CERES

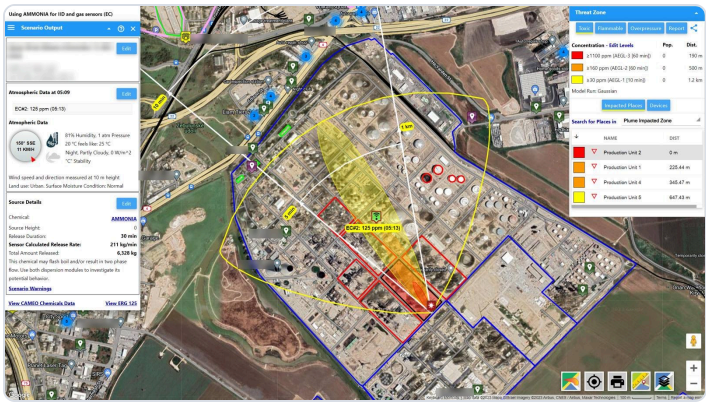
Chemical Emergency Response E-Service
Product sheet

For chemical plants, refineries, terminals and industrial parks

Run it well. Keep everyone safe. Be able to show it.

A plant's emergency team is judged on the days nobody hears about: the alarm that was real, the plume that stayed inside the fence, the neighbor who was told before they smelled anything. CERES Live Facility turns the detectors and met stations you already own into alarms that mean something, a plume that follows the wind, and a record that shows the plant did its job.

- Alarms that mean something, from the detectors and met stations you already own
- The plume from the readings, with the units, muster points and neighbors inside each zone
- The neighbors and the fire brigade warned first, and a history that shows the plant did its job



A sensor-driven ammonia scenario inside a refinery: one detector reading sets the release rate, the plume follows the live wind, and the production units inside each zone are listed by distance.

Six moments at a plant

Written from the side of the control room and the plant fire brigade. In each one, what CERES does comes second.

1 An ordinary shift

Most days nothing happens, and that is the job: every detector reporting, every met station in range, every screen showing the same site.

CERES Fixed, area, personal and vehicle-mounted detectors and met stations on one map, with one-minute averages and a warning when any device goes offline. A wall display for the control room, digital signage around the site, and a readiness board covering every site.

2 The alarm

A reading crosses a limit at two in the morning. The operator has seconds to decide whether it is a leak, a drifting sensor or a truck going by, and the whole shift acts on that call.

CERES Alarm levels per detector and per chemical, from AEGL, ERPG, IDLH and LEL fractions or your own limits; on screen, audible, by email and SMS. Every alarm numbered, with a verification countdown and its handling status; acknowledge, shield and record the disposition of every alarm, and change it later from the history. Weather, lightning and air-quality alerts.

3 Where is it going?

The wind is doing what it wants, the release rate is unknown, and the brigade needs to know which units to clear and where to stage.

CERES Quick Response draws the live wind corridor before the chemical or the rate is known. The sensor-driven plume lets the readings set the release rate and refreshes as they report. Locate Source works back from the pattern across the detectors to the likely origin.

4 Your people first

Operators, contractors and visitors are spread across the site. Before anything else, you need to know that everyone is out of the zone and at a muster point.

CERES Head counting with geofences and muster points; the status board with PAR roll calls for the site and for an incident; a roster joined by QR code; location shared while responding; the Command Board for the plant fire brigade; incident chat with @mentions and push.

5 The neighbors, told first

The fence line is not the edge of the problem. The fire department, the LEPC and the families across the road should hear it from you, with a map, before they smell anything.

CERES Call-down notification by email and SMS from pre-plan templates, with the plume link and a delivery log, and voice-call notification. Share links that the fire department, mutual-aid partners and the LEPC open without an account. CAP alerts for warning systems.

6 The review, and the next drill

Afterwards the questions come from the review, the regulator and your own team: what was known, when, and what was done about it. The honest answers are the ones written down at the time.

CERES History for detectors, weather, alarms and tracking, on the map or exported; wind rose; interval reports; Tier II summaries; signed exposure records per person and gas; the incident record with tasks, log, costs and ten FEMA ICS forms. Training missions and lessons for the brigade and the control room.



One picture from everything you own: live weather, met stations, fixed sensors, GPS devices and the personal and area monitors from Blackline, Industrial Scientific, Honeywell and AccuSense, on the desktop, the tablet and the phone.

