Encocoin Payment Guarantee (EPG)

– A Blockchain Solution to Seamless Cross-Border and Local Trade Finance

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Introduction

"Blockchain solves the problem of manipulation and trust." — Vitalik Buterin, Moscow, 2016

Blockchain is part of the technology that underpins cryptocurrencies such as bitcoin and ether. Specifically, it is a collection of existing technologies that are used to synchronize and secure a data structure. Distributed ledger technology (DLT) is a general term that describes blockchains and similar data structures.

Blockchain/Fintech Technology has been growing fast in the last 7-years with outstanding revolutionary benefits for the global financial community. It could be effectively deployed in the global ecosystem to ease cross border trade finance, transactions applications and cost through trusted nodes of all participants in the ecosystem.

Revolutionizing the issuance of financial trading instruments and redefining their process mechanisms through blockchain technology, Encocoin EPG seeks to transform cross-border and domestic business transactions and financing. The high degree of distrust that hitherto existed between contracting parties would cease to exist thereby replaced by a highly organized, structured, transparent and participatory process. All relevant parties validate the transaction at each stage in a secure, permissioned environment using cryptographic identities. Non-parties to the transaction don't have access to the active instrument. EPG would enable banks, Insurance and other agencies of indemnities to make quick decisions with zero default.

Providing end-to-end trade finance process at a single place will boost cross-border and domestic trade. Genuine exporters and importers, buyers and sellers will have easy access to credit issuance on an automated and transparent trade finance/processing platform.

Encocoin EPG Ecosystem

Encocoin EPG proposed blockchain ecosystem will disrupt the conventional practices currently involved in cross-border international trade and local financial guarantees by using trusted dual public/private blockchain technology.

EPG innovative solutions to global trade will work on the following core functions:

● **Distributed Ledger Technology (DLT):** A de-centralized distributed ledger functioning on the Encocoin blockchain.
● **Federated Consensus:** Self-executing contracts protected by cryptographic identities which are triggered on fulfilling certain pre-set conditions. They effectively generate Letter of credits, Payment Guarantees, Indemnities, Insurance bonds etc to establish trust and goodwill among various participants.
● **Financial Trading facilities and payment instruments** hitherto provided by banks and financial institutions exclusively will be available to businesses and SME segments for international and domestic transactions at a very minimal cost.

EPG Value proposition

EPG provides value specifically for the service providers in the global trade finance such as Banks, Central Authorities, Insurance, Shipping Companies, Customs and Excise, Warehouses etc. The EPG platform developed on unique blockchain to offer global trade finance functions in a permissioned environment with very high degree of trust, assurance and security.

For the Business User:
– Simplification of bureaucratic processing formalities.
– Less documentation
– Zero error rate
– Instant Release of Escrowed funds on compliance with pre-requisites and consensus validation.
– Systematic maintenance of verifiable records secured with cryptographic keys.
– Audit Trail

For the banks:
– Reduced supervision and oversight
– Authentication of each activity by counterparty Banks(Buyer and Seller), Importer and Exporter.
– Eliminates fraudulent transactions and Duplication.
– Minimal documentation and Confidentiality

General:
– Lower transaction cost
– Instant validations from corresponding parties online
– Easy exchange and settlement of value via escrow on the EPG blockchain.
– Peer to Peer funds settlement are undertaken in Encocoin cryptocurrency eliminating costs and immediate settlement of value. Encocoin EPG conversion option to fiats are enabled on the network.
– Transparency at all stages of the transaction.

The Problem:
Export/import trade often faces many hurdles simply owing to the lack of trust and transparency among the participants. By removing entry barriers, there will be a drastic increase in growth of cross-border trade as well as in the domestic market too. Major areas of concern for a buyer and seller are;

● **Trust Deficit :** Whether the buyer pays when the goods are shipped.
● **Payment Risk :** Whether the seller will ship goods once the payment is made.
● **Exchange Risk :** How the value of the goods will be transferred.
● **Default Risk :** How will the quality of goods be ensured?

Banks assumes to the role of establishing trust between the parties by acting as the default escrow and issue Letter of Credits(LOC), Payment Guarantees and other forms of instrument indemnities.

Under the current conventional practice, trade finance business has to face the following key challenges:

● **Cost:** Customers have to bear high costs for establishing Letters of Credits (LCs) and other instruments of indemnities. Major cost components are commitment charges, usance charges, confirming charges and advising charges.

● **Preparation and Physical verification of documents: Acceptance of a transaction covered by an LC is purely on the basis of the documents submitted by the seller. The documents have to be exchanged and physically verified to and fro by the parties involved in a cumbersome and time consuming exercise.**

● **Tedious Customer experience: Exporters and importers often suffer from a poor end-to-end customer experience. Not only does the issuance of LC-backed trade finance transactions require high coordination efforts among exporters, importers, and issuing and advising banks, the settlement of the transaction follows overly complicated & manual processes, delays, and uncertainties. Importers still face the delivery risk of fraudulent shipments, even if the transaction is backed by an LC and have to monitor shipments.**

● **Physical movement of documents :** With all advancement in technology, original documents are still physically couriered by negotiating banks to the issuing bank and are exposed to transit delays and loss of documents. Physical submission of documents are necessary since original transport documents such as Bills of Lading & Receipts are negotiable instruments which represent the ownership/title of goods.

Encocoin EPG Trade Finance Solution:

Encocoin EPG blockchain solution will be a decentralized trading solution that allows peer to peer business trading through the existing banking systems. EPG solution will reduce complexity and costs of doing business internationally and domestically. EPG is immutable, secure, autonomous, reliable, durable and trustless. Trust is replaced by cryptographic proof through decentralized validating peers who are parties in the specific trade.

