

Global Reinsurance Signal Ecology

Structural Assumption Drift

External Conditions, Cross-Domain Interaction and Decision Exposure

01 / Executive Summary

Upstream signal degradation may reduce confidence before formal recognition emerges.

Who	Model providers, brokers, reinsurers, retrocession and capital functions making material decisions through interpreted external signals.
What	Drift reconstructs the external signal state surrounding an organisation from its public footprint, operating scope and institutional ecosystem.
Where	At the interfaces between catastrophe models, underwriting, exposure, claims, capital, governance and shared infrastructure.
When	When environmental, capital, regulatory, narrative or technological conditions move faster than evidence, assumptions and decision cycles.
Why	Institutional exposure can emerge without individual failure when functions inherit incomplete, delayed or incompatible signal states.
How	Bound the organisation and horizon; reconstruct the public signal footprint; trace change through assumptions and hand-offs; define evidence to confirm, close or escalate.

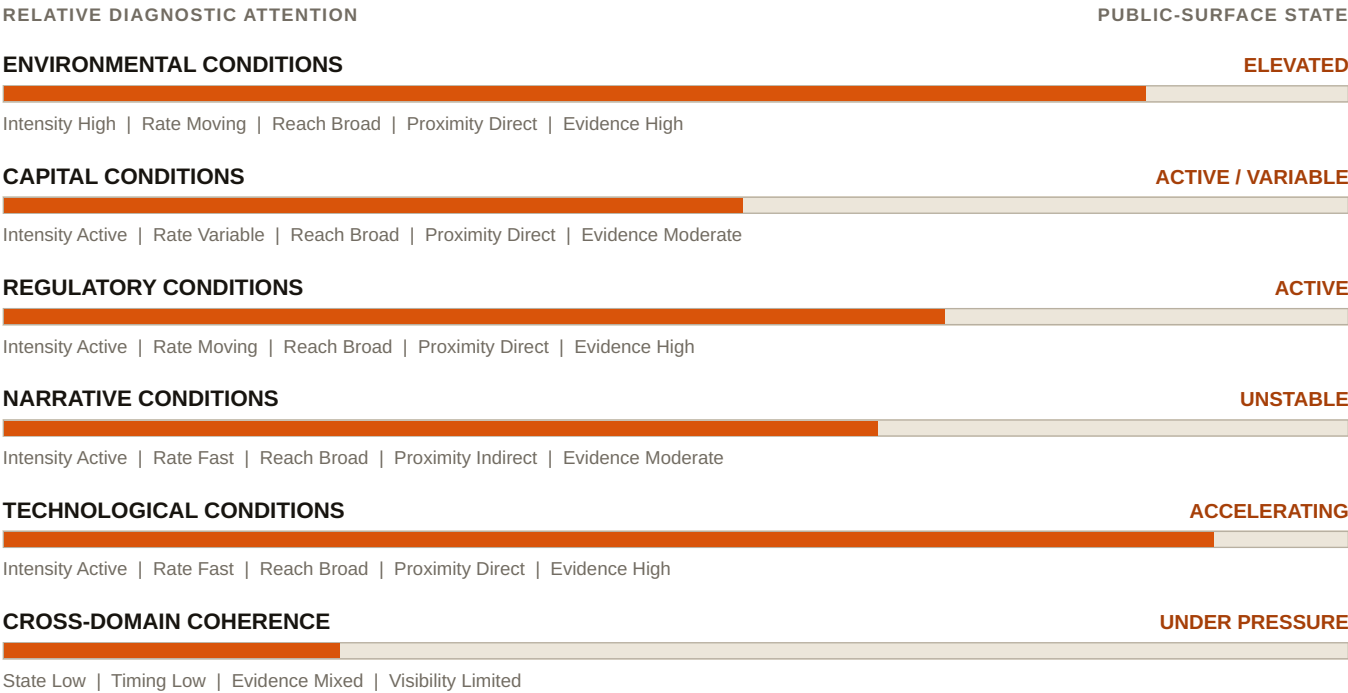
Scientific object: decision environment · Unit: signal state · Mechanism: institutional propagation

COMMISSIONED OUTPUT PREVIEW — ILLUSTRATIVE CONFIGURATION

Configuration	Europe Property Cat Treaty European Windstorm 12 months
Trace	Repair capacity → vulnerability and claims duration → modelling, claims and capital
Deliver	Decision brief confidence and hand-off matrix verification watchlist
Full illustrative extract	Page 15

02 Signal Condition Assessment

Assessment of environmental, capital, regulatory, narrative and technological conditions.



