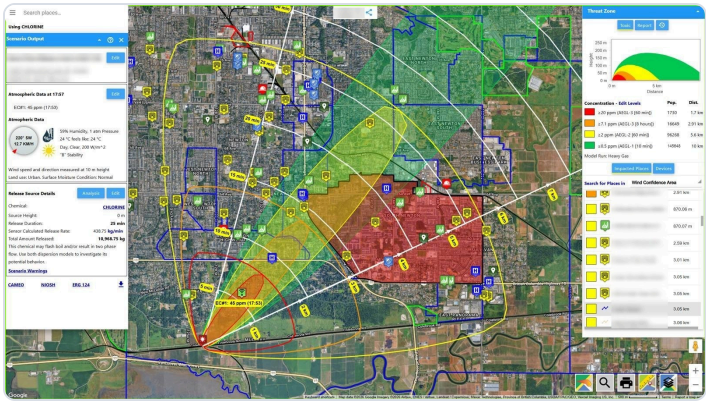
Everything CERES does, revised November 2026

Everything CERES does, on one page.

The product sheets tell the story from the responder's side and the plant's side. This page is the reference behind them: every capability of CERES, section by section, with the standard or data source behind each one, for procurement, RFP evaluators and anyone who needs the full list. Revised November 2026.

- **One platform for the whole incident: identify, model, protect, command, notify, record, plan and train**
- **Every model and every tool names its published basis**
- **Runs in any browser, nothing to install; iOS and Android apps; the Command Board works offline**



One detector reading over a city: four levels of concern, the people inside each by day and by night, where the plume goes if the wind shifts, and the places to call first.

Contents

1. Identification and chemical data
2. Hazard models
3. Terrain, maps and GIS
4. Live feeds
5. Weather
6. Detectors and live data
7. Protect the entry team
8. Decon and rehab
9. Medical and triage
10. Fireground, size-up and mitigation
11. Incident command and accountability
12. Collaboration and communication
13. Public notification
14. The incident record
15. Planning and compliance
16. Training
17. Platform, languages, security and support
18. Products

1. Identification and chemical data

CERES answers the first question of a call, what is it, from the clues a responder can read at a distance, then puts everything known about the chemical on one sourced page.

IDENTIFY CHEMICAL, FOR AN UNKNOWN PRODUCT

- **Markings:** the NFPA 704 diamond (health, flammability, instability, special), the DOT placard, UN number or ERG guide, the hazard class, the container or tank shape, a WMD class.
- **Physical properties:** state, color, odor, clarity, pH, vapor density, specific gravity.
- **Symptoms:** 74 observable signs grouped by body system; Best match sorts by how many each chemical explains.
- **Instrument readings:** what a PID shows for its lamp.
- **Test papers:** KI, F, M8 and M9 paper colors.
- **Stored nearby:** what the site's Tier II, RMP and Seveso imports and entered facilities hold around the point.
- **Search** by name, UN, formula or CAS tolerates prefixes, typos and phonetic spellings; a CAS with a bad check digit is flagged; Include unknowns keeps chemicals with missing data under a divider instead of eliminating them.
- **Beyond the library:** a typed name, CAS or UN is also looked up in CAMEO Chemicals and the ERG 2024.
- **What to expect:** the reverse lookup, how a known chemical should look, smell and behave on scene, with its ERG distances and symptoms.

- **Hand-off:** picking a candidate feeds the scenario dialog, the monitoring hazmat form or the Incident Desk.

CHEMICAL PROFILE, ONCE THE NAME, UN OR CAS IS KNOWN

- **One page:** hazards, exposure limits, PPE, first aid, ERG distances, GHS, combustion products and reactivity.
- **Every line with its source:** NIOSH Pocket Guide, CAMEO, DOT, USCG CHRIS, OSHA, EPA CompTox, Dutch intervention values.
- **Coverage:** the CERES library and every CAMEO chemical, with a lookup for chemicals outside both.
- **Warnings:** a corrosive-gas warning (likely Level A) for the gases of ERG guides 118, 124 and 125; explosives show their own ERG guide distances.
- **Sharing:** public read-only profile links with copy and revoke; a site's own notes and files per chemical.

THE CHEMICAL LIBRARY

- 1,300+ chemicals, solutions and mixtures from the ALOHA and CAMEO libraries, every property labeled with its source.
- Chemical and ERG material names in nine languages, taken from the official lists.
- Preset and custom levels of concern; the IDLH coverage extended and sourced.
- CERES Pro chemicals: gasoline, diesel, LPG, crude assays, formaldehyde solution, aqueous solutions, sulfuric acid solutions from 10 to 99 percent, warfare agents.
- A chemical-mixture generator with key-component modeling; a site's own chemicals first in every list; a published log of chemical-data corrections.

