



Aslan Project

Javascript blockchain as a service

Weighted proof of stake nodes

Provably scalable & secure

Truly decentralized

Instant exchange



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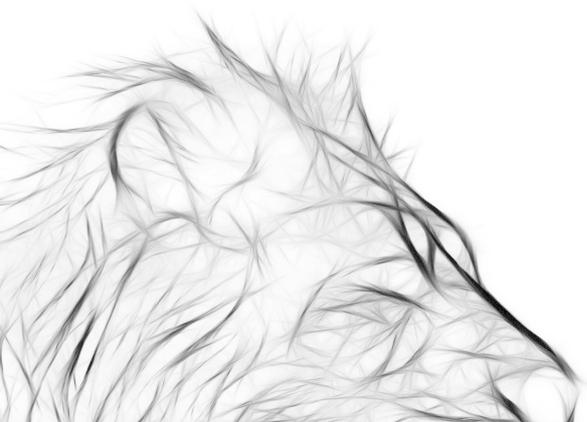
Introduction

This document gives a detailed overview of the ASL ICO and the Aslan Project. The aim of the document is not only to present the technical innovation and use cases of the upcoming platform, but also to outline the business strategy and development roadmap of Aslan.

Aslan is currently successfully running on a testnet and will be launched on 31st October 2018. The unique architect-author chain structure of Aslan, with a single security chain and multiple transactional chains, enables three fundamental advantages - reducing blockchain bloat, providing multiple transactional tokens, and hosting ready-to-use interconnected blockchains. To kickstart the Aslan project and allow it to compete with the rapidly growing blockchain market, the development team behind Aslan decided to conduct a crowdsale for 6 000 000 ASL - the token of Aslan.

ASL will act as an author chain within the Aslan Project which will be completely unrestricted and decentralised with all features and functionality which currently exist on the Aslan testnet. Multiple additional author chains can be created on the Aslan platform for various organizations, such as public entities, enterprises, consortiums, research institutions, and financial service providers. The platform technological innovations make it possible for large corporations and SMEs to have an author chain with ready-to-use features, instead of creating their own blockchain and developing features from scratch. Author chains can be implemented in a cost effective way without compromising their security, which is guaranteed by the architect Aslan chain.

The Aslan Project ICO is scheduled to begin on the 15th September 2018 and continue for six weeks or until the tokens are sold out. Proceeds from the ICO will be used to provide liquidity for the Instant Exchange Aslan Wallet and to provide development funding over the following two years.



Existing blockchain technologies have limitations

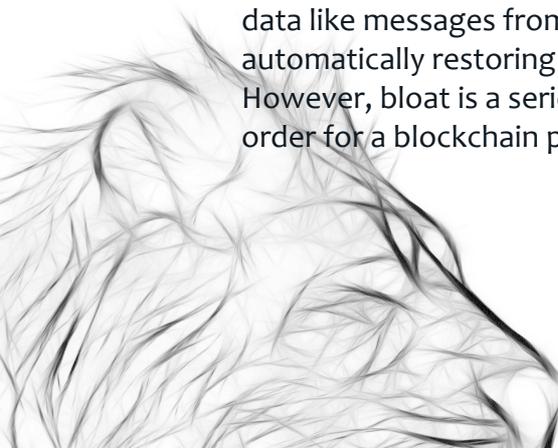
Over the course of the development of Aslan, we identified a few problems in the current blockchain – token model that we needed to address.

a. Single Token

Other tokens are not only required for the payment of transaction fees to the network and for the transfer of value, but also for all transactions involving the use of the blockchain e.g. pricing of asset exchange ask/bid orders, prices of digital goods listed on the marketplace, exchange rates of monetary system currencies, and the transfer of assets over the blockchain. This makes it difficult to develop applications which use the blockchain transparently, as ideally, users should not be required to have said token in order to transact and shouldn't need to denominate the value of assets and currencies in said token.

