

COMPLETE CAPABILITY INVENTORY

TRACE AI Platform + CAD / BIM

All documented AI developments, customer tools, 2D/3D controls, knowledge resources and advanced development boundaries.

455 numbered entries across 43 sections

Includes 24 original workflow guides and eight retained federal reference publications.

Review checkpoint: September 9, 2026 UTC / September 8, Pacific.

Prepared from TRACE development records, deployment evidence, test reports and a current production capability catalog. This is a documentation audit, not a new exhaustive platform functionality test.

Availability depends on the module license, user authority, usable inputs and configured services. Preview, candidate and roadmap boundaries are stated explicitly. The entry count includes controls and knowledge resources; it is not a count of distinct products or independently tested features.

EVIDENCE. INTELLIGENCE. PROJECT CONTROL.

Construction reasoning / Governed workflows / Visual review

A detailed, availability-qualified guide to the TRACE platform.

How to read this inventory

Supported / deployed: the documented product path exists, subject to its stated conditions. Historical deployment evidence does not establish that every customer configuration has been retested.

Preview: available visualization or analysis with explicit limits, including conceptual terrain and human-reviewed coordination candidates.

Conditional: requires applicable permissions, sources, a configured provider, an enabled owner setting, hardware onboarding or sufficient data.

Candidate / roadmap: development may have code or tests, but general production availability is not established.

TRACE combines language and vision models with retrieval, deterministic calculations, workflow rules and accountable human decisions. Bounded learning improves eligible retrieval or administrative patterns; it does not autonomously retrain the foundation model.

No customer project data, private infrastructure addresses, credentials or confidential drawing screenshots are included in this public-facing inventory.

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SECTION 01

TRACE AI: assistance and reasoning

Evidence-grounded assistance for construction administration, investigation and preparation.

1. Ask TRACE

Ask typed or voice questions, including informal wording and follow-ups. Choose quick lookup, an answer with sources or detailed investigation; edit scope-specific suggested questions before sending.

2. Product help and training

Find screen guidance, navigation help and explanations of supported workflows through a separate product-help knowledge base.

3. Project-context assistance

Use authorized project documents and supported structured records as evidence for project questions.

4. Structured interpretation

Separate recorded facts, inferred consequences, assumptions, competing evidence and missing information.

5. Risk and schedule reasoning

Explain supported implications, highlight missing logic, calendars or baselines, and propose a next verification step.

6. Cited answers and support checks

Attach source references to supported findings; identify insufficient evidence rather than invent a project determination.

7. Answer, draft, classify, compare and educate

Supported queued assistance tasks prepare material in an authorized record context, subject to evidence and access controls.

8. Professional decision boundaries

Keep formal engineering, safety, legal, approval and permission-to-build decisions with the authorized person.

9. Run history and accountability

Retain AI activity, run identifiers, source context and supported review/feedback information.

10. Request recovery

Recover eligible long-running requests with the same request key and avoid duplicate model calls for repeated submissions.

11. Voice interaction where available

Use supported voice entry/output subject to browser, device permissions and configured service availability.

Scope and availability: AI availability depends on the enabled module, configured provider and usage allowance. Fluent output is not evidence of correctness.

SECTION 02

TRACE AI: enforced evidence boundaries

Source selection is enforced before evidence reaches the reasoning model.

12. This project

Restrict retrieval to the current authorized tenant and project, with matching source and passage identity.

13. General knowledge

Search eligible shared reference material without carrying project context into that search.

14. Combined search

Use the authorized project plus separately identified general references; do not mix in another project.

15. Web research boundary

Project-only and combined project-bearing prompts do not use public web research. Permitted general research is a separate path.

16. Source authority

Distinguish project records, reviewed references, general guidance and assertions; a reference is not automatically a governing requirement.

17. Edition and adoption context

Retain available edition, jurisdiction and applicability metadata so the user can establish the controlling source.

18. Permission-aware retrieval

Apply current access rights to records and evidence, including API and queued worker paths.

19. Scope-switch reset

Clear prior questions, answers, citations and voice state when changing source scope.

20. Late-response protection

Reject stale results after account, tenant, project, source-mode or relevant revision changes.

21. Project-private improvement records

Keep failure curricula scoped and private; do not turn one customer's questions or project documents into another customer's knowledge.

Scope and availability: Shared general references and project-private evidence remain distinct. General references must be evaluated for actual project applicability.

SECTION 03

TRACE AI: documents, extraction and proof

Turn supported files into inspectable evidence while preserving their source identity.

22. Digital document ingestion

Extract supported born-digital documents into searchable passages with source and page context.

23. Scanned PDF and image OCR

Retain extraction method, page identity and available confidence/region metadata for scanned notes and images.

24. Page-preserving reference extraction

Retain native PDF page numbering and layout-oriented text; open the original PDF page to verify tables, symbols and context.

25. Immutable source identity

Use content fingerprints and revision links to identify the exact evidence used.

26. Source-linked passage retrieval

Search relevant passages and supported structured project facts rather than treating all text as equally authoritative.

27. Citation inspection

Open available source references and inspect the cited passage or original document.

28. Proof collection

Collect supported answer evidence into proof items for review and communication.

29. Proof preview and PDF export

Preview, print or download supported exhibits, reports and source manifests.

30. Safe upload admission

Apply supported file validation, scanning and ingestion gates before protected evidence becomes usable.

31. Reference-pack quality checks

Validate candidate hashes, page counts, page identity, empty/missing pages, safe paths and provenance metadata.

32. Controlled source expansion

Add eligible references through extraction and quality review; preserve approval states and edition metadata.

Scope and availability: Layout-oriented text does not preserve every visual relationship. OCR alone does not establish dimensions, scale, linework or design intent.

SECTION 04

TRACE AI: knowledge library

The deployed reference expansion includes eight complete retained federal publications, totaling 524 PDF pages, plus 24 original TRACE workflow guides.

33. Electrical engineering

UFC 3-501-01: electrical engineering reference material with page-linked source access.

34. Mechanical / HVAC

UFC 3-410-01: heating, ventilation and air-conditioning reference material.

35. Civil engineering

UFC 3-201-01: civil engineering reference material.

36. Plumbing

UFC 3-420-01: plumbing systems reference material.

37. Cost estimating

UFS 3-740-05: construction cost-estimating reference material.

38. Schedule specifications

UFGS 01 32 01.00 10: project schedule guide specification.

39. Quality control

UFGS 01 45 00: quality-control guide specification.

40. Safety requirements

UFGS 01 35 26: governmental safety requirements guide specification.

41. Existing reference records

Eligible existing Greenbook and selected OSHA reference records remain subject to their recorded rights, readiness and approval states.

42. Workflow knowledge

Original TRACE guidance explains common processes. Eligible exact guide matches can return cited guidance without a model call; the complete title index appears later in this document.

43. Source transparency

Retained editions, original PDF links and extraction provenance identify what is actually in the deployed pack.

Scope and availability: This is not an all-codes library. Referenced commercial standards are not included by reference. Full OSHA, FHWA and GAO libraries were not added by this expansion; full Greenbook fidelity was not newly certified.

SECTION 05

TRACE AI: drafting and action preparation

Prepare the next step while keeping issuance, approval and contractual decisions under human control.

44. RFI assistance

Investigate a question using authorized evidence and prepare supported wording or next-step guidance.

45. RFI follow-up draft

Generate an editable follow-up from the current RFI and workflow record; nothing is automatically sent or issued.

46. Change-review worksheet

Prepare a structured review draft tied to the current record, with missing evidence left visible.

47. Daily narrative assistance

Rewrite submitted daily notes into an editable narrative with fact-preservation checks.

48. Submittal preparation support

Use cited assistance to prepare questions and review material alongside the separate accountable submittal workflow.

49. Notice and correspondence preparation

Use supported drafting assistance with authorized context; review the controlling clauses and factual basis before use.