Specifications

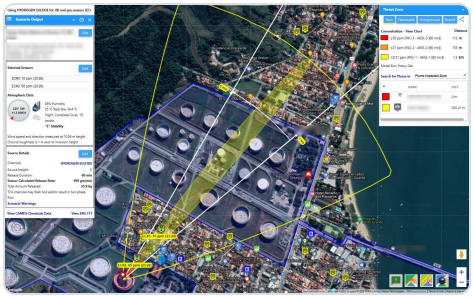
Detector interfaces	Modbus RTU, TCP and ASCII; OPC; OSIsoft/AVEVA PI (Web API, database, AWS bucket) and AVEVA CONNECT data services (on request); MQTT; serial and NMEA; PostgreSQL and web APIs; Blackline Live for G7c, G7 EXO and M7; Honeywell and RAE through ProRAE Guardian and Safety Suite; Industrial Scientific iNet; AccuSense; Squishy Robotics drone-dropped sensors; manual readings from the field.
Sensor types	Electrochemical, PID and VOC, LEL, oxygen and gamma channels; concentration and percent shown side by side; LEL basis per manufacturer (methane or pentane) handled by the detector correction tool, which includes the Dräger CatEx LEL tables and 604 Kitagawa, Dräger and Gastec detector tubes.
Alarms	Per-sensor and per-chemical levels; on screen, audible, email and SMS; every alarm numbered, with a verification countdown and its handling status; acknowledge, shield and disposition with history, changeable afterwards; weather and lightning alarms; alert feeds from NWS, AirNow and other air-quality networks; responder emergency alarm from the phone app.
Models from readings	Sensor-driven plume and locate source. Quick Response live wind corridor and upwind odor corridor with the monitoring plan. SCICHEM for wind shifts, calm air, particulates and soot deposition; SCICHEM complex terrain, over the hills and valleys around the plant, is an option at additional cost. All ALOHA sources and the Pro fire, explosion, boilover, battery and radiological models are available for planning; see the hazard models sheet.
Facility data	Tier II, RMP, Seveso and E2 inventories imported; emission sources, hazard areas, safe rooms, shelters, muster points and receptors on the site map; KML/KMZ, WMS overlays and your own imagery; zones with per-zone chemicals; predefined scenarios per zone; live feeds for weather radar, alerts, air quality, floods and outages; rivers, railroads, roads and neighborhoods from OpenStreetMap and NPMS pipelines, listed as impacted places; AIS vessel positions on request.

Met stations	Airmar, Zeno, WeatherPak, WeatherFlow Tempest, WeatherSTEM and Davis WeatherLink directly; Campbell, Vaisala and others over Modbus, PI or serial; The Weather Company conditions and forecasts as the online source or fallback; configurable averaging window per station.
Data acquisition	CERES DAQ software on a site PC or server polls the devices and pushes to the service; one-minute averaging; a warning when a device goes offline; vendor clouds read directly. Simulators for Modbus, PI Web API, Blackline Live and Safety Suite for commissioning without live instruments.
Gas Detectors board	Every detector on one board: a readings grid, a sortable table, a chart per gas, a wall of device screens, alarm events with corroboration, calibration readiness, filters by area and sensor type for sites with thousands of detectors, and an Excel export; signed exposure records per person and gas (STEL and 8-hour TWA).
Planning	Predefined scenarios for every unit, tank, rail spot and pipeline corridor, run in two clicks with the weather of the moment; worst-case auto-analysis of every Tier II or RMP chemical with distances and population; threat at a point for control rooms, muster points and the fence line; Detector Coverage, where your detectors would and would not catch a design leak, with their heights, open-path beams, building walls and three years of winds; a sensor placement study for new detectors, enabled on request; PRV sizing (NFPA 58, API 521).
Sites and users	Organizations with many sites under one administration; the multi-site readiness board; site sync; roles from responder to site and organization administrator; membership drives who receives alarm emails.

