



# ANNUAL REPORT 2023



# Coopérative Kleros Annual Report 2023

The Coopérative Kleros is a Société Coopérative d'Intérêt Collectif par action simplifiée, with a variable capital of 2,675.10€.

The company was incorporated on August 10th 2018, for 99 years, by the Registre du Commerce et des Sociétés of Paris under the registration number: 841 671 902.

The Head Office is located at 2 bis Rue Dupont de L'Eure, 75020 Paris. The company is domiciled at ABCLiv, (registration number: 314 503 996).

The closing of the 1st financial period was on December 31st 2019.

The second financial period was from January 1st 2020, to December 31st 2020.

The third financial period was from January 1st 2021 to December 31st 2021.

The fourth financial period was from January 1st 2022 to December 31st 2022.

**Occupation:** create, develop and promote a computerized and decentralized dispute resolution protocol using blockchain technology.

## President

Federico AST, born on April 18th 1981 in Buenos Aires, of Argentine nationality, residing at 1444 Echeverria, Buenos Aires, ARGENTINA.

## President of the supervisory board

LOGICAL PARADISE LDA, located at Avenida Visconde de Valmor 73, R/C, 1050-239 Lisboa, PORTUGAL and directed by Clément LESAEGE, born on March 4th 1992 in Villeneuve D'Ascq, of French nationality, and residing at Avenida Visconde de Valmor 73, R/C, 1050-239, Lisboa, PORTUGAL.

## Vice president of the supervisory board

Ferit TUNÇER, born on March 1st, 1992, of Turkish nationality, residing at Bostanlı Mahallesi, 1735. Sokak - Karşıyaka / İzmir, Turkey.



# Significant Events of the Past Financial Year

## May 2022

The collapse of Terra starts the bear market in the crypto industry.

The depeg of the UST stable coin triggers insurance claims for over 5400 ETH secured by Kleros through the Unslashed protocol.

## June 2022

The Kleros protocol suffers an attack by a protocol exploiter known as Avraham Eisenberg who tries to abuse the payout policy of Unslashed insurance. The attack is unsuccessful.<sup>1</sup>

## July 2022

The team participates at the EthCC conference in Paris.

The Kleros Moderate product is launched, a solution which relies on Kleros dispute resolution for moderating social media content.

First alpha presentation of the [Vea bridge](#).

## August 2022

The demo day of the second batch of the Kleros Incubator is held, featuring [Yubiai](#) and [ProveMeWrong](#) projects.

## September 2022

The team participates in the [Token 2049](#) conference.

Participants of the [6th Batch of the Kleros Fellowship of Justice](#) are announced.

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<sup>1</sup> In December 2022, Mr. Eisenberg was [arrested over a \\$100 Million Crypto Market Manipulation Scheme](#).



## October 2022

The team participates in the Devcon Conference in Bogotá.

The Cooperative launches Kleros Tags, a list curation approach for tagging smart contracts and fighting fraud.

## November 2022

The collapse of FTX exchange sends more shockwaves into the crypto industry.

After months of conflict, a decision is made to fork the Proof of Humanity protocol.

## December 2022

The extension of the juror incentive program is voted for one more year.

Members of the Cooperative participate in the Governing Web3 conference hosted by RMIT.

## January 2023

The third cohort of the Kleros Incubator begins.

## February 2023

The beta version of [Kleros 2.0](#) is presented in a public demo.

## March 2023

The [Vea](#) messages bridge is launched.

The Cooperative participates in the Paris Arbitration Week, one of the top events in arbitration law.



# Activities of the Cooperative

The Coopérative Kleros conducts four main activities for the fulfillment of its mission: core protocol development, integration development, research, and marketing and communications.

- Core protocol development activities include the definition of the Kleros protocol architecture, leading security procedures and developing smart contracts to improve the security and efficiency of the protocol.
- Integration development activities include building integrations with partners for fostering the adoption of the Kleros protocol, development of user interfaces and other activities oriented at assisting partners to adopt Kleros for escrow, list curation and oracle use cases.
- Research activities include cryptoeconomic research with the goal of improving security and efficiency of the protocol, as well as enabling new use cases.
- Marketing and communications activities include crafting and broadcasting Kleros messages to relevant audiences, as well as conducting business development in order to foster adoption of the platform and increase the number of partners and users.



# Members of the Cooperative

As of March 31st, 2022 there are a total of 39 members of the Coopérative for a total of 52 shares. One share is 50€.

	TOTAL MEMBERS	NUMBER OF SHARES	VALUE
<b>FOUNDER</b>	<b>2</b>		
Federico AST		5	€250.00
Logical Paradise represented by Clément LESAEGE		6	€300.00
<b>PRODUCER</b>	<b>6</b>		
William GEORGE		1	€50.00
Laurence ZHANG		1	€50.00
Plinio BRAGA PINTO		1	€50.00
Annabelle VASSALLO		1	€50.00
Lagoon Digital Limited, represented by Jean-Baptiste Cebe		1	€50.00
Guangmian Kung		1	€50.00
<b>USER</b>	<b>32</b>		
David ABAD		1	€50.00
Nicolas WAGNER		5	€250.00
Romina KAVCIC		1	€50.00
Mayank JAIN		1	€50.00
Lola GUÉRIN		1	€50.00
Samuel VITELLO		1	€75.10
Enrique PIQUERAS		1	€50.00
Pierre-Arthur RIBEIRO		1	€50.00
Alexander STACHNIEWICZ		1	€50.00
Dmitry NAROZHNY		1	€50.00
Lucas ACEBEDO		1	€50.00
William HARBORNE		1	€50.00
Marco MAUER		1	€50.00
Ivan de LASTOURS		1	€50.00
GENESIS RE represented by Michal STEPHANOW MARS ROBERTSON		1	€50.00
Damjan MALBASIC		1	€50.00
Abeer SHARMA		1	€50.00
Pablo EUILLADES		1	€50.00
Mariano ZVAIGZNINS		1	€50.00
Democracy Earth foundation represented Santiago Siri		1	€50.00
Mauro Viotti		1	€50.00
Agustin Dario Bresso		1	€50.00
Shawtaroh Granzier-Nakajima		1	€50.00
Anatoly Karlin		1	€50.00
Santiago Algozino		1	€50.00
Stuart James JACKSON		1	€50.00
Jimmy RAGOSA		1	€50.00
Henrique BARCELOS		1	€50.00
Ferit TUNÇER		1	€50.00
Matheus FARIA DE ALENCAR		1	€50.00
8bit Labs OÜ represented by Shaleen JAIN		1	€50.00
Jacob MacDonald		1	€50.00
	<b>40</b>	<b>52</b>	<b>€2,675.10</b>



# Financial Position of the Cooperative

## Total origin of the funds:

- Capital of the company: 2675.10€
- Shares bought by the Coopérative partners (52): 2675.10€
- Revenue from the 1st PNK sale: 5800ETH<sup>2</sup>
- Revenue from the 2nd PNK sale: 7790ETH<sup>3</sup>
- Funds from Logical Paradise Ida: € 370,726.98

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<sup>2</sup> Approximately €2,240,144 at the time of the closing of the sale.

