separate robust H0/H1/H2 lattice **-8.3** percentage points. These channels answer different questions and are not averaged. [L41]

Legislative Significance

Defense-industrial headquarters should not be treated as ordinary commercial destinations when ALPR systems retain and share long-term non-hit observations. The principal risk is not a single employee commute. It is the ability to identify rare government–industry overlaps, map the senior personnel responsible for strategic programs, and reconstruct their off-site patterns of life.

Legislators should consider a sensitive-site framework that includes major defense-industrial corporate headquarters, with heightened vendor security, short default retention, restrictions on reverse and pattern searches, documented case predicates, and prompt notification to appropriate counterintelligence and contracting-security authorities after credential or data compromise. The rules should protect against broad historical analysis without publishing exploitable 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

Finding	Observed condition	Evidence boundary	Disclosure and remediation status	Source(s)
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
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 Lockheed Martin 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 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 Lockheed Martin 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 Lockheed Martin 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 `lockheed_martin_headquarters`. It binds cohort `reachability-v7-audit-92bd2e6a45c3a7c6`, pair `lockheed_martin_headquarters-8b46051717f1641a`, seed `447032586`, index SHA-256

`3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b`, five-mile summary SHA-256 `0622fec836e97693938159bbeb5ff172a75f60aa294ca69da44d188e25f9935b`, and twenty-mile summary SHA-256 `c8e58a92531c37c3fdddb6fc053a65b615ec5125178523276e95d54028255f7f`. [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 (4 caveats)
V7 cohort	reachability-v7-audit-92bd2e6a45c3a7c6	reachability-v7-audit-92bd2e6a45c3a7c6
Pair ID	lockheed_martin_headquarters-8b46051717f1641a	lockheed_martin_headquarters-8b46051717f1641a
Pair seed	447032586	447032586
Generated at	2026-08-12T13:01:50.840335+00:00	2026-08-12T13:01:50.840335+00:00
Summary SHA-256	0622fec836e97693938159bbeb5ff172a75f60aa294ca69da44d188e25f9935b	c8e58a92531c37c3fdddb6fc053a65b615ec5125178523276e95d54028255f7f
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	202/14/722/62	321/211/1373/95
Primary H0 U/C/P/R	20.2%/1.4%/72.2%/6.2%	12.4%/18.6%/65.5%/3.5%
Robust H0/H1/H2 U/C/P/R counts	193/11/657/139	298/176/1271/255
Robust H0/H1/H2 U/C/P/R	19.3%/1.1%/65.7%/13.9%	11.0%/15.6%/61.7%/11.7%
Direction H0 interval	20.2% to 98.6%	12.4% to 81.4%

Field	5-mile near-base	20-mile primary
Fixed-gate access interval	19.3% to 33.3%	11.0% to 23.3%
Joint interval	19.3% to 98.9%	11.0% to 84.4%
Spatial H0 interval	20.2% to 24.5%	11.7% to 14.9%
Gate reselection diagnostic	fixed 20.1%; reselected 20.1%; absolute difference 0.0 pp	fixed 11.9%; reselected 11.9%; absolute difference 0.0 pp
H0 gate near-tie sensitivity	60s: 0.0% disagreement weight; 120s: 0.0% disagreement weight; 300s: 0.0% disagreement weight	60s: 0.0% disagreement weight; 120s: 0.0% disagreement weight; 300s: 0.0% disagreement weight
H0 range sensitivity U/C/P/R	75ft: 91.1%/1.4%/1.3%/6.2%; 150ft: 20.2%/1.4%/72.2%/6.2%; 250ft: 20.2%/1.4%/72.2%/6.2%	75ft: 73.9%/18.2%/4.4%/3.5%; 150ft: 12.4%/18.6%/65.5%/3.5%; 250ft: 11.7%/18.6%/66.3%/3.5%
H0 direction sensitivity U/C/P/R	25deg: 20.2%/1.4%/72.2%/6.2%; 30deg: 20.2%/1.4%/72.2%/6.2%; 35deg: 20.2%/1.4%/72.2%/6.2%; 40deg: 20.2%/1.4%/72.2%/6.2%; 45deg: 20.2%/1.4%/72.2%/6.2%; 60deg: 20.2%/1.4%/72.2%/6.2%	25deg: 12.8%/18.6%/65.2%/3.5%; 30deg: 12.6%/18.6%/65.3%/3.5%; 35deg: 12.4%/18.6%/65.5%/3.5%; 40deg: 12.4%/18.6%/65.5%/3.5%; 45deg: 12.3%/18.6%/65.6%/3.5%; 60deg: 12.1%/18.6%/65.8%/3.5%
Deployment-status sensitivity U/C/P/R	declared_policy: 20.2%/1.4%/72.2%/6.2%; in_service_only: 92.3%/1.3%/0.2%/6.2%	declared_policy: 12.4%/18.6%/65.5%/3.5%; in_service_only: 65.5%/15.7%/15.3%/3.5%
Physical-camera-cluster influence	maximum removal shift 70.7 pp; 1 material cluster	maximum removal shift 46.9 pp; 1 material cluster
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 6.200%3. fixed-gate access-policy interval spans 14.000 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 3.476%3. fixed-gate access-policy interval spans 12.215 pp4. one or more physical camera clusters exceed the influence materiality limit
QA and artifact warnings	None	None