50. Living Project investigation drafts

Prepare source-linked drafts from selected evidence gaps for an authorized reviewer.

51. Reusable investigation workflows

Propose and evaluate bounded read-only investigation patterns from reviewed outcomes before owner activation.

52. Formal-action separation

An AI draft or recommendation does not itself approve a submittal, close an inspection, issue a notice or change the contract.

Scope and availability: A follow-up template is not an autonomous legal analysis. Autonomous bid-protest issuance and a comprehensive automated technical submittal compliance matrix are not delivered claims.

SECTION 06

TRACE AI: risk and forward workload

Interpret recorded project conditions and make missing inputs visible.

53. Project risk assessment

Review supported project risk evidence, record context and identified gaps.

54. Confidential forward look

Show cumulative 7-, 14- and 30-day RFI/submittal review due horizons in the authorized confidential assessment.

55. Overdue and aging work

Identify overdue, undated and aged actions without inventing missing deadlines.

56. Separate workflow histories

Keep RFI and submittal completion rates separate, respecting current route cycles and parallel approvals.

57. Conditional backlog scenarios

Estimate remaining review workload only when the required positive completion history exists for each active record type.

58. Data sufficiency gates

Require at least eight positive completions spanning three of four weeks for each active type; return unavailable when the evidence is insufficient.

59. Completion quality filters

Exclude returned, rejected and future completions from the positive completion basis.

60. Schedule readiness signals

Highlight missing or stale accepted schedule evidence.

61. Refresh-time operational feeds

Read current structured workflow and schedule records when the assessment refreshes.

62. Scope and privacy controls

Keep confidential forecasts out of shared/compact views and reject results for a previously selected project or period.

Scope and availability: These are descriptive workload scenarios, not trained delay probabilities, proof of physical progress, legal causation or a guarantee of future performance.

SECTION 07

TRACE AI: schedule and resource scenarios

Combine deterministic schedule analysis with bounded alternatives for authorized review.

63. Supported schedule imports

Read CSV, XLSX, MS Project XML and Primavera P6 XER exports through supported parsers.

64. Immutable schedule versions

Retain source identity, import assumptions and authorized version comparisons.

65. CPM and logic analysis

Inspect supported critical-path calculations, relationships, gaps and version deltas.

66. Rolling look-ahead

Prepare three-week look-ahead drafts with constraints, accountable transitions and export.

67. Living Project rehearsal

Compare up to four user-supplied network alternatives for duration, release and dependency changes.

68. Recovery scenario generation

Generate four fixed-priority heuristic proposals for eligible complete, unstarted networks of 1-200 activities and up to 1,000 supported relationships.

69. Work-calendar handling

Evaluate supported work periods, closures and dependencies in the recovery planner.

70. Resource feasibility

Respect declared labor/equipment capacities and material-release constraints in supported recovery cases.

71. Declared cost comparison

Show direct work costs based on the supplied rates and inputs, rather than inferred project margin.

72. Unsupported-input refusal

Inspect original source semantics; refuse unsupported logic, ambiguous defaults, actual-progress recovery and unrepresentable constraints.

73. Reviewable output

Show assumptions, finish effects and relevant calculation evidence without modifying the imported schedule.

Scope and availability: Legacy rehearsal uses abstract elapsed minutes; recovery is a separate constrained planner. Neither guarantees a global optimum, constructability, Monte Carlo probabilities or automatic write-back to P6/MS Project.

SECTION 08

TRACE AI: visual field-to-plan review

Use selected images and a specific plan page to prepare a traceable visual review.

74. Photo and plan inputs

Submit supported field images and select the relevant PDF plan page for comparison.

75. Exact revision and page binding

Bind the review to the source plan revision and selected page rather than an unspecified drawing set.

76. Multimodal interpretation

Use the configured vision provider to analyze the selected image evidence and plan page together.

77. Reviewable observations

Present supported observations, uncertainty and information requiring field confirmation.

78. Evidence-linked persistence

Retain the source references and review output with the authorized record context.

79. Human review notes

Add accountable review information rather than treating a visual suggestion as an accepted field determination.

80. Response validation

Validate the provider's structured response, required shapes and completion state before admitting a result.

81. Protected upload workflow

Use file and page extraction gates; preserve access boundaries across upload, analysis and replay.

82. Stale-view protection

Prevent a previous project's visual result from replacing the current view.

Scope and availability: Delivered scope is assisted review of selected inputs. Automatic drone-feed monitoring, survey registration, measured alignment deviation, soil-condition diagnosis, automated takeoff from photos and certified installed-work verification are not established.

SECTION 09

3D / BIM: model intelligence

Inspect real IFC-derived geometry and its relationship to the uploaded source.

83. IFC and IFCZIP admission

Upload supported models to an authorized project container with an immutable version and source fingerprint.

84. Queued extraction

Extract supported IFC identity, hierarchy, objects and properties through the conversion worker.

85. Searchable model manifest

Find extracted elements and inspect properties with authorized project/version context.

86. Human publication gate

Review, publish or reject model versions; viewing rights depend on authority and publication state.

87. Derived GLB geometry

Convert supported IFC geometry to a self-contained browser-viewable model.

88. Opening integrity

Exclude Boolean cutter solids from displayed meshes while retaining actual host opening subtraction.

89. Conversion coverage

Show represented, converted, excluded-feature and missing-geometry counts, with an explicit completeness result.

90. Coordinate metadata

Report available units and axis basis; display centering does not rewrite source coordinates.

91. Source-to-geometry verification

Check original source bytes, derived geometry bytes, lengths and fingerprints against the version binding.

92. Serving-time authorization

Recheck actor, project, version and status before serving verified geometry.

93. BCF coordination exchange

Import supported BCF 2.1 issues into the staging register and export authorized issues.

Scope and availability: Native Revit ingestion, cross-model federation and automatic BIM-to-asset linkage are not established. Bounded single-IFC coordination candidates were subsequently deployed and are listed below.

SECTION 10

3D / BIM: interactive viewing

A construction-related example is automatically available from every project BIM panel.

94. Smooth orbit, pan and zoom

Inspect the model using interactive camera controls and short animated view transitions.

95. Element tree and search

Find and select individual rendered objects; display authorized names when available.

96. Selection and fit

Highlight an object and frame the selected geometry.

97. Isolation and show-all

Focus on selected geometry, then restore the complete model.

98. Section cuts

Move a cut along X, Y or Z to look inside the model.

99. Orthographic views

Switch to top or front inspection views, or return to an isometric perspective.

100. Wireframe and reset

Inspect mesh structure and restore the default view.

101. Rendering quality

Use antialiasing, controlled pixel density, balanced lighting and ground shadows for a clear model display.

102. Resource cleanup

Abort obsolete loads and dispose viewer resources when the active scope changes.

103. Source details panel

Inspect conversion metadata and fingerprints; unavailable details remain explicitly unavailable.

104. Related synthetic example

Explore a three-storey public-works building with structure, glazing, doors, utility pipes and six opening voids; it creates no project records.

Scope and availability: Section cuts are uncapped visual slices. The synthetic example is IFC-derived, not a reconstruction from photographs or a survey-certified model.

SECTION 11

TRACE AI: bounded learning and monitoring

Improve selected workflows through measured, controlled changes rather than autonomous foundation-model training.

105. Scheduled failure capture

Collect bounded failure signals into private, scoped evaluation curricula.

106. Data-minimized curricula

Use run references rather than publishing raw customer questions into shared learning material.

107. Curated vocabulary candidates

Evaluate fixed retrieval aliases for the original public workflow guides.

108. Held-out evaluation

Compare a candidate on separate labeled cases before activating it.

109. Regression protection

Require preservation of previously passing cases for the eligible vocabulary candidate.

110. Experiment identity

Avoid repeatedly tuning identical experiments against the same holdout; reject stale fingerprint selections.

