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Open-Source Cyber Resilience Act Tools

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Embedding Risk Management into the Development Lifecycle

CRA-focused case study using vulnerability scan results

Yasen Tanev

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CRA Changes the Game

From best practice to legal obligation

- Applies to products with digital elements
- Security by design and by default
- Cybersecurity across the full lifecycle
- Compliance must be demonstrable

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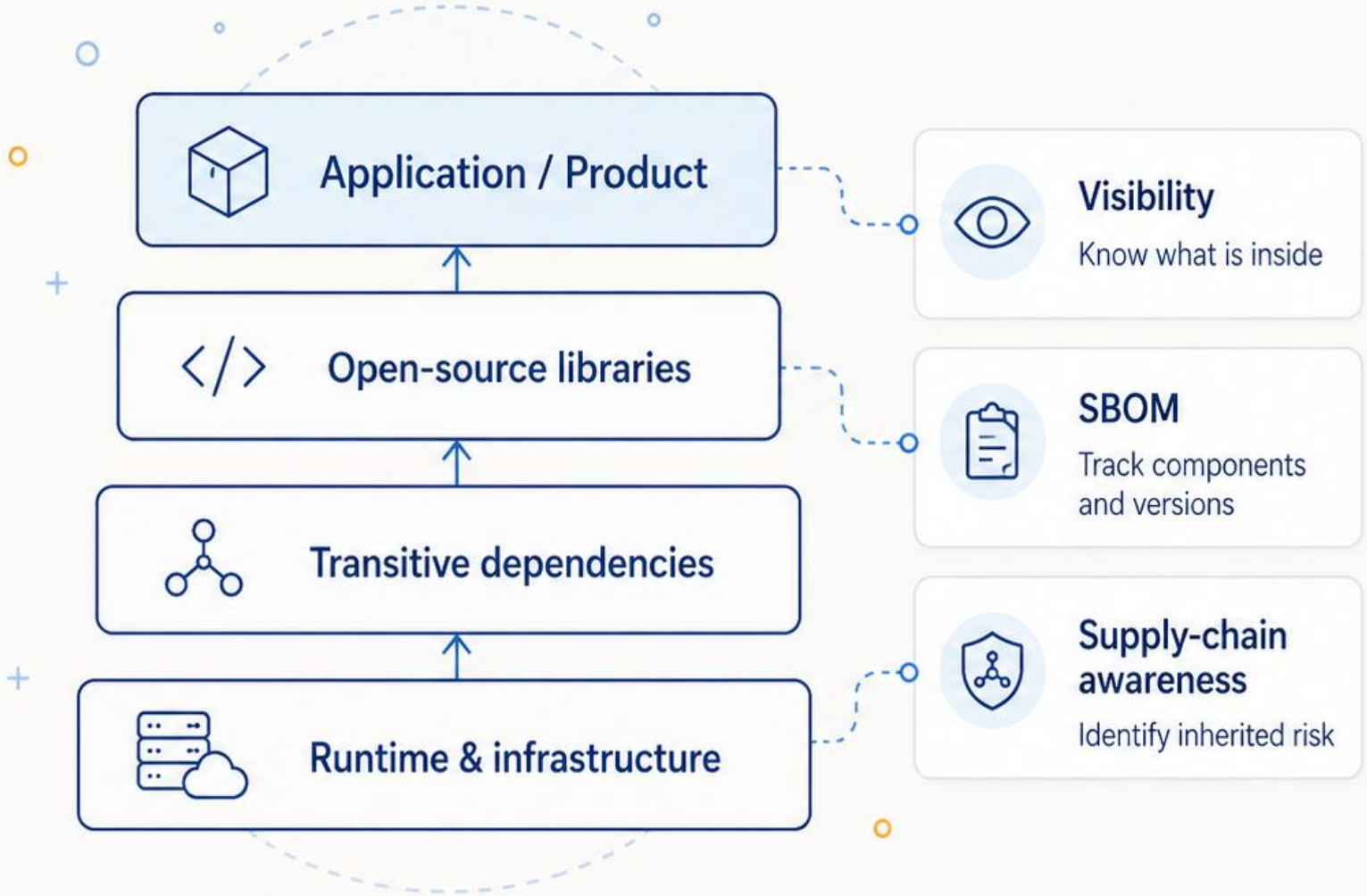
Where Product Risk Comes From

