



Joint Test Environment for Financial Inclusion

A handshake between Mobile Money API and Mojaloop

29 January 2020

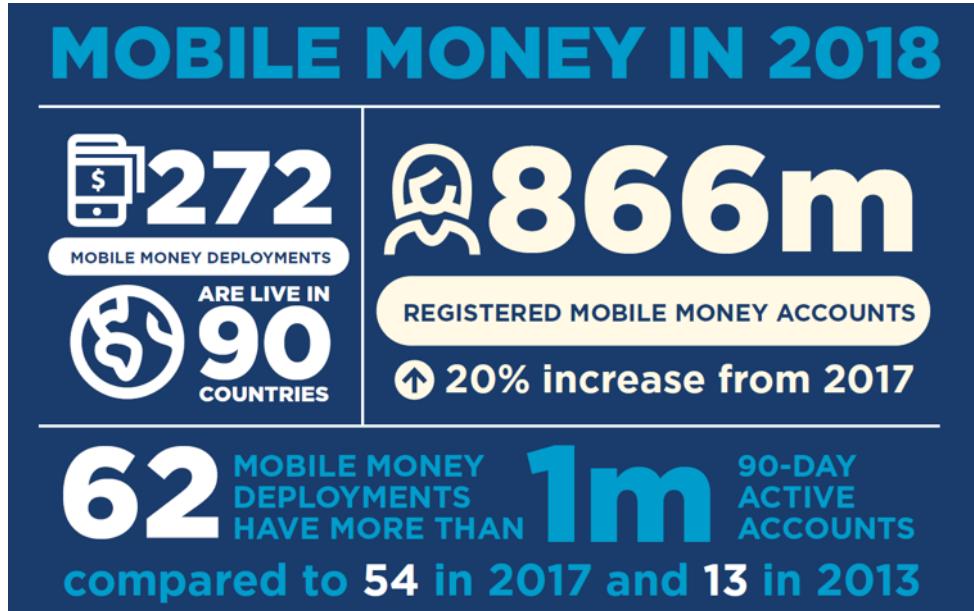
BILL & MELINDA
GATES foundation

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The mobile money industry is a key enabler for financial inclusion

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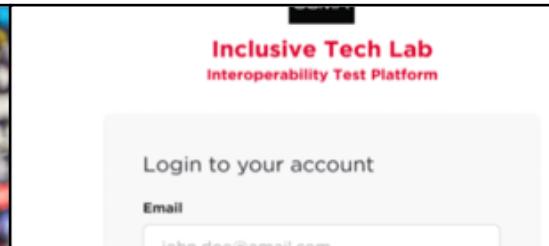


In 2018, the mobile money industry added another 143 million registered customers reaching 866 million registered accounts - a 20 per cent year-on-year increase



GSMA Inclusive Tech Lab: a testing ground for transformative digital solutions driving inclusion

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Technology-focused Research

Evaluation and validation of existing and upcoming technologies and standards

Provide thought leadership

Innovation Projects

Define, ideate, prototype, test, and share technology solutions

Support up to **proofs of concepts** / launch of solution

Assets

Develop technical assets for the wider industry

Provide the industry with. **specifications, test environments, SDKs**



mojaloop
Mobile Money API





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Two strategic technological topics for financial inclusion



Seamless third-party integration



Service
Providers



Interoperability

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The Mobile Money API Specification

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Enables parties to interact with mobile money accounts.



Jointly designed by key stakeholders
Mobile money providers, platform vendors, third party service providers and industry partners



Aims to:
➤ Reduce complexity within the mobile money industry,
➤ Limit fragmentation in the mobile money ecosystem.



A handshake between two key industry technologies: Mobile Money API and Mojaloop

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User

Service Provider

Mobile Money Operator

Mojaloop Software

Mobile Money Operator

Complementary

E2E testing

Drive adoption



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Mobile Money API Specification

Seamless third-party integration



Use Cases & Scope

Industry Driven

Mobile Money API

Developer &
Collaboration

Roadmap

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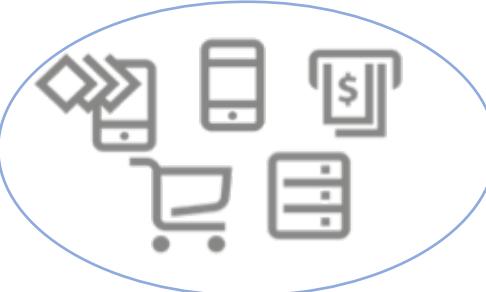


Who can use the Mobile Money API & for what?

