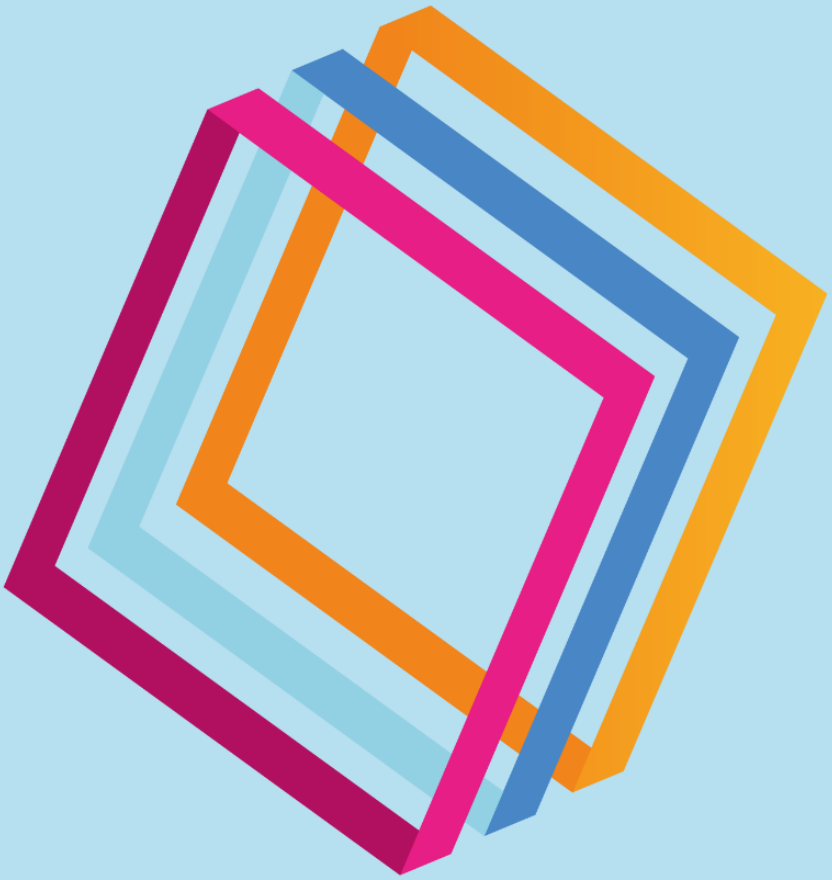
v1.0 28/09/2022

Guilds

by Uncommon Digital



Create or join
a trustworthy list
of trustworthy people.

Join Guilds

UNCOMMON DIGITAL

NGI TRUBLO

SIMBULA

cifa FOR PEOPLE

Abbreviations	*Definitions*
BIP	Bitcoin Improvement Proposal
DAO	Decentralized Autonomous Organization
DAI	Stable currency minted by MakerDAO finance tools
DApp	Decentralized Application
DID	Decentralized IDentifier
EIP	Ethereum Improvement Proposal
ERC	Ethereum Request for Comments
EVM	Ethereum Virtual Machine
FIAT	Fiat is the money with legal tender regulated by central banks.
IPFS	Inter Planetary File System
MVP	Minimum Viable Product
PLCR	Partial Lock Commit Reveal
POC	Proof of Concept
SSI	Self-Sovereign Identity
TCL	Token Curated List
TCR	Token Curated Registry
Web3	API between web clients and Ethereum nodes
1p1v	One-Person-One-Vote
$GLD	GUILDS Token

Throughout the text we use the all-capital word GUILDS to refer either to this project, to the network or to the protocol itself. We use the form with the first uppercase letter “Guild” to refer to a single instance created and managed by GUILDS protocol, and the form “guild” for the meaning of the word according to the English dictionary.

GUILDS in a Nutshell

Online reputation has become an immaterial asset of increasing importance in the professional world. The course of our life's career depends on it: indeed, we can sometimes make up for the lack of specific skills or experiences by being able to attract endorsement from other reputable individuals in our field of competence. Therefore, reputation can be ascribed to as a currency we trade in order to leverage our professional circles around us.

High caliber individuals, renowned professionals, famous artists and influencers of any sector are always in search of **means to monetize their reputation** and personal branding. GUILDS provide an alternative way to do that by using the blockchain technology and **smart contracts to model an interaction system where actors can endorse each other**.

The GUILDS project is an economically efficient alternative to the reputation solutions offered by centralized applications (Upwork, Fiverr, TripAdvisor etc.) for any existing field of competence. The protocol provides tools for a **transparent, immutable and auditable reputation** backed by the game theory of **Token Curated Lists** (TCL) or Token Curated Registries (TCR)[1]. The blockchain-based database prevents manipulations by single entities or centralized authorities, while enabling the portability and the verifiability of professional identities.

GUILDS is an extension of the idea behind TCL. **A Guild is a curated list where the items listed are the same members curating the list**. The founders of a Guild are publicly endorsing the listing by listing themselves as first items in the list and signing the on-chain transaction that will mint the Guild's tokens.

Four user types can be interested in a Guild:

- High caliber individuals/groups/SMEs who are incentivized to establish a new Guild in order to free their community's reputation mechanisms from centralized service providers and/or to monetize their own reputation.
- Similar professionals who desire to be included in such lists, become affiliated to the high reputation founders and receive a social proof of their profession (similarly to how music artists may receive a reputation boost by having their songs added to curated playlists with a lot of followers).

[1] https://hackernoon.com/what-are-token-curated-registries-and-decentralized-lists-d33fa42ba167

- Consumers and clients who want to deal with trusted professionals and are confident with the selection processes and vetting in a Guild.
- Small traders whose desire is to increase the price of the tokens they hold, therefore care about the high reputation of a Guild.

GUILDS as a protocol is governed by the $GLD ERC20 token. All $GLD holders have voting power over the protocol decisions (new Guilds' proposals) and future implementations, either via Governor contract or signaling.

At the current design, GUILDS must be considered as a stand-alone tool, not intended to offer any other services (e-commerce, payments etc.) other than the ones strictly connected to listing and dispute resolution.

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INTRODUCTION AND BACKGROUND

The online reputation problem

The pandemic linked to COVID-19 has forced the world economy to resort to remote work. A large amount of small B2B and freelancing transactions is happening through centralized freelancing job boards like Fiverr, Upwork and few other incumbents. Such marketplaces dictate conditions, fees, money-retain policies, and among the others reputation.

Corporate Control of Reputation _ No matter how vast your expertise is, once you join a platform you restart your profile from scratch, and the reputation is built inside someone else's land (servers), under someone else's terms. At any moment your account can be closed or your reputation score reset by a centralized action.

Biased Dispute Resolution _ One of the most significant benefits of using a freelance platform is supposedly the idea that disputes between clients and freelancers can be resolved quickly in some authoritative manner. However, these platforms are designed to protect the client first because clients are the source of the financial flows, and the platforms themselves live directly on top of this income.

Reputation is not portable _ No matter the level of professional experience accumulated by a professional in real life, once she joins a platform, she is an anonymous Jane Doe with no expertise. A transfer of reputation is not possible. Each platform has its own rating algorithm; therefore you cannot transfer your reputation from one to another.

Bad Quality of Projects in Job Boards _ Clients can usually post new job positions for free, which ends up in platforms flooded with low-quality projects with low budgets.