Component risk becomes product risk



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Real Vulnerability Scan Example

Example product: stardust-fine-edition 1.0

Component	Version	Key findings	Severity
log4j-core	2.14.1	RCE, Log4Shell chain	Critical
lodash	4.17.20	Injection, pollution, ReDoS	High / Medium

Severity legend

- Critical
- High
- Medium

These findings become CRA risk objects for assessment and treatment.

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From Vulnerability to CRA Risk

A scan is an input, not the end of the process

CRA expects risks to be identified, treated, and evidenced across the product lifecycle.

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Risk Register: Core Compliance Artifact

The central place to manage product cybersecurity risk

- Single source of truth for identified risks
- Supports technical documentation and audit readiness
- Tracks owner, status, treatment, and evidence

What it should contain

- Risk ID
- Component
- Vulnerability
- Impact
- Treatment
- Owner
- Status
- Evidence

Without a structured register, traceability is weak.

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Example Risk Register Entries

Derived from the vulnerability scan

Risk ID	Component	Risk	Treatment	Status
R-001	log4j-core 2.14.1	CVE-2021-44228 • Critical RCE	Upgrade to 2.17.1+	Open
R-002	lodash 4.17.20	CVE-2021-23337 • High injection	Upgrade to 4.17.21+	Open
R-003	lodash 4.17.20	CVE-2025-13465 • Prototype pollution	Upgrade to 4.17.23+	Open

Next step: assign owner, create task, attach evidence.

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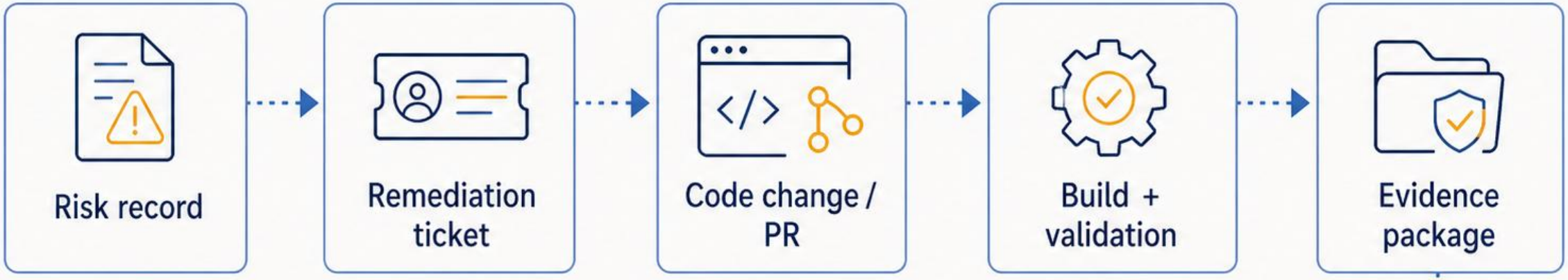
Traceability: Risk → Task → Evidence

This is how compliance becomes provable



Auditors look for the link between **finding**, **action**, and **proof**.

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Practical Risk Treatment

Common options for handling product cyber risk

1 **Mitigate**

- Patch / upgrade
- Add security controls

2 **Avoid**

- Remove risky component
- Change design

3 **Accept**

- Residual risk justified
- Document decision

4 **Monitor**

- Track exposure
- Watch for fix or exploit

Acceptance should be explicit, limited, and evidence-based.

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Using Risk to Support Decisions

Risk management helps decide what happens next

Scenario:
critical vulnerability found before release

Can we release?

- Patch before release
- Release with justified residual risk
- Hold release and redesign

Backlog priority

Release approval

Resource allocation

Stakeholder communication

Risk is a decision support mechanism, not just a register.

