

# GLOBAL NETWORK ENCRYPTION INVESTMENT SECURITY SERVICE



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White Paper  
The GNEISS Guys  
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# ABSTRACT

GNEISS is an innovative blockchain platform that operates as a digital marketplace where users can create coins and smart contracts to trade assets, goods, and services using a digitally encrypted, peer-to-peer blockchain exchange system. With the GNEISS platform, users can create, transact, and destroy any digital asset or smart contract in their personal E-Vault utilizing the Ethereum blockchain. In short, the GNEISS platform essentially replaces traditional dependency upon third-party market vendors, such as banks, to make transactions or legally binding contracts. The GNEISS platform provides a unique capacity for users to easily create digital assets of their choosing to trade in a digital marketplace. With the addition of smart contracts, to provide functions such as mint/burn coin, automate interest rates, collateralize smart contracts, and much more. The value of an asset created by each user is set by the market value. The asset itself may be tangible, for example, a gold-backed digital coin or as intangible like time, such as volunteer or billable hours.

Each user who develops an E-Vault is required by law to uphold any smart contracts made; however the GNEISS platform provides several added security measures. One robust security measure is that all digital assets and smart contracts constructed within E-Vaults on the GNEISS platform can be collateralized with digital assets or smart contracts. If collateralized, the value of the digital assets or smart contracts will be held by their equivalent value in Bitcoin, Ethereum, or any other digital asset in an Ethereum virtual blockchain escrow account. The value is then returned to the user after the smart contract has been fulfilled, or returned to the investor in the event of a forced liquidation. Forced liquidations will unfortunately happen occasionally when the value of the user's digital asset or smart contract exceeds the value of the collateralized asset agreement for that digital asset or smart contract. In such events, the user has the option to specify back-up digital assets to buy from, in case the currently invested coin force-liquidates prematurely.

If users properly take advantage of the back-up E-Vault buying system, they are instantly reimbursed from a forced-liquidated contract. They can instruct their E-Vault to automatically select and buy other secured digital assets or smart contracts. In time, this will create a performance-based rating system, since the free market will clearly show the most trustworthy E-Vaults based upon a track record of business transactions. Such direct and immediate transparency returns market power to the most trustworthy people and solves, within seconds, the redistribution of wealth problems caused by major economic crashes.

# 1. Introduction

Online investing and everyday finance now relies primarily on the too-big-to-fail financial institutions. While the current financial model works well enough now, it has many weaknesses. Banks are subject to a wide range of risks, from a single point of failure to the potential for massive corruption. GNEISS is not subject to these risks because of its decentralized, peer-to-peer blockchain platform. GNEISS operates with lower fees, greater transparency, and accurate history of all transactions and smart contracts, which are recorded by Bitcoin, BTC, and Ethereum, and ETH's public blockchains.

A decentralized digital free-market platform such as GNEISS can host millions, if not billions, of E-Vaults. Such a platform would create tremendous economic growth for all. GNEISS can securely automate the entire infrastructure of banks or financial institutions. This automation is accomplished by maintaining the public record of transactions while offering complete anonymity for users who do not share their public blockchain addresses.

Users who want to make public the contents of their E-Vault smart contracts can do so by sharing their BTC and ETH wallet addresses in their E-Vault. They can confidentially record every digital asset on either BTC's Lightning Network or ETH's Raiden Network, both of which provide instant free transactions. If an E-Vault user wants to see their assets on the blockchain again, they can choose either the Lightning Network or Raiden Network. Integration of the Lightning and Raiden Networks with the GNEISS cache system stored on the GNEISS nodes in conjunction with Hyperledger Proof-of-Trust, P-o-T, blockchain is how GNEISS provides up to around 7,000+ instant free transactions per second. Therefore, GNEISS is more than capable of taking over VISA's average of over 1,700 transactions per second.

GNEISS ensures the security of the platform by having two main verification methods. The first initial verification method is the balances cache system, stored on any GNEISS node and transacted through the hyperledger P-o-T blockchain. The P-o-T blockchain works by pre-assigning 300 master nodes to the users with the highest ratings on the GNEISS platform. The other verification method is the use of the spartan nodes. If selected, a user agrees to run a spartan node for four years and gets a mining reward for doing so. Once there are 300 master spartan nodes, then anyone can still run a full node. These full nodes verify the master nodes along with all the other nodes or they can run a regular node. This verification method will store only the cache balance system for instant transactions and P-o-T verification. Finally, the spartan nodes and full nodes have the BTC/ETH blockchains installed for a decided final verification.