These bars show where public evidence suggests attention should concentrate. They compare how visible, fast-moving, wide-reaching and decision-near each condition is. They are directional — not probabilities or loss forecasts.

ASSESSMENT LENS	ASSESSMENT QUESTION	PUBLIC-EVIDENCE TEST
Signal intensity	How strongly is the condition observable now?	Breadth, persistence and institutional relevance.
Rate of change	How quickly is its state or interpretation moving?	Direction, acceleration and update frequency.
Cross-domain reach	How many material domains can inherit it?	Plausible mechanisms across models, claims, capital and governance.
Decision proximity	How close is it to a reinsurance decision?	Connection to pricing, accumulation, portfolio, appetite or allocation.

The visual position expresses relative diagnostic attention. It is not a probability, forecast loss or measure of institutional performance. Cross-domain coherence asks whether state, timing, evidence and functional visibility remain aligned.

03 Assumption Confidence Review

Identification of areas where external conditions may be diverging from existing assumptions.

Surface 10 does not determine that an assumption is incorrect. It identifies assumption classes whose confidence may become more sensitive when the external operating environment moves. The relevant question is not simply whether a model or process is current. It is whether the surrounding interpretation still describes the conditions under which a material decision is being made.

ASSUMPTION CLASS	WHY CONFIDENCE MAY CHANGE	INDUSTRY REVIEW QUESTION
Historical representativeness	Recent and future conditions may not be represented by the selected calibration period.	Which decisions depend most heavily on historical stability?
Reconstruction stability	Labour, energy, materials, logistics, inflation and sanctions can alter cost and duration.	Are vulnerability, claims-cost and reserving views using compatible conditions?
Peril separability	Infrastructure, technology and services can connect otherwise separate loss pathways.	Which common dependencies sit beneath apparently diversified books?
Exposure comparability	Values, dates, modifiers, definitions and data quality can differ across submissions.	What transformation is required before exposures can be aggregated?
Claims as validation	Coverage, settlement, reporting and uninsured loss filter the observed event.	What does the claims signal validate, and what remains outside it?
Market price as risk signal	Capacity, competition, capital costs and return requirements also affect price.	Which part of market movement reflects risk-state change?
Stable correlation	Dependencies and regimes can change when conditions interact.	Is diversification conditional on an external state that has moved?
AI and automated output	Repeated use can amplify a small provenance, transformation or governance weakness.	Can material outputs be traced, challenged, corrected and withdrawn?

REVIEW PRINCIPLE

Reduced confidence is not equivalent to failure. It is a reason to ask what evidence would justify maintaining, reviewing or changing the assumption.

E03 **E04** **E06** **E07** Evidence anchors

04 Functional Exposure Assessment

Assessment of which operational functions may be most affected.

CATASTROPHE MODELLING

Model confidence may reduce
calibration | assumptions | revision cycles

UNDERWRITING

Pricing confidence may reduce
risk appetite | selection | terms

EXPOSURE MANAGEMENT

Accumulation visibility may reduce
concentration | scenarios | adaptation

CAPITAL & RESERVING

Allocation confidence may reduce
loss cost | constraints | retrocession

CLAIMS / RECONSTRUCTION

Development confidence may reduce
repair | supply chain | settlement

RISK GOVERNANCE

Decision visibility may reduce
thresholds | escalation | board confidence

Different functions do not receive the same evidence at the same time. Catastrophe modelling may first encounter calibration or representation questions. Underwriting may first encounter changes in price adequacy, appetite or terms. Exposure management may see accumulation behaviour that is difficult to reconcile with standard classifications. Claims and reserving may observe reconstruction and development effects only after contractual and settlement filters have acted. Capital and governance functions may receive a compressed interpretation after several specialist transformations.

The industry-level exposure is therefore one of fragmented visibility. No single function necessarily observes the complete external environment, and the absence of a visible problem in one function does not establish stability in another. A commissioned diagnostic uses the organisation's selected functions to determine where external conditions may already be affecting confidence, interpretation or adaptation.

FUNCTIONAL PRINCIPLE

The diagnostic does not replace specialist judgement. It supplies a shared external-condition view against which specialist confidence can be discussed.

05 Decision Implications

Potential implications for pricing, accumulation, capital allocation, adaptation and risk appetite.