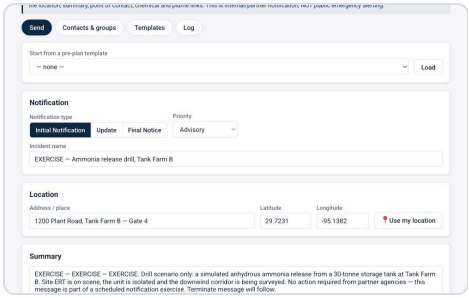
Personnel	Status board with PAR roll calls for the site and for an incident, roster joined by QR code, location shared while responding, head counting with geofences, Command Board for the plant fire brigade, incident chat with @mentions and push, and video calls with the brigade and mutual aid. Personnel Manager keeps every responder's own exposure record, started automatically at the On Scene check-in, with the gas readings around them; each member logs the Preliminary Exposure Reduction steps (NFPA 1851) from the phone.
Reports and exports	PDF and Word reports with the map, zones, impacted places, infiltration analysis and population; quick impacted report and source-locator report; KML/KMZ, Shapefile, CAP; history exports; weather briefing.
Delivery and security	Cloud service at ceres.vlahi.com, or a private deployment including a configuration for China with local map tiles and weather sources; phone and email support; a hardware compatibility review before start-up. Email and password with optional two-factor authentication, or Microsoft, Google or Apple accounts; protection against password guessing; roles per site; share links limited to what you publish.
Training	Story missions, Basics lessons and incident-command lessons for the brigade and the control room, played with the real tools on a private exercise incident; guided or tested with a qualification record; the chief's team matrix and curricula.
Runs on	Any modern browser on the control-room PC, the wall display, tablets and phones; iOS and Android apps; wallboard mode for the status board and readiness board. 11 languages including the help: English, French, Spanish, German, Chinese, Romanian, Dutch, Italian, Portuguese, Malay and Hebrew (Hebrew by link); every language but English on paid plans; metric or US units per user.



Moments one and two: area monitors and fixed detectors report onto the site map with the weather, and the alarms follow the readings.



Moment three: two detectors at a tank terminal drive a hydrogen sulfide scenario, and the places inside the zone are listed by distance.



Moment five: the call-down message from a pre-plan template, with the location, the plume link and the point of contact. The data shown is a drill.

Products

Four products and a free version, licensed per site. CERES First Responder is the communications product, for fire departments, and Vulnerability and Risk the hazard-modeling product, for planners; HAZMAT Team includes both, and Live Facility includes everything in HAZMAT Team. For a quote, write to sales@vlahi.com. Most plants start with Live Facility.

CERES Free

One responder, no cost

The ALOHA direct, puddle, tank and gas-pipe sources, the ERG, the map and past scenarios, plus the Command Board, the incident record, Training, Identify Chemical, the Chemical Profile and the free tools.

Vulnerability and Risk

Planners and EHS

Everything in CERES Free, plus the Pro models (fire, blast, boilover, battery, radiological, nuclear) and Pro calculators, the EPZ Directive 071 tool, vulnerability zones, threat at a point, population impact and head counting, your own predefined scenarios, Tier II, RMP, E2 and Seveso data, advanced reports, team location tracking, Incident Weather and CERES Docs and Sheets.

HAZMAT Team

Responders, police, military, CBRNE

Everything in CERES First Responder and in Vulnerability and Risk, for the whole team on one shared site, plus detectors and met stations, live weather and traffic, sensor-driven plumes and locate source, odor complaints, live camera video, a Command Board that works offline, and full history. Optional: SCICHEM puff dispersion with wind shifts, calm air, longer releases and complex terrain.

Live Facility

Plants, terminals, industrial parks

Everything in HAZMAT Team for your plant, with SCICHEM puff dispersion included: wind shifts, calm air, runs of up to eight hours, particulates, soot clouds and deposition, and continuous monitoring of your detectors and weather. Option: SCICHEM complex terrain*.

* Hills and valleys around the plant, at additional cost.

To the people who keep the plant safe

The best day at a plant is the one nobody outside it hears about. That takes a control room that trusts its alarms, a brigade that knows every unit, and neighbors who are told first. CERES Live Facility is built with plants that do this well, so they can keep doing it and show it. Doing a great job and keeping everyone safe is your work. Making it visible is ours.

Thank you for the days nobody hears about. Vlahi Systems

For a demonstration using your own site, write to **sales@vlahi.com** or call **+1 832-356-6669**.

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Model results are decision-support estimates and are no substitute for measurements, training and judgment on scene. Screenshots show demonstration scenarios; real addresses, dates and names in them are blurred. ALOHA and CAMEO are developed by the US EPA and NOAA. Blackline, Honeywell, RAE, Industrial Scientific, OSIsoft, AVEVA, Airmar, WeatherFlow and other names belong to their owners. CERES is a trademark of Vlahi Systems LLC. Revised October 2026. © 2017–2026 Vlahi Systems LLC.