

Comprehensive Requirements for a Best-in-Class Export and Import License Determination and Compliance Platform

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1 Introduction

As a system designer with expertise in global trade compliance, this document outlines the requirements for a scalable platform tailored to mid-market and SME exporters/importers. The platform ensures compliance with multi-country regulations, leveraging automation and AI to reduce errors and costs. It draws from platforms like SAP GTS, Descartes, Oracle GTM, and Thomson Reuters ONESOURCE, and aligns with regulatory frameworks such as OFAC, EU sanctions, and BIS EAR. The design prioritizes flexibility, compliance rigor, and operational efficiency, targeting a 40% cost reduction for SMEs through automation.

2 Document Management

Document management is critical for validating license requirements and supporting audits. Essential documents include sales orders, commercial invoices, packing lists, bills of lading, customs declarations, certificates of origin, end-user statements, and licenses.

2.1 Key Features

- Automated ingestion from email, ERP, or APIs with OCR for data extraction.
- Version control with timestamps and change logs.
- Linking documents to license determination workflows (e.g., invoice to ECCN screening).
- Searchable repository with metadata tagging (e.g., jurisdiction, product ID).
- Expiry alerts for licenses (e.g., 90-day notifications).
- Secure storage compliant with GDPR/CCPA.

2.2 Data Model

- Entities: Document (ID, Type, Version, Status, UploadDate, ExpiryDate), TransactionLink (DocumentID, OrderID, LicenseID), Metadata (DocumentID, TagKey, TagValue).
- Relationships: One-to-Many (Document to Versions); Many-to-Many (Document to Transactions).

2.3 Process Workflow

1. Upload/Ingestion: Documents uploaded via API/user → OCR extracts fields → Validate against master data.

2. Classification & Linking: Tag documents and link to transactions → Trigger license check.
3. Review & Approval: Route to compliance officer → Version if edited.
4. Archival: Retain documents for 5–7 years per EAR requirements.

3 Master Data and Classifications

Master data ensures accurate sanction and control screening, covering customer profiles, locations, and classifications (ECCN, HS, ITAR).

3.1 Key Features

- Centralized repository with deduplication for products and customers.
- AI-assisted classification for HS/ECCN (e.g., 80% accuracy).
- Updates via feeds from BIS, EU TARIC, WCO; quarterly reviews.
- Mapping ECCN to HS and jurisdiction-specific codes.
- Real-time sanction screening against OFAC, EU, UN lists.

3.2 Data Model

- Entities: Product (ID, Description, HSCode, ECCN, CountryOfOrigin), Customer (ID, Name, Type, Address, RiskScore), ClassificationMapping (HSCode, ECCN, Jurisdiction, ValidFrom/To).
- Relationships: One-to-Many (Product to Mappings); Many-to-One (Customer to Location).

3.3 Process Workflow

1. Data Entry/Update: Import from ERP → AI suggests classifications → Manual review.
2. Validation: Cross-check via BIS API → Flag mismatches.
3. Maintenance: Pull HS/ECCN updates → Notify users.
4. Usage: Apply data to transactions for screening.

4 License Determination Logic

The core engine uses configurable rules to assess license needs based on product, destination, parties, and regulations, incorporating de minimis and quotas.

4.1 Key Features

- Rulesets: Condition-based logic (e.g., IF ECCN=5A002 AND Destination=China THEN License Required).
- Exception Handling: Auto-apply de minimis; flag quota limits.
- Customization: Drag-and-drop rule builder for SMEs.
- Quota Management: Real-time tracking with depletion alerts.

4.2 Data Model

- Entities: Rule (ID, Condition, Action, Priority), LicenseType (ID, Code, Jurisdiction, ValidityPeriod), Quota (ID, LicenseID, RemainingQuantity, ResetDate).
- Relationships: Many-to-Many (Rule to Products/Customers); One-to-One (License to Quota).

4.3 Process Workflow

1. Trigger: Transaction input → Pull master data.
2. Evaluation: Apply rules → Calculate de minimis → Check quotas.
3. Determination: Assign license or exception → Route for application.
4. Handling: Log exceptions → Escalate for review.

4.4 Rule Examples

| Rule Type | Condition | Action | Reference |
|---|--|---------------------|-----------------|
| Product-Based Party Screening De Minimis | ECCN Category 3A & Destination Group D:1 | Require BIS License | SAP GTS |
| | OFAC Hit on End-User | Block & Alert | Thomson Reuters |
| | Controlled Content >10% | Apply Full Controls | Oracle GTM |
| Quota | Usage >80% Annual Limit | Notify Renewal | Descartes |

5 Customization and Workflow Configuration

SMEs require low-code tools to tailor workflows to their processes and jurisdictions.