## 2. Peer-to-Peer Smart Contract Transactions

Each E-Vault digital asset or smart contract has a chain of digital signatures stemming back from its origin. These digital signatures record and enable each step of the peer-to-peer smart contract transactions in the entire GNEISS system. E-Vault users can transfer ownership of any digital asset and smart contract to the next E-Vault. Ownership transfer is accomplished by digitally signing that coin's record with a hash of the previous transactions and sending it to the ETH public wallet key of the next E-Vault.

To verify authentic ownership of the digital asset, a user can search the signatures and recorded history of any digital asset and smart contract from inception. In this way, the entire system can be instantly audited by either public or private parties. Every transaction is stored in either the BTC or ETH blockchain, which is composed of 7,500+ nodes at the time of this writing. Anonymity is ensured with the GNEISS platform because only E-Vault wallet address functions can be seen by the public. The GNEISS platform offers the unique option of privately matching an E-Vault wallet address with the proper information for user verification. This is in compliance with Know Your Customer, KYC, and Anti-Money Laundering, AML, legislation.

All smart contracts have the option to be public or private while being self-enforceable through the ETH blockchain. Funds and payments from any contract terms are automatically controlled by the ETH blockchain. This self-enforcement is accomplished by isolating every possible event into a *function*. Functions either have a default value or are independently-programmed operations. They interact with the ETH blockchain separately in order to verify every function and transaction. Additional information can be stored in ETH smart contracts in the form of integers, strings, or data.

### 3. ETH Blockchain and Hashing

In order to implement a record-keeping system, which gives every user the option to publicly display digital assets or smart contracts, GNEISS needs a public blockchain that is Turing Complete and can store data privately or publicly. Since ETH is the most popular Turing Complete public blockchain with over 7,500 nodes, it is undeniably the most powerful and technologically superior Turing Complete blockchain. The Raiden Network is the side chain for ETH that allows for instant off-chain transactions too. All a GNEISS user has to do to turn on and off the Raiden Network is click the lightning bolt icon in the top right of their ETH/E-vault wallet and pay an ETH transaction fee to hash the newly updated balances on the Ethereum blockchain. Utilizing ETH's blockchain requires an online connection and programming knowledge in Solidity (ETH's programming language). However, GNEISS makes any ETH contract seamlessly manageable and automatic through the GNEISS platform, [www.GNEISS.io](http://www.GNEISS.io). This allows for file organization, enacting ETH smart contract transactions through the blockchain-enabled Function Manager, and providing a Graphical User Interface (GUI) that any user can understand. Each financial transaction stores the E-Vault address, function name, data, and date. The GNEISS interface neatly recalls this data and presents it in the easiest way possible.

In the future, GNEISS will pursue the building of its own blockchain that will work with, and act, as another layer on top of the BTC and can integrate the ETH blockchain, and will verify all transactions on GNEISS for the utmost safety and security. This GNEISS blockchain will have a hybrid blockchain consisting of a P-o-T Hyperledger initial verification blockchain. Next is the Proof-of-Stake, P-o-S verification in which every user with a Tier 2 verified E-vault automatically receives only one coin to stake and staking rewards. The final verification is the Proof-of-Work, P-o-W algorithm uses the most popular mining algorithm SHA256 which is the same mining algorithm Bitcoin uses and will be most efficient in the future for real world cases where mining can be used such as electrically heating a home or water tank.

The inspiration for this system came from the United States' Constitution. The three mining algorithms are analogous to the three branches of the United States' government. The P-o-T algorithm symbolically represents the executive branch of the blockchain government. The P-o-S algorithm represents the legislative branch. And, the P-o-W mining algorithm represents the judicial branch. The mining rewards will be paid out in the following proportions: 1,000 GNEISS Coins paid in mining fees goes to the P-o-T algorithm run by the Spartan Nodes, 5% goes to the P-o-S algorithm which every verified Tier 2+ account gets 1 Stake, and 95% goes to the P-o-W mining algorithm. The total mining fees consist of not only those created by the P-o-W mining but also the collection of transaction fees on the GNEISS platform.

## 4. ETH Smart Contract Fields and Functions

The ETH smart contract functions and fields all make up the backbone of each peer-to-peer transaction in both ETH and GNEISS. Each one is defined as follows:

- **Smart Contract Functions**—When a GNEISS smart contract is created, functions are linked to the created contract. Only the users can call functions on smart contracts with the allowed permission.
- **Smart Contract Fields**—Smart contract fields store integers, strings, and data. Utilizing all three of these data, any smart contract can be given specific properties to accomplish functions that exceed the capabilities of most computers. All smart contract data is stored on the ETH blockchain for security, auditing, and optional transparency.

