

# DeRISK Insurance

Cyber Risk Quantification  
for Cyber Insurance Underwriters

## The Business Impact of Cyber Risk

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Approximately 62% of organizations lack cyber insurance. Is it just not necessary? Doubtful. In a world that is increasingly becoming more technology-reliant, cybersecurity is highly relevant to the optimum operational performance of organizations.

The risk associated with providing meaningful cyber insurance is too great because there is often a lack of data and evidence to accurately inform underwriting and policy decisions. This leads to a deficiency in reasonable and cost-effective and fit for purpose coverage available, especially for larger businesses.

As an enterprise grows, its operations become more elaborate and complicated. Consequently, its cyber risk can be difficult to quantify in terms of financial impact and operational significance. For (re)insurance companies, this is a material dilemma. Cyber risk represents a substantive new product development for the (re)insurance industry, but it cannot be reasonably assumed if its complexity or the probabilities of data breaches are not fully understood. So, what is the solution?

## Introducing DeRISK Insurance

DeRISK is cloud-based Bayesian cyber risk quantification platform. DeRISK Insurance is purpose-built for the underwriter of cyber risk in-mind. Located in a FedRAMP certified infrastructure, DeRISK leverages operational asset data-flows, combined with contextual information and threat intelligence sourced from the DeNexus Knowledge Center© data lake illustrated in figure 1 to provide real-time visibility into the insured assets, vulnerabilities and existing security controls.

Capture, quantify, and model the cyber risk of companies in your portfolio with the only attack path probability SaaS platform

## DeRISK Insurance Benefits



### Expand Market Access

Augment cyber underwriting processes to enable new cyber (re) insurance offerings and services



### Policy Control Enforcement

Leverage consistent policy options for industrial clients and risk (re)insurers.



### Supply Capacity Protection

Enable supply capacity for direct coverage and protection for systemic risk events



### Optimize Capital Allocation

Achieve maximum capacity, judicious loss reserving and plausible catastrophic scenario analysis



### Extend Capital Access

Grow access to alternative capital and improve financial instruments

The DeRISK Insurance empowers risk stakeholders to financially quantify the cyber risk that companies within their portfolio are incurring in real-time. Using industry accepted cybersecurity frameworks we feed that data through standardized processes (\*\*) where the output is the probability analysis and financial impact on all the threat scenarios. Risk analysis results of all clients are clustered by sector and geography to derive the predictive drivers of loss.

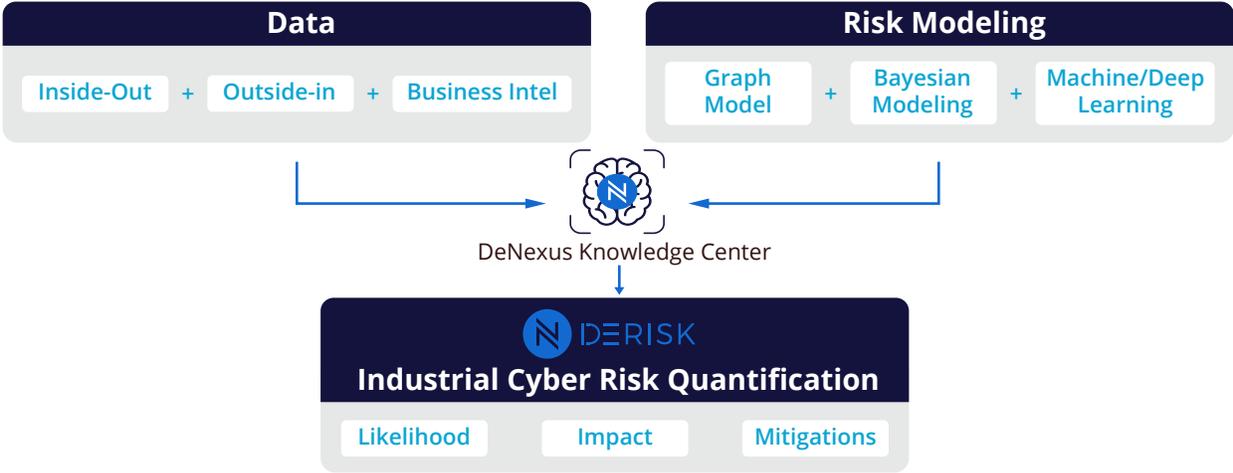


Figure 1: DeNexus Knowledge Center powered by trusted data, probabilistic inference and machine learning  
 MITRE ATT&CK framework - CIS CSC - NIST CSF - ISA/IEC-62443-3-3 - ISO 27001 - FAIR