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **-7.8** percentage points; separate robust H0/H1/H2 lattice **-8.3** 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: 202 unobserved (20.2%), 14 confirmed exposure (1.4%), 722 possible exposure (72.2%), 62 unresolved model (6.2%). The separate robust H0/H1/H2 lattice reports 193 unobserved (19.3%), 11 confirmed exposure (1.1%), 657 possible exposure (65.7%), 139 unresolved model (13.9%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 20.2% to 98.6%; fixed-H0-gate access 19.3% to 33.3%; joint 19.3% to 98.9%; spatial/grade-H0 20.2% to 24.5%. 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": "1a166b1a9af0bd4f95edf87c893e44045c9c5516036a6c479bbf7e312e6c4382", "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": 422, "near": 4033, "outer": 52238, "proven_out_of_frame": 44308}, "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count": 101001, "source_weight": 1791665.000000001, "weight_by_status": {"frame_unknown": 5173.0, "near": 56784.0, "outer": 877450.4166666673, "proven_out_of_frame": 852257.5833333335}, "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": 56783.99999999969, "weight_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 56783.99999999969, "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 6.200%3. fixed-gate access-policy interval spans 14.000 pp4. 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 (4 caveats).

The 20-mile primary H0 channel contains 2,000 draws on the full in-frame sampled denominator: 321 unobserved (12.4%), 211 confirmed exposure (18.6%), 1,373 possible exposure (65.5%), 95 unresolved model (3.5%). The separate robust H0/H1/H2 lattice reports 298 unobserved (11.0%), 176 confirmed exposure (15.6%), 1,271 possible exposure (61.7%), 255 unresolved model (11.7%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 12.4% to 81.4%; fixed-H0-gate access 11.0% to 23.3%; joint 11.0% to 84.4%; spatial/grade-H0 11.7% to 14.9%. 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": "1a166b1a9af0bd4f95edf87c893e44045c9c5516036a6c479bbf7e312e6c4382", "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": 422, "near": 4033, "outer": 52238, "proven_out_of_frame": 44308}, "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count": 101001, "source_weight": 1791665.000000001, "weight_by_status": {"frame_unknown": 5173.0, "near": 56784.0, "outer": 877450.4166666673, "proven_out_of_frame": 852257.5833333335}, "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": 934234.4166666823, "weight_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 934234.4166666823, "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 3.476%3. fixed-gate access-policy interval spans 12.215 pp4. one or more physical camera clusters exceed the influence materiality limit**QA and artifact warnings:** None [L41]

Relationship Between the Two Scopes

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **-7.8** percentage points; separate robust H0/H1/H2 lattice **-8.3** 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.
E21	Library of Congress, United States v. Jones, 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, *DoD Housing Management*, 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.

ID	Source and use in this report
E128	Lockheed Martin, “About Us” and “Business Areas,” https://www.lockheedmartin.com/en-us/who-we-are.html and https://www.lockheedmartin.com/en-us/who-we-are/business-areas.html - Official Bethesda headquarters address and public organization across Aeronautics, Missiles and Fire Control, Rotary and Mission Systems, and Space. Accessed 2026-08-08.
E129	Lockheed Martin, “Lockheed Martin Advances Trident II D5 Modernization with $850M Award,” July 10, 2026, https://news.lockheedmartin.com/Lockheed-Martin-Advances-Trident-II-D5-Modernization-with-850M-Award - Public D5LE2 mission, strategic-deterrence significance, and National Capital Region work. Accessed 2026-08-08.
E130	Lockheed Martin, “F-35 Global Enterprise,” https://www.lockheedmartin.com/f35/global-enterprise.html - Official description of the multinational F-35 enterprise and allied participation. Accessed 2026-08-08.
E114	The Guardian, “Snowden cache reveals diplomats’ hotel bookings being tracked by GCHQ,” November 17, 2013, https://www.theguardian.com/world/2013/nov/17/edward-snowden-diplomats-hotel-bookings-documents - Reporting on Royal Concierge, used as precedent for identifying rare official travel and meeting overlaps. Accessed 2026-08-08.
E131	Associated Press via PBS NewsHour, “Iran built a vast camera network to control dissent. Israel used it to track targets, AP sources say,” March 23, 2026, https://www.pbs.org/newshour/world/iran-built-a-vast-camera-network-to-control-dissent-israel-used-it-to-track-targets-ap-sources-say - Reported precedent for exploiting traffic and street cameras to map senior officials, protection patterns, routes, and convergence. 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 `reachability-v7-audit-92bd2e6a45c3a7c6` (index SHA-256 `3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b`); 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 `../Supporting Tools and Docs/project_support/planning_and_qa/reachability_v7_audit_development_snapshot.json`.

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].