

# Forensic Analysis Report

Neuro-Symbolic Crisis Generator • Comprehensive Evaluation

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## Test Configuration

**Model:** GPT-4o

**Temperature:** 0.7

**Mode:** Thesis (Full Validation) vs. Legacy (Skip Validation)

**Max Iterations:** 20 per Scenario

**Execution:** Parallel (2 Scenarios simultaneously)

# Executive Summary

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**Note:** This report uses **Deep Forensic Analysis** data from refinement loops. The numbers below reflect actual errors caught during validation, not surface-level batch comparison.

**18**

UNIQUE INJECTS ANALYZED

**16**

ERRORS PREVENTED (FORENSIC)

**2**

TOTAL SCENARIOS

**20.0%**

REJECTION RATE

# Statistical Significance Analysis

## Hypothesis Testing

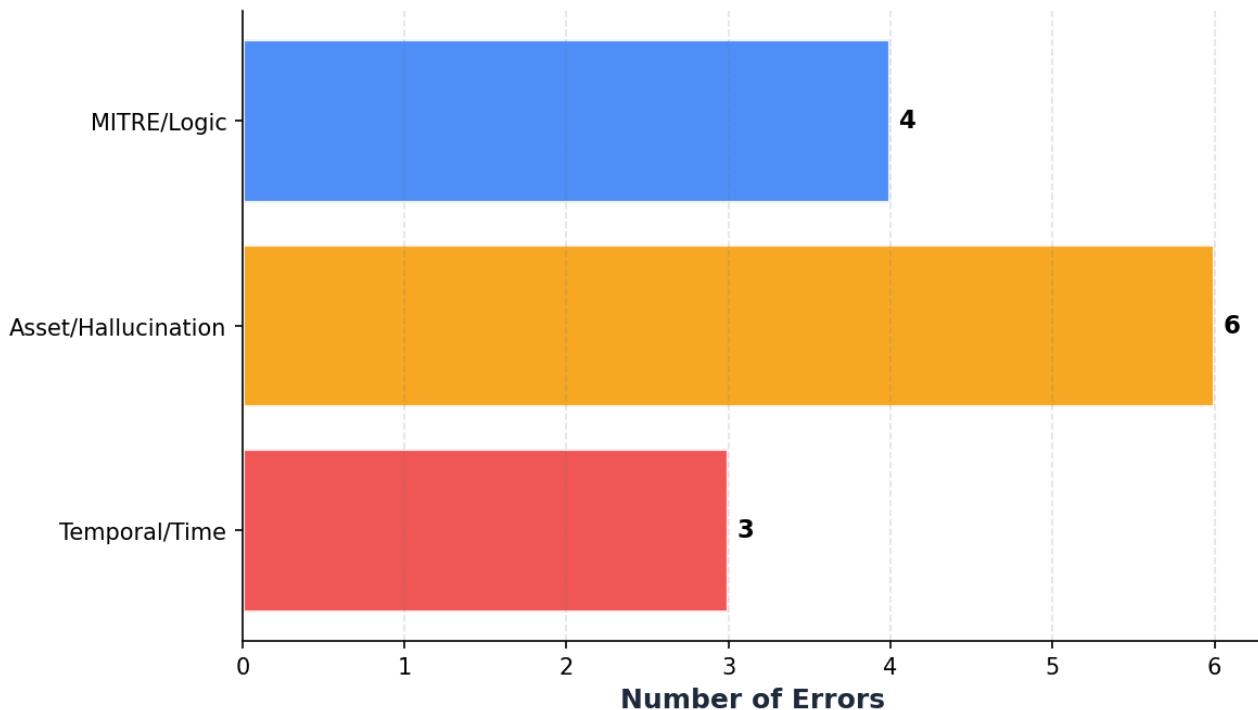
**H0:**  $\mu_{\text{legacy}} = \mu_{\text{thesis}}$  (No difference)

**H1:**  $\mu_{\text{legacy}} > \mu_{\text{thesis}}$  (Thesis reduces hallucinations)

Metric	Value	Interpretation
Mean Difference	0.000	Legacy - Thesis hallucinations
T-Statistic	nan	Test statistic
P-Value	NAN	Significance level
Cohen's d	0.000	Effect size: Negligible
95% CI	[0.000, 0.000]	Confidence interval
Sample Size	2	Number of scenarios

# Qualitative Error Pattern Analysis

Error Type Distribution



CATEGORY	COUNT	THESIS INTERPRETATION
Asset/ Hallucination	6	LLM invents non-existent assets. System enforces reality.
MITRE/Logic	4	LLM violates cybersecurity rules. System enforces domain knowledge.
Temporal/Time	3	LLM creates temporal paradoxes. System enforces causality.

