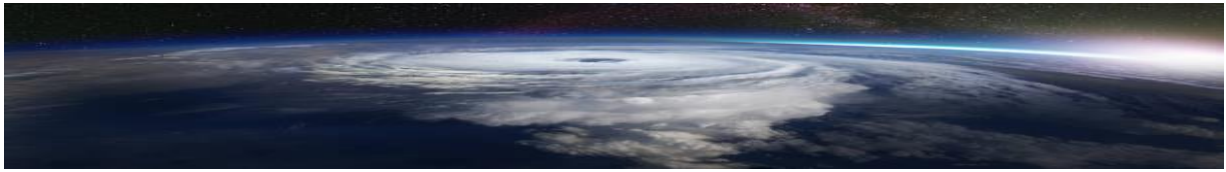


Solidum Market Comment



Cyber Risks and the ILS industry

September, 2025

Novelty of the peril class leads to difficulties in estimating the real underlying risk

Traditional ILS perils like hurricanes and earthquakes benefit from decades (sometimes centuries) of event data and increasingly sophisticated probabilistic models. Cyber, by contrast, lacks a long, reliable history of catastrophic “tail events”. Small and mid-sized losses are common, but the full extent of a systemic, market-moving cyber catastrophe (e.g., global cloud outage, widespread ransomware against critical infrastructure) has not yet materialized. This makes risk modelling highly uncertain: frequency, severity, and contagion paths are all harder to predict.

Diversification benefits are still there, but at a much lower level

Natural catastrophes are geographically constrained; a hurricane in Florida doesn’t simultaneously damage Europe. Cyber, however, is globally interconnected and also connected with the real economy and equity markets. A single vulnerability could cascade across all regions and industries and affect multiple insurers’ portfolios on a global scale. This correlation risk challenges one of the fundamental assumptions of ILS—diversification. Cyber may not provide the same diversification benefits that cat bonds tied to natural perils do. *Adding cyber risks to an ILS portfolio will therefore reduce the diversification benefits and increase the correlation to other asset classes.*

Uncertain legal and litigation situation

With hurricanes or earthquakes, the legal framework for claims is relatively settled. With cyber, coverage triggers, exclusions (e.g., “war exclusions” in state-sponsored cyberattacks), and attribution disputes create huge legal uncertainty. A future systemic cyber event will almost certainly lead to prolonged disputes around coverage and liability, which makes cash-flow modelling for ILS investors very difficult.

Investor appetite

Many ILS investors are attracted by transparent, parametric triggers (e.g., wind speed, quake magnitude). Cyber bonds with parametric or modelled-loss triggers have been tested but remain niche. Investors remain cautious because the peril is not well understood, and traditional indemnity-based triggers amplify uncertainty. *Still, some investors see cyber as a growth opportunity, since it is one of the fastest-growing insurance markets, and there is strong demand for (re)insurance capital.*

Cyber is still a niche peril; promising, but not yet “mature”. It is attractive from a growth and yield perspective, but until modelling and legal frameworks improve, it will remain a niche allocation for ILS investors. The needs are:

- Better data & modelling (e.g., stress tests, scenario analysis)

Cyber Risks and the ILS industry - September 2025

Marketing Material

Solidum Partners AG • Mühlebachstrasse 70 - CH-8008 Zürich • +41 43 521 2180



- Clearer triggers (parametric or event-based rather than indemnity).
- Standardization of wordings & exclusions to reduce litigation risk.

Examples

Scenario 1: A top-3 global cloud provider suffers a prolonged outage (say, 72 hours) due to a malicious cyberattack. Impact:

- Business interruption claims surge across SMEs and majority of companies relying on the provider.
- Losses are in the low tens of billions globally.
- Coverage disputes arise over whether outages caused by vendor failure are covered under cyber policies.

ILS Implications:

- If structured as a parametric event bond tied to cloud downtime metrics, payouts may be straightforward.
- Investors take a hit, but losses are comparable to a mid-sized Nat-cat event.
- Market impact: confidence in cyber-ILS actually increases, as the product works as designed.

Scenario 2: Global Ransomware Campaign: A ransomware strain exploits a common vulnerability (akin to “WannaCry” but on steroids), impacting banks, logistics, and healthcare worldwide. Impact:

- Direct remediation, ransom, and business interruption costs: USD 50–100 billion.
- Losses are widely spread across industries and geographies.
- Some policies exclude state-backed attacks — litigation over attribution (criminal vs. nation-state) slows settlements.

