

# UDPN POC Use Case #2

## Implementing the “Travel Rule”

### User Manual

2023/7/15

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# 1. Summary

The UDPN (Universal Digital Payment Network) is an inclusive digital infrastructure built to connect all payment-related regulated stablecoin and CDBC (Central Bank Digital Currency) systems as well as provide all businesses equal access to these currencies so that they can connect their business IT systems to UDPN and enjoys the accesses and functionality that UDPN offers.

UDPN is an infrastructure and not a single application. Applications are built on top of UDPN to provide specific functions. Digital currency transfers and swaps are the two most basic services on UDPN. The network's true potential resides in allowing any Business Node operator to deploy or connect to any smart contracts on UDPN's permissioned blockchain network to process various business transactions with any other Business Node operator and/or its end customers.

In PoC2, we will demonstrate how the "travel rule" can be easily implemented when two financial institutions use UDPN to facilitate the transfer or swap of digital currencies for their end customers (in UDPN terms, digital currency always means regulated stablecoin or CDBC), even when the digital currencies themselves are anonymous, as in the case of USDC.

The "travel rule" requires "obligations to obtain, hold, and transmit required originator and beneficiary information in order to identify and report suspicious transactions, monitor the availability of information, take freezing actions, and prohibit transactions with designated persons and entities."

## 2. Home

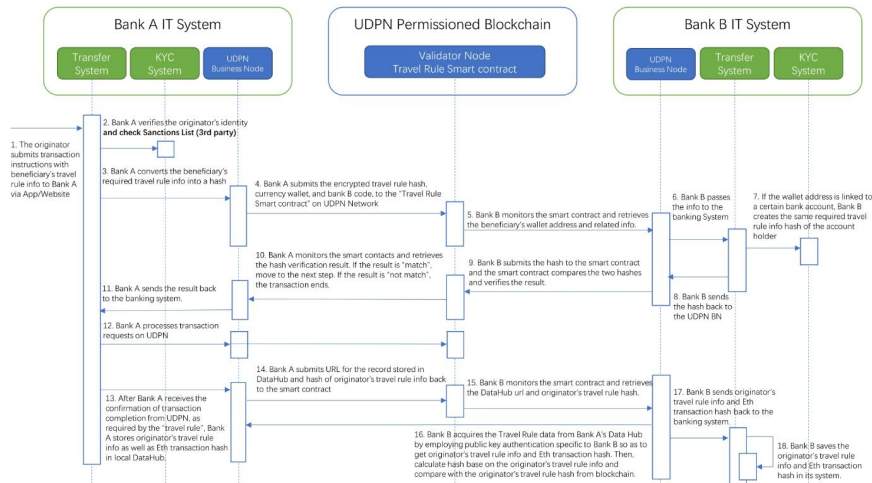
Users can view basic information about PoC2 and the transaction timing diagram below:

## UDPN Use Case #2: Implementing the "Travel Rule"

The "Travel Rule" requires that two financial institutions involved in a digital currency transaction (KYC-based or anonymous) have "obligations to obtain, hold, and transmit required originator and beneficiary information in order to identify and report suspicious transactions, monitor the availability of information, take freezing actions". This use case demonstrates how two banks can exchange originator and beneficiary information during a linked anonymous stablecoin transfer or swap when the two parties belong to two different banks on the UDPN network.

The Travel Rule data exchange is fully encrypted and linked with the UDPN transfer or swap transaction. The use case's smart contract can be deployed by a bank, by a third party, or by the UDPN Alliance as a universal service.

UDPN is an infrastructure and doesn't provide specific business processes and procedures defined by smart contracts or applications unless the UDPN Alliance is the owner of the smart contracts. The following is the flow chart of the specific process and steps among Bank A's system, Bank B's system, and the "Travel Rule" smart contract.



## 3. Bank A

### 3.1 Client Application

This module is for end-users of Bank A and simulates the behavior of an end-user initiating a transfer transaction.

#### 3.1.1 Link Digital Currency Account to UDPN DID

##### 3.1.1.1 Login

When first time entering the "Link Digital Currency Account to UDPN DID" page, you need to enter the username and password to log in (the user information can be added in "Bank A -> Admin Application -> User Management" page, you can refer to section 3.2.1 User Management for details on how to achieve this).

If you already have created users in the system, you can also click on the icon in the "Username" input box when login. Find the username and copy the information into the input box, and then click on the "Login" button.

UserName	Password	Action
admin	123456	Copy to input box
testA	123456	Copy to input box
bankA	123456	Copy to input box
zhangsansan	123456	Copy to input box

### 3.1.1.2 Create a Binding

Before trading on the UDPN, your DID information must be bound to your digital currency wallet. Login to “**Link Digital Currency Account to UDPN DID**” page, your DID has been generated by default, click the “**Creating a Binding**” button to enter “**Create**” page:

Here, you can create a new binding between a DID and a digital currency account.

\* DID  
did:udp:n:TbXbjYRQmwW11VE2AoJiA7nNGqb

\* Currency Type  
All

\* Platform  
All

\* Currency Account Address

\* Description

\* Set As Default Account  
☐ Yes ☒ No

Back Bind

You can select “**Currency Type**” and “**Platform**”, enter the “**Digital Currency Wallet Address**” and the description of that currency, and set whether the entered wallet address as the default wallet. Then, click the “**Bind**” button to complete the binding operation. There can only be one default binding wallet under the same platform and currency type.

