

indorse 2.0

Code Validation Network

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What is Indorse 2.0?

Indorse was started in 2017 and has been operating for more than three years now. As one of the early pioneers in the blockchain industry, Indorse was part of the initial wave of the token sale phenomenon, having completed its token sale in September 2017. Significant milestones have been achieved since then, including work with several renowned enterprise clients, and the generation of revenues over US\$ 1 million.

Whilst the Indorse team has been focused on creating real business value for Indorse and its ecosystem, the blockchain industry and the related technology itself has metamorphosed completely. To keep up with the times and incorporate the latest paradigms emerging in the blockchain industry and the innovations in the token model itself, Indorse management has taken the decision to upgrade Indorse's existing system and token utility model.

Although the most recent whitepaper v1.1 is still the authoritative document with regards to the Indorse project, this Light Paper will serve to update certain aspects of the token utility model and add a few more roles inspired from the recent Decentralized Finance (DeFi) initiatives in the space.

What is new?

Item	Expected timeline
A new ecosystem role - "Decentralised Referral Agents" (DRA)	Q4 2020
A new staking mechanism, coupled with staking rewards, for code validators and the DRA	Q4 2020
The launch of Indorse DAO - plan to decentralize the governance of certain aspects of the Anonymous Indorsement Protocol ('AIP') v2 in stages	Whole of 2021

Why Indorse 2.0?

- Through building Indorse in its initial form, it is now clear that the concept of a decentralized code validation network has a demand in the market. Furthermore, now, the time is right for Indorse to set its sights higher and move towards a completely decentralized model.
- Centralized platforms such as Freelancer, Codementor and Gumroad have demonstrated that there is much potential for generating revenues through peer to peer commerce.

- Indorse, in turn, would like to move towards the conjunction of both these ideas - leveraging the network of expert developers to enable peer to peer commerce, starting with code reviews.

Ecosystem Actors

These are the different roles in the Indorse ecosystem:

- Code Validators
- Decentralized Referral Agents (NEW!)
- IND Token Holders
- Indorse corporate entity

Roles external to but interacting with the Indorse Code Validation Network:

- Liquidity Providers (NEW!)
- Clients of the Code Validation Services

Code Validators

Code Validators are part of the Indorse ecosystem in terms of their calibre as independent expert software developers with multiple years of experience in the software industry. These validators conduct Code Reviews on the code projects submitted by individual candidates or those being sent by the clients of Indorse. Currently, Indorse has a community of about 250 active validators across 11 different technologies, including Java, JavaScript, Python, Data Science, Blockchain, C#, C, and more.

Code Validators Incentivization Criteria

Code Validators can be selected according to the criteria predefined by Indorse. Indorse has the tools to monitor the Code Validators' activity levels and thereby incentivize them. Code Validators can be Referral Agents as well. However, they will not be entitled to additional commission on their tasks unless it is a service provided to a Client brought by them into the network and provided that certain other conditions are also met.

Code Validators are professional independent expert software developers and are neither employees nor partners of Indorse.

Monthly token incentivisation program for Code Validators

The Code Validators activity is tracked via several statistics:

- Number of successful and completed Code Validation Services
- Positive feedback by the client on completed Code Validation Services
- The timeframe of the Code Validation Services
- Qualitative assessment of the Code Validation Services

These statistics help monitor the level of activity of Code Validators and their interaction with the platform and the Network. The Indorse Code Validation Network may regularly collect data and review data from the Code Validators' activities and plan incentivization programs accordingly. The objective of these incentives in IND is to encourage the Code Validators to be more active members of the Network. By receiving IND as an incentive, Code Validators can choose to increase their IND staking balance (you can find more information about Indorse 2.0 staking in the section below titled '**Staking Mechanism**').

Clients of the Code Validation Services

These are the clients who want to get their code reviewed. Currently, Indorse clients fall into three categories -

1. Organizations hiring new software developers
 - a. Most of these organizations are SMEs who are hiring between 2 to 10 software developers at a time
2. Organizations conducting massive online hackathons
 - a. Most of these clients are enterprise companies in the tech industry
 - b. Some of these companies want to conduct massive hiring rallies, often hiring about 50 or more software developers at a time
 - c. Some other companies want to get the developer community to either innovate using their APIs or platforms or else generate innovative ideas for their upcoming projects and innovation challenges
3. Organizations conducting Upskilling activities
 - a. Clients are usually universities, educational institutions such as coding schools, which in turn conduct Upskilling activities for other enterprises or individuals.