THE OTHER LOOKUPS

Tool	What it answers
SDS Search	A Safety Data Sheet by product, CAS or manufacturer, with cloud lookups, served as PDF.
Pesticide Lookup	A pesticide by registration number, brand or company (US, Canada, France, Germany, Netherlands): active ingredients, signal word, and whether CERES can model a plume.
Gas Cylinder Recognition	A cylinder from its color code, valve outlet and markings (CGA).
Vehicle VIN Look-Up	Make, model and power source (gasoline, diesel, EV, hybrid, hydrogen) from a VIN (NHTSA).
Vehicle Rescue Sheets	The manufacturer's rescue sheet by make, model and year, from the NHTSA and Euro NCAP collections.
Reactivity / Compatibility	Are two chemicals safe to mix (NOAA CAMEO matrix).
Binary Reaction	The toxic gas two chemicals make and its release rate.
Threat and Reaction Matrix	Several chemicals ranked by hazard, every pair crossed for reaction risks.
Clandestine Lab ID	The chemicals and equipment seen on scene ranked into the likely drug, explosive, toxic-gas or biological-toxin operation, with reference photos and the DEA listed chemicals.
Drugs of Abuse	The federally controlled substances by chemical, brand, street name or DEA code: schedule, narcotic status, responder cards by class, the DEA's own drug profiles.
Bio/CW Agents	Reference cards: incubation, signs, treatment, fatality, decon and isolation.
Infectious Disease	What the USAMRIID guide, the EMS playbook and CDC say, with current outbreak notices; or work from contact, travel and signs.

2. Hazard models

Every model takes the same weather and site data, draws on the same map with the same levels of concern, and is documented with its published basis. The ALOHA algorithms run natively in CERES and are checked run for run against ALOHA output; scenarios import from ALOHA.

Model	What it answers	Basis	Tier
ERG 2024 events	Isolation and protective-action distances for hazmat (Tables 1 and 3), IED, BLEVE, chemical-warfare agents, pipeline (PERG) and EV fire events, turned to the live wind, with the guide page, CAMEO data and the people inside each distance.	ERG 2024, DHS-ATF, Pipeline ERG	FREE

Model	What it answers	Basis	Tier
Gaussian dispersion	Downwind concentration of a neutrally buoyant cloud, indoors and outdoors.	ALOHA, US EPA and NOAA	FREE
Heavy-gas dispersion	Dense clouds that hug the ground: chlorine, ammonia, LPG, refrigerated liquids.	ALOHA, DEGADIS-based	FREE
Direct source	An instantaneous or continuous release of a known amount at any height.	ALOHA	FREE
Puddle	An evaporating or boiling pool on land or water.	ALOHA	FREE
Tank	Liquid, gas or two-phase release through a hole or valve; the RAILCAR 4 mist-pool term for pressurized tank cars; container presets from the Vessel Library.	ALOHA; RAILCAR 4, DHS Jack Rabbit tests	FREE
Gas pipe	A ruptured gas pipeline, connected or isolated.	ALOHA	FREE
Liquid flow	A continuous spill feeding an evaporating pool, rate and pool growth together; can burn as a pool fire.	CERES, ALOHA puddle physics	PRO
Liquid pipeline	A breached liquid line: drain-down, flashing vapor, the rained-out pool, isolation presets.	CERES	PRO
Stack and jet	Elevated stack or pressurized jet releases, the ignited jet-fire case, a flare mode.	CERES	PRO
Elevated heavy gas	Dense vapor released at height: descent, touchdown, the ground-hugging cloud.	CERES	PRO
Binary reaction	Two chemicals mix and make a toxic gas: product, rate and plume.	CERES, CAMEO reactivity	PRO
Water-reactive spills	Titanium tetrachloride, phosphorus trichloride, oleum: the acid-gas cloud from the reaction.	CERES	PRO
Petroleum and crude	Benchmark crudes and refined fuels with assay-grounded properties; sulfur-bearing mixtures burning as their SO_2 plume.	CERES, published assays	PRO
Release over time	A release rate that changes minute by minute.	CERES	PRO
Indoor release, outdoor plume	A cylinder or line failing inside a building: the indoor concentration minute by minute and the exhaust as a plume at the vent.	CERES	PRO
Pool fire	Thermal radiation zones around a burning pool.	ALOHA	FREE
Jet fire	Flame length and radiation zones from an ignited pressurized release.	ALOHA	FREE
BLEVE fireball	Fireball size, duration and dose zones from a tank failing in fire, two fragment rings, the pool fire of the remaining liquid; hydrogen fireballs from the SH2IFT liquid-hydrogen tests.	ALOHA; ERG 2024; CCPS	FREE
Flash fire	The flammable area of a drifting cloud at fractions of the LFL.	ALOHA	FREE
Pool-fire radiation	Validated flame geometry and smoke obscuration for large pools; measured burning rates per fuel.	POOLFIRE6-class	PRO
Liquid-pipe jet fire	Jet-flame geometry and radiation from an ignited liquid line; nine fuels from hydrogen to n-hexane.	Sandia HyRAM	PRO
Boilover	Time to boilover of a crude or fuel-oil tank fire, thermal-dose rings, the ejection zone, the smoke plume.	INERIS Omega-13	PRO