b. Blockchain Bloat

Blockchain bloat is a common problem across all blockchain platforms. It is due to the fact that every node needs to store all transactions ever processed since the blockchain was started. New nodes are also required to re-process all data when they download the blockchain for the first time. This is a security requirement stemming from the trustless design of blockchain platforms. Being a proof-of-stake cryptocurrency, the balance of an account (its stake) at a given blockchain height determines, in a pseudo random manner, whether this account is eligible to generate the next block. For a node downloading the blockchain from scratch, the only way to verify that the next block it is downloading was indeed generated by a legitimate account (i.e. having sufficient stake), is to make sure that it calculates and verifies each account balance as it downloads the blockchain by processing all old transactions it encounters during the download. This represents a processing bottleneck that will only get worse as the blockchain size increases, especially with the rising number of transactions per second. At the current transaction processing rate bloat is not yet a problem for Aslan, and we have already come up with several innovative solutions to reduce it even more. One such solution is the prunable data function which allows for the removal of some data like messages from the blockchain, thus reducing its size, yet when needed automatically restoring such data in a trustless manner from archival nodes. However, bloat is a serious issue that must be solved in a fundamental way in order for a blockchain platform to be future-proof and truly scalable.



c. Customization Issues

Cloning is simple, but maintenance is not!

Many organizations need a custom blockchain with its own transactional token and customized functionality for their needs. To achieve this with the Aslan software, an organization needs to create a clone - i.e., a completely separate blockchain, running a modified version of the software, but not linked in any other way to the original blockchain. Doing so requires the setup of servers to process transactions and to secure the network, as well as complex development work for the customizations. In addition to being a burden for most small-to-medium businesses, this lowers the system security, as compared to the main public blockchain. Such a clone is also bound to lag behind the latest public chain software in terms of feature development and security upgrades, since implementation of customized blockchains is a complex matter, especially if one is not very experienced with the software.

Technological Overview

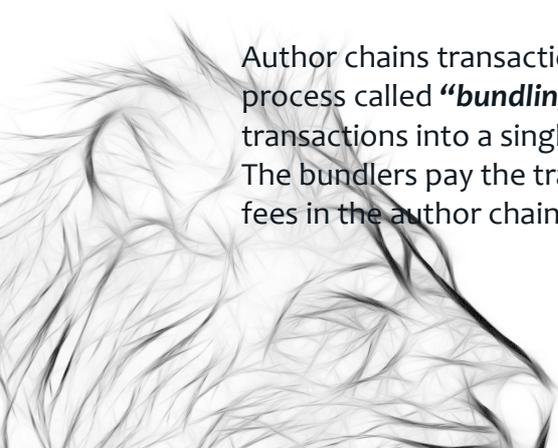
With Aslan, network security tokens and transactional tokens are separate

The above-mentioned problem led the Aslan developers to work on a new solution, which gave birth to the Aslan Project. In other blockchain smart contract platforms, it is the native token that serves this dual purpose, being used both to determine forging stake, i.e. the right of an account to generate blocks, and to execute all kinds of value-transfer transactions, i.e. represent a unit of value. In Aslan, a separation of these two functions is used to achieve much greater flexibility by allowing multiple other transactional tokens to be used and exist independently; in effect allowing author chains to exist and run on the same network while operating largely independent of each other.

Aslan: Briefly Explained

The Aslan platform is based on the stable and reliable codebase that has been running successfully as a private blockchain since November 2017. Aslan has a unique design composed of a single architect chain responsible for network security and processing, and multiple author chains responsible for the operational transactions such as creating assets, voting on polls, sending messages, etc.

Author chain transactions are reported to the architect chain using a new process called “**bundling**”. The bundlers package multiple author chain transactions into a single AuthorChainBlock transaction on the architect chain. The bundlers pay the transaction fees in Aslan (ASL) and receive the transaction fees in the author chain coin.



Unlike “*side chains*” and other blockchain-related technologies, the Aslan architect chain and author chains are based on the same source code and share the same security guarantees.

Staking & Author Chains

With the Aslan platform, the single blockchain architecture is replaced by a combination of one staking chain, on which transactions are denominated in one token (ASL), and multiple author chains, each having its own transactional token.