### 3.1.1.3 Set as Default Account

You can reset the default account in “**Link Digital Currency Account to UDPN DID**” page by clicking “**Set as Default Account**” in the Action column.

Binding List + Create a Binding ⓘ

Currency type	Digital Currency Account Address	Description	Binding Time	Action
GUSD-ETH	0x2d8f7908ee4a094c83a2bc7eade6a7f53f0b15	test	2023-07-13 14:18:05	Set as Default Account
GUSD-ETH	0xc12975943c10eef5829135b6cc3ee32e79603da0f (Default Binding ...)	test	2023-07-13 14:18:27	

1-1 total 1 < 1 > 10 / page Go to Page

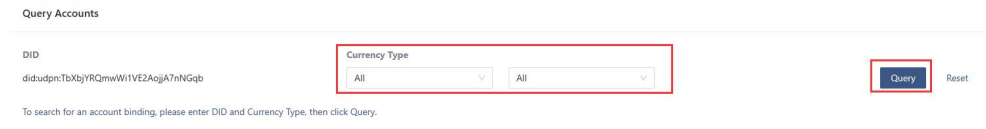
Click “**Confirm**” in the pop-up window to change the default binding wallet. There can only be one default binding wallet under the same platform and currency type.

Are you sure you want to change the default binding account ?

Cancel OK

### 3.1.1.4 Query

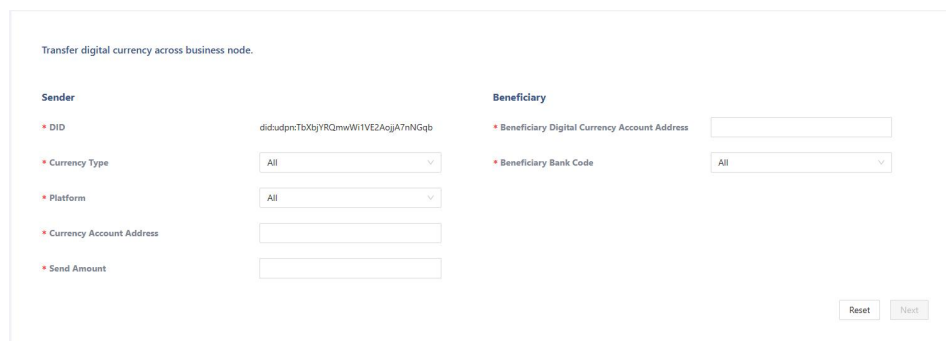
You can query all wallet information bound to your DID by selecting different platforms and currencies.



The 'Query Accounts' interface shows a DID field with the value 'did:udp:ncTbXbYRQmwW1VE2AojA7nNGqb'. To its right is a 'Currency Type' dropdown menu with 'All' selected. Further right is a 'Query' button and a 'Reset' button. A red box highlights the 'Currency Type' dropdown and the 'Query' button. Below the fields, a small text note reads: 'To search for an account binding, please enter DID and Currency Type, then click Query.'

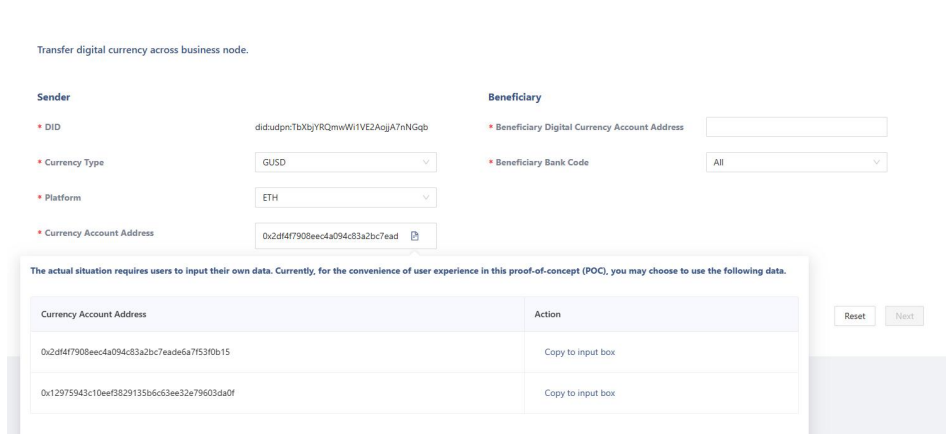
### 3.1.2 Transfer

To transfer out digital currencies, you need to select the sender's "Currency Type", "Platform", enter the wallet address that holds digital currencies, and the amount you want to send; also, you need to enter the beneficiary's digital currency wallet address, and select the "Beneficiary Bank Code" to complete the transfer transaction.



The 'Transfer digital currency across business node' interface is divided into two main sections: 'Sender' and 'Beneficiary'. The 'Sender' section includes fields for DID (pre-filled with 'did:udp:ncTbXbYRQmwW1VE2AojA7nNGqb'), Currency Type (dropdown, 'All'), Platform (dropdown, 'All'), Currency Account Address (text input), and Send Amount (text input). The 'Beneficiary' section includes fields for Beneficiary Digital Currency Account Address (text input) and Beneficiary Bank Code (dropdown, 'All'). At the bottom right, there are 'Reset' and 'Next' buttons.

The wallet address you have input in the sender's digital currency wallet address must have sufficient balance to support the completion of the transfer transaction. In this case, instead of entering the wallet address manually, you can copy and paste the recorded wallet address into the input box after selecting the digital currency type and the platform.



