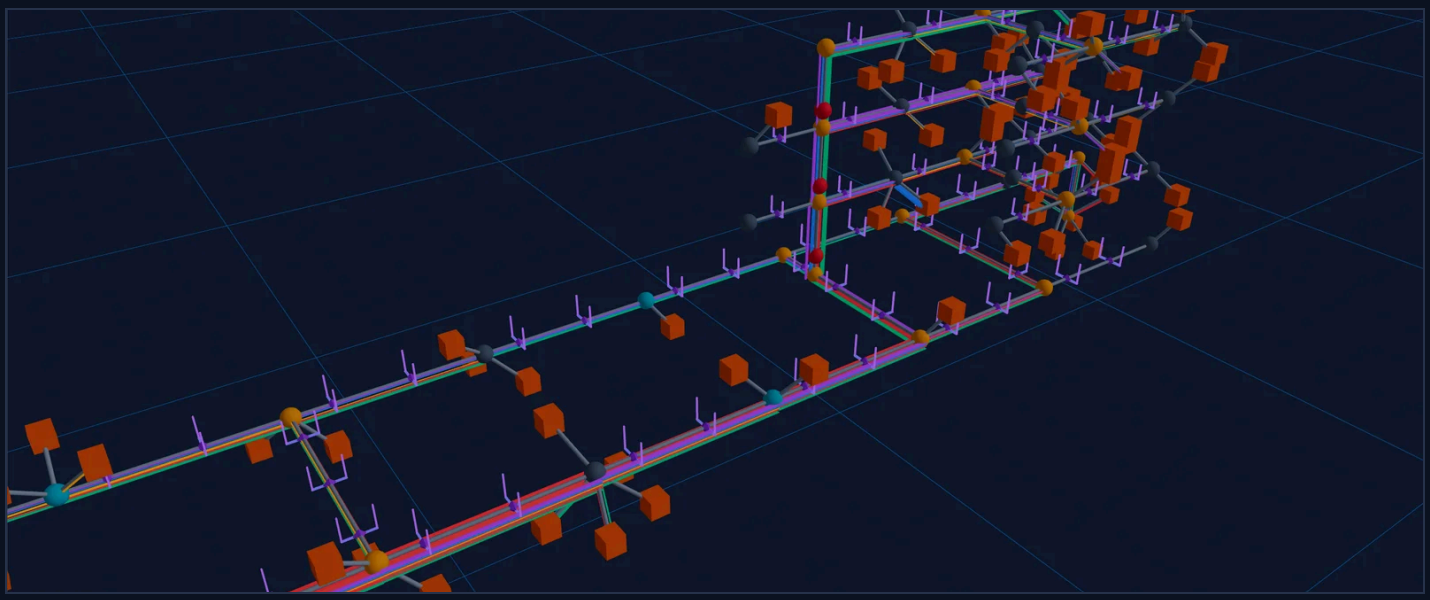
HIGH VOLTAGE TECHNOLOGIES · PLATFORM GUIDE

Unreal Routing

Every feature, and how it all works together.

Marine cable routing, compliance and shop-floor software. The tray network, every circuit, the marine electrical rules and the shop floor share one database — used from the browser, AutoCAD, Navisworks and Revit. This guide covers all 90 capabilities, grouped the way a vessel moves through the job.



THE APP'S OWN 3D VIEW · SYNTHETIC 280 FT SUPPLY VESSEL · 223 CIRCUITS ROUTED IN ONE BATCH PASS

26	4	~0.1 s	100k	53	~20
COMPLIANCE CHECKS UNDER USCG	RULE SETS: USCG, ABS, IEEE, IEC	TO ROUTE A CIRCUIT, 100K SHIP	CIRCUITS PER VESSEL, PROVEN	AUTOCAD COMMANDS	PRODUCTION EXPORTS