## Exemplary Interventions

**Hall of Fame:** Concrete examples of errors caught by the Critic Agent

**Asset/Hallucination:**

"Asset 'SRV-CORE-002' wird als betroffenes Asset angegeben, obwohl der Inhalt des Injects nur 'SRV-CORE-004' erwähnt. Dies ist inkonsistent mit der Beschreibung des Vorfalls."

**MITRE/Logic:**

"MITRE-Technik Fehler: T1595 (Active Scanning) passt nicht zur Phase NORMAL\_OPERATION. Scanning-Aktivitäten sollten in SUSPICIOUS\_ACTIVITY oder INITIAL INCIDENT vorkommen."

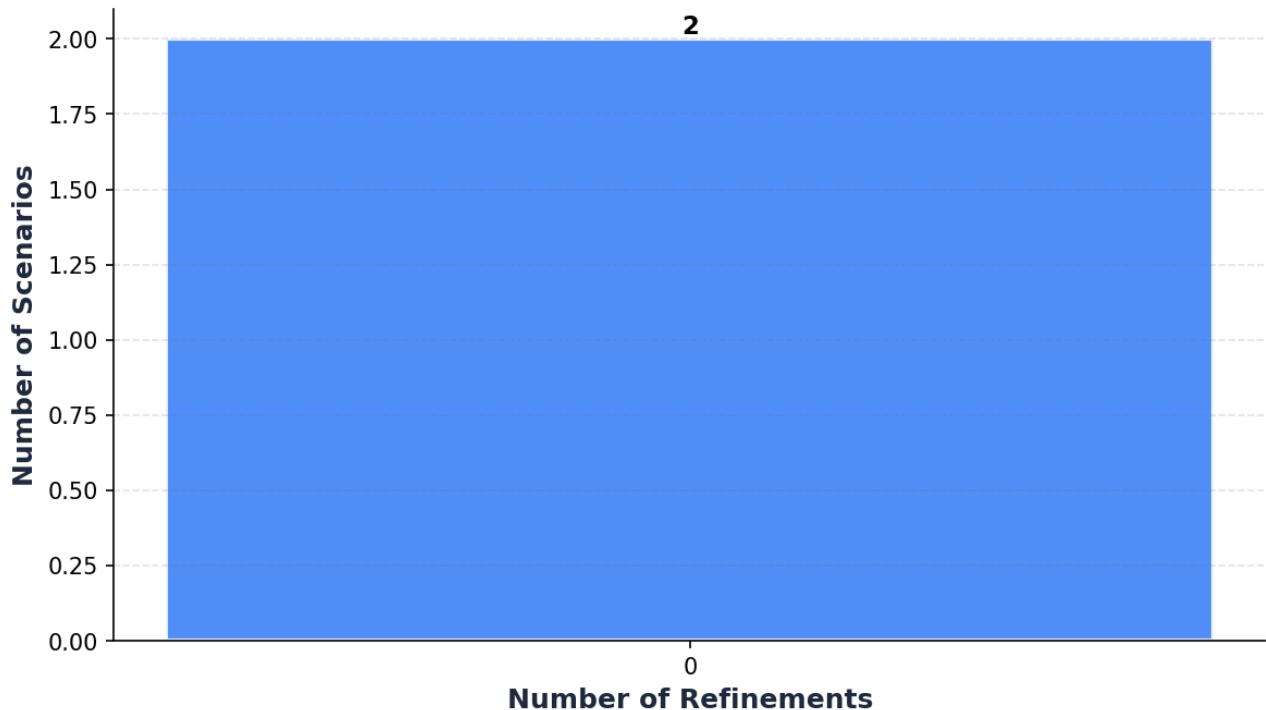
**Temporal/Time:**

"Temporale Inkonsistenz: Inject INJ-015 hat Zeitstempel T+00:00:30, aber vorheriger Inject INJ-003 hat T+00:01:30 (später). Zeitstempel müssen chronologisch sein."