State-capture Verification _ The recent controversial "Online Safety Bill" by the British Conservatory Party lawmaker John Penrose[2] proposes that the

[2] https://publications.parliament.uk/pa/bills/cbill/58-03/0121/amend/onlinesafety_rm_rep_0706.pdf

government forces online platforms to maintain a score of how truthful a user is, determined by their past statements.

PROBLEM	CHALLENGE	HOW GUILDS BRIDGE THE GAP
Lift professionals from Web2 Platforms' rules	Decentralize those conditions	Building a system where reputation is collectively governed
Reputation is not portable across marketplaces	Provable achievements	Building a solution where reputation is an attribute of the user and portable outside the platform
Race to the bottom	Create incentives to stop the race to the bottom	Rethinking the model to vet participants and drive users to invest in good projects
Dispute resolution is skewed and unfair	Have fairer dispute resolution by excluding centralized Platforms	Creating a self-regulating lists where members have incentives to keep the list's reputation clean
Centralized platforms charge massive commissions	Remove the need to be inserted in those platform's reputation systems	Creating economic incentives for reputable individuals to start their own reputation groups and extend those incentives to all participants
Centralized platforms are prone to vulnerabilities like fake reviews, sybil attacks etc	Create reputational incentives for players to give fair reviews	Strengthening the requirements for users to give reviews and give them economic incentives to become honest curators of an entire ecosystem
State capture on online platforms	Address the State concerns without giving up on the free internet	Preventing a top-down governmental control on social network by offering transparent, immutable and verified bottom-up reputation systems

TABLE 1 _ Summary of challenges and needs

THE GUILDS PROTOCOL

The concept of "Guild"

Decentralization is a multi-facet global movement that found in Web3 its brightest momentum, while still showing other trends such as local economic districts, local currencies, the rise of coops and consortia as meaningful phenomena. In this context, the revival of the old concept of guilds seems to be one of the imminent trends on the innovation horizon: onboarding them into web3 could turn out to be one of the most disruptive social innovations of the years to come. In order to fully grasp the scope of this disruption, we need to look back at guilds' original role as "*associations of craftspeople or merchants who would control the practice of their craft in a given town or region*" [3] and explore their many functions across the different ages: it will help us design their new role in the digital era.

Creating a Guild

In order to initialize a new Guild, one must obtain **$GLD**[4], the tokens of the GUILDS Protocol, and **submit** the new Guild's idea to the $GLD holders' community by staking a given amount of $GLD. If, during a probation period, no $GLD holder challenges the proposal[5], the Guild is ready to be initialized. This step is to ensure the financial viability of the Protocol as well as to grant the community voice over the creation of new Guilds.

A **Guild can be initialized** by any wallet or EOA (Externally owned account)[6]. Alice is a reputable individual in the field of Tech Law in Paris who just got her Guild proposal "Tech Lawyers Paris Guild" approved by the $GLD community.. She mints a Total Supply of $TLP tokens (Tech Lawyers Paris) eg. 1.000.000,00 of $TLP .

[3] https://en.wikipedia.org/wiki/Guild

[4] for $GDL token distribution information check: https://theguilds.io

[5] Proposing new Guilds follows the same application rules of all the children guilds (p.13), with token holders staking $GLD to support or counter a new Guild's proposal whenever a challenge is raised.

[6] Multisig implementations are in the Roadmap

As the founder, Alice must setup the **basic parameters** of the newborn Guild:

- Maximum number of participants (fixed size Guild or infinite)
- Name, Symbol and total supply of the Guild's token
- Stake required for an application
- Approvals, if from any token holder or restricted to listed members[7]
- Timeframe for application voting
- Strategy for voting (stake[8])
- Membership deposit (if different from application stake)
- Application Expiration Mechanism (default IN or default OUT)
- Delisting process permissions (onlyMembers or TokenHolders)
- Delisting process voting strategy (stake, isListed, quadratic voting, secret voting)
- Members' visibility (public or hidden)
- Code of conduct (in some legal prose)

[7] a guild's voting process can be open to all token holders (guild members and not) or restricted to members only
[8] token-weighted voting based on staked amount (usually referred to as "balanceOf" in Solidity)

Simplified Flow for Guild creation

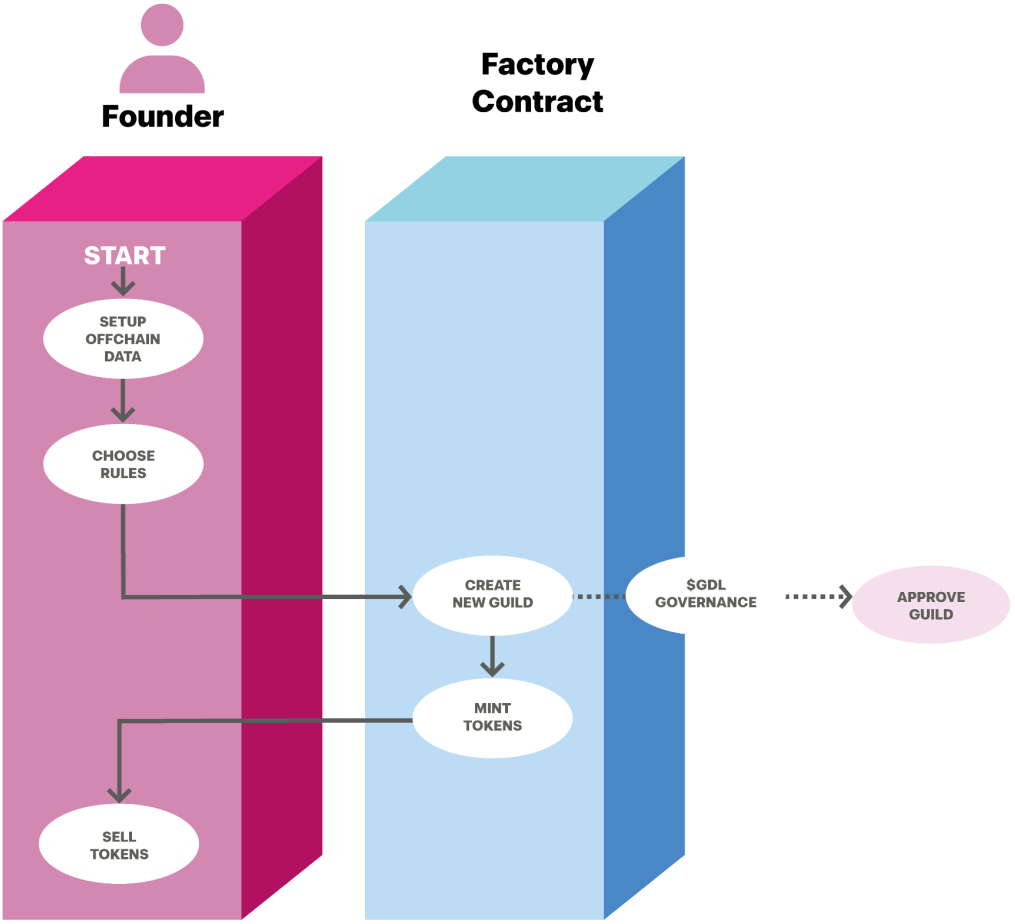

FIGURE 1 _ Simplified Flow of Guild foundation

Guild Tokens distribution

Now that Alice has initialized her TLP Guild, all native tokens of the newborn Guild are all in her hands: she needs to make them available to those other tech lawyers willing to join the list. The Guilds protocol should not pose any limitation on how the tokens are distributed and sold: however as a default strategy, with every Guild newly created, the corresponding token (ie. the $TLP) can be placed by founders in a liquidity pool against the governance token $GLD.