Model	What it answers	Basis	Tier
BESS battery fire	Heat-flux rings scaled from stored energy, the HF plume, the vent-gas explosion case.	CERES, published BESS tests	PRO
EV fire	Safe separation distances and heat flux from a burning electric vehicle; farm tractor class included.	UL FSRI	PRO
Smoke, soot, deposition	Every burning scenario also carries its PM2.5 smoke plume, SO_2 reach and soot fallout.	CERES	PRO
Fire Smoke and Gases	Any material, chemical or burn list put on the map as smoke bands and fallout, or as one of eleven combustion gases (below).	Products of Combustion	PRO
Vapor cloud explosion	Overpressure zones when a flammable cloud ignites.	ALOHA	FREE
VCE in congested areas	Rings at 8, 3.5 and 1 psi, standalone or from a live dispersion run, sized from a room, building or culvert.	Baker-Strehlow-Tang	PRO
Solid blast	Overpressure and fragment rings from a charge or a TNT-equivalent mass; published equivalences; storage types.	Kingery-Bulmash; UN IATG	PRO
Gas cylinder burst	Blast and fragment rings from a cylinder rupture; CO_2 as a flashing liquid.	Molkov-Kashkarov	PRO
Vent-stack explosion	A flammable stack cloud exploding at its height, with the ground reach of the blast.	CERES	PRO
Nuclear detonation	Blast, thermal, radiation and flash zones by yield and burst height; fallout on NOAA winds aloft.	Glasstone-Dolan; WSEG-10	PRO
Dirty bomb	Blast zone and the downwind dose and contamination plume; REMM distances beside the modeled zones.	HotSpot method	PRO
Sensor-driven plume	Live detector readings set the release rate; the footprint updates as detectors report.	CERES	HAZMAT TEAM
Locate source	Works back from the concentration pattern across the detectors toward the origin.	CERES	HAZMAT TEAM
Sensor placement	Fixed-detector siting along a fence line from predefined scenarios and the wind rose (on request).	CERES	PRO
Combined scenarios	Several releases merged into one plume picture; several threat zones on one run.	CERES	PRO
Oil spill on water	Drift, spreading and weathering on rivers, harbors and coasts, with booms, skimmers, burns, dams and tides (below).	CERES, NOAA methods	PRO
SCICHEM	Three-dimensional puffs through wind shifts, calm air, hills, valleys and large buildings; vertical profiles, particulates, soot deposition; runs of up to eight hours.	SCICHEM (EPRI)	LIVE FACILITY

Free: any account. Pro: Vulnerability and Risk, HAZMAT Team and Live Facility. HAZMAT Team: with the detectors of a HAZMAT Team or Live Facility site. SCICHEM is an optional module for HAZMAT Team and included with Live Facility.

WE CAN BURN ANYTHING: FIRE SMOKE AND GASES

- **Input:** any material or chemical, or a whole burn list (a car plus a stack of tires), with the amount, the share that burns, the fire condition (open, enclosed, smoldering) and the duration.
- **Materials in the list:** brush, vegetation, trees, leaves, slash, chips, mulch, yard waste, Christmas trees; wood, pallets, paper, cotton, wool, grain and silos; tires, vehicles, electronics, waste; PVC, polyethylene, polypropylene, polystyrene, PET, PMMA, nylon, ABS, acrylic, PIR, PTFE, composites; coal, bitumen, crude, diesel, gasoline, and light, medium and heavy fuel oils.
- **Smoke:** the PM2.5 bands (the fire-response set or the 24-hour air-quality set) and the soot-fallout corridor.

- **Gases:** or one of the gases it makes, at its AEGL-3, 2 and 1: CO, HCl, HCN, HF, HBr, Cl_2, NO_2, SO_2, NH_3, acrolein, formaldehyde; the others are listed with their reach, and one click runs the same fire for another of them.
- **Everywhere else:** a receptor in the smoke reads as a threat at a point; every pool, jet, BLEVE, boilover, EV and BESS fire carries its own smoke rows.

OIL SPILL ON WATER

- Drift, spreading and weathering of oil and fuel on forecast currents, for US coasts, bays and the Great Lakes and for the open sea.
- On rivers, the oil follows the channel with the live gauge flow, past dams, weirs and tributaries, and the tide where it reaches.
- Booms, skimmers and in-situ burns are entered as barriers and actions; pre-planned boom sites are on the map.
- Trace downstream from here shows where the water passing a point is after 1, 2 and 6 hours, before any spill is modeled.

WHAT EVERY RUN GIVES

- **Levels of concern:** up to four, from AEGL, ERPG, PAC/TEEL, IDLH, fractions of the LEL, kW/m^2, psi, INERIS and Dutch thresholds, or your own values.
- **People:** the population inside each zone by day and by night (a weekday release over an office park at 2 pm meets the people working there), or residents from the census, chosen per site; or your own population drawings for the hours they apply.
- **Places:** impacted places, zones, neighborhoods, municipalities, roads, rail lines and parks identified automatically and sorted by distance.
- **Time and wind:** a time slider in five-minute steps with footprint and snapshot views; the downwind time cone; wind-confidence lines for a backing or veering wind; a 360-degree vulnerability zone for planning; a forecast-aware wind cone; a 3D view of the cloud.
- **Threat at a point:** the indoor and outdoor concentration and dose over the first hour at any address, by building type, with a blast tab on native runs; infiltration analysis for many receptors in one report.
- **Zones and ground:** control zones (hot, warm, cold, exclusion) suggested from the run and refined by monitoring; a heavy-gas side view along the centerline; the ground charted along every plume with a warning when it is too uneven for a flat-ground model.
- **Record:** scenario history for every run; head counting in ERG output.