111. Reviewed outcomes

Record source-versioned human outcomes for selected administrative findings.

112. Calibration candidates

Evaluate selected priority/calibration changes against later, different records before owner activation.

113. Reusable skill candidates

Test bounded investigation patterns before activating supported read-only workflows.

114. Opt-in continuous watch

Process bounded scans, retain progress and recover eligible stalled work with retries, pause and health information.

115. Owner control

Require the applicable authorization for activation, monitoring and return to baseline.

Scope and availability: No autonomous model-weight training or unrestricted self-modifying code is deployed. Continued improvement needs maintained sources, new validated candidates and evaluation; it is not guaranteed every day or year.

SECTION 12

Assets, sensors and live-source checks

Connect structured observations to a protected project record.

116. Project asset registry

Register an asset with an immutable sensor channel, metric and unit.

117. Manual observation entry

Enter attributable readings with measurement time and declared units.

118. Authenticated observation API

Accept authorized client readings with project and tenant checks.

119. Data-quality validation

Validate decimal precision, time bounds, metric and unit identity; reject conflicting or mismatched observations.

120. Duplicate protection

Use UUID idempotency and sensor/timestamp deduplication to prevent replayed readings from multiplying records.

121. Channel credentials

Issue, rotate and revoke scoped sensor credentials with bounded expiry and one-time raw-token display.

122. Credential revalidation

Check issuer rights, license and project lifecycle at intake; credentials cannot silently switch channels.

123. MQTT 5 / TLS bridge

Delivered gateway software supports durable buffering, fixed-identity retries, QoS 1 acknowledgment and verified TLS.

124. Energy TRACE

Keep attributable manual energy, fuel and power-demand readings with units, time and source references.

125. City of Los Angeles permit lookup

Look up an exact issued-permit number in the supported official dataset and display source/status/check dates separately.

126. No automatic permit mutation

A lookup does not itself update a project's issued status or establish legal applicability.

Scope and availability: Gateway deployment and actual hardware onboarding are required. No production hardware calibration, anomaly control, general municipal feed, live CSLB/DIR connection or full operational digital twin is claimed.

SECTION 13

Platform: account, navigation and access

An organized workspace for owners, public agencies, construction managers, designers and contractors.

127. Account and profile

Manage profile, password, organization identity and branding.

128. Project portfolio

Create and open authorized projects; review active, closeout, archived and permitted trash views.

129. Account overview

Use portfolio summaries and project selection to reach the right job.

130. Project control center

Access project tools, current work, updates and available records from one starting point.

131. Task-oriented menu

Use grouped navigation for home, field work, plans, reviews, schedules, costs and closeout.

132. Find a project tool

Search navigation labels to locate a supported section quickly.

133. Quick access

Open common records through account/project shortcuts.

134. Visible authority context

See customer, project and current authority so actions are taken in the right workspace.

135. Organizations and users

Assign participating organizations, project team members, roles and effective permissions.

136. Notifications and activity

Review notifications, assigned actions and AI activity/audit information.

137. Page help and language controls

Use contextual guidance and available interface language options.

138. Field application controls

Configure licensed project, organization and person-level access; device enrollment and operating-system permissions remain separate.

Scope and availability: Module visibility depends on licensing and effective permissions. Device access follows the applicable client, browser and operating-system requirements.

SECTION 14

Platform: project setup and workflows

Keep responsibility, review authority and record history explicit.

139. Project identity and settings

Maintain the job identity, participating parties and supported administrative settings.

140. Contract basis

Record contract details, notice to proceed and the relevant review/payment clock inputs.

141. Project team and routing

Configure responsible organizations and supported review routes for each record type.

142. Distinct actions

Separate creating, submitting, responding, reviewing, verifying and approving according to effective authority.

143. Current ball-in-court

Identify the current responsible party and workflow state.

144. Multi-step / parallel review

Use supported route and approval semantics with accountable transitions.

145. Route revisions and history

Preserve earlier route steps and decisions when a current route is amended.

146. Content sealing

Bind supported certifications and finalized records to their content identity and attribution.

147. Linked corrections

Create eligible correction revisions while preserving original sealed RFI/submittal content.

148. Forms and signatures

Use configured templates and supported signing workflows with required fields and signing authority.

149. Audit events

Retain attributable record and status history across governed workflows.

Scope and availability: Routes differ by record type and project configuration. A content seal records identity and attribution, not the correctness of an engineering judgment.

SECTION 15

Platform: RFIs, submittals and communications

Manage the formal exchange of questions, responses and review packages.

150. RFI register

Track questions, subject, responsible parties, references and current review status.

151. RFI supporting context

Associate specification sections, plan references, related submittals and governed attachments.

152. RFI response workflow

Record the authorized response, route it through configured review and retain sealed history.

153. Submittal register

Organize packages by specification section, assigned parties and review clocks.

154. Submittal review

Capture dispositions, review stamps, certifications and accountable finalization.

155. Unsigned and sealed artifacts

Preserve supported original/unsigned material alongside the accountable review record.

156. Branded record documents

Produce supported RFI, submittal, change-order and payment-application covers from the record and account branding.

157. Issued transmittal register

Maintain append-only issued-document history and source associations.

158. Meeting management

Prepare agendas, record minutes and action items, and finalize supported meeting records.

159. Communication preparation

Preview or print supported records and prepare communication through the configured workflow.

Scope and availability: Draft generation and document export are separate from sending, issuing or approving a record.

SECTION 16

Platform: documents, plans and field evidence

Organize files, drawings and daily records around their project context.

160. Project document workspace

Upload, organize and retrieve authorized project files with source identity and extraction status.

161. Plan sets and sheets

Register plan sets and sheet records, including supported proposals from uploaded documents.

162. Human-attested registration

Review proposed sheets and bulk-register supported records with attribution.

163. Immutable plan revisions

Retain prior sheet versions and formal review context.

164. Internal document markup

Select a supported PDF/image page, annotate it and use the authorized sharing workflow while preserving original bytes.

165. Plan revision comparison

Compare extracted statements and metadata between authorized revisions of the same sheet.

166. Photo and media records

Store project images and attachments with content provenance.

167. Daily reports

Capture field work, labor/equipment context and supporting media in the daily record.

168. Signed daily records

Use supported signature/seal workflows and append corrections rather than overwriting finalized content.

169. Weather intelligence

Use project-coordinate forecasts, the current weather bar, ten-day outlook and source-linked weather notices.

170. Daily Project Success Brief

Produce a deterministic cited position statement from supported sealed records and contract clocks, including freshness and explicit unknowns.

Scope and availability: Text comparison does not compare all pixels or geometry. Forecasts are external observations, not proof that work was weather-delayed.

SECTION 17

Platform: quality, safety and permits

Record findings and route accountable follow-up through the project.

171. Inspections

Capture supported inspection records and evidence.

172. Observations and deficiencies

Describe issues, assign responsibility and track follow-up.

173. Punch items

Maintain completion items and evidence-backed closure under the applicable authority.

174. Job walks

Record field walks, observations, due dates, responsible parties and accountable finalization.

175. Formal closure rules

Require the supported human determination; a party claim or AI recommendation cannot close an item on its own.

176. Safety observations

Capture unsafe-condition reports and corrective actions.

177. Incidents and near misses

Maintain incident/near-miss records and human recordability determinations.

178. Toolbox talks and training

Record supported safety talks, training and participation evidence.

179. Permit screening

Use country/jurisdiction-aware candidate screening with editable federal, state/province and local entries.

180. Applicability determinations

Record a project-specific basis for permit applicability.

181. Issuance evidence

Require supported clean evidence for issued status and preserve determination history.

Scope and availability: These workflows support accountable administration; they do not independently certify site safety, statutory compliance or permit applicability.

SECTION 18

Platform: commercial and contract controls

Connect billing, cost and change records to their supporting evidence and authority.

