Arts & culture have been the cornerstones of our civilization for millennia. Since the dawn of time humankind created art as a way to express thoughts, emotions and spirituality as well as to portray important people, and cultural events. Our history, and all that we are, has been painted by great artists throughout centuries.

In today’s rapidly evolving digital realities, the art world and the art market are lagging behind in finding their way through the digital jungle. Many stakeholders on the market are still holding on to exclusively tangible assets, often dismissing any form of digitalization in order to “protect” the original.

With the emergence of cryptocurrencies, the blockchain and smart contracts it is now possible to redefine the rules of the game. The art market has been considered one of the most conservative and closed circle industries for centuries. Recent developments in online art sales prove that a disruption is imminent. The art community is struggling to reach democratization, where greater transparency would drive the implementation of an open market as a principle. Blockchain enables a new paradigm with complete decentralization, peer-to-peer execution and traceability like never before in the art world.

The digitalization of art introduces one important challenge: the handling of rights on digital assets in digital and virtual spaces. With the expansion of virtual and mixed realities the usage and trade of virtual art becomes as important as the trade of real objects. This new arena is yet to be shaped and created.
Art knows no boundaries. The art market does. We will change this.

VR-All-Art is a groundbreaking platform and a new marketplace for artists, galleries, museums and the general public to exhibit, explore and acquire art in the virtual and augmented worlds. VR-All-Art sets the foundation for an unprecedented evolution of art exhibitions, art spaces and art trading. It is an unlimited world in a new reality – a metaverse of galleries and museum spaces with no borders and no physical boundaries. It enables everyone to explore artworks and discover artists from all over the world wherever they are, at any time. It also gives new power to artists, as they are no longer constrained to the physical limits of real-world space and time.

To fuel and empower this transformation we are introducing a new cryptocurrency All-Art coin and an underlying blockchain economy to handle the arts & culture space. Within the VR-All-Art ecosystem, it is used for art trading, exhibition fees, curation rewards, art dividends, art profits and many other use cases associated with the art space. Trading physical, real-world art and purely digital artworks on a blockchain-based marketplace allows art to become a liquid asset and enables a completely new type of art investments.

VR-All-Art has extensions in virtual, augmented and mixed reality to showcase art in unlimited virtual spaces as well as a classic web portal where all presented art will be available for web users. As part of the creation of VR-All-Art we have also developed a sophisticated new surface scanner which is used for high-detail scanning of paintings, transforming the way we present and protect art.

The VR-All-Art ICO represents a unique moment in art history, when the art world and art trading enters the world of blockchain technology.
Art market

Background

There are many problems affecting the art market which need to be resolved through a different perspective. One of the main worries is that the diverse stakeholders must adapt to a digitized environment without the market itself adapting to it. Artists are forced to play double roles - they need to be both creators and business people. Galleries and art dealers face a different issue - high operational costs, especially for rent.

The expansion of new technologies and the internet have given artists and gallerists some new possibilities of presenting the artworks without the high costs but still without the effect of the user immersing into the art piece as if it was was there.

VR-All-Art & All-Art protocol
According to the current numbers, there is an increased online sales of artworks; however this area is still waiting for its full potential in the digital age. Statistics say that the global art market annual turnover amounts to $63.7 billion, while out of these, $5.4 billion dollars account for online art sales. Online sales are rising year on year at 10%, which proves that digital sales are changing the way we purchase and trade art. Online sales have become an important method for dealers reaching new customers, with over half (56%) of the sales generated by dealers coming from new clients that had never been to their gallery or met them in person, but found them online. This is a clear indicator that the digital transformation in art space is imminent.

Today a large part of global art sales is concentrated on a relatively narrow set of big names and “blue chip” artworks and artists. But what about the obscure, unfamiliar or local artists? This is a market that still needs to be discovered and fostered. And finally, with the mechanisms currently in place, it is logistically impossible to monitor all transactions made by dealers, private collectors and museums. Suspected forgeries are generally considered on a case-by-case basis, because they can usually be identified only by an expert in the field.