DECISION AREA	POTENTIAL IMPLICATION	QUESTION
Pricing and underwriting	Loss expectations, claims cost, capacity and competition may be difficult to separate.	What changed: risk, cost, supply or interpretation?
Accumulation	Common physical, digital or service dependencies may connect exposures.	Which shared nodes are not visible through conventional classifications?
Portfolio adaptation	Selection, structure and appetite may adjust at a different speed from models or claims.	Does the portfolio response match the selected decision horizon?
Capital allocation	Tail, correlation, retrocession and return assumptions can inherit different external states.	Which conditions drive the capital decision most strongly?
Risk appetite	Thresholds may remain formally valid while their environmental context changes.	What observation should trigger review or escalation?
Governance	Emerging conditions may reach decision forums after specialist interpretation has stabilised.	Can uncertainty and alternative interpretations still be seen?

The diagnostic identifies which external conditions, assumptions and functional hand-offs deserve decision-level attention. It strengthens the evidential basis for pricing, underwriting, reserving and capital judgement while accountable action remains with the institution.

06 Emerging Conditions Review

Identification of developments not yet fully visible through conventional evidence.

CONDITION	STATUS	WHY IT MAY MATTER EARLY
Climate and NatCat methodology	Established and developing	Changing hazard, vulnerability, adaptation and data methods can shorten confidence horizons.
Geeconomic fragmentation	Established	Inflation, supply chains, financial markets and claims costs may move together.
AI adoption and governance	Accelerating	Provenance, repeated use, model risk, cyber security and human oversight become linked.
Third-party technology concentration	Accelerating	Common providers and nth-party services can create shared operational dependency.
Cyber accumulation	Established and developing	Common technologies and providers can create correlation beyond individual insureds.
Protection-gap pressure	Established	Availability, affordability, adaptation, retention and public-private responses interact.
Narrative synchronisation	Watch condition	Market interpretation and appetite may converge before evidence is mature.
Synthetic or contested information	Watch condition	Source reliability, validation and institutional interpretation may become less stable.
Regulatory divergence	Watch condition	Different requirements can alter operations, evidence and transaction structure across jurisdictions.

A watch condition is not a prediction. It remains in the report only when a plausible connection to a selected assumption, function or decision can be stated. The diagnostic is designed to distinguish conditions that warrant attention from those that are merely interesting.

EMERGING-CONDITION TEST

What is changing? Where could it enter the decision environment? Which assumption or function would encounter it first? What conventional evidence would arrive later?

E01 E02 E06 E08 E09 Evidence anchors

07 Areas Requiring Attention

Topics, assumptions and conditions that may warrant further internal review.

AREA	INDUSTRY OBSERVATION	INTERNAL REVIEW QUESTION
External-condition stability	Several relevant domains are active at the same time.	Which conditions matter most to the selected peril, business and horizon?
Cross-domain coherence	Conditions considered separately may interact through common mechanisms.	Which interactions are absent from current discussion or scenarios?
Assumption confidence	Historical, reconstruction, diversification and market assumptions may be sensitive.	Which assumption would most change the decision if confidence reduced?
Functional visibility	Different functions encounter different parts of the external environment.	Who observes each condition first, and who receives it last?
Accumulation	Infrastructure, technology and services can create shared dependencies.	Which common nodes connect exposures across geography, peril or sector?
Decision timing	Market and narrative response can be faster than models, claims or governance.	Could action occur before the evidential basis stabilises?
AI and data	Automated transformation and repeated use increase propagation reach.	Can material outputs be traced, challenged and withdrawn?
Governance confidence	Escalation thresholds may depend on evidence that arrives late.	When does reduced confidence become a review or board-level issue?