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Customers
Service Providers
Agent & Merchants
Financial Institutions



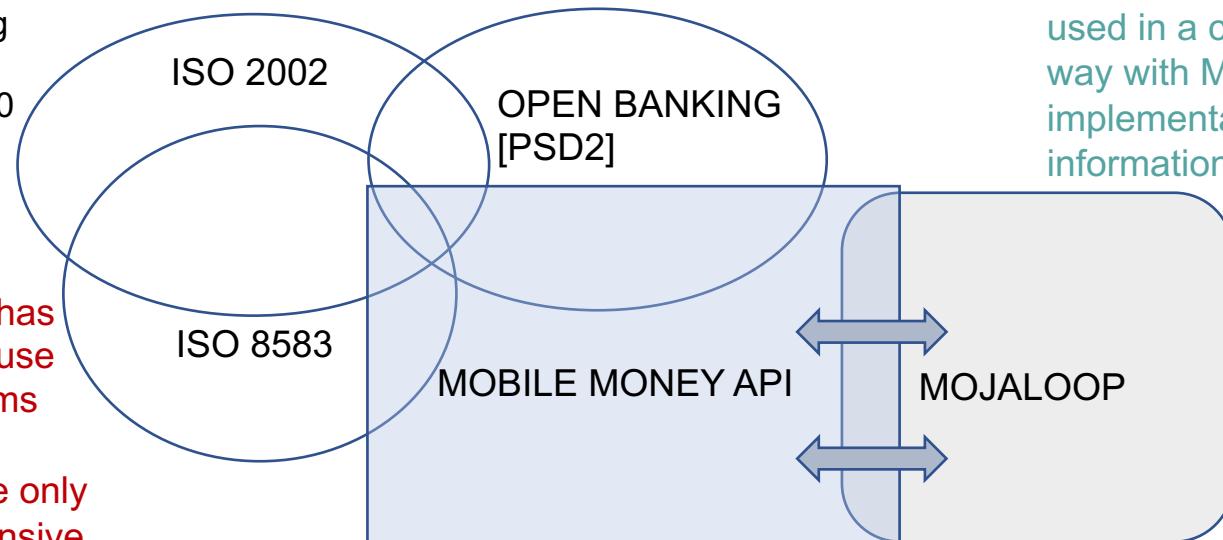
Apps
POS Devices
Data Systems
ATMs
E-Commerce



Why do we need a Mobile Money API?

Where does the API fit amongst other industry standards and interoperability initiatives?

GSMA completed analysis with existing Industry Standards Publish findings 2020



Mobile Money API can be used in a complementary way with Mojaloop switch implementations routing information between DFSPs

Banking/Payments

Mobile Money

Combined



Adoption to 2019



Collaboration

Renewed Commitment from GSMA 2019

Industry Convening 2019

Technical Steering Committee to be put in place for 2020

Governance

Governance Board to be put in place for 2020



Developer & Collaboration

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The screenshot shows the GSMA Harmonisation Mobile Money API documentation. It features the GSMA logo at the top left and a navigation bar with 'Mobile Money API'. Below the navigation is a section titled 'Mobile Money API' which defines the RESTful endpoints provided by the GSMA Mobile Money API. A specific endpoint is highlighted: 'accounts-api-controller : the accounts API' with the URL '/v1.0/mm/accounts/{msisdn}/{msisdn}/accountname'. The page includes implementation notes stating: 'This endpoint returns the name of an account (via MSISDN identifier)'. There are also 'ShowHide', 'List Operations', and 'Expand Operations' buttons.

The screenshot shows the SmartBear SwaggerHub interface displaying the 'mobile-money.ap...' API specification version 1.1.0. The interface includes sections for 'Info', 'Tag', 'Servers', and 'Search'. The 'Transactions' section lists various endpoints such as POST /transactions, POST /transactions/type/batch, GET /transactions/transaction, etc. The 'Quotations' section lists POST /quotations. On the right side, there is a detailed code snippet of the 'Transactions' section, followed by a note: 'Note: "Try it out" is disabled because no servers are specified in the "servers" array. Please see: info on OAS3 servers'. Below this is a 'Transactions' section with a 'POST /transactions Create a Transaction' button. The page footer indicates 'Last Saved: 3:57:08 pm - Nov 21, 2019' and 'VALID'.

