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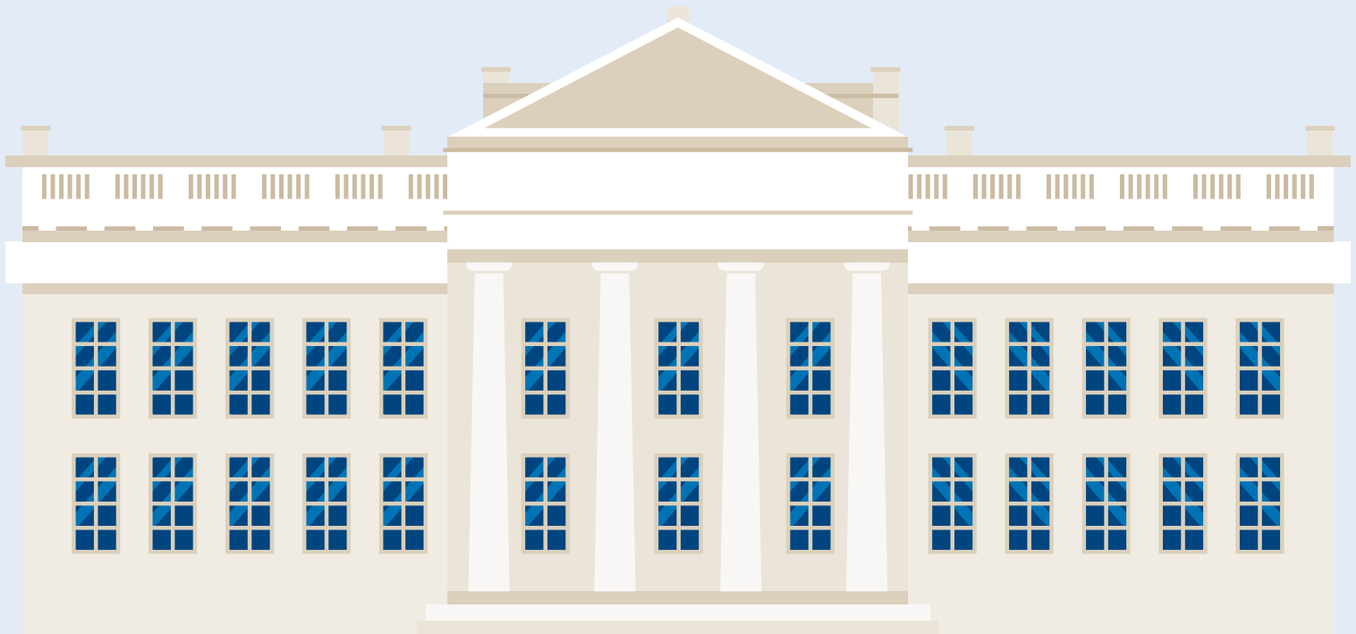
REMARKABLE EXPERIENCES

Case Study



databricks

DOCUMENT INTEGRITY & AI FORENSICS

PDF Forensics Pipeline to Identify Risk of Fraud in Over 10 Million Documents with Databricks

OCR, document forensics, and explainable risk scoring help reviewers identify potentially tampered and AI-generated documents.