That being said all other options are still open:

Airdrop _ Alice can allocate $TLP to an airdrop contract where she can set the addresses eligible for the airdrop, together with the amount of $TLP that each address can claim. This procedure can turn useful for non-profits and collectives wanting to turn into a Guild without involving monetary transactions. For example, Alice could "green-list" certain addresses who execute preliminary actions meant to prove their good will and skills.

Token Sale _ this mechanism can be achieved via several ICO-empowering platforms and implemented via on-ramp widgets on any Guild's website. All AML/KYC procedures will be upon Alice to execute.

Liquidity Pool _ Another option is to supply the tokens into a decentralized exchange like Uniswap or Sushiswap, also called Automated Market Makers (AMM), and appreciating the token from this action. By creating a liquidity pool with e.g. 10k $TLP and 1 ETH, Alice would set up an exchange starting at 0,0001 ETH per $TLP. If the Guild gains traction, people will start exchanging ETH for $TLP to apply as members, pouring ETH in the pool and taking out $TLP, a process that will drive up the value of $TLP against ETH.[9]

Centralized Exchanges _ Finally, a fourth option is to make an agreement with a centralized exchange with FIAT on-ramp functionality, so that buyers can acquire tokens directly in the exchange launchpad undergoing all the required procedures like AML/KYC and the like.

[9] Risks in the tokenomics are strictly connected to the Guild's reputation: holders may be incentivized to dump a Guild's token when the Guild's reputation and token price are crashing as well as when they are experiencing a bull market. Keeping a stable and constant reputation in the Guild's growth is therefore essential for healthy Guild's tokenomics and will be an object of study during the Pilot Phase.

Guild membership, voting and list length

Assume Bob is a new applicant who wants to be listed in the Tech Lawyers Paris Guild. In order to proceed, he must hold the minimum amount of $TLP required to file a new application (e.g. 10 $TLP).

Bob will fill the application form and stake (lock) 10 $TLP. Once a new application is submitted, any member of the TLP Guild has the possibility to challenge Bob's application by opening a $TLP token vote. If no member challenges Bob, he will be accepted by default.
Similarly, any listed TLP member can be "challenged" by other members and undergo a **de-listing** challenge.

The voting strategies currently under implementation and study are the following:

Token Stake Weighted Voting (stake) _ This strategy allows Members of the Guild (or Guild's token holders - depending on the initial setup) to decide how many of their $TLP in stake they want to use for voting. Members can challenge Bob if they think he is not qualified to join. If the challenge is voted and the application is rejected, Bob's stake is slashed and credited to the challengers. If the challenge fails, any voter adverse to Bob will be penalized, the slashed tokens will be credited to him and his supporters[10] and his membership application will become successful. This voting strategy is public.

QV - Quadratic Voting (under study) _ This is a token-weighted voting strategy with a quadratic implementation that makes it more democratic and less plutocratic. Members of the Guild will be able to allocate voicing credits pro or against Bob's entry, but every additional credit they will decide to spend will cost them the square of $TLP: 1 credit = 1 $TLP, 2 credits = 4 $TLP, 3 credits = 9 $TLP and so on.

Secret Voting (under study) _ This strategy is to allow members of the Guild to vote without disclosing if they're voting for or against someone's membership. Secrecy is probably one of the central issues in on-chain voting due to its conflict with the transparent architecture of the blockchain, still the use of "secrets" combined to a deterministic YES/NO vote can turn out to be a viable

[10] gained tokens from the losing party will end up in a reward pool that will distribute them to all winning members, in proportion to the amount of tokens each staked to vote. The candidate's stake will be considered as a vote in favor, therefore also the candidate may gain tokens from losing challengers.

and satisfactory implementation for GUILDS' research purposes. More secure ways like zero-knowledge-proof technology will be investigated in the near future. This strategy can be thought of as an add-on to stake voting and QV.

Once Bob is listed in the Guild his funds are kept staked as his voting power.

In the example above the list is not limited to a **fixed number of participants**. Had Alice set the Guild's limit to, say, 100 participants, the Guild would allow new members normally until the 100th application and every new application after that point would be directly a challenger to another TLP member.

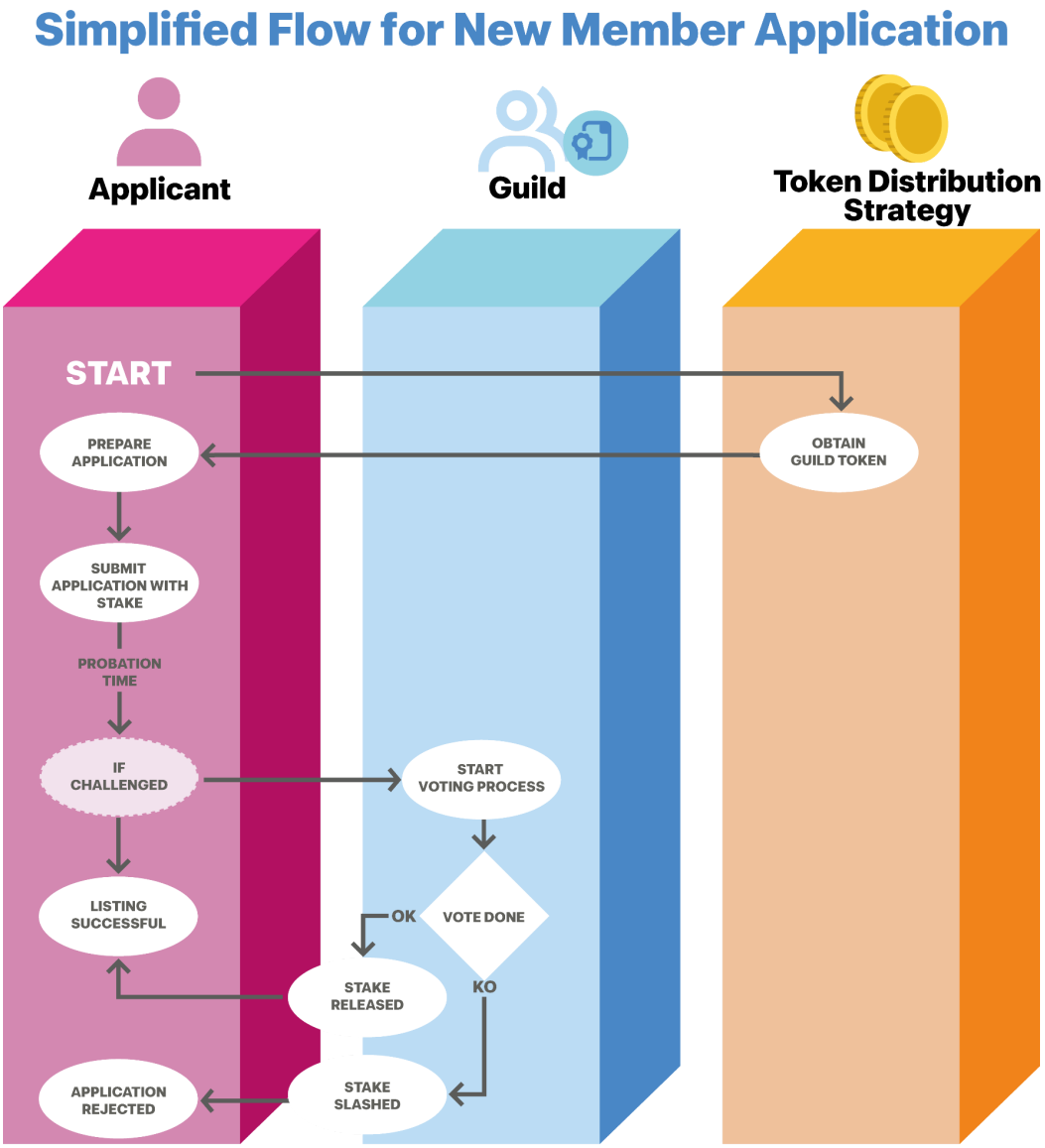

FIGURE 2 _ Flow of new member application

The Genesis Guild and disputes resolution

The **Genesis Guild** is a list of all Guilds where Guilds' founders have voting power. It is also open for applications to all $GLD holders. Its purpose is to govern the disputes that might occur between any Guild's members and external customers[11].