VESSEL LIBRARY

- Ready-made scenarios for the vessels responders actually meet, authored with a county hazmat team from the published tables and container specifications.
- Rail tank cars (DOT-105, 112, 114), MC-331 tankers and B-trains, bobtails, nurse tanks, chlorine cylinders and ton containers, propane from a 20 lb grill cylinder to 30,000 gal bulk storage, ISO, barge and European tanks.
- A template carries the vessel, fill, chemical and failure mode; the hole size, temperature, levels and weather are entered at run time. Transport Containers hands any of them to a Tank scenario with the legal maximum load.

3. Terrain, maps and GIS

Every plume is charted against the real ground, and the GIS layers a team used to build by hand now load by themselves wherever the map is looking.

TERRAIN

- Elevation from USGS and the national lidar and elevation services in the United States, Canada, the United Kingdom, France, the Netherlands, Norway and Australia, and a global model everywhere else.
- CERES warns when the ground is too uneven for a flat-ground model, draws a side view of a heavy-gas cloud along the centerline, gives an elevation profile in the ruler, and carries complex terrain in SCICHEM.

BASE MAPS AND IMAGERY

- **Backgrounds:** Google Maps (road, satellite, Street View, live traffic, Places search) or OpenStreetMap; a background for mainland China; a blank background for air-gapped servers; a site's own offline tile pack or tile server.
- **Overlays:** your own high-resolution imagery; KML/KMZ and WMS layers; a site plan image placed from two known points and kept as a layer.
- **Tools:** drawing and measurement for emission sources, sensitive receptors, assets, fencelines and zones; location search for addresses, places, coordinates in any notation, railroad crossings and highway mile markers.
- **Places:** Google Places import for the receptors inside a threat zone, with an optional review before saving; copying a place with its inventory, scenarios, contacts and files.

LAYERS THAT LOAD BY THEMSELVES, WORLDWIDE

- **Rail:** lines, yards, sidings, light rail and metros, drawn as the railroad a responder names, with operator, usage, tracks, electrification and speed.
- **Roads:** motorway to secondary roads with lanes, speed limit, toll and dangerous-goods rules: designated hazmat routes, prohibitions, tunnel categories.
- **Water:** rivers, streams and canals with flow-direction arrows, the same waterways an oil spill follows.

- **People and places:** neighborhoods, suburbs and districts with kind and population; municipalities with population; parks; airports with IATA and ICAO codes; stadiums with capacity; points of interest.
- **Listed for you:** while a layer is on, the features inside the wind cone, the plume or a Locate Source area appear among the impacted places (the roads to close, the neighborhoods affected, people in the open) and the possible emission sources.

OTHER REFERENCE LAYERS

- NPMS pipelines with their predefined scenarios.
- Railroad crossings and mileposts from the official inventories (FRA in the US, Transport Canada) and from OpenStreetMap elsewhere.
- Fire hydrants; pre-planned boom sites; protected lands (USGS PAD-US); FEMA flood zones; EPZ and EAZ emergency zones.
- Tier II, RMP, Seveso and E2 facilities; census population.

4. Live feeds

Live feeds put the wider situation on the map as layers a user toggles; an administrator switches them on per site. Several hazard feeds share an area of interest and raise an alarm when a threshold is crossed: earthquake magnitude, wildfire confidence, air-quality AQI, flood stage, or the number of customers without power.

Group	Layer	What it shows
Weather	Weather alerts	Official watches, warnings and advisories, severe weather and hazmat incidents (US, Canada, international).
Weather	Weather radar	Precipitation radar: NEXRAD for the US and international coverage.
Weather	Tsunami warnings	Active tsunami watches and warnings (NOAA).
Weather	Wind field	Surface wind speed and direction across the area.
Environmental	Air quality	Readings from nearby public and community sensors, PurpleAir included, with an AQI alarm.
Environmental	Earthquakes	Recent seismic events and magnitudes (USGS).
Environmental	Wildfires	Active fire detections and extent (NASA FIRMS).
Environmental	Flood gauges	River and stream levels from monitoring gauges (USGS).
Environmental	FEMA flood zones	Mapped flood-hazard areas (FEMA, US).
Environmental	Rivers and flow direction	Rivers, streams and canals with flow arrows.
Environmental	Railroads and rail yards	Running lines, yards, sidings, light rail, trams and metros.
Environmental	Roads and highways	Motorway to secondary roads with lanes, speed, toll and dangerous-goods rules.
Environmental	Protected lands	Parks, refuges and protected areas (USGS PAD-US).
Infrastructure	Power outages	Current electrical outages by area (US).
Infrastructure	Fire hydrants	Hydrant locations near the incident.
Infrastructure	Live traffic	Current road-traffic conditions.
Infrastructure	Points of interest	Buildings, hydrants, rail, waterways and other map features.
Infrastructure	Railroad crossings	Level crossings from the official inventories where they exist, elsewhere from the map data.
Infrastructure	Neighborhoods	Named neighborhoods, suburbs, quarters and districts with kind and population.
Infrastructure	Municipalities	Municipality outlines and names worldwide, with population.
Infrastructure	Parks, airports, stadiums	Named parks, airports with IATA/ICAO codes, stadiums with capacity.
Maritime	Vessels (AIS)	Live ship positions and details, with hazardous-cargo flags.
Maritime	Maritime markers	Buoys, beacons and other aids to navigation.