By using these Smart Contract Functions and Fields, one can perform most Turing complete computer functions while processing it through one of the most secured blockchain networks in the world. GNEISS takes advantage of this technology to create a new FinTech free-market platform. GNEISS is not only the least expensive, easiest, and fastest form of banking, but it also is more secure and trustworthy than most other financial institutions. GNEISS can claim all these superior attributes simply because it has built the most advanced free-market platform using cutting-edge blockchain technology. Decentralized money and software systems have been attempted before, but BTC (created on January 3rd, 2009) is the first successful version of decentralized money the world has ever seen. GNEISS aims to be the go-to payment processor for BTC while using its blockchain technology to decentralize a P2P-free marketplace to match.

The most popular Smart Contract is the ERC20 token contract, followed closely by the ERC721 token contract. Both of these Smart Contracts create a limited supply of a token or object hashed on the ETH blockchain that can be transacted. GNEISS has based its own coin creation on the ERC20 token standard. Additionally, we have also made some features by incorporating more Smart Contract Functions such as the ability to make a coin public or private. It also can mint and burn coins, tax transactions, enact an interest holding tax, and secure a smart contract by collateralizing it with other digital assets. By offering all these different Smart Contract Functions on top of the ERC20 token standard, market makers will have an incentive to make money by bringing commodities and other real-world assets to the blockchain.



## 5. Secure Digital Assets and Contracts

Each digital asset and smart contract has the option to be collateralized with BTC, ETH, and any other user-owned digital asset, along with a percent of the asset or contract to be covered, as determined by the user. For example, if an E-Vault user creates a 50% collateralized gold coin digital asset, then that 50% value of the gold coin asset is held in escrow in GNEISS's virtual blockchain holding system. If at any point, the issuer of the gold coin digital asset does not have 50% of its value in their account balance, then liquidation occurs to cover the collateralized contract. The platform automatically starts liquidating the amount of gold coin digital assets needed to fulfill the 50% collateralized smart contract obligation.

Every liquidation default negatively impacts that E-Vault's credit score. Thus, the most professional E-Vaults will reveal their creditworthiness through time, and this system will create a strong *trustless* free market. Any smart contract can also set a predetermined amount of collateralized obligations to secure more complex smart contracts, such as loans, derivatives, insurance, etc. By setting even a low amount of collateral for a smart contract such as a loan, the user would still increase the chances of getting funded. The investors know that if the loan smart contract fails, at least they would still receive the underlying asset.

By providing secured collateral assets in a smart contract, market makers and investors can bring a high level of confidence that the real-world asset the coin represents is there. For example, suppose investors want to bring S&P 500 shares to the ETH blockchain. They can start by logging into their GNEISS account, creating an E-Vault, and within seconds, create their own crypto-coin, *Digital Asset*, and add a mint/burn, yearly interest tax rate, and secured smart contract. This would allow them to set one actual S&P 500 share in a bank equal to one S&P 500 coin. They can either create and destroy coins as they buy or sell S&P 500 shares through their bank or brokerage accounts. They can set an yearly interest tax rate so they can profit from their market-making. Finally, they can secure the S&P 500 coins with BTC, ETH, or any other digital asset so that users who would buy their coins know that the coins are backed up with collateral regardless of whether the investor actually owns any S&P 500 shares. Thus, creating a banking system that removes all trust from the equation since the digital assets are 100% backed up.



## 6. The GNEISS Network

The steps to run any transaction through the GNEISS network are as follows:

1. A user interacts with the GNEISS online interface or GNEISS's API.
2. New transactions are simultaneously broadcast to all GNEISS nodes and ETH nodes.
3. Each ETH node collects new transactions into a block.
4. Nodes accept the block only if all transactions in it are valid and are not already spent.
5. Nodes show their acceptance of the block by working on creating the next block in the chain, using the hash of the accepted block as the previous hash.

BTC and ETH nodes will always recognize the longest chain as the correct one, and will work on extending the longest chain over any smaller chain. If two nodes broadcast different versions of the next block simultaneously, some nodes may receive one or the other first. When this happens, they work on the first one received, and save the other blockchain branch, in case it becomes the longest chain. The tie is broken when the next block is found, and one branch becomes longer and therefore dominates the priority of the remaining nodes. The nodes that were working on the shorter blockchain will then switch to the longer one.

