mojaloop

Mojaloop – ISO 8583 ecosystem Integration- Part II

Sending payments from ISO Payments Network to Mojaloop systems

Proof of Concept

Agenda

- Goals and Scope
- Ecosystem
- Design Decisions
- Current Design
- How It Works
- Community Contributions
- Next Steps

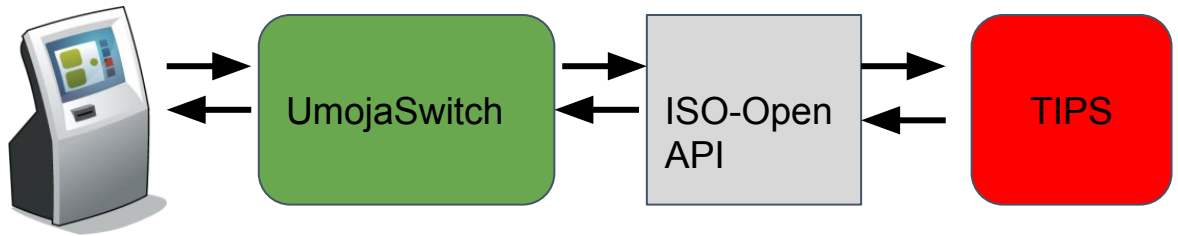
Goals of the POC

Demonstrate that integration of ISO 8583 based systems with Mojaloop could be done, based on the use cases as per below:

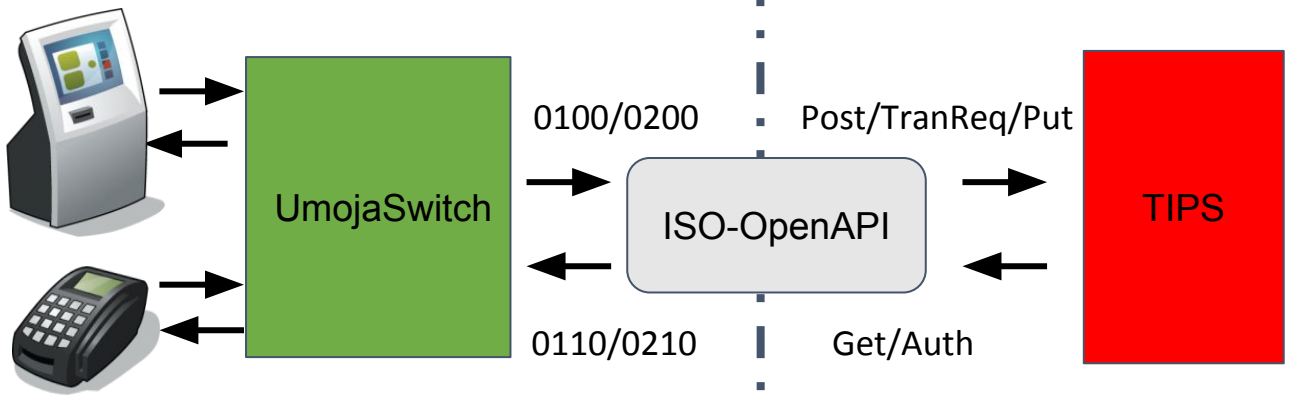
- **ATM-Initiated Cash-Out**
- **OTP generation and validation**
- **ISO 8583 to Open API conversion**

Scope - **ATM-Initiated Cash-Out**

1. Customer initiates a Cash-Out request through Umoja ATM from the customer account using MSISDN and the customer confirms the request by providing authentication (OTP) on ATM.
    - The customer pre-generates an OTP for cash-out and uses this OTP on ATM device to initiate ATM Cash-out.
2. Umoja Switch sends the transaction to ISO-OpenAPI adapter.
3. ISO-OpenAPI adapter converts the ISO message to Open API, performs account look up and sends the transaction to TIPS, which is sent to Payer FSP for authentication, validation and approval.
4. If the customer authentication is successful; then the customer's account will be debited at Payer FSP and Umoja account maintained at Payee FSP will be credited.
5. As a result, the customer receives cash from ATM.



Ecosystem


UmojaSwitch
0100/0200
Post/TranReq/Put
ISO-OpenAPI
TIPS
0110/0210
Get/Auth
UmojaSwitch
Tanzania Instant Payment System