Decentralized Referral Agents (DRA)

This is a newly introduced role for Indorse 2.0, wherein these individuals or organizations will be incentivised to generate more business for the Indorse ecosystem as a whole. They will be incentivized to:

1. Refer new companies/businesses who wish to conduct code reviews
2. Refer new code validators to the Indorse ecosystem

Decentralized Referral Agents are independent agents who will be able to collect IND rewards based on the Referred Client's paid projects and the Referred Code Validators paid services. Rewards will be defined and revised regularly with specific reward conditions updated regularly and distributed through the *Rainmaker* contract. Each Decentralized Referral Agent will be assigned a Decentralized Referral Agent Code which he/she will communicate to the Referred Clients and Referred Code Validators he/she has led to the Indorse platform so that it may be added to Code Validation inquiries and Code Validation Services in order to ensure eligibility for the rewards.



Indorse is free to add any Code Validators to its platform and to accept or refuse Referred Code Validators submitted by any Decentralized Referral Agents.

Decentralized Referral Agents are neither employees nor partners of Indorse.

Monthly token incentivisation program for Referral Agents

Data will be generated in relation to Decentralized Referral Agents :

- The number of submitted Code Validators added to the Indorse Code Validation Network.
- Number of Clients who have used the DRA's code when registering on the Indorse Code Validation Platform

Indorse will therefore easily be able to review the impact of the Decentralized Referral Agents' activities and can decide to set up incentivization programmes in order to increase the level of business generated by the DRAs. Through these programmes, DRAs can collect more IND and therefore increase their IND staking balance.

Liquidity providers

Indorse aims to create liquidity pools on various leading DEXes such as Kyber, Uniswap and Balancer amongst others. Various IND token pairs will be listed on these exchanges. The liquidity providers will add liquidity to these pools.

Indorse DAO

Indorse DAO is a manifestation of the aspirational ideas of creating a truly decentralized, peer to peer platform which enables software developers to earn rewards by offering their skills and time for conducting gigs. Indorse DAO will manage the central tenets for the underlying protocol and ensure that it runs smoothly, is sustainable, and caters to the various stakeholders involved in this ecosystem as a whole.

Indorse DAO will be created based on industry-standard templates, thus providing a well-tested and community vetted mechanism for the governance aspects. Whilst the Indorse corporate entity will certainly be involved in the creation and the day to day running of the Indorse 2.0 platform in the beginning, the idea is to create a separate on-chain governance structure, which will consist of the various actors mentioned in this paper.

The governance structure will be decentralized gradually in three distinct phases.

Note:- Please wait for granular details about these phases to be announced from the aforementioned official Indorse communication channels only

Phase 1 - Limited delegation

Timeline - Q1 2021

- Launch of the Indorse DAO and working on Indorse 2.0
- The stakeholders will be the current major IND token holders, which will include the early founding team, Indorse shareholders and also some of the early backers of the IND token sale
- In this phase, only these actors would be able to vote on the proposals for the changes to the protocol
- Proposals cannot be submitted by everyone - only by the Indorse stakeholders
- Staking would have been enabled by this stage

Phase 2 - Delegated stakeholders + proxy voting

Timeline - end of Q2 2021 / beginning of Q3 2021

- Introduction of the delegation feature in this release
- This could include the most active validators, the most active referral agents and even some of the clients in the ecosystem
 - This will be in addition to the aforementioned actors from Phase 1
- IND token holders will be able to delegate their voting power to
 - Themselves (their own Ethereum address)
 - Any other Ethereum address
- Proposals cannot be submitted by everyone - only by the Indorse stakeholders and the most active ecosystem members.

Phase 3 - Community governance

Timeline - Q1 2022

- By this phase, it is expected that the community adoption will have increased to a level wherein there will be several hundred governance members in the community who will be incentivized to participate in the governance of the DAO.
- This will be accomplished by making the Indorse 2.0 platform a central part of their daily work life and making it a base to provide them with a fixed income and livelihood.
- Proposals can be submitted by all the members of the Indorse community.