This screenshot shows the 'Transfer digital currency across business node' interface with specific values entered: Currency Type is 'GUSD', Platform is 'ETH', and Currency Account Address is '0x2df4f7908ecc4a094c83a2bc7ead6a7f53f0b15'. A tooltip is displayed over the Currency Account Address field, providing suggested data for convenience. The tooltip contains a table with two columns: 'Currency Account Address' and 'Action'.

Currency Account Address	Action
0x2df4f7908ecc4a094c83a2bc7ead6a7f53f0b15	Copy to input box
0x12975943c10ee9829135b6c53ee32e79603da0f	Copy to input box

*Note: When the transfer amount is greater than or equal to 1,000 EUR/USD, the system will first verify the "Travel Rule" information before completing the transfer transaction. At this time, the "Beneficiary Name" is in need.*

Transfer digital currency across business node.

<b>Sender</b>		<b>Beneficiary</b>	
* DID	did:udpnc:TxXjYRQmwW1VE2AcjA7nNGqb	* Beneficiary Name	<input type="text"/>
* Currency Type	GUSD	* Beneficiary Digital Currency Account Address	<input type="text"/>
* Platform	ETH	* Beneficiary Bank Code	All
* Currency Account Address	0x2df4f7908ec4a094c83a2bc7ead		
* Send Amount	1001		
		Reset	Next

Input beneficiary's name and wallet address and select the bank code. Click **"Next"** button and the system will verify the Travel Rule information.

Transfer digital currency across business node.

<b>Sender</b>		<b>Beneficiary</b>	
* DID	did:udpnc:TxXjYRQmwW1VE2AcjA7nNGqb	* Beneficiary Name	zhangsan
* Currency Type	GUSD	* Beneficiary Digital Currency Account Address	0x3e8642581bd441f88d93604ef22ac73f1da
* Platform		* Beneficiary Bank Code	Bank B
* Currency Account Address			
* Send Amount			
		Reset	Next

Travel Rule compliance checks in process!

Loading

After passing the verification (for transfers less than 1,000 EUR/USD, there is no need to verify the Travel Rule information), click on the "Confirm" button and you will be taken to the page where you can select a transaction node (TN) for the transfer transaction:

Available Transaction Nodes									
TN Name	TN Code	Currency Type	Amount (GUSD-ETH)	Estimated Channel Fee (Ether-Eth)	Service Fee (GUSD-ETH)	Total Amount (GUSD-ETH)	IsKYC	Action	
GUSDTN	TN0000380	GUSD-ETH	1001	1	13.05	1015.1	Yes	Signing	Detail

- Sign: When a transfer transaction is executed, it needs to be signed by the initiator first. Click the **"Sign"** button and the system will simulate the signing of the transaction by an end-user.



Simulated Signature

X

```

{
  "message":
  "Amount": "1,001",
  "sourceAccountAddress": "0x14d3ffd1fe470d9c848bd1c97769d0836dcd2069",
  "sourceCurrencyType": "GUSD/ETH",
  "TotalAmount": 1,001,
  "targetAccountAddress": "0x3e8642581bd441f88d9604ef22ac73f1da72856d",
  "userDid": "did:udpnc26hLXmu8dj9ikqLTGmFmApSA4igv"
  "IsKYC": Yes
}

```

\* Private Key

.....

🔑

Note: UDPN sandbox connects to public chain test network only, hence please use private key of TEST account to sign the transaction and DO NOT use real private key here.

Cancel

Sign and Submit

After inputting the private key string, click **"Sign and Submit"** button to submit the transaction. If the transaction is submitted successfully, you will get a transaction key and you can use it to check the execution status of that transaction in **"Admin Application"** -> **"Send Transaction History"** page.

- Detail: Before executing a transfer transaction, you can view the details of the TNs that may execute this transaction.

Sender Details

Transfer Information	
DID	did:udpnc26hLXmu8dj9ikqLTGmFmApSA4igv
Currency type	GUSD
Platform	ETH
Amount	1001 GUSD-ETH
Travel Rule Information	
Currency Account Address	0x14d3ffd1fe470d9c848bd1c97769d0836dcd2069
Name	BankAUser

Beneficiary Details

Transfer Information	
Beneficiary Type	Internal Bank Beneficiary
Beneficiary Bank Code	bank8
Amount received	1001 GUSD-ETH
Travel Rule Information	
Currency Account Address	0x3e8642581bd441f88d9604ef22ac73f1da72856d
Name	Bank8User

Other information

TN Name	GUSD TN	TN Code	TN0000380
Estimated Channel Fee	1 Ether-ETH	Service fee	13.05 GUSD-ETH
Total Amount	1015.1 GUSD-ETH	IsKYC	Yes

## 3.2Admin Application

This module is mainly for bank staff, and it simulates the behavior of managing users and checking historical transactions.

### 3.2.1 User Management

#### 3.2.1.1 Add a User

On the "User Management" page, click the "Add" button to add a new user.


---

\* Name


\* Address

\* National Identity Number

\* Date Of Birth

Select date 

\* Country Of Birth



\* UserName

\* Password

123456

Back

Save

Input the name, address, national identity number, date of birth, country of birth, username and password, and then click the "**Save**" button to create a user.