182. Schedule of values

Structure progress billing and maintain supported line allocations.

183. Payment applications

Prepare progress applications with supporting records and review/payment clocks.

184. Certification controls

Use supported content-bound, two-person certification and structural validation.

185. Compliance withholdings

Track supported withholding amounts separately from the operation of the payment clock.

186. Change orders

Keep approval and contract incorporation as distinct actions.

187. Contract growth

Associate approved changes with SOV allocation while preserving the original contract value.

188. Cost codes and budgets

Maintain budget, commitments, actual cost, forecast and variance records with attributable revisions.

189. Timesheets

Record crew and equipment hours by cost code with supported approval.

190. Trade partners and subcontracts

Maintain project partners and subcontract records.

191. Credential windows

Evaluate entered license, registration, bond and insurance effective/expiry dates against the recorded work date.

192. Releases and waivers

Manage configured release records and claimant exposure.

193. Stop payment notices

Track notice-related withholding separately from release exposure.

Scope and availability: Legal and financial determinations require the controlling project terms and authorized review. Recorded credential windows are not a live licensing-board verification.

SECTION 19

Platform: labor compliance

Support configured public-works and project-specific labor evidence workflows.

194. Compliance profile

Configure the applicable project requirements and supported California public-works / PLA / CWA settings.

195. Requirement register

Track required submissions and project-specific evidence.

196. Sealed submissions

Receive attributable subcontractor compliance submissions.

197. DIR receipt evidence

Record supported registration/receipt information for review.

198. Prevailing-wage review

Compare reported classifications against supplied, cited rate determinations; flag unknown or missing classifications.

199. Apprenticeship notices

Track DAS 140/142-related evidence and supported requests.

200. Apprenticeship ratios

Review configured ratio information against submitted records.

201. Training funds

Track supporting contribution evidence.

202. Assent and dispatch

Maintain agreement/dispatch-related records where required by the configured profile.

203. Local and targeted hiring

Track supported project workforce and hiring commitments.

204. Exception findings

Use deterministic checks to identify gaps and document human resolution.

Scope and availability: No universal live wage-rate feed, autonomous trade classification or blanket legal-compliance guarantee is included. Time cards and certified-payroll review remain distinct processes.

SECTION 20

Platform: preconstruction and estimating

Prepare procurement and contractor estimates while preserving controlled access.

205. Preconstruction readiness

Maintain supported readiness records and qualification information.

206. Procurement profiles

Configure public or private operating workflows for the project.

207. Solicitations

Prepare and manage supported solicitation records.

208. Addenda

Track procurement amendments and associated documents.

209. Bidder access

Use supported bidder invitation and controlled bid-room workflows.

210. Controlled bid receipt

Receive and retain bid submissions through the configured process.

211. Human award

Keep award decisions with authorized people.

212. Source-bound takeoff

Associate supported quantity work with the source evidence used.

213. Deterministic estimating

Build supported estimates with cost-code and cost-basis information.

214. Quotes and leveling

Maintain supported internal quote and comparison information under contractor access controls.

215. Estimate handoff

Move an authorized estimate through the supported controlled handoff process.

216. Contractor-private commercial data

Do not expose internal estimates, quotes, budgets or leveling merely because an owner also uses TRACE.

Scope and availability: Procurement profiles are configurable workflows, not determinations that a bid, classification, protest or award is legally compliant.

SECTION 21

Platform: Living Project and Energy TRACE

Bring supported project records into a current, permission-aware investigation workspace.

217. Current project-world view

Combine authorized RFIs, submittals, schedules, drawings, field observations and available energy records.

218. Evidence freshness and coverage

Show the age and coverage of available information rather than implying complete live awareness.

219. Selected gap detection

Identify supported missing answers, references, assignments and review information.

220. Investigation drafts

Prepare source-linked next-step drafts from selected findings.

221. Owner settings

Control eligible monitoring and learning through authorized opt-in settings.

222. Bounded scan execution

Retain scan progress and handle eligible retry, resume, pause and stalled work.

223. Outcome feedback

Record accountable adjudications with source-version context.

224. Priority and calibration review

Evaluate supported candidates against later records before adoption.

225. Reusable read-only investigations

Activate supported tested workflow patterns under owner control.

226. Schedule rehearsal

Explore bounded imported-network scenarios and retain assumptions and calculation evidence.

227. Manual energy readings

Record energy, fuel and demand separately with units, time and source attribution.

Scope and availability: The Living Project workspace and the asset/sensor intake are complementary foundations. They do not currently constitute a fully synchronized operational digital twin.

SECTION 22

Platform: App Factory and inventory

Create supported custom trackers and manage attributable stock movements.

228. Natural-language app definition

Describe a supported form or tracker and generate a reviewable constrained definition.

229. Typed fields

Configure supported field types, validation and references.

230. Workflow states

Define supported simple states and transitions.

231. Dashboard charts

Add supported charts over application records.

232. Draft and revision review

Inspect and edit the generated definition before publication.

233. Publication controls

Use app-specific builder and publisher authority to release a supported revision.

234. My Apps runtime

Open published applications and create or manage authorized records through the installed web runtime.

235. App-specific access

Separate viewer, editor, builder and publisher grants.

236. Bounded recovery

Restore an eligible prior valid published definition when required.

237. Inventory ledger

Record receipts, transfers, issues and reversals with fixed-precision quantities and attribution.

238. Movement history and reconciliation

Inspect stock movements and supported reconciliation records.

239. App-to-inventory references

Link supported custom records to inventory items without automatically posting a stock movement.

Scope and availability: App Factory generates constrained definitions, not arbitrary executable programs. It does not automatically purchase material, post ERP transactions or connect external systems.

SECTION 23

Platform: closeout, integrations and governance

Preserve the operating record and configure external exchange deliberately.

240. Closeout checklist

Assemble evidence-backed turnover requirements and track completion.

241. Human closure acknowledgment

Record accountable closure rather than inferring acceptance from an export.

242. Agency package builder

Create supported record snapshots with a sealed manifest and content fingerprints.

243. Project archive

Retain supported read-only archived records for authorized access.

244. Customer API

Use supported scoped API operations with current authorization and read/write restrictions.

245. Integration configuration

Maintain supported provider setup, mapping and connection-health information; unavailable adapters remain unavailable.

246. Source and record export

Export supported records, manifests, proof reports and exchange formats.

247. Tenant/project separation

Enforce server-side scope and effective permissions across governed endpoints.

248. Attributable history

Retain supported audit events, sealed content identity and linked corrections.

249. Platform administration

Manage supported account/module licensing, grants, AI usage and operational settings.

250. Support and onboarding

Use product help and supported support workflows; configure email, retention, backup and external connections for the deployment.

Scope and availability: Named integration catalog entries are not proof of active adapters. SSO/MFA/SCIM, enterprise certifications, failover and restore guarantees require separately verified delivery terms.

SECTION 24

Platform: source administration and media

Additional document, knowledge and field-record tools included in the platform inventory.

251. TRACE Atlas source administration

Upload eligible reference sources, track ingestion and manage source versions under the applicable authority.

252. Source review queues

Review extraction/readiness and verification status before eligible material is used as grounded evidence.

253. Source relationships

Maintain supported relationships between references and preserve provenance context.

254. Access classifications

Apply supported document/source classifications in addition to tenant and project permissions.

255. Quarantine handling

Keep unsafe or unready uploads out of the usable evidence path and expose supported status information.

256. Resumable media uploads

Use supported large-file upload handling for project media.

257. Media organization

Maintain descriptions, location metadata, collections, evidence links and previews.

258. Media archive and restore

Archive and restore eligible media under current authority.

259. Field-day archive

Retain supported daily field records and printable daily outputs.

260. TRACE Sign

Prepare, send or void supported signature envelopes; delivery and provider availability are configuration dependent.

Scope and availability: Source verification status does not establish universal technical correctness. Access to the source administration tools is role dependent.