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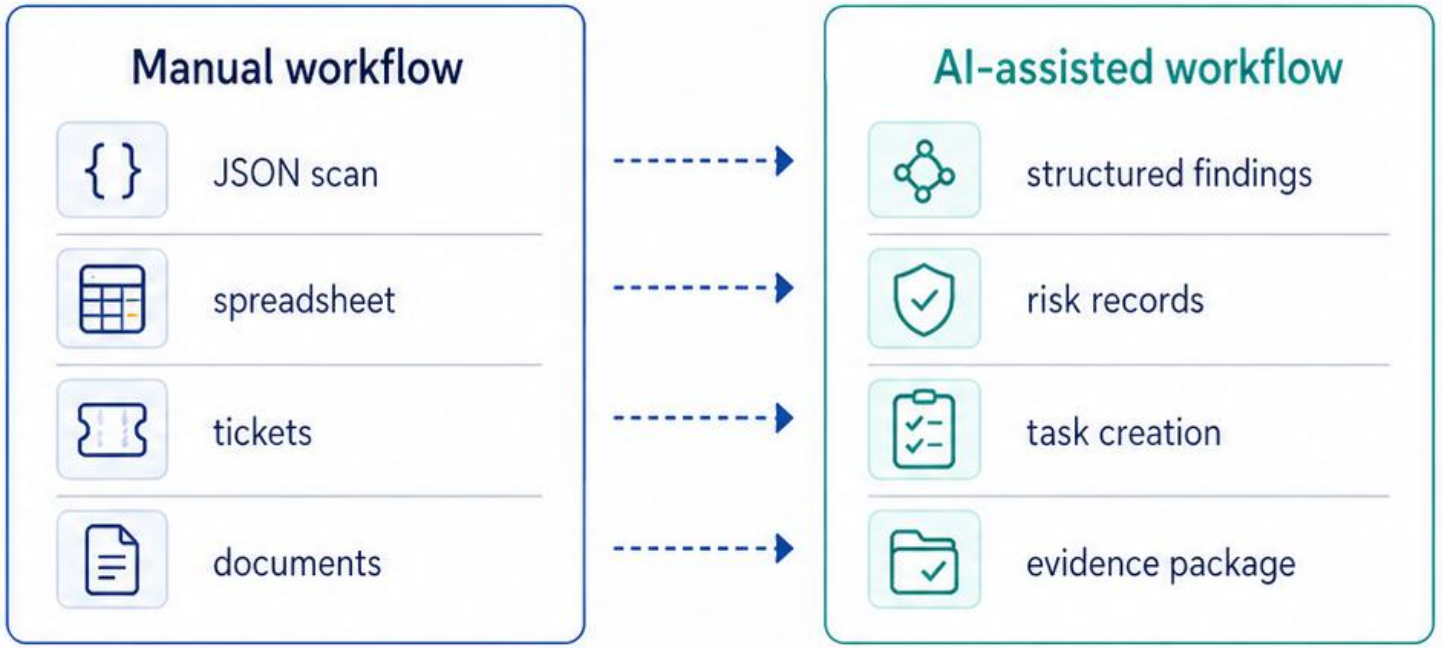
Why AI Matters for CRA Workflows

Turning raw security findings into structured compliance actions

- Too many findings to triage manually
- Fragmented data across tools
- Manual documentation is slow
- Traceability is hard to maintain at scale



AI improves speed, consistency, and scalability — while accountability remains human.

