

Product Requirement Document: IDP SaaS Tool

1. Module: Document Ingestion (The "Upload" Phase)

The User Story:

"As a user, I want to bulk upload mixed file types without friction so that I can process a batch of mixed administrative paperwork in one go."

Narrative Workflow:

1. **The Landing Zone:** The user arrives at the "Upload" tab. They drag and drop a folder containing 50 files—a mix of PDFs, high-res JPG scans of receipts, and PNG screenshots.
2. **The Staging Area:** The system instantly parses these files into a grid or list view (The "Staging Area").
 - *Visual Feedback:* Each file shows a thumbnail preview. Invalid formats are flagged immediately.
 - *Queue Management:* The user realizes they missed a file and clicks "Add More" to append to the list. They also spot a personal file uploaded by mistake and hover over it to click a "Trash" icon, removing it from the batch before processing begins.
3. **The Gatekeeper:** Once satisfied with the batch, the user clicks "Next."

2. Module: Classification & Strategy (The "Brain" Phase)

The User Story:

"As a user, I want the system to tell me what I just uploaded, but I want the final say. I also need to know how much this will cost me before I commit."

Narrative Workflow:

The user is presented with a choice: Auto-Classify or Manual Assignment.

Path A: The "Auto-Pilot" (Classification Enabled)

1. **The Sort:** The system runs a lightweight pass and buckets the 50 files into groups: "Invoices," "Payment Slips," and "Birth Certificates."
2. **The Human Correction:** The user sees a visual grouping. They notice one "Payment Slip" was incorrectly grouped as an "Invoice." They simply drag that document from the Invoice bucket to the Payment Slip bucket.

3. **Handling Unknowns:** There is a bucket labeled "Unknown." The user clicks into it, selects the unclassified documents, and chooses "Create New Class." They name this new class "Customs Declaration."
4. **Tag Assignment:** Now that documents are bucketed, the user assigns a "Tag" (Extraction Schema) to each bucket.
 - *Invoice Bucket* \rightarrow Assigned "Standard Invoice Tag."
 - *Birth Certificate Bucket* \rightarrow Assigned "Vital Records Tag."

Path B: The "Express Lane" (Skip Classification)

1. The user knows all 50 files are Invoices. They click "Skip Classification."
2. They select a single global tag: "Standard Invoice Tag" to apply to every file in the batch.

The Cost Check (Token Estimation)

Before the user clicks "Process," a dynamic banner updates in real-time:

*"Based on your selection of 50 documents and the complexity of the 'Invoice' tag, this job will consume approximately **4,500 Tokens**."*

3. Module: Tag & Schema Studio (The "Configuration" Phase)

The User Story:

"As a user, I want to teach the AI how to read my specific documents by showing it just one example, and I want to control exactly how the data is formatted for my database."

Narrative Workflow:

The user realizes they don't have a tag for "Customs Declarations" yet. They click "Create New Tag."

1. **The One-Shot Lesson:** The user uploads **one** sample "Customs Declaration" document.
2. **The AI Draft:** The system analyzes the sample and auto-generates a schema. It presents a list of suggested fields: Declaration Date, Port of Entry, Total Weight, Item List.
3. **The Editor (Visual & Prompt-Based):**
 - *Correction:* The AI missed the "Officer Name." The user highlights the name on the document preview and clicks "Add Field."
 - *Prompt Refinement:* The AI is extracting the date as "Jan 01 2024," but the user needs "2024-01-01." The user clicks the field settings and types a prompt: *"Always convert to YYYY-MM-DD format."*
 - *Standardization:* The document says "Bill No," but the user's database needs "Invoice_ID." They rename the field key output.
4. **Advanced Structures (Child Fields & Grouping):**

- The document has a list of shipped items. The user enables "**Child Fields**" (Line Items).
 - They define the structure: Item Name, HS Code, Quantity.
 - *Grouping*: They group these items under a parent category based on the "Container ID" found on the page.
5. **The Simulation**: The user clicks "Preview Output." A drawer slides open showing exactly how that sample document would look in **JSON**, **CSV**, and **XML**. Satisfied, they save the tag.

4. Module: Extraction & Review (The "Execution" Phase)

The User Story: "As a user, I want to trust the AI to handle the easy documents automatically so I can focus my limited time only on the ambiguous or low-quality files that require human judgment."

Narrative Workflow:

1. **The Loading State**:
 - The user hits "Start Extraction." A progress bar appears: *"Processing 14 of 50..."*
 - **The Panic Button**: The user realizes they applied the wrong tag. They hit **"Abort Job."** The system stops immediately, ensuring they only pay tokens for the files processed so far. They restart with the correct settings.
2. **The Triage Dashboard (Confidence-Based Routing)**:
 - The batch completes. Instead of opening the first document immediately, the user sees a **Summary Dashboard**.
 - **The Traffic Light Split**: The 50 documents are automatically sorted into buckets based on the AI's confidence score:
 - ☐ **Ready (40)**: High confidence (>90%). These are auto-approved.
 - ☐ **Needs Review (10)**: Low confidence (<60%) or missing mandatory fields.
 - **The Workflow**: The user clicks the **"Review 10 Exceptions"** button to start the HITL (Human-in-the-Loop) process.
3. **The Review Station (Exception Handling)**:
 - **Filtered View**: The system presents *only* the low-confidence documents.
 - **Visual Cues (Field Level)**:
 - On the extracted form (right side), most fields are plain text, but the specific fields the AI was unsure about are highlighted in **Orange**.
 - *Example*: The "Date" field is highlighted because the scan was blurry.
 - **Visual Anchoring**: The user clicks the orange "Date" field. The image view (left side) zooms into that specific blurry corner to help the user decipher it.
 - **On-the-fly Edit**: The AI guessed "Jan 10," but it is actually "Jun 10." The user types the correction. As soon as they tab away, the field turns Green (Verified).
 - **Validation**: Once all "Red/Orange" fields in a document are addressed, the document status flips to **"Verified."**
4. **The Exit**:

- Once the "Needs Review" queue is empty, the "Export" button becomes active for the full batch.
- **Bulk Export:** The user selects **JSON / CSV / XML**. The system downloads a single zip file containing clean data from both the 40 auto-approved docs and the 10 manually corrected docs.

5. Module: History & Audit (The "Memory" Phase)

The User Story:

"As a user, I want to see what I did last week and re-download a file I lost, without paying for it again."

Narrative Workflow:

1. **The Timeline:** The user navigates to "History." They see a chronological list of jobs: *"Batch #304 - 50 Docs - Completed 2 hours ago."*
2. **Status Transparency:** A job from yesterday shows as "Failed." The user hovers to see why (e.g., "Corrupted PDF").
3. **Retention Retrieval:** The user needs the JSON for the "Batch #304" again. Since it is within the 30-day retention window, the "Download" button is still active. They grab the file instantly without re-running the extraction credit.