Charlie was in need of legal advice for her tech startup and decided to hire Dan, a lawyer listed with the Tech Law Paris Guild. Unfortunately, their collaboration did not work out as expected and Charlie now wants to open a dispute. She can do so at the TLP Guild's dispute contracts by submitting her claim along with a statement on the financial loss caused by Dan's misconduct. This generates an NFT that only Charlie will be later able to burn[12], thus claiming her compensation (if applicable) and allowing her to leave a 0 - 5 satisfaction rating on a Guilds' Billboard[13] contract.

The Guild passes on Charlie's claim to the Genesis Guild. Guilds' founders listed in there can decide to enforce one or more of the following actions:

- to require Dan to fulfill the missing deliverable or to reimburse the buyer under the penalty of delisting.
- to start a motion to expel Dan (bad leaver clause) and, in case of delisting, offer the gained tokens to Charlie.
- to deny Charlie's claim

A Guild where members are too often involved in problematic deals and disputed transactions will be for sure tainted and will get bad press (public rating on the Billboard contract) and negative sentiment in the Guild audience. This would cause two financial consequences:

- all the Guild members would receive less work in their profession, and as such will receive less income.
- The price of the tokens they own will sink causing a direct financial loss to the Guild members.

[11] Here we call "customers" those individuals or companies which are not directly members of any Guild but that have some business relation or commercial agreement with one or more members of a Guild.
[12] Charlie could also trade the NFT as the Genesis Guild is processing the dispute.
[13] likely via Dispute.sol contract with an NFT factory and a score implementation.

This is again part of the overall conjecture that the Guilds tokenomics will stabilize the Guild and converge to a set of fair participants willing to keep the reputation of their own Guild high. Finally, it must be understood that the full procedure to initiate, manage and settle a dispute will require deeper research during the execution of the project and that final features cannot be completed at the current stage.

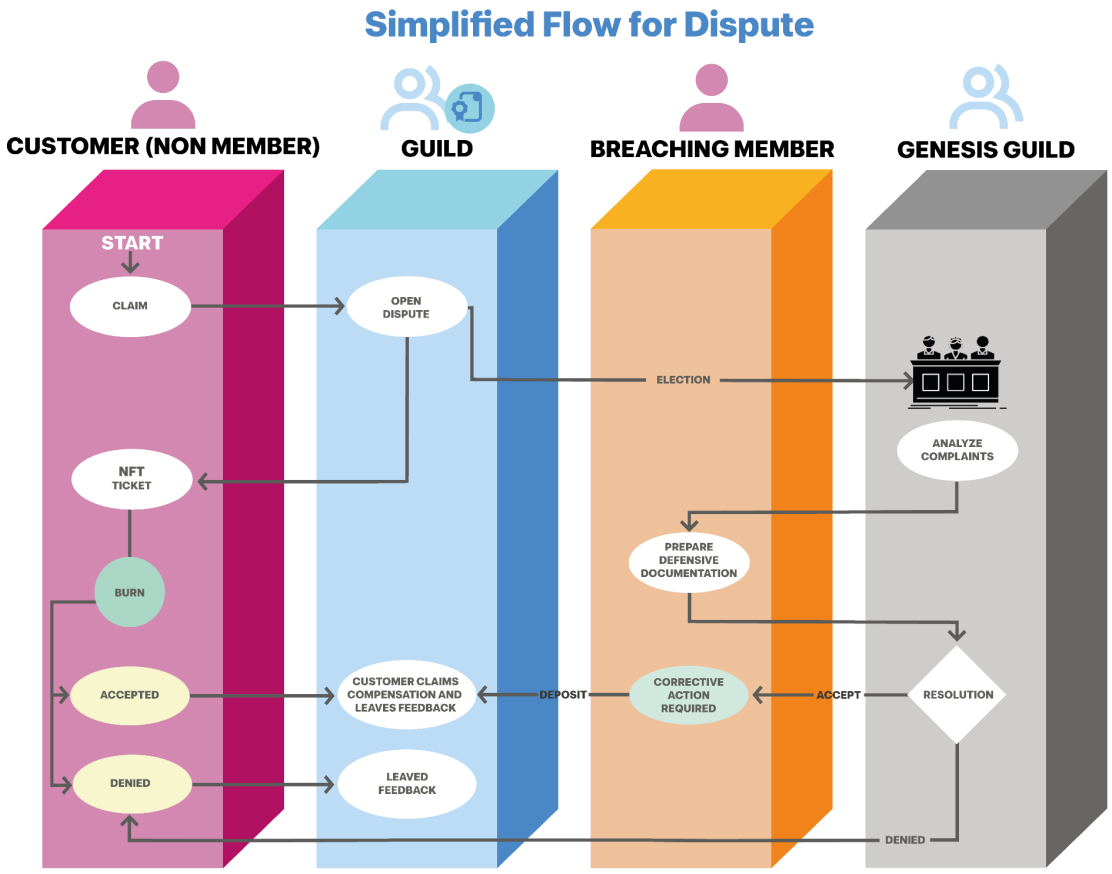

FIGURE 3 _ Dispute flowchart in GUILDS

Technical Architecture: behavioral and structural view

In this subsection we introduce the architecture with components and their relations.