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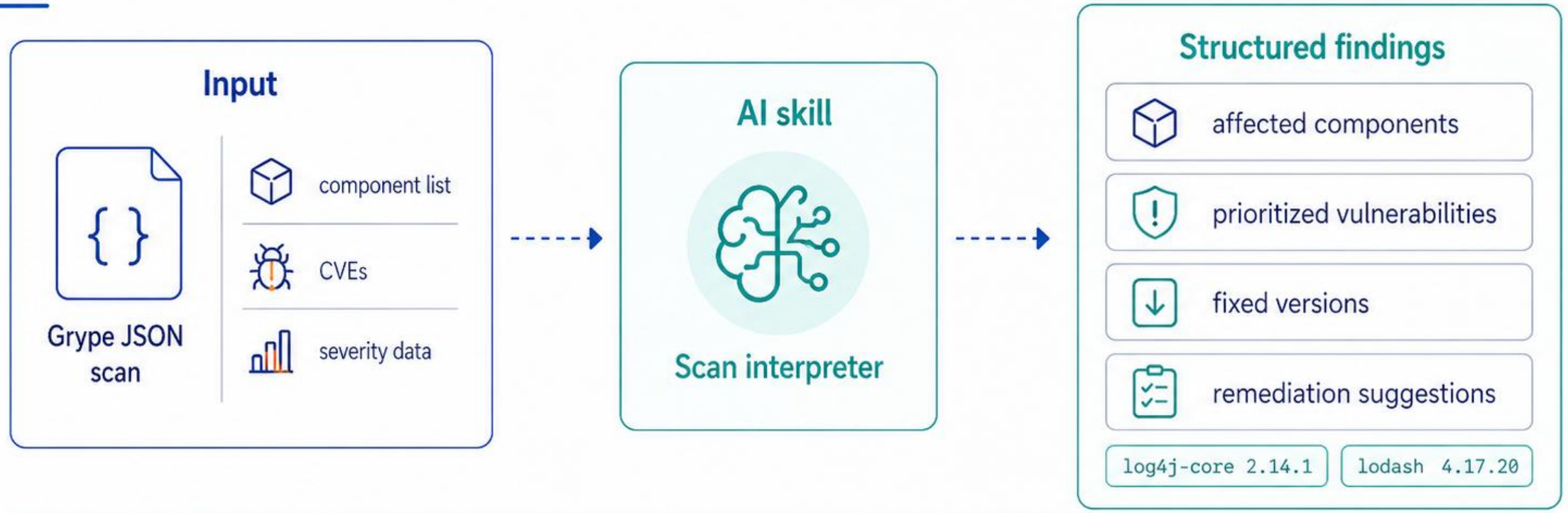
Skill 1: Vulnerability Scan Interpreter

From raw scan output to structured technical findings



Use case: turn raw scan files into CRA-ready technical summaries.

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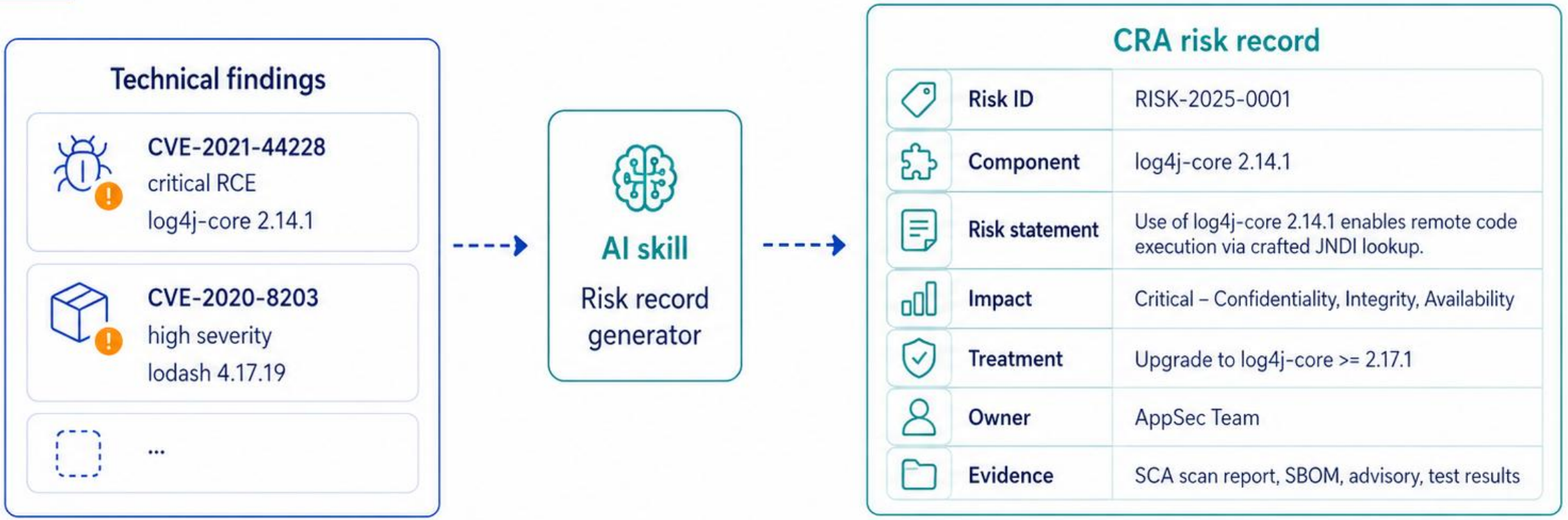
Skill 2: CRA Risk Register Generator