<sup>3</sup> Approximately €1,344,656 at the time of the closing of the sale.



# Kleros Cooperative Treasury

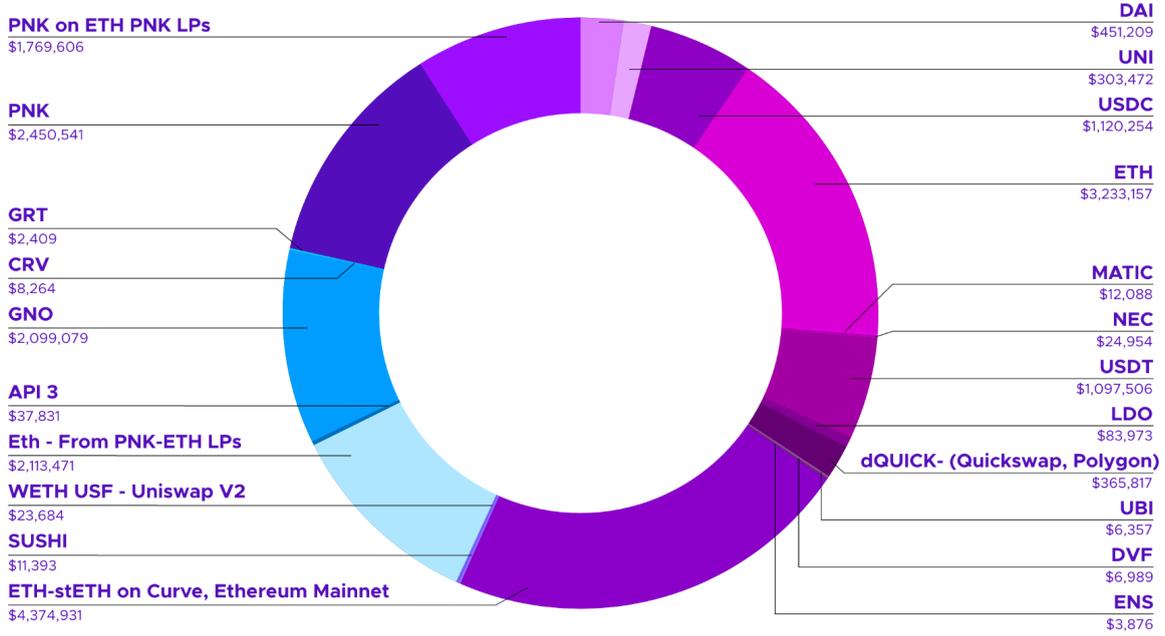
## (as of 01/03/2023)

DAI	\$451,209
UNI	\$303,472
USDC	\$1,120,254
ETH	\$3,233,157
UBI	\$6,357
CRV	\$8,264
DVF	\$6,989
MATIC	\$12,088
ENS	\$3,876
USDT	\$1,097,506
NEC	\$24,954
GRT	\$2,409
SUSHI	\$11,393
LDO	\$83,973
dQUICK- Quickswap, Polygon	\$365,817
ETH-stETH on Curve, Ethereum Mainnet	\$4,374,931
WETH USF - Uniswap V2	\$23,684
Eth - From PNK-ETH LPs	\$2,113,471
API 3	\$37,831
GNO - Running Valditors on Gnosis Chain	\$2,099,079
PNK	\$2,450,541
PNK on ETH PNK LPs	\$1,769,606
<b>TOTAL TREASURY</b>	<b>\$19,600,861</b>
Treasury without PNK holdings	\$15,380,714
Fiat on the Cooperative Bank Account	€12,500



### TOTAL ASSETS: \$19,600,861

based on 01/03/2023





# Kleros Cooperative Expenses

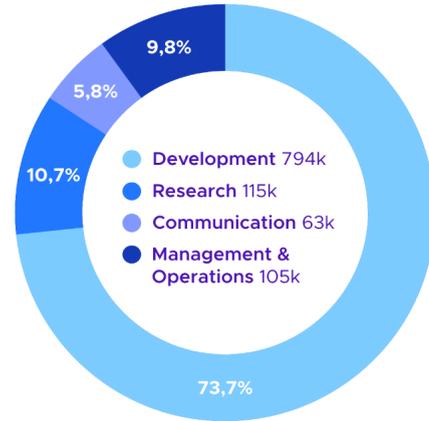
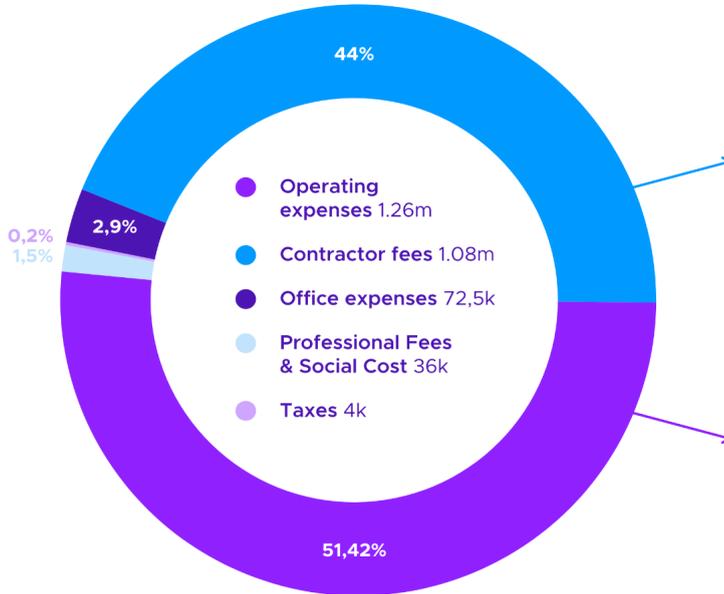
## (from 01/01/2022 to 31/12/2022)