Staking Mechanism

(Note: Please wait for the launch of the staking mechanism to be announced from the official Indorse communication channels only, if in doubt of the origin of the information please ask us via these channels. This includes the address of the Staking Smart Contract)

How does staking work?

1. The users can stake their tokens by “depositing” them in the Indorse staking Smart Contract
2. Before depositing their tokens, they need to “approve” the Smart Contract to spend the tokens on their behalf
3. Once they “approve” they can call the “createStake” function on this Smart Contract whereby their tokens will be deposited
4. This Smart Contract also has public getter functions in order to query which address has staked how many tokens
5. The AIP v2 algorithm will always call the function “isEligibleStakeholder” while selecting the validators.

Staking Rewards

- The staking rewards will be given out of the 14,624,747.00 “Inflation Tokens” that have been kept aside during the token sale in 2017. They can be found in this contract - <https://etherscan.io/address/0x00D31206E625F1f30039d1Fa472303E71317870A>
- The staking rewards distribution model is designed to be available for a period of 60 months and will go on decreasing month over month until the 60th month. It might go on beyond this time period if part of the tokens is not distributed by the 60th month.
- Every month, IND tokens equivalent to the corresponding value from the column ‘Block rewards’ from Table 1 below will be moved from the Inflation tokens contract to the staking contract in order to cover the disbursements
- If there are not enough users staking for any given month, the reward tokens will roll over in the subsequent months (this may, in effect, extend the period during which staking rewards are distributed beyond the initial plan of 60 months).

- The rewards will be given out for every new block mined on the Ethereum blockchain
- The rewards will need to be claimed by an eligible Ethereum address holder by calling the relevant function on the staking Smart Contract
- Unclaimed IND token rewards will remain available until the user claims them
- The claimed rewards will be instantly available (after the subsequent block is mined) and the wallet owner may add the reward IND tokens to the staked IND balance through the process described above - and therefore receive more IND token rewards in the future - or keep them on their wallet unstaked, or transfer them to another wallet of their choice.

Note:- You can use [this website](#) to estimate the time required to mine the following number of blocks

Block number	Monthly rewards	Sample rewards for 1000 IND staked
T0 + 200,000	438,742.41	7.45
T0 + 1,200,000	405,122.3	6.88
T0 + 2,400,000	364,778.17	6.19
T0 + 3,600,000	324,434.04	5.51
T0 + 4,800,000	284,089.91	4.82
T0 + 6,000,000	243,745.78	4.14
T0 + 7,200,000	203,401.65	3.45
T0 + 8,400,000	163,057.52	2.77
T0 + 9,600,000	122,713.39	2.08
T0 + 10,800,000	82,369.26	1.39
T0 + 12,000,000	42,025.13	0.71

Table 1 - Sample calculations for staking rewards - for illustration purposes only - actual rewards may vary

T0 = Block at which the Staking contract is deployed

Staking and Delegation

Note: Please wait for the launch of the staking and delegation to be announced from the official Indorse communication channels only

1. Once the Delegation system in place, delegation can be assigned to a user's own Ethereum address or to the address of another Indorse stakeholder
 - a. Delegation is required in order to be eligible to create proposals under Indorse DAO and vote on them

2. If a user tries to delegate to an ineligible Delegatee, the transaction will result in an error
3. In order to delegate to an address, the user needs to call the function “delegate” in the relevant Smart Contract and insert the address of the delegatee.
4. **Note** - It is not possible to delegate to an address that doesn't have a certain minimum number of IND tokens staked
5. There will be a separate UI on the Indorse website to facilitate this process.

Staking by Code Validators

Code validators have to stake a minimum number of IND tokens and can opt for code review payments in, IND, DAI or USDC upon providing their code validation services.

Staking IND is a prerequisite to be considered an eligible candidate to provide the code review service. Other criteria will be taken into account, however, when selecting the code validators, see more details about the code validator selection process here.