#### 3.2.1.2 Edit the User

In the list of users on the "**User Management**" page, click the "**Edit**" button in the Action column:

User list of Bank A

+ Add

Name	Address	National Identity Number	Date Of Birth	Country Of Birth	UserName	Password	Creation Time	Action
zhangsan	北京市朝阳区来广营	12312312	2023-07-01	Burkina Faso	admin	123456	2023-06-27 17:01:38	Edit
testA	beijing	123456	1995-07-13	Belarus	testA	123456	2023-07-13 13:53:19	Edit
BankAUser	26 Chaoyang District. ...	110110202307131425	2023-07-13	China	bankA	123456	2023-07-13 14:25:28	Edit
zhangsansan	北京	13654897122	2023-07-13	Andorra	zhangsansan	123456	2023-07-13 14:35:18	Edit

1-4 total 4

<

1

>

10 / page

Go to

Page

Enter the “**Edit**” page, edit the name, address, national identity number, date of birth, country of birth, username and password, and then click the “**Save**” button to update the user information.

\* Name

testA

\* Address

beijing

\* National Identity Number

123456

\* Date Of Birth

1995-07-13

\* Country Of Birth

Belarus

\* UserName

testA

\* Password

123456

\* Confirm Password

123456

Back

Edit

## 3.2.2 Sent Transaction History

Here you can check all the transfer transaction information initiated by the user of Bank A.

### 3.2.2.1 Query

You can enter the transaction key, select the currency type, submission date and status, etc., and click the “**Query**” button to query the transaction information.

Query

Transaction Key

Currency Type

Submission Date

All

All

Start date

→ End date

Status

All

Query

Reset

List

I

Transaction Key	Sender's Account Address	Currency Type	Amount	Beneficiary's Account Address	Submission Time	Status	Action
TR-7484795210314548a753...	0x2df4f7908eec4a094c83...	GUSD-ETH	1001	0x60d5a2e7a656c47d4d46c2...	2023-07-15 15:24:03	Travel rule failed	<a href="#">Detail</a>
TR-e1f277c7d62c4ab4860ab...	0x2df4f7908eec4a094c83...	GUSD-ETH	1001	0x60d5a2e7a656c47d4d46c2...	2023-07-15 15:22:49	Travel rule failed	<a href="#">Detail</a>
TR-1531c2aac0e4303af650b...	0x2df4f7908eec4a094c83...	GUSD-ETH	1001	0x12975943c10eef3829135b...	2023-07-15 15:21:44	Travel rule failed	<a href="#">Detail</a>
TR-361beab1a9a4962b096...	0x12975943c10eef38291...	GUSD-ETH	1	0xe0a89c40815f055c1de5ee...	2023-07-14 19:10:16	TN processed successfully	<a href="#">Detail</a>
TR-g49c0b5fd5246d082403...	0x12975943c10eef38291...	GUSD-ETH	1001	0xe0a89c40815f055c1de5ee...	2023-07-14 19:02:34	Travel rule failed	<a href="#">Detail</a>
TR-5e8ddfe69c2e4180b5bc3...	0x12975943c10eef38291...	GUSD-ETH	1002	0xe0a89c40815f055c1de5ee...	2023-07-14 19:00:44	TN processed successfully	<a href="#">Detail</a>

### 3.2.2.2 Detail

On the **"Sent Transaction History"** page, click the **"Detail"** button in the Action column to view the transaction details.

Basic Information

DID	did:uipn:ToBzjY8QmwW1Vx2AaJa7nKQqb	Transaction Key	TR-Se8dd6f69c2e4180b5bc3bb3b3712caa
Transaction Hash	0xad5c31642810bd7a73c288896d40de738c2294a84a48943d3ba23ae630ff8e68	Currency Type	GLSD-ETH
Amount	1002 GLSD		
Sender's Account Address	0x12975943c10eef58291335dc6c3ae32e79603da0f	Beneficiary's Account Address	0xe0a89c40815055c1dc5eeabda554a488eda2e
Beneficiary Type	External Beneficiary	Beneficiary Bank Code	bankB
TN Name	GLSDTN	TN Code	TN0000380
Estimated Channel Fee	1 Ether	Service Fee	13 GLSD
Total Amount	1016 GLSD	Received Amount	1002 GLSD
IsKYC	Yes	Submission Time	2023-07-14 19:02:10
Status	TN processed successfully		

Travel Rule Information

Sender's Information

Sender's Account Address	0x12975943c10eef58291335dc6c3ae32e79603da0f
Name	IsaA
Eth Transaction Hash	0xad5c31642810bd7a73c288896d40de738c2294a84a48943d3ba23ae630ff8e68

Beneficiary's Information

Beneficiary's Account Address	0xe0a89c40815055c1dc5eeabda554a488eda2e
Beneficiary Name	testB

Circulation Information

State machine of a normal transfer transaction

start

Check function list  
(#1)

checked time 2023-07-14 19:02:10

Verify beneficiary Travel Rule info successfully  
(#2)

tn state Travel rule successfully

received time 2023-07-14 19:01:54

(is) Pending  
(#3)

tn id TR-Se8dd6f69c2e4180b5bc3bb3b3712caa

tn state Pending

received time 2023-07-14 19:02:10

Transfer processing (TN1)  
(#4)

tn id TR-Se8dd6f69c2e4180b5bc3bb3b3712caa

tn state TN processing

received time 2023-07-14 19:02:11

Transfer processed successfully (TN1)  
(#5)

tn id TR-Se8dd6f69c2e4180b5bc3bb3b3712caa

tn state TN processed successfully

received time 2023-07-14 19:14:00

tn hash on ETH 0xad5c31642810bd7a73c288896d40de738c2294a84a48943d3ba23ae630ff8e68

tn detail on ETH from 0x12975943c10eef58291335dc6c3ae32e79603da0f to 0xe0a89c40815055c1dc5eeabda554a488eda2e

tn process time on ETH 2023-07-14 19:14:00

Send sender's Travel Rule info successfully  
(#6)