PRIORITY POSITION

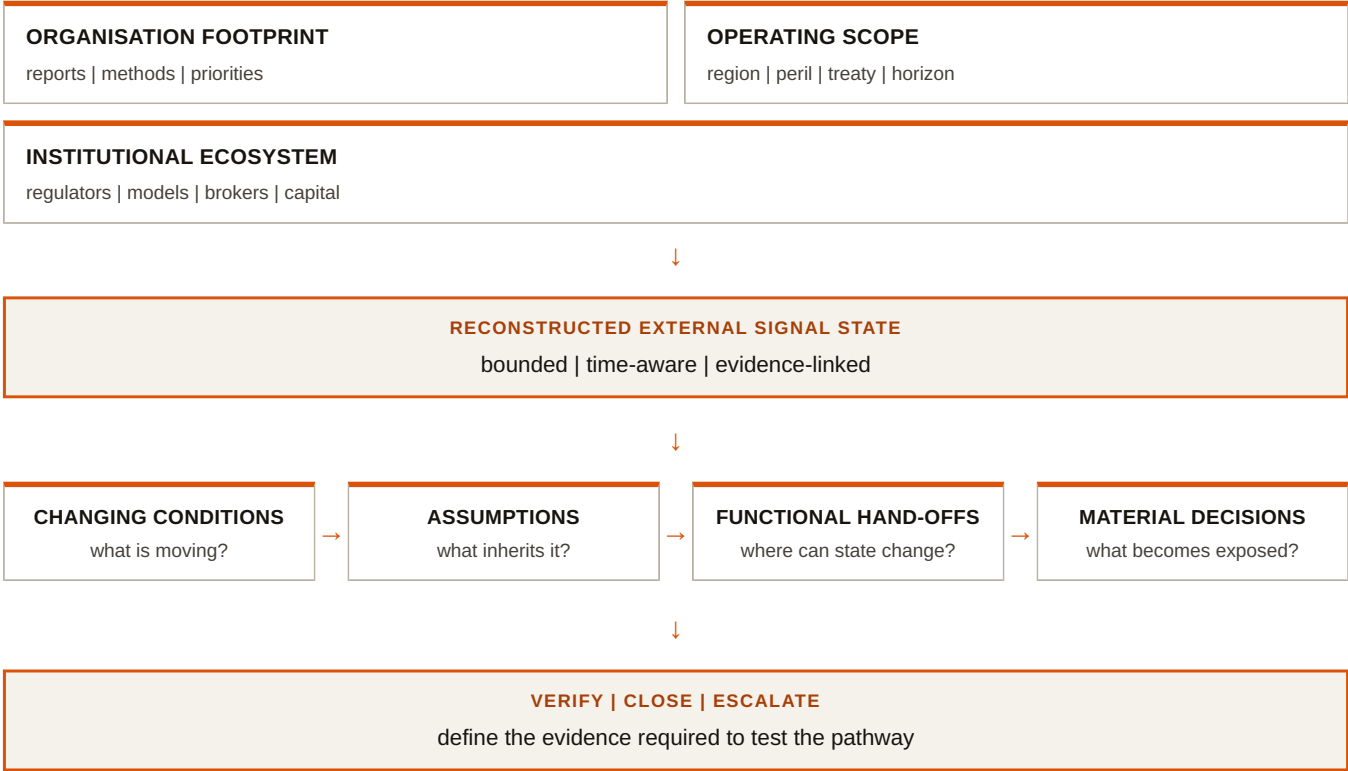
The highest-value review is not the most complex topic. It is the external condition that is relevant to a material decision, insufficiently visible across functions, and capable of changing the confidence attached to an important assumption.

Pages 8–18 provide the supporting analysis behind these seven diagnostic sections.

08 Supporting Analysis

Public-footprint reconstruction: how Drift builds a decision-relevant external state.

IP-safe view of the Campaign 5 method



PUBLIC EVIDENCE FIELD	WHAT IT CONTRIBUTES	BOUNDARY
Organisation public footprint	Declared scope, public reporting, priorities, methods and risk positions.	Does not establish internal adequacy.
Operating scope	Selected geography, peril, treaty, function, concern and decision horizon.	Does not replace portfolio or claims data.
Institutional ecosystem	Signals from regulators, model providers, brokers, cedants, vendors and capital.	Does not prove internal transmission.
External conditions	Environmental, capital, regulatory, narrative and technological state.	Does not predict a specific loss.

The intersection of these fields creates a reconstructed external signal state. Configuration narrows the evidence search, selects plausible pathways, identifies assumption classes capable of inheriting change, locates relevant functional hand-offs and defines the decisions against which materiality is tested.

The diagnostic does not infer hidden internal facts. It identifies what the organisation should be able to verify internally if its public footprint and current operating environment are being represented by compatible assumptions and decision artefacts.

09 Supporting Analysis

Cross-domain interaction across the reinsurance decision environment.

Cross-domain interaction — conditions may combine before conventional evidence stabilises



Technological conditions remain a cross-cutting condition in the supporting analysis: provenance, dependency, cyber accumulation and propagation speed.

External conditions rarely move independently. Environmental change can influence reconstruction cost, claims development, regulatory response and capital availability. Capital conditions can influence price, retention, portfolio construction and the accessibility of risk transfer. Regulatory expectations can influence evidence requirements, model use and governance. Narrative conditions can influence confidence, appetite and the timing of institutional action. Technological conditions can change data provenance, operational dependency, cyber accumulation and the speed with which interpretations propagate.