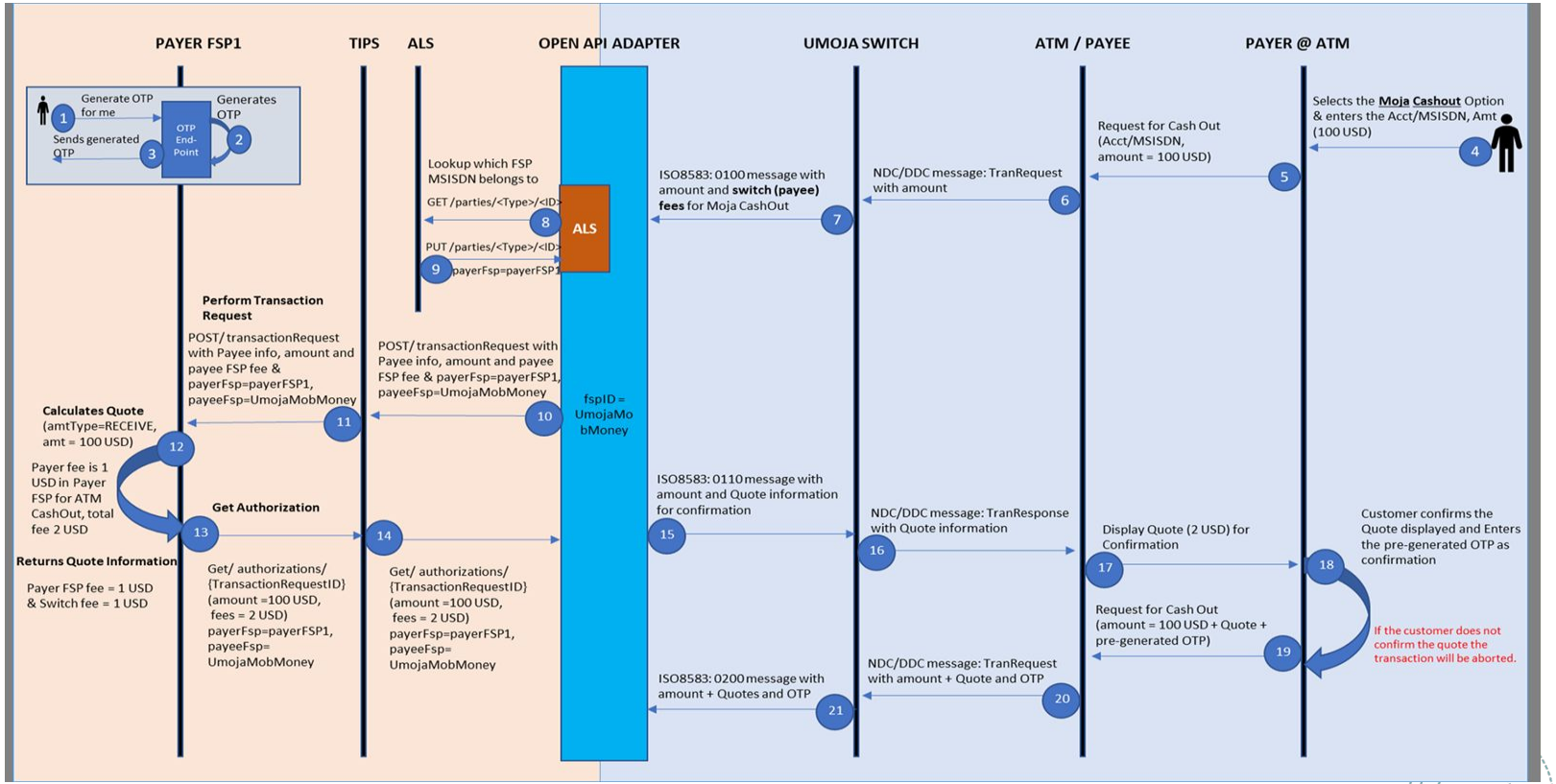
Design Decisions

- Use the FSP Simulator for Payee FSP and Payer FSP Scenarios.
- ISO - Open API Adapter to convert ISO to Open API.
- OTP Endpoint implemented on the Payer FSP Sim.

