

# Technical Overview: ProcessUnity Evidence Evaluator

This document is a comprehensive overview of the training methodology for Evidence Evaluator and inference characteristics. The aim of this document is to detail the technology differentiator inherent to ProcessUnity's training data and explain how Evidence Evaluator produces results at scale.

## What is Evidence Evaluator?

Evidence Evaluator is an AI-enabled feature that accelerates assessment cycle times by reducing the time it takes a third-party analyst to review a third party's submitted evidence for control validation. This feature uses Natural Language Processing (NLP) and small language models to extract information from submitted evidence documents (security policies, completed questionnaires, etc.), then uses Generative AI to produce an AI response and final summarization of the results.

## Evidence Evaluator Overview

Once a third party submits their assessment with the attached evidence documents, Evidence Evaluator will scan the attachments for relevance to the assessment questions. Then, Evidence Evaluator will choose the most relevant pieces of information to generate an answer to the assessment question and provide the reasoning and references supporting that answer. Data is encrypted both in-transit and at rest to protect sensitive data in the evidence documents. Furthermore, after each use of Evidence Evaluator, all uploaded data is removed leaving no trace of sensitive information.

ACI Worldwide Inc - TPQ - May 2025 Exit Workbench X

**04. Evidence Evaluator**

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Filters Section: ED. Endpoint & Device Security Al Analysis: Mismatch (AI No), Match (AI No)

Section	Review Status	Review	Question	Response Analysis				Evidence Evaluator		
				TP Response	Preferred	AI Response	AI Analysis	Source File(s)	Rationale	References
(1% Reviewed) ACI Worldwide Inc - TPQ - May 2025				2						
ED. Endpoint & Device Security				2						
Under Review	ED.22 - Do you utilize a host intrusion detection and prevention system (HIDS/HIPS) on all virtualized endpoints?	Yes	No	Mismatch (AI No)	Acme Mega Corp. SOC 2.pdf AcmeMegaCorp Access Control Policy.pdf	<ul style="list-style-type: none"> <li>The sections do not mention the use of a HIDS/HIPS on virtualized endpoints.</li> <li>The sections focus on network access control, least privilege approach, inbound/outbound firewalls, network monitoring, and intrusion detection systems at the network level.</li> <li>The sections do mention the use of unique user IDs and passwords, and the review of firewall rulesets, but these are not the same as HIDS/HIPS.</li> <li>The sections do not provide any information about the specific security measures in place on virtualized endpoints.</li> </ul>	<p>AcmeMegaCorp Access Control Policy.pdf Page: 11</p> <p>Access Control Policy 3.7.1.1. Network Access Control A network access control solution should be deployed to validate that all systems that connect to the network are properly identified. Endpoint Security Control requirements. 4. Enforcement Any employee found to have violated this policy may be subject to disciplinary action, up to and including termination of employment. ProcessUnity Internally 11-ProcessUnity, Inc.</p> <p>Acme Mega Corp. SOC 2.pdf Page: 26</p> <p>The policy uses a least privilege approach to configure the network components used by ProcessUnity. Only a limited number of designated IT-Sec staff is authorized to connect or disconnect network devices to the network. No one except designated ProcessUnity IT-Sec staff may install a router, switch, hub, or wireless access point to the network. Inbound firewalls are deployed in a defense-in-depth strategy. Outbound connections are only allowed through proxy ports, and outbound connections from a ProcessUnity instance can only be established if allowed by business need. Network monitoring, firewalls, and intrusion detection systems (IDS) have been implemented in ProcessUnity to reduce the risk of an attack on the network. In addition, unique user IDs and passwords are utilized to reduce the risk of unauthorized access. Firewall rulesets are reviewed quarterly to ensure all open ports, protocols and services are associated with a documented IS Partners, LLC SOC 2 Type II - Confidential 25</p>			
Under Review	ED.30 - Do you acquire assets through a standardized process?	No	No	Match (AI No)	Acme Mega Corp. SOC 2.pdf	<ul style="list-style-type: none"> <li>The sections do not mention any standardized process for acquiring assets.</li> <li>The sections focus on risk management, vendor management, and system controls.</li> </ul>	<p>Acme Mega Corp. SOC 2.pdf Page: 73</p> <p>P-73; P-74; P-75; P-76 CC9.0 Risk Mitigation CC9.1 The entity identifies, selects, and develops risk mitigation activities for risks arising from potential business disruptions. P-77; P-78 CC9.2 P-27; P-34 The entity assesses and manages risks associated with vendors and business partners. A1.0 Additional Criteria for Availability A1.1 The entity maintains, monitors, and evaluates current processing capacity and use of</p>			

**In the Assessment Report, Evidence Evaluator displays the assessment question, alongside the third-party response, a yes/no preferred response, the AI response, and the AI analysis. Evidence Evaluator provides the identified relevant documents for the question, along with extracted rationale and references inside the source documents.**

## Training Dataset and Methodology Overview

### Framework Mapper Dataset

The starting dataset contains over a quarter million in-house cybersecurity text pairs labelled by our security analysts, who have decades of experience in the field. This dataset is curated to represent question-to-passage pairs where the passage is the information relevant to the question. Each passage pair is weighted by relevancy as there can be many individual passages relevant to the same question. As of early 2025, there are no standardized human labelled publicly available datasets that have cybersecurity text similarity pairs at this volume.

control1	control2	weight
Do you establish an authentication standard?	Cloud Storage Buckets Controls.	0.5
Do you establish an authentication standard?	Define and implement mechanisms for authentication, authorisation, identity lifecycle management, Single Sign On, Federation, Adaptive Authentication using Toll's endorsed Identity and Access Management Solution. This includes compliance to password management policies.	1

The framework.mapper.dataset is a mapping between the Cyber.Controls.Questionnaire.questions and controls.from.various.frameworks. Each mapping is given a weight assigned by a human expert for relevancy.