## The DeRISK Solution

Comprehensive risk management for (re)insurance organizations is dependent upon detailed risk analysis of both operational and contextual cybersecurity data. This is why the DeRisk Platform sources and aggregates data from all key operational areas, including intrusion detection, threat intelligence and impact of successful breaches to provide continuous cyber risk modeling via actionable dashboards that clearly visualize relationships between cyber-attack stages and the organization’s specific infrastructure. The figure below illustrates how Initial Access Vectors (IAVs) are processed and analysed.

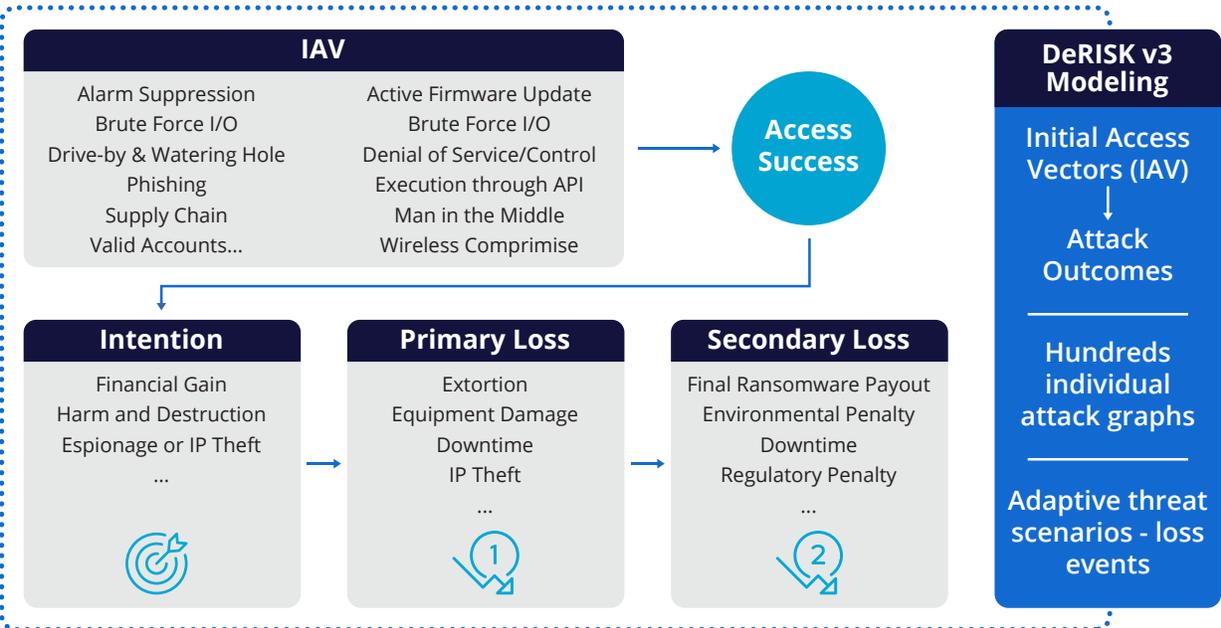


Figure 2: Attack-Path mapping using the DeNexus probabilistic modeling approach

Leveraging the DeNexus Knowledge Center, DeRISK explores every possible attack path that attackers could take against a target, estimates the probability of each attack path succeeding and what loss scenarios can be expected. Also, to quantify the impact of each loss event, the platform considers the impact of a primary loss plus any possible secondary losses as well. The result is a powerful risk quantification and management tool-set, offered as-a-service, that arms risk stakeholders with hundreds of actionable attack paths sourced from numerous different threat variables that are referred to as “nodes.”