All-Art coins and VR-All-Art address the market's current weaknesses and aim to reduce friction and boundaries in the art trade.
VR-All-Art
introduction

VR-All-Art is a platform and a marketplace for artists, galleries, museums and for the general public to exhibit, explore and acquire art. VR-All-Art is a virtual space, a metaverse of galleries and museum spaces with no borders and no physical boundaries. It is an evolution of art exhibitions giving new power to the artists as they are no longer constrained to physical limits of real-world space and time. VR-All-Art is also an active marketplace, enabling easy purchase and trading of art, promoting the idea that art is affordable, exciting and valuable. VR-All-Art is also a presentation space - not only for contemporary artists, but also for museums and galleries that display old masters and where a wider public is invited to enjoy and learn more about the magnificent creations of our civilization.

VR-All-Art system is based on three technology pillars that provide a base for this transformation. It's goal is not only to innovate presentation space but to create an infrastructure needed for next generation of decentralised and distributed economy, based on proven standards and institutional requirements in arts & culture space. Blockchain approach has finally opened doors for digital value representation and transfer that can bring incentives for all participants in the ecosystem. It is now possible to directly reward all stakeholders for contributions, thus sparking a new economy based on tokenized value representation and transfer.
VR-All-Art apps

Main front-end for users, an entry point in the world of arts & culture, through virtual, mixed and augmented reality, but also through regular website and mobile app.

VR app - Virtual reality exhibitions and tools for museums and galleries
AR app - Mobile app accessible to everyone with augmented reality features
MR app - Mixed reality app for planning exhibitions and new way to purchase art
Kiosk app - For museums and galleries as an attractive exhibition listing browser
Web app - All data and tools accessible in the browser
All-Art protocol

Blockchain layer for handling transactions in decentralised system based on smart contracts, developed in accordance with international documentation and cultural heritage standards, based on CIDOC-CRM - semantics and ontologies representing movement and handling of objects through actions represented by transactions.

**Wallet contracts** - smart contracts holding wallet information
**Ownership contracts** - smart contracts holding information on ownership of objects
**Transactions contracts** - smart contracts handling transactions of objects - art piece sales, auctions, art piece renting, tickets sales, space renting, etc.

All-Art registry

Database and storage layer for all data classes based on CIDOC-CRM standard, linked to protocol layer through unique identifiers.

**Users** - Identity registry
**Actors** - Registry of people (stakeholders): artists, curators, experts, etc.
**Objects** - Registry of objects: art pieces, artefacts, institutions, etc.
**Actions** - Actions performed on objects by actors
**Files** - Files representing objects and actors
VR-All-Art key features

The virtual reality approach of VR-All-Art is important as it solves five major problems for the arts & culture community.

Limitation of size and space
For many artists and galleries it is a common problem to exhibit large art pieces that don't fit into gallery spaces. Artists are limiting their creative potential as they know that large pieces would be difficult to present, thus confining themselves to smaller sizes that could fit into a standard gallery space. For galleries it is usually difficult to present all the art pieces as their space and resources are limited so some art pieces never get shown.

Transport, logistics and planning of exhibitions
The transportation and setting up of an exhibition is a costly, demanding and time consuming process. Creating an exhibition is out of reach for many artists due to these problems. Museums face similar problems especially if they curate exhibitions containing objects that are rented or borrowed from different locations and owners.

Accessibility and cross-border paperwork
Access to great art pieces is usually bound to a specific geographical location. Cross-border transport of art is a demanding and expensive process that usually limits both artists and potential buyers in trading art. As we have additional expenses that need to be recouped, it is actually the buyers who are paying for these expenses which are incorporated into the art piece valuation. In today's world, to see an art exhibition, you need to visit the gallery, either in your city or somewhere abroad, which is a limiting experience both geographically and time-wise.

Placement of art pieces in your life space
It is difficult to foresee how an art piece would fit into your living (or working) space. You always have to guess whether it would fit or which piece best suits your space. VR-All-Art solves this by introducing augmented reality and mixed reality extensions, where you will see your potential pieces inside your space either through your mobile device's camera, or by using more advanced holographic devices like Microsoft HoloLens. As there are big advancements in the field of mixed reality we are expecting new devices like Magic Leap to emerge on the market, that will further merge the real and virtual world and allow an even better immersion.
Easy purchase of art
Every purchase decision is driven by many psychological factors and it is important that friction in the buying process is as small as possible. Since purchasing art in the real-world is not a quick process, a one-click purchase is essential for the successful digital transformation of the art market.
Virtual reality app

The VR app is the most immersive experience art-lovers and gallery visitors can have. For gallerists and artists, it opens up unprecedented possibilities to gain exposure for their artworks in the unlimited space of virtual reality. The VR app solves the problem of limited exhibition space – be it in galleries, art fairs or museums. It also allows artworks to travel the globe without ever having to physically move.