INSIDE

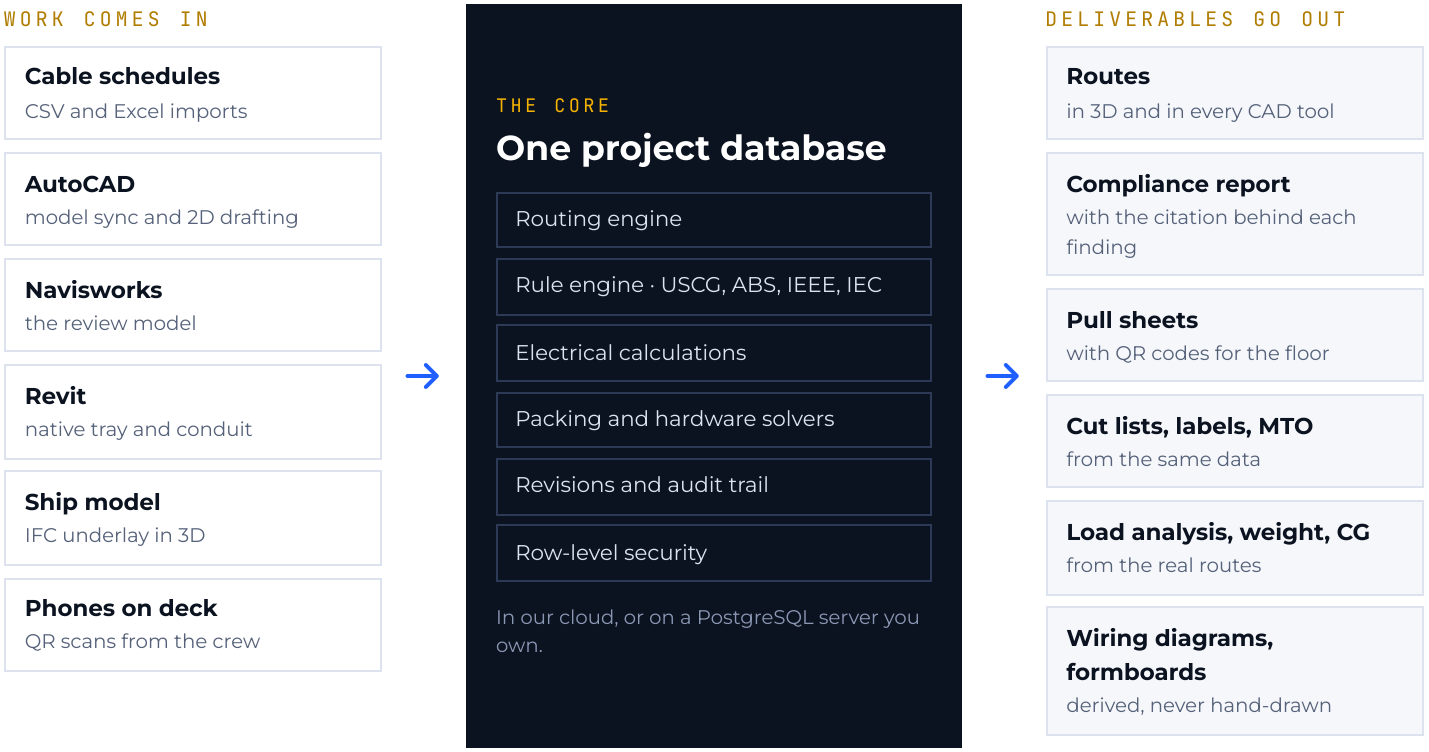
02 How it all works together
03 The job, start to finish
04 The vessel model
05 Circuits and routing
06 Electrical engineering
07 Compliance
08 Hardware, penetrations, wiring
09 Manufacturing and exports
10 Inside your CAD tools
11 Platform and yard setup
12 Security and on-prem
13 Start a pilot

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THE BIG PICTURE

One database. Four ways in. Everything connected.

Most yards keep the cable schedule in a spreadsheet, the trays in CAD and the pull status on paper, so every handoff is re-entry. In Unreal Routing there is one project database. The web app and the AutoCAD, Navisworks and Revit plugins sign in as the same user and read and write the same records, with the same permissions. Nothing is exported from one tool and imported into another.



ONE CHANGE, EVERYWHERE

A batch route is accepted

Tray fill and weight on every run are recalculated, each cable's ampacity is judged on its real route, the penetrations on each path suggest and pack the new cables, and weight and center of gravity follow the routes.

A run is deleted from the network

Every cable that used it is un-routed and flagged for re-routing — never left on a path that no longer exists — and fill is recalculated.

A circuit is approved

Its design is snapshotted as a revision, with a field-by-field diff and a change-log export on the circuit, and it can go into an output batch.

A batch is issued

Each circuit's design, route and manufacturing fields are frozen into the issue, and the pull sheets print with QR codes that open the cable on a phone.

An installer scans a QR code on deck

The install stage or test result lands in the same database: the manufacturing board, the dashboard progress and the Navisworks install-status colors update from it.

A router draws tray in Revit or AutoCAD

The runs push up as nodes and segments, and the web app, the other plugins and every report see the same network.

The model moves under an approved circuit

The database flags the circuit as changed since approval, records old and new values and the cause, and warns when the cable is already cut or pulled.

Anyone changes anything, anywhere

Open AutoCAD drawings and the Navisworks pane pick it up within seconds; Revit applies changed values and lists changed runs for the next pull.

THE WORKFLOW

From an empty project to tested cable.

The order a vessel normally moves through the product, and who does each step. Each person sees only the workspace their role needs; the owner decides who holds which role on which project.

01 Set up the contract — OWNER

Create the project (or clone the last contract), pick the rules the vessel is built to and the routing policy, add the sister hulls, and give each person the roles they need.

02 Load the reference data — ENGINEER · ROUTER

Segregation classes, cable types, systems, compartments with their 3D volumes, and every device. Import from spreadsheets or build it in CAD.

03 Build the tray network — ROUTER

Nodes, runs, raceways and tiers — drawn in the 3D viewer, imported, or pushed from AutoCAD, Navisworks or Revit. Map the steel, generate the hangers, register every penetration.

04 Enter the circuits — ENGINEER

Import the cable schedule, draw circuits on 2D functional sheets in AutoCAD, or connect two devices in one step. Size each loaded circuit for voltage drop and fault level.