● Enables Issuance of Letters of Credit, Guarantees and other indemnities through Blockchain network which will provide transparent and cost-effective trade finance instruments to the industry.
● Offers a comprehensive range of services to facilitate cross-border trade efficiently.
● Enable exporters & importers to commit and execute trade globally, in a trustful, efficient and reliable manner.
● Aggregate all stakeholders to a the Encocoin network using Distributed Ledger Technology and enable consensus on various legs of a trade cycle without any central or monitoring authority.
● Enable self-executing and event specific Federated Consensus to negotiate various conditions and situations arising at each stage of the trade cycle.
● Drastically reduce documentation procedures and implement a paperless transaction process.
● Cut short delays in transit, documentation etc since systematically authenticated data will be available online for all the participants to take a considered decision.
● Improve credit delivery since the authenticity of the shipment and current status of the goods will be available to banks/financing agencies.

● Funds are held in the EPG escrow vault and are instantly released on complete validation of the federated consensus.

All intermediaries who are party to a trade cycle need to be in the network and authenticate transactions as a node to make the system successful. Other than banks, agencies such as Customs, Shipping companies, freight forwarders, clearing Agents, Insurance companies. Respective manufacturers, suppliers, warehouses, traders, merchants etc should also be available on the network.

With all parties to the Federated Consensus updating and authenticating real-time information on the status of the goods and other relevant data, the buyer can plan the further movement of goods once received in his warehouse and also manage his funds flow effectively.

Scalability

Encocoin EPG is built on Chain Core which permits handling transactions of over 1 million per second. This is an evolving technology at its inchoate stage and can expect further advancement which will ensure desired scaling.
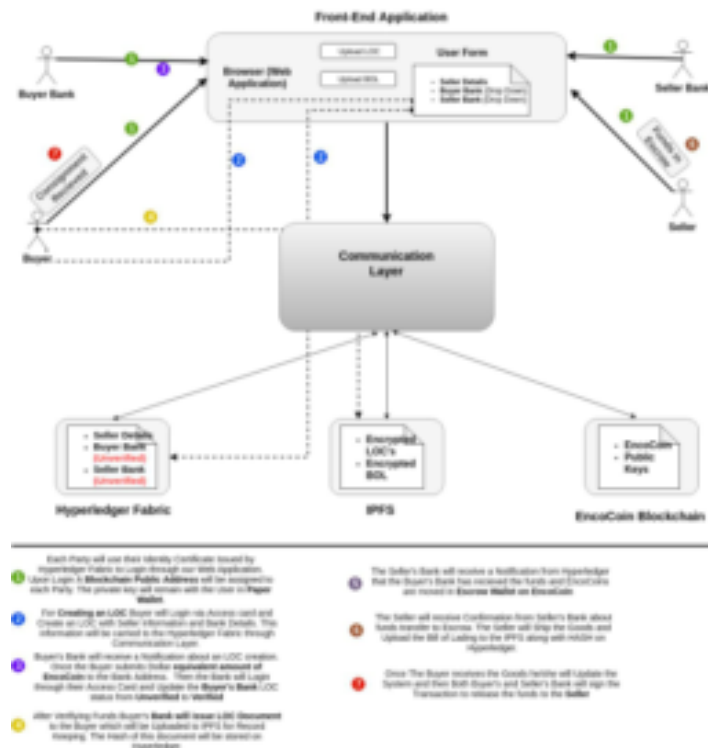
Technology:

Chain Core
Chain Core is software designed to operate and participate in permissioned blockchain networks. Each network maintains a cryptographically-secured multi-asset shared ledger. Using this ledger, participants can issue digital assets directly to custodians, who can then transfer them to each other in real time with no transactional intermediary. Each Chain Core holds a copy of the ledger and independently validates each update. A federation of block signers ensures global consistency of the ledger.

Hyper Ledger Fabric
Hyperledger Fabric is the private permissioned blockchain framework implemented on the Encocoin EPG blockchain and it is one of the Hyperledger projects hosted by The Linux Foundation. Intended as a foundation for developing applications or solutions with a modular architecture, Hyperledger Fabric architecture on the EPG blockchain allows consensus and membership components to be plug-and-play. Hyperledger Fabric leverages container technology to host smart contracts called "chain code" that comprise the application logic of the Encocoin EPG system.

Advantages
Third-party trust
The blockchain is built on the concept of sharing information across parties without a central authority to manage and processes using federated consensus during transactions. All the data recorded in the ledgers are available to all the nodes taking part in a transaction but the scope are limited for each nodes or access levels.

Updation of books
Since the transactionson on the EPG network are peer to peer and ledgers are updated in real time, there is no need for an additional reconciliation process. A transaction will be completed only if all the consensus is validated and the defined rules are satisfied. Each transaction will be completed with absolute finality.

Transparency
Maintaining an immutable record of the transaction with events in a chronological order being the main pillar of the Encocoin EPG architecture, EPG guarantees the much-desired attributes to banking and financial transactions such as immutability and finality. The ledgers are open and can be validated by each participating node at any time. For example, the seller will be aware of the issuance of LC and its terms and authenticity and can track it till he receives the same. On the other side, the buyer will be aware of the movement of the goods from procurement till it reaches his warehouse or destination port. Likewise, banks and other institutions also will be in the know always to track and process escrow release.

Reduced processing time

Under the Encocoin EPG Blockchain system, transactions are made on peer to peer manner so that the settlement of funds and updating of records are immediate with absolute finality.

Transaction Costs
Transaction costs can be reduced to a bare minimum, just enough to recover operational costs by the particpating nodes involved in the transaction cycle.