Transforming technical findings into compliance-ready risk records



AI standardizes risk language and reduces documentation effort.

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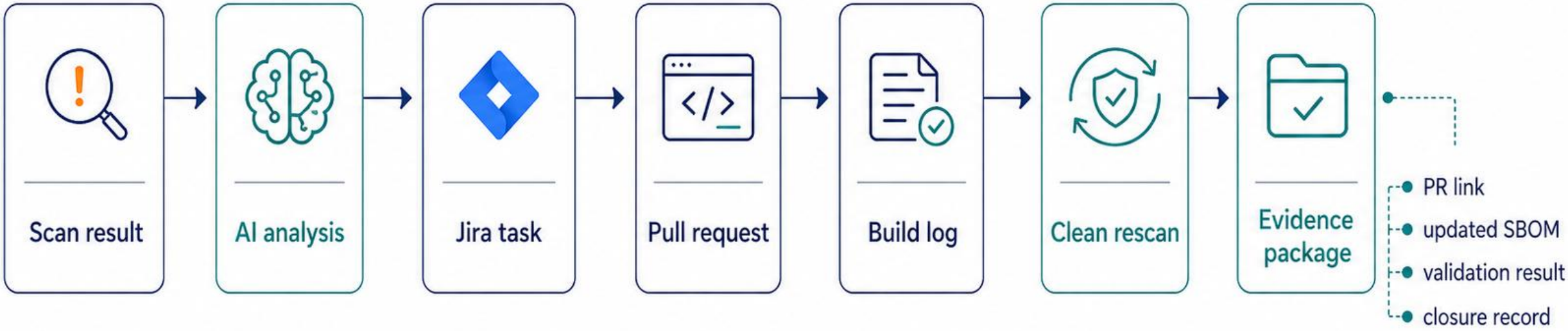
Skill 3: Traceability & Evidence Builder

Linking findings, actions, and proof across the lifecycle



This makes CRA traceability scalable and audit-ready.

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AI as a Practical CRA Enabler

Helping teams interpret, structure, connect, and prove

Interpret findings

understand raw scan data

Structure risk

generate compliance-ready records

Connect tasks

link work across tools

Prove evidence

support audit readiness

It is not enough to fix vulnerabilities — organizations must prove they managed the risk.

AI helps teams move from scan results to provable CRA compliance.

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16. What We Are Doing with This Skill

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End-to-end CRA-aligned risk management from SBOM to report with guided gap analysis.

HOW THE SKILL HELPS

Knows Where You Are
Identifies the current stage (0–6) of the risk assessment based on available data.

Finds Gaps
Analyzes what is missing and asks targeted questions to close the gaps.

Turns Data into Risk
Converts scan findings into clear risk statements and risk register entries.

Drives Mitigation
Recommends treatments, creates actionable tasks and tracks remediation.

Ensures Traceability
Maps risks to tasks, evidence and decisions for audit readiness.

Delivers Reports
Produces executive and technical reports aligned with CRA expectations.

Outcome: A structured, repeatable, and auditable process that reduces cybersecurity risk, supports CRA obligations, and builds trust in the products we deliver.

We help you:

- Understand your risk posture
- Prioritize what matters most
- Take the right actions
- Prove it with evidence
- Make informed release decisions

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