1.Store sender's travel rule into databub.  
time created: 2023-07-14 19:14:00

2.Submit sender's travel rule hash and databub retrieval URL.  
databub url: H8uad586c0du011u67096c9123605d4u205d3d172713061ad4u278d5dc78db3d41u05  
travel rule: 0u46c73d0678945d32547d1c3d99320978u05d3ca7  
hash: d545a2db0d8772935188914  
time submitted:2023-07-14 19:14:00

3.Access sender's travel rule info and hash.  
time accessed: 2023-07-14 19:14:00

end

### 3.2.3 Received Transaction History

Here you can query all transaction information when the user of Bank A is the beneficiary of the transfer transaction.

Input the transaction hash and click the "**Query**" button to query the transaction information.

Query

Transaction Hash

Query

Reset

List

Transaction Hash	Sender's Account Address	Sender's Name	Currency Type	Beneficiary's Bank Code	Beneficiary's Account Address	Beneficiary's Name	Received Amount
<div><div></div><div>No Data</div></div>							

## 4. Bank B

### 4.1 Client Application

#### 4.1.1 Link Digital Currency Account to UDPN DID

##### 4.1.1.1 Login

When first time entering the "**Link Digital Currency Account to UDPN DID**" page, you need to enter the username and password to log in (the user information can be added in "**Bank B** -> **Admin Application** -> **User Management**" page, you can refer to section 4.2.1 User Management for details on how to achieve this).

<

UDPN-BankB

User Name

Password

LOGIN

If you already have created users in the system, you can also click on the icon in the "Username" input box when login. Find the username and copy the information into the input box, and then click on the "Login" button.

UserName	Password	Action
admin	123456	Copy to input box
testA	123456	Copy to input box
bankA	123456	Copy to input box
zhangsansan	123456	Copy to input box

User Name

Password

LOGIN

#### 4.1.1.2 Create a Binding

Before trading on the UDPN, your DID information must be bound to your digital currency wallet. Login to "**Link Digital Currency Account to UDPN DID**" page, your DID has been generated by default, click the "**Creating a Binding**" button to enter "**Create**" page:

Here, you can create a new binding between a DID and a digital currency account.

\* DID  
did:udpn:TbXbjYRQmwWf1VE2AojA7nNGqb

\* Currency Type  
All

\* Platform  
All

\* Currency Account Address

\* Description

\* Set As Default Account  
☐ Yes ☒ No

Back Bind

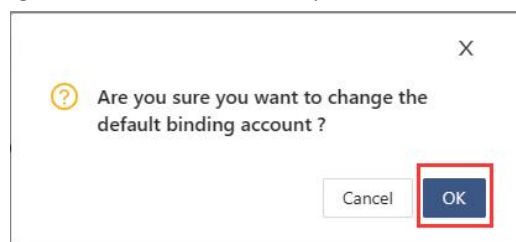
You can select "**Currency Type**" and "**Platform**", enter the "**Digital Currency Wallet Address**" and the description of that currency, and set whether the entered wallet address as the default wallet. Then, click the "**Bind**" button to complete the binding operation. There can only be one default binding wallet under the same platform and currency type.

### 4.1.1.3 Set as Default Account

You can reset the default account in "**Link Digital Currency Account to UDPN DID**" page by clicking "**Set as Default Account**" in the Action column.

Binding List				
<a href="#">+ Create a Binding</a>				
Currency type	Digital Currency Account Address	Description	Binding Time	Action
GIUSD-ETH	0x2d847908ee04a094c83a2bc7eade6a7f530b15	test	2023-07-13 14:18:05	<a href="#">Set as Default Account</a>
GIUSD-ETH	0x12975943c10ee5829135b6c3ee32e79603da0f (Default Binding ...)	test	2023-07-13 14:18:27	

Click "**Confirm**" in the pop-up window to change the default binding wallet. There can only be one default binding wallet under the same platform and currency type.



### 4.1.1.4 Query

You can query all wallet information bound to your DID by selecting different platforms and currencies.

Query Accounts			
DID	Currency Type		
did:udp:TpXbYRQmwW1VE2AqjA7nNGqb	All	All	<a href="#">Query</a> <a href="#">Reset</a>
To search for an account binding, please enter DID and Currency Type, then click Query.			

## 4.1.2 Transfer

To transfer out digital currencies, you need to select the sender's "**Currency Type**", "**Platform**", enter the wallet address that holds digital currencies, and the amount you want to send; also, you need to enter the beneficiary's digital currency wallet address, and select the "**Beneficiary Bank Code**" to complete the transfer transaction.



Transfer digital currency across business node.

