COMESA Digital Retail Payments Platform (DRPP) - System Integrator Toolkit

Introduction

The COMESA DRPP presents a significant opportunity for Implementation Partners and System Integrators to play a crucial role in the digital transformation of the region's financial landscape. By facilitating the integration of various financial institutions, mobile network operators, and other stakeholders into the platform, we collaboratively can contribute to the growth of cross-border digital payments, enhance financial inclusion, and drive economic development. This toolkit aims to equip our partners and collaborators with the necessary resources and guidance to effectively participate in and benefit from the inclusive DRPP initiative, ensuring that digital financial services reach all segments of the population.

Opportunities for Implementation Partners and System Integrators

1. Market Expansion: The DRPP opens a vast market to offer integration services to a wide range of financial institutions and businesses across the COMESA region.
2. Revenue Generation: Can generate revenue through service fees, integration projects, and ongoing support and maintenance contracts. (Business Case)
3. Technological Innovation: The DRPP provides a platform for showcasing technical expertise and innovative solutions, contributing to financial inclusion while advancing digital payment technologies in the region.
4. Collaboration and Partnerships with other stakeholders, such as financial institutions, technology providers, and regulatory bodies, foster a thriving ecosystem for Fintech and digital payments.
5. Capacity Building: Participation in the DRPP enhances skills and knowledge in digital payments, fraud management, and regulatory compliance, strengthening capabilities and competitiveness.

Risks and Mitigation Measures

Risk	Mitigation
Technical Complexity: The integration of diverse systems and technologies can be complex and challenging. Integrators need to possess strong technical expertise and experience in integrating payment systems, APIs and security protocols.	Thoroughly assess technical requirements, conduct comprehensive testing, and leverage the support and guidance provided by INFITX and the Mojaloop community.

Regulatory Compliance: Adhering to various regulatory requirements across COMESA member states can be a daunting task. There is a need to stay updated on the evolving regulatory landscape and ensure solutions comply with relevant standards.	Engage with regulatory bodies early in the process, seek legal counsel if needed, and utilise compliance tools and resources provided by the DRPP.
Security Risks: The digital payments landscape is prone to security threats, such as fraud, data breaches, and cyberattacks. We need to implement robust security measures to protect sensitive data and ensure the integrity of transactions.	Adopt industry best practices for security, implement multi-factor authentication, encryption, and fraud detection mechanisms, and conduct regular security audits.
Competition: The DRPP market may attract numerous actors, leading to increased competition. Hence, we need to differentiate through expertise, quality of service, and innovative solutions.	Focus on niche areas, develop specialised expertise, offer value-added services, and build strong relationships with clients and partners.

Integration Requirements

There are three distinct integrations that are required. These are:

1. **IIPS integration**
   This is the technical integration of the core-banking systems to enable payments as both a debtor and creditor.
2. **FRMS integration**
   This is the technical integration of the DFSPs core-banking system to provide additional KYC data for parties of a transaction that is required for Fraud detection, and then to ingest fraud case events so that appropriate responses to fraud and stop list violations can be made.
3. **Settlement automation integration**
   The auto-reconciliation of pre-funded capital to the appropriate accounts and settlement banks

The initial FRMS Integration is likely to be implemented as extra fields in the IIPS APIs, but may take additional forms later on. The Settlement Automation is optional, as there is a manual process that can be followed. Most of the integration documents and processes are aligned with the IIPS integration.

Key Components of the System Integrator Toolkit

These are the key components of the System Integrator Toolkit, that are designed to support a System Integrator business in all phases of building integrations into a Mojaloop Hub. They are discussed in more detail below:

1. **DRPP Solution Overview**
   This is a good introduction to the DRPP project, as it provides a high-level overview and signposting of the key characteristics and milestones.
2. **DFSP Documentation**
   Documentation supporting DFSP client engagements outlining the typical DFSP onboarding lifecycle with a process for managing initial DFSP evaluations.
   - Onboarding Guide,
   - Technical and Business Assessment
3. Mojaloop Connector the main participation tool component. This
   - abstracts the Mojaloop FSPIOP api supporting easy upgrades to newer API versions
   - provides a synchronous API experience simplifying integrations
   - manages the Mojaloop security
   - provides optional support for large scale bulk transfers to support the G2P use case.
4. Payment Manager the component that support the running/deployment and configuring of the Mojaloop Connector
   - automatically on-boards the Mojaloop Security using best practice
   - provides docker and helm deployments of Mojaloop connector and other supportive microservices
   - provides configurable best practice RBAC security
   - provides the ability to trace and inspect a transfer through a UI
   - provides technical operational metrics to support management of the connection
5. DFSP liquidity Design Guide this is a guide to support understanding and business operational design for a DFSP connecting to Mojaloop. This guide includes a:
   - description of the Mojaloop process that control the flow of funds
   - description of how this requirement translates into a process for managing DFSP flow of funds as both a net debtor, or a net creditor.
6. IIPS Design Patterns this resource helps guide the integration designs. These design have detailed sequence diagrams illustrating API calls, and responsibilities carried out by the integration. Various generic scenarios are shown with the consequence of adapting an approach / pattern. At a high level the patterns include:

- patterns for building integrations as a Payer DFSP
- patterns for building integrations as a Payee DFSP

7. Core-Connector Testing Harness this is a repository that can be downloaded to deploy and run the core-connector testing harness. It includes
   - A docker-compose script for deploying the testing harness
   - pre-configured TTK. This solution makes use of the Mojaloop testing tool kit
   - Golden-Path core-connector test collection used to test core connectors.
8. Core-Connector Template this is a template repository for building core-connectors. It includes
   - a typescript code repository with pre-configured scripts and CI controls to support quick development that align with Mojaloop engineering best practices.
9. Core-Connector Development Guide this provides a core-connector testing harness that can be used to locally test integrations as they are being built, and then to verify that all unhappy path requirements have been catered for.
   - a docker compose repository and Golden Path Core-Connector test collection.
10. **COMESA DRPP User Acceptance Testing**
    The UAT facility takes advantage of the project templates and quality assurance standards to minimise effort to validate the integrations for all happy and unhappy path testing.
11. **ISO 20022 for IIPS Specifications**
    Standardized messaging protocols for seamless interoperability.

Training courses and recommended reading

This is a collection of internal and external training courses and reference material that is recommended for all COMESA system integrators.

1. Mojaloop Training Program: This is a useful resource for building technical skills on Mojaloop. The following courses are recommended for the following roles:
   i. System Integrator Business / Product Expert
      1. The MOJA101 and DFSP101 Mojaloop Training Courses should be taken.
      2. Optional Courses that would help understanding, but are not required immediately are: SCHEME101

   ii. System Integrator Technical Architect
      1. The MOJA101, MOJA102, DFSP101 and TTK101 Mojaloop Training Courses should be taken.

2. Optional Courses that would help understanding, but are not required immediately are: MOJA104, DFSP209, MOJA103

iii. System Integrator Software Engineer

1. The MOJA101, MOJA102, and TTK101 Mojaloop Training Courses should be taken.

2. Mojaloop Documentation: Comprehensive documentation on the
   i. Mojaloop Product Specification,
   ii. Product Factsheet,
   iii. Mojaloop Technology Stack

Support

1. **INFITX Support:** Technical support and guidance from INFITX experts throughout the integration process.
2. **Community Forums:** List of major OSS online forums and communities for knowledge sharing and collaboration. i.e. https://mojaloop.io/community/