05 Route the vessel — ROUTER

One pass finds a legal path for every circuit; after that, route the circuits a change touches in under a second. Each one left over says why it did not route. Fix it, lock what must not move, and let the penetrations pack themselves.

06 Prove it — ENGINEER

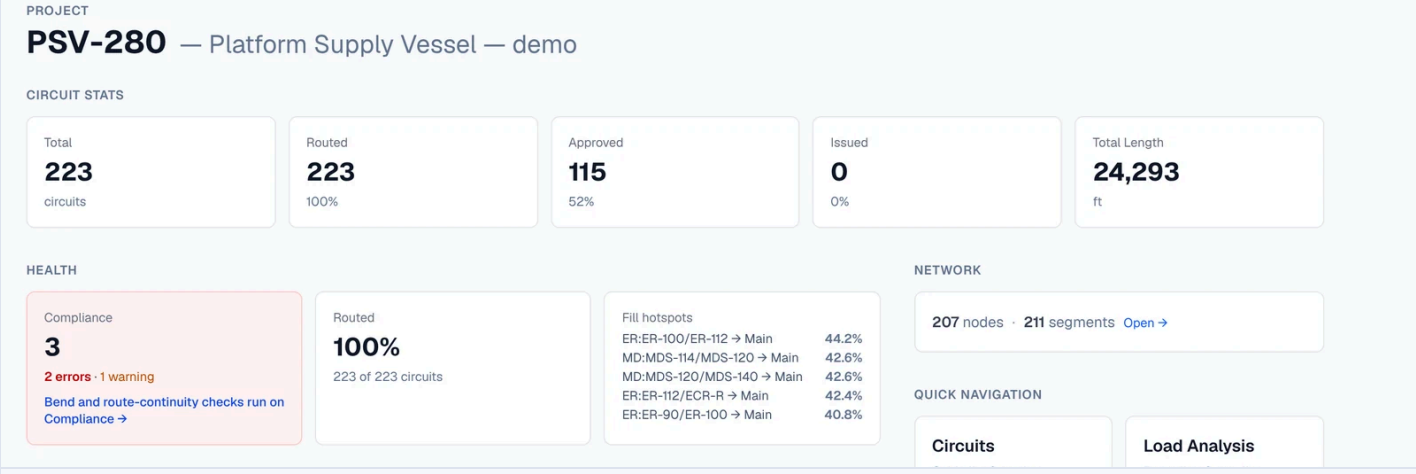
Run the compliance check per hull, fix what it finds, read the load analysis and weight report, then approve — every approval records a revision.

07 Release to production — ENGINEER · MANUFACTURING

Issue approved circuits as a frozen batch, print the pull sheets, assign cable to drums, and export cut lists, labels and the material take-off.

08 Build and test — MANUFACTURING

Crews record cut and pulled lengths, terminations and megger results — on the status board or by scanning a pull sheet QR code on a phone.



THE PROJECT DASHBOARD · ROUTED AND APPROVED %, OPEN COMPLIANCE FINDINGS, FULLEST TRAYS, INSTALLATION AND SHOP-FLOOR PROGRESS

PART 1 · MODEL

The vessel model

The 3D road map every cable follows, and the reference data every other page reads.

- **3D tray network**
  Nodes (junctions, bends, penetrations, cable ends) and the runs between them form the graph the router travels. Build it by hand, import it from CSV or Excel, or push it from AutoCAD, Navisworks or Revit.
- **Ship model underlay (IFC)**
  Load the ship's IFC model behind the network to route against real structure and equipment. It stays in your browser session and is never uploaded.
- **Raceways and tier setups**
  Trays and their tiers carry width, depth, fill limit and the classes they accept. On a tier setup the router puts each cable on one tier: groups share, other classes get a tier of their own, and a full tier closes the run.
- **Circuit Spotlight**
  Open any circuit alone in 3D, the rest of the ship ghosted gray — from its page, right after accepting a route, or from a compliance finding. Select a few on the list to see them together.
- **Segregation classes and separations**
  Define your power, control and signal classes and the minimum separation between each pair. Your organization's rules take precedence over the shipped defaults without deleting them.
- **Devices and systems**
  Register every piece of equipment with its location and compartment, and create its routing node in one click. Group circuits by ship system.
- **Multi-hull contracts**
  One project is the contract baseline; the sister hulls share it. Limit any cable to specific hulls, then work one hull at a time with its own circuit list and compliance check.
- **Routing policy**
  Set the project's tray-fill cap, growth reserve, design ambient, voltage-drop standard and governing rules once. The router, the circuit pages and the compliance check all read them.
- **Interactive 3D viewer**
  The whole ship in the browser, even at 100,000 circuits. Click to place nodes and devices, drag them or type exact coordinates, and draw runs between nodes. Turn on cables to see them in their real tray slots.
- **Compartment-scoped loading**
  Open only the compartments you are working in. The web viewer and all three CAD plugins pull a coherent slice of the network, so a large vessel stays fast.
- **Decks, one at a time**
  Decks are real surfaces, camber and sheer included. Pick one and the 3D view shows just that deck in plan, marking every place a route leaves it; AutoCAD's ROUTEDECK does the same.
- **Compartments and 3D volumes**
  Define each compartment as a 3D box and every node and device inside it is assigned automatically. Block pass-through, ban cable types per space, and give each space a design ambient temperature.
- **Cable type catalog**
  OD, weight, conductor size, ampacity, minimum bend radius, insulation temperature, and armored, watertight, flame-retardant and fire-resistant flags — the data behind routing, derating, weight and compliance. Import it from a spreadsheet.
- **Ship structure**
  Tell the app where the steel is — a parametric frame grid, or beams and frames captured from CAD. Tray crossings are mapped so hanger downcomers land on real steel.
- **Project cloning**
  Start the next contract from a proven baseline: settings, compartments and volumes, systems, the tray network and the structure are copied with their links intact. Cables are not.