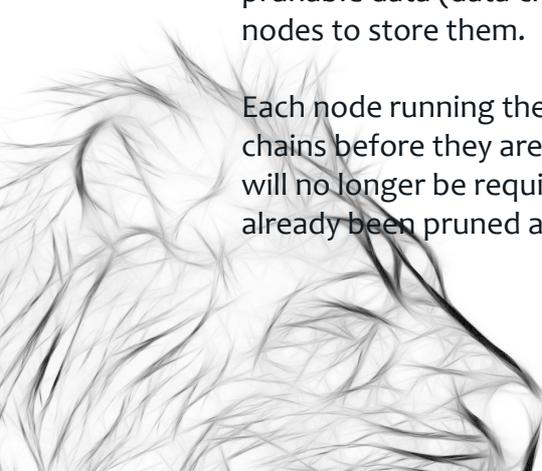
The staking chain supports a very limited set of allowed transaction types, such as transfer of ASL from one account to another, trading of ASL to each of the author chain tokens and back, leasing ASL balances to other accounts for the purpose of staking, and a special type of "AuthorChainBlock" transactions. The staking power of each account depends on its ASL balance.

All transactions that change ASL balances are recorded on the staking chain, and therefore downloading and re-processing the transactions from the staking chain. All transactions that only modify author chain token balances, or any other account holdings (such as assets or currencies), are not recorded on the staking chain, but only on their corresponding author chains. Thus, the removal ("**pruning**") of those author chain transactions, after they are no longer needed, does not affect the blockchain security, as validity of ASL account balances can always be verified in a trustless manner by each node.

Transaction Validation

The validity of author chain transactions and account balances (in native tokens) must also be ensured by the platform, and this is done by anchoring them to the forging chain by means of the above AuthorChainBlock transactions. This special transaction type contains, as an attachment, a list of one or more transactions belonging to a single author chain, i.e. transactions denominated in that author chain native token, with their execution affecting only account balances and holdings on that chain. In effect, such an attachment represents a "block" on the author chain, although no actual forging (block generation) is done on author chains. Those attachments are linked to the AuthorChainBlock transaction by means of a cryptographic hash only, thus allowing the transaction signature verification to be performed even after the actual content of the attachment has been pruned after some time. This is building upon the design and technology already implemented and in production, in the form of prunable messages and prunable data (data cloud), together with a network of special-purpose archival nodes to store them.

Each node running the Aslan blockchain validates the transactions from all author chains before they are pruned. A node downloading the blockchain from scratch will no longer be required to fully validate author chain transactions that have already been pruned as they will only verify their hashes and AuthorChainBlock



transaction signature. However, this does not lower the overall blockchain security as it can still verify that the accounts that staked the blocks containing them were eligible to stake at that time, and therefore those transactions must have been validated by all up to date nodes while their data was still available, in order to get included in the currently winning (best difficulty) blockchain fork.

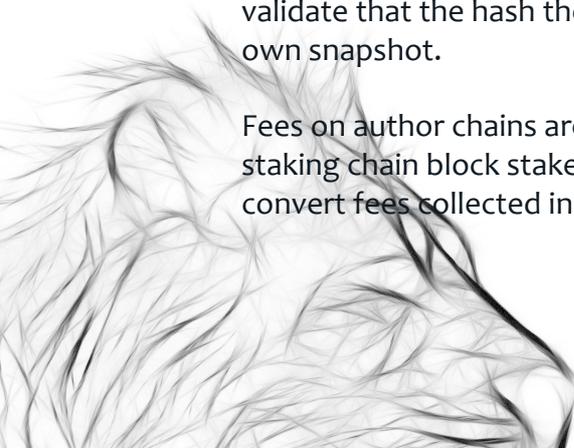
All transactions from all chains must be processed by all Aslan nodes and these nodes carry all Aslan chain transactions for the last 1440 blocks, until their expiration deadline, or phasing finish height, whichever is longer. Author chain transactions will be pruned completely on nodes not configured to archive them longer than this minimum retention period, but those that do, known as archival nodes, can opt to store one or more author chains longer or indefinitely.

