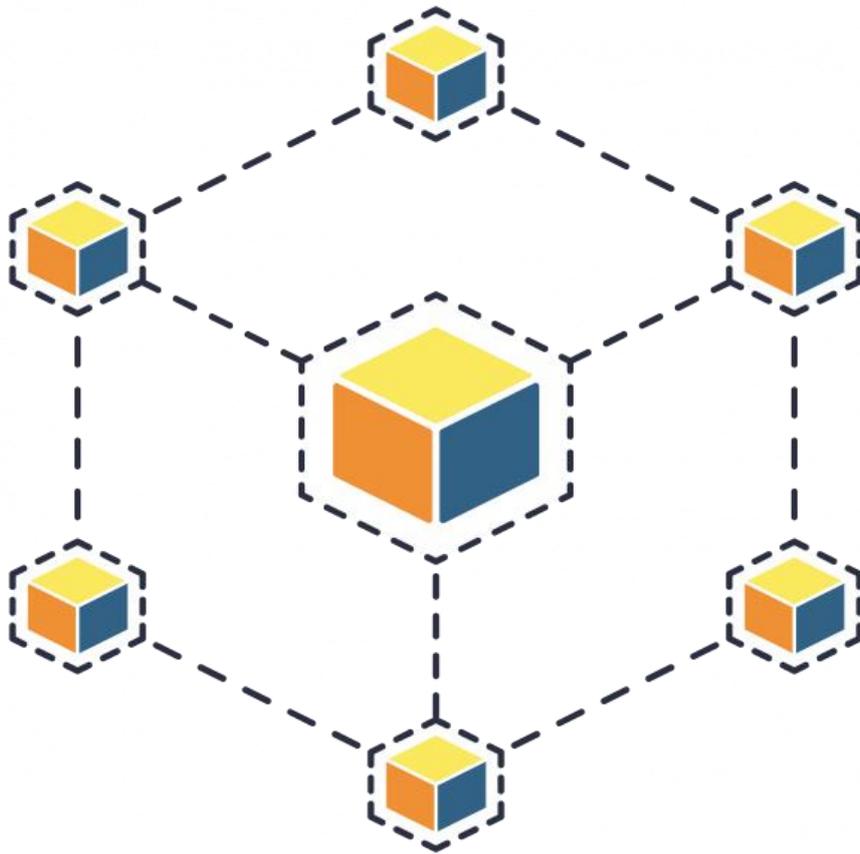


DGLD

*PHYSICAL GOLD CUSTODY MEETS THE
BITCOIN BLOCKCHAIN*



**Investment Grade Gold,
Allocated in Swiss Vaults,
& Secured Using Bitcoin.**

Introduction	3
Gold in the 21st Century	5
DGLD Key Characteristics	6
The Technology Stack	7
Creations & Redemptions	9
Storage and Verification	9
Fees	10

Disclaimer:

This whitepaper provides an overview on the commercial scope and the underlying technology of the DGLD Project. The information shared in this whitepaper is not all-encompassing or comprehensive and the whitepaper does not in any way intend to create or put into implicit effect any elements of a contractual relationship. All rights and duties of all involved parties are exclusively defined by the General Terms and Conditions (T&Cs) available here: <https://dglD.ch/assets/190911-dgld-general-terms-conditions-1.0.pdf>.

Introduction

Techniques for investing in gold have become increasingly digital. As a result, gold investment is now more dependent on institutions and intermediaries than ever before. This is problematic as gold is often seen to derive its value *as a hedge against systemic failure*.

Gold is an inefficient asset, stuck somewhere between an unusable store of value and a heavily intermediated investment. Therefore, gold, the *ultimate physical bearer asset*, requires a digitally disintermediated format to rekindle its role as an independent store of wealth and to be useful in today's digital society.

Bitcoin, the *ultimate digital bearer asset*, and blockchain technology can provide the network rails and the technology for gold to maintain the independence of physical gold, while benefiting from the value and benefits of digitization.