PART 2 · ROUTE

Circuits and routing

The cable schedule, and the engine that finds a legal path for every circuit.

Cable schedule

Every circuit in one list, searched, filtered and paged in the database so it stays fast on a large vessel. Import from CSV or Excel, save filter views for the team, and edit a field on hundreds of circuits at once.

Why a circuit didn't route

Every unrouted circuit gets its reason in one sentence — a full run, a weight limit, a compartment it may not cross, a run that will not take its class, or ends the network does not connect — with the runs that block it. AutoCAD gives the same answer.

Three ways to route one circuit

Auto-route it, pick its path hop by hop, or run it point to point where it leaves the tray network. Lock a route once it must not move.

Change-safe network edits

Delete a run and every cable that used it is un-routed and flagged, never left on a path that no longer exists. Re-route them in one batch.

Segment inspector

Click any run to see every cable through it, its fill, and which cables apply to which hull.

Design assistant

Six step cards score where the design stands, from equipment to voltage drop. A quick form creates a circuit between two devices, and a readiness checklist covers every circuit.

Auto-routing

On a 100,000-circuit ship in production, one circuit routes in about a tenth of a second and five selected in about half a second; the whole vessel goes in passes. Segregation, fill, weight and compartment rules are enforced inside the pathfinder.

Suggested routes

Like a map app's alternatives: the shortest legal route plus up to two others within every limit, each with its extra length and how much it shares, so you can trade a few feet for a less crowded tray. On the web and in AutoCAD.

Rules enforced on every route

A route is checked again when it is accepted, whichever surface it came from: the right endpoints, an allowed segregation class on every run, no blocked compartments. Fill and weight limits can only be exceeded with an explicit override.

True cable placement

A cross-section solver packs each cable into its real slot on the tray — classes on their own tiers, largest cable first, banking and gaps honored. The web 3D view and AutoCAD draw the same slots.

Change control

Approval locks a circuit on every surface and keeps each revision with a field-by-field diff. A model change under it is flagged, with old and new values and a rework warning; hold and cancel stop the floor.



THE CABLE SCHEDULE · BATCH ROUTE BAR, IMPORT, FILTERS AND PER-CIRCUIT HEALTH CHIPS

PART 3 · ENGINEER

Electrical engineering

Sizing and analysis that use each cable's real route, not a guess.

- **Voltage drop and conductor sizing**
  DC, single-phase and three-phase drop on the routed length, with a suggested minimum conductor that also covers fault withstand. Use yard/IEC-style limits or IEEE 45's 5% combined limit, per project or per circuit.
- **Ampacity as installed**
  Chart ampacity corrected for how the cable is actually run: double-banked or bunched on its accepted route, the hottest compartment it passes through, and its insulation class. The same figure, with the factor spelled out, on the list, the circuit page and the compliance report.
- **Overcurrent protection**
  Record each circuit's breaker or fuse rating; the checks compare it with the cable's installed ampacity, not its catalog value.
- **Weight and center of gravity**
  Cable weight spread along the actual routes and totaled by deck (following each deck's surface) and compartment with the center of gravity — the basis disclosed: catalog weight, estimated from OD, or unknown.
- **Cumulative drop up the feeder chain**
  Each circuit warns when the drop from the source through every upstream feeder exceeds its limit, and says where the chain forks or loops.
- **Short-circuit withstand**
  Checks every conductor against its fault level and clearing time with the adiabatic I^2t method, and names the size it needs when it is undersized.
- **Electrical load analysis**
  Builds the distribution one-line from the circuits themselves, rolls connected load up from every source bus, applies diversity factors, and compares demand with generator or shore-power capacity.
- **20 engineering calculators**
  Cable sizing, power-system breaker sizing and conversions as live tools, each citing the standard or workbook note it comes from.