SECTION 25

Platform: advanced app and inventory tools

Additional lifecycle functions behind the custom-application and stock-ledger workspaces.

261. App templates and catalogue

Start from supported catalogue definitions or reusable templates.

262. Saved app drafts

Retain editable drafts before publishing a valid application definition.

263. Blueprint import and export

Exchange supported application definitions through validated blueprint workflows.

264. Definition migration preview

Inspect supported schema/definition changes before applying an eligible migration.

265. Migration application

Apply supported changes through the controlled application lifecycle.

266. Record operations

Create, update and delete eligible custom-app records under app-specific permissions.

267. Search and pagination

Find records in supported custom trackers without loading the entire record set at once.

268. Linked tracker references

Relate supported records across authorized custom applications.

269. Summaries and dashboards

Use supported record summaries, charts and dashboard layouts.

270. Manifests and health controls

Inspect app definition/runtime state and use supported recovery-draft or repair operations.

271. Inventory setup

Maintain item/location registers and opening-stock preview/application.

272. Stock balances

Review balances and attributable movement history across authorized locations.

Scope and availability: These are validated application-data workflows. They do not establish arbitrary code execution, generalized ERP automation or fleet telemetry.

SECTION 26

Platform: extended project operations

Additional setup, commercial handoff and exchange functions included in the reviewed platform.

273. Project operating profile

Record supported sector, delivery method, contract duration and site coordinates.

274. Sourced contract clocks

Associate clock settings with the applicable source and delivery-evidence requirements.

275. Recoverable project deletion

Use eligible trash/recovery controls alongside archive and lifecycle permissions.

276. Preconstruction clearances

Track readiness, award/agreement clearances, authorities, organization policies and follow-ups.

277. Procurement and long-lead items

Maintain supported procurement-item tracking and mobilization/NTP handoff information.

278. Takeoff calibration and measurements

Record supported source calibration and measurements before relying on derived quantities.

279. Bid-basis capsules

Retain supported source-basis information with controlled estimate publishing and handoff.

280. Schedule acceptance and history

Record acceptance/rejection, supported mappings, activity data and analysis history for imported versions.

281. Billing findings and exports

Review payment-application findings and prepare supported accountant exports.

282. Accounting exchange setup

Maintain supported mappings, dry runs, approved exchange and reconciliation; an external provider must be configured and supported.

283. Portfolio reporting

Use supported cross-project summaries and export under effective account access.

284. Field-client governance

Apply licensed project, organization and person-level controls to eligible field-client operations.

Scope and availability: Configured agreements and signatures are not an unrestricted legal contract-authoring system.

Generalized Workflow Studio, fleet/GPS intelligence and comprehensive offline resilience are not established by these functions.

SECTION 27

TRACE AI: expanded interpretation, research and proof

Deployed additions verified in the interpretation, schedule-reasoning, research and RFI release records.

285. Informal question interpretation

Handle typos, shorthand, alternate meanings and standard-family hypotheses while retaining the original question.

286. Bounded multi-aspect investigation

Consider sequence, staging/access, crews, equipment, procurement, temporary works, testing holds, permits, handoffs, mitigation and counterevidence when supported.

287. General-reference explanation

Explain a standard as general guidance without requiring project adoption; keep binding project determinations separate.

288. No-match research fallback

Eligible general questions may continue to official public research when related local passages still cannot answer the question.

289. Advanced research fallback

The documented difficult-general-research fallback uses gpt-6-astra after the primary provider cannot release a cited answer; this is an application component, not a TRACE-trained foundation model.

290. Citation validation

Validate citation ranges and Unicode offsets; reject incomplete provider output and unsupported assertions rather than releasing partial text as verified.

291. Truthful research history

Distinguish research actually attempted from a setting merely being enabled; record provider usage and cost.

292. Schedule evidence context

Provide authorized baseline/latest revision, disposition history, methodology, bounded activities/relationships, import assumptions and exact-version comparisons.

293. Competing delay explanations

Examine overlapping delays, mitigation and completion impact; distinguish calendar days from working-time float and request missing CPM evidence.

294. Saved Office chart extraction

Read saved XLSX/PPTX chart series, categories, values, labels, number formats and formula references. Do not evaluate formulas or follow external links.

295. Exact RFI conversation binding

Load subject, question and references from the authorized RFI ID; preserve linked follow-ups only while that project and RFI remain active.

296. Public proof tools

Show proof, collect all eligible references, prevent duplicates and print answer proofs through an in-app preview.

297. Direct proof PDF download

Export supported complete text, tables, technical symbols, citations and eligible original source-page images without depending on the browser print dialog.

298. Mixed proof identity

Reauthorize indexed passages; distinguish archived source evidence from public URL references that have not been archived.

299. Request replay protection

Serialize/replay eligible requests by authenticated user and submission key; reject key reuse for a changed question and avoid duplicate model calls.

Scope and availability: Known limits include intermittent P6 answer-release failures, variable research latency, and saved chart caches that can be stale. These are not guarantees of universal answer accuracy.

SECTION 28

CAD and solid elevation review

Deployed customer-panel capabilities added after the earlier public inventory.

300. Automatic CAD availability

Clean authorized uploaded DWGs appear in the current project BIM CAD workspace.

301. Direct Open CAD

Open the selected drawing revision from Documents; keep original download and version history available.

302. Review-pending viewing

Provisional review status no longer alone blocks the CAD viewer; viewing does not approve the source, bypass quarantine or widen access.

303. Native bounded conversion

Convert supported DWG geometry through an isolated native worker; preserve original source bytes and report unsupported entities and missing references.

304. 2D drawing controls

Pan, zoom, fit, show/hide layers, restore converted visibility and find/select supported entities.

305. CAD annotations

Create notes, polylines and approximate XY distance annotations bound to the exact version and source fingerprint.

306. Append-only markup history

Retain saved drawing annotation history without overwriting the original drawing.

307. XYZ elevation view

Inspect actual source line/point coordinates in 3D with orbit, pan and fit controls.

308. Elevation display filters

Choose a Z range, optional zero-Z exclusion and explicitly labeled 1x, 2x, 5x or 10x vertical display scale.

309. Solid terrain preview

Build a shaded height-colored triangulated surface from one selected native POINT layer.

310. Low/high color legend

Show source-elevation ranges with blue lows and gold highs; optional wireframe and source-point overlays.

311. Surface quality controls

Report zero-Z exclusions, merged duplicates, conflicting-coordinate exclusions and triangle counts; refuse unusable or collinear input.

312. Gap filtering

Optionally exclude triangles exceeding a selected edge length. Separate point layers are never automatically pooled.

313. Survey point distinction

Keep actual native POINT coordinates separate from block-insertion anchors; neither is automatically official survey control.

314. Point selection and filtering

Filter coordinate candidates by layer/block, select rows and retain exact XYZ rather than substituting attribute labels.

315. Selected-point CSV

Export selected coordinate rows with units, source/version and unverified status; escape spreadsheet-formula strings.

316. Reference marker

Mark a selected actual POINT with a visible reference label and XYZ; label remains unverified and does not establish an official benchmark.

317. Drawing and surface printing

Print current 2D, XYZ or solid-surface views and selected coordinate tables with source identity and applied display settings.

318. Context cleanup

Abort obsolete loads and dispose graphics resources on tenant/project/source changes; recheck access and source integrity.

Scope and availability: Solid terrain is interpolated point coverage, not certified final grade. The reviewed grading file has separate point patches and missing references; approved proposed-surface identity, boundaries, breaklines, CRS and datum remain unverified.

SECTION 29

IFC / VDC coordination additions

Deployed after the original 3D release.

319. Element evidence links

Associate an exact IFC element/revision with an authorized RFI, submittal or schedule activity and record the reason.

320. Revocable association history

Preserve link revocation history and recheck access to both model and target record.