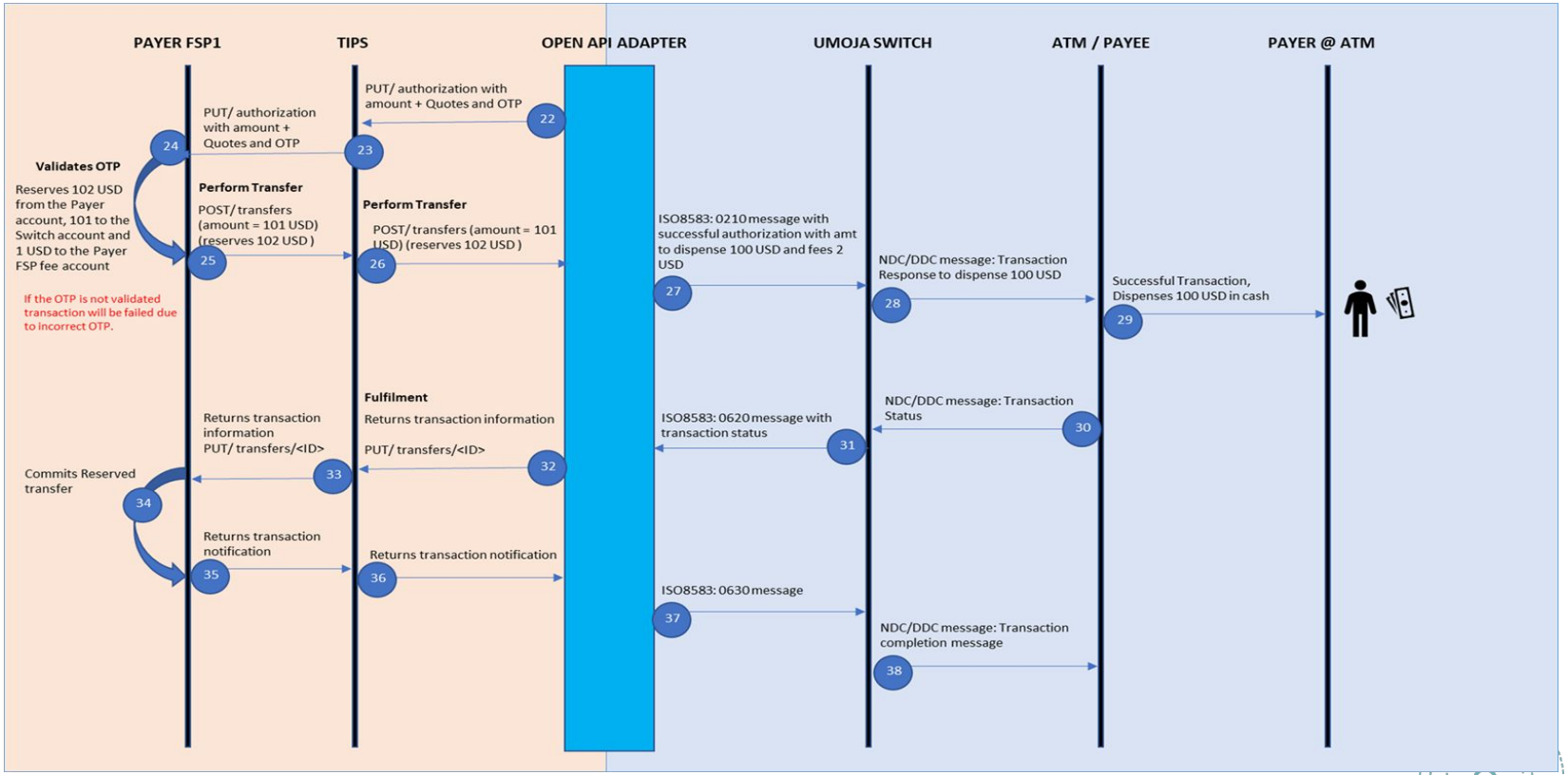
Current Design

- ISO - Open API adapter developed and implemented.
- OTP Endpoint to generate and validate OTP as per request from Originators.

How It Works - **ATM Initiated Cash Out - Request Leg**



How It Works - **ATM Initiated Cash Out - Authorization Leg**



How It Works - Steps

- Customer generates an OTP before initiating the transaction request from ATM.
- The customer initiates Mojaloop transaction on the ATM by entering their Mobile number and amount.
- The Customer will authenticate the transaction by entering pre-generated OTP
- Cash Out Request will be generated by ATM and sent to Umoja Switch as 0100 message
- Umoja Switch sends the 0100 transaction to ISO-OpenAPI adapter.
- Adapter converts 0100 to Open API and performs the account look-up with ALS.
- After the Account lookup, the transaction request will be sent to TIPS and henceforth to the Payer FSP for authentication.
- The Payer FSP validates the transaction request and also calculate the Quote for the transaction.
- The calculated Quote will be sent back to Umoja as a 0110 and displayed on the ATM for confirmation by the customer.
- Once confirmed by the customer, Umoja sents the transaction to ISO-OpenAPI adapter as a 0200 message
- Open API Adapter maps 0200 message to Open API format and sends the transaction request to TIPS for authorization.
- TIPS forwards this to the Payer FSP and the successful response is returned to TIPS and back to the adapter.
- Adapter maps the successful response to ISO (DE 39=0) and returns the 0210 to Umoja.
- ATM dispenses the Cash, completion (0620) is sent to adapter, converts to fulfilment and hence commits the transfer.
- PayerFSP returns transfer notification, which is converted to 0630 and back to Umoja.

Community Contributions

ISO-Open API Adapter

- An adapter to process and convert ISO 8583 messages from ISO networks to Open API.

OTP Endpoint

- An Endpoint to generate and validate OTP as per request from Originators.

Discussions board

- Documentation initiated with ISO to Open API mapping
- Explore the various integration scenarios & possibilities

Candidate Future Work

- Implement the completion/fulfilment leg (0620/0630)
- Implement ALS function on the Adapter.
- Implement BIN based routing.
- Implement Participant mapping.
- Produce production ready code for contribution to OSS
  - Unit tests
  - Documentation

https://github.com/mojaloop/**terminal-integration/ISO-OpenAPI**