THE 20 CALCULATORS

Voltage drop (DC, 1φ, 3φ)	Conduit fill (IEEE 45 or NEC)	Steering-gear breaker
Cable ampacity chart	AWG ↔ mm² conversion	Transformer breaker
Ampacity derating (ambient and grouping)	kW → amps	Standard breaker sizes
Minimum bend radius	Motor FLC and breaker	Battery discharge (Peukert)
Pulling tension and sidewall pressure	Generator breaker (3φ)	UPS / inverter runtime
Short-circuit withstand (I^2t)	Generator breaker (1φ)	HVAC tons ↔ BTU
	Generator sizing and voltage dip	Illumination / fixture count



DESIGN WARNINGS ON A CIRCUIT · VOLTAGE DROP WITH A SUGGESTED CONDUCTOR, AND THE CUMULATIVE DROP TO THE SOURCE

PART 4 · PROVE

Compliance

Automated rule checks under the rulebook the vessel is actually inspected or classed under.

- **Checks matched to your rules**
  USCG 46 CFR Subchapter J, ABS River & ICW (Part 4 Ch 5), IEEE 45 or IEC 60092: the check runs what those rules require and cites each one.
- **Honest about gaps**
  A rule with nothing to check reads NOT CHECKED, never PASS; the headline says so.
- **Design warnings on every circuit**
  Voltage drop, ampacity, fault withstand and breaker sizing flagged on the circuit as you design.
- **Findings you can act on**
  Every rule shows how many circuits it checked and how many fail, and lists each offender with the reason and a link straight to it. Export the whole report as CSV.
- **Per hull, at any size**
  Check one sister hull or the whole contract; past 10,000 circuits the check runs in the background.

THE 20 RULE CHECKS	WHAT IT CHECKS	RUNS UNDER
Voltage drop	Each circuit within its limit: IEEE 45's 5%, yard/IEC, or its own.	Always
Ampacity as installed	Load within ampacity after banking, ambient and insulation class.	Always
Short-circuit withstand	Conductor covers the fault level and clearing time (IEC 60364-5-54).	Always
Watertight penetrations	Cables through watertight transits are watertight construction.	Always
Penetration fire rating	Every transit carries a SOLAS fire class.	Always
Fire-rated penetration flammability	Cables through fire-rated transits are flame-retardant.	Always
Non-metallic tube in fire boundary	No nylon stuffing tube on a fire-rated boundary (IEEE 45 §25.7).	Always
Routing completeness	Every circuit has a routed or accepted off-route length.	Always
Commissioning	No failed tests and no insulation reading below 1 MΩ.	Always
Data completeness	Every circuit has a cable type and both end devices.	Always
Tray and raceway fill	Every tier and limited run within the fill limits the router enforces.	Always
Penetration packing off the route	Cables packed in a penetration pass through it on their route.	Always
Hanger and crosstier width	Generated crosstiers and hangers as wide as the cables they carry.	Always
Hanger tier load	Cable weight on each tier, over its longest span, within its rating.	Always
Banking on assumed tray width	Flags banking derates that rest on a default tray width.	USCG · IEEE 45
Minimum conductor size	18 AWG, 14 power and lighting, 22 instrumentation (46 CFR 111.60-4).	USCG only
Emergency cable through machinery space	Emergency-switchboard cables do not pass through machinery spaces (46 CFR 112.05-5(f)).	USCG only
Alarm and comms through machinery space	General alarm, PA and voice-comms cables stay out of machinery spaces (46 CFR 113.25-8(h), 113.30-25(j)).	USCG only
Overcurrent device sizing	Breaker or fuse ≤ 150% of installed ampacity (46 CFR 111.50-3(c)).	USCG only
Lighting branch overcurrent	Lighting branches ≤ 20 A, loaded ≤ 80% (46 CFR 111.75-5).	USCG only

Plus six checks of every route — bend radius between supports, bends to review, a support within 610 mm of each turn (IEEE 45-2002 §25.5; USCG and IEEE 45), continuity, route ends and the bend basis — and, once set up, redundant-feeder separation and cores landed.

Standards named are what the checks are written against, not certifications. 46 CFR incorporates IEEE 45 and IEC 60092 by reference for voltage-drop and bend-radius figures, so those checks cite the engineering standard.

PART 5 · BUILD IT REAL

Hardware, penetrations and equipment

The physical parts: supports, bulkhead crossings, and the last inch into the equipment.

- **Hanger assemblies**
  Downcomers, cross tiers and banding or tapped hangers sized from the real packed bundle, drops cut to the steel overhead, every tier hung, hangers kept clear of cable bends and each bend's curve supported. Generated in the background; FMD / RT&D part families built in, or your own vendor's.
- **Penetration register**
  Every bulkhead and deck crossing — Roxtec S, G, SRC, R, RS and ComSeal transits, MIL-S-24235 swage tubes, nylon stuffing tubes, kickpipes, and filled openings — with its fire class and watertight status.
- **Equipment prep**
  The entry hardware for every cable end on every device — swage or nylon stuffing tubes, heat-shrink, gland plates — with tube sizes suggested from cable OD, status from planned to fitted to sealed, per-device prep sheets, and a project MTO.
- **Parts catalog and part numbers**
  Part families generate concrete part numbers from length patterns, so the hardware take-off can be ordered as it stands.
- **Exact transit packing**
  The packing solver seats each cable in the frame and gives the exact order quantity: every block, spare and compensation piece. Cables routed through a penetration are suggested and packed automatically.