The screenshot shows the GSMA Mobile Money API 1.0 Specification website. At the top, there are links for 'MOBILE MONEY API', 'DOCUMENTATION', 'API', 'SUPPORT', and 'Logout'. The main title is 'GSMA Mobile Money API 1.0 Specification.'. Below the title, a sub-section title is 'The purpose of this site is to detail the design principles, objects, behaviours and error handling for the Mobile Money API.' A paragraph follows: 'The overriding goal of the API is to enable all parties to implement mobile money API's in a flexible, yet consistent manner. This has been achieved by the implementing the following principles:'. A bulleted list of principles is provided, including: 'Use of REST architectural principles', 'Providing a set of well-defined objects that are abstracted from the underlying object representations held in the various mobile money systems. This allows API client to construct an API message without requiring specific knowledge of the target server implementation.', 'Creation of a standard set of transaction types and other key enumerations, removing the need for developers to map for each and every API implementation.', 'Use of ISO international standards for enumerators such as currency and country codes.', 'Use of supplementary metadata and sub-types to enable use case and/or mobile money provider-specific properties to be conveyed where necessary.', and 'Recognizing that no common mobile money account identifier exists, use of a flexible construct to enable the target account(s) and transaction parties to be identified using one or multiple identifier types.'





GSMA Support for API Providers

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Before Integration

- Developer tools
- Portal
- Marketing support
- Tailored workshops

During Integration

- Implementation support
- Hackathons

After Integration

- Compliance verification
- Hackathons

Ongoing



Insights

- Global API Landscape
- Compatibility with other standards
- Best practices from adjacent industries



- Marketing
- Market Outreach
- Governance Meetings



API Roadmap - Potential

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Example Roadmap – TBD with Industry Stakeholders

Current consensus for next release to be a Major Release 2.0

Q1 2020

Q3 2020

2021

2022->



MMAPI 1.1

- Transactions
- Quotations
- Accounts
- Account Links
- Debit Mandates
- Async Callbacks
- Account Identifiers
- OAS 3.0

MMAPI 2.0

- Data Harmonisation
- API Updates
- New APIs
- API Approaches
- Security
- Release Cycles
- Documentation
- Frameworks/ Tools

MMAPI 2.1

MMAPI N.n



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Interoperability Test Platform



Interoperability Test Platform

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A close-up photograph of two hands, one light-skinned and one dark-skinned, shaking hands firmly against a white background.

The joint test environment for
financial inclusion



Mobile Money API

mojaloop

Mojaloop API



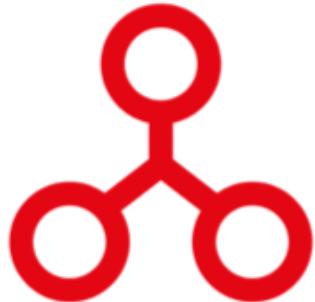
There is a need for technologies driving financial inclusion to be interoperable... and a place to prove it

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The **GSMA Mobile Money API** and **Mojaloop** are two of the leading tech assets in this space



Despite both technologies having their documentation and assets, there is
no central place currently where these assets can be **jointly tested**.



The **Interoperability Test Platform** provides a **joint environment** for ecosystem players to learn about and test both assets



What is the Interoperability Test Platform?

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- The Interoperability Test Platform is a facility where:
 1. **Service providers** can test how to connect to mobile money providers and the wider mobile money ecosystem using the GSMA Mobile Money API
 2. **Mobile money providers / other DFS players** can test how to connect to a central hub (i.e. Mojaloop) and the wider ecosystem using the Mojaloop API.



