

# Trade Finance Document Management System

## System Overview

This document provides a comprehensive overview of the Trade Finance Document Management System designed to track, validate, and manage documentary credits and their associated documents. The system handles 18 documentary credit types and supports all 38 SWIFT Category 7 message formats.

## Database Structure

### Tables

1. **MasterDocuments**

2. Primary table containing all 40 unique document types

3. Schema: DocumentID, DocumentCode, DocumentName, Description, IsActive

4. **DocumentaryCredits**

5. Contains all 18 documentary credit types

6. Schema: CreditID, CreditCode, CreditName, Description, IsActive

7. **SwiftMessageCodes**

8. Contains all 38 SWIFT Category 7 message types

9. Schema: SwiftCodeID, SwiftCode, Description, IsActive

10. **CreditSwiftMapping**

11. Junction table mapping credits to SWIFT messages (131 mappings)

12. Schema: MappingID, CreditID (FK), SwiftCodeID (FK), IsActive

13. **DocumentRequirements**

14. Junction table mapping credits to required documents (185 entries)

15. Schema: RequirementID, CreditID (FK), DocumentID (FK), IsMandatory, IsConditional, Condition, IsActive

## Views

1. **DocumentRequirementSummaryView**
2. Shows count of mandatory and optional documents for each credit type
3. Provides quick statistics on document requirements
4. **SwiftMessageDocumentView**
5. Shows all documents required for each SWIFT message type
6. Maps the indirect relationship between SWIFT messages and documents
7. **CreditTypeDocumentView**
8. Shows all documents required for each credit type with status
9. Provides detailed document requirements by credit type
10. **SwiftMessageCreditMappingView**
11. Shows which credit types use which SWIFT messages
12. Maps the relationship between credits and SWIFT messages

## Documentary Credit Types

The system supports the following 18 documentary credit types:

1. Import Letter of Credit (ILC)
2. Export Letter of Credit (ELC)
3. Sight Letter of Credit (SLC)
4. Usance Letter of Credit (ULC)
5. Revolving Letter of Credit (RLC)
6. Transferable Letter of Credit (TLC)
7. Back-to-Back Letter of Credit (BBLC)
8. Standby Letter of Credit (SBLC)
9. Red Clause Letter of Credit (RCLC)
10. Green Clause Letter of Credit (GCLC)
11. Import Bills for Collection (IBC)
12. Export Bills for Collection (EBC)
13. Bank Guarantee (BG)

14. Shipping Guarantee (SG)
15. Performance Guarantee (PG)
16. Advance Payment Guarantee (APG)
17. Bid Bond (BB)
18. Retention Guarantee (RG)

## **SWIFT Message Types**

The system supports all 38 SWIFT Category 7 message types, including:

1. MT700 - Issue of a Documentary Credit
2. MT701 - Issue of a Documentary Credit (Continuation)
3. MT705 - Pre-Advice of a Documentary Credit
4. MT707 - Amendment to a Documentary Credit
5. MT708 - Amendment to a Documentary Credit (Continuation)
6. MT710 - Advice of a Third Bank's or a Non-Bank's Documentary Credit
7. MT711 - Advice of a Third Bank's or a Non-Bank's Documentary Credit (Continuation)
8. MT720 - Transfer of a Documentary Credit
9. MT721 - Transfer of a Documentary Credit (Continuation)
10. MT730 - Acknowledgement
11. MT732 - Advice of Discharge
12. MT734 - Advice of Refusal
13. MT740 - Authorisation to Reimburse
14. MT742 - Reimbursement Claim
15. MT747 - Amendment to an Authorisation to Reimburse
16. MT750 - Advice of Discrepancy
17. MT752 - Authorisation to Pay, Accept or Negotiate
18. MT754 - Advice of Payment/Acceptance/Negotiation
19. MT756 - Advice of Reimbursement or Payment
20. MT760 - Guarantee/Standby Letter of Credit
21. MT767 - Guarantee/Standby Letter of Credit Amendment
22. MT768 - Acknowledgement of a Guarantee/Standby Message
23. MT769 - Advice of Reduction or Release
24. MT790 - Advice of Charges, Interest and Other Adjustments
25. MT791 - Request for Payment of Charges, Interest and Other Expenses
26. MT792 - Request for Cancellation
27. MT795 - Queries
28. MT796 - Answers
29. MT798 - Proprietary Message
30. MT799 - Free Format Message

31. MT700-1 - Issue of a Documentary Credit (Variant 1)
32. MT700-2 - Issue of a Documentary Credit (Variant 2)
33. MT707-1 - Amendment to a Documentary Credit (Variant 1)
34. MT707-2 - Amendment to a Documentary Credit (Variant 2)
35. MT759 - Ancillary Trade Structured Message
36. MT785 - Advice of Non-Payment/Non-Acceptance
37. MT786 - Advice of Fate and Request for Instructions
38. MT787 - Amendment to Instructions

## Document Types

The system manages 40 document types including:

1. Sales Contract/Proforma Invoice
2. Bill of Lading
3. Airway Bill
4. Certificate of Origin
5. Certificate of Inspection
6. Insurance Certificate
7. Packing List
8. Commercial Invoice
9. LC Application
10. Bill of Exchange
11. Beneficiary's Bank Details
12. Shipping Bill
13. Phytosanitary Certificate
14. Health Certificate
15. Quality Certificate
16. Weight Certificate
17. Analysis Certificate
18. Fumigation Certificate
19. Dangerous Goods Declaration
20. Export License
21. Import License
22. Bank Guarantee Application
23. Performance Bond
24. Advance Payment Guarantee
25. Bid Bond
26. Retention Guarantee
27. Shipping Guarantee
28. Incoterms Documentation

- 29. Beneficiary Statement
- 30. Draft/Drawing
- 31. Delivery Order
- 32. Customs Declaration
- 33. Legalized Documents
- 34. Halal Certificate
- 35. Financial Statements
- 36. Consular Invoice
- 37. Inspection Request
- 38. Manufacturer's Certificate
- 39. Country-Specific Certificate
- 40. Free Sale Certificate

## System Features

### 1. **Document Management**

- 2. Upload, store, categorize, and retrieve all trade documents
- 3. Version control and document history
- 4. Document template management

### 5. **Credit Instrument Management**

- 6. Create and manage all 18 types of documentary credits
- 7. Track lifecycle stages of each instrument
- 8. Link relevant SWIFT messages to each credit

### 9. **Validation Engine**

- 10. Automated checking of mandatory vs. optional documents
- 11. Rule-based validation of document content
- 12. Discrepancy flagging and reporting

### 13. **SWIFT Integration**

- 14. Parse and process all 38 Category 7 message types
- 15. Generate SWIFT-compliant messages
- 16. Maintain mapping between credits and SWIFT messages

### 17. **Reporting & Analytics**

- 18. Standard reports (pending documents, discrepancies, etc.)

19. Custom report builder
20. Analytics dashboard with KPIs and trends

## User Roles

1. **Admin:** Full system access, user management, configuration
2. **Bank Officer:** Document review, approval, discrepancy management
3. **Customer:** Document submission, status tracking, notification receipt
4. **Auditor:** Read-only access to all transactions and audit logs

## Technical Implementation

1. **Frontend:** React with Material UI
2. **Backend:** Node.js
3. **Database:** SQL Server
4. **Authentication:** OAuth 2.0 or JWT
5. **Deployment:** Docker containers

## Sample Queries

### Count of Mandatory and Optional Documents by Credit Type

```
SELECT
    dc.CreditID,
    dc.CreditCode,
    dc.CreditName,
    SUM(CASE WHEN dr.IsMandatory = 1 THEN 1 ELSE 0 END) AS
MandatoryDocumentCount,
    SUM(CASE WHEN dr.IsMandatory = 0 THEN 1 ELSE 0 END) AS
OptionalDocumentCount
FROM
    DocumentaryCredits dc
LEFT JOIN
    DocumentRequirements dr ON dc.CreditID = dr.CreditID
WHERE
    dc.IsActive = 1 AND (dr.IsActive = 1 OR dr.IsActive IS NULL)
GROUP BY
    dc.CreditID, dc.CreditCode, dc.CreditName
ORDER BY
    dc.CreditCode;
```

## Documents Required for a Specific SWIFT Message

```
SELECT DISTINCT
    d.DocumentID,
    d.DocumentCode,
    d.DocumentName,
    d.Description,
    CASE WHEN dr.IsMandatory = 1 THEN 'Mandatory' ELSE
'Optional' END AS Status
FROM
    MasterDocuments d
JOIN
    DocumentRequirements dr ON d.DocumentID = dr.DocumentID
JOIN
    DocumentaryCredits c ON dr.CreditID = c.CreditID
JOIN
    CreditSwiftMapping m ON c.CreditID = m.CreditID
JOIN
    SwiftMessageCodes s ON m.SwiftCodeID = s.SwiftCodeID
WHERE
    s.SwiftCode = 'MT700'
    AND d.IsActive = 1
    AND dr.IsActive = 1
    AND c.IsActive = 1
    AND m.IsActive = 1
    AND s.IsActive = 1
ORDER BY
    dr.IsMandatory DESC, d.DocumentCode;
```

## Relationship Between Documents and SWIFT Messages

```
SELECT DISTINCT
    d.DocumentID,
    d.DocumentCode,
    d.DocumentName,
    s.SwiftCode,
    s.Description AS SwiftDescription,
    COUNT(DISTINCT c.CreditID) AS NumberOfCreditTypes
FROM
    MasterDocuments d
JOIN
    DocumentRequirements dr ON d.DocumentID = dr.DocumentID
JOIN
    DocumentaryCredits c ON dr.CreditID = c.CreditID
JOIN
    CreditSwiftMapping m ON c.CreditID = m.CreditID
JOIN
    SwiftMessageCodes s ON m.SwiftCodeID = s.SwiftCodeID
WHERE
```

```
d.IsActive = 1
AND dr.IsActive = 1
AND c.IsActive = 1
AND m.IsActive = 1
AND s.IsActive = 1
GROUP BY
    d.DocumentID, d.DocumentCode, d.DocumentName, s.SwiftCode,
    s.Description
ORDER BY
    d.DocumentCode, s.SwiftCode;
```