Exhibition creation and planning tool

VR-All-Art is an exhibition planning tool that can be used both by artists and galleries in creating not only virtual exhibitions, but also real life exhibitions. This tools saves time and money for galleries as well as facilitating the artists in visualizing what their exhibitions would look like in the real-world.
Rendering of paintings with multiple layers of surface details
Using the surface scanner (Appendix A) it is possible to extract multiple layers of details from paintings, thus providing more depth and realism to the viewer. Digital paintings look more realistic and convincing.

Interaction with objects
Clicking on an art piece in VR reveals more details about the artist, the story behind the piece and pricing details. The interaction is seamless and engaging, animating visitors to learn more about an artwork.

Public and private exhibitions
Exhibitions created in VR-All-Art can be firewalled for specific audiences or individuals. We understand the need for private exhibitions where agents, galleries and artists can show selected art pieces to special visitors only.

Buying and selling of art in VR
Trade in VR-All-Art is done directly in virtual reality in just a with a few steps only. The importance of impulse purchase is essential in all digital stores. Through usage of digital wallets and crypto currencies this process becomes easy and painless.
Public and private auctions in VR
As with exhibitions, privacy and limited access are a necessary feature in the art market. Early and private access to auctions will enable art sales that are targeted for specific audiences.

Data analytics in 3D space
For the first time in art market history we will enable precise analytics of exhibitions in 3D space. Organizers will know how much time visitors spend looking at each art piece and how that converts into sales.

Multi-user functionalities
Exhibition attendees can meet other people inside the VR space and have a shared experience. This feature is part of the planning tool where the artist and the gallerist will join and chat with avatars inside VR to discuss their exhibition. Later, this option will be open for all audiences entering virtual exhibitions.
Mobile augmented reality app

The VR-All-Art mobile app is a direct gateway from the smartphone to the art world. It invites all art-lovers to discover new artists, galleries, exhibitions and artworks.

Mobile AR application for projecting artworks via camera image

A unique feature of the VR-All-Art mobile app is an augmented reality function. Users are able to download and print a special AR code and place it on a wall inside their real life spaces. While looking through their AR camera scanner in the app they will see how a specific art piece fits into their room. Based on this experience, they can now decide about a purchase with greater certainty.

Augmented Reality scanner

By visiting real-life exhibitions that are featured on VR-All-Art users are able to select a special AR scanner functionality that detects artworks with mobile phone camera. This feature provides a unique user experience and closes the loop where visitor likes specific art piece, takes the phone, scans it, favorites it, tries the piece at home with AR functionality and buys the piece.

All-Art coins wallet

The mobile application will serve as a coin wallet and as a personal collection info point. It will also enable a frictionless buying and selling process of art pieces even if the user is not using VR. Power will be placed in users and artists' hands like never before.
Mixed reality app

Holographic technology mixes and overlays digital and real-worlds and lets artworks appear anywhere in the real-world - in rooms, on walls or in the open space.

Holographic app for mixing digital art pieces and real-world
Mixed reality is the next step in the evolution of both VR and AR technologies. HoloLens is the first available commercial headset that has these functions and we have developed a VR ALL ART version for HoloLens. It enables users to see how art pieces fit into real spaces with the help of holograms and thus change the way art is purchased, forever. Holographic app has three major use cases:

Exhibition setup and planning tool
With usage of hololens and VR All Art artists, curators and gallerists will be able to plan real-life exhibitions in their spaces without the need to transport objects. Everything is done virtually, and easily. This saves a lot of money and hassle and creates opportunities for remote collaboration if we combine holograms and virtual reality. Example: curator comes into the gallery and creates exhibition using VR All Art hololens app. Artist on the other side of the world enters virtual reality VR All Art app and visits the exhibition and comments on the setup.