Mobile Money API



mojaloop

Mojaloop API

Entities



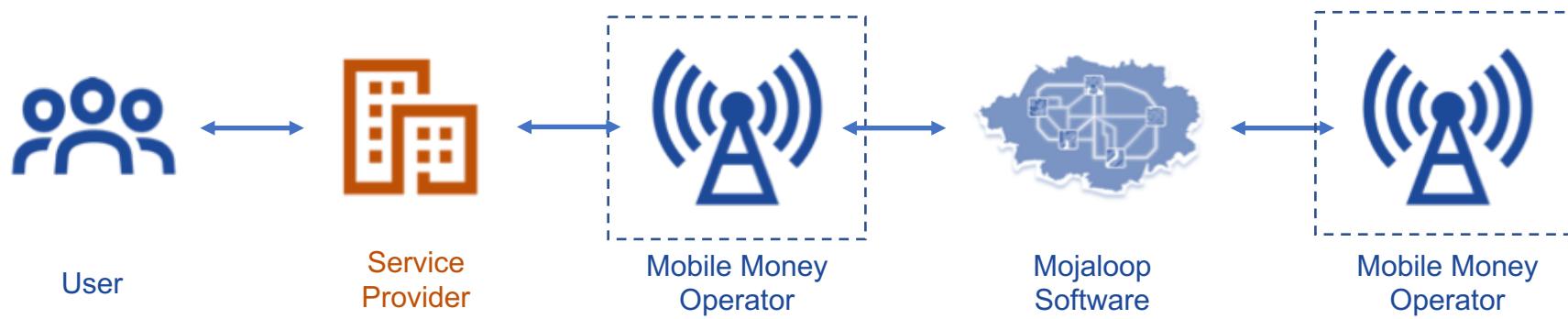
Scenarios

1. Service Provider
2. Mobile Money Operator as “Acquirer”
3. Mobile Money Operator as “Authoriser”

Testing Scenarios