In this paper we introduce **DGLD**, a digital bearer asset that is 100% backed by physical gold. **DGLD** represents direct ownership of the underlying. **DGLD** restores the independence of physical gold (which can be redeemed at any point) with the convenience of digital money that can be transferred, fractionalized and secured securely and with ease.

DGLD is a product of Gold Token S.A. (GTSA), a hard-asset tokenization and issuance company established and operating out of Switzerland launched by a Consortium of trusted partners in their respective fields of gold, digital assets and blockchain.

The Consortium is comprised of the *MKS PAMP GROUP*, the *CoinShares Group*, and *Blockchain.com*. Each bringing a vast wealth of knowledge, experience, and resources to GTSA.

- *MKS PAMP GROUP* – One of the world's most trusted gold dealers, specializing in all aspects of the precious metals business, covering refining, producing, and trading. Established in the early 1980s, the group prides itself on the highest quality standards based on solid foundations of honesty, integrity and trust. With 700 employees across 15 offices in 12 countries, covering the world's major bullion markets. This breadth of experience and knowledge makes the MKS PAMP GROUP the ideal organization to serve as a founding partner in **DGLD**. The physical gold represented by **DGLD** in circulation is stored in the GTSA cage at the PAMP vaulting facility in Castel San Pietro, Switzerland.
- *CoinShares Group* – Pioneering new approaches to digital asset investing, and collectively, the Group enjoys the world's longest track record of regulated investment

management in digital assets. Managing approximately \$1 billion of assets on behalf of a global investor base, with offices in London, Jersey, and New York, the Group creates, issues, and manages investment products that serve tens of thousands of investors, including institutional and accredited investors. Providing regulated, risk-managed investment products and services by which investors can participate in the growth of a new asset class, and a new technology paradigm. With a proven track record, CoinShares has the breadth, depth, and scale needed to provide investment products and services to the world's most sophisticated investors

- *Blockchain.com* – connecting the world to the future of finance as one of the most trusted and fastest growing digital assets companies. Helping millions across the globe – from individuals to the largest institutions – get easy and safe access to cryptocurrencies. With more than 45 million wallets across 140 countries, Blockchain.com brings the distribution rails, exchange trading and digital custody for **DGLD** to be transported and stored.

This Consortium of precious metals and digital-asset partners gives **DGLD** the best capabilities and resources to solve the fundamental issues that gold faces.

Digital Gold

DGLD has all the benefits of physical gold; it provides the benefits of a safe-haven asset and serves as a hedge against both inflation and financial instability. But it does all this in a digitally disintermediated format that is mobile, liquid and secure.

As a result, **DGLD** represents significant breakthroughs for one of the world's most valuable commodities. It eliminates the disadvantages of physical gold by removing the consequences of storage and the barriers to its transferability.

A Better Stablecoin

Current stablecoins, especially those backed by cash, carry substantial risks in terms of intermediaries, regulatory interdiction and even risk of default.

Most stablecoins fall within the regulatory perimeter and control of the US banking system, meaning your assets can be frozen or the network shut down if the technology isn't compliant. Additionally, current stablecoins lack transparency around the actual underlying assets and the partners.

For holders of digital assets who are seeking a currency independent of fiat risk and sovereign control, it makes little sense to use stablecoins that have those same problems. **DGLD** allows users to store and transact in their own “gold standard” which is legally operated entirely outside the perimeter of the banking system.

Scalable Structure

The federated sidechain which **DGLD** operates on provides users with a fixed, low-cost and fast payment rail. Along with a robust technological structure that is regulatory compliant and fulfils all required duties.

Having 1-minute block times at a fixed price allows for trust and predictability – users will never fear of congestion or unpredictable transaction fees. Additionally, only whitelisted wallets, where the owners have been ID verified, can own and transfer **DGLD** outside of an exchange hot wallet which fulfils regulatory duties in a self-sovereign way.