<b>Wages &amp; Contractor Fees</b>	<b>€1,077,527.45</b>
Development	€793,778.18
Research	€115,272.34
Communications	€63,054.27
Management & Business Development	€105,422.66
<b>Professional Fees &amp; Social Cost</b>	<b>€36,044.81</b>
Accountant, Lawyer, Bank & Social Contribution	€36,044.81
<b>Taxes</b>	<b>€4,040.65</b>
Taxes	€4,040.65
<b>Office Expenses</b>	<b>€72,465.10</b>
Web Services, Conference Calls, Office Rent, Post & Other Office Supplies	€72,465.10
<b>Operating Expenses</b>	<b>€1,259,599.10</b>
Marketing/Awareness/Travel	€330,074.14
Communication/Advertisement/SEO	€651,258.27
Punctual Legal Fees	€102.00
Development (Bounties, Website, Audits)	€149,777.00
Other Marketing & Communications (Recruitment, Translation, Reward Programs)	€128,387.69
<b>TOTAL EXPENSES</b>	<b>€2,449,677.11</b>



### KLEROS EXPENSES: 2,45 M €

based on December 2022





## Token Allocation (as of 01/03/2023)

	Subtotal Supply	PNK Allocated	PNK Remaining
<b>Token Sale &amp; Juror Incentive Programs</b>	<b>424,626,704</b>	<b>373,419,871</b>	<b>51,206,833</b>
PNK Sold in the First Token Sale		160,000,000	
PNK Sold in the Second Token Sale		150,000,000	
PNK Sold OTC		20,619,871	
Juror Incentive Program		42,800,000	
<b>Team Pool</b>	<b>180,000,000</b>	<b>180,000,000</b>	<b>0</b>
Total Used in Team Allocations		180,000,000	
<b>Coopérative Reserve</b>	<b>120,000,000</b>	<b>95,306,908</b>	<b>24,693,092</b>
Liquidity Provided to Exchanges		63,352,874	
PNK Paid to Team Members as Contractor Fees		14,745,651	
PNK Paid as Bounty Rewards		16,849,383	
Marketing Programs		359,000	
<b>Airdrop Pool</b>	<b>40,000,000</b>	<b>23,497,522</b>	<b>16,502,478</b>
PNK Airdropped		23,497,522	
<b>TOTAL SUPPLY</b>	<b>764,626,704</b>	<b>672,224,301</b>	<b>92,402,403</b>



## Administrative News

A commercial case at Tribunal Judicial da Comarca de Lisboa Norte has finished between the Cooperative and Mitchell Loureiro over the rendering of services in connection with the first token sale (case n°577/20.4T8LRS). The legal representation of the Cooperative was done by Ms. Zélia Leal Pinto. The amount at stake was in the vicinity of €20,000 and the Cooperative won the case. The other party did not appeal the decision.

A number of activities are being conducted to improve the administrative processes of the Cooperative such as banking operations and payroll management.

The Cooperative works with Amarris Contact, a French accounting firm, specializing in VSEs and SMEs based in Paris.

### The Kleros Cooperative accounting team:

Christophe LECLAIR, Certified Accountant

Anaïs VIOLLEAU, Accounting Advisor

### Amarris Contact Paris

WeWork Paris Rive Gauche

198, avenue de France

75013 Paris

☎ +33 (0)1 83 75 75 60



# Social Impact of the Coopérative

Coopérative Kleros is a mission-driven company with a positive social impact in a number of aspects.

## Justice Inclusion

The Cooperative's mission is to contribute to the development of a protocol for secure, affordable and fast dispute resolution. The successful completion of the project has the potential to greatly increase access to justice opportunities for people around the world.

## Open Source Technology Development

The Kleros protocol is open source and free for anyone to use. The Cooperative holds no patents on any of its code or other developments, which are freely accessible via [Kleros Github](#).

## Open Research

All research activities conducted by the Cooperative are published openly and free for anyone to use.

## Education

The Cooperative also engages in the important activity of educating the public. Different educational activities are conducted in partnership with academic and business organizations in order to foster awareness about decentralized justice.



# Research Activities

During the past year the Cooperative has conducted the following research activities:

- The research team has continued their research on griefing, a measure of the effectiveness of sabotage introduced by Vitalik Buterin. This research allows one to measure the resistance of a system to attackers who are willing to incur financial losses in order to cause harm to others. In particular, the team studied in what situations the equilibria of a system can be altered by the presence of griefing participants and applied the results to study the degree to which the Kleros protocol can be made resistant to such attacks.
- The team has begun research on how "Soulbound Tokens" (SBTs) can be incorporated into the Kleros protocol. SBTs were introduced in a [work by Weyl, Ohlhaber, and Buterin \(2022\)](#) as a means of establishing social identity information about blockchain users, particularly towards enabling non-financial use cases. The team has considered how an approach using SBTs can be adapted to the process of juror selection in the Kleros protocol to draw juries with diverse backgrounds and expertise. Notably, William George gave a presentation entitled "[Economics and Souls in Schelling-point based oracle](#)" at Devcon 6 in October 2022, detailing a vision for the potential role of SBTs in the Kleros protocol.
- In preparation for the Ethereum "Merge", a thorough analysis of the random number generation that could be achieved with the tools available post-merge has been conducted to ensure that it still offered adequate security when used as part of the Kleros protocol.
- Tooling for parameter calculation has been improved upon, both by incorporating more nuanced models of certain attacks, as well as by improving upon the methods used to approximate certain inputs into parameter calculation from historical data.
- The team has begun to consider how tools from cooperative game theory can be incorporated into Kleros. Notably, research has focused on how Kleros could act as a social planner for parties that failed to negotiate among themselves.
- Furthermore, the team has engaged in research combining ideas from the field of law and economics with tools from graph theory, notably attempting to obtain a better understanding of inter-address links/interactions in Proof of Humanity and Kleros.
- Research has been conducted on the role of cryptographic primitives (RSA type encryption, hash function, etc) as legal objects in a decentralized, public



blockchain environment.