Purchasing tool
Holographic app has a purchasing mode, where you can experiment with placing art pieces into your own environment, similar like with augmented reality viewer in mobile app. Feature is used to better understand how specific piece fits on your wall or on your floor, whether the size is right and position is adequate. This helps bringing user to purchasing decision as he can not only imagine, but for real see how an art piece that he liked will look in his own environment.

Exhibition narrative tool
With holographic capabilities of mixed reality devices, it is now becoming possible to enrich visits to real-life galleries and museums with additional data layer and storytelling experiences overlapping real objects. These additional details will be presented through textual/visual/video/audio stories, but also with virtual avatars that will give interpretation of the importance of specific pieces.
Website

Even though we find the future of art trade is in virtual and mixed realities, it is important to understand that the web is still a necessary piece of the puzzle. The VR-All-Art platform has a web/mobile solution for the management of art in the blockchain ecosystem. It will enable access to blockchain data, from the All-Art coins wallet to transaction history, art certificates and management of personal collections.

Data management is done on a dashboard interface where each user will have access to his collections, exhibitions, artists, etc. In the dashboard users are able to query blockchain for transactions that occurred on specific objects, and create and sign transactions themselves.

Dashboard interface is also used when creating exhibitions in virtual reality, as all objects that are present in the exhibition are managed through web interface first.

The VR-All-Art web/mobile apps includes the following features:

<table>
<thead>
<tr>
<th>· Artists</th>
<th>· Augmented Reality Viewer</th>
<th>· All-Art coins Wallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Art pieces</td>
<td>· Augmented Reality scanner</td>
<td>· Trading tools</td>
</tr>
<tr>
<td>· Exhibitions</td>
<td>· 3D/VR exhibition viewer</td>
<td>· On-demand curation</td>
</tr>
<tr>
<td>· Galleries</td>
<td>· Art collection management</td>
<td>· Open art market</td>
</tr>
<tr>
<td>· Museums</td>
<td>· Art market news and trends</td>
<td>· Art piece ownership tracking</td>
</tr>
</tbody>
</table>
All-Art protocol
In order to successfully transition from centralised and non-standardised databases to a new decentralised and distributed universal database a lot of steps need to be taken. Academic research has been focusing on documentation of cultural heritage objects including art pieces ever since there was a need to properly store and document data, yet only recently we have seen emergence of accepted standards, even though they have not yet been implemented in tools used in institutions.

Standard we have chosen for our protocol is CIDOC-CRM, a general data model developed primarily for museums, thus covering everything we need in both arts & culture space. The CIDOC Conceptual Reference Model (CRM) provides definitions and a formal structure for describing the implicit and explicit concepts and relationships used in cultural heritage documentation.

“The CIDOC CRM is intended to promote a shared understanding of cultural heritage information by providing a common and extensible semantic framework that any cultural heritage information can be mapped to. It is intended to be a common language for domain experts and implementers to formulate requirements for information systems and to serve as a guide for good practice of conceptual modelling. In this way, it can provide the "semantic glue" needed to mediate between different sources of cultural heritage information, such as that published by museums, libraries and archives.”

We cannot have a world-wide decentralised protocol for tracing art on a blockchain without understanding the complex relationships between objects and actors and how we are documenting them.

Relationships between objects can be understood as a form of transactions, where actors and objects perform actions that are stored inside the database. CIDOC-CRM modeling provides detailed standardisation of all classes of objects and their interdependencies needed for proper record keeping and provenance. The CIDOC CRM is the culmination of over 10 years work by
the CIDOC Documentation Standards Working Group and CIDOC CRM SIG which are working groups of CIDOC. Since 9/12/2006 it is official standard ISO 21127:2006. CIDOC-CRM is supported by ICOM - international council of museums and CIDOC international committee for documentation.

Blockchain does not solve certification and provenance of an object per se. Neither do transactions stored on a distributed ledger, where we are tracing ownership of a hashed object on a forkable platform. That is just scratching the surface of a millenial problem.