321. Revision metadata comparison

Show added, removed and changed extracted identities/properties between two versions of the same model.

322. Potentially affected links

Show explicit associations potentially affected by metadata changes while leaving each link bound to its original revision.

323. Intersection candidates

Run bounded native geometric intersection checks between selected classes within one exact IFC revision.

324. Clearance candidates

Measure supported separation against the selected tolerance and return candidate pairs for human review.

325. Opening-aware geometry

Respect host opening subtraction and exclude Boolean cutter objects from the displayed products.

326. Coverage-qualified results

Report missing geometry and check coverage; incomplete zero-hit results cannot establish a no-conflict conclusion.

Scope and availability: No cross-model federation, RVT authoring, geometric revision comparison, 4D simulation or automatic issue/approval creation is claimed.

SECTION 30

Shared markup editor additions

Deployed document-page editing improvements.

327. Undo and redo

Restore up to 100 supported annotation changes, including grouped clear operations.

328. History branching

Invalidate redo after a new edit; retain native text-input undo behavior.

329. Page and source isolation

Reset markup history on project/source-version/page changes, cancellation and successful send.

SECTION 31

TRACE telephone voice development

Updated by the September 9 AI/operations release: interruption handling corrected and a user-reported real-call acceptance passed.

330. Telephone conversation gateway

Configured telephony gateway connects caller audio with a realtime AI conversation service.

331. Public product knowledge

Provide TRACE product/help knowledge through the configured voice service; this does not establish unrestricted project-document access over telephone.

332. Turn and response controls

Manage conversation-turn behavior and response-length settings to reduce interrupted or unfinished speech.

333. Privacy-safe timing diagnostics

Collect timing/completion telemetry for audio-gap diagnosis without recording audio or transcript text in that diagnostic.

334. Versioned gateway deployment

The current operations/help gateway passed 37 voice tests and TypeScript checks. Its audio/queue code matches the real-call-tested version.

Scope and availability: The earlier interruption issue is superseded by the documented fix and user-reported natural, responsive real-call result. Device, network and conversation conditions still affect call quality.

SECTION 32

TRACE Continuum: project-state and missing-proof foundation

Deployed on-demand foundation; its evidence compilation is distinct from a fully verified digital twin.

335. Cross-register state compilation

Compile accessible schedule, labor, change, billing, meetings, permits, safety, quality, daily and integration record state.

336. Typed evidence presentation

Distinguish facts about stored records from assertions in those records, unsupported proof and restricted registers.

337. Unsealed record citations

Provide scoped database references with explicit unsealed status and bounded per-register coverage.

338. Accepted-schedule gate

Distinguish submitted schedule versions from the recorded accepted schedule of record.

339. Missing-Proof Radar

Expose absent records and domain evidence that has not yet been verified.

340. Authority-aware proof requests

Prepare reversible proof-request text with the current brief attached only for an authorized preparer; no automatic sending or record insertion.

341. Review-bundle export

Download state, references, refusals, authority and draft/refusal as JSON with a payload SHA-256 fingerprint, not a digital signature.

342. Fresh-state controls

Refresh state, reject stale results and explain restricted access without inferring authority from an administrator title.

Scope and availability: Continuous event compilation, atomic historical snapshots, complete seal/source verification, day-level proof-spine analysis, contractual exposure calculations and signed evidence archives remain pending.

SECTION 33

Living Project: detailed reviewed-learning controls

Implemented opt-in administrative improvement; activation and usable evidence are prerequisites.

343. In-project reviewed outcomes

Retain explicit source-versioned human adjudications and append-only corrections within the project.

344. Chronological source-disjoint evaluation

Evaluate on later unseen records rather than reusing the same source in training and testing.

345. Reviewer diversity gates

Apply minimum distinct-record and reviewer-diversity/concentration requirements before eligible candidate promotion.

346. Baseline and incumbent comparison

Compare eligible ranking candidates against baseline/current behavior, including per-kind regression and Brier-score checks.

347. Bounded learning history

Refuse candidate promotion from truncated history beyond the supported 2,000-review cap.

348. Correction invalidation

Invalidate dependent learning when source evidence is corrected or access is revoked.

349. Owner promotion and rollback

Keep candidate activation explicit and permit return to the baseline.

350. Declarative skill proposals

Propose read-only investigation patterns from repeated substantiated outcomes; test later reviewed records before owner activation.

351. Resumable monitoring

Use bounded source generations, durable cursors, fenced leases and atomic finding/checkpoint writes.

352. Fair scheduling and suspension

Process due projects with fresh authorization, retry/pause behavior and owner opt-out; do not treat platform support as unattended authority.

353. Uncertainty-reduction scenario

Compare supported paired readiness/duration scenarios and identify the next fact that reduces remaining uncertainty.

Scope and availability: Learning currently covers selected administrative RFI/submittal finding kinds. Metrics are observational and exposure-biased, not foundation-model retraining, physical verification or guaranteed improvement.

SECTION 34

Development candidates and roadmap - NOT generally deployed

Include these in a development roadmap, not an available-feature sales list.

354. Universal approval evidence gates

Additional bid-award, takeoff, accounting-exchange, lien-release and stop-notice gate code has test evidence; the full contract-system package remains undeployed.

355. Expanded contract and procedure controls

Candidate customer device recovery/revocation, reviewed-procedure activation/drafting/retirement and jurisdiction-pack validation require remaining release gates.

356. Approved jurisdiction packs

Validation machinery does not supply approved legal rule content; authoritative pack review remains outstanding.

357. Richer direct-face DXF path

Separate POINT/LINE/3DFACE parser, isolated socket/Docker bridge and crash-recovery workflow passed disposable integration acceptance; permanent deployment is not established.

358. Broader regional recovery

Later staging authentication, encrypted backup/restore and scoped regional-independence tests exist; complete current-region production failover is not accepted.

359. Native Revit and federation

Licensed native translation, multi-model federation and cross-source coordinate reconciliation remain advanced integration work.

360. 4D and 5D intelligence

Model-linked schedule playback, cost exposure, trade/zone capacity and richer package/procurement readiness remain roadmap scope beyond bounded delivered tools.

361. Calibrated predictive models

Trained, prospectively validated delay/cost probabilities require suitable outcome data and validation; workload scenarios are not those probabilities.

362. Autonomous reality capture

Continuous drone feeds, photo-to-3D reconstruction, calibrated field-to-plan deviation measurements and certified visual takeoff remain unestablished.

363. Full operational digital twin

Automatic asset/BIM identity mapping, sensor-based physical-state simulation and municipal lifecycle synchronization remain incomplete.

364. General regulator synchronization

Live CSLB/DIR/wage and broad jurisdiction feeds remain separate from the limited delivered permit adapter.

365. Unrestricted self-learning and repair

Autonomous model-weight training, arbitrary executable self-modification and universal automatic infrastructure repair are not delivered capabilities.

Scope and availability: Some staging/candidate areas continue to change. Only a scoped acceptance/deployment receipt can promote their availability status.

SECTION 35

App Factory: additional AI and customer controls

Deployed web tooling with provider generation subject to current pricing, usage and service readiness.

366. Guided tracker creation

Describe, review, save draft and publish through a four-step process.

367. Searchable tracker library

Find trackers using library search and draft/published filters.

368. Stable field editing

Add, remove and reorder typed fields without silently replacing stable field keys.

369. Interactive practice mode

Preview a generated design and submit practice entries without creating business records.

370. Multiline records

Preserve paragraphs and Unicode through preview, creation, editing and reload.

371. Contextual entry deletion

Confirm deletion of the named selected entry with Keep entry as the safe default; this is not whole-tracker deletion.

372. Automatic training tracker

Supported new-account paths receive one account-local SAMPLE inspection tracker with 15 fields, four transitions, a chart and a fictional record; existing accounts are not universally backfilled.