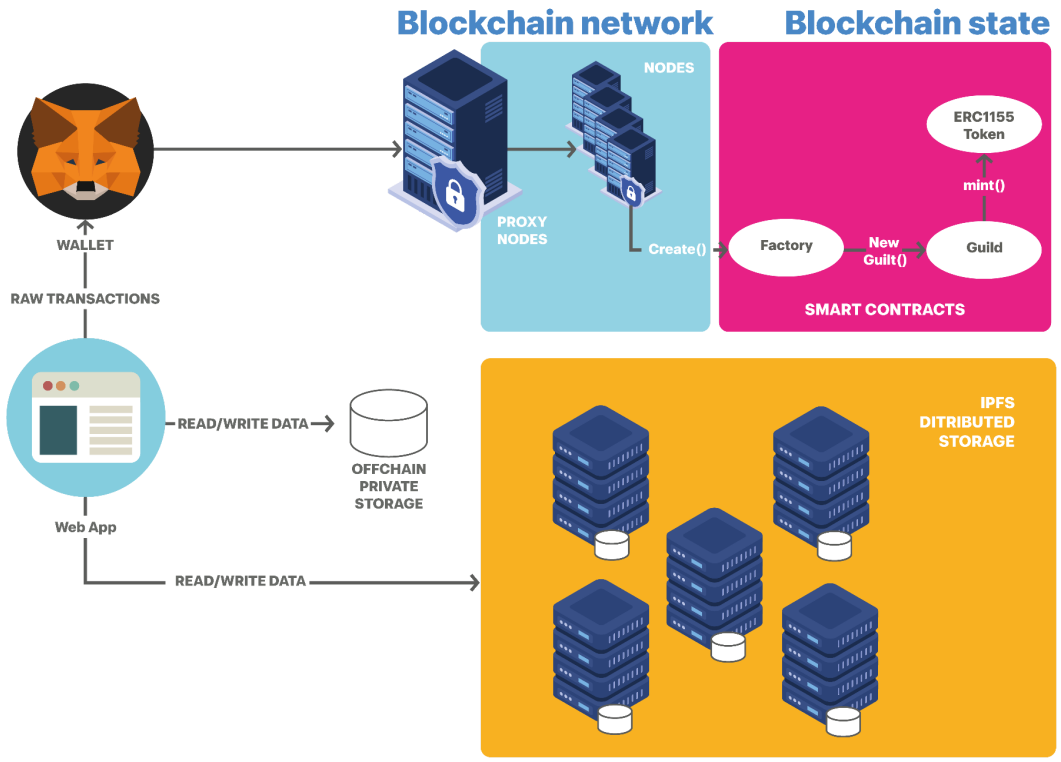

FIGURE 4 _ Architecture with components and their relations

In the FIGURE 4 above we can identify the following components:

- **The Crypto wallet**: to sign transactions and send/receive funds. It is delegated to securely store the cryptographic keys.
- **The Web Application**: a decentralized app (**DApp**) based on web3 interface or equivalent which will be the access point for the user from the landing page https://www.theguilds.io/.
- **The blockchain network**: For the experimentation it can be a private node, a public testnet or another testbed providing the required functions to

deploy and execute the smart contract code. In such regard, we would apply experimenting our application within the Alastria Red-T network[14] which is based on Consensys/Quorum[15]. For the final deployment in production it will likely be chosen as an EVM-compatible livenet or sidechain provided the experimental functionalities can be ported.

- **Guild and Guild Factory smart contracts**: we plan to adopt the well-known OOP factory pattern[16], so that a single contract deployed once will be in charge of deploying copies of the Guilds contracts on demand.
- **Token related smart contracts**: as mentioned later in this same section, the use of EIP1155 contract instead of EIP20 when the protocol is set to scale, would allow to deploy a single contract for the whole GUILDS ecosystem and to mint supplies for multiple logical tokens without the need to deploy a new contract for each Guild. This would mitigate the gas used in EVM based networks. However, for a first implementation in pilot projects we will use the more common ERC20 standard.
- **Dispute related smart contracts:** not yet represented in the architecture, these functionalities will be deeply analyzed during the execution of the project.
- **Decentralized public storage**: data that can be made visible will be moved to a decentralized storage like Interplanetary File System (IPFS). IPFS will be also used to store any data that would require notarization in blockchain (a Guild's statute or a website) given its resource locator schema based on content hash rather than server names and folders.
- **Private storage for ID Verification**: this might be an initial implementation by Uncommon Digital, later to be opened to the participation of external DID and Verifiable credentials issuers.

Private storage for Guilds: although not recommended because it is not decentralized, the use of private databases managed by appointed data managers of a Guild will not be prohibited by the GUILDS protocol.

[14] https://github.com/alastria/alastria-node

[15] https://github.com/ConsenSys/quorum

[16] Gamma, Erich (1994). Design Patterns. Addison-Wesley. pp. 18–19

TOKENOMICS

The $GLD Token

$GLD is the native token of the GUILDS project with a deflationary model and limited supply with the role of the Governance Token in the GUILDS Ecosystem. Users can vote for any decision about the GUILDS platform by holding a minimum amount of $GLD tokens.

Token Supply _ The Token supply of the GUILDS project is limited. The total token supply is capped at 100M tokens which satisfies the Governance model's basic requirements running on the GUILDS project's core.

Initial Supply _ The number of tokens in circulation when tokens start to be traded on the secondary market will equal 10% of the total token supply, including Centralized exchanges and Decentralized exchanges.

Token Allocation _ Considering the importance of token allocation and the transparency of project performance, we reveal the percentage of token distribution to each active project area in this section.

Tokenomics

Team	**10%**	Vesting & Cliff
Investors	**5%**	Vesting & Cliff
Public Sales	**6%**	
Advisors	**3%**	Vesting & Cliff
Treasury	**21%**	Vesting
Ecosystem	**30%**	Vesting
Liquidity	**18%**	Vesting
Automated Liquidity	**7%**	Vesting

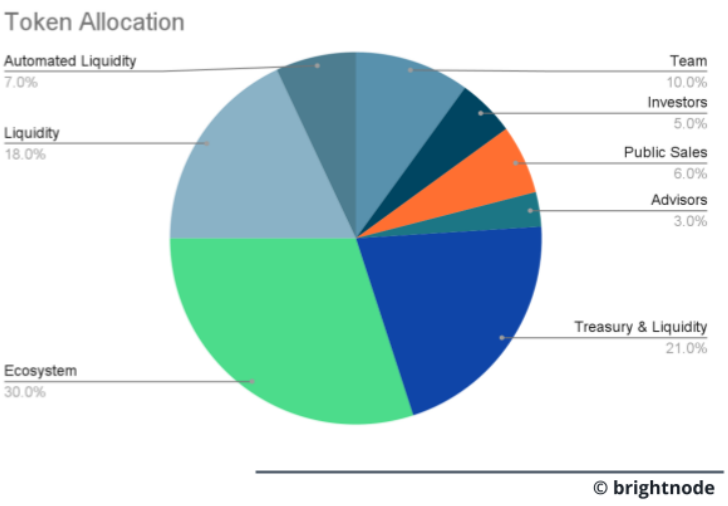

TABLE 2 _ Tokenomics

- Team: This usually has long-term vesting and cliff to guarantee that they are dedicated to the project and do not intend to leave or dump the project in the middle of the roadmap. The GUILDS team has a 12 months cliff period and a 24 months vesting period.
- Investors: 5% of the total token supply is dedicated to investors participating in the Seed and Private Sales.
- Public Sales: 6% of the total token supply is dedicated to Public sales, meaning Crypto projects make their Tokens public before it is listed on the Centralized/Decentralized Exchanges.
- Advisors: 3% of the total supply is allocated with a Short-term vesting and cliff period. Advisors have a 6 months cliff period and a 12 months vesting period.
- Liquidity: tokens assigned to this part can be used in two parts of the liquidity Category for decentralized exchanges as well as centralized exchanges. In decentralized exchanges, the $GLD token is paired with stablecoins and placed in the liquidity pool. In centralized exchanges, by providing only the $GLD coin, the centralized exchange supplies stable coins by valuing the project.
- Automated Liquidity: it is a default setup in which the GUILDS project assigns a specific amount of $GLD tokens with a particular % of the new guild's tokens after the creation of each new guild. This token pair will be placed in a decentralized exchange as an LP token to provide initial Liquidity for all newly created tokens by guilds.
- Ecosystem: this means tokens allocated for the ecosystem can be divided and used for different purposes like Staking Rewards, Events, Competitions, and Airdrops, which helps to keep the community alive and make them interact with the project more and more.
- Treasury: tokens in the treasury are considered for the predicted and unforeseeable situations of the project in the future. We can mention new partnerships, strengthening the project structure and developments, as well as the operational cash flow of the project.