<b>Sender</b>		<b>Beneficiary</b>	
* DID	did:udpncTbXbYRQmwW1VEZAcjA7nNGqb	* Beneficiary Digital Currency Account Address	<input type="text"/>
* Currency Type	All	* Beneficiary Bank Code	All
* Platform	All		
* Currency Account Address	<input type="text"/>		
* Send Amount	<input type="text"/>		

Reset Next

The wallet address you have input in the sender's digital currency wallet address must have sufficient balance to support the completion of the transfer transaction. In this case, instead of entering the wallet address manually, you can copy and paste the recorded wallet address into the input box after selecting the digital currency type and the platform.

Transfer digital currency across business node.

<b>Sender</b>		<b>Beneficiary</b>	
* DID	did:udpncTbXbYRQmwW1VEZAcjA7nNGqb	* Beneficiary Digital Currency Account Address	<input type="text"/>
* Currency Type	GUSD	* Beneficiary Bank Code	All
* Platform	ETH		
* Currency Account Address	0x2df4f7908eec4a094c83a2bc7ead		

The actual situation requires users to input their own data. Currently, for the convenience of user experience in this proof-of-concept (POC), you may choose to use the following data.

Currency Account Address	Action
0x2df4f7908eec4a094c83a2bc7ead6a7f53f0b15	Copy to input box
0x12975943c10ee9829135b6c53ee32e79603da0f	Copy to input box

Reset Next

*Note: When the transfer amount is greater than or equal to 1,000 EUR/USD, the system will first verify the "Travel Rule" information before completing the transfer transaction. At this time, the **"Beneficiary Name"** is in need.*

Transfer digital currency across business node.

<b>Sender</b>		<b>Beneficiary</b>	
* DID	did:udpncTbXbYRQmwW1VEZAcjA7nNGqb	* Beneficiary Name	<input type="text"/>
* Currency Type	GUSD	* Beneficiary Digital Currency Account Address	<input type="text"/>
* Platform	ETH	* Beneficiary Bank Code	All
* Currency Account Address	0x2df4f7908eec4a094c83a2bc7ead		
* Send Amount	1001		

Reset Next

Input beneficiary's name and wallet address and select the bank code. Click **"Next"** button and the system will verify the Travel Rule information.



After passing the verification (for transfers less than 1,000 EUR/USD, there is no need to verify the Travel Rule information), click on the "Confirm" button and you will be taken to the page where you can select a transaction node (TN) for the transfer transaction:

TN Name	TN Code	Currency Type	Amount (GUSD-ETH)	Estimated Channel Fee (Ether-ETH)	Service Fee (GUSD-ETH)	Total Amount (GUSD-ETH)	IsKYC	Action
GUSD TN	TN0000380	GUSD-ETH	1001	1	13.05	1015.1	Yes	Signing Detail

- **Sign:** When a transfer transaction is executed, it needs to be signed by the initiator first. Click the **"Sign"** button and the system will simulate the signing of the transaction by an end-user.

Simulated Signature

```
{
  "message":
    "Amount": "1.001",
    "sourceAccountAddress": "0xc8e642581bd441f88d9604ef22ac73f1da72856d",
    "sourceCurrencyType": "GUSD/ETH",
    "TotalAmount": "1.001",
    "targetAccountAddress": "0x14d3f1d1e470d9c848bd1c97769d0836dcd2069",
    "userId": "did:udpni29CCYDovM9pg8P81pZWPa3yITYYM",
    "isKYC": Yes
}
```

Private Key

Note: UDPN sandbox connects to public chain test network only, hence please use private key of TEST account to sign the transaction and DO NOT use real private key here.

Cancel

Sign and Submit

After inputting the private key string, click **"Sign and Submit"** button to submit the transaction. If the transaction is submitted successfully, you will get a transaction key and you can use it to check the execution status of that transaction in **"Admin Application"** -> **"Send Transaction History"** page.

- **Detail:** Before executing a transfer transaction, you can view the details of the TNs that may execute this transaction.

← Info

Transfer Information	
DID	didudpn29CCiDovM9gaP81pZWPa3yYTYiYM
Currency type	GUSD
Platform	ETH
Amount	1001 GUSD-ETH
Travel Rule Information	
Currency Account Address	0x3e8642581bd441f88d9604ef22ac73f1da72856d
Name	BankBUser

Transfer Information	
Beneficiary Type	Internal Bank Beneficiary
Beneficiary Bank Code	bankA
Amount received	1001 GUSD-ETH
Travel Rule Information	
Currency Account Address	0x14d3ffdf1fe470d9c848bd1c97769d0836dc02069
Name	BankAUser

Other Information			
TN Name	GUSD TN	TN Code	TN0000380
Estimated Channel Fee	1 Ether-Eth	Service fee	13.05 GUSD-ETH
Total Amount	1015.1 GUSD-ETH	Is KYC	Yes

## 4.2 Admin Application

This module is mainly for bank staff, and it simulates the behavior of managing users and checking historical transactions.

### 4.2.1 User Management

#### 4.2.1.1 Add a User


On the "User Management" page, click the "Add" button to add a new user.

\* Name


\* Address

\* National Identity Number

\* Date Of Birth

Select date 

\* Country Of Birth



\* UserName

\* Password

Back

Save

Input the name, address, national identity number, date of birth, country of birth, username

and password, and then click the "Save" button to create a user.

