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1. Operational Definition: A state where the complexity of the security environment (tools, rules, processes) exceeds human cognitive capacity, leading to unpredictable interactions, misconfigurations, and an inability to manage the system effectively.

2. Main Metric & Algorithm:

- **Metric:** Complexity-Induced Incident Rate (CIIR). Formula: `CIIR = (Number_of_Incidents_Caused_By_M / Total_Incidents) over a time period`.
- **Pseudocode:**

  python

  ```
  def calculate_ciir(start_date, end_date):
      all_incidents = get_incidents(start_date, end_date)
      misconfig_incidents = 0

      for incident in all_incidents:
          # This requires incident root cause to be tagged
          if incident.root_cause == "Misconfiguration":
              misconfig_incidents += 1

      total_incidents = len(all_incidents)
      return misconfig_incidents / total_incidents if total_incidents > 0 else 0
  ```

- **Alert Threshold:** `CIIR > 0.3` (Over 30% of incidents are caused by misconfigurations).

3. Digital Data Sources (Algorithm Input):

- **SOAR / Incident Management Platform:** (e.g., Jira, ServiceNow) with a mandatory `root_cause` field for closed incidents. Values should include "Misconfiguration".

4. Human-to-Human Audit Protocol: Interview system administrators and cloud engineers: "How confident are you that you fully understand the interaction between all the security policies applied to a system? Can you easily trace why a specific request was allowed or blocked?" A high level of uncertainty indicates complexity catastrophe.

5. Recommended Mitigation Actions:

- **Technical/Digital Mitigation:** Implement Infrastructure as Code (IaC) security scanning (e.g., Checkov, Terrascan) and policy-as-code to enforce consistency and simplicity in configurations.
- **Human/Organizational Mitigation:** Create a "Simplicity Task Force" with the mandate to decommission redundant tools and standardize configurations across the environment.
- **Process Mitigation:** Introduce a mandatory "complexity impact assessment" for the procurement of any new security tool or the creation of any new security policy.