## Extended Framework Pairs

The Framework Mapper dataset is further expanded using our Cyber Controls Questionnaire (CCQ) as steppingstones from one framework control to another.

We can extend these mappings to map frameworks to frameworks, not just frameworks to CCQ controls, by relating two controls from different frameworks through the CCQ.

### Original Mappings:

Framework 1	CCQ
A1	Q1
B1	Q2
C1	Q3

Framework 2	CCQ
A2	Q1
B2	Q2
C2	Q3

### Relation:

Framework 1	CCQ	Framework 2
A1	Q1	A2
B1	Q2	B2
C1	Q3	C2

### Extension:

Framework 1	Framework 2
A1	A2
B1	B2
C1	C2

The resulting unified dataset characterizes:

- Upwards of 40-million pairs
- All 40-million pairs are topic clustered through the CCQ
- All 40-million passages are weighted by using the minimum of the weights for each pair that was derived from being primary (1.0) to the CCQ, or supporting (0.5) to the CCQ

This amount of data enables us to efficiently aggregate, filter, fine-tune, and iterate on models capable of retrieving sections of text from documents.

An example of the resulting training dataset of pairs is shown below after filtering, aggregating framework controls, and averaging scores.

question	positive passage	score	negative passage	score
Do you have a disaster recovery plan and emergency mode operation plan?	Data is appropriately backed up and archived in compliance to Toll's backup and retention policies. Requirements for continuity of the system in adverse situations, e.g. during a crisis or disaster are determined and implemented for all applications and services that process or hold sensitive information. Define and document business impact of any disruption that considers dependencies, processes, applications, business partners and third party providers.	0.8333	Data protection and associated media protection must be in accordance with the Cyber Security Standard – Data Security. Encryption must be applied in accordance with the Cyber Security Standard – Data Security. Maintain a centralised inventory(CMDB) and record / register Information Services including ownership, data classification, business impact assessment, risk rating, and location. Update as underlying assets in the service change. Create and securely store backups based on business system owner agreed backup cycles (daily, weekly, monthly). Encrypt backups where required.	0

This is an example row of the resulting training dataset with aggregated pairs to create positive (relevant) passages and negative (similar language? not relevant) passages;

## Cybersecurity Relevant Document Test Dataset

Evidence Evaluator is tested on real-world cybersecurity data to verify its ability to identify the documents and text passages as we would expect to see in practice.

## Hard Negatives

One of the training techniques used is the method of pairing similar passages in the training set with different questions. These pairs are not relevant to each other, i.e. negative pairs, but exhibit similar language use. By pairing similar passages in both positive and negative examples, the model is forced to learn distinctions in context, language, and topic, rather than simply identifying related words.

## Inference at Scale

### No Performance Hardware Dependency

Our proprietary relevancy model is light weight at a few hundred megabytes. The model is compiled with the inference code, allowing it to be as mobile as the code is when packaged. The model only requires CPU hardware as opposed to more expensive, higher carbon-emitting, difficult to provision, inflexible hardware while still performing at a high level. This allows

for Evidence Evaluator to achieve much higher and more consistent uptime than depending on specialized hardware.

## No Queueing Mechanism

With performance hardware, there needs to be a queueing mechanism as requests are limited by the amount of onboard hardware memory. We are not constrained by queueing requests that cause halts for customer results. Being independent of a queueing mechanism opens inference to be horizontally scalable while remaining cost-effective. In our tests using real world documents, we find that five-hundred documents can be processed in under two minutes.

## AWS Infrastructure

Evidence Evaluator is hosted in AWS cloud infrastructure for scalability and managed services, further reducing our development time and exposure to security vulnerabilities.

## Dynamically scalable

The inference pipeline is scalable with the ability to support 5,000 *simultaneous requests per minute of roughly 500 documents per request. Since the documents are processed in parallel, the average runtime of one minute is unchanged as the documents and requests increase.*

## Multi-Region Deployment

The necessary components are also light as to be implemented easily in multiple regions through AWS. We maintain stateless components that only require CPUs and storage that can be initialized across many AWS regions to support our customers' needs.

## Data Security and Privacy

### Data Security

The data uploaded from each request to Evidence Evaluator is encrypted in transit and at rest. Any documents and questions delivered to Evidence Evaluator are removed from the processing pipeline and all databases within the pipeline after the inference run completes. Any tables, sections, or numerical representations produced of the content in the data are also removed.

### AWS Services

Any content in the documents that are used is scrubbed for sensitive information, sectioned to a handful of short paragraphs, and only those relevant to the given question are retained before being processed in any AWS service. Additionally, the data used within an AWS service is not retained for training or improving the AWS product.

## **Additional Support**

Have additional questions regarding Evidence Evaluator? Please reach out to your account representative to get connected with our product team for additional support.