ALSO IN THIS PART

Terminations, wiring and harnesses

Conductor-level detail, from the connector on each end to the terminal it lands on.

- **Terminations**
  Per cable end: connector, backshell, gland, marker, potting and test sign-offs, picked from shared catalogs that include MIL-DTL-5015, MIL-DTL-38999 and MIL-DTL-26482 connectors.
- **Device terminals and wiring diagrams**
  Define each device's terminals, land conductors on them, and get an automatic point-to-point wiring diagram and wiring list — the same data AutoCAD draws.
- **Block and label libraries**
  Your organization's device symbol library and token-based label templates, shared by every drawing and label export.
- **Pin assignments**
  Map every conductor to its pin at each end; the connection schedule is built from the map.
- **Harnesses and formboards**
  Group cables that are built or pulled together. The formboard — branch tree, true lengths, bundle diameters — is derived from their routes, never hand-drawn, and the build sheet exports.

PART 6 · PRODUCE

Manufacturing and the shop floor

The same database that holds the design runs the cut, the pull and the test.

- **Output batches**
  Group approved circuits into an issue package. Issuing freezes each design, and the pull-sheet PDFs print merged or zipped.
- **Drum management**
  Register the reels on hand and auto-assign cut lengths to them, longest first, with a slack margin. See which drums are over-committed before anyone cuts.
- **Manufacturing status board**
  Cut and pulled lengths, termination and test outcomes, and the install stage for every circuit.
- **Commissioning records**
  Insulation-resistance (megger) readings and pass/fail per circuit, exported as the commissioning record.
- **Pull sheets with QR codes**
  Schedule data, both end devices, lengths and the route node by node on one sheet. Its QR code opens the cable on a signed-in phone to record the pull.
- **Pull plan**
  The pull order for the whole job: which reel comes out first, and heavy, large-diameter cables first so they lie at the bottom of the tray.
- **Shop Floor on a phone**
  Installers scan a cable's QR code or type its ID, then tap one big button to advance its install stage or record a test. The office sees it at once.

ALSO IN THIS PART

Reports and exports

Every deliverable straight from project data, as CSV or Excel.

Circuit record and route details — The full schedule and every accepted route, hop by hop.

Cable tag and label sheet — Tags for both ends and each side of every penetration, plus optional tags at a set interval along the run.

Material take-off (BOM) — Cable, transit seals, glands and run hardware in one workbook.

Segregation audit and clash report — Every route hop checked against its allowed classes, and incompatible cables sharing a run or transit.

Revision change log — What changed on each circuit since the last issued batch, field by field.

Commissioning (IR) record — Megger readings and test results per circuit.

Network dump and project backup — The tray network, and a full JSON backup of the project.

Connection schedule — End-to-end connections, pin to pin.

Cut list and reel plan — Cut lengths with pull margin and end allowances, packed onto reels longest first.

Raceway fill and spare capacity — Used versus allowed fill on every tier, and the room left in trays and transits for growth.

Penetration register — Every penetration with its type, fire class, watertight status and drawing reference.

Weight by deck — The weight rollup behind the center-of-gravity figure.

Compliance report — Every finding with its rule, severity and detail.

PART 7 · DESIGN WHERE YOU ALREADY WORK

Inside your CAD tools

Three native plugins, signed in as the same user against the same live data. Each uses the web app's roles and seat, and pulls only the compartments you ask for.

AutoCAD

53 COMMANDS · AUTOCAD 2020–2027

Sync and connect

Pull the whole network or chosen compartments, push new work up, switch projects without signing in again.

ROUTEPULL · ROUTEPUSH · ROUTESYNC · ROUTELINK · ROUTEPROJECT · ROUTEWEB · ROUTEPANEL · ROUTEACCOUNT

Model and route

Place and move nodes and runs, route one cable or the whole project, lock routes, finalize draft nodes, capture compartment volumes and steel, link legacy linework to devices.

ROUTENODE · ROUTESEG · ROUTEMOVE · ROUTEAUTO · ROUTEAUTOALL · ROUTELOCK · ROUTEFINALIZE · ROUTEVOLUME · ROUTESTRUCT · ROUTEDEVLINK

3D and true view

The whole ship's cables in their real slots, real 3D in a box you move around, a Spotlight on any cable you click, one deck in plan, sag and section cuts.

ROUTECABLE · ROUTE3D · ROUTETRUE · ROUTEBOX · ROUTEFADE · ROUTEDECK · ROUTESAG · ROUTESECTION

2D functional drafting

Register sheets, draw regions, place device blocks, draw circuits that become real cables, continuation ties between sheets, symbols, tags, tray runs, legends, one-lines, live schedules, wiring diagrams and formboards.