INTERACTION	POTENTIAL EFFECT	VISIBLE LATER THROUGH
Environmental × reconstruction	Changed severity and duration without changed physical hazard.	Claims development, reserving and reinstatement.
Capital × risk transfer	Capacity and price affect retention and portfolio adaptation.	Renewal outcomes and risk appetite.
Technology × infrastructure	Common dependencies connect otherwise diverse exposures.	Operational interruption and accumulation.
Regulation × models	Evidence and governance expectations alter acceptable use.	Validation, documentation and review cycles.
Narrative × capital	Rapid interpretation changes confidence and allocation.	Price, capacity, appetite and executive attention.

10 Supporting Analysis

Environmental conditions, catastrophe models and calibration confidence.

External conditions may move before calibration evidence matures.



Catastrophe models combine hazard, exposure and vulnerability components to estimate probabilistic loss. Their value does not depend on perfect prediction. It depends on appropriate use, understood limitations and confidence that the components and assumptions remain relevant to the decision. Climate-related change, new scientific evidence, exposure evolution and adaptation can affect different components at different times.

Public supervisory material increasingly emphasises climate-risk governance, scenario analysis, data and methodological limitations. This does not demonstrate that catastrophe models are failing. It establishes that the operating environment around model interpretation is developing and that historical observations alone may not answer every current or forward-looking decision question.

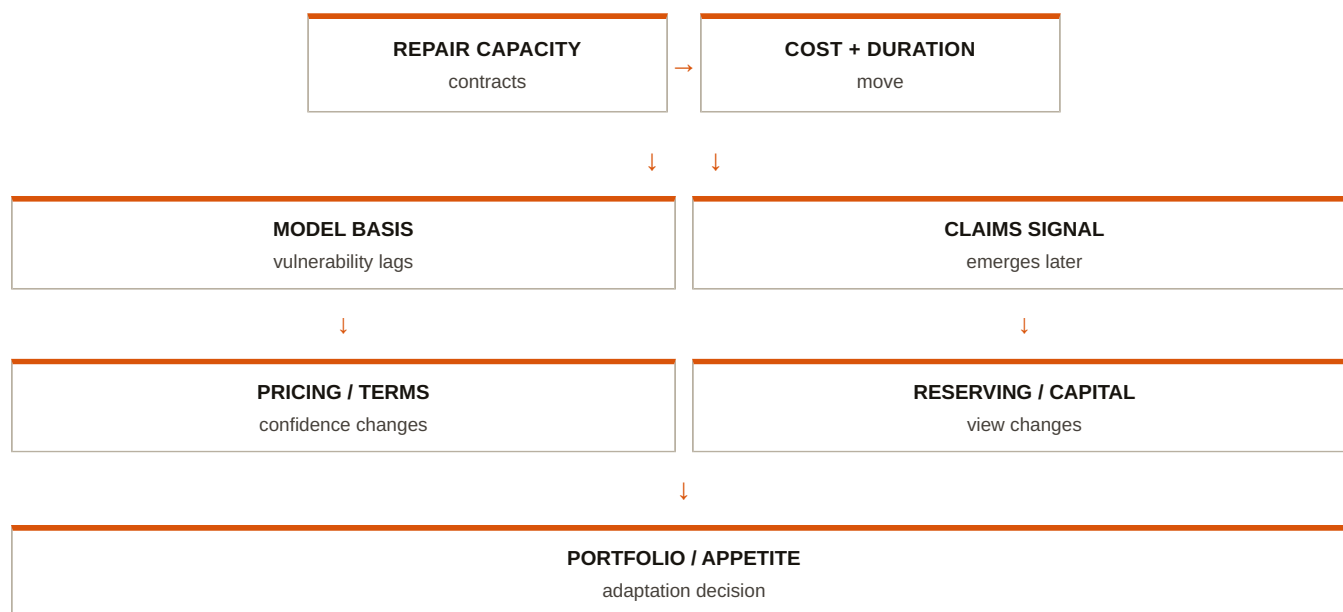
MODEL COMPONENT	POTENTIAL EXTERNAL PRESSURE	CONFIDENCE QUESTION
Hazard	Changing frequency, severity, spatial pattern or event behaviour.	Which climate state and time horizon does the view represent?
Exposure	Changing values, occupancy, adaptation, dates and data quality.	Is the exposure state compatible with the decision date?
Vulnerability	Repair practice, mitigation, materials, labour and duration.	Do damage and loss relationships reflect current conditions?
Financial	Terms, inflation, claims practice and reinstatement.	Which costs and contractual responses are represented?

