# **Lean pre-coding sheet — 88/89**

**Component:** crates/vm\_app/ui/public/map/style.json (MapLibre style; packaged)  
 **Version/FormulaID:** VM-ENGINE v0

## **1) Goal & success**

**Goal:** Provide a MapLibre **style.json** that references only **local** sources (tiles/sprites/fonts), for offline frontier rendering.

**Success:** App renders maps with **no network**, using bundled tiles/styles/fonts; reporting remains self-contained.

## **2) Scope**

**In scope:** Style metadata (name, version), sources → local MBTiles/vector sources, glyphs/sprite → local paths, layers for units/adjacency/frontier statuses.

**Out of scope:** Algorithmic frontier logic (done in pipeline), any remote URLs. Frontier statuses come from **FrontierMap** produced by pipeline.

## **3) Inputs → outputs**

**Inputs:** Local tiles DB (public/map/tiles/world.mbtiles), local sprite/glyph files, **FrontierMap** data (IDs/status) from pipeline outputs.

**Outputs:** On-screen map reflecting **FrontierMap** statuses; no artifacts written.

## **4) Entities/Tables (minimal)**

## **5) Variables (only ones used here)**

## **6) Functions (signatures only)**

N/A (static style document).

## **7) Algorithm outline (style logic)**

Declare **local** sources for tiles; set glyphs/sprite to **relative** app paths.

Define layers for units/labels; style according to **FrontierMap** statuses: no change / autonomy / phased / immediate; show mediation/protected flags.

Optional line styles for adjacency by type (land/bridge/water).

Ensure color/legend mapping matches report’s Frontier section.

## **8) State flow (very short)**

UI loads style.json → MapLibre reads **local** tiles/assets → UI overlays statuses from **FrontierMap** produced after **MAP\_FRONTIER**.

## **9) Determinism & numeric rules**

Map is **presentation-only**; no computations affect Result/RunRecord. Offline-only assets; report precision rules unchanged.

## **10) Edge cases & failure policy**

Any absolute http(s):// in sources/glyphs/sprite is a **bug**; replace with packaged files.

Missing **FrontierMap** → hide frontier layer/legend; report still renders (map optional).

Missing adjacency layer → disable contiguity line styling; statuses still display.

## **11) Test checklist (must pass)**

App runs **offline**; map loads with **zero** HTTP/DNS; all style URLs resolve locally.

Frontier legend and colors match the statuses produced by **FrontierMap** tests (Annex B Part 5).

Toggling features does not change Result/RunRecord bytes (presentation only).