ROUTESHEET · ROUTEREGION · ROUTEREGIONSYNC · ROUTEBLOCK · ROUTECIRCUIT2D · ROUTECONT · ROUTEDEVSYM · ROUTEPENSYM · ROUTETAG · ROUTETRAY · ROUTELEGEND · ROUTEONELINE · ROUTESCHEDULE · ROUTEWIRING · ROUTEFORMBOARD

Reports and checks

Fill report, a live design-rule check (unrouted, segregation, overfill, overweight, overload), take-offs, connections, pull sheets, and a drawing health check.

ROUTEFILL · ROUTECHECK · ROUTEMTO · ROUTECONNECT · ROUTEPULLSHEET · ROUTEDOCTOR

The web's project windows

Circuit Manager (approve, hold, cancel), compliance report, hanger generation, production reports, transits, Properties.

ROUTECIRCUITS · ROUTECOMPLIANCE · ROUTEHANGERS · ROUTEREPORTS · ROUTETRANSIT · ROUTEPROPS

Navisworks

- Color raceways by tray fill, by install status, or penetrations by fire class.
- Isolate one cable's route through the ship.
- Selection sets per segregation class and saved viewpoints for every overfill or clash.
- Load check of installed ampacity, worded as the web Compliance page words it.
- Stage draft nodes, compartment volumes and steel from selected geometry — built for refit.

Revit

- Pull the network as real cable tray and conduit, joined with fittings.
- Push tray and conduit you draw back as a routable network.
- Check and heal broken runs.
- Route selected cables or every unrouted cable, with an explicit overfill option.
- Overlay accepted routes; capture volumes and structure from a selection. Revit 2020–2027.

INSTALLING

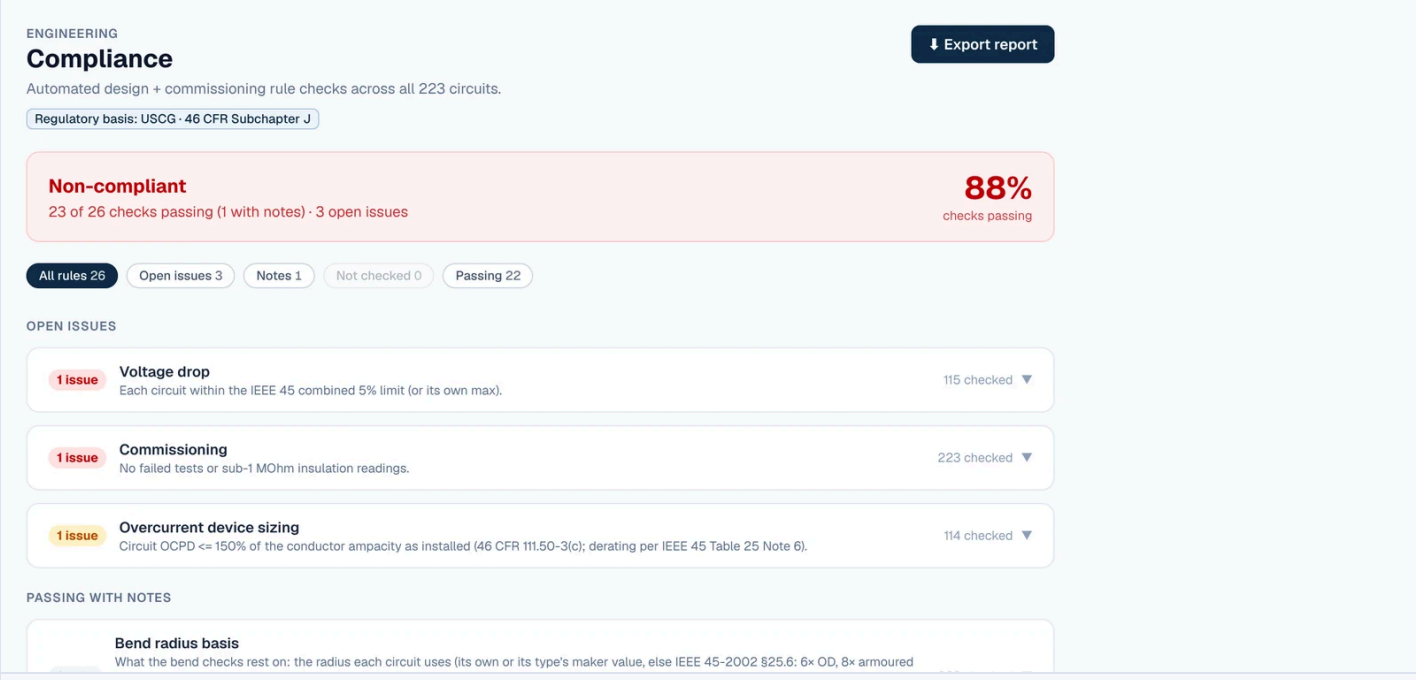
Prebuilt installers for all three plugins download from the web app with published checksums, and source packages for yards that build locally. One setting points any plugin at an on-prem gateway.

PART 8 · RUN IT

Platform and yard setup

Roles, audit trail, licensing, and your yard's own conventions — set once, used everywhere.

