



Seaglass Globe™

A Real Coordinate System, Behind a Loopback-Only Boundary

For programs where a picture of the Earth is not enough: a WGS-84 ellipsoid held in double precision, measurements that name their algorithm, coordinates read as DD, DMS, UTM and MGRS, real terrain above and below the waterline — and the Forge suite's GPU compute drawn where you are looking. It runs on one Windows x64 workstation with a real GPU. Its API, like the agent's, binds to 127.0.0.1 behind a per-install bearer token; neither is exposed to the LAN. The optional 3D view of the Forge suite, and the surface the agent draws on.

127.0.0.1

the whole boundary is local

the Globe's MCP API and the agent's HTTP API bind to loopback and require per-install bearer tokens — one in each direction; neither is ever exposed to the LAN

MGRS

and UTM, DMS, DD — from one cursor

the military grid reference read straight off the status bar, built from a Snyder forward UTM on WGS-84; the readout re-forms as you switch

f64

geodesy, all the way down

Vincenty inverse and Karney polygon area on the WGS-84 ellipsoid; geodetic ↔ ECEF in double; the ground stops shimmering exactly where a single-precision engine starts to

Runs where the work is

One workstation, everything local. The Seaglass Control Center™ lays down a private Java runtime for the engines, with the Globe's native binaries beside them — no prerequisites — and stores LLM keys in the Windows Credential Manager, never on disk. The tile cache is a plain directory tree under the working directory that never expires, so visited regions serve without a network; any WMS, WMTS, XYZ or MVT service you host yourself is added by URL, and your own elevation enters through the ForgeData catalog.

A coordinate system an evaluator can check

The datum is not a label: $a = 6\,378\,137\text{ m}$ is on the spec sheet, geodetic ↔ ECEF runs in f64 with Bowring latitude and Heikkinen height, and altitude is ellipsoidal, along the geodetic normal — which differs from the geocentric radial by up to ~11.5 arcminutes near 45°. Two clicks return distance, forward and back azimuth and the method that computed them; close a polygon and the badge flips to Karney; save it and the GeoJSON carries the algorithm beside the geometry.

The agent's surface, contained

When the Globe is running, ForgeMind™'s visual answers — contours, elevation profiles, draped rasters, scene entities — are drawn on it instead of only described. The compute engines run as stdio children under the same path sandbox ForgeGIS™ enforces on disk (read roots, write roots); a missing engine degrades the compute tools and never the globe; every tool call is bounded by a 30-second timeout and a panic guard, and the chat panel's bearer rides each request rather than a client default, so it cannot leak into a fetch of a URL an agent names.

WHAT PROGRAMS GET

Terrain work on real elevation, re-run while you hold the slider

Terrain does not stop at the waterline: the depth tint below it reads the same elevation data as the mountains above. Point at the ground and ask what elevation data exists there; it ranks what it can reach, cuts a window sized to your view, and hands you a document with that file set as its source — named, with its resolution. Type a contour interval; drag the sun's altitude and the hillshade re-computes and re-drapes while you hold it — a latest-wins pump, never a queue — from a workflow editor docked under the map that runs branching graphs, not only chains.

A live picture, honestly labelled

Earthquakes as USGS reports them; severe-weather warnings as the Weather Service issued them, over the radar that produced them; ships under way over AIS. Each shows whatever its feed says that day. A dropped connection degrades visibly rather than silently blanking the map: stale entities stay on screen until their staleness clock expires and the indicator turns amber. The satellite catalogue is CelesTrak elements propagated locally by SGP4 — propagated, not live — with a per-category filter that takes a whole shell out of the sky and puts it back.

The digital twin, replayed the same as live

The Globe is the remote consumer of the ForgeGIS digital twin's published wire contract, implemented from the specification text alone: framed raster and vector deltas draped on the terrain, live and replayed runs rendered identically because a replay is indistinguishable from live by design. When engine and globe share one GPU, an opt-in co-resident mode pins Vulkan so raster epochs are imported into shared VRAM rather than copied — zero copy, header-only frames — and every error in that path falls back, loudly, to working wire-only rendering. The demonstration flood is a hydraulic model, not a real event.

DEPLOYMENT POSTURE

2 tokens

distinct per-install bearer tokens, one in each direction between the agent and the Globe; the Globe answers a missing token with an empty 401 after a constant-time compare and logs no token material

0 copies

in co-resident twin mode: raster epochs land in shared device-local VRAM rings and are sampled in place — no readback hop, no CPU bytes

30 s

per tool call — a wedged UI thread or child engine returns an error to the caller; a panicking tool is caught, and the globe window stays up

Footprint. Windows x64 with a real GPU — Vulkan or DX12, whichever wgpu picks on the machine; an RDP or remote-desktop session usually can't drive it. The suite wants 8 GB of RAM with the Globe installed (the Globe runs its own copy of the GIS engines) and roughly 4 GB of disk for a tile cache that grows only with where you have flown. Installed and started by the Seaglass Control Center; port 7900 by default, loopback only, bearer-authed.

Honest by construction. This brief, like the product page, makes no operator, dataset or tool counts — they vary with the engine build attached. The flat projections use the WGS-84 semi-major axis as a sphere radius; the ellipsoid lives in the geodesy and the measure tool. Satellites are propagated from cached elements, the seismic-month showcase is real USGS data replayed, and the twin flood is modelled. Performance figures in the Technical Brief are single-machine measurements, not budgets.

Request the Technical Brief and ask about evaluation access

The Technical Brief covers the geodesy and precision model, rendering and tiling, the data and feed surface, the MCP agent surface, the compute and twin bridges, security posture and deployment. Seaglass Globe is an opt-in component of the Forge suite, installed by the Seaglass Control Center, and is not sold separately; the suite's license is not yet finalized and nothing here is a grant of rights. Ask about evaluation access.

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