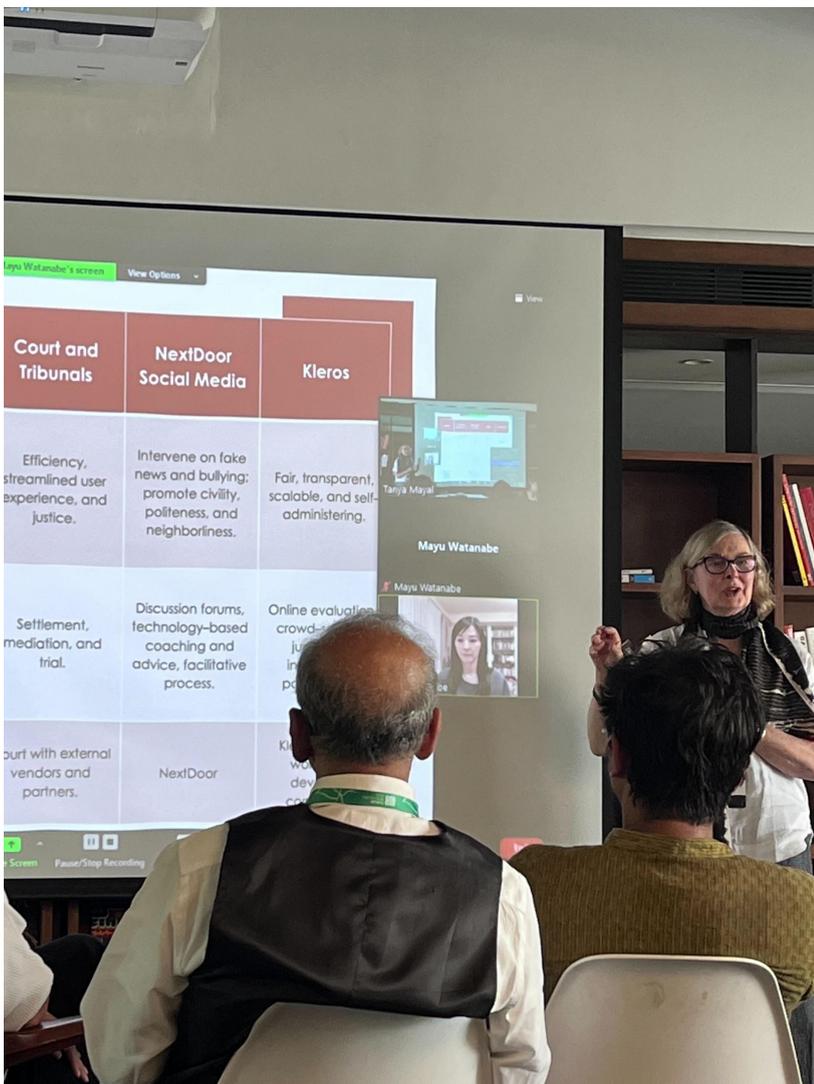
- Jamilya Kamalova, one of Kleros' PhD researchers, co-authored an ethnographic [case study](#) (together with her colleagues from BlockchainGov Tara Merk and Sofia Cossar) on the governance issues leading to the Proof of Humanity fork under the supervision of Dr. Primavera De Filippi.
- The Cooperative has conducted research on legal pluralism and its relation to the “Schelling point” type of justice. This involved a Kleros case study presentation at EUI University in May 2022, the organization of a decentralized dispute resolution reading group together with BlockchainGov (discussion involving founders/collaborators of projects such as UMA, Aragon, etc.), and a hypothesis paper presented by Jamilya Kamalova at the [RMIT University conference](#) in December 2022 on decentralized justice and distributed ledger technology.
- Team members have participated at different academic events, meetings, workshops and classes at the [University of Valencia](#), the [Smart Contract Research Forum](#), [Paris 2 Panthéon-Assas](#), the [Plurality Institute](#) at UC Berkeley, the [University of Oxford](#), [Stanford University](#), [Harvard University](#), the [Wharton School](#), RMIT, [Metagov](#), and IAE Business School among others.
- The Kleros protocol was mentioned in a number of influential third party research articles and books from different fields and countries.<sup>4</sup>
- The [6th cohort](#) of the Kleros Fellowship of Justice was launched with a record number of applicants. Selection of the accepted fellows was done after 34 candidates made it to the final interview round.

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<sup>4</sup> Some of the texts include the following: Blockchain Dispute Resolution for Decentralized Autonomous Organizations: “[The Rise of Decentralized Autonomous Justice](#)” published by Florence Guillaume and Sven Riva in Blockchain and Private International Law; “[Resolving NFT and Smart Contract Disputes](#)” published by Amy Schmitz in The Cambridge Handbook on the Law and Policy of NFTs; “[Lex Cryptographia Guidelines for Ensuring Due Process in Transnational Blockchain-Based Arbitration: Study on the Kleros Model](#)” published by Gabriela Cosío Patiño in the Transnational Dispute Management Journal; “The Crowd's Wisdom in Smart Contract Dispute Resolution: Is Crowdsourced Dispute Resolution Arbitration?” published by Alex Yang in the “[Contemporary Asia Arbitration Journal](#)”; [Artificial Intelligence and Blockchain for Social Impact: Social Business Models and Impact Finance](#)” published by Wolfgang Spiess-Knafl in Taylor & Francis; “[Blockchain and Smart Contracts and the Role of Arbitration](#)” published by Dirk Wiegandt in the Journal of International Arbitration; “[Something Borrowed, Something Blue: The Best of Both Worlds in Metaverse-Related Disputes](#)” published by Elizabeth Chan and Emily Hay in the Contemporary Asia Arbitration Journal; “[Making uncertainty operable: social coordination through game theory in decentralized finance](#)” published by Andreas Langenohl in the Journal of Cultural Economy; “[An Efficient and Decentralized Blockchain-based Commercial Alternative](#)” published by Marwan Zeggari, Renaud Lambiotte, Aydin Abadi, Louise Axon and Mohamad Kassab.



Members of the Cooperative participating at the "Governing Web3" conference hosted by RMIT in Melbourne. December 2022.



Stanford dispute resolution professor Janet Martinez discussing Kleros at the ODR Forum in Bangalore, India. March 2023.

Court and Tribunals	NextDoor Social Media	Kleros
Efficiency, streamlined user experience, and justice.	Intervene on fake news and bullying; promote civility, politeness, and neighborliness.	Fair, transparent, scalable, and self-administering.
Settlement, mediation, and trial.	Discussion forums, technology-based coaching and advice, facilitative process.	Online evaluation, crowd-sourced justice, in-person mediation.
Court with external vendors and partners.	NextDoor	Kleros development



# Development Activities

During the past fiscal year, the Cooperative has conducted the following development activities:

- The scope for Kleros 2.0 has remained mostly unchanged: delivering feature-parity with Kleros 1.0 initially. The roadmap, however, has evolved to prioritize the launch of Kleros 2.0 on Gnosis Chain at first. This was considered a less risky strategy than migrating the Ethereum court first.
- The Cooperative has been closely following the progress in rollup technology and recognized that even the most promising solutions (Arbitrum and Optimism) will take at least one more year to reach the level of security originally envisioned. This is another reason for not rushing the migration of the main court currently on Ethereum and for instead migrating the Gnosis Chain court first.
- The functionalities for Kleros 2.0 have been implemented at 90% on the smart contract level. On the frontend level (including the indexing layer), the essential arbitration functionalities have been implemented at 75%.
- The Cooperative has created a new user-interface components library which serves as a building block for the Kleros 2.0 frontend. The library's design is inspired by user research with nearly 50 community members and will provide a consistent look and feel to the Kleros product portfolio. A newer version of the Curate frontend is already being built on it, and it can be used by any third party project in the Kleros ecosystem.
- Several previews of Kleros 2.0 have been showcased to the community throughout the year. The first technical demo was presented in March 2022. This demo validated the technical feasibility of cross-chain arbitration. In September 2022, the Cooperative presented another demo showing the new user interface, the resolution of a curation dispute on Arbitrum and the associated cost savings. In February 2023, another demo presentation showcased the resolution of a cross-chain dispute originating from the Gnosis Chain testnet, more frontend functionalities (including a redesigned staking user experience) and the migration to a new decentralized storage solution.
- A particular challenge for Kleros 2.0 has been identified when it comes to supporting existing arbitrable contracts on the Gnosis Chain. These contracts pay the Kleros dispute fees in a currency (xDAI), which differs from the other courts (which receive ETH). The Cooperative has designed a solution which is currently being implemented.