Validators can get the IND tokens in two ways -

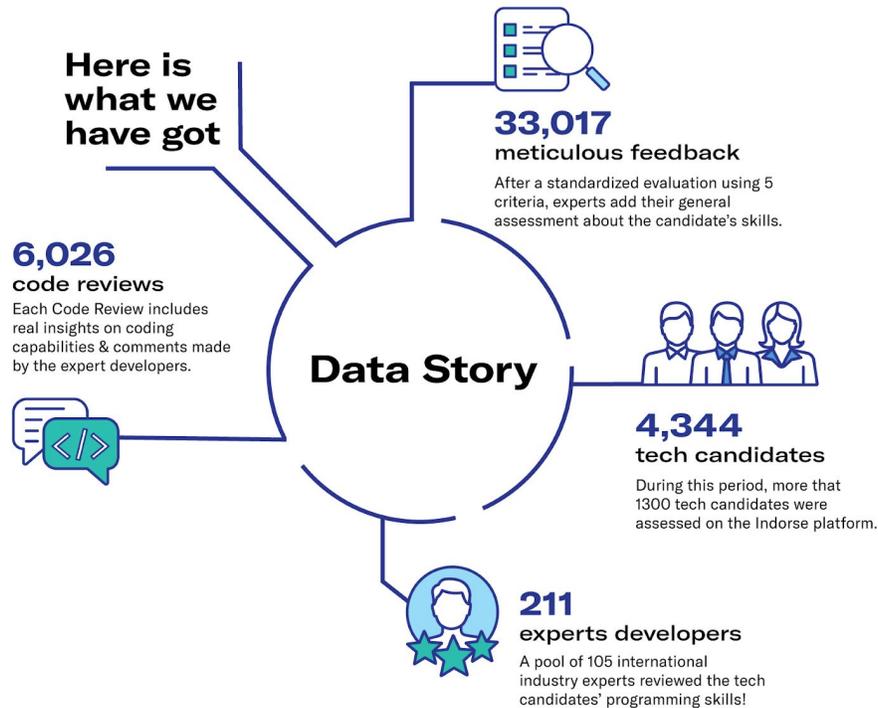
1. They buy them on the market
2. They opt to be rewarded in IND tokens when providing code validation services

Staking by Decentralized Referral Agents (DRA)

In order to be considered as DRAs, agents must stake IND and lock in a minimum balance of IND to keep their DRA status active. Failure to maintain the required minimum balance can prevent agents from submitting Potential Clients and Code Validators and from collecting any referral rewards due. Agents are free to submit as many Code Validators and Potential Clients as they wish to. Decentralized Referral Agents are neither employees nor partners of Indorse.

Anonymous Indorsement Protocol v2

AIP, which has been the backbone of Indorse, has been operating in the background since its inception. These are the statistics for the performance of AIP until now -



Note:- The original AIP design had envisioned using Zero-knowledge proofs and the requirement for the validator to “register” for voting. However, in the actual implementation (using which over thousands of reviews have been done), it became apparent that both of these are not required in practice.

With hundreds of validators in the Indorse community, it is the right time to introduce the staking based selection of validators for the various claims. With the benefit of these insights, this is set to become the new algorithm for AIP.

The new AIP algorithm will work in this way -

1. A new validator is selected to be a part of the independent expert developer community, only after a rigorous selection process.
2. In the onboarding process, this validator will be asked to stake a certain minimum number of tokens in order to be chosen for conducting code reviews (this minimum number will be a variable and subject to updating from time to time).
3. Every time a new claim (code review project) is submitted on Indorse, the Indorse team will carry out some sanity checks before releasing it to the independent expert community. A system to automate this process is currently in the works.
4. Once the sanity checks are done, the claim validation request is sent to -

