GSMA Interoperability Test Platform

A joint test environment for Mobile Money API and Mojaloop

22 Jul 2020

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Just released!

- [Mobile money API industry report: Towards seamless integrations videocast](#)
- [Many paths to mobile money interoperability report](#)

Going live soon!

- Why is there a need for GSMA Mobile Money API Specification? A comparison with other industry standards report
- QR Code Merchant Payments: a growth opportunity for Mobile Money Providers report
- Many paths to mobile money interoperability videocast

What's next?

- [GSMA Thrive Africa](#)
- Mobile Money Leadership Forum
- Biometric workstream

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Many paths to mobile money interoperability: Selecting the right technical model for your market

An interoperability solution can be characterised as being constituted of five core components

|	
Connection	The interconnection allows DFSPs (institutions holding the client accounts) to **exchange information**, **initiate and receive** transactions, **accept or reject** them and **debit or credit** end user accounts.
Settlement	The settlement mechanism is what allows the **flow of 'real' money** between participant organisations. In the world of e-money, this step need not coincide with the debiting and crediting of end user accounts.
Governance	Governance refers to the way participants of an interoperability solution make decisions.
Pricing and Business Model	Pricing and business model encompasses the key determinants of an interoperability solution's profitability and sustainability. These generally revolve around **processing or transaction fees**, **interchange** and client **surcharge**.
Dispute Resolution Mechanisms	Interoperability requires specific dispute resolution mechanisms, as enabling clients to perform cross-net transactions requires the ability to reach consensus with other DFSPs.