E02 E03 E04 E05 Evidence anchors

11 Supporting Analysis

Geoeconomic fragmentation, claims cost and reconstruction.

Worked diagnostic pathway — one external condition can reach models, claims and capital differently



The industry report can establish that repair-capacity constraints may move reconstruction cost and duration before models, claims, pricing and capital functions update on a common basis. The commissioned diagnostic determines whether that pathway matters to the selected peril, business or decision horizon, which assumptions inherit it, which functions observe it first and what evidence would close or escalate the concern. The physical hazard need not change for the insured severity view to move.

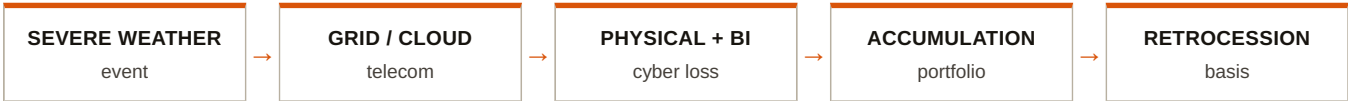
PATHWAY STAGE	INDUSTRY REPORT ESTABLISHES	COMMISSIONED DIAGNOSTIC DETERMINES
External condition	Repair capacity, energy, materials and labour can move together.	Which conditions matter to the selected peril and geography?
Early effect	Reconstruction cost and duration can change before mature claims evidence.	Which severity or duration assumptions inherit the change?
Model translation	Vulnerability and financial components may update on different cycles.	Which model view, version and decision date are exposed?
Claims translation	Settlement and emergence can reveal only part of the changed state.	Which internal or market evidence would confirm the pathway?
Decision exposure	Pricing, reserving, capital and appetite can receive incompatible states.	What evidence triggers monitoring, review or escalation?

E01 **E04** Evidence anchors

12 Supporting Analysis

Weather, infrastructure and shared-technology accumulation.

A common dependency can connect apparently diverse books.



Physical, digital and service dependencies can interact. Severe weather can disrupt electricity, communications, transport or cloud services. Those disruptions can create physical damage, business interruption, cyber loss, operational delay and claims-handling pressure across multiple insureds. A portfolio may appear diversified by geography, industry or peril while still sharing a critical service node.

The existence of a common provider does not establish systemic loss. The relevant questions are materiality, substitutability, event definition and visibility. Financial authorities have highlighted the difficulty of identifying key nth-party dependencies and the limited influence financial institutions may have over providers further down a service chain. Cyber insurance analysis similarly identifies common technology and service providers as potential sources of concentration.

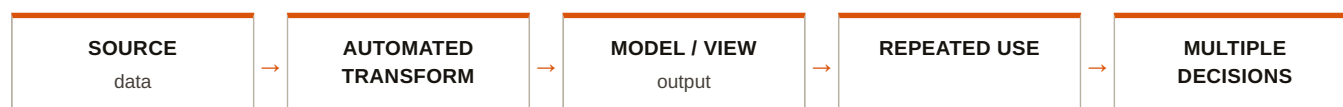
DEPENDENCY VIEW	QUESTION
Physical infrastructure	Which grid, transport, water or communications nodes support the exposure?
Digital infrastructure	Which cloud, software, identity or security services are common?
Service dependency	Which providers are critical to operation, restoration or claims response?
Risk transfer	Do event definitions, coverage and retrocession respond to the same loss pathway?

E07 **E08** Evidence anchors

13 Supporting Analysis

Artificial intelligence, data transformation and repeated use.

Repeated use can turn a local transformation into a wider confidence question.



AI is relevant to Surface 10 through both underwriting exposure and institutional use. External AI adoption can create new liability, cyber and operational risks. Internal or third-party AI can influence data preparation, exposure analysis, research, scenario development, pricing support, claims handling and governance. The diagnostic does not assume that AI use is unsafe. It asks whether provenance, transformation, oversight and repeated use remain visible enough to sustain confidence.

Repeated use is the important propagation mechanism. A small source, transformation or interpretation weakness can acquire wider reach when the same artefact is reused across products, submissions, portfolios or committees. EIOPA governance principles emphasise data governance, record keeping, fairness, cyber security, explainability and human oversight. FSB analysis identifies third-party dependency, market correlation, cyber risk and model governance among relevant financial-sector vulnerabilities.

CONTROL OBJECT	SURFACE 10 QUESTION
Data provenance	Can material output be traced to source, date, permission and transformation?
Record keeping	Can every material use and affected decision be located?
Human oversight	Who can challenge, override or stop use?
Change control	Which decisions are revisited when the source or model changes?
Third-party dependency	Can material upstream changes be observed and responded to?