Ultimately, **DGLD** combines the infallible longevity of gold as a stable store of wealth, with the robust security and transparency of the Bitcoin network. Best understood as a digital proof of ownership of allocated gold, **DGLD** leverages the power and immutability of the Bitcoin blockchain to provide convenient access to gold with the independence of physical ownership, and the 24/7 nature of digital assets.

Gold in the 21st Century

Gold is one of the most valuable commodities for individuals and investors around the world. The most precious of all metals, gold has been treated as a safety net in times of financial uncertainty, often immune from wild currency fluctuations or economic downturns. It has an unparalleled reputation as a secure investment.

Owning gold can be complex, though. In many cases, you may not actually own the physical commodity itself. Many individuals consider investing in an exchange-traded fund (ETF) which tracks the relative value of gold at any given time. Other products may give the impression that you own your stocks of gold, but suffer from additional, inconvenient layers of ‘middlemen’ which create distance between investors and their asset. With additional layers come additional uncertainties around security, accessibility and geographic/regulatory concerns.

If you are investing in gold as a hedge or safe haven –but rely on middlemen whose bottom line is tied to the market you are specifically hedging against– then you may be defeating the object of investing in gold in the first place. Because in the midst of a crisis, those very middlemen may be frozen, inaccessible or otherwise predisposed. These traditional solutions are neither convenient nor practical for individuals or professionals, particularly in an unpredictable economic scenario when easy access to a physical store of gold may be of paramount importance.

From Ancient Egypt to serving as part of a modern-day investment strategy, gold has been sought after and evolving in both form and utility for centuries. At GTSA, we are less interested in gold's past, but very much focused on its future. We are focused on the role gold will play in a 21st century financial world rife with uncertainty and a monetary system damaged by central bank policies, and the opportunities provided by the disruptive developments in blockchain and digital assets.

DGLD Key Characteristics

- **DGLD** is a digital proof of ownership of allocated gold, physically held in a vault in Switzerland.
- It is secured using the Bitcoin blockchain and GTSA's unique technology stack
- **DGLD** is a natural, digital evolution of gold ownership format (coins, bars, ETFs, now tokens)

Each **DGLD** token represents ownership of 1/10th of a fine troy ounce of gold, vaulted in Switzerland. Prior to the creation of a new token, London Bullion Market Association (LBMA) certified London Good Delivery gold (providing accreditation and certainty for the most sophisticated participants in the gold market) is allocated and placed in PAMP's Swiss vaults. Then, **DGLD** representing that specific gold is created and sent to a **DGLD** whitelisted wallet. This simple approach renders gold both digitally accessible and physically redeemable.

At all times and publicly available on our block explorer, **DGLD** can be mapped back to a specific, vaulted gold bar, providing direct ownership and transparency. Furthermore, **DGLD** holders can independently verify and prove their unique ownership of the allocated vaulted gold without relying on any third party.

Although each token represents 1/10th of a fine troy ounce of gold, **DGLD** is divisible into fractions of 8 decimal points (0.00000001 - 100 millionth of a token), allowing for gold exposure above and beyond what is possible with physical gold or gold exchange traded products. In addition, **DGLD** holders with the equivalent of a ca. 400 troy oz. (12.5kg) gold

bar will be able to redeem directly from GTSA for physical LBMA gold bars. Holders with less than 400 troy oz. of **DGLD** can redeem as little as 1g of gold via a 'swap' with the MKS PAMP GROUP subsidiary, Gold Avenue.

With its innovative technical approach, **DGLD** can be accessed from a digital wallet at any time, allowing investors to access their investment on their terms. No third parties, no waiting, no intermediation, 24/7, 365 days of the year.

The Technology Stack

The idea behind the technology which **DGLD** operates on was to develop a sidechain that would ensure scalability to be possible by always complying with regulatory frameworks in a frictionless and independent manner. As well as to ensure users to have the direct ownership in gold and to have self-sovereignty and flexibility.