Each interoperability component offers a set of alternatives / options
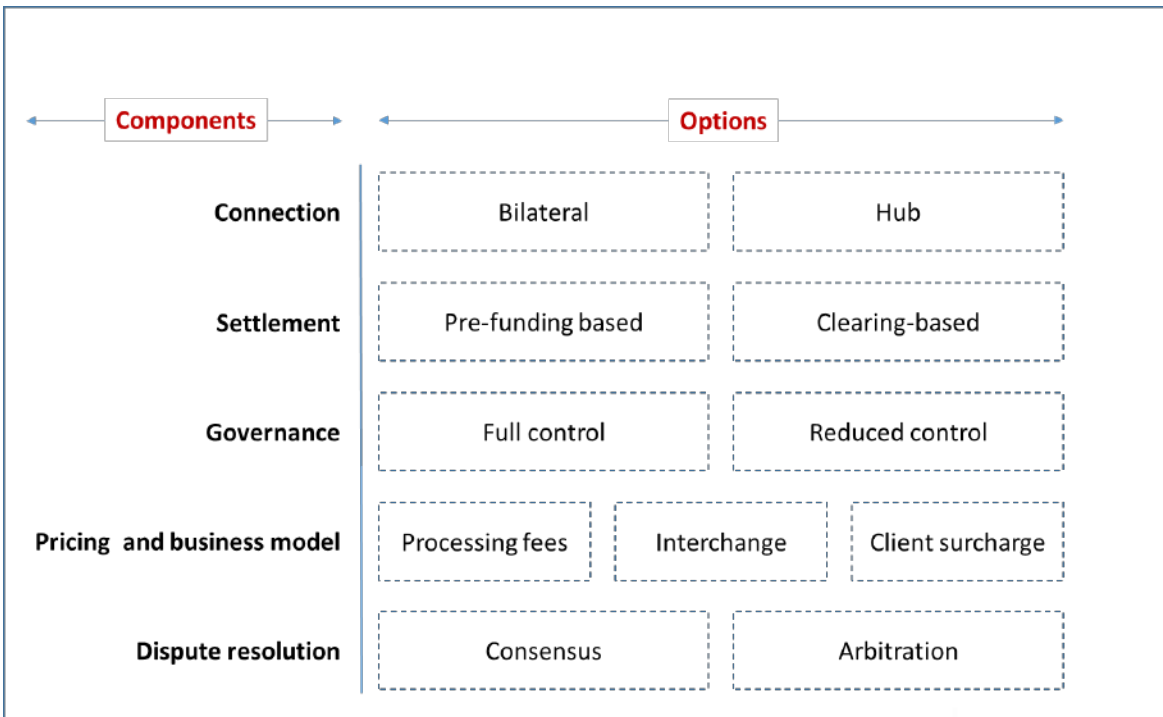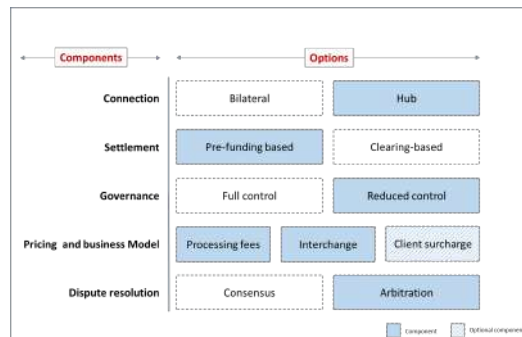
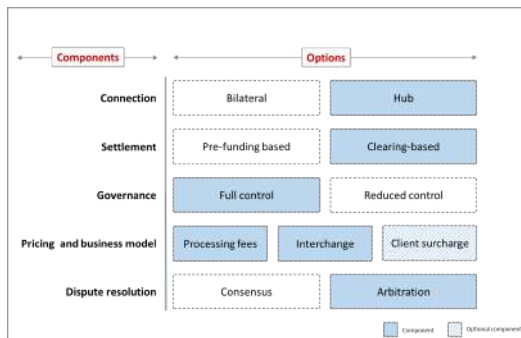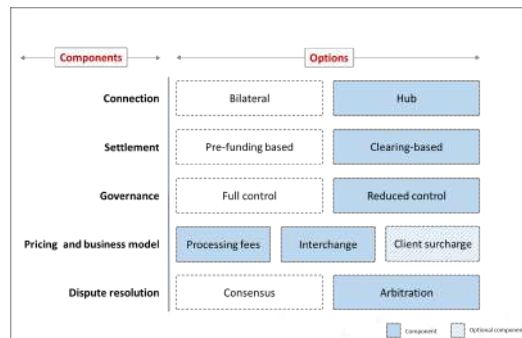# Out of eight possibilities, we identified four viable interoperability scenarios
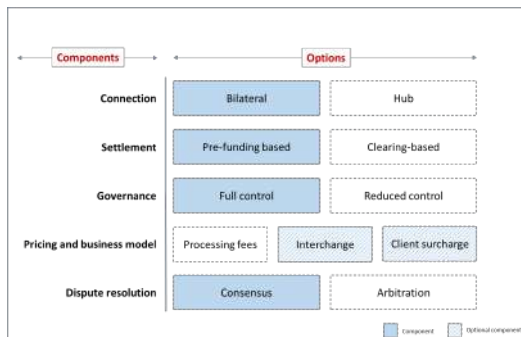
1/4 Bilateral Agreement Model

2/4 Aggregator Model

3/4 Mobile Money Hub Model

4/4 Global Hub Model

Implications of different interoperability models

Technical implications

- API design and protocols

- Account identification

- Processing capacity and scalability

- USSD session timeout

- Breakdown risk

Commercial and Business Implications

- CAPEX

- OPEX

- Time to market

- Prefunding and liquidity requirements

- Dynamics with other stakeholders

- Integration times

The GSMA's position on interoperability

Interoperability is a **strategic priority for mobile money providers** in order to:

1. Enable the long-term growth of mobile money
2. Strengthen the relevance of mobile money accounts to consumers, ensure their loyalty, and drive network effects
3. Contribute to the digitisation of cash in the ecosystem and to the modernisation and the efficiency of payment systems
4. Improve financial inclusion by bridging the gap between banked and unbanked consumers

GSMA focuses advocacy and engagement efforts on **an industry-led approach:**

- The **timing** of interoperability should be determined by commercial logic – if mandated prematurely, interoperability could undermine early-stage investment incentives and increase operational complexity and risk, without advancing market growth.

- **Commercial incentives should drive the choice of (i.e. the model) financial infrastructure** - mandated approaches prevent effective competition, can increase cost and ultimately lead to technical, commercial, and governance complexities that are likely to diminish uptake.