- The team has continued refining a number of upcoming Kleros 2.0 features scheduled further on the roadmap including evidence moderation, modularity of the juror sortition mechanism and forking strategies.
- Vea (formerly known as the Fast Bridge) is a bridging mechanism critical to the cross-chain design of Kleros 2.0. This bridge has been implemented on the smart contract level between the Arbitrum and Ethereum testnets, and partially implemented between the Arbitrum and Gnosis Chain testnets. The client specifications and implementation are underway, as well.
- Kleros Moderate is a new product built during 2022 and announced at the EthCC 2022 conference. It is initially focused on discussion moderation for the instant messaging app Telegram with a bot named “Susie”. Kleros Moderate has expanded on earlier code contributions from Kleros community member Rodrigo Souto. Significant efforts have then been made on the user experience side to make it easy to onboard a new chat group or to report content. On the policy side, work has been done to provide a reasonable set of rules by default and on the technical side - to improve the bot’s reliability.
- The entire stack of Proof of Humanity 2.0 has been implemented and is currently undergoing internal security reviews. That includes the smart contract layer on both Ethereum and Gnosis chains, the subgraph, the frontend and the automation bots. Vitalik Buterin’s [essay on soulbound tokens](#) prompted the realization that a Proof of Humanity account could be abstracted and attached to a registered human. This opens interesting applications in the field of social recovery for crypto accounts.
- The governance difficulties in the Proof of Humanity DAO have delayed the launch of Proof of Humanity 2.0. Despite this challenge, the development team has remained continuously engaged with the community, has continued advocating for the protection of the original mission (sybil-resistant identity) and continued providing technical support.
- The Cooperative has started a redesign and modernization process for Kleros Curate, the most widely adopted product so far. Work is being done to rethink the strategy to further ease onboarding of new integrations and improve user experience. The process of upgrading and securing the technical stack to ship value incrementally and more efficiently is underway.
- The UX & design team is working on giving Curate a fresher look and making user participation more accessible. All these efforts will lead to a Curate stack that is both more performant, easier to use and ready for new use cases. The upcoming



UI will have capabilities to show data from multiple chains, reduce page-load times and allow us to expand Curate to more L1s/L2s.

- The Linguo codebase has been modernized to address performance issues with long loading times. Suboptimal on-chain data queries were identified and the team proceeded with building a subgraph to index on-chain data. This new subgraph has been integrated in the Linguo frontend, along with other performance tweaks (change of caching layer, removal of older libraries).
- The Cooperative has continued providing technical support to both end-users of Kleros products and developers/partners who have been building on top of the Kleros protocol. Specifically, the development team has been facilitating the adoption and usage of the Governor (which translates governance decisions voted off-chain into on-chain protocol changes in a trust-minimized way) in the Proof of Humanity and UBI communities. The Cooperative has often assisted with the review of proposed transactions and funding deposits.
- The Cooperative has conducted a number of IT platform and cybersecurity improvements aimed at strengthening the overall security across the organization. Solutions have been adopted to stop sharing sensitive information (passwords, private keys and other secrets) wherever possible and instead rely on individual credentials as best practice.
- For its email hosting and office suite, the Cooperative has made the move from AWS WorkMail to Google Workspaces, which let us enable critical security features such as multi-factor authentication.
- Kleros' cloud architecture with AWS has been upgraded with logical separation of resources per account, which has been used mostly by newer projects such as Kleros Moderate and provided RPC endpoints in 2022.



# Integration Activities

The last year was a big year for the Cooperative in terms of partnerships and integrations. With Guangmian Kung coming onboard as Integration Lead in March 2022, an extensive partner management process was put in place, enabling the team to track and manage several partner conversations in parallel.

- The integrations team grew from one man to five members, gaining the bandwidth needed to explore new industries and markets where more experimentation and active outreach are needed.
- The increased team and improved operational processes put in place allowed the Cooperative to handle an increasing amount of inbound leads, resulting in many of them converting into actual partnerships.
- The Cooperative saw a substantial growth in committed partners with the numbers more than tripling in the course of 2022, from 30 to more than 110. Over 20 different industries were represented in these partnerships, including DeFi, identity & credentials, marketplaces, real-world asset tokenization, wallets and blockchain oracles. All these partnerships are now visible on the revamped partnership portal at [kleros.world](https://kleros.world).
- The collapse of Terra Luna allowed Kleros to showcase its capabilities as an impartial claim arbitrator for the DeFi insurance industry. The integration with Unslashed Finance secured over 5400 ETH in claims with over 20 claims coming to Kleros for appeal. In parallel, a commitment has been secured from 5 other insurance protocols for an integration, which should be realized in the next year.
- The Cooperative made an important push into the identity and credentials space, and increased the number of identity partners integrating Proof of Humanity to over 20, including projects such as Bitcoin Passport, Lens Protocol, Noox, Sismo, CyberConnect, and EtherScore.
- The Cooperative also made significant progress in token-curated data integrations. In particular, the address tag and contract domain name registries built with Kleros Curate gained significant adoption in the wallets and explorers space. Ledger, Etherscan, MyEtherWallet and Alphawallet have all signed up to use the crowdsourced data from these registries for their consumer-facing products, with many more in the pipeline.
- Kleros Oracle expanded its reach to another blockchain, with the successful deployment of a bridge to Polygon for the Kleros-Reality integration. Bhavish

