## CALCULATED APPROACH TO CYBERSECURITY RISK CALCULATED IMPACT AND RISK RATINGS FOR ENHANCED

**VULNERABILITY PRIORITIZATION** 



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## REDEFINING OPERATIONAL TECHNOLOGY RISK ASSESSMENTS

To address the limitations of traditional risk assessment models in Operational Technology (OT), Verve has developed an innovative approach to calculating risk. This methodology combines Calculated Impact Ratings (CIR) and Calculated Risk Ratings (CRR) and offers OT professionals a tailored solution to accurately gauge the potential impact of Common Vulnerabilities and Exposures (CVEs) on their specific assets and systems. This advancement enables more effective vulnerability management, ensuring better resource allocation and reduced exposure to cyber threats.

## CALCULATED IMPACT RATINGS (CIR)

The Calculated Impact Rating (CIR) is a metric designed to accurately quantify the potential consequences of a vulnerability based on specific attributes of an organization's assets.

Unlike conventional methodologies that provide generalized impact scores, the CIR is built with a comprehensive set of factors in mind, including:

#### **Potential Losses**

Estimates the potential financial, operational, and reputational losses in the event of a successful exploitation of a particular asset. Regardless of the security in place, CIR aims to understand how an exploited asset could devastate the organization.

#### **Asset Location**

Evaluates the geographical location of the asset within the organization's infrastructure. Assets at critical sites or locations with high-yield production will influence the CIR more.

#### Network Segmentation

Considers the network segment to which the asset belongs. Assets in heavily utilized networks can greatly influence the overall CIR calculation.

#### Asset Type and Functionality

Assesses the type and function of the asset within the organization's operations. Assets with varying levels of importance or functionality will distinctively contribute to the CIR calculation.





This advanced approach to calculating impact ratings ensures that the assets are assessed in a nuanced and contextual manner while allowing manual edits, reflecting the unique attributes of the organization's assets, their locations, and their network.



## CALCULATED RISK RATINGS (CRR)

The Calculated Risk Rating (CRR) augments the traditional risk assessment process by providing a precise evaluation of the potential risk associated with a vulnerability for the next thirty days. Traditionally, risk is measured as impact times likelihood. CRR combines the Calculated Impact Rating (CIR) with the Exploit Prediction Scoring System (EPSS) to offer a comprehensive risk assessment approach.

#### CALCULATED IMPACT RATING INTEGRATION

The CRR incorporates the CIR to determine the possible consequences of a vulnerability. This integration ensures that the calculated risk aligns with the potential impacts.

#### EXPLOIT PREDICTION SCORING SYSTEM (EPSS)

Developed in 2019 by FIRST, the EPSS model enhances traditional Common Vulnerability Scoring System (CVSS) methods by predicting the likelihood of a vulnerability being exploited within 30 days. It incorporates historical trends, current threat intelligence, and existing exploits to provide a more accurate assessment of exploitation risk.

CVSS Provides the "what" — the general risk landscape

EPSS Provides the "when" and "how likely"



## METHODOLOGY

The methodology for determining Calculated Impact Ratings (CIR) and Calculated Risk Ratings (CRR) involves a multi-step process:

### **STEP 1: ASSET PROFILING**

Organizations identify and profile their assets, considering criticality, functionality, and dependencies.

### **STEP 2: VULNERABILITY ASSESSMENT**

Vulnerabilities are identified and evaluated based on standardized criteria and technical attributes provided by the Verve Security Center.

### **STEP 3: CALCULATING THE CIR**

The CIR is calculated for each asset by considering the asset's location, network, and type. Additional values can be added depending on the customer's environment such as specific assets outside of mentioned parameters that may raise its criticality level.

### STEP 4: CALCULATING THE CRR

The CRR is derived by combining the CIR with the output of the Exploit Prediction Scoring System (EPSS).

### **STEP 5: PRIORITIZATION AND MITIGATION**

Vulnerabilities are prioritized based on their CRR, allowing organizations to focus on addressing the most critical threats on the most critical assets first.



## **BENEFITS & APPLICATIONS**

The introduction of Calculated Impact Ratings (CIR) and Calculated Risk Ratings (CRR) offers numerous benefits to organizations:

#### **Tailored Prioritization**

Enables organizations to prioritize vulnerabilities based on their unique assets and operations, leading to more effective allocation of resources.

#### Accurate Risk Assessment

Provides a more accurate representation of the potential consequences and likelihood of exploitation for each asset and vulnerability.

#### Informed Decision-Making

Empowers stakeholders to make informed decisions about cybersecurity strategies, investments, and risk mitigation efforts.

#### **Reduced Exposure**

By focusing on vulnerabilities with higher CRR, organizations can reduce their exposure to potential cyber threats.

## CONCLUSION

The traditional one-size-fits-all approach to cybersecurity risk assessment is no longer sufficient in today's dynamic threat landscape. Verve's Calculated Impact Ratings (CIR) and Calculated Risk Ratings (CRR) offer a more tailored solution that addresses the shortcomings of current practices. By considering an asset's criticality, location, network segment, type, and functionality, coupled with the insights from the Exploit Prediction Scoring System (EPSS), organizations can now prioritize vulnerabilities with greater precision and reduce their overall cyber risk exposure.

This approach marks a significant step forward in protecting OT assets, enabling organizations to proactively safeguard their digital assets and maintain operational continuity in the face of evolving cyber threats.

## FROM CONCEPT TO REALITY

Wonder how CIR and CRR translate to real-world success? Our case study shows you how.

#### **READ NOW**



## TAKE THE NEXT STEP

## ELEVATE YOUR CYBERSECURITY WITH VERVE'S 360-DEGREE RISK ASSESSMENT

Our 360-degree Risk Assessment provides a comprehensive, real-time view of each asset's security posture. It integrates vulnerabilities, missing patches, user accounts, and even your own disaster recovery plan to offer a complete risk profile.



Full visibility into hardware and software



Risk scores updated in real time



Tailored to your unique operational needs

READY TO SEE YOUR CYBERSECURITY LANDSCAPE FROM EVERY ANGLE?

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