This method of probabilistic modeling allows (re)insurers to use DeRISK Insurance to calculate client-side risk exposure for accurate underwriting policies and pricing. In addition, DeRISK Insurance can be leveraged to create new innovative risk products, better protecting both the underwriter and ICS/OT asset owner with an accurate understanding of cyber risk implications.

## Key Capabilities and Functions

### Attack-Path Mapping Interface

- Account-based, end-to-end mapping of potential attack and loss events
- Hundreds of actionable attack graphs for loss scenarios
- Bayesian probabilistic estimation of cyber-attack attempts and potential outcomes

### Loss Event Quantification

- Comprehensive loss event classification derived from the Organization for Economic Co-operation and Development (OECD)
- Hierarchical analysis of primary and secondary financial losses
- Loss distribution composition providing a complete evaluation of Value at Risk (VaR)

### Dynamic Risk Aggregation

- Collection of asset and intrusions related information from host environment (inside-out risk sources)
- Threat intelligence information from public, private and proprietary data sources including supply-chain risks (outside-in risk sources)
- Bottom-up risk visualization

### Risk Scenario Modeling

- Continuous detailed, dynamic vulnerability analysis with environmental and industry context
- Adaptive quantification engine to industry, sub-industry, facility features and risk mitigation options
- Historical data, risk quantification, what-if scenarios for comparison