New initiated transactions do not necessarily need to reach all nodes. As long as they reach many nodes, they will get into the blockchain. If a node does not receive a block, it will request that block when it receives the next block, having recognized that the prior block is missing.

## 7. Lightning Network and Raiden Network

GNEISS has integrated both BTC's Lightning Network (LN) and ETH's Raiden Network (RN) for instant, free, off-the-blockchain transactions. Both networks ensure that BTC or ETH is on the blockchain in the user's E-Vault before opening a network channel on LN and RN, which a user must have Tier 2 verification or above to access. Once a channel is opened, users can transfer funds immediately. The transactions will not show up on their respective public blockchains until the networks have been closed. Networks can be closed by clicking the lightning bolt icon in the top right corner of each wallet. Closing either LN or RN will require a blockchain transaction on their respective blockchain. During the confirmations and blockchain verification processes, deposited or withdrawn funds cannot be used until after enough verifications on the blockchain to ensure authenticity.

In order to close the networks, GNEISS matches the transactions of the open network channels, so when a single user closes their LN or RN open channel, they pay the lowest possible fee to hash their transaction onto the public blockchain. GNEISS also matches the transactions of the open network channels with any other users' accounts, which might have to be closed to reach an equilibrium of the blockchain. This may temporarily force other user's networks to close if GNEISS alone has insufficient funds to match the user's transactions. This forced closing will be temporary, including any funds locked up in the process, and shouldn't last more than a few minutes to a few hours if funds get locked up in the process of closing other LN and RN channels.

By utilizing LN and RN technology, GNEISS can offer instant free BTC, ETH, and other digital asset transactions which outcompetes Visa and Mastercard that charge merchants around 2% for each transaction. Not only will merchants save around 2% average by switching their electronic point of sales to GNEISS. They would also gain the benefit of having one of the easiest electronic payment platforms in the world. Users can download their own GNEISS or GNEISS Merchant app to access all the features of their E-vault. The GNEISS Merchant app is for users who have their own business and want an easy and intuitive point of sale system. A customer clicks the scan button on the GNEISS app, then scans the merchant's point-of-sales check out request to instantly see how much is owed and what digital assets are accepted by the merchant. If a customer doesn't have any of the coins associated with that merchant, then the GNEISS app still shows the option to sell coins the user has in his or her wallet for BTC and proceed as usual. Everyone must accept at least BTC as an option for payment. The merchant instantly receives from the digital assets transaction once the customer approves it and can reinvest it in any other digital asset if they wish.

## 8. E-Vault Incentives

The GNEISS network incentivizes users by offering the easiest, fastest, least expensive, and safest way to securely invest and trade digital assets online. Nonetheless, for the skilled market maker or investor, GNEISS offers the option to tax any digital asset and smart contract, either through transactions or a predetermined timely interest rate. By giving E-Vault investors and market makers the ability to tax the digital assets and smart contracts they create, the GNEISS network generates healthy competition. This creation of a global free-market allows market makers and investors to profit just as much, if not more, than any basic user who might be using the platform to store a couple digital assets and registrations.

As long as there are plentiful E-Vaults, competition alone will generate the lowest and most competitive fees of any current marketplace across the globe. GNEISS also offers a referral bonus to anyone who signs up another user using the referrer's own personal E-Vault. The referrer would then receive a 50% bonus of all the transaction fees generated by the new account. This bonus incentive includes any trading activity, transactions, or other GNEISS functions used while the account remains open. The bonuses will be paid out every Friday at 5:30 pm EST in GNEISS Coin.

In addition to the referral bonus or any of the profits made by market-making and investing, GNEISS pays out staking rewards to each user with a Tier 2 E-vault or higher. Each Tier 2 or Tier 3 E-vault gets one GNEISS staking coin, which cannot be moved or redeemed. This coin is held in escrow in a user's E-vault and receives 10% of the mining payouts proportionally given out to all the GNEISS staking coin holders. This way, creating an account with Tier 2 verification or above will start earning that user free GNEISS coin. Also, verified marriages on GNEISS will earn the bride and groom one more GNEISS staking coin to encourage the families that create the GNEISS ecosystem.