### 4.2.1.2 Edit the User

In the list of users on the "User Management" page, click the "Edit" button in the Action column:

User list of Bank B

+ Add

Name	Address	National Identity Number	Date Of Birth	Country Of Birth	UserName	Password	Creation Time	Action
zhangsan	北京市朝阳区来广营	12312312	2023-07-01	Burkina Faso	admin	123456	2023-06-27 17:01:38	Edit
testB	123456	123456	1997-07-02	American Samoa	testB	123456	2023-07-13 14:44:31	Edit
adminzhangsan	上海	1231231231	2023-07-13	American Samoa	adminzhangsan	123456	2023-07-13 15:18:03	Edit
BankBUser	26 Chaoyang District, ...	110110202307131549	2023-07-13	China	bankB	123456	2023-07-13 15:49:46	Edit

1-4 total 4

<

1

>

10 / page

Go to

Page

Enter the "Edit" page, edit the name, address, national identity number, date of birth, country of birth, username and password, and then click the "Save" button to update the user information.

\* Name

testB

\* Address

testB

\* National Identity Number

123456

\* Date Of Birth

1997-07-02

\* Country Of Birth

American Samoa

\* UserName

testB

\* Password

123456

\* Confirm Password

123456

Back

Edit

## 4.2.2 Sent Transaction History

Here you can check all the transfer transaction information initiated by the user of Bank B.

### 4.2.2.1 Query

You can enter the transaction key, select the currency type, submission date and status, etc., and click the "Query" button to query the transaction information.

Query

Transaction Key

Currency Type

Submission Date

All

All

Start date

→ End date

Status

All

Query

Reset

List

Transaction Key	Sender's Account Address	Currency Type	Amount	Beneficiary's Account Address	Submission Time	Status	Action
TR-3695a50faec74109be5ad...	0xe0a89c40815f055c1de...	GUSD-ETH	1222	0x12975943c10eef3829135b...	2023-07-14 18:41:37	Travel rule successfully	<a href="#">Detail</a>
TR-849941eda400420badfdd...	0xe0a89c40815f055c1de...	GUSD-ETH	1222	0x12975943c10eef3829135b...	2023-07-14 18:38:10	Travel rule successfully	<a href="#">Detail</a>
TR-8cf9dc0be13f4d76a2825...	0xe0a89c40815f055c1de...	GUSD-ETH	1222	0x12975943c10eef3829135b...	2023-07-14 18:30:15	Travel rule successfully	<a href="#">Detail</a>
TR-62b1c657f92e446096559...	0x3e8642581bd441f88d9...	GUSD-ETH	1005	0x14d3ffd1fe470d9c848bd1c...	2023-07-14 18:18:46	Travel rule processing	<a href="#">Detail</a>

## 4.2.2.2 Detail

On the “**Sent Transaction History**” page, click the “**Detail**” button in the Action column to view the transaction details.

### Basic Information

DID	diduopn2jAPuAtiHBD8dNghtuBEQWe	Transaction Key	TR-3695a0fae74109b5ac08765de868d
Transaction Hash	--	Currency Type	USD-ETH
Amount	1222 USD		
Sender's Account Address	0xe0a89c408159055c1de5eeabdaa554a488eda2e	Beneficiary's Account Address	0x12975943c10eef3829135b6c63ee32e79603da0f
Beneficiary Type	External Beneficiary	Beneficiary Bank Code	bankA
TN Name		TN Code	
Estimated Channel Fee	--	Service Fee	--
Total Amount	--	Received Amount	--
UKYC	Yes	Submission Time	--
Status	Travel rule successfully		

### Travel Rule Information

#### Sender's Information

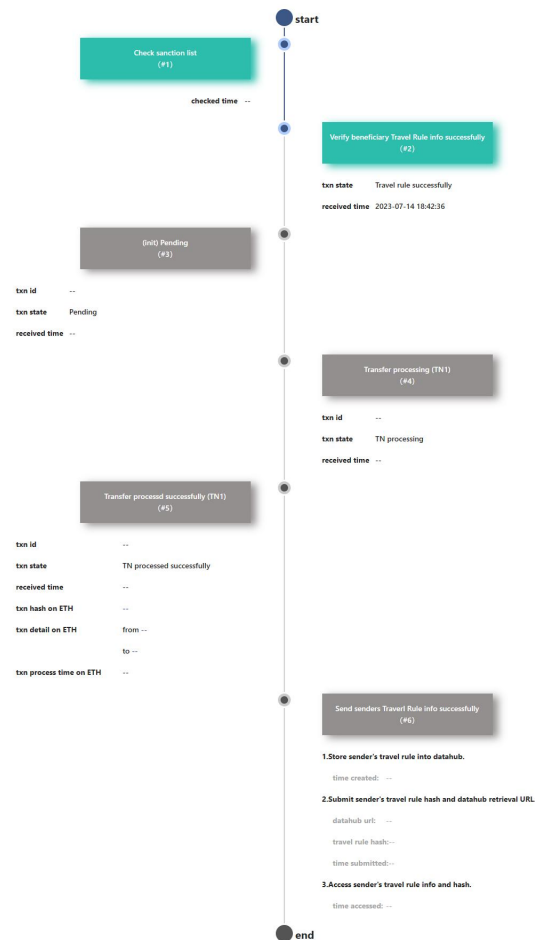
Sender's Account Address	0xe0a89c408159055c1de5eeabdaa554a488eda2e
Name	testB
Eth Transaction Hash	

#### Beneficiary's Information

Beneficiary's Account Address	0x12975943c10eef3829135b6c63ee32e79603da0f
Beneficiary Name	testA

### Circulation Information

#### State machine of a normal transfer transaction



### 4.2.3 Received Transaction History

Here you can query all transaction information when the user of Bank B is the beneficiary of the transfer transaction.

