

Seed State OS

Small state. Focused reconstruction.

Seed State OS is a retained-state and selective-reconstruction technology programme for applications and devices. When part of a supported structured state changes, applicable retained state can remain in use while the required changes are reconstructed and checked against the agreed output contract.

4,096x less logical work

A defined GPU study updated one changed tile among 4,096. This is dispatched logical work, not a measurement of electricity use or physical bus traffic.

Focus on the changed work

Avoid repeating applicable work when the state and output contract permit reuse. The integration must establish when retained state remains valid.

Fit an existing application

Start with one repeated state operation in an application, simulation or device. This is an integration route rather than a general-purpose replacement for a desktop or phone operating system.

Check before returning state

Define correct output, invalidation, fallback and restart behaviour for the target application. GLYX can provide exact retained records for a separately qualified archive/state connection.

UK patent application GB2624953.2 is pending. An application is not a granted patent.

Workflow and recorded evidence

- 1. Agree one state operation and its output contract.
- 2. Retain the state and qualify what remains applicable.
- 3. Reconstruct affected work and check the result.
- 4. Return the accepted result, or use the defined fallback.

GPU logical-work reduction	4,096x; 1 of 4,096 tiles changed
GPU full-output operational update	22.4062x primary; 20.9190x repeat
GPU compact-output operational update	27.3896x primary; 24.6871x repeat
Separate FPGA engine cycles	2,523 to 13; 99.48% fewer
FPGA complete-service timing	1.264x improvement
FPGA exact outputs	256 requests; zero wrong outputs

How to read these results

These are separate studies and measurement boundaries. GPU operational update measurements used warm retained state. Initial warm-state construction and an independent full-output evaluator were excluded. The full-output and compact-output arms are different contracts; all 120 measured trial results across the two runs matched exactly. The FPGA complete-service comparison excluded prepared-input creation. Its 99.48% engine-cycle reduction is not a 99.48% complete-service speedup.

Scope of the evidence

The studies demonstrate benefits for their stated operations, inputs and retained-state conditions. They do not establish general-purpose CPU/GPU acceleration, energy savings, a finished phone OS, or safety-certified robotic/aerospace deployment. A customer integration must include startup, state construction, checks, output transfer, invalidation and fallback costs that its own operation requires.

From evidence to a deployment

A scoped customer evaluation

Choose a repeated operation with representative changes and a trusted complete-output reference. Freeze the baseline, candidate, input distribution and output contract. Measure complete operational time, construction and restart costs, memory, output correctness, invalidation and fallback. Qualify the actual device and runtime before distribution.

Commercial route

Proposed routes include an annual application/runtime licence and a device-maker development agreement followed by per-shipped-device or annual volume terms. A scoped evaluation establishes the qualified integration. Prices and distribution rights follow the accepted deployment scope.

Using the products together

TokenHoloFold addresses supported local work; GLYX retains exact records; Seed State qualifies and reconstructs supported returning state. Each can be considered separately. A combined evaluation uses one agreed cost boundary and counts each saving once. Separate benchmark ratios must not be multiplied into a projected total saving.

Confidentiality and delivery

This paper describes customer-visible behaviour, recorded outcomes and evaluation boundaries. It does not disclose implementation source, private reconstruction material, issuer keys or proprietary selection rules. Controlled packages and confidential technical discussions require an agreed disclosure and delivery scope. An NDA is not permission to redistribute source or customer data.

Product status

The material describes qualified studies and private evaluation candidates. General customer distribution, target-platform acceptance, production support, checkout and subscription activation require their own completion checks. No universal installation, lossless compression ratio, guaranteed customer saving or energy claim is made.

Evidence reference

Recorded matched selective-GPU studies and separate FPGA study, as summarised in the current Seed State evidence page. Their results are reported independently and are not multiplied together.

Find the corresponding evidence section and evaluation route on the Beyond Brute Force Systems company website when public access opens. Enquiries can be directed to Ben Vivian through his professional profile: [linkedin.com/in/ben-vivian-0782b0130](https://www.linkedin.com/in/ben-vivian-0782b0130).