# Refinement Efficiency Analysis

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Refinement Distribution



**0.00**

AVG REFINES PER SCENARIO

**0**

MAX REFINES NEEDED

**100.0%**

FIRST ATTEMPT SUCCESS RATE

## Cost-Benefit Analysis

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**54**

Avg Legacy API Calls

**54**

Avg Thesis API Calls

**0.0%**

Overhead

**0**

Total Prevented

## Forensic Analysis Details

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**45**

TOTAL EVENTS

**18**

UNIQUE INJECTS

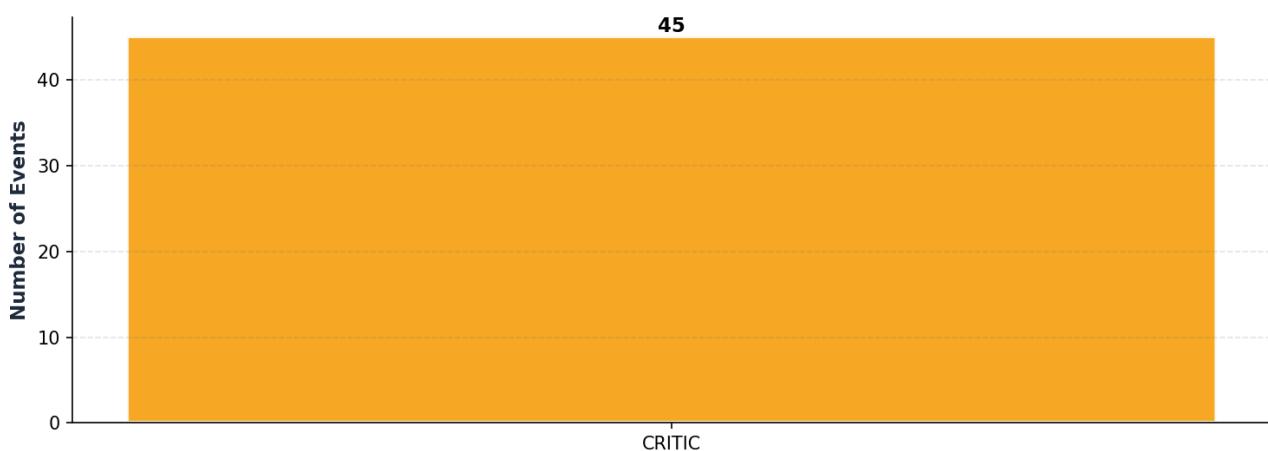
**20.0%**

REJECTION RATE

**0.50**

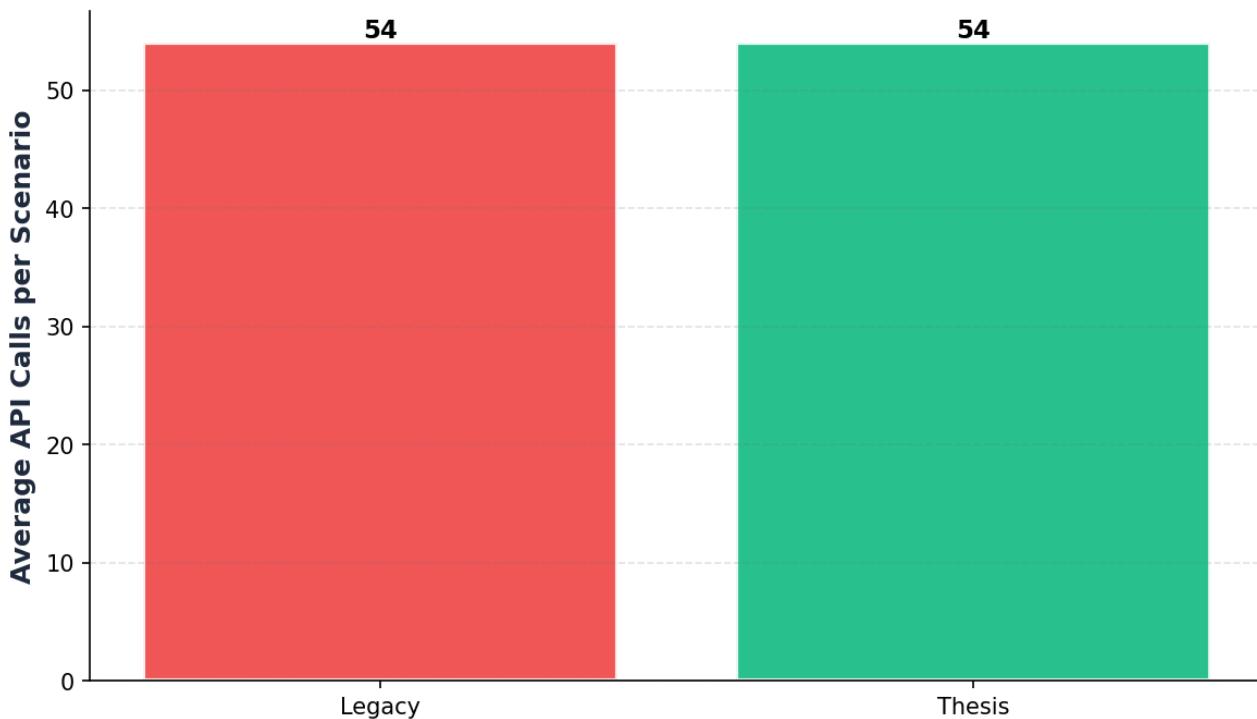
AVG REFINES PER INJECT

**Event Type Distribution**



# API Call Efficiency

API Call Efficiency Comparison



## Detailed Results by Scenario

SCENARIO ID	LEGACY HALLUCINATIONS	THESIS HALLUCINATIONS	HALLUCINATIONS PREVENTED	THESIS REFINES
SCEN-000	0	0	0	0
SCEN-001	0	0	0	0