## 9. Distributed Autonomous Organizations (DAOs)

One of the many advantages of having ETH's blockchain being Turing complete is a user using the proper ETH Smart Contract Functions and Fields can create a digital company. This is regulated by the ETH blockchain and its DAO's Smart Contract Functions and Fields programming. How a typical DAO would work is by assigning roles and permissions based on those roles. For example, a DAO could program an assignment of all funds to the CFO and require the CEO to grant permission for their use by the CFO. Another example would be if three friends wanted to set up a joint digital asset bank account and have either 2/3 or 3/3 signatures to make a withdrawal or purchase. This eliminates the necessity to trust just one individual with all the funds or control over the account.

GNEISS takes advantage of the technological opportunities DAOs present by giving our users many options in how they structure their company and adding on to smart contracts. A typical GNEISS DAO will first have a registered company to pair with, and then can set up a ERC20 token for their DAO's main currency or shares. Once completed, the DAO could stack up other smart contracts or even other DAOs if there is a parent company with multiple child companies. Another smart contract that would work well with DAOs are digital asset airdrops which send a determined amount of coins to certain chosen E-vault or ETH addresses. Thus, using airdrops a user could easily payout dividends to individuals that own their DAO's shares. Many other smart contracts offer a choice of FinTech services—all backed up and processed by the ETH blockchain.

## 10. Privacy

Traditional banking used to be somewhat anonymous during the Gold Standard days. Paper currencies and precious metals secured customers' privacy because no data was recorded after trading unless it was documented by the involved parties or banks. However, the technical revolution allowed banks to integrate their practices with computers, and eventually, the Internet. With Internet banking, third parties could offer convenient systems making personal online banking effortless, though at the cost of customers' privacy. Every debit and credit card transaction is now recorded along with the exact details of that transaction. Some third parties even resell this information for marketing purposes, which is clearly *unethical*.

The GNEISS platform resolves this problem for consumers by offering the same convenience to which they've grown accustomed too, while maintaining users' privacy and anonymity. This anonymity is accomplished by using roughly the same blockchain technology as BTC transactions. Each E-Vault has a unique randomized address, GNEISS address, which is the E-Vault's identity. E-Vaults that wish to be public can identify themselves with their unique GNEISS address. E-Vaults that wish to stay anonymous need only identify themselves with their GNEISS user name.

For extra anonymity, when E-Vaults transact coins or contract with each other, they have the option to make such transactions public or private. Thus, GNEISS provides multiple layers of privacy and anonymity for every E-Vault user.

## 11. Know-Your-Customer, KYC, and Anti-Money Laundering, AML

Authorization to use the GNEISS system is governed by permissions. Each GNEISS user in the system has to have access granted to them by the GNEISS platform, which is controlled by its user. Permissions allow for validating, adding, or removing any GNEISS users. Each functional smart contract can create and manage contracts that make up the system. In order to become functional, a smart contract must satisfy the requirements set by GNEISS, which is the KYC/AML and completed User Agreement. Once these are satisfied, the permissions are updated and the GNEISS user's smart contract becomes active.

There are three different Tiers to a user's E-vault which has set permissions: Tier 1 can create ERC20 tokens along with their additional smart contract functions, using GNEISS as a digital asset wallet, with full registration service. Tier 2 contains all of the features of Tier 1 and is allowed to trade digital or registered assets on the GNEISS marketplace, open/close the Lightning and Raiden Network, yet is limited to trading only derivatives, options, and insurance. Tier 3 can access everything on the platform, which includes the creation of all smart contracts including derivatives, options, and insurance.

When a user defaults on a smart contract with a value of 0.01 BTC or more, the user's contact information and identity are sent to the related investors. After they receive the clients info they can, for example, then proceed to sue in the relevant local jurisdiction with all the legal courtroom materials to easily win the case. **GNEISS is not responsible for any data transferred because of a smart contract default.** When a user is liable for paying funds to an investor, for example borrowing money in a P2P loan, it is wise to meet their obligation and pay the funds due. If the user defaults it is possible for their identity and contact information to be sent to the investors, they may be subject to legal action or any other remedies the investors choose, and their GNEISS credit score will drop.

The GNEISS credit score will allow for those who chronically default to be removed from the system. See information at <https://gneiss.io/pages/fees/>. The credit score points are awarded or taken away from the following credit score variables: Initial Sign Up/E-Vault Creation, Basis ID verification, Tier 3 Verification, Criminal Record, Loans, Secured, and Account Balance

## 12. Conclusion

The GNEISS platform is the first digitally encrypted, fully automatic, peer-to-peer exchange system, which allows users to accomplish the creation, transaction, and destruction of any digital asset and smart contract within a simple website. Anyone with an Internet connection can create a personal E-Vault, trade any digital asset on GNEISS's platform and the ETH network, and feel safe knowing their investment can be fully collateralized. This is a great advancement in financial instruments. We believe this is the future and we are on the forefront of development and implementation of digital financial institutions.