$GLD Token Use Cases _ $GLD is the core of the GUILDS project, and all the governance system revolves around this token. Creating every new Guild depends on spending a specific amount of $GLD. Moreover, by creating liquidity pools in DEXs, the demand for the $GLD token will increase over time.

$GLD currently has the following core values:

- $GLD has voting power over future protocol implementations.
- $GLD determines voting power over a new Guild's proposal.
- a $GLD holder can apply to the Genesis Guild for dispute resolution.
- new use cases and functionalities will be R&D'd.

$GLD Token Sale _

Sales	% of Total Token Supply	Token Allocation	Price	Cliff period (months)	Vesting period (months)
Seed	2%	2,000,000	$ 0.035	6	12
Private	3%	3,000,000	$ 0.045	6	10
Public	6%	6,000,000	$ 0.066		
Total	11%	11,000,000			

TABLE 3 _ $GLD Token Sale Strategy

- Three Sales Rounds are considered (Seed 2% , Private 3%, Public 6%).
- Different valuation is defined for each Round based on their Cliff and Vesting Period.

Self-sustainability of the GUILDS project

The project has three different revenue streams to self sustain:

- identity verification service
- on-ramp services
- appreciation of the governance token

As stated in previous sections the entity Uncommon Digital Srl is an established company licensed to operate as Virtual asset service provider. In this regard it will provide on one hand the service to identify Guilds founders and on the other

the services and the operations to convert fiat currencies into $GLD tokens at market prices. Both services will be charged to users and will constitute a revenue stream for the project. Once the ecosystem will be consolidated and populated, other entities will be entitled to provide similar services, like the identity verification service.

The role of token traders

Based on the tokenomics model, even the users which are not interested in joining a Guild can find appealing the opportunity to speculate. In fact, if a high caliber individual like a pop star or a VIP creates a Guild and mints the token, it is likely that those tokens will be appreciated by the market. The potential demand will cause scarcity and small investors can make profits buying tokens at the primary market[17] to resell them on the secondary market where applicants will try to acquire as many tokens as possible. This target represents people who are not willing to join a Guild but that might take advantage of the price of tokens. This target does not have a precise shape or figures to be compared, so we can assess with similarity to the market of NFT or Governance Tokens, since in recent years these tokens have been sought after more in the market. Like NFT art, Guild tokens will be representing a professional status symbol.

[17] Crypto-primary markets issue new digital tokens for the first time to investors and adopters, who purchase them directly from where they were created. "Secondary markets" refers to the token's P2P transactions usually happening in AMMs.

RISKS AND MITIGATIONS

In the Introduction we have shown how some of the below listed vulnerabilities are impacting online reputation systems with thousands of users and reviews. Here we describe the most common attacks that can be orchestrated against decentralized reputation systems

Sybil attack[18] **_** A malicious actor could create many false identities to vote multiple times or create DOS.

White washing[19] [20] **_** An identity with a bad reputation can be delisted but a fresh new one is created without much effort. "Traitor attack" is when the whitewashed identity behaves good until he/she reaches some sufficient audience to take profit from switching to bad conduct again.

Plutocracy capture _ It occurs when founders' èlite concentrate most tokens in their hands in order to direct the governance of the Guild.

Retaliation[21] **_** Voting against a misbehaving member of the Guild may later result in backfiring to the voter, either within the Guild, on other social networks or even in real life.

Slandering _ Slandering attack is orchestrated by an attacker (or a coordinated group) who launches a delisting procedure against a Guild's member on false premises, with the only intent to damage their reputation.

[18] Douceur, John R. "The sybil attack." *International workshop on peer-to-peer systems*. Springer, Berlin, Heidelberg, 2002.
[19] Sun, Yan, and Yuhong Liu. "Security of online reputation systems: The evolution of attacks and defenses." *IEEE Signal Processing Magazine* 29.2 (2012): 87-97
[20] M. Feldman, C. Papadimitriou, J. Chuang, and I. Stoica, "Free-riding and Whitewashing in peer-to-peer systems", IEEE Journal on Selected Areas in Communications, vol. 24, no. 5, pp. 1010–1019, 2006.
[21] P. Resnick, R. Zeckhauser, J. Swanson, and K. Lockwood, "The value of reputation on ebay: A controlled experiment", Experimental Economics, vol. 9, no. 2, pp. 79–101, 2006.

Sybil attacks & white-washing

Applicants' identities should be checked. This is to prevent applicants from impersonating high caliber individuals as well as submitting more than one identity to the list. Differently from standard TCR, GUILDS aims at intersecting with identity technologies: we see every Guild as a potential consumer of Digital Identities and Decentralized Identifier (DID) technologies. The European Union is creating an eIDAS-compatible European Self-Sovereign Identity Framework (ESSIF)[22] which makes use of DIDs and the European Blockchain Services Infrastructure (EBSI)[23] : these new standards match the use cases relevant for GUILDS and will be implemented as a framework for the emission and verification of credentials.

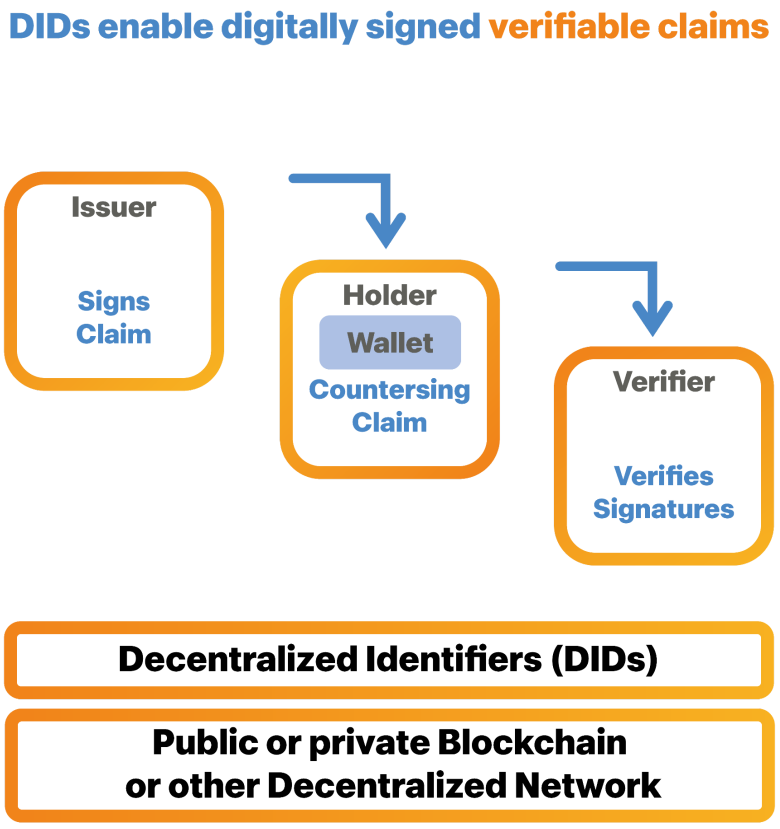

FIGURE 5 _ Digital Identifiers enable verifiable claims[24]

[22] "Understanding the European Self-Sovereign Identity Framework (ESSIF)". *ssimeetup.org*. 7 July 2019. Retrieved 22 June 2020.
[23] "European Blockchain Services Infrastructure (EBSI)". *European Commission*. Retrieved 1 July 2020.
[24] Image © Drummond Reed CC BY-SA 4.0