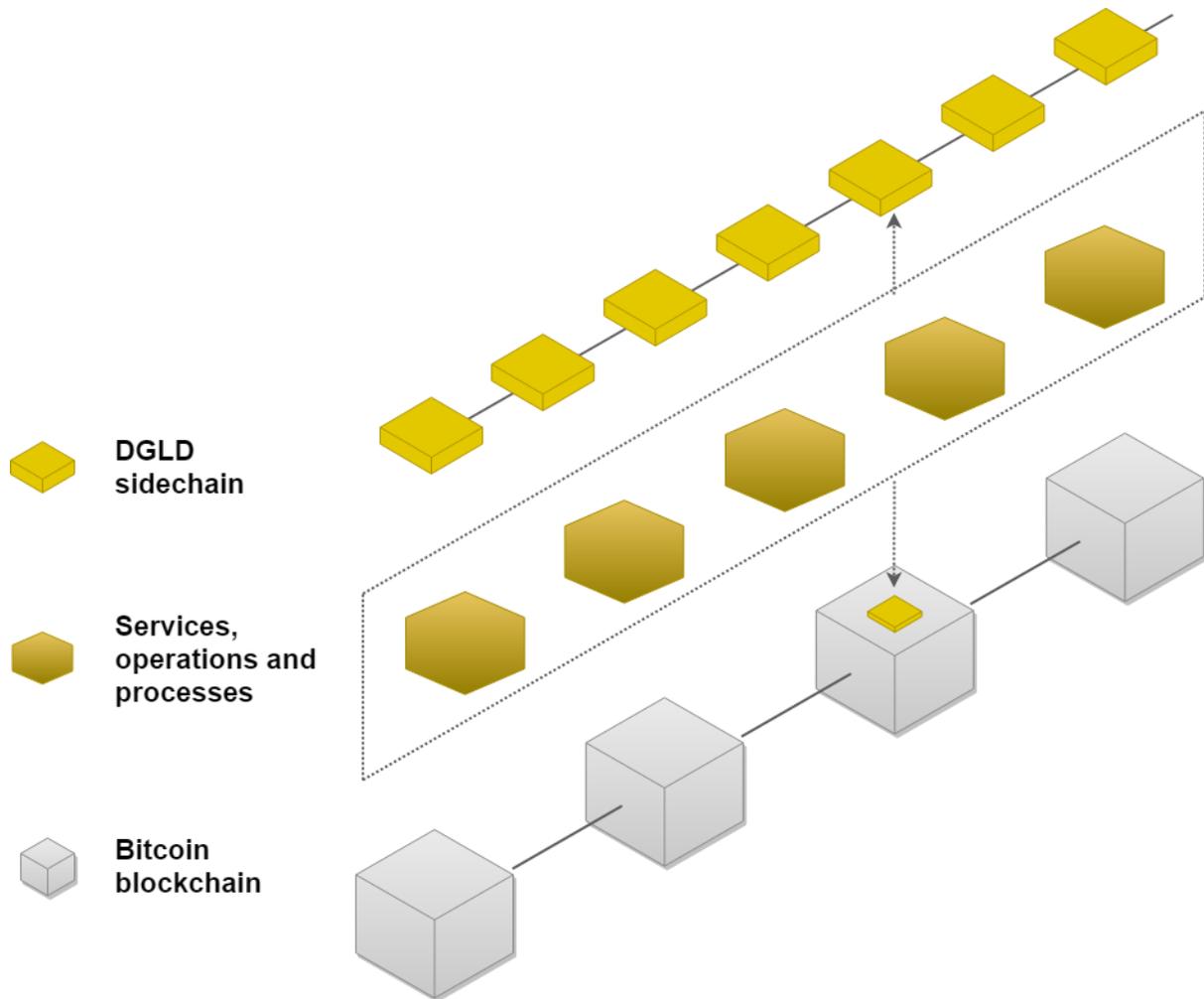
As such, the technology was structured to include certain policies to incorporate regulatory requirements and ownership rights. The Consortium, having the best experience with regulation in digital assets and gold, engaged with regulators and lawyers on to get feedback and guidance on building and subsequently developing the product. The combination of this led to a technology stack and product which complies with regulatory obligations and is able to scale across jurisdictions while being cheap, fast, flexible and maintain 100% direct ownership in gold.