Group	Layer	What it shows
Maritime	Pre-planned boom sites	Geographic Response Plan boom deployment sites for an oil spill.

5. Weather

CERES reads the weather from the nearest reliable source, sets the stability class and the ERG day or night for you, and keeps an incident's weather for the whole response.

SOURCES

- The Weather Company: current conditions, hourly and 15-minute forecasts, the last 24 hours of observations; stations nearest first, stale readings flagged.
- The NWS point forecast in Incident Weather; reanalysis weather for incidents in the past, back to 1940.
- Manual entry from the scene; automatic stability class and ERG day or night; forecast fields for SCICHEM.

YOUR OWN STATIONS

- AreaRAE Pro, WeatherPak, Columbia, Vaisala, AIRMAR, WeatherFlow Tempest and WeatherSTEM units; Modbus and PI connections; personal weather stations on request.
- Wind, temperature, humidity, pressure and solar radiation archived at one-minute resolution; sensor history and exports.
- Met thresholds and alarms: lightning by the NWS 30/30 rule, heavy rain, high wind, temperature.
- Weather API links: an outside system reads a site's stations through named links that can be revoked one by one.

INCIDENT WEATHER AND THE INCIDENT WEATHER RECORD

- The forecast read as a hazmat size-up: where a release goes and the sector it can reach, the stability class, the changes in the operational period, heat, cold, lightning and rain for the crews, past weather, and a briefing to paste or export.
- Once an incident has a location, CERES records its weather for the whole response: your station when one reports nearby, otherwise the forecast service at the location; official alerts kept and logged; a forecast snapshot every three hours and at each new operational period.
- The record feeds the ICS 202 weather attachment and a Weather page in the planning packet; at close a summary goes on the log and the after-action report carries one reading an hour.

6. Detectors and live data

Every gas detector a site receives, whatever the make, lands on one board and one map, feeds the plume, and leaves a sealed exposure record per person.

MAKES AND PROTOCOLS

- Blackline Live (G7, EXO, M7); Honeywell Safety Suite (MultiRAE, AreaRAE, AreaRAE Pro); Industrial Scientific iNet (Ventis Pro, Radius); AccuSense and Thiamis units.
- Modbus, OPC, PI Web API, AVEVA CONNECT (on request), MQTT and serial through a CERES data-acquisition unit; an interface for your own systems to push readings.
- Alarms: up to three escalating levels per sensor plus a saturation level.

GAS DETECTORS BOARD

- Fixed, area, personal and manual readings on the live map, with the active alarms and the latest readings against their alarm levels.
- A readings grid, a sortable table, a chart per gas over 1, 8 or 24 hours, a wall of device screens that turns its own pages, the fleet, a calibration readiness verdict per unit.
- Alarm events with corroboration; the incident declared or opened from an alarm; Locate Source from a gas event; every site you belong to; an Excel export of exactly what the screen shows; a dark theme and a phone layout.

EXPOSURE RECORDS

- From detector datalogs and manual readings: one signed and sealed record per person and gas against the site's own limits, with the STEL and the 8-hour TWA.

AIR MONITORING AND SAMPLING

- The readings the entry team calls in (instrument, channel, value, where, when), logged in a few taps with gloves on, sealed into the activity log, shown on the monitoring map for everyone and fed to the sensor-driven plume while fresh; the site's own instrument feeds beside them.
- Samples with a full chain of custody: both parties, how the sample is held, signatures, custody and submission forms, a sub-sample with its own number and chain; a white-powder call with its notifications and exposed list; every custody event a sealed line on the incident log with its photo.

DETECTOR COVERAGE AND SIMULATORS

- **Detector Coverage:** where the site's fixed detectors would and would not catch a leak of a design size, with each detector's mounting height against the cloud's, open-path beams, building walls, one wind direction or three years of winds, over satellite imagery, with one- or two-detector voting.
- **Simulators:** a sensor and device simulator with manufacturer presets, a custom build or a clone of a live device, for drills and commissioning; integration simulators for every supported make, run by Vlahi when commissioning a site's interfaces.

7. Protect the entry team

Five calculators answer what the suit stops, how long the air lasts, what the meter is really reading and how long a crew can stay in.

- **CPC Breakthrough:** chemical-suit and glove breakthrough times by chemical (ASTM F739), with suits and gloves from eight makers and current manufacturer data sheets.
- **Respiratory Protection:** the legal respirator class (OSHA 1910.134) and the SCBA air time at the work rate.
- **APR Canister and Life:** whether a canister or cartridge protects against a chemical, and for how many minutes.
- **Detector Correction:** PID and LEL correction factors and the true concentration from a meter reading, by chemical and instrument, with the catalytic-bead LEL tables and the detector-tube tables.
- **Heat Stress and Stay Time:** the work and rest cycle, fluids and monitoring cadence in protective clothing, from temperature, humidity and work rate.

8. Decon and rehab

Decon is decided, sized and recorded in the field, and the crews' recovery is run against NFPA 1584.

