Swiss Grid Generator - One-Page App Summary

Repo: /Users/i/Docs/Dev/swiss-grid-generator

What it is

Swiss Grid Generator is a Next.js web app for building ratio-first typographic grids, editing baseline-aligned text layouts, and exporting vector PDFs. It combines grid setup, interactive preview editing, and print-oriented export in one interface.

Who it is for

- Primary user/persona: Not found in repo.
- Inferred from features/docs: designers and typographers creating modular editorial layouts.

What it does

- Builds configurable grids across ratio families (DIN/ANSI and custom ratios) with orientation and rotation controls.
- Calculates margins, baselines, modules, and typographic scales from shared grid settings.
- Supports drag/snap preview editing, inline text editing, per-block spans/rotation, and optional text reflow/syllable division.
- Tracks UI/layout history with undo/redo, including structural reflow apply/cancel flows.
- Loads and saves full layout state as JSON (uiSettings + previewLayout + gridResult metadata).
- Exports vector PDF output through jsPDF with optional print-pro settings (bleed, crop marks, guide behavior).

How it works (repo-evidenced architecture)

- UI layer: React client page coordinates state and panels in webapp/app/page.tsx and webapp/components/*.
- Core services: grid math in webapp/lib/grid-calculator.ts; text wrapping/optical margin in webapp/lib/text-layout.ts and webapp/lib/optical-margin.ts.
- Background compute: reflow and autofit run in Web Workers (webapp/workers/reflowPlanner.worker.ts, webapp/workers/autoFit.worker.ts) via useWorkerBridge with in-thread fallback.
- Data flow: UI settings -> generateSwissGrid result -> GridPreview rendering -> optional worker reflow/autofit updates -> JSON save/load in browser.
- Export path: useExportActions calls renderSwissGridVectorPdf (webapp/lib/pdf-vector-export.ts) to write vector primitives through jsPDF.
- Backend/services: core app API/service dependency is Not found in repo; optional survey files exist under webapp/public/survey/.

How to run (minimal)

- 1. From repo root: cd webapp
- 2. Install deps: npm install
- 3. Start dev server: npm run dev
- 4. Open http://localhost:3000