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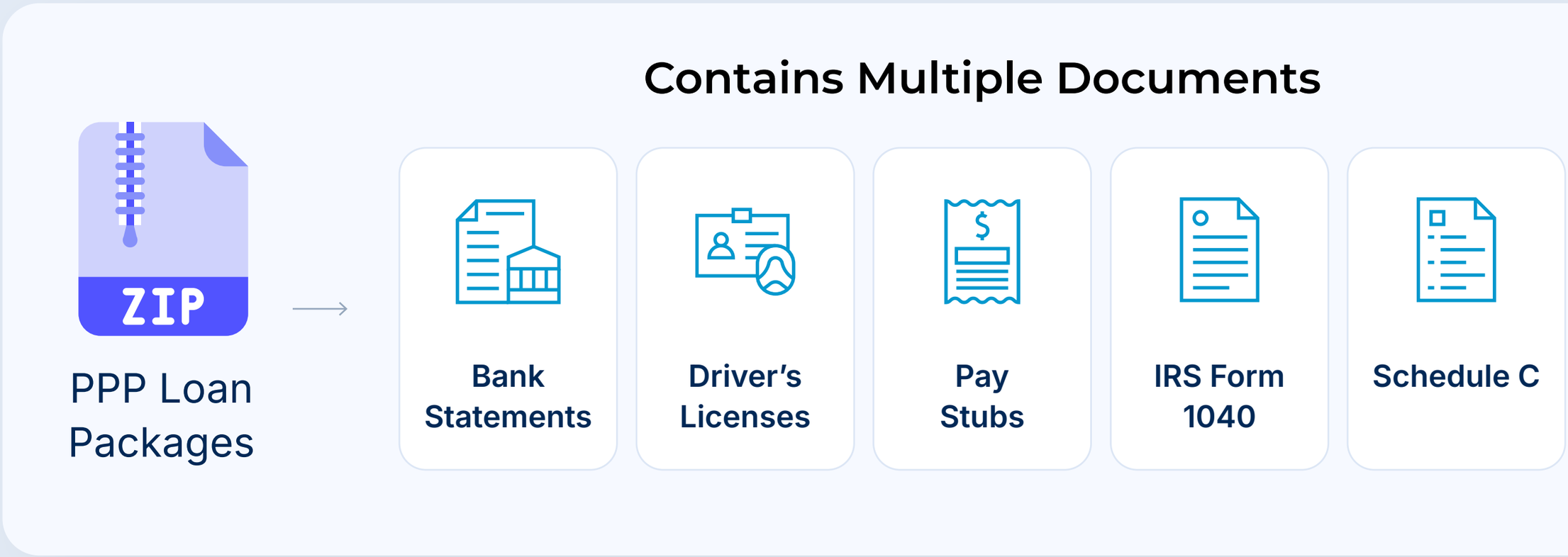
The Challenge

FocalCXM built a PDF forensics pipeline to process PPP loan packages submitted as ZIP files, with each package containing multiple documents such as **bank statements, driver's licenses, pay stubs, and IRS tax returns including Form 1040 and Schedule C.**

The scale and variety of these documents create challenges for manual review. **Potentially tampered files and AI-generated content** can be difficult to identify through casual inspection, while scanned and flattened documents can create blind spots for automated forensic checks.



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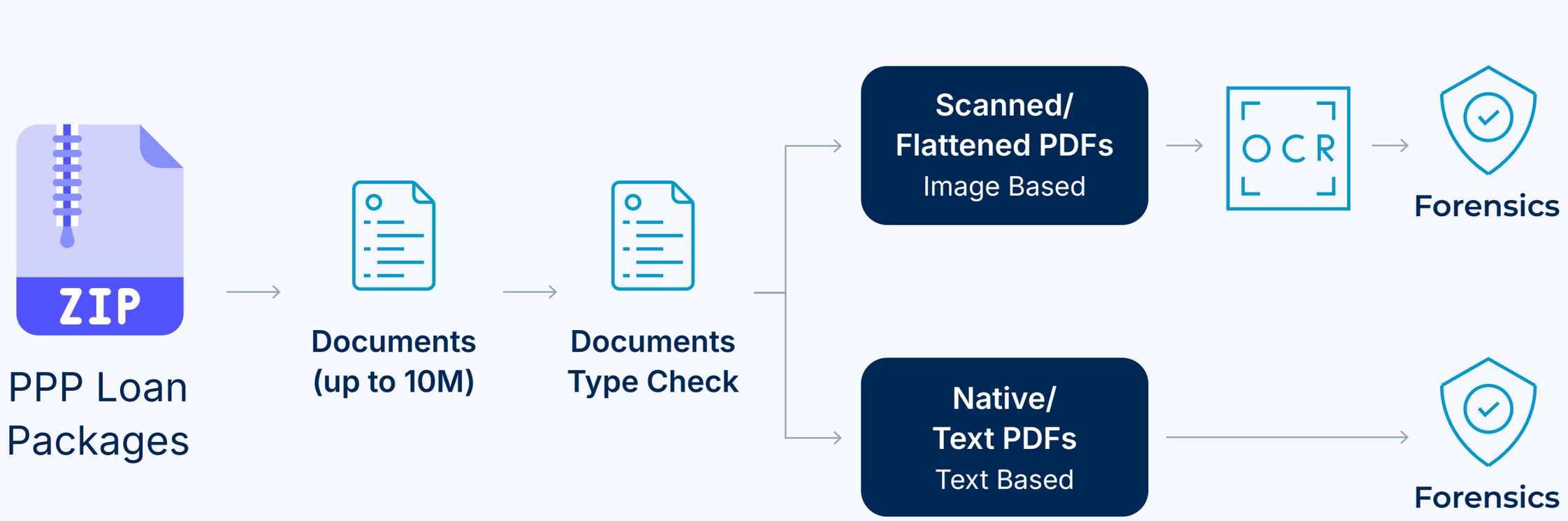
The Solution

FocalCXM built a PDF forensics pipeline that scans ZIP packages containing up to 10 million documents, scoring them for tampering and AI-generation risk before they reach a decision-maker.