- **Decontamination Advisor:** is wet decon worth it, from volatility and time urgency, then the disrobe and wet or dry decon steps (CHEMM, PRISM, IOR).
- **Technical Decon:** can this product decontaminate this contaminant on this surface; every answer names who says so (a regulator, a standards body, a published test or the maker) and the day it was checked.
- **Decon Runoff and Containment:** how much contaminated water decon makes, whether the berm or pool holds it, plus drums, totes and absorbent.
- **Disinfectant Finder:** which EPA-registered disinfectants kill this pathogen and how long the surface must stay wet, by disease or EPA Reg. No., read from EPA's own lists, with what your agency carries marked.
- **The decon line** with its stations and accountability on the Command Board.
- **Post-Fire Preliminary Exposure Reduction (NFPA 1851):** the on-scene decon of each firefighter's gear logged from the phone (method, gear elements, the NIOSH follow-through with the time of each step), reaching the incident log and the exposure record.
- **Rehab Tracker (NFPA 1584):** check crews in from the Command Board with one tap, capture vitals and the medical screening against the NFPA 1584 gates, time the rest cycle, log fluids, release or transport, with pre-entry hazmat baselines and every step optional per agency.

9. Medical and triage

From the first symptom to the antidote, and from a mass-casualty sort to a radiation dose, each tool names the guideline behind it.

- **Toxidrome:** the likely toxic syndrome and antidote from the patient's signs (CHEMM and WISER rules), opening the matching drug cards.
- **Antidote Dosing:** weight-based mg and mL dosing for hazmat and CBRN antidotes (CHEMM, REMM, FDA); fixed-dose products return their regimen, never mg/kg.
- **Bio/CW Agents** cards and **Infectious Disease** (USAMRIID guide, EMS playbook, CDC notices), free on every plan.
- **Triage Tracker:** tag mass-casualty patients by color in two taps (START, SALT or RAMP questions), live counts, photos, hospitals placed on the map and alerted through Notify, patient records sent to the offered hospitals, a triage report.
- **START / JumpSTART** (adult and pediatric), **SALT** (the US all-hazards method) and **Burn Triage** (percent TBSA by Rule of Nines or age-adjusted Lund-Browder, the Parkland or Brooke starting rate, ABA burn-center referral criteria).
- **Radiation set:** the Radiation Calculator (unit conversion, gamma dose rate, stay time, fallout decay), Radiation Dose from Vomiting (AFRRI BAT, Demidenko), ARS Management (REMM, Waselenko), Radiation Countermeasures (potassium iodide, Prussian blue, Ca/Zn-DTPA, myeloid cytokines) and Scarce-Resource Radiation Triage (REMM).

10. Fireground, size-up and mitigation

Four water calculators for the engine company, and the size-up set for how much is out and what it takes to make it safe.

Tool	What it answers
Foam Application	Foam supply: flow, concentrate and water per NFPA 11.
Hose Friction Loss	Friction loss and the required pump discharge pressure for a hose lay (NFPA, IFSTA).
Drafting / Suction Lift	The maximum safe lift from static water by altitude, water temperature and cavitation.
Fire Flow and Water Supply	How much water the fire needs (NFA, Iowa, ISO, NFPA 1142), what hydrants and tanker shuttles deliver, and whether it is enough.
Tank Volume	Capacity by shape and dimensions and the liquid volume from a level; a horizontal tank on its side, oval road cargo tanks, dished and hemispherical ends, LP tanks at 80 percent fill.
Spill Volume	Volume and mass from the puddle footprint and depth; an oil-on-water mode by the Bonn Agreement appearance code; hands off to neutralization, absorbent and evaporation.
Mass to Volume	Pounds or kilograms to gallons or liters and back for any chemical at its temperature, with the scenarios' own density data.
Transport Containers	Rail car, cargo tank, ISO tank and barge presets with the legal maximum load, to pre-fill a Tank scenario.
Dilution	Water to render a spill safe, by chemical (peroxides, acids, bases, bleach, UAN, ferric chloride, formalin, alcohols) or by pH, with a feasibility verdict and safety notes.
Neutralization	Neutralizing-agent mass for an acid or base spill by chemical equivalents, with exotherm, gas and HF safety notes.
Absorption	How much sorbent (clay, polypropylene, peat and more) to bring for a liquid spill, with the bag count and the HF warnings.
Ventilation	Time to clear an indoor space to a safe level, and the air changes required.
Solution and Liquid Spill Evaporation	The evaporation rate of an aqueous or pure liquid spill, how long the puddle lasts, ready to feed a plume.
Cryogen O_2 Displacement	Oxygen left in a confined space after a cryogenic or gas release: no-entry verdict, maximum safe quantity, time to hazard (EIGA, OSHA).
Spill to Water	Flammable vapor in the storm drains, river dilution and travel time, whether it floats, sinks, dissolves or evaporates (SEBC), intake closure against EPA benchmarks.

11. Incident command and accountability

The Command Board, the status tools and the Incident Manager keep every crew member accounted for and write the ICS paperwork as the incident runs.

COMMAND BOARD

- Drag crews onto assignments; one-tap PAR; air and work-cycle timers; MAYDAY; alarms that sound until acknowledged.
- The ICS 214 log writing itself; ICS 201 and 211 exports; the ICS 207 org chart on a second screen; a decon line with stations; units placed on the incident map; cards and sections edited on the board itself.
- Works without a connection.