ILS Implications:

- Indemnity-based cyber bonds face delayed/litigated payouts, hurting investor confidence.
- Parametric or modelled-loss bonds may pay faster, but correlation across cedents raises concerns about systemic risk.
- Investors demand higher spreads going forward, similar to how 2005 (Katrina) hardened cat bond pricing.

Scenario 3: Critical Infrastructure Attack – Black Swan: A sophisticated cyberattack disables power grids in multiple U.S. states and parts of Europe for several days. Impact:

- Economic loss runs into hundreds of billions; insured losses could breach USD 100–200 billion.
- Disputes around “act of war” exclusions dominate.
- Insurance balance sheets are severely strained — parallels to terrorism post-9/11.

ILS Implications:

- Investors face near-total loss on exposed bonds.
- The cyber-ILS market suffers a “Lehman moment” — issuance freezes until governments step in with backstops.
- Long-term, a public–private pool (like TRIA for terrorism) may be needed to support cyber capital markets.

Issued bonds and analysis of PoleStar RE 2024-3

2023 saw an issuance of 4 public Cat Bonds (Volume USD 415 Mn.), while in 2024, 2 Cyber–Cat Bonds were issued (Volume USD 370 Mn.). Apart from a very small cyber bond (USD 20 Mn.), no public issuance took place in 2025. PoleStar RE 2024-3 was a USD 210 Mn. Cat Bond, yielding 10.5%, with an expected loss (*as per the model!*) of 0.93%, an attachment probability of 1.2% and an exhaustion



probability of 0.7%. The multiple over expected loss was so high (11.3x) that one must question *whether the modelled expected loss reflects the risk properly.*

A deep analysis of the structural elements and the exposure to cyber risks of this bond would go beyond the scope of this paper. While the expected loss suggests a relatively low likelihood of loss, the very high multiple (11.3x) indicates *that investors demand a steep risk premium for uncertainty and systemic risk.*

Conclusions and Solidum's approach

Cyber has certainly the potential to diversify returns *if carefully structured* (especially parametric triggers on clear metrics like cloud downtime, internet traffic anomalies, or ransomware incident counts). *The tail risk is systemic and legal, not just financial.* Unlike a hurricane, cyber's correlation and attribution problems mean ILS investors face much greater model uncertainty.

As of today, Solidum has not yet invested into cyber bonds, but is closely monitoring the developing market. Solidum will consider cyber as a *satellite allocation*, but will select only those cyber Cat Bonds that are carefully structured and pass a detailed and stringent scenario testing. Apart from its certainly attractive premiums, the risk factors must be considered in detail. Furthermore, our portfolios are traditionally very lowly correlated to macro economic shock events. The correlation impact of adding cyber to the portfolios must be carefully evaluated.

Adding cyber must also be evaluated by comparing it with other alternatives. As an example, one could add a similarly yielding, higher risk "Nat-cat" Cat Bond to the portfolio. The cyber bond has to be at least as attractive, so one must not forget or neglect alternatives in the more traditional space of ILS. The analysis of PolestarRe shows that modelled expected losses are most certainly calculated in a too optimistic way and there is a high uncertainty. *Our approach is to compare expected losses of the similarly yielding, alternative "Nat-cat" Cat Bond with the cyber bond.* As explained before, the expected loss number is much more reliable and stable for a higher risk "Nat cat" Cat Bond, and it is significantly higher.

Let's assume the expected loss for a cyber bond is at 1%, and the one of a similarly yielding, higher risk "Nat-cat" Cat Bond is 3.5%. We then have an "expected loss multiple" of 3.5, so a relatively good buffer against embedded model uncertainties. Solidum will, besides its deep analysis, use this multiple as an additional factor to evaluate the absolute and relative attractiveness of a cyber bond. The higher the multiple, the more attractive the cyber bond and the higher the likelihood to integrate it to its portfolio.

Solidum's investment team combines more than 120 years of professional experience in all relevant fields of the ILS market, such as modelling, underwriting and actuarial. Please do not hesitate to contact us for further details on this important matter.

Solidum Partners AG
Mühlebachstrasse 70
CH-8008 Zurich, Switzerland
T +41 43 521 2180
T +41 43 521 2189
contact@solidumpartners.ch

Dr. Ulrich Behm
T +41 43 521 21 83
M +41 79 613 21 83
ulrich.behm@solidumpartners.ch

Daniel Wälchli
T +41 43 521 21 84
M +41 79 614 21 84
daniel.waelchli@solidumpartners.ch