Only scanned and flattened documents go through OCR extraction, converting image-based PDFs into searchable, analyzable text. **Native,** text-based documents proceed directly to the forensic analysis without unnecessary OCR processing.



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Extensible Across Document Types

The pipeline can be extended beyond PPP loan packages to process multiple document types, including:

Legal Documents

Real Estate Contracts

Lease Agreements

Vendor Contracts

Deeds & Titles

Insurance Documents

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PDF forensics pipeline checks metadata-level signals, including:

- **Standard, XMP & XREF metadata**
  editing history, application traces, and authorship clues
- **EOF markers**
  structural signs of post-creation edits
- **Creator/Producer Mismatches**
  inconsistencies between declared and actual authoring tools
- **Document ID Discrepancies**
  signals that may suggest reassembly or splicing
- **Font metadata**
  irregularities that may indicate font substitution or injection
- **Layered vs. flattened content**
  differences in document structure and composition
- **Revision timing**
  edit patterns that may be inconsistent with the claimed document history

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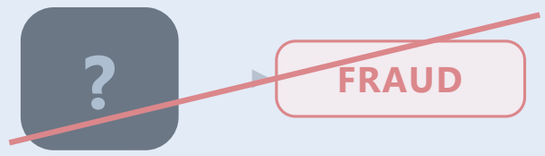
The Design Principle That Matters

The pipeline reports indicators for a human reviewer, not automated fraud verdicts.

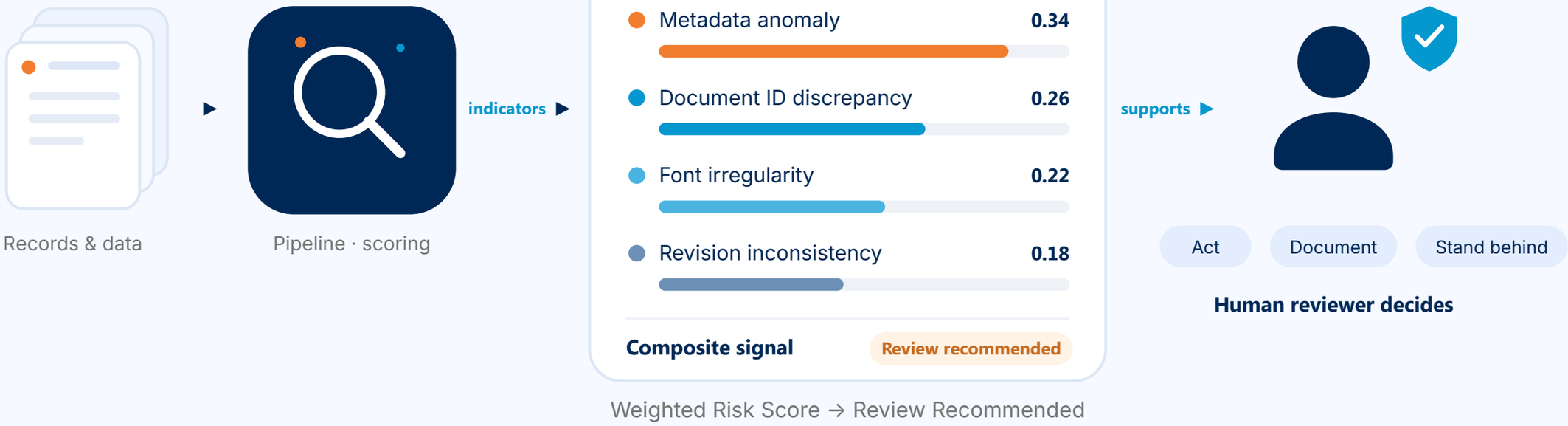
In compliance driven programs such as federal contracting, loan and grant review, and audit programs, this distinction provides a defensible, explainable signal for reviewers to act on rather than a black-box accusation.

SIGNAL, NOT VERDICT



Not this — a black-box verdict.

Hard to defend, hard to appeal, easy to challenge.



Weighted Risk Score → Review Recommended

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Trust every document.
Verify every decision.
Scan to see how.

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www.focalcxm.com