In addition to staking chain transactions and blocks, each node needs to store the current state of all accounts, as represented by balances in native author chain tokens, asset and monetary system balances, account properties, aliases, and all other objects and account holdings that are created as a result of transactions. Any state that might be needed for validation of future transactions must be kept. But once the rolling fork resolution limit of 720 blocks has passed, older state (i.e. the values of such balances and holdings) no longer needs to be kept. Such state is being removed ("trimmed") even now, however in the current system a node that downloads the blockchain from scratch is reprocessing all past transactions, thus re-creating each past state and trimming it as it goes along. In the Aslan platform, those old transactions will also have been pruned, so recreating past state in order to arrive at current state will no longer be possible. To solve this issue, snapshots and snapshot propagation will be implemented.

Periodically, each node will calculate a snapshot of the state of all derived objects, and a hash of this snapshot will be included in the current block by its staker. All nodes that are up to date and on the same fork already have exactly the same state, and thus will be able to verify this hash (and reject the block if invalid). A protocol will be defined by which nodes that are out of date, or downloading the blockchain from scratch, are able to request the latest snapshot from up to date nodes, validate it based on its hash being included in the blockchain, and download it in a decentralized manner. In this way such nodes will catch up with the latest system state, bypassing the need to re-process all old transactions that are already pruned.

The snapshot data itself does not need to propagate through the network when the snapshot hash is calculated. Each node that is up to date already has the state of all author chains, so it can generate such a snapshot for itself. It must only validate that the hash the staker calculated for the snapshot indeed matches its own snapshot.

Fees on author chains are denominated in the chains native tokens, but the staking chain block stakers still accept fees in the staking token (ASL) only. To convert fees collected in author chain tokens to ASL, the role of "bundlers", or



AuthorChainBlock creators, has been introduced. Any account can serve as a creator of an authorchain block, provided it is willing to accept the fees (in native token) collected from the transactions in the AuthorChainBlock, and in exchange pay the required fee (in ASL) to the staking chain block staker. This establishes a market rate for author chain token to ASL token.

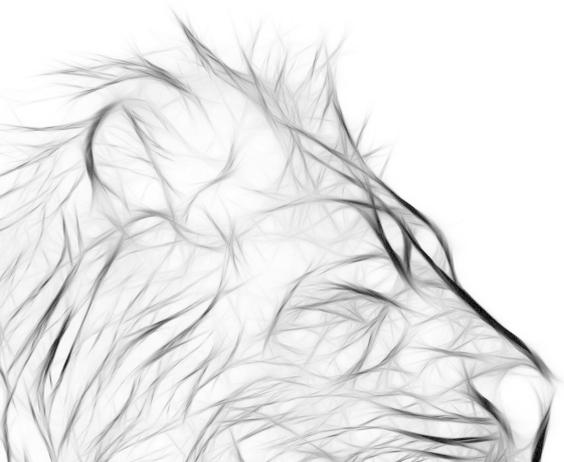
If the fee in native token offered by a transaction sender is too low by current market rate, when converted to ASL, no one will be willing to bundle such transaction into a AuthorChainBlock, and the sender must resubmit the transaction with a higher fee. If an author chain token loses value completely and no-one is willing to exchange it to ASL, transaction processing on that author chain will naturally stop - unless someone interested in keeping it alive is willing to subsidize it, creating AuthorChainBlocks and paying the expected ASL fees to the stakers, while getting worthless (by free market rate) native tokens in return.

Author chains compete with each other for inclusion into a block, since at the end the stakers will still look at the fee/size ratio for each transaction and will want to maximize their staking profits, subject to main chain block size and transaction numbers limits.

Pegged Author Chains

The ability of author chain tokens to have their independent market value, without this affecting the security of the whole platform, allows one important use case that deserves further mention - the creation of Pegged Author Chains, think USDT as an example.