Service Provider

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Legend

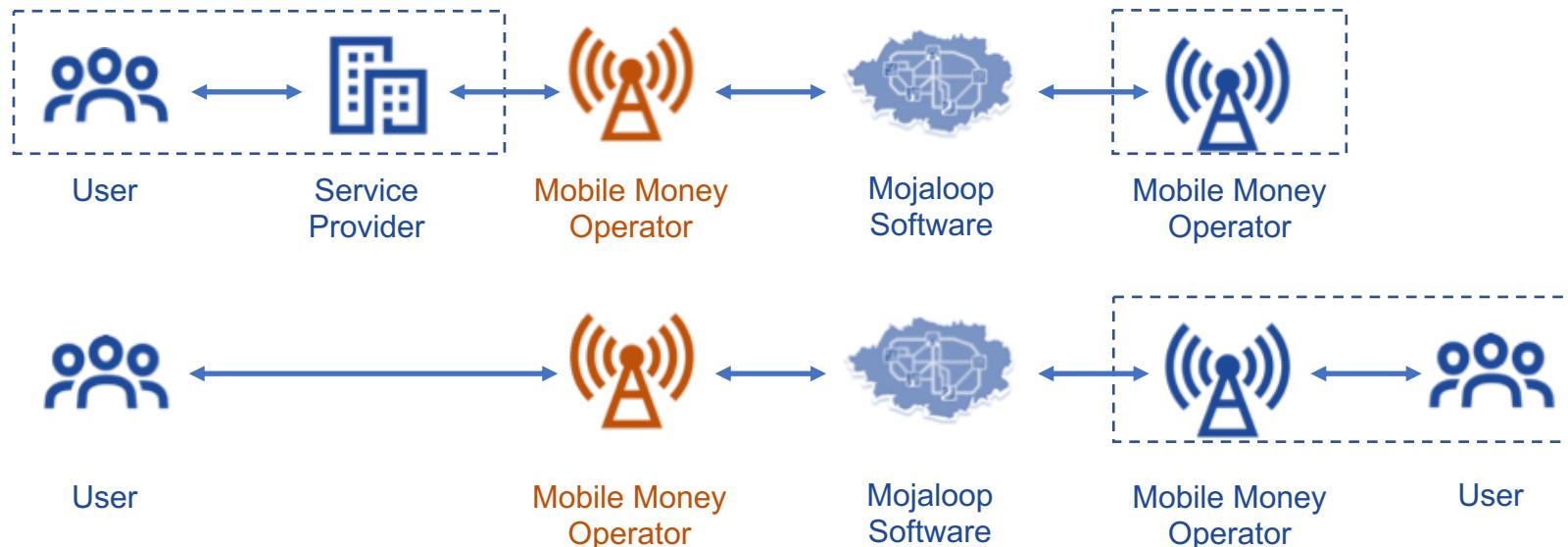
SUT

Entities

Simulated

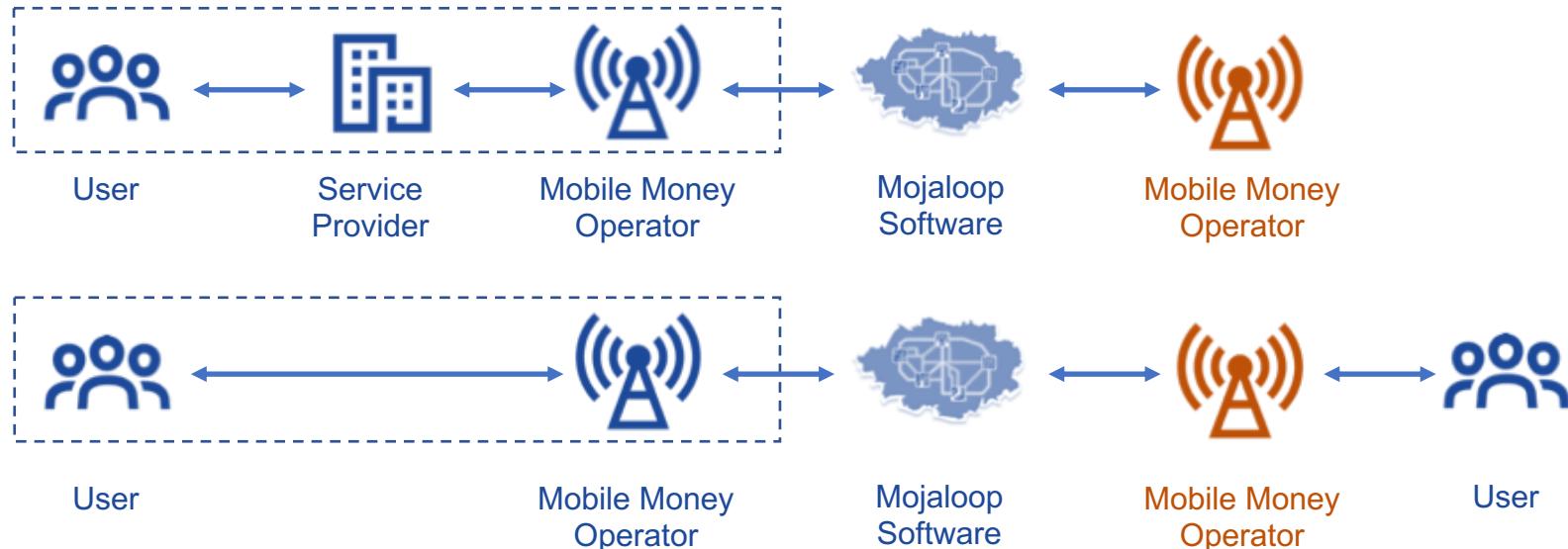
Testing Scenarios

Mobile Money Operator as “Acquirer”