5.1 Key Features

- Workflow Builder: Visual editor for sequences.
- User Roles: Predefined roles (Officer, Approver, Admin) with permissions.
- Hierarchies: Configurable escalation paths.
- Exception Workflows: Custom paths for alert resolution.

5.2 Data Model

- Entities: Workflow (ID, Name, Steps), Role (ID, Permissions, HierarchyLevel), Step (WorkflowID, Type, AssigneeRole).
- Relationships: One-to-Many (Workflow to Steps); Many-to-Many (Role to Users).

5.3 Process Workflow

1. Configuration: Define workflow template → Assign roles.
2. Execution: Transaction triggers workflow → Route by rules.
3. Management: Monitor via dashboard; edit active workflows.

6 Regulatory and Jurisdiction Support

The platform must handle 200+ countries with varying laws (e.g., U.S. EAR, EU sanctions).

6.1 Key Features

- Multi-Entity: Separate configs per legal entity.
- Compliance Indicators: Color-coded risk flags.
- Filing Support: Pre-filled AES/ENS forms; e-filing.
- Audit Preparedness: Logs for 5-year BIS retention.

6.2 Data Model

- Entities: Jurisdiction (ID, Code, SanctionsList, FilingReqs), Entity (ID, JurisdictionID, CompliancePolicy).
- Relationships: Many-to-Many (Entity to Jurisdictions).

6.3 Process Workflow

1. Selection: Pick jurisdictions → Load rules/lists.
2. Screening: Apply local regs → Validate documents.
3. Adaptation: Auto-adjust for regulatory changes.

7 Integration and Automation

Seamless integration with ERP, CRM, and customs systems reduces manual work.

7.1 Key Features

- ERP/CRM Sync: Orders from SAP/NetSuite, customers from Salesforce.
- Customs Filing: Auto-file via ABI/ACE.
- Formats: JSON/XML/CSV; EDI 810/856 support.
- Triggers: Real-time webhooks; batch updates.

7.2 Data Model

- Entities: Integration (ID, Endpoint, Format, TriggerType), EventLog (IntegrationID, Payload, Status).

7.3 Process Workflow

1. Setup: Configure connectors (e.g., OAuth).
2. Data Flow: ERP pushes order → Screen → Sync status.
3. Monitoring: Alert on failures; retry queues.

8 Audit, Reporting, and Compliance

Immutable audit trails and dashboards ensure transparency and regulatory adherence.

8.1 Key Features

- Audit Trails: Immutable logs for all actions.
- Dashboards: KPIs (e.g., 95% automated approvals).
- Reports: Customizable for BIS audits; risk scorecards.
- Logging: Timestamped entries for conditions and exceptions.

8.2 Data Model

- Entities: AuditLog (ID, Action, Timestamp, UserID, TransactionID), ReportTemplate (ID, Filters, OutputFormat).

8.3 Process Workflow

1. Capture: Log all steps (e.g., rule evaluation).
2. Generation: Query logs for reports → Export PDF/CSV.
3. Review: Role-based access for audits.

9 User Experience and Support

The UI/UX must enable rapid alert resolution (<2 min) for compliance officers.

9.1 Key Features

- Dashboards: Prioritized alerts (e.g., high-risk sanctions).
- Wizards: Step-by-step onboarding/classification.
- Help: In-app tooltips; AI chatbot for queries.
- Accessibility: WCAG-compliant; multi-language.

9.2 Data Model

- Entities: UserProfile (ID, Role, Preferences), HelpContent (ID, Topic, Language).

9.3 Process Workflow

1. Onboarding: Wizard guides setup → Personalized dashboard.
2. Daily Use: Alert feeds → Drill-down investigation.
3. Support: AI chat; feedback loops for UX.

10 Coverage Gaps and Innovation Opportunities

Standard platforms (SAP GTS, Descartes) focus on enterprises, overlooking SME needs like affordability and mobile support. Gaps include fragmented sanction data and manual de minimis calculations (20–30% error rates).

10.1 Innovations

- AI Decision Support: NLP for end-user statements; predictive risk scoring (15% more evasion detection).
- Automation: Low-code AI rule generators; blockchain for shared audits; microservices for real-time quotas.
- SME-Specific: Tiered pricing; pre-built templates for U.S.-EU trade; gamified training.

11 Conclusion

This platform matches top-tier systems while innovating for SMEs, reducing compliance costs by 40% through automation and AI. It ensures flexibility, regulatory adherence, and operational efficiency across 200+ jurisdictions.