PEOPLE

- **My Status** from the phone: Available, On-Duty, Responding with destination and ETA, On Scene; GPS shared only while responding; every change logged to the ICS 214.
- **Team/Site Status Board:** live roster, per-status counts, teams, officer overrides, PAR roll calls, a responder-emergency alarm, wallboard mode; **Multi-Site Readiness** across every site you may see.
- **Roster by QR code** with a phone-only Status and Tasks role; responder location drawn against the wind cone and the zones.
- **Personnel Manager:** one page per person with every incident from the exposure record, hot-zone minutes, PPE, SCBA, rehab, decon, chemicals with CAS, gas-detector records, training and the ICS 214 log; officers see everyone, each member sees and downloads their own.

THE RECORD AND THE COMMAND POST

- **Incident Manager:** header, tasks, operational periods, a live activity log with responder, ICS role, time and tags; an incident location set by dispatch, the facility on file or a responder, with Directions and Weather.

- **Incident Sketch and Mark-Up:** freehand or over a graph board, an aircraft outline, the DOT/MC cargo-tank and rail-car family, a photo or the live map; NIMS symbols; tank compartments tagged with product and status; a wind arrow; print or post to the board.
- **Open Action Tracker (ICS 233)**, **Cost Review** against published rate schedules with the FEMA schedule loadable, and the **Coordinate Converter** (any notation in, all out, offline).
- **Incident Desk:** tools open in windows side by side, attached to the incident, so every input and answer lands in the record and is shared live with the crew.

FROM DISPATCH

- CAD e-mails and text messages become incidents, placed at the street they name, with the Tier II facilities nearby checked; a held inbox and automatic declaration for trusted senders; dispatch links pasted in the chat become unit cards and a dispatcher timeline.

ICS FORMS AND PACKETS

- Ten FEMA ICS forms filled from the record: 201, 202, 203, 204, 205, 207, 208, 211, 214, 233.
- A personal ICS 214 and a CAN report (conditions, actions, needs) from the phone; the IAP packet; the ICS 202 weather attachment; the after-action export; Word or PDF.

12. Collaboration and communication

The team, its mutual-aid partners and the county work on the same picture: chat, calls, shared documents and links, with every exchange part of the incident record.

CERES CHAT

- Channels for the site and for every incident, private messages, photos and files, @mentions and push notifications.
- Plumes and tool results shared as cards; every message sealed as part of the incident record; a channel exported as a PDF; team channels shared with a linked partner agency.

CERES VIDEO AND VOICE

- Calls start from any chat conversation; an incident's own call pages the crew and is recorded, with start and end on the incident log.
- Calls on any other channel, camera-off huddles inside the chat, a waiting room for guests from outside CERES, live camera video.
- A Photos and video table of every recording with verification records, legal hold and delete for administrators.
- Calls ring on every open CERES page and on the phones; HAZMAT Team includes unlimited minutes and recording on every level.

CERES DOCS AND SHEETS

- Documents and spreadsheets written together in the browser, with comments, mentions, version history, Word, Excel and CSV import, charts and pivot tables, attached to the incident with their kept versions in the record.

SHARING AND MUTUAL AID

- Share links that partners open without an account; a public common-operating-picture link for an EOC wall or a public-information channel, opened with the layers you had on.
- Share view only: a frozen copy of any tool result at a short public address; e-mailed reports to Contacts and Resources groups.
- Site sharing of detectors and met stations with a partner site during an incident.
- Linked incidents between CERES accounts: an approved partner agency reads the map, copies scenarios, sees the shared sensors and the host's Command Boards read-only, and shares team channels.
- Status boards on digital signage; site-to-site sync of zones and places between the sites you administer, with preview and undo; remote support.

TEAM RESOURCES

- **Contacts and Resources:** the response phone book (dispatch, hospitals, CHEMTREC, key people), kept current by administrators, with groups that feed the call-down and the report e-mails.
- **Agency Equipment:** the fans, gas meters, PPE and respirator cartridges the agency carries, pinned and highlighted across the tools.
- **Useful Links** (CERES references and manuals plus the links administrators add) and **Rate Schedules** (the published equipment rates incident bills are priced from).

13. Public notification

CERES notifies the call-down list itself and drafts the public alert for the authority that issues it.

INCIDENT NOTIFICATION

- Call-down of your own list and partner agencies by e-mail, SMS and voice, from pre-plan templates, with location, summary, point of contact, chemical, plume links and photos.

- Groups; a per-recipient delivery log; a monthly allowance of messages included, or your own Twilio account; every text ends with a STOP line and contacts carry consent notes; hospitals in the phone book are reachable.

PUBLIC ALERT PRO

- A CAP 1.2 alert drafted from a run's threat zones or an incident's zones, shelter or evacuate, with simplified areas, recipients, Update and Cancel, a log and a zone map.
- Sent to the call-down groups by e-mail and SMS with the CAP file attached, and handed to the county or EOC operator who issues the public warning; the evacuation instruction reads the same in all 11 languages.

EXPORTS

- KMZ/KML, Esri shapefile and CAP from the report dialog for every report type; NetCDF for SCICHEM fields; weather-alert and weather-briefing exports.

14. The incident record

Everything that happens on an incident is recorded by itself into one package, sealed so a later change shows, and comes out as the forms, reports and files a review needs.

