

Multi-Assets Custody System

by



Pakistan's first Blockchain FinTech providing digitized asset servicing platform for Trustee/ Custodian/Independent Asset-Holding, Asset (Shares) Registry & Authorized Intermediary Functions



Batch Processing

Posting and processing of multiple transactions at once



AMC's FMS

Data prepared in the Back-Office of the AMCs



Front-Office Module

Terminal for transactions posting and monitoring



API Connectivity

Direct posting of transactions from AMCs' FMS to MACS



MACS Core Module

Automated Processes and Controls for compliance, operations and finance departments





Settlement Gateway

Payment through Gateways, Online Terminals and Auto-generated emails, cheques & letters



Oversight Dashboard

For monitoring of summary of transactions

Front-Office **MODULE**



Txn Creator

Enters / Uploads Transaction through Terminal or API



Authorizer-A

Approves Transaction



Authorizer-B **Approves Transaction**

Processing Hub **MODULE**



Compliance Officer (DCCL)

Due Diligence



Panel-A Signatory (DCCL) **Approves Transaction**



Panel-B Signatory (DCCL)

Approves Transaction



Concerned Officer

Payment Processing & Reconciliation











Top Benefits of MACS





Digital Processing & Fast Settlement

Provides considerable time savings in end-toend transactions processing with ever simpler, faster and digitized processes.

Provides more information in a shorter period.



Automated Compliance with Reduced Risks

Boosts compliance functions of AMCs by reducing risks of human errors.

Audit trails of each activity is recorded and reconciliations with banks is simplified.



Unit Holders' Ledgers & Fund Portfolios

Thorough Unit Holders' ledgers compliance.

Excessive redemption of units is notified instantly.

Investment portfolios of each fund are managed.



Less Resources & **Reduced Costs**

Reduces expenses (on resources and HR) because of integrated digitized processes and distributed data.

Requires no separate links and high bandwidths for MACS connectivity.



Enhanced Security and Authenticity

Security of ledgers is enhanced due to encryption, data access controls, and locking of data with timestamp.

Digital Signatures for authenticity of user's activity, two-factor authentication and OTPs



Transparency and Surveillance

Identical copy of data exists on all terminals; therefore, data is not in control of any single person or entity.

Statistics of daily activity made visible to SECP and MUFAP at their dashboards.



Transformation of Functions









Transaction is initiated by AMC from its **FMS**



AMC prepares Letter of Instructions for the Trustee



AMC users can view the status of instructions via MACS terminal or APIs



All transactions are initiated from the FMS of AMCs



AMC's post instructions through MACS terminals or APIs



Operations team Reconcile the transaction with bank



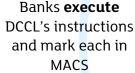


AMCs scan and

send letters to

Trustee via **email**









AMCs authorized signatories approve instructions in the system



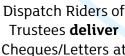
Banks **execute** Trustees' instructions



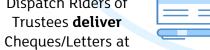
MACS auto-generates emails, cheques and/or letters on the system for banks, on as required basis



DCCL's compliance team verifies the instructions in the system through defined controls and checklists