- The existence of a switch at the national level does not necessarily mean that it is relevant or optimal for successful mobile money interoperability - a **switch/scheme's governance model, commercial model, technical capacity and other factors should be assessed** to determine its overall suitability for mobile money interoperability.
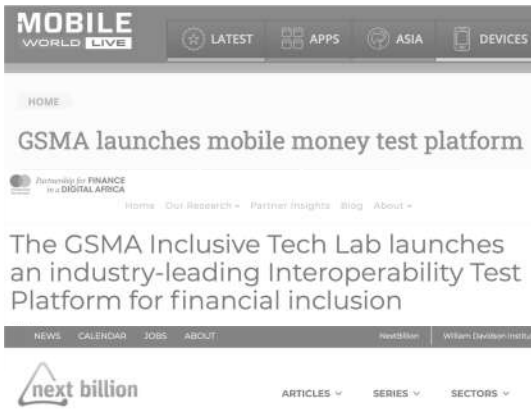
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Interoperability Test Platform

ITP IN THE NEWS

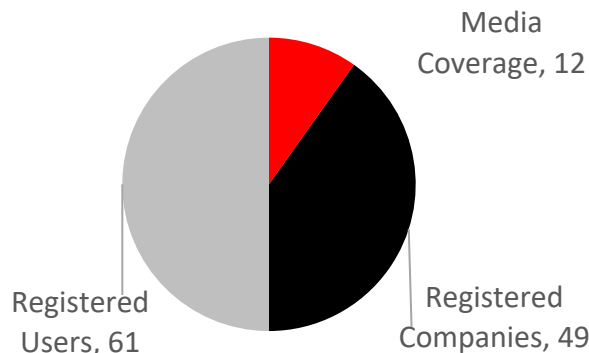International Media coverage ITP Launch   July, 2020

Media Coverage, 12

Registered Users, 61

Registered Companies, 49
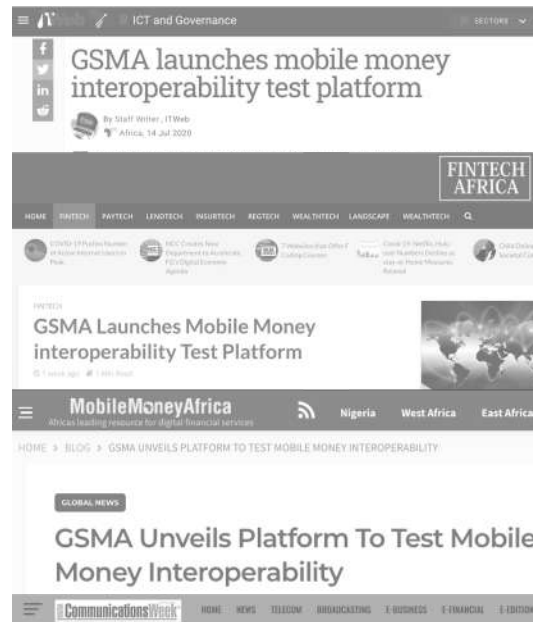
What is the Interoperability Test Platform?

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

User → Service Provider → Mobile Money Operator → Mojaloop Software → Mobile Money Operator

Why to use the Interoperability Test Platform?

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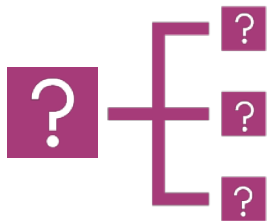
Why we build it?

- Enable the industry players to use 2 **key technologies** for **financial inclusion**
- Support the **Mobile Money** industry to **test interoperability** technologies
- **Facilitate** the **ecosystem expansion** for financial inclusion

Why to use?

- **Validate** your system connecting with **real life** interoperable ecosystem
- Build **independently** from core **interoperable** software bringing more **trust** for your test results
- **Plug-and-play** use
- **Free** and **open-source**

Interoperability Test Platform
Under the hood

What is on the platform?

- Service Provider and DFSP as SUT
- Service Provider, DFSP and MMO as Simulators
- Mojaloop as Interop Hub
- Developer Experience

How does the test engine work?

- Driven by Use Cases and Test Cases
- Simulation of Happy and Unhappy flows

What is validated?