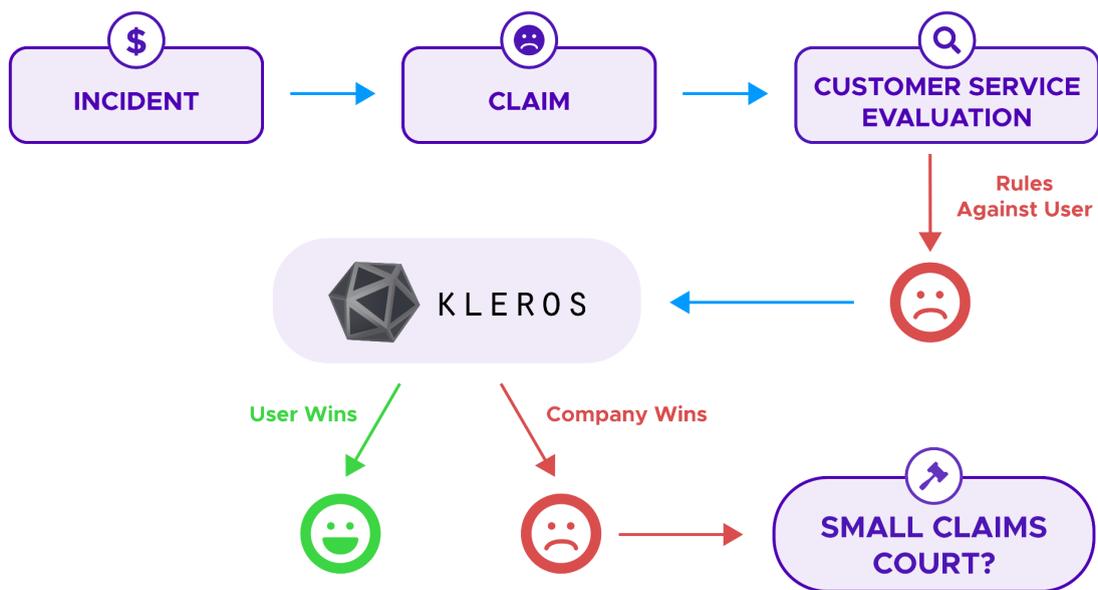


Finance, a leading decentralized prediction market and betting platform on Polygon, was the launch customer for this integration. Additionally, Prode.eth joined Kleros as the latest prediction market partner on Gnosis Chain.

- The 2022 FIFA World Cup was also a significant event for Kleros, the Cooperative celebrated this through several community campaigns in collaboration with Kleros' prediction market partners using Galxe and Port3.

In terms of product development, the Cooperative launched the following products:

- [Kleros Moderate](#), a decentralized content moderation solution based on Kleros for defining if some content or user is violating the rules of a platform. This comes with a bot called Susie that can implement Kleros Moderate rulings in Telegram groups.
- [Linguo](#), a decentralized translations marketplace with an innovative price discovery mechanism has been relaunched, and a product manager has been hired to push for the adoption of the product.
- The Cooperative has started work to revamp the [Curate](#) product in order to provide a better user experience.
- The Proof of Humanity product faced a particular situation, emanating from a governance conflict within the Proof of Humanity community which ultimately resulted in a decision to fork (for a comprehensive study of the reasons to fork read [this article](#)).
- The Cooperative made some important progress towards the application of the Kleros Protocol for consumer disputes in the mainstream economy. Two pilots have been under development since mid-2022, one of them with an insurance company and the other one with a cryptocurrency exchange. A unique implementation achieved during the customer discovery process was something called “asymmetric arbitration”, where a Kleros ruling is binding for the company but not for the user. In the preliminary research, this seems to resolve an important part of the legal uncertainty that mainstream companies have when considering the implementation of the Kleros protocol.



This flow describes a potential use of Kleros in an insurance case. A dispute starts between an insurance company and a policyholder on the payout of an incident. The company offers the policyholder using Kleros for resolving the dispute. In case the policyholder wins, the company pledges to abide by the ruling. In case the company wins, the policyholder still has the choice of presenting his case at a small claims court. With this mechanism, dubbed “asymmetrical arbitration clause”, Kleros can work as a tool for an evaluative mediation process.

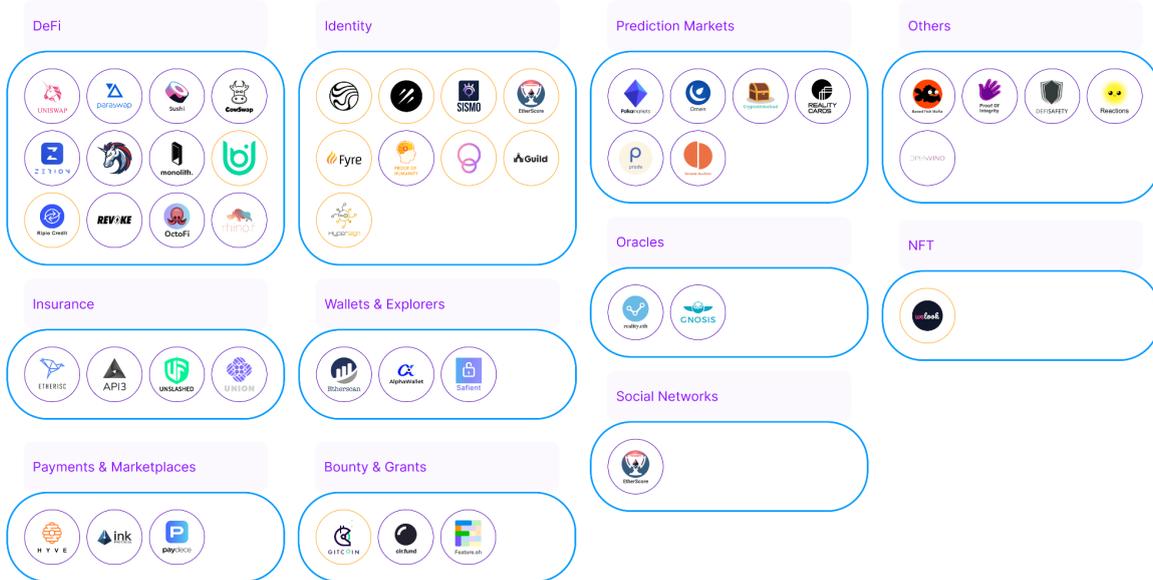
- The third cohort of the Kleros Incubator was launched with three teams: [TheBadge](#), a decentralized certification service; [Talent Layer](#), a decentralized social network for labor; and [LensTags](#), a decentralized social media application.
- The Cooperative launched “[How to Build in Web3](#)”, an online course produced by the Cooperative to share our entrepreneurship experience with the wider community.



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BLOCKCHAINOV

The growth of the Kleros ecosystem.

# Marketing and Communications Activities

During the past fiscal year, the Cooperative has conducted a number of marketing and communications activities with the goal of strengthening the Kleros brand, raising awareness about decentralized justice and increasing interest for integrations:

- The Cooperative has strengthened the marketing and communications team with the recruitment of members for the positions of content writers, event manager, and developer relations.
- Team and community members have participated in conferences and meetups both in the blockchain and the legaltech industries such as the [EthCC](#), [ETH Denver](#), [ETH Amsterdam](#), [ETH Dubai](#), [ETH Prague](#), [ETH Barcelona](#), [ETH Latam](#), [ETH Uruguay](#), [ETH Santiago](#), [ETH Porto](#), [DappCon](#), the [Oracle Summit](#), [Token 2049](#), [BlockchainRio Festival](#), [Labitconf](#), the [Dubai Arbitration Week](#), the [ODR](#)



[India Forum](#), [CODIFI the Hague Conference on International Private Law](#) and the [Paris Arbitration Week](#) among others.