Following the diagram above, we envision two flows as follows:

Guild as Verifier _ When applying, the applicant should provide documentation about his/her past achievements. For example, diplomas, employment records and portfolio. The adoption of DID and signed claims can mitigate ID theft and sybil attacks. In a happy path scenario where Bob is the applicant and the actual owner of the achievements:

- The Guild is the Verifier
- Bob is the applicant and the Holder
- Any third-party endorsing Bob's claims is the Issuer

Guild as Issuer _ TCR are usually public but what if a Guild is created with a GDPR compliant policy and members agree to keep their listing confidential? In such a case every member listed in the Guild (say Bob the white hat) may decide to disclose its membership only to trusted parties (say Charlie the recruiter) and by means of a claim like:

- Bob's claim of being listed in "Top 20 White Hat Europe" Guild – signature of Bob and Guild proof
- The Guild is the Issuer
- Bob white hat is the Holder
- Charlie the recruiter is the Verifier

Plutocracy capture

In GUILDS, the highly reputable founder is creating a system where only at the beginning he/she has full control, and then as new members are included the power of the founder is diluted. However, the founders will have a strong leverage in their hands. In fact, as they are the initial minters of the tokens they will likely keep a significant reserve of all the pre-minted tokens. This fact, together with the token-weighted voting in a Guild, would allow founders to keep a great influence in the overall decisions. It will be their choice to relinquish control by selling or transferring their token reserves to other parties.

Solutions under study to the **plutocracy capture** scenario can be:

- to set a standard amount, or a limit, to how many Guild tokens to be staked by new members.
- to implement in GUILDS a 1p1v voting strategy for the listing governance.
- to opt for Quadrating Voting strategies.

Retaliation and secrecy

A member of the Guild can be motivated by retaliation purposes when starting a delisting procedure against another member. In extreme cases, a member can extend the retaliation to cyber-bullism, harassment and even stalking of another member. However, malicious behavior like retaliation are mitigated by the cost of orchestrating the attack which requires stakes that have the high probability to be slashed. To prevent even further these type of attack, zero-knowledge-proof based voting strategies will be researched as plugins for Guild creators and will allow Guild members to vote in secrecy.

ROADMAP

It is on GUILDS' near Roadmap to run communication and social engagement campaigns, which will aim to create awareness of the performed research for different targeted audiences. To this regard, our company will put a particular focus on creating and growing **discord**, **twitter** and **telegram** communities, the **GUILDS Dapp landing page** (as the entry point for all communication with prospects, leads, advocates and members of the project), **participation in fairs and events** (either online or in real life) and the **publication of papers, articles and seminaries** (in partnership with Academic and Research centers to examine scientifically what are the benefits of the solution).

GUILDS' Pilot Phase aims at piloting the platform with real communities of professionals and activists to battle-test the many different features of the Dapp. At present, it counts three verticals with three different pilot communities:

- **ethMusicians Guild:** a group of musician developers in the Ethereum ecosystem who are launching a series of music initiatives within Ethereum events around the world. The EthMusicians Guild is scheduled for launch at Devcon VI (Bogotà, Colombia) in October 2022.
- **Top50 Tech Legal Guild**: talks with the Italian Legal Hackers chapters have led to the proposal and interest around a fixed-sized pilot Guild for the best 50 Tech Lawyers on the Italian territory. The Top50 Tech Legal Guild is scheduled for launch in January 2023.
- **HateTrackers Activists Guild**: the HateTrackers project by CIFA ONG (https://www.cifaong.it/) aims at educating high school students and teachers in the issue of online hate speech management. Uncommon Digital and CIFA have recently signed a MoU (memorandum of understanding) to support the creation of an activists' Guild. The HateTrackers Guild's launch is scheduled for Spring 2023.

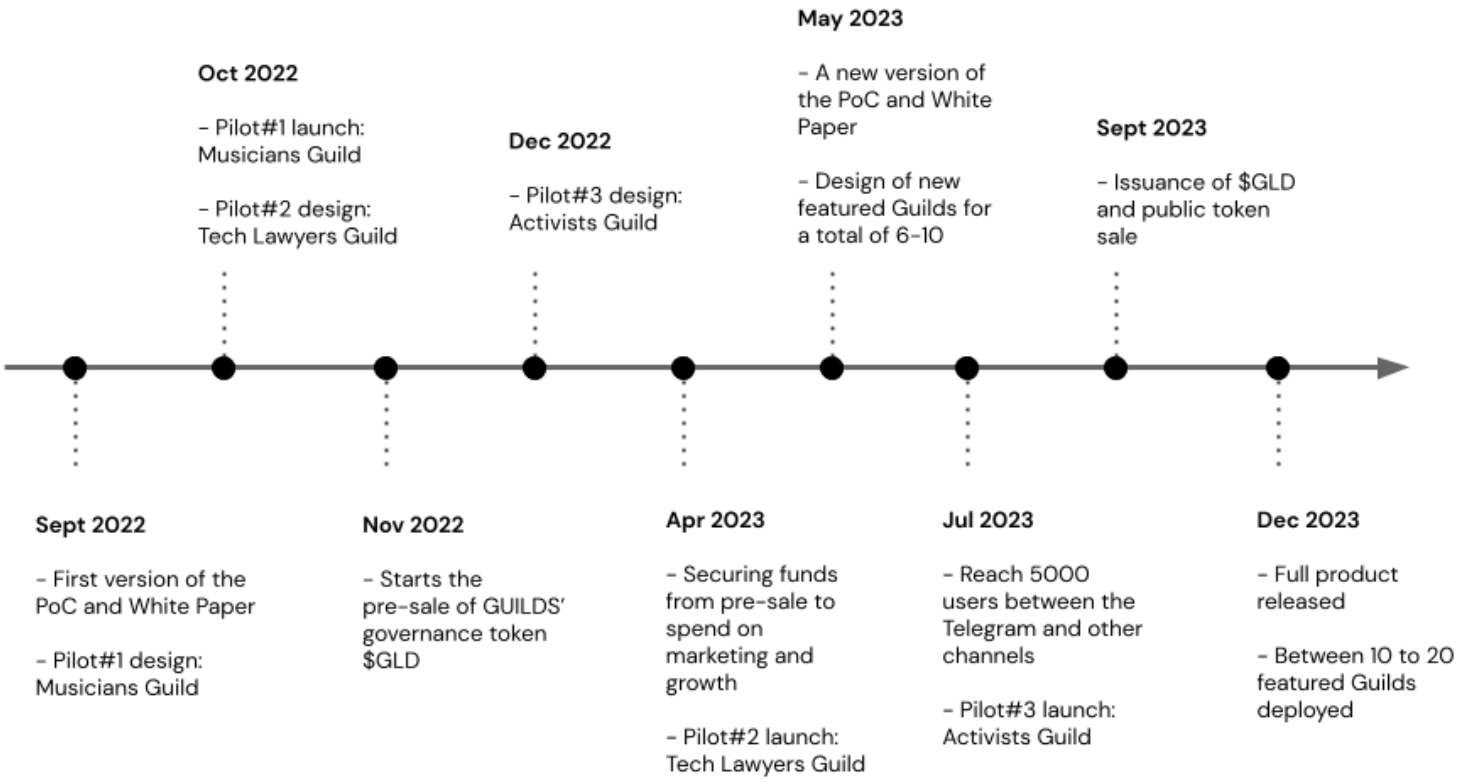

FIGURE 6 _ GUILDS' Roadmap until Q4 2023

APPENDIX

Limitations

Medical doctors, lawyers, chartered engineers, and other categories of freelance workers who are regulated by special statutes and code of conducts can of course benefit from a protocol for reputation management like GUILDS, provided they comply with the specific regulations regarding the publicity of their profession.

