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BenchEWS Studio Web – User Manual

Web Laboratory, data flow, modules, and reproducible results

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Publication state: 29 September 2026. BenchEWS Studio Web is the browser-based execution interface for the BenchEWS Scientific Core. This manual separates operation, scientific status, and data custody.

1 - Quick start

1. Open https://studio.vonmallinckrodt.com.
2. Select German or English.
3. Choose an input mode: paste data, upload CSV, or example.
4. Select the scientific module.
5. Run the analysis.
6. Inspect the result, scientific status, execution metadata, and provenance.
7. Export JSON when needed.

2 - Inputs

Paste data

Univariate series use one value per line. Multivariate data use comma-separated channels per observation row. Every row must contain the same number of channels.

CSV

The Web service accepts strict CSV input within the published request-size limits. For sensitive data, Public Web is not the strongest custody option because computation is server-side.

Example

Example mode is module-aware. The reference dataset is resolved from the module selected at run time. Switching from variance to CRTI must therefore never reuse stale univariate example data.

3 - Scientific modules

Module	Input	Status
Variance	univariate	implemented
Lag-1 autocorrelation	univariate	implemented
Skewness	univariate	implemented
CRTI	multivariate	EXPERIMENTAL_UNVALIDATED

CRTI is not a global risk score or transition probability. Successful computation does not imply scientific validation.

4 - Result view

The result view presents numerical values, module-specific scientific status, warnings, queue and execution timing, and provenance. Long source and hash values wrap on mobile devices without changing numerical content.

5 - Provenance

Provenance identifies the Scientific Core reference, normalised input, runtime environment, BLAS configuration, Web/API version, and input source. It supports technical traceability and does not replace domain interpretation.

6 - Data custody and deployment modes

Public Web

Browser -> HTTPS -> BenchEWS Web service -> Scientific Core -> result. Intended for examples, teaching, public data, or data deliberately submitted for server-side processing.

Local Offline

Planned mode for confidential work on the researcher's own machine. The architecture is accepted, but the download may only be released after its dedicated offline verification gate.

Institutional Self-hosted

Planned mode for universities, institutes, laboratories, and organisations inside their own infrastructure. The package will only be released after reproducibility, network, telemetry, parity, administration, and rollback verification.

7 - Common errors

- UNSUPPORTED_DIMENSIONALITY: The selected module requires a different data shape.
- ANALYSIS_CAPACITY_EXCEEDED: Capacity is temporarily full.
- ANALYSIS_TIMEOUT: The bounded execution deadline was reached.
- SERVICE_NOT_READY: The service is not ready for analysis.

8 - Scientific boundary

BenchEWS Studio Web is an evidence interface. Computation does not imply scientific validation. It does not output a global BenchEWS score, risk probability, or automatic scientific recommendation.

9 - Numerical reproducibility and Tolerance Contracts

BenchEWS fixes the measurement rule before a cross-platform comparison is evaluated. Every non-exact numerical parity comparison requires a versioned Tolerance Contract that is SHA-256 bound and frozen before evaluation. A missing, PENDING, or hash-mismatched contract cannot produce PASS. A scientifically justified change creates a new contract version; the rule used for an already evaluated run is never widened retrospectively. For CRTI macOS/Desktop versus Linux/Web, the contract deliberately remains PENDING until frozen Mac outputs and the associated Python/NumPy/BLAS environment are available. This governance layer does not change Scientific-Core mathematics.