

Hidden Error Budget Series: Master Index and Scope

Juan Segurola

3Dresyns by Resyner Technologies S.L.

© 2026 Juan Segurola. All Rights Reserved.

Correspondence: info@3Dresyns.com · www.3Dresyns.com

HEB-000 · Series Master Index · Version v0.4 · 23 September 2026

Purpose and scope

HEB-000 is the navigation and scope document for the Hidden Error Budget series. The series examines recurring ways in which a technically competent experiment, measurement or analysis can support a stronger conclusion than the evidence warrants. Each numbered article isolates one reasoning failure or boundary condition; HEB-016 synthesises the series across measurement, inference, modelling and transfer.

This index records the scientific architecture of HEB-001 through HEB-016 and fixes the article identifiers, English-edition titles and versions represented here. The table lists the English editions; other language editions are separate publication objects. Repository identifiers are shown only where already assigned and verified.

Series architecture

The series follows a progression from measurement-system control to inference, experimental design, modelling and transfer. HEB articles are methodological. They do not replace the Engineering Review corpus, which owns domain-specific qualification requirements, acceptance evidence and engineering implementation.

ID	Article	Version	DOI
HEB-001	The Hidden Error Budget: Measurement-System Failure, False Precision and Experimental Design in Laboratory Science	v1.0	10.5281/ zenodo.22862642
HEB-002	The Hidden Boundary Problem: Understanding, Visualisation and Scientific Reasoning	v0.2	10.5281/ zenodo.22903671
HEB-003	From Molecular Structure to Prediction: Visual Reasoning in Organic Chemistry and Photochemistry	v0.2	10.5281/ zenodo.22903715
HEB-004	The Hidden Proxy Problem: When the Measured Quantity Is Not the Question	v0.2	10.5281/ zenodo.22914950
HEB-005	The Hidden Reference Problem: Blanks, Standards, Controls and Calibrations Are Part of the Measurement System	v0.2	10.5281/ zenodo.22915086
HEB-006	The Hidden Observer Problem: Subjective Endpoints, Expectation and the Unblinded Reader	v0.2	10.5281/ zenodo.22915113
HEB-007	The Hidden Limit Problem: Non-Detection, Censoring and the Values That Were Never Measured	v0.3	10.5281/ zenodo.22915170
HEB-008	The Hidden Replication Problem: Repeated Measurements Are Not Independent Experiments	v0.3	10.5281/ zenodo.22915191
HEB-009	The Hidden Correction Problem: When Data Treatment Creates Confidence Instead of Information	v0.3	10.5281/ zenodo.22915218
HEB-010	The Hidden Interaction Problem: Why One-Factor-at-a-Time Experiments Mislead	v0.3	10.5281/ zenodo.22915242
HEB-011	The Hidden Time Problem: The Present State of an Experiment Depends on How It Was Reached	v0.3	10.5281/ zenodo.22915275
HEB-012	The Hidden Scale Problem: Mechanisms Change Their Relative Weight With Size	v0.3	10.5281/ zenodo.22915324
HEB-013	The Hidden Model Problem: When a Good Fit Becomes a Mechanism and an Optimum	v0.2	10.5281/ zenodo.22915377
HEB-014	The Hidden Classification Problem: When Categories Conceal Continuous Behaviour	v0.3	10.5281/ zenodo.22915432
HEB-015	The Hidden Transfer Problem: Why Reproducing a Procedure Is Not Reproducing a Result	v0.3	10.5281/ zenodo.22915501
HEB-016	Hidden Error Budget Series Synthesis: From Measurement to Inference and Transfer	v0.4	10.5281/ zenodo.22915548

Scope boundaries

Measurement and representation. HEB-001 to HEB-005 address measurement-system validity, representation and boundary choice, molecular-to-observable reasoning, proxy validity and reference-system validity.

Human and observability boundaries. HEB-006 and HEB-007 address observer-dependent endpoints and the limits created by non-detection and censoring.

Information structure. HEB-008, HEB-009 and HEB-010 address replication, data treatment and interaction structure.

State dependence. HEB-011 and HEB-012 address path dependence and scale dependence.

Inference compression. HEB-013 and HEB-014 address model overreach and categorical compression of continuous behaviour.

Transfer. HEB-015 addresses why procedural similarity does not establish result equivalence across laboratories, instruments, operators, materials or scales.

Synthesis. HEB-016 integrates the series around the principle that a scientific conclusion is only as transferable as the weakest untested link connecting the physical system to the claim.

Relationship to the Engineering Review corpus

HEB asks whether a conclusion follows from what was measured, observed or modelled. Engineering Reviews ask what evidence is required to qualify a particular engineering claim. A HEB article can therefore expose a reasoning failure that an ER article later converts into a domain-specific qualification requirement, but the two series retain separate identifiers, scope and publication objects.