- API Schema
  Automatic validations based on specifications
- Behavior Validation
  Defined rules on test case level following business data

Who can use the platform?

- Service Provider and DFSP
- People who want to understand the end to end flow in details without testing

What do we support?

- Merchant-Initiated Merchant Payment Use Case
  - 11 Test Cases with Happy and Unhappy flows
- P2P Transfer Use Case
  - 12 Test Cases with Happy and Unhappy flows

What do we offer?

- End to end testing
- Full flow visualization
- Message unpacking in detail
- Pass/Fail result

Interoperability Test Platform
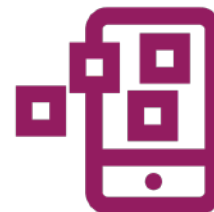## Use Cases

Merchant-Initiated Merchant Payment

- Approved Flows
- Rejected Flows
- With and Without Account Lookup
- With and Without Authorization Code
- HTTP Error Flows (500,…)

P2P Transfer

- Approved Flows
- Rejected Flows
- Send / Receive Flows
- Disclosing / Non-Disclosing Flows
- With and Without Account Lookup

New to Use Cases to come

- Customer Initiated Merchant Payment
- Agent Initiated Cash-Out
- Refund
- Bulk Payments
- Merchant Initiated Merchant Payment (Additional Flows)
- P2P (Additional Flows)
- Agent Initiated Cash-In
- Customer Initiated Cash-Out

Dashboard
Tracking the day to day evolution

Plug and Play
Enables teams to interact with their platform with minimal configuration required
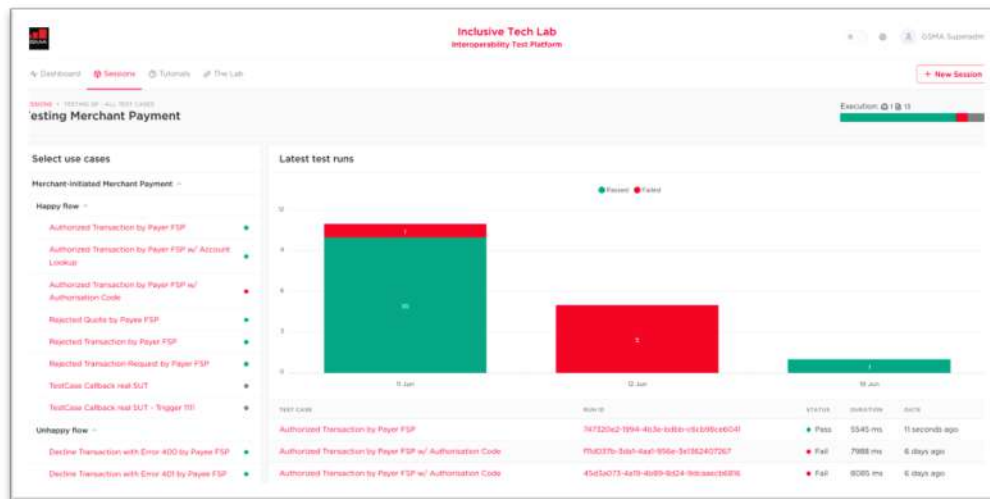
Pre-built Test Cases
Covering all primary use cases within the industry

Easy understanding of the flows
Full flow diagram to easily understand each message and endpoint

Automatic validation
Every message exchanged within the flow is automatically validated both at the schema level and with business rules for each test case