Third party businesses can peg the value of their author chain token to a fiat currency, or to other cryptocurrency, thus allowing all transactions on this author chain to be effectively denominated in that external currency. When such pegged author chains are added to the Aslan Platform, users will have the choice of pricing their asset ask/bid orders in fiat, selling their marketplace goods with prices in fiat, asset issuers will be able to pay dividends calculated in fiat, etc. This opens the door to conducting seamless transactions with fiat over the blockchain. Furthermore, the existence of multiple author chains pegged to different external currencies will allow users to trade them for each other using the Coin Exchange functionality, effectively using Aslan as a decentralized foreign exchange ("forex") platform.



Business Talk

Revenue Sources

Aslan has identified three **primary revenue streams** based on the Aslan blockchain protocol. The revenue sources will help Aslan to be a self-sustainable project in the medium to long term.

a. Author Chain Creation and Customization

The unique structure of the Aslan platform will allow the creation of customized author chains with their own native tokens. Though each author chain will come with all features that will be found on the Aslan Project, some features can be disabled and additional ones needed for a specific author chain can be developed. Even after the future implementation of user-created author chains, Aslan will still be able to provide author chain creation services, if heavy customization is required, such as author chain coin inflation or the ability for the author chain creator to generate more author chain tokens. Paid maintenance and support of the author chains will be a part of this service. Revenue sharing with businesses which extract revenue from their author chains (such as pegged to real currencies or BTC author chains) is another possible income source.

b. Consulting

Aslan will provide consulting services such as modification of the existing features or building custom functionality to fit the needs of each client. With this service, the changes applied are done by the creators of the platform itself, so it is done in an efficient and secure manner. Other consulting services will also be available, such as the verification of potential use case applications with our technology at a high technical level. Consulting not only for businesses but also for large range of organisations and public authorities about the potential benefits of integrating the blockchain technology in their operations.

c. Private Chain Licensing

Aslan, after it launches on 31st October 2018, will be available for organizations to license for private chain solutions. Though it is open source, if changes are made and closed sourced, a license from Aslan would be required. Private chain licensing will help enterprises not only to have a secure private blockchain solution, but also to have one directly supported by the core developers of the technology, all while being able to keep their changes closed source. Part of this service are the charged per blockchain instance runtime licenses, maintenance and support.



We will also explore other potential monetization areas:

Paid premium services on the Aslan platform like in-wallet ads or charging for promotion of certain author chain services in the wallet itself.

Integration of exchanges and payment providers in the wallet to allow conversion of author chain coins to other crypto currencies, pegged to fiat or BTC author chains etc., and revenue sharing with them.

Targeted Industries

The financial and banking sectors have undoubtedly been in the last years some of the most eager industries to embrace the advantages of the blockchain technology. Cross-border transactions, mirror accounts, trade finance, money transfer, digitalized payments and insurance tracking can all benefit from the distributed and trustless nature of the blockchain. Aslan, being written in Java, scalable and secure, is the perfect choice not only for the above-mentioned use cases but also, thanks to its rich functionality, for asset and securities issuance, management, trading, and dividend payments.

Payment providers, exchanges, and money transmitters can create a pegged to a fiat currency author chain, can provide asset and currency tokenization, allowing their clients to transact easily on the blockchain in their national currency.

In fact, not only big financial institutions can use blockchain such as Aslan in their operations. Due to its scalability and the architect-author system the energy and hardware requirements for using a author chain are so minimal that practically even SMEs can digitalize their company's internal processes for transparency, security and efficiency while the extremely flexible voting feature can be used to facilitate the shareholders meetings.

Public authorities, on both local and national level, are also experimenting with integrating blockchain technology in various sectors like tracking of government payments, digital identity management, real estate or IP recording, notarial services and not in the last place - for optimizing the highly expensive old-fashioned and not so secure way of voting. Legal professionals can use it for time stamping of documents, proof of existence, secure messaging, digital signatures etc. For all these use cases a highly adaptable, flexible and cost efficient blockchain architecture is needed in order to satisfy the diversity and complexity of the tasks ahead.

For example, if KYC or AML procedures are required or personal data retention or protection need to be in place, the platform has to be able to implement that too. The Aslan blockchain is using various transaction types which can be easily built



upon or modified to address such conditions and proof of that is the variety of features already implemented, tested, and proven on the Aslan blockchain.