- a. all the validators who have this particular skill in their Indorse profile.
 - b. all the validators whose address returns `bool:true` when the "isEligibleStakeholder" function is called in the Smart Contract.
5. The first 4 or 6 validators to reserve a slot and complete the code review are considered for the code review reward payments.
6. Once a validator completes the code review, they are asked to sign an Ethereum transaction using Metamask.
 - a. It is important to note Indorse saves this TXN signature, but this transaction is not immediately broadcast to the blockchain (this is done in order to help the validators to save the gas costs).
 - b. All these transactions will be collated in a Merkle tree and at a regular interval (every day, every week), the root of this Merkle tree will be broadcast to the blockchain by Indorse.
 - c. Whilst this helps to save the gas costs for the validators, it will also ensure benefitting from the immutability of the blockchain for all the votes done by the validators.
 - d. The message being signed by the validator contains these data fields -
 - i. Claim_id
 - ii. Decision
 - iii. Timestamp
 - iv. Version
 - v. Skill
7. As the validator continues reviewing the code, a tab is kept about the number of votes done by the validator and the code review payment due to them.
 - a. At the end of each month, payments will be collated and the rainmaker.sol contract will be used in order to make the payments in bulk.
8. The validators will have the option to receive a part of their payments in IND and a part in a stablecoin (DAI or USDC to begin with)
 - a. Also, the validators will receive a part of the payment in the form of IND tokens. They will also get an option to automatically stake these tokens in order to increase the probability of getting selected for the validation process.

Some screenshots from the current code review process

1. The sanity checks are done through the algorithm and the Indorse team

Link Details

Link Accessible	Yes
Duplicate Claim	No
Forked Repository	No
Authenticated Commits	0
Total Commits	0

i In the new flow for validators, you first need to reserve a slot for about 30 minutes, after which you can start either reporting a claim or writing your review. For more details please [click here](#).

Voting

Pythonds

Slot Available.

Reserve Vote Slot

2. Information collected from validators during the code review process

Code Quality  Poor Great

Extensibility  Poor Great

Use of Algorithms  Poor Great

Code Efficiency  Poor Great

Documenation  Poor Great

Total Commits  Poor Great

How many years of experience do you think the author has based on their code?

0 - 1 Years 

How long did you spend on this vote? 

General assessment about the skills

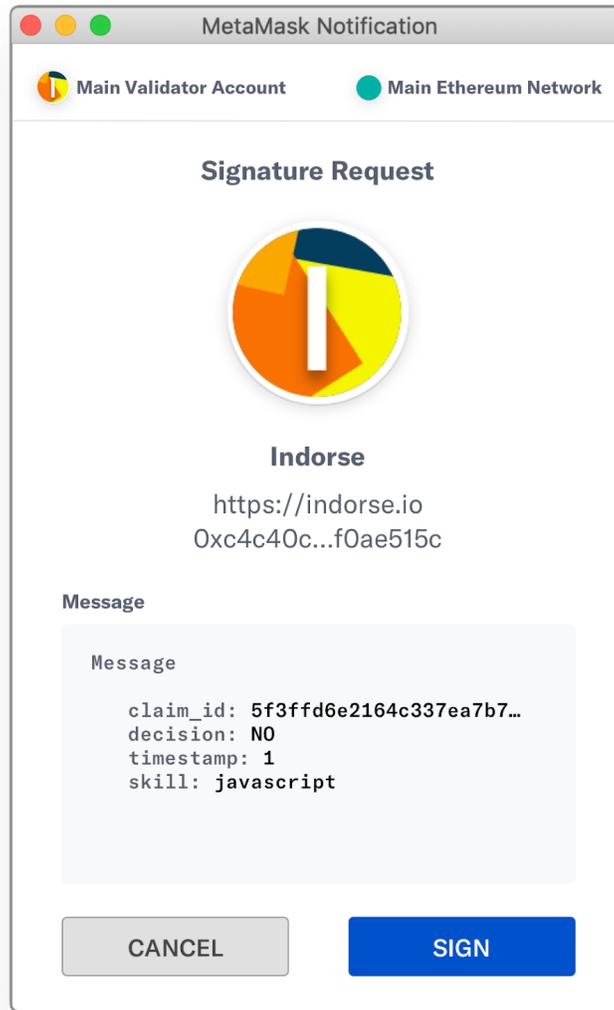
0/250

Suggestions for improvement

0/250

Can this Person Code in Python? 

3. Metamask transaction signature



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- b) Shares or interest in a collective investment scheme
- c) Stocks, debentures, note, warrant, certificate or any other instrument of which the purpose is to grant a right to interest, dividend, payment or any kind of return from any person
- d) Any form of security
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