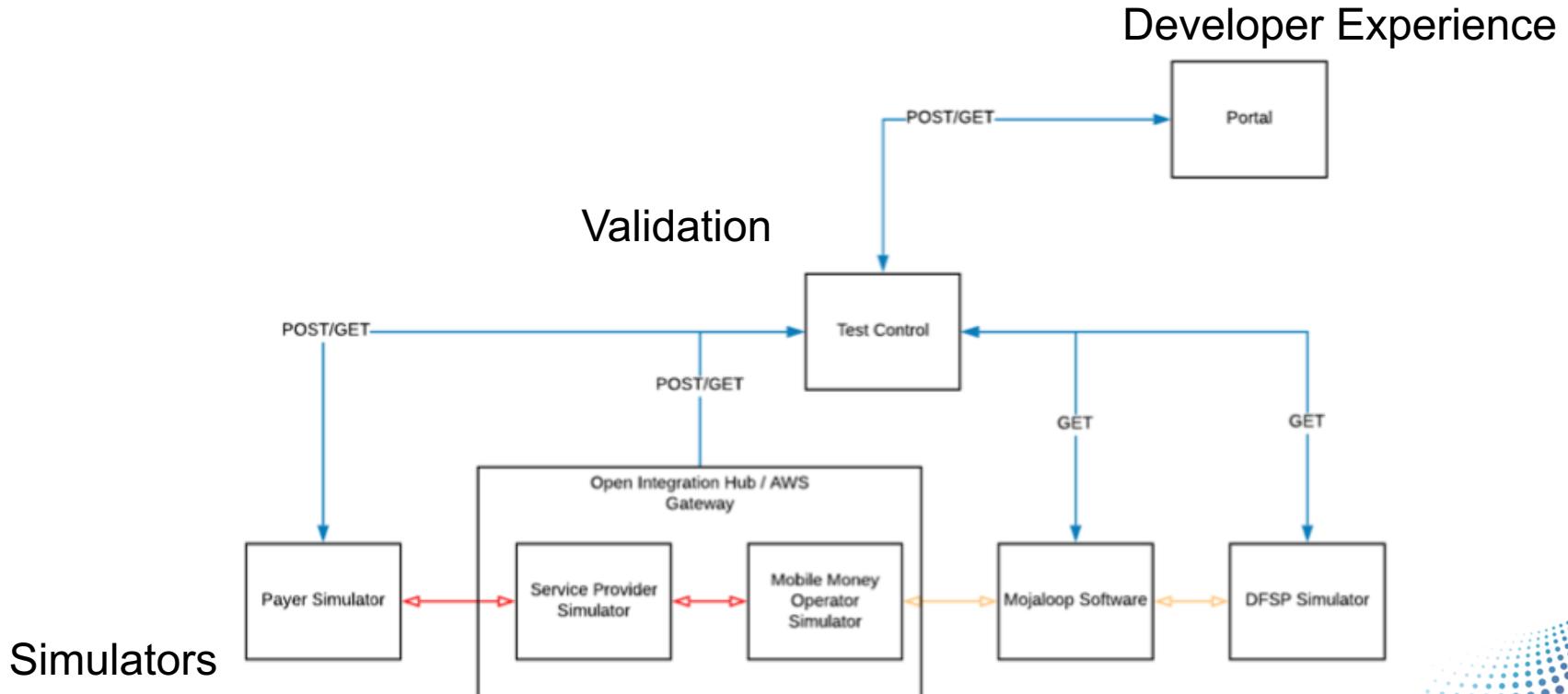


Testing Scenarios

Mobile Money Operator as “Authoriser”

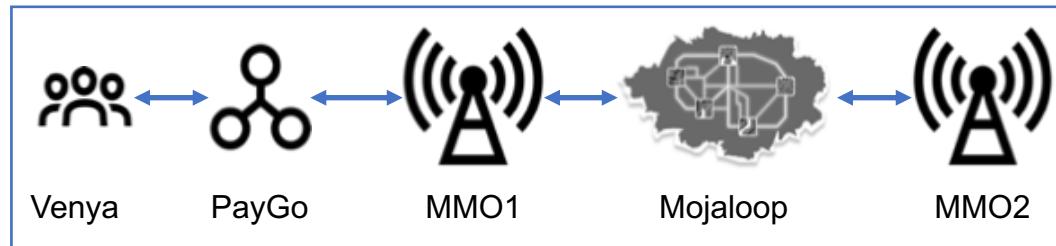


What is the Interoperability Test Platform?



What could the Interoperability Test Platform be used for?

Example use case – **Buy Goods**



1. Venya request to the PayGo provider, over SMS, a new code to enable his solar energy
2. PayGo receives it and sends to MMO1, through Mobile Money API
3. MMO1 receives the payment and verifies the account if from another MMO, sends to Mojaloop to perform the transaction
4. Mojaloop checks the account belongs to MMO2 and send a transaction request to MMO2
5. MMO2 approves it and the flow comes back

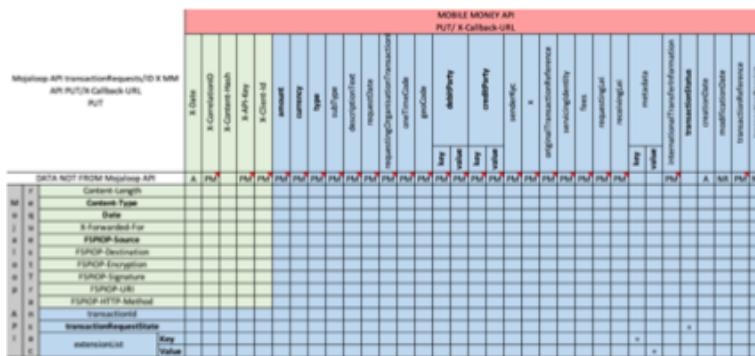


What could the Interoperability Test Platform be used for?