- Members of the Cooperative have been active in legal innovation communities such as ArbTech and MetaLaw among others.
- The Cooperative has organized a number of side events in conferences such as ETH Dubai, EthCC, [Devcon Bogotá](#) and Token 2049.
- The Cooperative co-hosted hackathons such as the [Infinite Hackathon](#) of Devcon Bogotá, and the official hackathon of EthCC.
- The Cooperative hosted the conference “[Deeptech in Law](#)” in Paris, in partnership with Panthéon-Assas University and the ArbTech community.
- We relaunched the Decentralized Justice Broadcast with guests including [Mark Miller](#), [José Luis Martí](#), [Thibault Schrepel](#), [Antonio Canova and Roberto Hung](#), [Jason Potts](#), [Glen Weyl](#), [Nathan Schneider](#) and [Robin Hanson](#).
- Research and thought leadership pieces produced by members of the Cooperative have been published at prestigious outlets including the [Cyberjustice Laboratory](#) at the University of Montreal, and [BlockWorks](#).
- Kleros was covered among the top Web3 projects in a report by [CBInsights](#) and was featured in high impact general and specialized media outlets such as [Wolters Kluwer](#), [Bankless](#), [CoinTelegraph](#), the [Global Arbitration Review](#), [Arbitech TV](#), [La Nación](#) and [Globo](#).
- Kleros was mentioned in several pieces by industry leaders such as Vitalik Buterin ([What in the Ethereum application ecosystem excites me](#); [DAOs are not corporations: where decentralization in autonomous organizations matters](#)) and Balaji Srinivasan (in his influential book "The Network State", he refers to online trials as Kleros-style trials.)
- A significant amount of time and communications efforts had to be spent on addressing PR concerns associated with the Proof of Humanity governance conflict. This included correcting and responding to misinformation campaigns directed at Kleros.
- A large number of blog posts, explainers, articles and social media material were produced in [content moderation](#), [DeFi](#), [insurance](#), [NFTs](#), [DAO governance](#), [prediction markets](#), [parametrization](#) and the [metaverse](#) as well as a series of



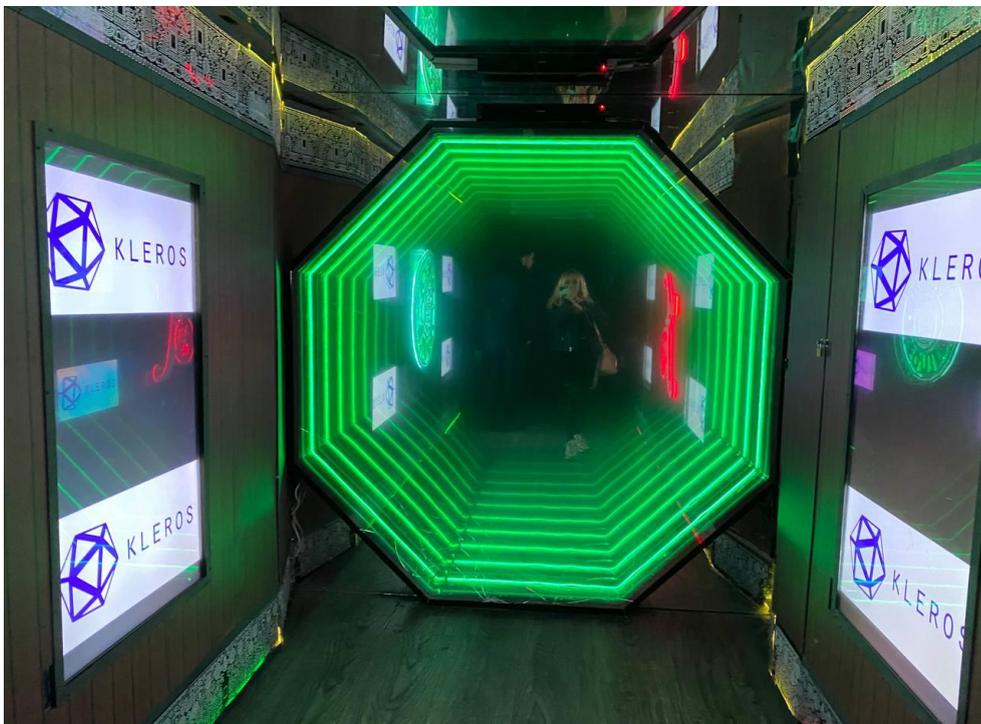
interview articles for the community to know about members of the team (see articles on [JB](#), [Jamilya Kamalova](#) and [George](#)).



*Members of the Kleros community from Argentina during ETHLatam. August 2022.*



*Jean presenting Kleros approach for the curation of NFT markets at ETHLatam. August 2022.*



*A side event hosted by the Cooperative during Devcon Bogotá. October 2022.*



# Foreseeable Economic and Financial Developments

## Research

The Cooperative will continue developing research activities with the goal of improving the security, efficiency and versatility of the Kleros protocol.

- In preparation for the modularity allowed by the upcoming Kleros 2.0, considerations of how existing work on modeling voting and incentives in Schelling point based systems will be conducted.
- We will continue with our research on using "Soulbound Tokens" (SBTs) in the Kleros protocol, particularly in the process of juror selection. This approach requires a careful analysis of how the incorporation of SBTs impacts the existing security model of the Kleros protocol. Indeed, there are many relevant research questions that remain open around what weighting functions can be used to increase the likelihood of juror panels with diverse backgrounds and expertise that are nonetheless resistant to manipulation by attackers.
- We will conduct economic experiments to help inform the parameterization of Kleros in partnership with French educational institutions. Notably, this will encompass classic experiments from behavioral game theory about how users with different motivations (e.g. strong reciprocators, selfish users, and cooperative users) interact with the Kleros protocol.
- One of the main research topics involves investigating improvements in the way policies are written for Kleros courts, which will direct jurors to Schelling points that the community deems desirable and ensure the delivery of verdicts that are coherent, predictable, and sensible. Some future areas of research will include methods to ensure robust policy drafting that minimizes unintended consequences, the construction of clauses that provide jurors with confidence to be flexible in their decision-making, and analyses of the reasoning on case precedents of Kleros juries.
- The Proof of Humanity governance conflict was a reminder of the importance of strong governance processes in the context of DAOs. Following this, Kleros launched a collaboration effort with BlockchainGov for drafting a handbook on constitution building for DAOs. This will help position Kleros as a key actor in providing governance services for many Web3 communities.