Other use cases of the Aslan platform can be logistics, parts tracking, mobile roaming, recording of system logs events, recording of donations to non-profit organizations, traditional crowdfunding, financial return based crowdfunding etc.

Speaking more generally, every time when people or organizations need to do business together but they do not trust each other, every time when a system without single point of failure has to be used or immutable ledger is needed, there is a room for blockchain technology and the Aslan platform fits such needs perfectly.

ICO Details

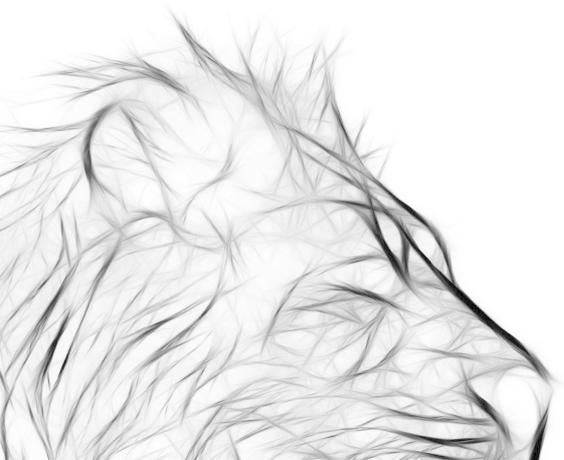
6 600 000 (six million six hundred thousand) Aslan (ASL) will be created of which 6 000 000 (six million) will be offered at ICO. The remaining 600 000 (six hundred thousand) will be distributed via bounties and referral link holders.

The ICO/token sale itself will be conducted on the Ethereum blockchain and a “placeholder” ASL token will be issued prior to the swap for ASL mainnet tokens.

To take part in the ICO you will simply need to supply an email address, an Ethereum address and to create a password. Please take note of this password as you will need it to retrieve your ASL mainnet tokens.

Utilization of the Funds

The contributions raised by Aslan will be used initially to provide the liquidity for the Aslan in-wallet instant exchange between ASL, BTC, ETH and USDT, following this, funds will be used for research and development of the Aslan blockchain platform and subsequent author chains, the maintenance of the Aslan blockchain, and for business development and marketing.



Legal & Disclaimer

The ASLAN token is a temporary technical coin, which only gives you the right to receive the ASLAN mainnet token. The ASLAN token will allow access to the services provided by the Aslan blockchain platform. The sale of ASLAN token is final and non-refundable.

The ASLAN token do not have the legal qualification of a security, since they do not give any rights on dividend or interest. The ASLAN token is not a share and do not give any right to participate in the general meeting of ASLAN. The ASLAN token cannot have a performance or a particular value outside the ASLAN blockchain respectively. The purchase and use of the ASLAN token shall therefore not be done for speculative usage or investment purposes. The purchaser of the ASLAN token is aware that national securities laws, which ensure that investors are sold investments that include all the proper disclosures and are subject to regulatory scrutiny for investors' protection, are not applicable.

Any person purchasing any ASLAN token, expressly acknowledge and represent that (s)he/it have carefully reviewed this white paper and fully understand the risks, costs and benefits associated with the purchase of ASLAN token as indicated in the white paper and in any terms and conditions provided.

Knowledge required

The purchaser of the ASLAN token undertakes that (s)he/it understands and has significant experience of cryptocurrencies, blockchain systems and services, and that (s)he/it fully understands the risks associated with the token sale as well as the mechanism related to the use of cryptocurrencies (including storage).

ASLAN shall not be responsible for any loss of ASLAN tokens or situations making it impossible to access ASLAN tokens, which may result from any actions or omissions of the user or any person undertaking to acquire ASLAN tokens as well as in case of malicious third party (hacker) attacks.