WHAT IS SEALED

- A chained activity log that shows any later change.
- Photos sealed with their time, GPS position and accuracy and compass direction, the full-size file kept exactly as it arrived; a swapped, edited or re-dated photo shows in red on Verify record.
- The chat, the call recordings, the samples and every custody event, every tool result and plume run, the weather record, costs, responder exposure records and scenario history for every run.

WHAT COMES OUT

- The ten FEMA ICS forms, a personal ICS 214 and a CAN report, the IAP packet.
- PDF and Word reports with map imagery, zones, population, impacted places, infiltration analysis and the plume-analysis charts, a Scenario Warnings table and head counting.
- The chat as a PDF; custody forms and reports as CERES Docs; a Verification record (PDF) that lets a court or an insurer check a file against its record without CERES; the after-action ZIP; KML/KMZ, shapefile and CAP exports; share links and the public link.

15. Planning and compliance

The inventory, the worst case and the pre-plan live on the same map as the response.

- **Tier II Facilities:** import Tier II XML, Tier2 Manager and E-Plan exports, Canadian E2 and CAMEO data; facility pages with chemicals (EHS and TPQ), scenarios, 24-hour contacts, site plans and Street View; county-level data with every level, the statewide dataset with Level 3.
- **Online filing:** facilities file their Tier II report through the site's public link for the planners to review and accept.
- **Seveso sites and classified installations (France):** imported from the national register, département by département, with each site's rubriques and declared quantities, labeled by tier, and predefined scenarios generated for the chemicals identified.
- **RMP inventories**, with the largest container as the RMP quantity; **Tier II Summary Reports** (the EPCRA inventory rolled up across the site, totals, extremely hazardous substances, CSV export).
- **Worst-Case Auto-Analysis:** the worst-case release batch-modeled for every Tier II or RMP facility chemical, with distances, population, stacked footprints and influencing facilities.
- **Predefined scenarios:** a library for site-specific and transportation events, pre-plans and drills, response and planning modes; the Vessel Library templates, copied from the library and upgraded when it changes.
- **Sensor placement study** for a fence line, from the predefined scenarios and the wind rose (on request); **Detector Coverage** for an existing layout.
- **EPZ Directive 071:** the Alberta emergency planning zone study of a facility.
- **PRV Sizing:** a relief valve sized for fire engulfment (NFPA 58, ANSI K61.1, API 521).
- **Site sync:** zones and places kept in step between the sites you administer, with preview and undo; copying a place carries its inventory, scenarios, contacts and files.

16. Training

The Training module teaches CERES with the real tools, step by step, and records who is qualified.

- **Six story missions** played on a private exercise incident, so nobody is paged: guided mode teaches with hints and tours; tested mode records a qualification with an expiry.
- **Basics lessons**, close to forty, on the workspace, chemicals, levels of concern, weather, running models, PPE, decon, radiation and blast standoff, spills and fires, batteries, fireworks, vent stacks, neutralizing and diluting, boilover and BESS fires.
- **Three incident-command lessons:** taking command, the roster and the record, accountability.

- **The chief's Team tab** with the matrix, curricula and assignments; progress stays on each member's record.
- A how-to tour on every tool, most with a practice mode; HSEEP-style ratings and after-action review; remote training sessions with the setup.

17. Platform, languages, security and support

- **Runs on:** any modern browser on Windows, macOS, Linux, iOS and Android, nothing to install; iOS and Android apps with push notifications, background location for responder tracking, calls that ring over the lock screen, exports saved to the phone; the Command Board and the coordinate converter work offline.
- **Languages and units:** eleven languages including the help: English, French, Spanish, German, Chinese, Romanian, Dutch, Italian, Portuguese, Malay and Hebrew (right to left throughout); every language but English on paid plans; metric or US units per user.
- **Sign-in:** e-mail and password with optional two-factor authentication per site, or Microsoft, Google and Apple accounts; password policies and protection against password guessing.
- **Roles and links:** from phone-only responder to site and organization administrator; share links limited to what you publish, with a per-site expiry.
- **Audit:** security events written to the log; deletions recorded with who and when.
- **Administration:** every admin item on one Administration page: users and roles, sensors and interfaces, alarm levels, predefined scenarios, feeds and layers, control-zone buffers, ICS form preferences, public-link expiry, imports, chemicals, sensor names; organization administration across sites.
- **Delivery and support:** cloud service at ceres.vlahi.com, updated continuously, or a private deployment; 24/7 e-mail support with a reply by the next business day and telephone support during CST business hours; help in every language, with a tour on every tool.

18. 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. Users are unlimited within the licensed team; mutual-aid partners and guests join an incident through share links. For a quote, write to sales@vlahi.com.

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.

CERES First Responder

Fire departments

Everything in CERES Free, plus chat and video, My Status and the status board with PAR and MAYDAY, field photos, the shared triage list, CERES Docs and Sheets, public alerts and SMS call-down, the equipment register with its due dates, Incident Weather and the eleven fire and rescue calculators, for a department without a hazmat team.

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.

Try CERES free at **ceres.vlahi.com**. For a walkthrough or a question, write to **sales@vlahi.com** or call **+1 832-356-6669**.

Prices in US dollars, per department and per year, renewed automatically until cancelled. Screenshots show demonstration incidents; real addresses, dates and names in them are blurred.