The **DGLD** technology stack has three layers which provide the optimal combination of security, efficiency and user experience:

1) The first layer is the **Bitcoin blockchain**, which is the root of the trustless immutability of the **DGLD** ledger and enables all **DGLD** token holders to independently verify and prove their unique ownership of specified vaulted assets. The ownership of tokens and the mapping of physical gold (amongst other things) is attested to the Bitcoin blockchain via the Mainstay protocol which enables a proof of unique history of **DGLD** transactions and prevents the possibility of double spending of **DGLD** without relying on trust in the issuer or any other third party.

2) The second layer is the **DGLD sidechain**, which is a federated blockchain controlled by the issuer, but with immutability of the transaction history guaranteed by Bitcoin's proof of work. User wallets hold keys for **DGLD** tokens on the sidechain, which represent proof of ownership and enable **DGLD** tokens to be transacted peer-to-peer. The **DGLD** sidechain is publicly verifiable against the Bitcoin blockchain.

3) The third layer is the **operations and processes of the token issuer and custodian, GTSA**. This involves the responsibility for securely storing the gold, and securely issuing the corresponding tokens representing gold ownership. GTSA is also responsible for authenticating the mapping between on-chain tokens and vaulted assets, and for processing gold asset redemptions. In addition, GTSA is responsible for on-boarding users and maintaining AML and KYC standards.



These three layers underline four key features:

- 1) ***The sidechain record cannot be changed:*** it is linked to the Bitcoin blockchain, which is backed by a global, decentralised Proof of Work consensus mechanism;
- 2) ***The sidechain provides enhanced control over KYC and AML:*** The **DGLD** sidechain has whitelists and blacklists permissions, providing greater control over KYC and AML;
- 3) ***The sidechain is secure:*** the technology stack prevents double spending and forking;

4) The sidechain is scalable: there are few network constraints on transactions.

The 'trustless' immutability of the Bitcoin network combined with the highly secure and verifiable processes linking the physical gold to **DGLD** provides the strongest guarantees of ownership, ensuring only you can transfer, redeem or access your gold.

The **DGLD** blockchain ensures the trustless immutability of the record of gold ownership by linking to the Bitcoin blockchain via CommerceBlock's Mainstay protocol. The use of the Mainstay protocol ensures that **DGLD** holders can independently verify and prove their unique ownership of the allocated vaulted gold without relying on any third party: this means that ownership of allocated gold cannot be re-assigned or double-spent by anyone, including by Gold Token S.A.

In order to double-spend **DGLD**, the Bitcoin blockchain would have to be rolled-back and re-written, which is practically impossible due to its global Proof-of-Work consensus mechanism, and as well roll-back the **DGLD** blockchain, by taking over the block-signing nodes.

Creations & Redemptions

DGLD has 4 essential features to issuing and redeeming tokens:

- 1) ***Tokens will only be issued against delivery of gold:*** Tokens can only be issued once the recipient has deposited the necessary amount of gold with PAMP. This ensures that the tokens are physically backed by gold at all times.
- 2) ***Tokens can be created on the same day:*** Participants can purchase gold directly from MKS PAMP GROUP and receive the issuance of a token on the same day;
- 3) ***Tokens can be redeemed against delivery of physical gold:*** Since each token represents ownership of allocated gold and is mapped to the gold held in the PAMP vault, holders can redeem the token directly against the delivery of physical gold.
- 4) ***Tokens are securely and verifiably issued and redeemed:*** The issuance and creation of tokens on the **DGLD** sidechain is configured with multi-signature permissions, where a number of separate parties are required to sign an issuance transaction. Additionally, the mapping table and signed vault deposit receipts are made publicly available which users can use to verify the underlying gold matches the circulating supply of **DGLD**. This is combined with bi-annual audits of stock and **DGLD** circulating supply.

