

PURPOSE

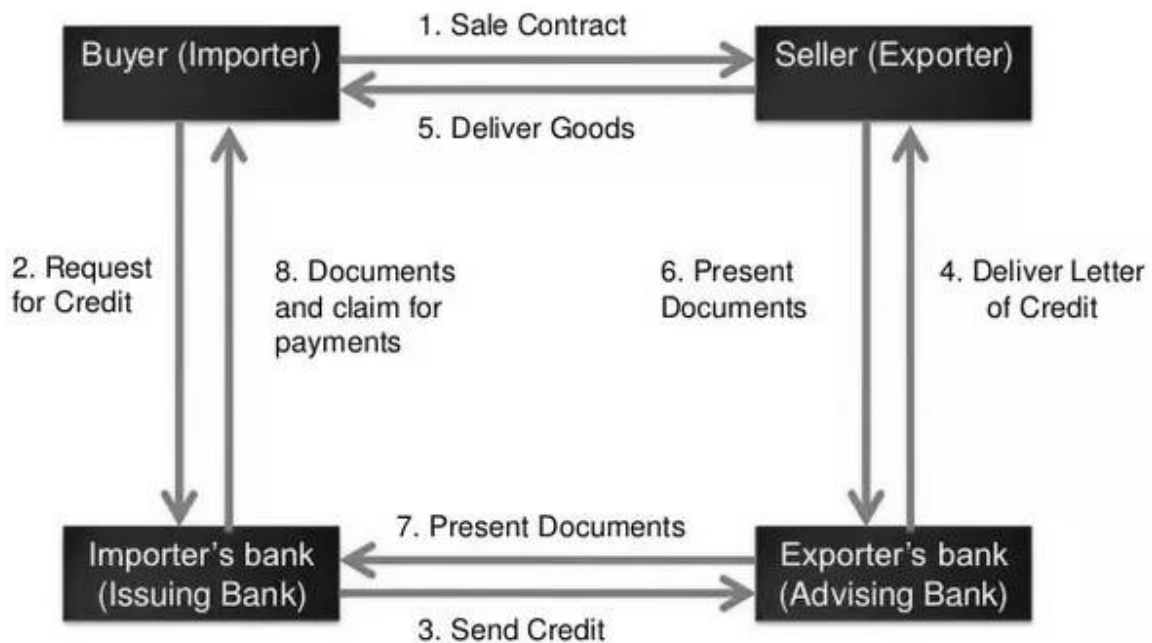
This document details a Proof of Concept (POC) for implementing a Decentralized Trade Finance Scenario using Corda DLT.

ACTORS

1. **BUYER** - Who intends to buy the goods
2. **SELLER** - Who offers the goods for sale
3. **BUYERS BANK** - Buyer has account with this bank and Letter of Credit (LC) is opened by this bank. Also known as Issuing Bank
4. **SELLERS BANK** - Seller deals with this bank and LC is verified by this bank. Also known as Advising Bank.
5. **Carrier** – Shipping Agent is the carrier of goods from Sellers port to Buyers port
6. **USDA** - Agency which does the Phyto Certification for the goods that is being sold.

WORKFLOW

1. **Sale Agreement.**
2. **Letter of Credit.**
3. **Phyto Certification.**
4. **Bill of Lading.**



1. SALE AGREEMENT

An agreement of sale is executed by the buyer and seller. For brevity we are skipping all the processes prior to sale agreement like, Letter of Intent, Expression of Interest, Invoice, Purchase Order etc. The only parties to the sale agreement are Buyer and Seller. Following parameters define a typical sale agreement in this context.

Sale Agreement

```

{
  "SaleAgreementNo" : "SA1234",
  "Buyer" : "FutureGroup",
  "Seller" : "ADL",
  "BuyerCountry" : "India",
  "SellerCountry" : "USA",
  "CountryOfNotary" : "Germany",
  "NotorizedBy" : "ABC GmBH",
  "ItemOfSale" : "Hazel Nut",
  "QuantityOfSale" : "500 MT",
  "SaleAmount" : "50000 USD",
  "AgreementDate" : "01/01/2018"
  "State": "Triggered",
}
  
```

Corda Parties – **Buyer** and **Seller**.