Proper blockchain-based solution for arts & culture unified and distributed registry must cover not only handling of new transactions, but managing of all previous transactions and associated metadata including documentation and certification. We need to create a unified solution that will be widely used, with adequate protocol layer implementing blockchain-based transaction models. This will take time, and it will not happen overnight.

Now, with additional benefits that blockchain provides we need to extend the standard with new features like fractional ownership, digital rights with digital scarcity, unique collectables that exist only on blockchain, etc. Creation of proper semantic framework for blockchain features and implementing that into already approved models will not only be local development challenge but will need to be communicated, explained and approved by proper bodies in charge of standardisation like CIDOC Documentation Standards Working Group.
All-Art coin is a new digital cryptocurrency based on smart contracts and used for art trading, exhibition fees, curation rewards, art premiums, art profits, and many other use cases that could be associated to the arts & culture world.

Blockchain serves as a ledger that is used both for certified transactions and as a new trading platform for real-world artifacts represented in the blockchain as a digital value. While real-world assets are also tradable, so are their digital representations and other forms of art in digital space. All-Art coin is a utility token and a smart contract abstraction layer that is used to set new principles in art & culture trade and value exchange. All-Art coins do not represent shares of any kind, but are used in trade and other functionalities of the All-Art coins ecosystem.

All-Art coins are based on the ERC-20 token standard enabled by underlying Ethereum network to handle smart contracts and blockchain implementation.
The power of smart contracts will change the way we organize and handle the trade of artworks. Using the All-Art coins platform and associated smart contracts, artists and collectors will have unique and unprecedented options in the art market that will change the way we are treating and trading art forever.

Every art piece in the system will be given a unique hash and a smart contract functionality that will extend the possibilities of art trade and incorporate additional options in every transaction. We can consider as creating a regular contract, with additional features, that every buyer and seller signs into.

By creating and verifying an artwork inside the system, artists and owners will set different parameters that will handle the future life of an art piece inside the blockchain network.

Example of smart contract parameters:
- Art-Value
- Is the piece on sale and what is the type of sale (regular price, auction, ...)
- Sale or auction parameters
- Percentage of profits artist would like to distribute to their collectors upon sale (owners of other artworks created by the same artist)
- Percentage of profits from future sales that the artist would like to keep (from the art piece's future resale)
- Time function on future sales (percentage of future sales can go higher or lower as the time passes)
- Possibility to make an offer to the owner of an art piece already sold (option to bid for an art piece that has already been sold)
- Digital license rights
- Exploitation other than sale
Art certification

With usage of blockchain as a ledger, every transaction is stored in an immutable distributed database, where an art piece's journey is fully traceable through the history of transactions, from provenance to their final destination. In the art market one of the biggest concerns is documentation and proof of ownership. If an art piece is traced through verified transactions in a blockchain, then the certification is solved in a transparent, unchangeable and distributed way.

Technology can solve many paperwork problems, but certification of artwork sometimes needs human involvement, especially if a new artwork, not introduced directly from the author, needs to be created within the system. This situation demands that art experts give feedback on the provenance and to verify the authenticity of a piece. Experts will have ways to earn All-Art coins through such actions, thus enabling their services to be easily requested and rewarded.

We define a new term called Art Value. This is a unique valorization unit of an art piece. It is a necessary ingredient to cover global, cross-border understanding of the value of an art piece. Art Value enables an easy conversion of this value into different monetary systems and vice versa.
Art Value applies its own unit of measurement. It is relative to fiat currencies and subsequent changes reflect relative contribution of each currency to Art Value. Currently, the majority of the art trade is conducted in US Dollar, Chinese Yuan, Euro and British Pound. Naturally, these currencies will carry the highest weight in the Art Value unit, but these currencies fluctuate in value while, where Art Value doesn't. The weight of each fiat currency in the Art Value unit will be publicly available and updated annually to reflect the trends in relative volumes across the globe. The Art Value unit itself and its conversion rates will be updated daily. Thus, it is possible to see how Art Value translates to value in every other fiat currency. This allows daily marking to market of any piece of art in a currency-independent unit of measurement that follows the trends in the global demand for art.