E06 **E09** Evidence anchors

14 Supporting Analysis

Capital, capacity, pricing and feedback.

THE REINSURANCE SURFACE RUNS ON SEVERAL CLOCKS — BAR LENGTH REPRESENTS RELATIVE SPEED OF VISIBLE RESPONSE, NOT MAGNITUDE

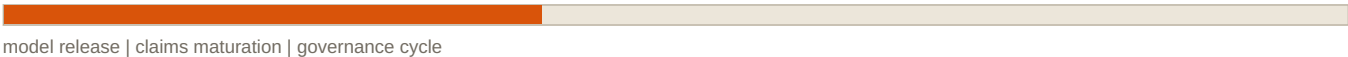
HOURS / DAYS



WEEKS / MONTHS



MONTHS / YEARS



————— → slower evidence

The reinsurance surface updates on several clocks. Event response, market narrative and indications of capacity can change in hours or days. Pricing, terms, portfolio action and retrocession can change over weeks or months. Catastrophe-model releases, matured claims evidence, reserving cycles and governance reviews can take longer. Each timescale can be rational, but it carries a different evidential meaning.

This produces a feedback problem. Reinsurer capacity and price influence cedant retention, programme structure and underwriting response. Those changes alter the next portfolio presented to the market. Capital inflow or reduced retrocession demand can change price without proving a lower external risk state. Conversely, tighter terms or higher retentions can reflect capital and affordability conditions as well as changed loss expectations.

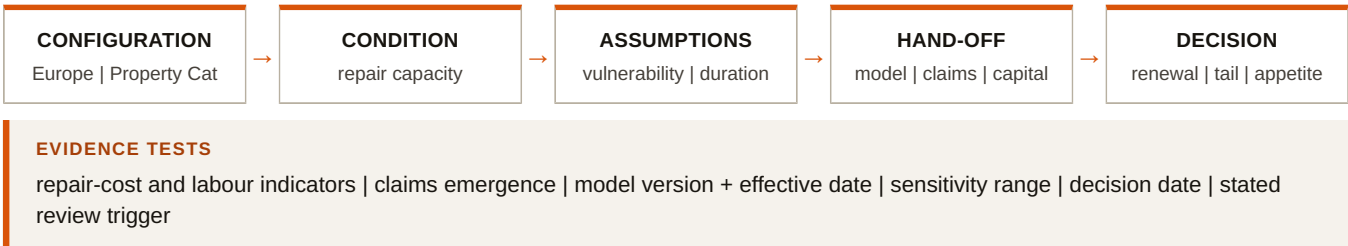
MARKET MOVEMENT	COULD INDICATE	CANNOT ESTABLISH ALONE
More capacity	Risk-bearing supply, improved capital position or competition.	Lower hazard or correlation.
Lower pricing	Lower loss view, abundant supply or strategic competition.	That every underlying assumption improved.
Higher retentions	Optimisation, affordability pressure or changed appetite.	Improved cedant risk alone.
More ILS issuance	Diversification and additional risk-bearing capacity.	Independent model or data foundations.
Tighter terms	Contract clarity, uncertainty or market discipline.	That uncertainty is fully priced.

15 Supporting Analysis

Illustrative commissioned-style extract — synthetic configuration, not a client finding.

SELECTED REQUEST FIELD	SYNTHETIC CONFIGURATION
Region / horizon	Europe 12 months
Functions / audience	Catastrophe Modelling Claims Capital Management Chief Risk Officer
Business / peril	Property Catastrophe Treaty European Windstorm Supply Chain
Concern / greatest effect	Reduced confidence in assumptions Calibration confidence Claims implications Capital allocation
Report priority	Which assumptions may be less reliable, and which functions are most exposed?

Configuration narrows the evidence and the decision pathway



COMMISSIONED OUTPUT	ILLUSTRATIVE ORGANISATION-RELEVANT RESULT
Selected condition	European repair-capacity, labour and materials pressure is relevant to the configured peril and 12-month decision horizon.
Assumption inheritance	Current vulnerability relationships, claims duration and capital-tail interpretation may not update on the same evidence cycle.
Functional hand-off	Cat modelling may receive cost evidence before claims maturity; capital may receive a compressed tail view after both interpretations.
Decision exposure	Renewal pricing, retrocession and appetite could inherit different restoration states unless the effective date and sensitivity are explicit.
Close or escalate	Close when current state, model version, sensitivity and decision date reconcile. Escalate when a material state change is absent, late or untraceable.