373. Idempotent sample provisioning

Avoid duplicate samples and preserve user edits, deletions and revoked grants; eligible later members receive sample-specific access.

374. Known-definition recovery

Recover eligible valid published definitions and repair derived indexes without inventing replacement business records.

375. Generation availability disclosure

Earlier production generation passed, but later pricing/reconciled-usage gates blocked a tested request. Generation is implemented and conditional, not guaranteed available to every account.

Scope and availability: Client access follows the applicable browser and device requirements. Whole-tracker deletion and unrestricted executable generation remain separate from these supported tracker controls.

SECTION 36

Advanced contract AI and evidence candidates - release pending

Additional detailed development scope found in the separate contract-system candidate; not advertised as deployed.

376. Transactional evidence decisions

Candidate bridges formal record actions to required evidence checks and exercises correction-versus-approval contention.

377. Contract provenance journal

Candidate journal, evidence-policy configuration, signed receipts and independent review.

378. Signed offline capture

Candidate device enrollment/revocation, signed local queues, pinned receipt keys, encrypted backup/recovery, quarantine and independent review.

379. Extended schedule semantics

Candidate working-day and relationship-lag calendars, progress methodology, remaining durations and cited scenario packets.

380. Reviewed procedure lifecycle

Candidate procedural suggestions, held-out evaluation, explicit activation/retirement and unsent record-specific checklists.

381. Portable project evidence archive

Candidate whole-project record/file registry, credential exclusion, original-byte checks, signed coverage manifest and independent verifier.

Scope and availability: Passing isolated tests does not establish release completion. Approved jurisdiction content, broad portal coverage, archive/schema reconciliation and migration rehearsal remain governed release requirements.

SECTION 37

Commercial onboarding availability

Separate billing technology from the construction capability inventory.

382. Subscription onboarding controls

Corrected provisioning checks distinguish subscription activation from verified completed payment and enforce plan mismatch guards.

383. Atomic account provisioning

Implemented receipt/account/encrypted-mail enqueue and retry controls are documented.

384. Sandbox checkout development

Sandbox OAuth, catalog and checkout creation are recorded; end-to-end buyer approval, webhook activation, delivery and live launch acceptance remain incomplete.

Scope and availability: Paid self-service launch is not accepted merely because sandbox objects or subscription routes exist. Quote-based public pricing and actual provider readiness remain relevant.

SECTION 38

TRACE AI: deeper evidence and learning architecture

Detailed implementation distinctions retained from the AI audit.

385. Deterministic clarification

Offer bounded follow-up choices for broad construction questions without reading private evidence or spending model tokens.

386. Structured field-day evidence

Retrieve authorized daily, job-walk, quality, safety and time-record facts with operational citations.

387. Sourced contract clocks

Include clock settings only with explicit source, day count and working/calendar basis; do not substitute unsourced settings for contract terms.

388. Authority, applicability and operativity

Distinguish retrieval relevance from controlling authority, effective time, jurisdiction, project area/system/phase and amendment effects.

389. Qualifying evidence lanes

Retain exceptions, conditions, alternatives and supersession alongside direct matches; a classifier alone does not establish a legal conflict.

390. Optional exact-evidence review

A separately configured reviewer can assess a draft against its cited passages without browsing, retrieving new evidence, adding citations or executing actions.

391. Private shadow curriculum

Capture corrections, rejections, no-match and escalation signals into a scoped curriculum. This shadow layer does not itself change live answers.

392. Measured public-guide retrieval improvement

A fixed 31-alias candidate improved one small held-out top-topic evaluation from 14/18 to 15/18 while preserving eligible passing cases; this is not general answer accuracy.

393. Fingerprint-bound retrieval activation

Bind eligible activation to pack, dataset, algorithm and registry identities; corrupt or stale state falls back to baseline.

394. Route-aware workload counting

Count any-one review groups once at the earliest due action, all-required groups separately, and exclude inactive future steps.

395. Recovery semantics gate

The resource-recovery planner supports bounded unstarted fixed-duration DAGs with FS/nonnegative lag and ASAP/SNET releases plus explicit calendars. Unsupported SS/FF/SF, actual progress, splitting, overtime and inferred productivity are refused.

396. Narrative fact preservation

Rewrite supplied daily notes in English or Spanish while preserving facts, numbers, negations and uncertainty; do not add unsupported blame or causation.

397. Provider-team distinction

Gemini, Grok and Claude consultations helped development reviews; they are not established as a three-provider vote on every customer answer.

Scope and availability: Reference extraction is automated rather than named human fidelity review. Attempted but blocked GAO, OSHA 3886 and USACE CQM source downloads were not ingested. UFS is a nonmandatory reference and UFGS documents are templates requiring tailoring/adoption.

SECTION 39

Internal TRACE viewer and controller

Integrated customer-panel viewing and review controls; original source files remain preserved.

398. Internal document viewer

Open supported authorized PDF/image documents inside TRACE, navigate available pages and download the original.

399. Internal CAD workspace

Choose a current-project DWG and exact version, then open the converted drawing inside BIM without requiring an external CAD application for the supported review functions.

400. Internal 2D controller

Select entities, search source handles, pan, zoom, fit, switch layers, restore converted visibility, add notes, draw polylines and measure approximate XY distances.

401. Internal XYZ controller

Orbit, pan, zoom and fit source XYZ line/point geometry; apply explicit Z-range, zero-Z and vertical-display controls. The 2D layer switches do not automatically filter this XYZ view.

402. Internal solid-surface controller

Select one actual POINT layer, build the shaded surface, inspect low/high colors, toggle points/wireframe and apply maximum-edge and display-scale controls.

403. Internal IFC controller

Use object tree/search, picking, selected-object fit, isolation/show-all, top/front orthographic views, isometric perspective, X/Y/Z section cuts, wireframe and reset.

404. Source/geometry distinction

IFC-derived GLB is served as a checked derivative; this does not establish arbitrary public GLB/gITF upload support or automatic mapping of every mesh to an IFC element.

405. Coordinate/reference controller

Select actual points or separate block anchors, inspect original XYZ, export/print chosen rows and label a selected actual point as an unverified reference marker.

406. Version and integrity controller

Bind viewing, annotations, evidence links and geometry to source/version fingerprints; reject stale or mismatched outputs.

407. Review and publication controller

Apply current source cleanliness, status, license and actor permissions; IFC publication and provisional CAD review remain distinct workflows.

408. Conversion controller

Dispatch bounded native extraction, use private identity-bound caches, report supported/omitted geometry and recheck access after processing.

409. Print/export controller

Prepare supported drawing, elevation, surface, coordinate and document-page outputs with applicable source identity, units and display settings.

410. Format boundaries

DWG and IFC/IFCZIP have deployed paths. PDF/images use their document/markup paths. Direct richer DXF/3DFACE remains a separate candidate; native RVT/DGN/SKP and arbitrary format conversion are not established.

411. Editing boundaries

TRACE review annotations do not rewrite the DWG/IFC design. IFC dimensioning, capped section solids, survey-certified benchmarks and approved final grading are not supplied merely by viewing.

Scope and availability: This is TRACE's internal review viewer/controller, not a full AutoCAD/Civil 3D/Revit authoring replacement. Section cuts are uncapped; camera ground/shadows are display aids, and geometry completeness remains source-dependent.

SECTION 40

Latest AI / operations release: September 9, 2026

Implemented release with 155 passing tests: 112 PHP tests (384 assertions), 37 voice tests and six browser fixture tests; TypeScript typecheck also passed.

412. Telephone interruption fix

The response queue now waits while the caller speaks, coalesces overlapping turns and supports caller interruption. The user reported the real-call test passed as natural and responsive.

413. Source-specific research

Explicit official-source requests bypass the original workflow-guide shortcut; literal exclusions of project records are respected while private identifier protections remain in place.

414. Live official-citation acceptance

The tested RFI question returned official public-web citations to USACE CQM guidance and Caltrans Source Inspection Guidelines, with no project records used.

