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Document Management

AI/OCR, versioned docs, linked to transactions, compliance, search/download

Here is a research-driven, full-fledged user story and requirements set for **Document Management** in modern compliance/RegTech SaaS, centered on AI/OCR, versioned docs, transaction/document linkages, compliance context, rapid search, and audit-ready downloads. [1] [2] [3] [4] [5]

Document Management – Full-Fledged User Story & Competitive Best-Practices

Title

AI-Driven Document Management for Integrated Compliance

Description

As a compliance manager or operations user, I need to centralize every compliance and trade document—supporting email/ERP/API ingestion, AI/OCR data extraction, tamper-evident versioning, linkage to orders and licenses, flexible search/download, and real-time classification —so all evidence is at my fingertips to meet regulatory requirements, accelerate audits, and minimize manual work.

Functional Requirements

1. Comprehensive Ingestion

- Documents accepted via UI, API, ERP/OMS, email parsing, or SFTP. [1]

- Essential doc types: sales invoices, packing lists, bills of lading, declarations, certificates of origin, end-user statements, licenses, customs files. [5]

- Each document is logged on receipt/upload with timestamp, uploader/source, hash, and type.

2. AI-Powered OCR & Automated Classification

- Each new doc is processed by advanced OCR/NLP engines, extracting key fields (e.g., invoice number, partner, value, HS/ECCN, license ref, parties).

- AI/NLP auto-tags and suggests document types; high-confidence (over 95%) are auto-categorized, while edge cases flagged for human review.[5]
- Human-in-the-loop allows correction and teaching of the model for continuous improvement.

3. Version Control and Tamper Evidence

- Every new upload or edit generates a new version, with version chain, timestamp, user, delta/change summary, and hash.
- Past versions always available for review for 5–7 years (per BIS, EAR, and GDPR/CCPA retention).
- Any attempt to overwrite or delete documents outside permitted workflow is blocked/alerted, logged for compliance.[1]

4. Contextual Linking to Transactions & Compliance Entities

- Each doc is linked (one or many) to: orders/shipments, products, business partners, compliance workflows, cases, licenses, rules applied, and audit trails.[1]
- Links visible both in document UI and from referencing transactions—one click from order to supporting docs.

5. Intelligent Search, Filtering, & Download

- Powerful search box and filters (by type, status, tags, entity, content, text, field value, upload/expiry date, compliance status).
- Full-text (OCR-based) search allows finding any word/number in thousands of docs.
- Batch and single file download, export (PDF, original, ZIP), with audit of download/export actions.

6. Compliance and Expiry Alerts

- Auto-warnings for expiring documents (e.g., license renewals, soon-to-expire certificates).
- Configurable alert thresholds and routing (to document owner, compliance lead, escalations).[2]

7. Security and Privacy

- All documents stored encrypted at rest, with access permissioned by entity, role, and jurisdiction (e.g. only EU-compliant personnel view EU docs).
- Audit logs record every access, download, change, export; search/audit features unblock during external investigation without exposing non-permissible data.

8. API, Integration & Automation Hooks

- Documents accessible and pushable via REST APIs for real-time integration (ERP/OMS/Portal).
- Outbound automation: e.g., auto-submit of license paperwork to regulators, or pull of inbound e-docs from customs.
- Supports plugin extensions and market API standards for e-invoicing, trade documents, and customs integration.[1]

Acceptance Criteria

- 100% docs ingested are classified/tagged, with over 95% having >90% OCR accuracy after teaching loop.

- Past versions traceable for every doc for minimum required years; tampering/unauthorized removal not possible.

- All docs centrally searchable, downloadable, and exportable with full audit compliance in real-world test.

- Automated expiry/alerting reaches the right stakeholder, with proof on follow-up.

- Works for both "uploaded now" and "synced from legacy" documents, tested for international character sets.

Innovations and Compliance Drivers

- Legacy GRC platforms lack rapid OCR/AI classification and require manual linkage—this model automates both. [3] [4] [5]

- Modern design focuses not just on scanning but on making every doc "clickable," linkable, and compliance-audit-ready.

- Encrypted, versioned, and jurisdiction-aware storage/exports make audits, disputes, and legal defense simple and affordable.

Subtasks & QA

- Build ingestion/UIs, AI/OCR, and NLP modules and teaching UI.