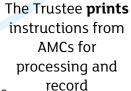
branch



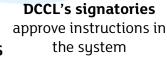
Trustee's

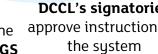


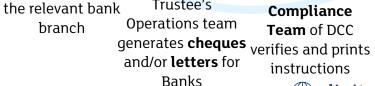
Compliance **Team** of DCC instructions





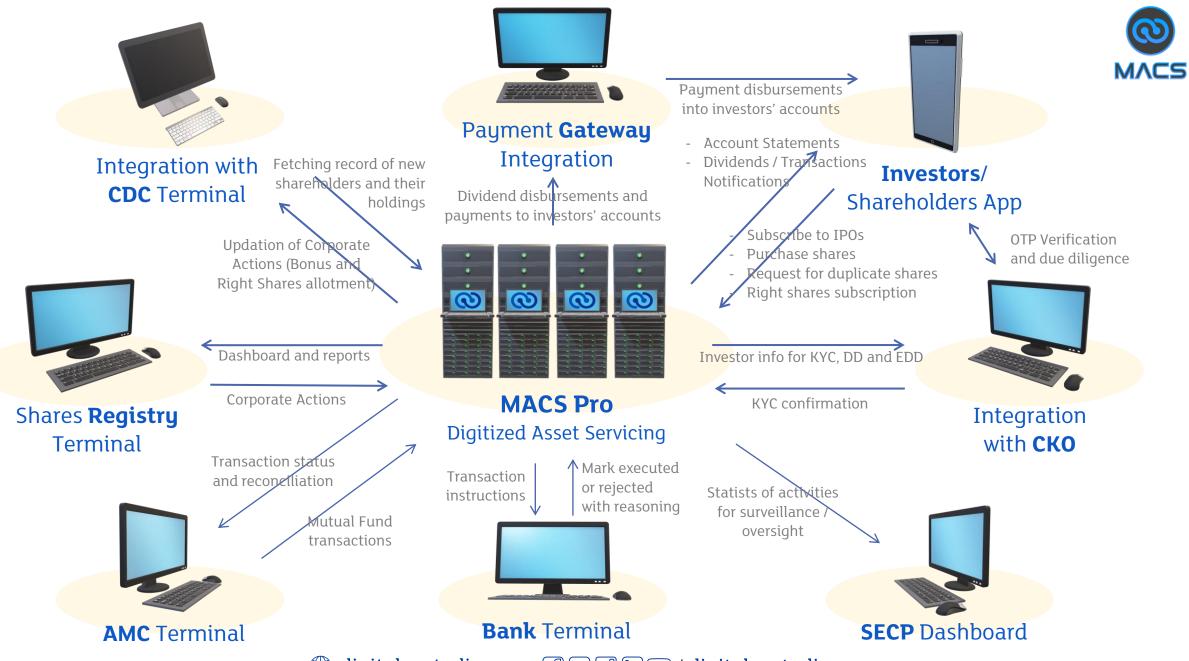














Key Contacts

Scan QR codes with mobile app to save contacts



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Deputy CEO

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Siddique-ur-Rahman Khurram

Head of Middle Office Functions

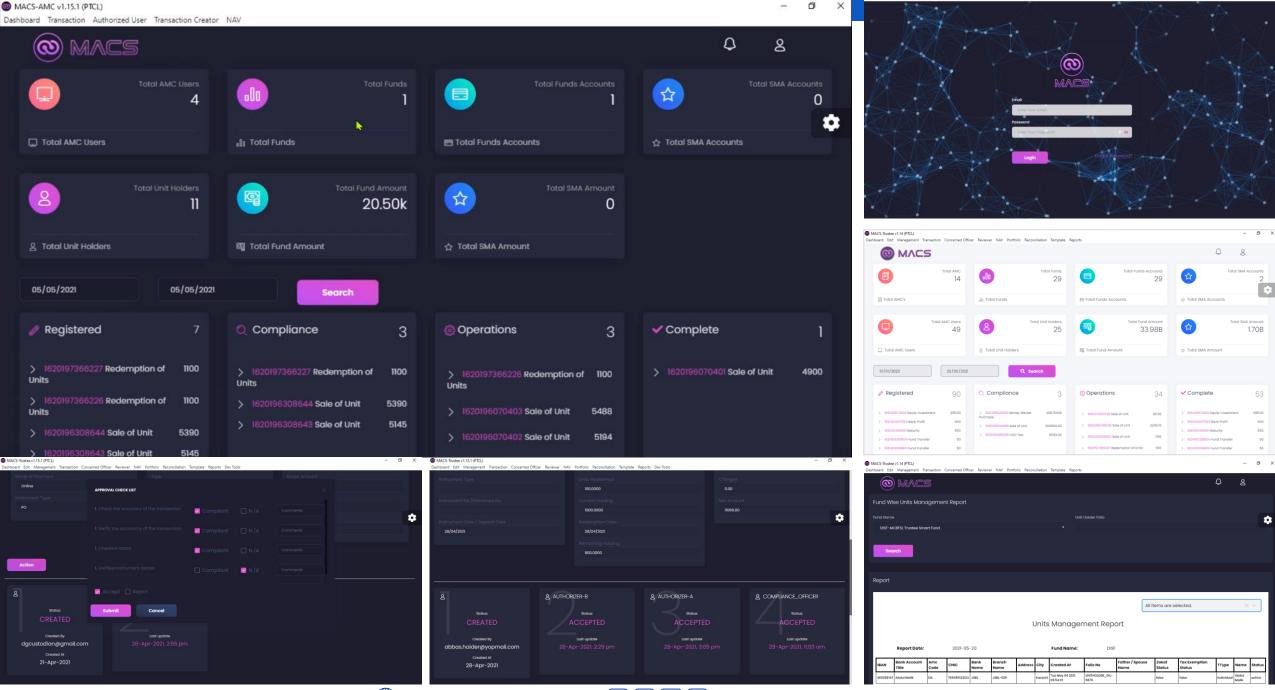
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Naeem-ur-Rahman

Head of Front Office Functions

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Encrypting data to unrecognizable format at one end. **Decrupting** back to original format for privileged user only

Components

Blockchain



have a copy of the

ledger for complete

transparency

MACS

Secure

All records are individually encrypted and accessible to owners only



P2P Network

In Peer-to-Peer Network. each node directly communicates with other nodes, without a central authority



Hashing

One-way encryption in which data can not be reverted back to original format. Fixed length hash of each block is saved in next block to link them. Unauthorized change breaks link and invalidates node



Smart Contracts

Data can be **managed** only

through programmable Smart

Contracts

Characteristics

Anonymous

The **identity** of all participants can either be anonymous or pseudonymous



All network participants

agree to the validity of each

transaction using consensus

algorithm

All validated records are irreversible and cannot be changed

Immutable

Time-stamped

Every transaction is locked and timestamped in blocks

Digital Signatures

Authenticity of each participant is validated by Certification Authority (CA) using private/public key infrastructure

A block of the transaction is created

The block is broadcasted to all nodes of the network

All nodes validate the block

The transaction gets verified and executed

Transaction Processing

A user initiates a transaction

The validated block is added to the chain