Example use case – Buy Goods



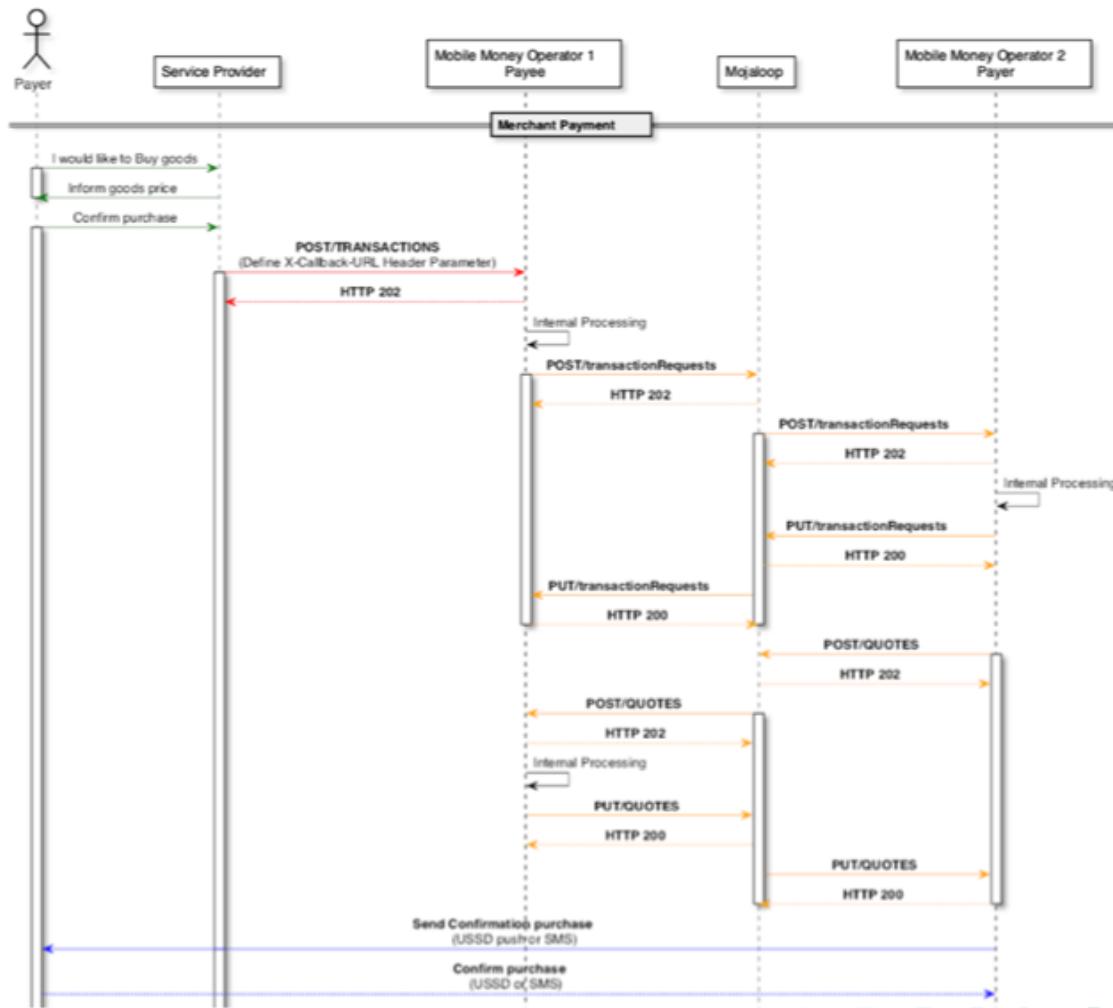
Transformation Maps



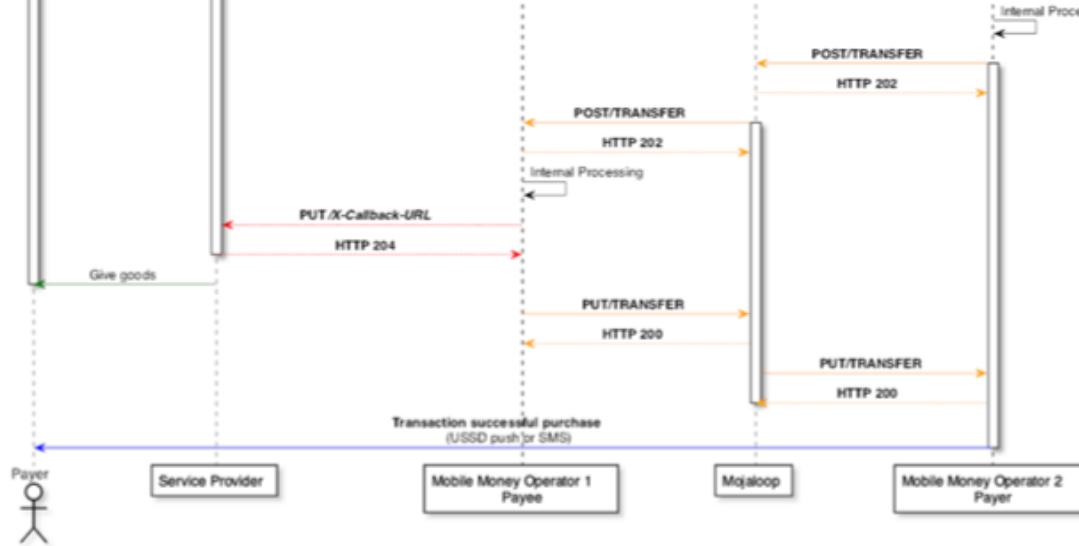
APIs Flow



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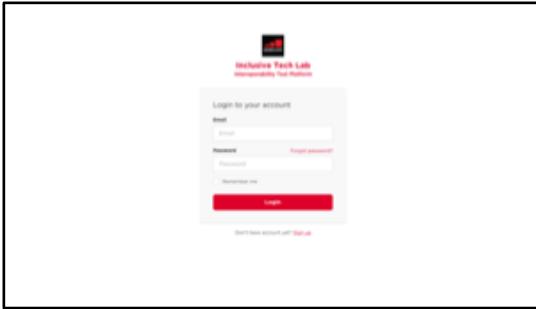


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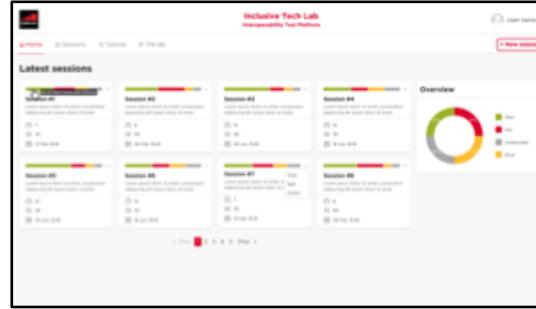


Interoperability Test Platform – UI / DX

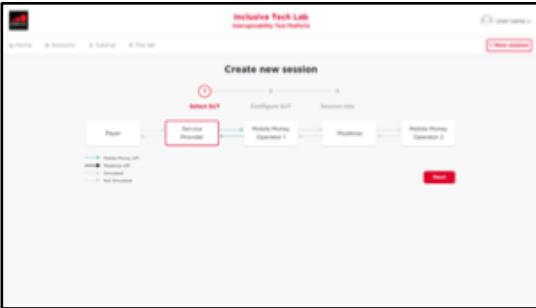
1. Login screen



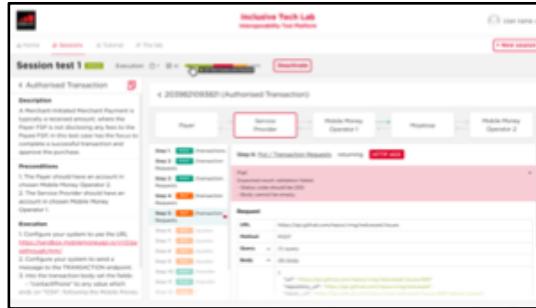
2. Home screen



3. New session screen



4. Execution screen





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