For more information on creation and redemption, please feel free to contact GTSA for a full process and timeline at admin@dglD.ch.

Storage and Verification

For any gold investor, one of the most pressing concerns is the security of their physical investment. With **DGLD**, you not only have the digital gold in your wallet, protected by the power of the Bitcoin blockchain; but the physical gold is also safely stored in highly reputable Swiss vaults that are maintained by one of the leading and most trusted industry groups, the MKS PAMP GROUP.

MKS PAMP GROUP is a renowned leader in the precious metals industry, providing financial trading services in all major bullion markets. Today, PAMP is one of the world's leading bullion brands. In everything they do, PAMP has established a reputation for bringing best-in-class quality and service to their range of precious metal products and gold trading services.

Gold should always be stored in the most secure and safe location possible. Alongside PAMP's high-class reputation, ultra-secure vaulting facilities, auditing systems and insurance protection, Switzerland is recognized as the most secure place to store gold.

DGLD represents a specific amount of the allocated gold sitting in PAMP's Swiss vault. So, the gold exists and is stored inside a physical vault, while being usable at your fingertips/the click of a button. The flexibility of owning both physical and digital versions of your gold is further enhanced by top-level security for both. Reliable partners like the MKS PAMP GROUP, combined with the digital security of Bitcoin's blockchain technology - mean you can rest comfortably knowing that you can access your gold 24/7/365 as well as having the most secure and trusted way to store your underlying.

The full list of allocated bars backing **DGLD** is digitally signed by the vault operators and can be directly and independently cross-referenced with **DGLD** token mapping. Every token that is issued is directly mapped to the LBMA Good Delivery bars held in PAMP's vault. Users can see this on the **DGLD** block explorer website at the following link:

<https://explorer.dgld.ch/assets>.

Fees

GTSA accrues a fee that amounts to 1% of the Token Gold per year. GTSA receives this fee in the form of new **DGLD** issued according to the inflation scheme as described below.

For instance, at initiation 1 **DGLD** will represent a specific mass of gold and be divisible into fractions of 8 decimal points. The mass of gold which 1 **DGLD** (or fraction thereof) is representing will then be reduced at a specific rate of 1% per year and the outstanding amount of gold will be accounted for by the issuance of a new **DGLD** to GTSA (issuance of the new **DGLD** will be automatically performed every 480 blocks).

Gold Token Ratio

Each token is worth a set amount of gold, known as the Gold Token Ratio (**GTR**). This ratio determines the mass of fine gold (in ounces) that can be redeemed for 1 **DGLD** token. It is defined as follows, with time $t = 0$ at the launch of the blockchain:

$$GTR = 0.1 / (1 + r)^{(t/N)}$$

Where,

r is the annual inflation rate;

N is the number of 8 hours periods in a year (i.e. $3 \times 365 = 1095$).

The annual token inflation rate (*r*) is defined as:

$$r = 1 / (1 - f) - 1$$

Where,

f is the annual fee (demurrage) rate (i.e. with $f = 1\%$ then $r = 0.0101010101\dots$).

DGLD Transaction Fee

For each transfer of **DGLD**, a transaction fee of 0.0005 **DGLD** will be applied.

The transaction fee is applied to mitigate the risk of a DDoS (Distributed Denial of Service) attack on the network by making it punitive economically to mount such an attack.

DGLD Redemption Fee

Redemption fees will be applicable, at customary market prices, for delivery of physical gold.

For more information, visit <https://dglD.ch>