DEMOS CHAIN

**Broad DAO Democracy Consensus:**

Consensus is reached by a new algorithm based on statistics and mathematic. Every consensus time (e.g. 5 seconds) all the nodes vote a random peer to be validator. Collected the votes, 12 nodes are chosen. Of these, 6 are validator and 6 are dummy nodes.  
Both the groups execute transactions in mempool and propose a block to be included. The validator group needs to reach at least 4/6 agreements to declare a block valid. The nodes that tried to submit an invalid block are penalized based on how many times they violated the protocol. The dummy group does the very same but the result isn’t inserted in the chain: it is just used as a control group for eventual other malicious actors. BDD consensus is able to declare a valid block and is legit until less than 4/6 nodes are compromised. The risk of being a malicious node is to be penalized (also monetary) and to be excluded from the governance.

**Decentralized Autonomous Organization Rewarding:**

With zero gas needed to submit transactions, one may ask what is in for the nodes to validate. In every blockchain is needed an incentive to be able to attract validators. Demos Chain uses an approach based not on the fees paid by the users but on a DAO Governance that controls the various taxes, directions and governance of the whole chain. The more a validator validates, the more keeps being legit and available, the more governance it gains. Through a progressive loss and redistribution of shares, it is ensured that validators are required to be loyal and active to maintain their position.

**Equality Chain Contribution System:**

While there is no gas fees, the DAO Governance is awarded with small taxes based not on transactions but on value moved and resources used. We believe that using the blockchain is a right of any individual, and we believe as well that contributing to its usage is a duty of any actor that benefit from the chain itself.

A progressive tax is applied based on transaction value: starting from 1% of tx value and keeping 1% until 50$ of fees paid, the tax step down progressively to 0.1% until 100$ of fees are paid. That’s the maximum tax paid by an user. This ensure that users won’t ever pay more than 100$ of fee and won’t ever pay useless fees if they don’t require high resources.

For special types of operations, like file exchange or cross chain operations, the tax can reach 150$.

**File Exchange Native Protocol:**

Demos Chain is able to accept, transfer, store and retrieve files up to 1MB of size (or more, if the Governance decides so), with strict limits on time and quantity per user so to not saturate the nodes. It is possible to upload documents, images, spreadsheets and even binary files natively, without any external tool and remaining fully on chain. Like every tx, the file exchange must be signed with a private key and is linked forever to the corresponding transaction so not to loose the transparency proper of a blockchain.

**From Scratch Approach:**

The decision of not basing Demos Chain code on any other solution comes from a simple consideration: to innovate, is good to look at other ideas but is bad to inherit other’s implementation. That’s why we took the battle proven concepts founding every blockchain, such as Private/Public keys, blocks, validation and consensus, and we coded them from source posing the roots for a new kind of chain, optimized and agnostic, that maintain a great speed while retaining the most secure features.

**Offchain Web 2.0 Endpoints:**

Not being limited by designs that block interactions with the off chain World Wide Web, we carefully crafted some methods, called Endpoints, to let any Demos Chain user interact (almost) freely with resources existing out of the Chain. There are no particular risks of allowing, for example, transactions asking for the price of a coin or checking the result of a football match. Obviously, this design takes in account the less security and the non verifiable status of the offchain world.

**Interchain Hub Protocol:**

For the exact same reason, at Domus Chain we wanted to make it easy for our users to interact with other chains easily. Thanks to the native instruments we built for this reason, there is no need for a bridge to, let’s say, exchange tokens from Domus to BSC or from Solana to Domus. The so-called Hub is a series of APIs, contracts and middlewares that keep the operations on chain while interacting with virtually any blockchain out there.

**Expansion Proof Design:**

Evolving is living, especially for a blockchain. We are at the beginning of a great future made of innovative solutions and discoveries and we simply cannot think of being static or non modifiables. Domus Chain has a elastic structure that, based on the Governance decisions, allows to change direction and remove, insert or edit the majority of the instruments built on the chain.

**Smart Contracts Made Easy:**

To understand why smart contracts are so popular, we cannot avoid the question: are they easy to write and to evolve?  
The answer, on EVM chains, is yes: Solidity is a mature, even with some serious flaws, language that anyone can learn and use. Blockchains using Rust or other low(er) level languages are not so lucky, as many users are stopped by the learning curve.

At Demos Chain we wanted to emulate and tribute our main language: Python. We created Demoscript, a simple yet powerful python-like language that allows to create complex smart contracts without necessarily suffering from a steep learning curve. More, Demoscript is an interpreted language that is executed on validators, thus avoiding any low level bytecode instruction that could be obfuscated or maliciously exploited.