This specimen demonstrates the translation mechanism only. It does not describe a real organisation or imply an observed internal weakness.

16 Supporting Analysis

Evidence field — authoritative source map.

ID	EVIDENCE OBJECT	USED TO SUPPORT
E01	IAIS — Global Insurance Market Report 2025	Reinsurance context; geoeconomic, AI, cyber and climate priorities.
E02	IAIS — NatCat protection gaps 2025	Climate, protection gaps and reinsurance context.
E03	NAIC — Catastrophe Modeling Primer 2025	Model components, probabilistic outputs and interpretation.
E04	FSI / IAIS — Climate-related protection gap	Pricing, underwriting, adaptation and exposure data.
E05	PRA — SS5/25 climate-related risks	Governance, risk management, scenario analysis and data.

The source field is deliberately institutional. Supervisory and standard-setting materials establish observed conditions, governance expectations and recognised dependencies. They are suitable for defining an external assessment boundary. They do not independently validate every analytical conclusion in this report, and they cannot establish a deficiency inside any named institution.

Industry and model-provider materials can provide additional context, but Surface 10 gives priority to sources with clear authority, defined publication responsibility and direct relevance to insurance or financial-system supervision. Evidence anchors throughout the report show which sources support each analytical page. Source titles on pages 16 and 17 are clickable.

EVIDENCE RULE

Public evidence establishes the external field. Diagnostic language remains conditional until the selected organisation determines whether the condition is relevant to its assumptions, functions and decisions.

17 Supporting Analysis

Evidence field — continued / confidence boundary.

ID	EVIDENCE OBJECT	USED TO SUPPORT
E06	EIOPA — AI governance and risk management	Data governance, records, explainability, cyber security and oversight.
E07	FSB — Third-party risk management toolkit	Critical providers, nth-party visibility and dependency monitoring.
E08	FSI / IAIS — Cyber insurance unpacked 2026	Common technology and service-provider accumulation.
E09	FSB — AI adoption and related vulnerabilities	Third-party dependency, correlation, cyber and model governance.

CONFIDENCE	REPORT POSITION	WHAT REMAINS UNKNOWN
High	Relevant external conditions are active across climate, geoeconomics, cyber, infrastructure and AI.	Their exact effect on a named organisation.
High	Models and decisions depend on interpreted external information and assumptions.	Whether the organisation's current interpretation is adequate.
Moderate	Cross-domain interaction can reduce confidence before conventional evidence stabilises.	Frequency, severity and materiality across transactions.
Unproven	The global surface is materially degraded today.	Requires organisation- and decision-specific evidence.

The industry report creates an informed question. The commissioned diagnostic makes that question decision-specific by selecting the evidence field, reconstructing the pathway, locating assumption inheritance and testing functional visibility against the configured horizon and audience.

DECISION-USEFUL FALSIFICATION

A valid diagnostic may conclude that the selected conditions are stable, already incorporated and visible across the relevant functions. That conclusion closes the pathway and is itself useful evidence for decision confidence.

18 Supporting Analysis

Report application, delivery structure and engagement parameters.



ORDER INPUTS THAT CONFIGURE THE ANALYSIS

function | geography | treaty | peril | concern | affected decision — report priority | time horizon | audience

DELIVERABLE	WHAT THE COMMISSIONING ORGANISATION RECEIVES
Decision brief + condition map	The highest-priority configured questions and only the conditions relevant to the selected geography, treaty, peril, concern and horizon.
Confidence + hand-off matrix	Each condition mapped to the assumptions and selected functions capable of inheriting it, including evidence confidence and who may observe change first.
Decision pathways	Concrete translation into configured pricing, accumulation, portfolio, capital, adaptation or appetite questions.
Verification watchlist	The evidence that would close, monitor or escalate each pathway, including emerging conditions, sensitivities and falsification triggers.

DECISION DIAGNOSTIC	FIVE WORKING DAYS FIXED FEE EUR 25,000
Scope	Configured external assessment of one bounded decision environment
Internal data	Not required
Systems integration	Not required
Operational disruption	None
Executive report	12–18 pages approximately 4,000–6,000 words PDF
Confidentiality	Strict

INSTITUTIONS FAIL QUIETLY FIRST.
SIGNALS DEGRADE BEFORE MODELS.
MODELS DRIFT BEFORE DECISIONS.
DECISIONS PROPAGATE CONSEQUENCES.

CONFIGURE SIGNAL ECOLOGY DIAGNOSTIC → driftsystems.org/reinsurance-order.html