Potential State changes for Sale Agreement – **Triggered**, **Verified**, and **Notarised**.

2. Letter of Credit.

Once the sale Agreement is verified and notarised by the participating parties, the Buyer initiates the request for letter of credit (LC) to Buyers Bank. Based on the credit worthiness of the buyer, genuineness of the Sale Agreement etc, Buyer's Bank issues the letter of credit to Sellers Bank. Sellers Bank verifies the LC and pass it on to the seller.

LC will have the following format.

Letter of Credit

```
{  
  "LCNumber" : LC1234,  
  "LCType" : "Revokable",  
  "LCDate" : "01/01/2018",  
  "LCApplicant" : "FutureGroup",  
  "LCBeneficiary" : "ADL Corp",  
  "IssuingBank" : "SBI",  
  "AdvisingBank" : "Bank of America",  
  "DescriptionOfGoods" : " 500 MT First grade Hazel Nut",  
  "LCAmount" : "50000 USD",  
  "LCExpiry" : "01/01/2019",  
  "State": "Requested"  
}
```

Corda Parties – **Buyer** and **Seller**, **Issuing Bank** and **Advising Bank**

Potential State changes for LC – **Requested**, **Created**, **Verified**, and **Accepted**.

Key constraint – Only participating parties has access to any contract/state data. Sale Agreement is an input for LC flow, but sanctity and confidentiality of the sale agreement needs to be maintained.

3. Phyto Certification.

Seller has to comply with food safety regulations and the Shipping agency will accept goods only if it is certified by USDA. Seller arranges for inspection and get the Phyto certification before submitting the goods for shipment.

Phyto Certification request will be represented in our system as below.

Phyto Certification Request

```
{  
  "CertificateNo" : PHC1234,  
  "Buyer" : "FutureGroup",
```

```

"Seller" : "ADL",
"CertifyingAuthority" : "USDA",
"ComodityName" : "Hazel Nut",
"CountryOfOrigin" : "USA",
"CuntryOfExport" : "India",
"DateOfInspection" : "02/02/2018",
"ShippingBillNo" : "SCN1234"
"State" : "Requested",
"LCNumber" : "LC1234",

```

```

}

```

Corda Parties – **Seller** and **USDA**

Potential State changes for LC – **Requested, Approved, and Rejected.**

Same constraint mentioned in the case of LC applies here also. LCNumber is an input state, But USDA should not be given access to the entire LC state, any flow on Phyto Certification Request just need to ensure that LCNumber supplied is genuine.

4. Bill of Lading.

Bill of Lading is a sacred document and anyone who is in possession of BL can claim the goods from Customs at the port of unloading. BL is issued by the shipping agency within stipulated time of shipment leaving the port of Origin, either to the seller or sellers bank directly. Sellers Bank despatches the BL to the Buyers Bank and Buyer take the possession of BL by making the payment to his Bank.

For the context of our POC, we will use the below format for BL.

```

BL
{
"BLNumber" : "BL1234",
"Consignor" : "ADL Corp",
"Consignee" : "FutureGroup ",
"Carrier": "EMU Lines",
"PhytoCertNo" : "PH1234",
"IssuingBank" : "SBI",
"AdvisingBank" : "Bank of America",
"PlaceOfAcceptance" : "Mumbai",
"Vessel" : "ITAL Modena",
"PortOfLoading" : "Perl Harbour",
"PortOfDisCharge" : "Mumbai",
"State" : "Issued"
}

```

Corda Parties – **Carrier, AdvisingBank, Issuing Bank** and **Buyer**

Potential State changes for BL – **Issued, Despatched, Received** and **Accepted**.

Same constraint mentioned in the case of LC and Phyto certificate applies here also. PhytoCertNo is an input state, But Carrier should not be given access to its state, any flow on BL Request just need to ensure that Certification Number supplied is genuine.