- **Project roles**
  Owner, editor, viewer, router, engineer and manufacturing. Everyone on a project can read it; each role writes only its own domain — the same on the web and in every plugin.
- **Activity log**
  Who approved, deleted, restored or bulk-edited circuits, changed hulls or changed someone's access, and when.
- **Built-in training guide**
  Step-by-step instructions for every page, filtered to your role, plus a command palette (Ctrl-K) that jumps to any page or circuit.
- **Yard setup**
  Your install stages, custom cable and device fields, numbering rule, import layouts, export columns and hanger standards — set once for every project, and moved between organizations as one profile. Starters for Navy / NAVSEA and USCG / ABS work.
- **Custom role bundles**
  Name your own roles, such as "QA Lead", from the built-in permissions, and choose which pages they see.
- **Project dashboard**
  Circuits routed, approved and issued; open compliance issues; the fullest trays; installation, manufacturing and drum progress — totaled in the database.
- **Demo vessel in one click**
  A fully routed 280 ft platform supply vessel with 223 circuits, for learning the product or showing it to your team.
- **Two seat tiers**
  A design seat (owner, editor, router, engineer) or a production seat (manufacturing), per named user per month, covering the web app and every plugin. Viewers never take a seat.



COMPLIANCE UNDER USCG 46 CFR SUBCHAPTER J · EACH CHECK WITH WHAT IT TESTED, HOW MANY IT FLAGS AND THE RULE BEHIND IT

PART 9 · KEEP IT INSIDE

Security and on-prem

The controls a NIST SP 800-171 / CMMC Level 2 assessment looks at, and the option to run everything inside your own boundary. Your yard is assessed, not the software; this is what supports that deployment.

- **Two-step sign-in**
  An authenticator-app code, or a passkey on a local-sign-in site. For an account that uses it the database itself refuses a password-only session, on the web and in every plugin. Owners must use it and can require it of every member.
- **Session limits**
  Per organization, a maximum sign-in lifetime and an idle sign-out. A session that is signed out or revoked stops at its next request.
- **Security in the database**
  Row-level security on every table, and no record can ever be moved to another project or organization. The database decides who sees and changes what, whichever surface asks.
- **On-prem site gateway**
  The whole platform on a PostgreSQL server you own, with the same web app and the same plugins pointed at it. Vessel data never leaves the site.
- **Site extension packs**
  Custom tables and reports for your yard, added to your gateway and never pushed to the cloud.
- **Plugin sign-in through the browser**
  The CAD plugins sign in by approving a code in the browser, so they get the same two-step sign-in. Each user sees their signed-in plugins and can sign any of them out.
- **CUI markings**
  Set a project's marking, such as CUI//SP-CTI, and it prints on every page, export, pull sheet and backup, every AutoCAD table and drawing property, the Navisworks status line and a Revit parameter.
- **Per-project access**
  Organization membership alone opens nothing: people are granted projects one by one, and leaving the organization revokes access everywhere, plugins included.
- **Local sign-in**
  The gateway signs your users in itself and counts seats against a vendor-signed license: nothing about a user leaves the site, and it never contacts our cloud.
- **Written procedures**
  A backup and disaster-recovery plan, and tenant offboarding: a complete export with checksums, verified destruction and a certificate.

ON-PREM, IN DETAIL

What stays on site

All vessel data — nodes, runs, cables, routes, drawings, penetrations and manufacturing state — in a database the yard owns.

If the link drops

Under cloud sign-in, users already signed in keep working for 72 hours after their last seat check (adjustable). Under local sign-in there is no link to lose.

Review when you choose

Push one project up to its cloud mirror for outside review — one way, with a preview of what will ship first.

Two ways to sign in

Cloud sign-in: our cloud keeps the accounts and the monthly seat check, nothing else. Local sign-in: the site signs its own users in against a vendor-signed license and never calls the cloud.

Accounts on a local site

New accounts get one-time setup links instead of e-mail, each authenticator code is accepted once, and wrong passwords and codes are limited per account.

Same tools

The same web app runs on your network and the same plugins point at the gateway; plugins refuse to send a password over plain http.

PILOT PROGRAM

Prove it on one hull before you buy a seat.

Bring one vessel's real data and we run it end to end with your engineers. You see it work on your boat before anything is signed.

01 One hull: your cable schedule and tray model, loaded from spreadsheets or the CAD tool you already draft in.

02 A batch route of the whole vessel, checked against the rules you are inspected under.

03 Pull sheets, drum assignments and floor tracking run on your real data.

04 A straight answer on fit and a per-seat price before you commit to anything.

Scan for the 60-second tour — or book a demo on your data.

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BUILT FOR

U.S. commercial shipyards — towboats, barges, OSVs, ferries and workboats under USCG and ABS River & ICW.

Marine electrical design firms — schedules, load analyses and drawing packages as deliverables.

Defense shipbuilders and electrical subs — Navy and Coast Guard programs, on-prem with local sign-in.

Refit and repair yards — rebuild the cable picture over an existing review model.

High Voltage Technologies LLC. Screenshots show a demo project with synthetic vessel data. Standards named are what the checks are written against, not certifications. Roxtec, AutoCAD, Navisworks and Revit are trademarks of their respective owners.