- Engineer compliance-driven version chain and delta engine; block unauthorized changes.

- Test entity linkers, exports, and search with real data volumes, varied language docs, and regulatory scenarios.

- Run pilot with all major doc types and international compliance teams.

This design ensures compliance evidence is never siloed, lost, or untraceable—putting your platform years ahead of manual and legacy digital "file folder" alternatives.Here is an exhaustive, research-driven user story for **Document Management** in compliance software: [4] [2] [3] [5] [1]

Document Management – User Story & Requirements

Title:
Automated, AI-Driven Document Management with Compliance Context

Description:
As a compliance or operations user, I want to ingest, classify, search, and manage every trade and compliance document (from ERP/email/API), with AI-driven OCR for data extraction, robust

versioning, and secure links to orders, licenses, products, and workflows—so nothing is lost, audits are fast, and every transaction is always evidence-rich. [2] [5] [1]

Core Functional Requirements

- **Ingestion & Capture:**

  - Drag-and-drop, email, API, SFTP, or ERP/OMS sources; instant file receipt logging.

  - Supported doc types: invoices, packing lists, certificates, declarations, license files, end-user statements, and more. [5] [1]

- **AI/OCR and Classification:**

  - Automated OCR/NLP on upload for key field extraction (party, rule, product details, license ref).

  - AI/ML suggests document types and tags with >90% initial classification accuracy; built-in "teach" mode for inaccuracies.

  - Document classification/metadata flagged for human review if confidence is low, with "feedback loop" for model improvement. [5] [1]

- **Versioned, Tamper-Evident Storage:**

  - Every upload/version edit tracked with immutable hash, timestamp, editor, change comment.

  - All historic versions (original upload, later redactions, annotations) always recoverable for 5–7 years (regulation-driven).

  - Strict, role-based permissions; unauthorized deletes or edits impossible (system blocks and alerts).

- **Entity Linking & Compliance Context:**

  - Each doc can be referenced by any order, shipment, product, case, or license—visible from both sides (doc-to-transaction and transaction-to-doc).

  - Smart workflow: "Auto-attach" rule for license/transaction context (e.g. auto-link all docs signed by a given exporter to relevant open licenses/orders).

- **Search, Filtering, Export:**

  - Robust search: by text, extracted fields, type, entity, expiry, compliance status (open/closed/flagged).

  - Full-text search enabled for all OCR'd content.

  - Export/download: single or batch (with permissions, expiry, and legal-hold controls), audit-logged.

- **Alerts & Expiry Management:**

  - Automated alerting for soon-to-expire documents, renewal windows, license/certificate changes.

  - Notification to responsible party with traceable follow-up/actions.

- **Audit-Readiness:**

- All docs and actions (add, search, export) included in audit log.
- Point-in-time "compliance state" snapshot—what documents/evidence supported a shipment or screening at each past moment.

- **API and Extensibility:**
  - Open REST APIs for real-time and batch doc push/pull; supports e-invoicing, customs EDI, and future trade doc standards.
  - Outbound automation for compliance reporting, application submission, and regulator portals. [3] [5] [1]

Acceptance Criteria

- 100% of compliance docs are retrievable, OCR'd, and properly classified in <30s per file on average.
- All key compliance docs (licenses, certificates, invoices) are proactively linked to relevant transactions, and vice versa.
- Version chain shows every update, with rollback and audit trail for each.
- Search/download works for both live and archived documents, and all permission events are logged.
- Expiry and renewal alerts setup in pilot with valid notifications delivered and actioned.

Innovations:

- AI teaches itself client-specific tags/entities over time—reduces manual review by 40–70% for future data.
- Proactive expiry/renewal monitoring and auto-linking keep audits fast, with no need for last-minute doc hunts.
- Deep, permissioned linking and versioning make regulator and customer audits a "one-click" operation and minimize legal exposure. [4] [2] [3] [5] [1]

This structure gives your platform true competitive advantage for modern compliance, data volumes, audit preparedness, and regulatory change.

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1. https://dl.acm.org/doi/10.1145/3658617.3697578
2. https://publicacoes.softaliza.com.br/cilamce/article/view/10228
3. https://csitjournal.khmnu.edu.ua/index.php/csit/article/view/248
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