## DeRISK Solves the Money Questions for Industrial Asset Owners

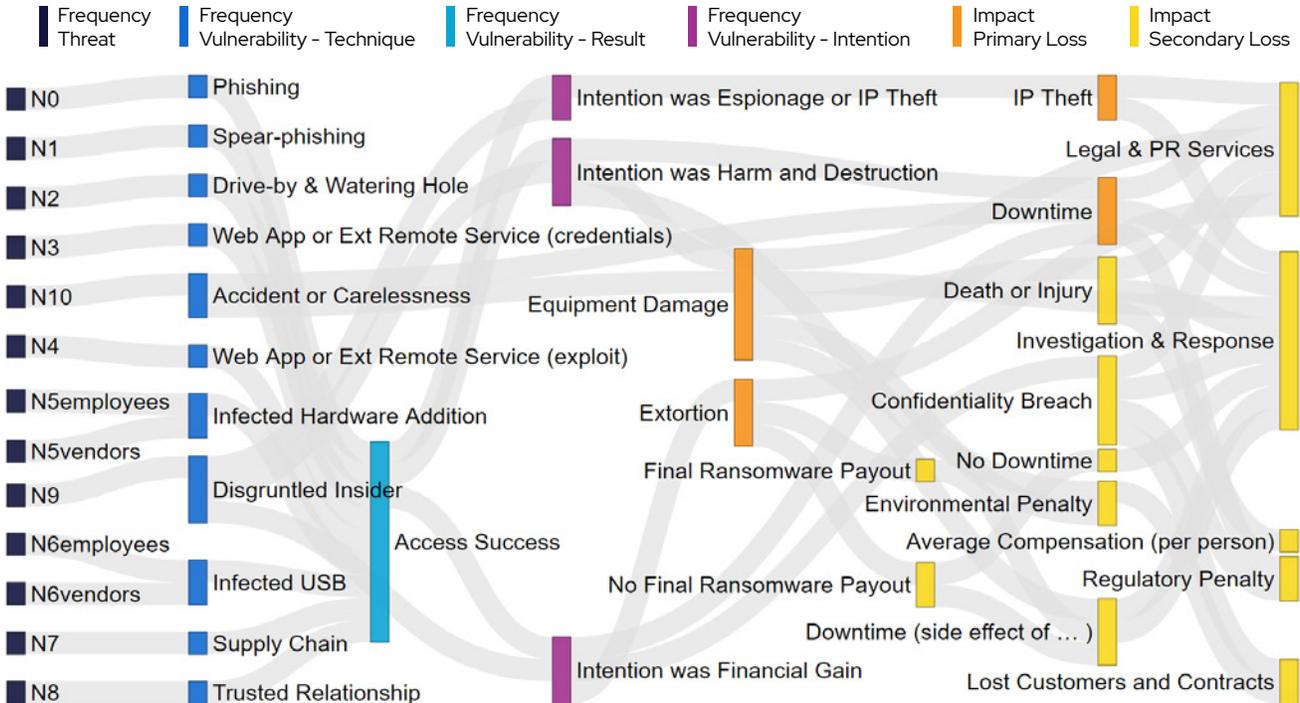


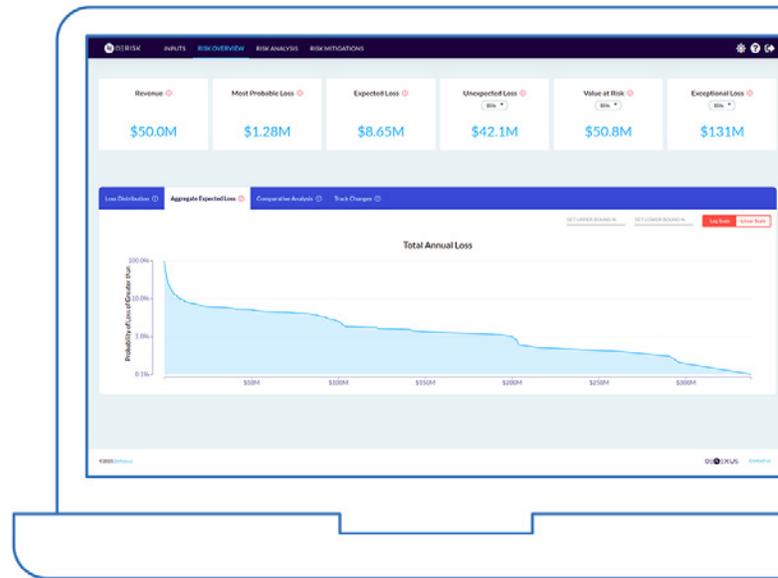
Figure 3: Attack-Path Mapping from IAV to Financial Impact

DeRISK combines empirical data and expert knowledge to provide insurers and reinsurers of cyber risk with:



## Expanded Market Access

- Augments cyber underwriting enabling new products with continuous, dynamic cover & pricing as well as continuous cyber (re)insurance as a service (aaS)
- Provides insights based on Loss Event Frequency (LEF) and Loss Magnitude (LM) for detailed cyber risk analysis



## Policy Control Enforcement

- Allocates accurate capital allocation and loss reserves according to cyber risks
- Provides rapid (re)insurer policy modification according to changes in client environments



## Supply Capacity Protection

- Enables supply capacity for direct coverage, and protection for systemic events
- Unifies out-side in and inside-out cyber risk sources into orchestrated risk models and dashboards



## Targeted Capital Allocation

- Identifies pragmatic accumulation assessment and control measures against Value at Risk (VaR)
- Helps guide maximum capacity capital allocation against client-side risk outcomes
- Optimizes judicious loss reserving and plausible catastrophic scenario analysis activities



## Capital Access

- Expands access to alternative risk capital with credible quantification of cyber risk exposure
- Improves the design of financial instruments that investors can find attractive and validated

## Quantify Cyber Risk. Save Money.

We are  
DeNexus

DeNexus is the leading provider of cyber risk modeling for ICS/OT organizations and global (re)insurers. Our platform empowers the industrial enterprise and risk underwriters to quantify cyber risk exposure on a continuous, self-adaptive basis using the world's first evidence-based data analytics software and services. The DeRISK Platform from DeNexus is the world's first self-adaptive, cloud-based platform that uses evidence-based data to predict where and how breaches are likely to occur, what their business impact will be and how to mitigate them. DeNexus is headquartered in Sausalito, California with engineering based in Madrid, Spain.

Fortune 500 companies, from power generation to manufacturing to other critical infrastructure, rely on DeNexus to understand their bespoke cybersecurity economics and optimize their risk-reduction ROI. Leverage DeNexus and our DeRISK Platform to make asset, vulnerable, configuration, operational anomaly, supply chain and cyber intrusion data work for you.