- The Cooperative is planning to host a conference for researchers in decentralized justice in July 2023, in collaboration with the Paris Center of Law and Economics from Panthéon-Assas University.

## Development

Development activities for the next fiscal year include the following:

- The Cooperative will conduct a number of necessary preparations for the launch of Kleros 2.0, including exhaustive security procedures for smart contract audits and bounty programs.
- In the beginning, a soft launch will be done with the parallel run of the Court V2 and the Gnosis Chain Court V1. This will allow for testing the interoperability with the V1 arbitrables on Gnosis Chain.
- Afterwards, a migration of the Gnosis Chain Court from V1 to V2 will be done, which will include a court freeze on V1, the unstaking of PNK on V1, the bridging to Arbitrum and the restaking on V2. This will be followed by the launch of the court V2 for integrations on the Gnosis Chain.
- The Cooperative is planning an expansion beyond the Gnosis Chain, including a possible launch on Polygon and the Binance Smart Chain.
- For late 2023, a set of new features are planned to be deployed, including one-human-one-vote mechanisms for specific courts, evidence spam protection, the forking court and juror misbehavior prosecution.
- A developer preview launch showcasing a bridge deployment between Arbitrum and Ethereum testnets will be deployed, including documentation allowing developers to build on Veal for their own cross-chain apps. The Cooperative will also release several light client implementations allowing anyone to contribute and validate the operations of the bridge.
- The Arbitrum to Gnosis Chain mainnet bridge will be deployed ahead of the launch of Kleros 2.0. This will be followed by a launch on other chains to support the expansion of Kleros V2 beyond the Gnosis Chain: Arbitrum to Polygon, Arbitrum to BSC, and bridges to/from Optimism.
- The Proof of Humanity 2.0 app will be launched on Gnosis Chain with a migration path for users coming from Proof of Humanity 1.0.



- The Cooperative will continue to provide technical support to end-users, integration partners and the wider ecosystem (incubator teams, hackathon projects etc).
- Kleros will also continue the maintenance of the arbitrable Dapps already launched (Curate, Tokens, Linguo, Proof of Humanity, Governor, Escrow etc.), as well as their respective courts.
- A number of Kleros products launched in the early days (eg., Token) rely on obsolete and suboptimal solutions that affect user experience and developer productivity. The Cooperative will modernize the codebase of the existing products where the development effort makes sense and aim to converge on a more consistent baseline across products.

## Integrations

The Cooperative will continue ongoing efforts to bring more integrations to the Kleros protocol.

- In the first half of 2023, the business development team will focus on a few industries where there is a product/market fit, namely prediction markets, DAOs, wallets, explorers, identity, credentials and insurance.
- The Cooperative also plans to dive into other promising industries, such as real-world asset tokenization, social recovery, marketplaces, real-world arbitration and consumer-facing solutions.
- The progress of Kleros 2.0 plans and the ability to go multichain (starting with Arbitrum, Polygon, Binance Smart Chain) with lower gas fees will increase the accessibility of operations of the Kleros Court and unlock a larger number of high volume, low value use cases.
- The Cooperative also plans for the continued growth of the business development and marketing teams to manage a larger portfolio of partners. Part of the resources will be used to encourage the adoption of new products such as Kleros Moderate and Proof of Humanity 2.0.
- Over the past few years, the product portfolio has grown in complexity. Kleros plans to conduct work in order to streamline the product portfolio, reduce areas of product overlapping and reduce maintenance costs.
- Current efforts are underway to increase the quantity and quality of the teams that



participate in the Kleros Incubator program. The Cooperative is planning a virtual version of the Incubator that will be accessible to a higher number of teams.

## Marketing and Communications

The Cooperative will continue to conduct activities for promoting the Kleros brand and its different products.

- Plans are being made for a communications campaign to support the launch of Kleros 2.0. The goal will be to create more awareness about the protocol and its expanded capacity to resolve a whole new set of use cases.
- The Cooperative will also focus on the promotion of the Vea bridge in order for it to be adopted by other projects.
- As usual, the team will participate in relevant conferences from the blockchain and legaltech industries.
- The Cooperative plans on organizing two large scale side events at the EthCC in Paris and one global Asian event which is still to be decided upon with the aim of driving conversions on both the integrations side, as well as onboarding high level jurors.
- The Cooperative will continue with its efforts to produce relevant content aiming at integrating more projects.
- Kleros will keep working on maintaining a strong presence in the field of decentralized justice by publishing high quality articles, videos and other materials directed at informing and educating the audience. Notably, plans are in place to release an updated and revised version of "[Dispute Revolution: Kleros Handbook on Decentralized Justice](#)".

## Funding for Future Operations

Following the crash in the crypto markets after the collapse of Terra, last year was particularly difficult for the blockchain industry. Many projects have died or have drastically reduced their activities. Even though the general crash affected the finances of the Cooperative (as a large part of the treasury is held in cryptoassets), we still have a comfortable runway for sustaining operations.

The Cooperative closed the previous fiscal year with a treasury in the vicinity of €41 million. As a result of the crash, the treasury in the vicinity of €20 million which provides a



4 year runway at the current burn rate.

During the past financial year, the Cooperative professionalized treasury management activities, with a dedicated person in charge.

We have developed a plan for improving the treasury allocation in strategies which don't suffer impermanent loss.

We are using our large quantity of GNO tokens, product of a token swap with Gnosis, to earn rewards by validating transactions on the Gnosis Chain. Assuming a stable price, this is currently generating around 250,000 USD in annual revenue.



# Conclusion

The last fiscal year was challenging for the blockchain industry as a whole, triggered by the collapse of Terra and exacerbated by other high-profile bankruptcies such as 3AC and FTX.

In spite of a difficult context, the Cooperative has made progress in fulfilling its mission of building tools and evangelizing the world on decentralized justice.

In summary, during the past year, the Cooperative:

- Conducted research relevant to increasing the efficiency, security, and flexibility of the Kleros protocol, which is reflected in introducing ideas such as soulbound tokens, new social choice mechanisms, and learnings from the field of behavioral game theory.
- Participated in many relevant academic conferences in both the blockchain and legaltech industries.
- Continued the active development of Kleros 2.0, which is vastly more flexible and efficient than the current version.
- Launched new products such as Kleros Moderate for content moderation and the Veal bridge.
- Developed different communication activities to strengthen the positioning of Kleros as a leader in the decentralized justice industry.
- Collaborated with entities from traditional legal systems to foster the use of decentralized justice methods.
- Conducted continuous support for the growth of the Kleros ecosystem by incubating teams.

In a very challenging year, I am proud that Cooperative Kleros has continued to make progress towards its vision of justice inclusion, and I look forward with confidence to the next year.