For instance, medical doctors in Italy cannot advertise themselves as specialists without diplomas or other document grounds and cannot use the title of Professor unless they are permanently or temporarily appointed as professors of medical sciences in a recognized university enlisted by the government.

Lawyers are not allowed in principle to promote their professional activity using words and pay-off which do not respect deontological and ethical rules established by the relevant bar association and cannot spend names of their clients (save specific cases such as Institutional clients like Governments, International Organizations, Ministries, etc.). Lawyers, within these limits, may publish information on their law firm or other relevant legal news and information via web and social networks.

Moreover, aside from the advertisement of activities, chartered professionals are also subject to internal procedures for any infringement of deontological rules. In such a case, there is a possible conflict of attribution between the procedures dictated by local laws and the specific Guild dispute resolution.

The GUILDS protocol does not mandate any specific solution or requirement about diffusion or advertisement of the Guilds, and in the case of dispute resolution, the Guild procedure must be considered overruled by laws and policies mandated by the members residence jurisdiction.
So, any legal requirement or provision derived from the code of conduct and code of ethics of the chartered professionals must be managed at the level of the single Guild and it is not in the scope of the current project.

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Risk associated with the purchase of GUILDS Tokens _ Prospective purchasers of GUILDS Tokens should evaluate all risks and uncertainties associated with the purchase of GUILDS Tokens. This White Paper does not constitute advice nor a recommendation by the GUILDS Team on the merits of purchasing or holding GUILDS Tokens or any other token or cryptocurrency. Such purchase and holding carry substantial risks that could lead to a loss of part, or all, of the funds invested. As of the date hereof, the GUILDS Token has no known potential uses outside of the GUILDS Protocol. No promises of future performance, value, or utility are or will be made concerning the GUILDS Token, including no promise that the GUILDS Protocol will be launched and no guarantee that the GUILDS Tokens will have any intrinsic value. GUILDS Tokens are designed and intended for future use on public GUILDS Protocol, for trading and governance transactions, or for the operation of nodes. The GUILDS Team may decide to amend the intended functionality of GUILDS Tokens for any reason, including to ensure compliance with any legal or regulatory requirements to which it is subject, which may affect the utility or any other properties of the GUILDS Tokens. Any GUILDS Token could be impacted by regulatory action, including potential restrictions on the ownership, use, or possession of such tokens. Regulators or other competent authorities may demand that the mechanics of the GUILDS Tokens be altered, entirely or in part.

IT Risks _

a. Fraud: The crypto space is still largely unregulated. This allows for unlawful projects to be launched in a quest to raise funds for a project which was never intended to deliver on any of its promises. In these instances contributors often

lose 100% of their contribution. It is important to conduct thorough due diligence on all crypto projects. You should thoroughly research the team and advisory board behind all projects you're interested in. Please be aware that it's often not enough to simply look at the profiles listed on the project's website, as some fraudsters have taken to using fake identities, fake social profile accounts and listing fake work histories and work experiences. In other cases, fraudsters have used real identities of people who are not associated with their project. So, please, carefully check our team and experience and if you do not feel comfortable with our profile description, please DO NOT invest in GUILDS.

b. Hacks: While it is less likely a blockchain will be hacked, there is a greater potential for hacks on the system layers that exist above the blockchain layer. For example, applications such as wallets, browsers, websites or software programs are all common targets for hackers. These hacks often lead to a substantial loss of funds for both the token issuer and the token purchaser. Please be aware that many blockchain projects are uninsured which will likely result in the complete loss of your funds in the event you're the victim of a hack. In case of loss of data or hacking, you may lose 100% of the crypto-currencies invested in GUILDS.

c. Project Abandonment: There is also a risk the GUILDS project could become abandoned. This may happen for a variety of reasons including but not limited to; lack of interest from the public or developers, unfavorable regulations, failures in technology or lack of funding. If the GUILDS project is abandoned, the tokens associated with it will be illiquid or void of any value.

d. New technology: Be aware that in the blockchain space it's not uncommon to see technology failures.

e. 3rd Party Underlying Protocol Failure: the GUILDS protocol executes its project on top of existing Ethereum blockchain. Therefore, GUILDS rely on the proper functioning of this underlying blockchain. However, issues such as forks, system failures, project abandonment or newer technologies such as quantum computing could introduce new risks for these underlying blockchain and therefore the projects built on top of it.

f. Mining Attacks: Early stage blockchain projects come with increased levels of risk. Blockchain protocols often use algorithms (such as Proof Of Work of Proof Of Stake) which help protect the network. While these algorithms and others have

proven to be quite secure, there is a risk with early stage projects, such as GUILDS, which don't have a balanced distribution of miners. In these instances a project could find themselves with miners who are bad actors and could engage in activity, such as majority mining power attacks, that would reduce the value of the platform or network to zero.

g. Extreme Volatility: Crypto-currencies have traditionally been incredibly volatile assets. This has many implications for the Token industry. The value of a project's internal token may or may not lead to increase or decrease in project progress as well as public interest in the project.

h. Lack of verifiable 3rd Party Audits: Token sales are often not designed as securities sales and therefore they often are not subject to the same rigorous third party verification and auditing standards.

i. Accidental Loss of Tokens: It is possible to lose the entire balance of your token based on many different factors. For example, if you fail to follow the exact instructions, including providing a correct and compatible receiving address you may lose your tokens. You may also lose your tokens if you fail to write down your password, private key or passphrase (depending on the rules of the token sale). Generally, failing to follow very strict guidelines will result in the total loss of all tokens. In the majority of these cases the tokens will be forever unrecoverable.

l. Regulatory Risk: There is a risk that the GUILDS protocol either failed to adhere to regulatory requirements for their specific use case and technology, or new laws or regulation may conflict with their current project functioning. It's also important to realize that regulatory standards and laws change greatly between jurisdictions. It's important to study, understand and constantly update yourself on the rapidly changing regulatory landscape surrounding blockchain technology and token offering in your jurisdiction.

m. Internal Team Errors or Failures: There is a risk associated with putting control of the day to day operations in the hands of the token issuer. Token price, stability and utility are often grounded in the principles of good business management. However, there is a risk that central management will fail to run the business properly.

Regulatory Landscape_ Crypto-currencies, token offering DAO, and exchange of cryptocurrencies present novel regulatory challenges. Their rapid ascension led to instances of new products running afoul of world's current regulatory framework. This demonstrated how certain regulatory environments are simply out of touch with the internet age. The market expanded with a light regulatory touch, but its explosion in 2017 and the well-publicized nefarious actions in this space prompted regulators to act. Further, regulators spent years convening working groups, watching developments, and conducting research to ensure they understood how these technologies operated and how they could be regulated.

In particular, the European Union and United States intend to regulate the sale, promotion and distribution of tokens (utility, security, payment), and the draft of a Market in Crypto asset Regulation (known as MICAR) is in a very advanced stage of approval at the European Parliament. Therefore such future regulation may heavily impact GUILDS and we will do our best efforts to cope with this new incoming regulation. Please consult with your lawyer and tax advisor in order to be always updated on this matter.

REPOSITORIES & REFERENCES

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