Risks

Acquiring ASLAN tokens and storing it involves various risks, in particular that ASLAN may not be able to launch its operations and develop its blockchain and provide the services promised. Therefore, and prior to ASLAN tokens, any User should carefully consider the risks, costs, and benefits of acquiring ASLAN within the crowdsale, and, if necessary, obtain any independent advice in this regard. Any interested person being not in the position to accept nor to understand the risks associated to the activity (incl. the risks related to the non-development of ASLAN network and operations) or any other risks as indicated in the terms and conditions of this crowdsale, should not acquire ASLAN tokens, at this stage or ever later.

Important disclaimer

This white paper shall not and cannot be considered as an invitation to enter into an investment. It does not constitute or relate in any way nor should be considered as an offering of securities in any jurisdiction. The whitepaper does not include nor contain any information or indication that might be considered as a recommendation or that might be used to base any investment decision on.

The ASLAN (ASL) token is just a currency token and are not intended to be used as an investment. The offering the ASLAN token on a trading platform is not changing the legal qualification of the token, which remain a simple means for the use of the Aslan blockchain and is not a security.

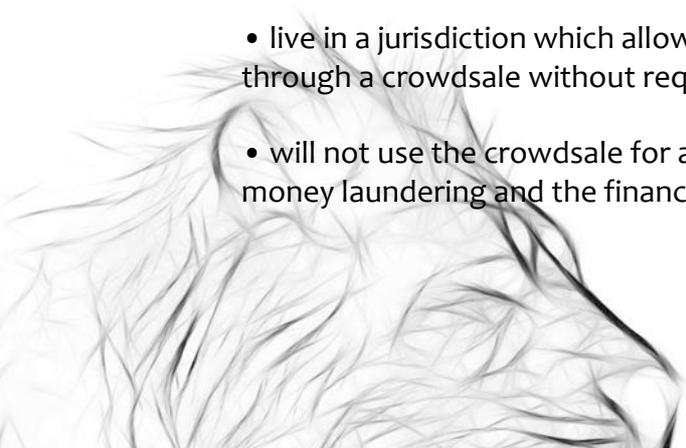
The Aslan Project is not to be considered as advisor in any legal, tax or financial matters. Any information in the whitepaper is given for general information purpose only and The Aslan Project does not provide with any warranty as to the accuracy and completeness of this information.

Any person undertaking to acquire the ASLAN token acknowledge and understand that The Aslan Project does not provide any guarantee that it will manage to achieve launch of the Aslan Blockchain. They acknowledge and understand therefore that The Aslan Project (incl. its founders, bodies and employees) assumes no liability or responsibility for any loss or damage that would result from or relate to the incapacity to use the ASLAN token including in the case of intentional misconduct or gross negligence.

Representation and warranties

By participating in the Token Sale, the purchaser agrees to the above and in particular, they represent and warrant that they:

- have read carefully the terms and conditions attached to the whitepaper; agree to their full contents and accept to be legally bound by them;
- are above 18 years old or have reached the age in which are qualified to enter into a contractual relationship in the country of residence;
- are not a US citizen or resident;
- have full authorization to act on behalf of the legal entity which will purchase the ASLAN token, if acting on behalf of a legal entity;
- live in a jurisdiction which allows the The Aslan Project to sell the ASLAN token through a crowdsale without requiring any local authorisation;
- will not use the crowdsale for any illegal activity, including but not limited to money laundering and the financing of terrorism;



- have sufficient knowledge about the nature of the cryptographic tokens and have significant experience with, and functional understanding of, the usage and intricacies of dealing with cryptographic tokens and currencies and blockchain-based systems and services;
- are familiar with all related regulations in the specific jurisdiction in which s(he)/it is based in and that purchasing cryptographic tokens in that jurisdiction is not prohibited, restricted or subject to additional conditions of any kind;
(Participants cannot contribute to the Token Sale if there are applicable legal restrictions in their country of residence. It is the responsibility of each participant to know these laws and take them into consideration before their participation in the Token Sale)
- waive the right to participate in a class action lawsuit or a class-wide arbitration against the The Aslan Project, its Affiliate Parties, founders, associates and employees whether real or fictitious.
- are not purchasing the ASLAN token for the purpose of speculative investment or usage;