Input the transaction hash and click the **"Query"** button to query the transaction information.

Query

Transaction Hash

QueryReset

List

Transaction Hash	Sender's Account Address	Sender's Name	Currency Type	Beneficiary's Bank Code	Beneficiary's Account Address	Beneficiary's Name	Received Amount
0xac70f10cbb9dd4c2...	0x12975943c10eef382...	testA	ETH-GUSD	bankB	0xe0a89c40815f055c1...		1
0xad31642810bd7a7...	0x12975943c10eef382...	testA	ETH-GUSD	bankB	0xe0a89c40815f055c1...	testB	1002
0xda4bf4b336424a1cf...	0x12975943c10eef382...	testA	ETH-GUSD	bankB	0xe0a89c40815f055c1...		1
0x814ccb7836336d298...	0x12975943c10eef382...	testA	ETH-GUSD	bankB	0xe0a89c40815f055c1...		2
0xb7def2cc193a5145c...	0x14d3ffd1fe470d9c84...	BankAUser	ETH-GUSD	bankB	0x3e8642581bd441f88...	BankBUser	2000
0x01ac858929388222...	0x14d3ffd1fe470d9c84...	BankAUser	ETH-GUSD	bankB	0x3e8642581bd441f88...	BankBUser	2000
0x478c5b9469e55281a...	0x2df4f7908eec4a094c...	testA	ETH-GUSD	bankB	0xe0a89c40815f055c1...		1

## 5. Validator Node

The Validator Nodes are at the heart of the UDPN. Any transaction on the UDPN will be validated by a cluster of Validator Nodes which are connected with all the other stakeholders via a secure and encrypted connection. The Validator Nodes store the full set of transaction data on the UDPN.

Each transaction submitted from the Business Nodes will be randomly assigned to certain Validator Nodes to validate. All transactions are validated and written to the peer of Validator Node which reads, endorses, and writes transactions to the distributed ledger Blockchain ledger. The Validator Nodes are connected to the Business and Transaction Nodes through secure APIs.

The validator nodes module in the PoC2 shows the transactions submitted by all business nodes.

### 5.1 Transaction History

#### 5.1.1 Query Transactions

Users can query the transaction by entering BN name, DID and transaction key, or selecting transaction type, source currency, target currency, submit date and status.

Query

BN Name

DID

Txn Key

Txn Type

Source Currency

Source PlatformType

Target Currency

Target PlatformType

Submission Date

Status

Query

Reset

Txns List

BN Name

DID

Txn Key

Txn Type

Source Currency

Amount

Target Currency

Transaction Submit Time

Action

tao0602

didudpnTbXbyYRQmwW1VE2AojA7nNGqb

VN1111\_BN0000867\_eef1ca17027d54a90...

Transfer

GUSD-ETH

1000000

GUSD-ETH

2023-07-17 10:23:17 ...

Detail

tao0602

didudpn26hXmuBdqkgLTGmfmaA5A4gvr

VN1111\_BN0000867\_81b3c0e4c993409b...

Transfer

GUSD-ETH

1000

GUSD-ETH

2023-07-17 09:40:15 ...

Detail

tao0602

didudpnTbXbyYRQmwW1VE2AojA7nNGqb

VN1111\_BN0000867\_a0e161d0c824828...

Transfer

GUSD-ETH

1

GUSD-ETH

2023-07-17 09:39:30 ...

Detail

tao0602

didudpnTbXbyYRQmwW1VE2AojA7nNGqb

VN1111\_BN0000867\_tac044b0ac48b1...

Transfer

GUSD-ETH

1

GUSD-ETH

2023-07-14 19:11:18 ...

Detail

## 5.1.2 Transaction Details

This page is used to display detailed information about the transaction, including basic information and circulation information.

Basic Information

BN Name

tao0602

DID

didudpnTbXbyYRQmwW1VE2AojA7nNGqb

Transaction Type

Transfer

Amount

1000000 GUSD

Transaction Key

VN1111\_BN0000867\_eef1ca17027d54a90ad88b5ad5d1302f1689560497563

Source Currency

GUSD-ETH

Target Currency

GUSD-ETH

Source Account Address

0x2d84f7908ec4a094c3a2bc7ead6fa7653f0b15

Target Account Address

0xe0a8f9c40815d55c1dc5eeabbaa554a488eda2e

TN Name

GUSDIN

TN Code

TN0000380

Estimated Channel Fee

1Ether

Max Channel Fee

...

Service Fee

13.05 GUSD

Rate

...

Total Amount

1000013.05 GUSD

Received Amount

1000000 GUSD

Submission Time

2023-07-17 10:23:17 AM GMT+8

Status

TN1 processing

Circulation Information

State machine of a normal transfer transaction

txn id:

VN1111\_BN0000867\_eef1ca17027d54a90ad88b5ad5d1302f1689560497563

txn state:

Pending

received time:

2023-07-17 10:23:19

Txn1 processing (#2)

txn id:

VN1111\_BN0000867\_eef1ca17027d54a90ad88b5ad5d1302f1689560497563

txn state:

Permit processing

received time:

2023-07-17 10:23:37

Txn1 procced successfully (#3)

txn id:

...

txn state:

Permit processed successfully

received time:

...

end

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