Art Value is a currency independent value, used in the All-Art coins network to understand the value of an art piece, total market cap of an artist in Art Values and thus provide an understanding of the relative value of an art piece both worldwide and in a specific collection. Art Value translates into All-Art coins value as is with any other fiat or crypto currency pair.
Unlike almost every other cryptocurrency, All-Art coins are “mined” by an act of art discovery in the real-world. When a new art piece is introduced into the system, distribution of new coins is initialized on the first sale of that piece within the system (almost like gold, where we dug a new value and introduced it to the world).

New All-Art coins are generated each week with a stable spread of newly generated coins throughout the year and a fixed cap of how many coins can be generated yearly, where each year the number of new coins decreases (like in bitcoins). Every week the total amount of new art pieces that are sold for the first time receive generated All-Art coins as a percentage of the total amount of Art Value introduced and sold for the first time into the system in that week.

A special case of generating coins is the introduction of only a digital version of an original art piece. Art Value is determined by the sales of digital rights either through auctions or other mechanics that will determine the Art Value in an open market. Such a situation is most suitable for museums and galleries that protect cultural heritage but are not allowed to sell the original.

Art discovery mechanism provides a special incentive for artists and galleries to enter the system early in the life cycle, generating profits not only from sales, but also from art discovery.
Protocol structure

Off the shelf blockchain platforms today, even though they are promoted as revolutionary, lack many functionalities and features that would enable revolution to fully materialise. Until time comes, we must use what is now available to construct models that will later be integrated into one system.

All-Art protocol structure is set as a mesh network of contracts and data storages, where every contract serves specific purpose, but they all function together and share same datasets. Datasets are stored both in smart contracts (ownership and wallet contracts) as well as databases that hold information and metadata on objects used by the system. Logic behind smart contracts follows standards set by international committee for documentation under official ISO 21127:2006 standard. Smart contracts will provide transactional meaning compatible with semantics and ontologies defined by CIDOC-CRM, thus providing import-export compliant system that will handle transfer of value without loss of meaning.

Ownership of objects is not handled through wallet identification but rather through identity identification. Owner of an object or right is an individual or a legal entity, and as such can have ownership of multiple wallets.
Contracts

Wallet contract (ERC-20)
All-Art coins are held in standard ethereum ERC-20 wallet contract.

Ownership contracts (ERC-721)
Asset registry representing record of ownership on a blockchain. Objects are defined through classes compatible with CIDOC-CRM standard classification system. Following E77 Persistent Item class.

Real-life Objects / art pieces, artifacts, movable and immovable objects
Ownership record of objects as defined by CIDOC-CRM E71 Man-made thing:
Class comprises discrete, identifiable man-made items that are documented as single units.

Digital-only object / images, digital photos, scans, 2d / 3d models, crypto-assets
Digital object, or digital representation of real-life object. Ownership contract handles rights associated to such objects. Creator of object defines the rights and scarcity of a digital object.

Tickets / Non-transferable rights
Buying and owning a ticket grants you a right to visit/experience/see specific content. Tickets are non-transferable and can have time limitation, or be use-once or use-multiple-times.

Spaces / virtual real-estate
Ownership of specific digital real-estate that we define as space. Ownership grants you rights to transfer, rent and charge fees for usage and additional rights on exhibitions that are organized in the space.

Exhibitions / collection of objects on display
Group of objects where owner/creator of exhibition has been granted rights to use objects. Exhibitions can be public or private and grant the owner rights associated to tickets sales and sales of art pieces.
**Transactional contracts (Ethereum contracts)**

Smart contracts that allow actors/users to operate transactions on objects. Following E5 Event Item class.

**Real-life sales** / transfer of ownership through direct sale (E8 Acquisition)
Escrow contract that handles sale of an object and transfer of ownership.

**Digital sales** / transfer of ownership through direct sale (E8 Acquisition)
Smart contract that handles sale of an object and transfer of digital ownership.

**Real-life auctions** / transfer of real-life ownership through auctions and bids
Smart contracts that handle different types of auction systems with escrow features.

**Digital auctions** / transfer of digital ownership through auctions and bids
Smart contracts that handle different types of auction systems in digital rights which have immediate effects.

**Real-life renting** / transfers and real-life grant of usage
Smart contracts that handle transfer and insurance of renting a real-life object.