Like the discovery of fire, the invention of the wheel, and later, the airplane, the creation of a truly decentralized monetary and banking system separately sovereign from any nation's government should be seen as a major stepping stone in human technological evolution. The separation of money from the state is the most important thing citizens can do to fight any authoritarian government, whether that government has the structure of socialism, communism, or fascism. In the past, this was done by trading gold and silver. However, in the modern era, a more complex, yet accessible, financial system is necessary. Thus, GNEISS aims to fill this void by offering to the people all the power of Wall Street while providing a decentralized P2P free market blockchain platform that boasts the highest security while allowing users to have instant, verified, and free transactions. GNEISS is dedicated to promoting fair business standards and practices around the world.

GNEISS is powered by the most advanced blockchain technology, which means its smart contracts are enforced by complex algorithms, rather than relying on the trust of third parties. GNEISS users also can take full advantage of ETH's Turing Complete architecture by using GNEISS's smart contract templates or by coding on their own smart contracts. By properly utilizing smart contracts, a one could essentially build an online "trustless economy." GNEISS provides this through a secure and easy-to-use platform for all users as an alternative to the traditional banking sector, bringing global financial freedom, fair credit history transparency, and marketplace equality to all.



# Glossary

**Bitcoin:** The first digital currency built upon an algorithm that utilized blockchain technology and encryption techniques to generate units of currency and verify the transfer of funds, independent of any central bank. Each transaction has the ability to add a short note as well.

**Blockchain:** A complete record of every executed transaction and smart contract, which is stored in a public ledger (i.e., the blockchain). The blockchain database is created by collaborating online computers which run the same software nodes. A specific amount of transactions are stored in a block, and each one is then verified and hashed into blockchain nodes which synchronized computers are running. The blocks accumulate in a linear, chronological order to compose the entire blockchain.

**Decentralize:** The delegation of money, power, and/or governance from a central authority to local automatic technological computational node. Multiple nodes verify each other through blockchain or other algorithms which keep a shared mutual digital ledger or data.

**Decentralized Autonomous Organization (DAO):** A company or organization represented by rules, permissions, and keys which are encoded in a computer program that is transparent on the blockchain and to the public. DAOs can be controlled by shareholders and not influenced by any government institution. All financial transactions being recorded and programmed rules are maintained on a blockchain.

**Digital Asset:** A digital representation (or token) of a GNEISS user's electronic or physical asset in which encryption techniques are used to regulate the generation of units and verify the electronic transfer of assets.

**Ethereum:** A public blockchain platform that powers smart contracts via apps created by developers around the globe. ETH's computing platform is Turing Complete, meaning it makes up a decentralized virtual machine that can execute any peer-to-peer smart contracts.

**E-Vault:** The GNEISS user's password-protected account, which interfaces with the user's BTC and ETH wallet, to perform all the banking, sending, and smart contract transactions. Later versions of the GNEISS platform will give users the option to privately handle their own wallet keys at the user's risk, and swap out the BTC/ETH addresses for new ones while maintaining the same username and E-Vault rating system.

## Glossary Continued

**Free Market:** An economic system in which prices are determined by unrestricted competition between privately owned businesses. Governments may regulate free markets while they are still considered to be true “free markets,” but they cannot assign possible advantages or disadvantages to any particular individual participating in the exchange of goods or services.

**Smart Contracts:** Computer protocols that facilitate, verify, or enforce electronic contracts between peers. Every E-Vault, digital asset, or electronic contract is considered to be a smart contract. With smart contracts, developers can create truly free, peer-to-peer marketplaces, store registries of debts or promises, move funds without the cost or risk of third-party (middle man) entities, and much more. Rather than relying on trust of third-parties (such as banks or financial institutions), smart contracts rely on algorithms, which take risks (such as fraud) out of the equation.

**Smart Contract Fields:** The fields of any smart contract store integers, strings, and data. Utilizing all three of these, any smart contract can be given specific properties to accomplish functions that any normal computer can do, and more. All smart contract data is stored on the ETH blockchain for security, auditing, and optional transparency.

**Smart Contract Functions:** When a GNEISS smart contract is created, functions are linked to the created contract. Only the users can call functions on smart contracts with the allowed permission.