415. Immediate support and troubleshooting

Get help now provides four current workflow guides, typed product guidance, clear source labels, retained inputs/errors and a human-ticket handoff path.

416. Current product guidance

Web and telephone guidance covers My Apps/App Factory, Undo/Redo, loading, support, training and billing boundaries.

417. Private improvement cycle

Completed a private cycle containing seven failure signals, two scoped curricula and two new versions. No model weights, live answer behavior or promotion changed; no autonomous training.

418. Billing readiness checks

A read-only, secret-free check identifies missing merchant credentials, webhook configuration and plan setup. Live paid launch remains blocked pending configuration and financial acceptance.

419. Support interaction isolation

Support guidance no longer triggers a legacy acceptance toast; topic selection does not approve or seal a project record.

Scope and availability: The real-call result is one user-reported acceptance, not two independently identified calls or a statistical audio benchmark. Live research is a tested example, not universal accuracy. Human handoff is a ticket path, not a continuous staffing promise. No live charge, refund or subscription was attempted.

SECTION 41

Windows, Mac, iOS and Android access

Device access and feature requirements.

420. Desktop access

For Windows and Mac, use the applicable TRACE client or supported browser workflow with the account's enabled modules.

421. Mobile access

For iOS and Android, use the applicable TRACE mobile/browser workflow and project-authorized features.

422. Device permissions

Microphone, camera, file selection, downloads and notifications follow the device/browser permission settings.

423. Graphics and connectivity

Interactive CAD/BIM requires compatible graphics support; provider-backed and connected workflows require the relevant network/service connection.

Scope and availability: Access, installation and feature behavior follow the applicable client release, operating-system/browser support, license and project permissions.

SECTION 42

Complete original workflow-guide index

Retained 24-guide pack; these are original workflow explanations, not adopted contract requirements.

424. Getting started with TRACE

Original TRACE guidance available to eligible workflow retrieval.

425. Asking TRACE a useful question

Original TRACE guidance available to eligible workflow retrieval.

426. Writing and tracking a request for information (RFI)

Original TRACE guidance available to eligible workflow retrieval.

427. Preparing a submittal for review

Original TRACE guidance available to eligible workflow retrieval.

428. Finding the right drawing and revision

Original TRACE guidance available to eligible workflow retrieval.

429. Organizing project files and document records

Original TRACE guidance available to eligible workflow retrieval.

430. Writing a useful daily report

Original TRACE guidance available to eligible workflow retrieval.

431. Taking and labeling useful site photos

Original TRACE guidance available to eligible workflow retrieval.

432. Preparing and recording an inspection

Original TRACE guidance available to eligible workflow retrieval.

433. Recording and escalating a safety concern

Original TRACE guidance available to eligible workflow retrieval.

434. Reviewing time entries and field days

Original TRACE guidance available to eligible workflow retrieval.

435. Turning meetings into clear action items

Original TRACE guidance available to eligible workflow retrieval.

436. Building a practical lookahead plan

Original TRACE guidance available to eligible workflow retrieval.

437. Tracking materials and long-lead items

Original TRACE guidance available to eligible workflow retrieval.

438. Keeping change requests and approvals distinct

Original TRACE guidance available to eligible workflow retrieval.

439. Reading a project budget carefully

Original TRACE guidance available to eligible workflow retrieval.

440. Preparing a payment application record

Original TRACE guidance available to eligible workflow retrieval.

441. Organizing permit and authority correspondence

Original TRACE guidance available to eligible workflow retrieval.

442. Planning closeout and turnover information

Original TRACE guidance available to eligible workflow retrieval.

443. Managing punch lists and remaining work

Original TRACE guidance available to eligible workflow retrieval.

444. Using a transmittal to explain what was sent

Original TRACE guidance available to eligible workflow retrieval.

445. Coordinating models and markups

Original TRACE guidance available to eligible workflow retrieval.

446. Using forecasts alongside field observations

Original TRACE guidance available to eligible workflow retrieval.

447. Understanding citations, uncertainty, and corrections

Original TRACE guidance available to eligible workflow retrieval.

SECTION 43

Complete retained publication index

Eight retained publications totaling 524 PDF pages. Editions below describe the retained pack, not a claim of current editions.

448. UFC 3-501-01 Electrical Engineering

27 November 2024; 96 PDF pages; https://legacy.wbdg.org/FFC/DOD/UFC/ufc_3_501_01_2024.pdf

449. UFC 3-410-01 Heating, Ventilating, and Air Conditioning Systems

28 July 2025; Change 1, 23 January 2026; 63 PDF pages; https://legacy.wbdg.org/FFC/DOD/UFC/ufc_3_410_01_2025_c1.pdf

450. UFC 3-201-01 Civil Engineering

20 December 2022; Change 1, 1 June 2026; 68 PDF pages;
https://legacy.wbdg.org/FFC/DOD/UFC/ufc_3_201_01_2022_c1.pdf

451. UFC 3-420-01 Plumbing Systems

1 April 2021; 72 PDF pages; https://legacy.wbdg.org/FFC/DOD/UFC/ufc_3_420_01_2021.pdf

452. UFS 3-740-05 Construction Cost Estimating

2 February 2026; 112 PDF pages; https://legacy.wbdg.org/FFC/DOD/UFC/ufs_3_740_05_2026.pdf

453. UFGS 01 32 01.00 10 Project Schedule

August 2026; 24 PDF pages; <https://legacy.wbdg.org/FFC/DOD/UFGS/UFGS%2001%2032%2001.00%2010.pdf>

454. UFGS 01 45 00 Quality Control

August 2023, Change 4 August 2026; 51 PDF pages;
<https://legacy.wbdg.org/FFC/DOD/UFGS/UFGS%2001%2045%2000.pdf>

455. UFGS 01 35 26 Governmental Safety Requirements

May 2024, Change 2 August 2026; 38 PDF pages; <https://legacy.wbdg.org/FFC/DOD/UFGS/UFGS%2001%2035%2026.pdf>

Validation and evidence basis

Reviewed sources include the previous public inventory; current production module catalog; interpretation and research releases; source-isolation and reference-pack releases; Living Project v1/v2 and Continuum; App Factory and inventory deployment records; visual review, schedule recovery, sensor/permit checks; IFC/VDC and CAD/terrain releases; and the separate contract-system and BIG EXPANSION candidate ledgers.

Recorded focused results include the VDC combined suite (148 tests / 1,326 assertions), CAD backend suite (19 / 85), Living Project v2 suites on SQLite and PostgreSQL (140 / 1,059 each), source-isolation suite (94 / 2,285), reference/workload suite (61 / 3,664), research/proof suite (126 / 557), and the latest AI/ops release (155 tests: 112 PHP, 37 voice and six browser fixtures). These runs overlap, cover different frozen releases and are not summed into a coverage percentage.

Browser evidence includes actual CAD opening and solid-surface construction, IFC synthetic geometry, selected page/image vision-provider checks, source-linked proof PDF downloads, and isolated workflow tests. Hardware calibration, arbitrary CAD/model fidelity, universal legal compliance, complete disaster recovery and every customer/device configuration are not established by these tests.

Known qualifications include intermittent research-answer release, preview-only terrain without verified final-grade boundaries, unsupported CAD entities/references, and separate tested but undeployed contract/CAD/recovery candidates.

The September 9 AI/operations audit records the telephone interruption fix and user-reported real-call pass, a live USACE/Caltrans source-specific research pass, immediate support with human handoff, a private shadow improvement cycle and read-only billing readiness checks. Merchant, webhook and plan setup still block live paid launch.

Earlier statements that DWG viewing and single-IFC coordination were unavailable are superseded by their later scoped deployments. Separate richer DXF candidates are not presumed deployed.

The retained reference editions identify the included pack. They are not represented as the newest editions or automatically governing requirements for any project.