



The EW SUITE is an **integrated electronic-warfare, SIGINT and cyber training, analysis and wargaming platform** — forty-one interactive applications that share one scenario, one map and one threat picture. From characterising an emitter and quantifying a jam, to denying GNSS, modelling a cyber kill-chain and fighting a joint BLUE-vs-RED engagement, every result is computed by **faithful, transparent physics and probability models** — not canned animations. Built for the schoolhouse, the lab and the briefing room.

## THE FORTY-ONE APPLICATIONS

- 1 ECM — Jamming Effectiveness.** J/S, burn-through range, noise vs deception.
- 2 ELINT Workstation.** OAK RX-style pulse analysis + ThreatBuilder emitters.
- 3 Radar Bench.** Echo generator + receiver: pulse compression, Doppler/MTI, CFAR.
- 4 Threat Simulator.** Scenario → PDW stream → signal generator over SCPI/TCP.
- 5 Comms Receiver.** COMINT 20 MHz–6 GHz: IQ, demod, modulation classification.
- 6 Comms Jammer / GNSS.** Comms denial, GPS jamming, GNSS-spoof analysis.
- 7 CEMA Threat Modeller.** Attack-graph, kill-chain, risk matrix (conceptual).
- 8 Cyber Tactical Wargame.** Red-vs-blue Monte-Carlo, MITRE ATT&CK reference.
- 9 Detection Lab.** Synthetic-telemetry detection trainer, ROC / PR curves.
- 10 COA Planner.** Course-of-action decision aid over the engagement model.
- 11 Tactical Ops Console.** Map-based EW/cyber COP; task effects, score outcomes.
- 12 Joint Wargame.** Turn-based BLUE/RED force-on-force; EW, cyber, ASM raids.
- 13 EO/IR Sensor.** IRST detection, NETD/MRTD, Johnson DRI ranges.
- 14 Training & AAR.** Quizzes computed live from the models; after-action review.
- 15 Video Tracker (EO).** EO auto-tracker: detect, track & classify UAV/fighter/missile/projectile.
- 16 EO Tracker Workstation.** Live EO tracking from a real feed (file / TCP / camera) — standalone.
- 17 ELINT Receiver Workstation.** Live PDW deinterleave from a real receiver (TCP / UDP / SCPI) — standalone.
- 18 Space (SDA / SATCOM-EW).** Orbits, ground track & passes; SATCOM link budget; uplink-jamming geometry.
- 19 Counter-UAS.** Detect-track-ID-mitigate vs the 5 DoD UAS groups; RF/GNSS defeat; swarm leakers.
- 20 IADS / SEAD-DEAD.** Terrain-masked SAM threat rings, route survival, SEAD/DEAD option scoring.
- 21 Cognitive / Adaptive EW.** Sense-decide-act-adapt loop; a learning jammer out-learns a fixed technique.
- 22 Spectrum Manager / EMCON.** Own-force frequency plan, EMI/fratricide matrix, EMCON posture.
- 23 RF Coverage / Propagation.** Terrain-masked coverage footprints over DTED (radar/jammer/GNSS/comms/ESM).
- 24 Multi-INT Fusion.** ELINT/COMINT/EO-IR/radar correlated into one common track picture.
- 25 Scenario & Threat Library.** One authored scenario / threat DB feeds every app via the shared bundle.
- 26 NAVWAR / PNT Resilience.** GNSS denial, INS holdover by IMU grade, PNT-resilience score.
- 27 Undersea / Acoustic (Sonar).** Passive & active sonar equations, transmission loss, convergence zones.
- 28 Multi-Domain Synchroniser.** Schedule & deconflict effects across all domains; combined mission effect.
- 29 AI EW Advisor.** ML classifies emitters, assesses threat/priority, recommends a COA; calibrated confidence + OOD flag, explainability, report export.
- 30 AI Model Trainer.** Five pure-numpy classifiers over suite physics or 11 public datasets; cross-validation, feature importance, model export.
- 31 AI EW Assistant.** Natural-language Q&A over the scenario from the suite's own models.
- 32 Autonomous Cognitive-EW Agent.** Closed-loop agent that learns to beat a fixed jamming doctrine.
- 33 CBRN Hazard Prediction.** Gaussian-plume dispersion of a chem/bio/radiological release; downwind hazard areas.
- 34 Information / Influence Ops.** Narrative diffusion (SIR), bot amplification, counter-messaging; bot-detection ROC.
- 35 ISR Collection Manager.** Task ISR sensors against named AOIs; coverage/revisit; collection-deck optimisation.
- 36 CASEVAC / Combat Health.** Golden-hour MEDEVAC routing & sequencing; time-to-care; expected survivors.
- 37 Artillery & Munition ID.** Identify munition/firing-system from a weapon-locating track; counter-battery origin/impact; counter-fire priority.
- 38 AI Campaign Planner.** Minimax force allocation across objectives + posture; re-plans vs an adaptive RED to beat a fixed doctrine (wargame rehearsal).
- 39 AI COA Generator.** Generates, scores & ranks ingress COAs vs an IADS; mapped route, explainability, top-COA confidence.
- 40 Force-mix Optimizer.** Greedily sites air-defence assets for max weighted coverage of the defended area vs a naive even-ring (force protection).

**41 Strategic ISR / I&W.** Fuses strategic indicators into an indications-&-warning level + drivers + a timeline that rises ahead of an event.

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## WHY IT STANDS OUT

### Integrated, not siloed

One **scenario bundle** drives the console *and* the wargame; emitters flow from ELINT to ECM to the map. Auto-generated **HTML + PDF briefing** across all domains.

### Faithful physics

Real EW, radar, EO/IR and GNSS maths with every assumption visible — a teaching tool that shows *why*, plus **hill-shaded DTED/SRTM terrain** & line-of-sight.

### Safe & deployable

Representational & **unclassified**; cyber is conceptual with **no exploit content**. One offline Windows executable — air-gap and export friendly.

## WHO IT'S FOR

**EW & SIGINT schoolhouses** and training academies · **Universities** teaching radar, comms & cyber · **Defense primes** & system houses for onboarding and concept demos · **Test & evaluation ranges** for pre-mission familiarisation · **CEMA / cyber-defence** course providers. Runs on a standard Windows laptop — no cloud, no licences to phone home.

3-D battlespace in every app

Shared scenario bus

Real DTED / SRTM terrain + LOS

SCPI instrument control

Monte-Carlo analysis benches

One-click suite report

Single offline .exe

**Unclassified · Representational / educational use.** The EW SUITE is a training, analysis and wargaming aid built on transparent models; it is not an operational EW system and contains no operational exploit, payload or attack code. Specifications subject to change. © OAK DEFENSE LTD.

### Request a live demo

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