**Digital renting** / grant of digital usage
Smart contracts that handle limited rights on usage of digital assets.

**Licenses** / grant of usage
Smart contracts that handle specific rights of usage of digital assets.

**Expert contribution** / transfer of reputational value
Smart contracts that will handle intellectual value transfer.
Databases

Users (Local) Following E39 Actor
Identity database that holds information of all users. With strict KYC and AML regulations it is necessary to comply fully with regulators in such a way that does not compromise privacy, but provides security for other participants in the ecosystem, especially when transferring real-life goods that can be subject to forgery, damage or misconduct. Hashed data and unique identifiers will be a way to ensure cross contract data consistency.

Actors (Local) Following E39 Actor
Database of people or entities that are involved into system. As defined by class E39 Actor: This class comprises people, either individually or in groups, who have the potential to perform intentional actions for which they can be held responsible. The CRM does not attempt to model the inadvertent actions of such actors. Individual people should be documented as instances of E21 Person, whereas groups should be documented as instances of either E74 Group or its subclass E40 Legal Body.

Every user becomes an actor after first transaction.

Objects / metadata (Local) Following E77 Persistent Item
Database of objects with associated metadata. Properties of object define relationships between Actors, Objects and Events following CIDOC-CRM property declarations. Properties are derived from actions/transactions.

Transactions / actions (Local) Following E5 Event
Database of transactions/actions performed on objects by actors. Transactions that are recorded in a blockchain and stored as a reference for quicker browsing.

File management (Cloud)
File storage with handling of ownership and rights of usage.

All databases are currently developed on an in-house NoSQL based registry, as there is no decentralised production ready blockchain compatible databases on the market (although some are in development as FlureeDB and BigblockDB). As soon as solution emerges that can handle databases in accordance to the needs of arts & culture sector, and can be integrated
with stakeholders properly, we will immediately transfer all functionalities to a decentralised system.

Big challenge is not only data persistency in decentralised systems, but also privacy with maintaining compliance with regulators. With GDPR, persistence of data on the network must be in control of an individual, and thus systems must provide such functionality on all personal information, which includes also intellectual property. You need to be able to delete non-public information.

**Staking of All-Art coins**

All actions that have associated risk will level this risk with coins staking mechanics and escrow contracts. Staking of coins is a way to vouch for specific action. Actions that need some form of trust or consensus require staking: sales, renting, auctions, expert involvement, etc. Staking serves to show participants have skin in the game and are not only playing for the profits, but truly believe in the actions they are taking.

Staking also takes significant portion of coins off the market.
Token economy

The VR-All-Art business model is based on fees for usage of the platform and fees and margins on art sales. Fees will be charged for art sales through the VR-All-Art platform, exhibition entrance fees (paid exhibitions), auction fees, license of VR-All-Art depending on stakeholders, curation fees, etc.

Payment models

Transactions (actions)
Transactions are used to store actions on objects and perform transactions between actors (users) either between objects or between themselves. Each transaction has an associated cost that is used as gas to power the network. A form of service fee for storing and handling the data.

Services
Different types of services paid on the platform. Services can range from 3D modeling of Spaces, 3D scanning of objects, technical support, etc. VR-All-Art will charge its services to participants of the platform in All-Art coins.

Renting – digital
Renting fees for digital objects, handled through smart contracts automation.

Renting – real-life
Renting of real life objects such are art pieces can be complex process, where the platform will provide necessary tools to help, automate and facilitate this process.

Exhibition creation
Usage of VR-All-Art platform to create and share exhibitions.

Exhibition tickets
Usage of VR-All-Art platform to visit virtual exhibitions. Exhibition can be free to visit and payable exhibition. VR-All-Art will share profits with exhibition creator from exhibition ticket sales.
Experts rewards / art service bounties
Arts & culture experts have a crucial role in creating an efficient and trustworthy ecosystem. Platform will enable bountie mechanics for performing specific tasks like providing verification, research, curation, critic, etc.

Listing
Creating an entity in the database has associated cost as there will be both storage costs, but also transaction costs as every database entry is accompanied with formal transactions on a blockchain.