Interoperability Test Platform
Features

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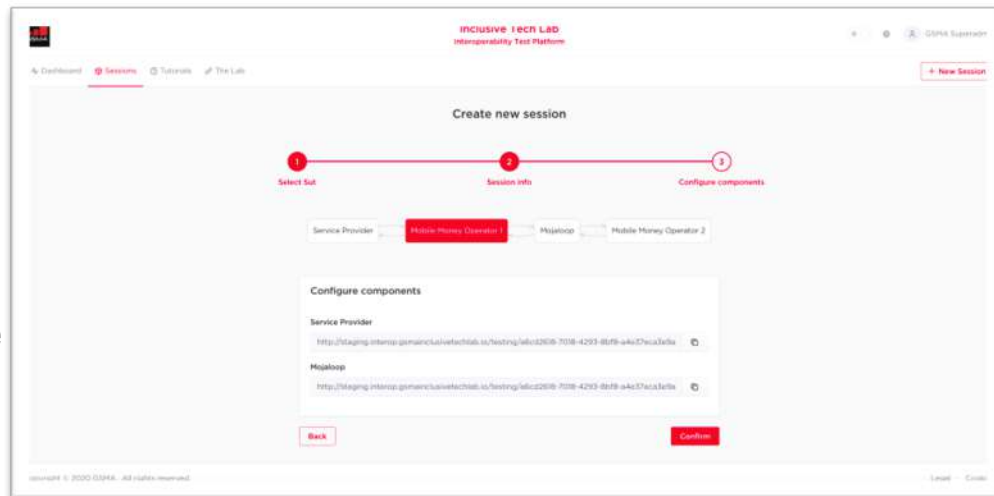
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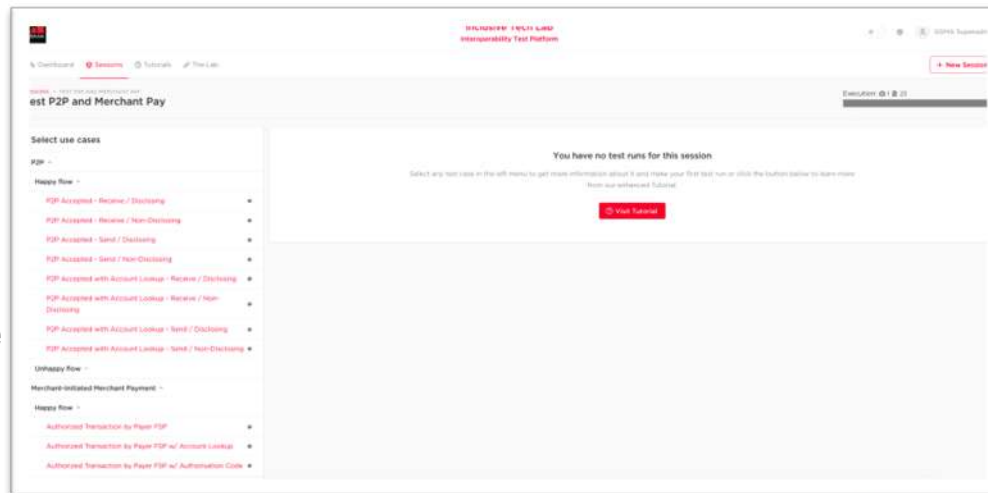
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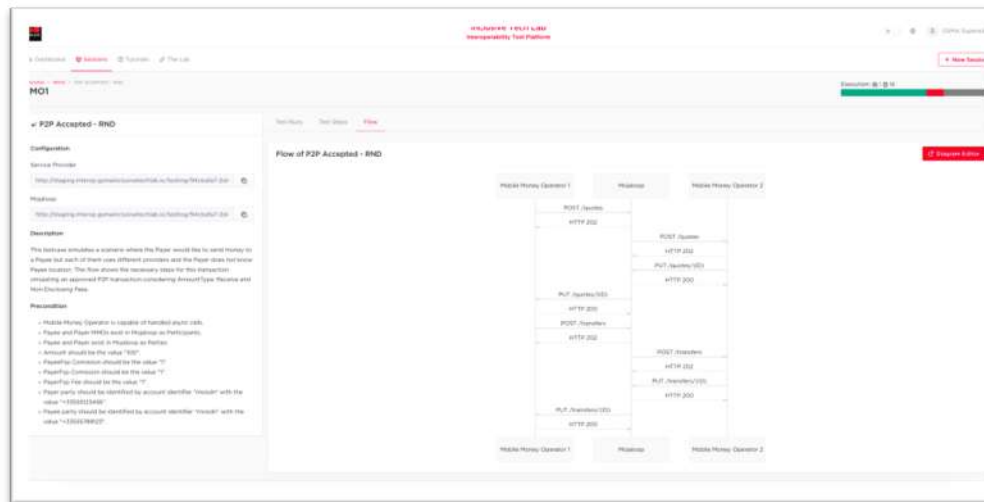
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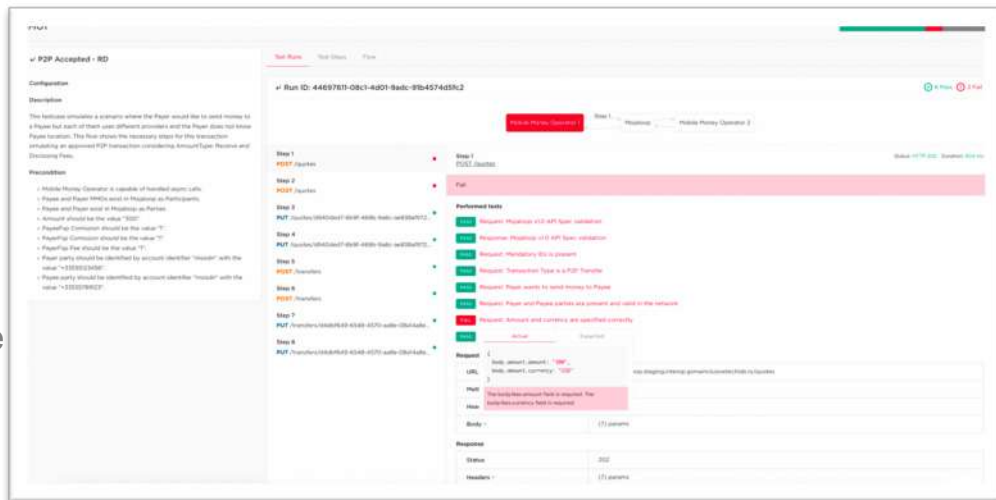
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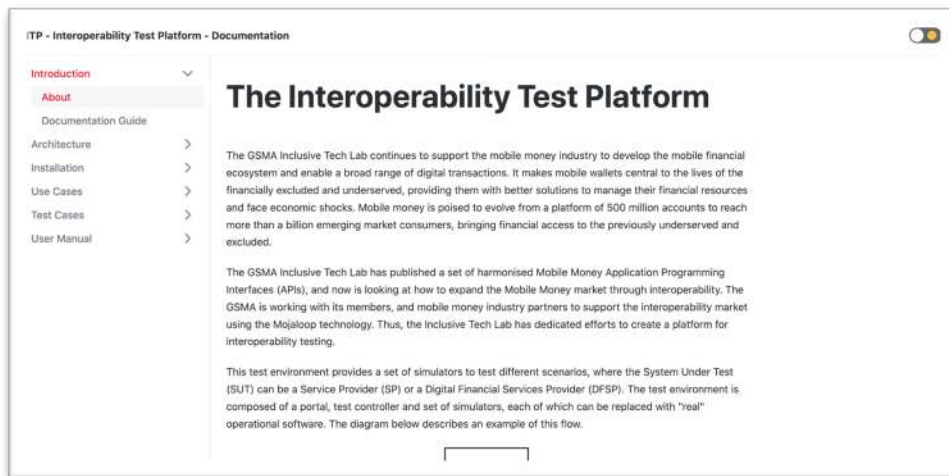
Interoperability Test Platform
Documentation and How to Contribute

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docs.interop.gsmainclusivetechlab.io

How to Contribute

- Open-Source Project under MIT Licence
- Available to anyone on **github.com/gsmainclusivetechlab**
- Check the contributors guide and start coding!

Interoperability Test Platform
Roadmap

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New Use Cases	New Use Cases	Candidate Features
Q3	**Q4**	**TBD**

Q3
- Use Cases
  - Customer Initiated Merchant Payment
  - Agent Initiated Cash-Out
  - Refund
  - Bulk Payments
- Features
  - Message Log
  - User Groups

Q4
- Use Cases
  - Merchant Initiated Merchant Payment
  - P2P
  - Agent Initiated Cash-In
  - Customer Initiated Cash-Out
- Features
  - Edit Sessions

TBD
- Use Cases
  - ATM Cash-Out
  - POS Cash-Out
  - POS Initiated Merchant Payment
- Features
  - Test Case Management UI
  - Environment Configurations
  - JWT Support

DEMO

Q&A

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Join the Platform
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