Real-life purchase / escrow
Buying real-life art pieces is a complex process. Through automated escrow smart contracts, this process is more secure and partially automated, where transacting over blockchain provides much needed certification. In case of purchases from customers that came exclusively from VR-All-Art platform, we are sharing the profits with the seller. When seller brings customers directly, VR-All-Art is not interfering in the sales.

Digital purchase
Buying digital art piece with associated rights (like digital photos used on websites) is becoming increasingly popular, and protection and registration of these assets is becoming important part of the ecosystem. We can foresee that in not-so-distant future, it will be more important what digital objects do you own, rather then real-life objects.

Real-life auction / escrow
Organizing auctions of real-life objects is enabled through smart contracts that handle all auction rules, but also acts as an escrow contract until the sale is finalized.

Digital auction
Auctions for digital objects are enabled through smart contracts that handle all auction rules, where transfer of ownership is instant on the blockchain.

Cold bid
Cold bids are offers placed on either real-life pieces or digital pieces that are not on sale, but are present at exhibitions. Owners if they opt-in to receive cold-bids will get notifications if someone is offering to purchase their piece.
**Advertisement / promoted discovery mechanics**
VR-All-Art will create in-platform positions for promoting new exhibitions, artists, museums or expert bounties. Placement will be biddable. Only limited positions will be available for promotions, while main menus will have organic placements based on categories that users follows/chooses.

**Spaces / virtual real-estate**
Exhibitions are created in virtual spaces, which are actually 3d models of galleries and museums, but can be also imaginary unrealistic spaces, cityscapes, or actually anything that creator wants. Once created and approved, the space becomes virtual real-estate that is used to organize virtual exhibitions. Renting of space is paid, but space can also be bought or sold, even fractionally owned.
Incentive mechanics

The fee structure will be attractive and better than the current standard usually present in the art market and will open up possibilities for low profile, unrecognized artists to get into the game and start selling their artworks. On the other hand we do not intend to jeopardize high profile galleries, agents and museums in their current business models. On the contrary, we aim to lower their operational costs and bring them more profits not only from current sales but also from all future sales through the unparalleled functionalities of virtual and augmented reality and blockchain.

Examples

Sales process
Buying real-life art piece is a process that requires both buyer and seller to come to the terms of sale, but process of delivery of an actual piece, especially if it is shipped cross-border can have substantial risk both for buyer and for seller.

Smart contract handling an art piece
Every art piece will handle its life on the blockchain through a smart contract. Registered art piece will receive a unique cryptographic hash that will represent that piece in the blockchain. Owner of the art piece will have his ownership hash registered in the artworks smart contract, and will be the only person allowed to manage properties of the smart contract. Smart contract enables multiple possibilities for art sales, transferring or renting of rights, and operations on the art piece.

How is art piece sold?
Sales of an art piece are handled by smart contract in many different scenarios. From time limited auction based sales, reversed auction, direct transfer, private bid, public bid, and other scenarios, buyers will be able to acquire art pieces on the platform. In each of these scenarios there is a final price of an art piece settled at the end of a sales cycle, paid by the buyer. Buyer has transferred agreed amount on the smart contract that then locks this payment until buyer receives and registers the ownership of the art piece. Steps of an art sale in more details:

Step 1. Art piece is registered by the first owner in the system. Art piece receives a unique hash.
Step 2. Buyer and seller agree on the price. Buyer sends transaction to the smart contract of an art piece in total value of an art piece plus stake coins. Seller stakes coins for the sale.
Step 3. Smart contract locks all the payments and signals that an art piece has received the transactions, produces a secret code of the sale.
**Step 4.** Seller prints (or uses NFC tag) the secret transaction code and sends it together with art piece to the buyer.

**Step 5.** Seller signals the smart contract that the art piece has been sent.

**Step 6.** Buyer receives the art piece and activates secret code signing it with his own private key within the smart contract.

**Step 7.** Smart contract registers new owner, and releases the locked coins both for seller and buyer.

**Step 8.** If this is a first registered sales of a particular art piece in the system, seller receives bonus award in coins.
Stakeholders
The artist

Creators of art are in a constant struggle to showcase and sell their work. They have limited options not only in reaching the right audiences, but also in managing their sales and lifespan of their art pieces. With All-Art coins and smart contracts we are opening up many additional benefits to art creators. They will be able to profit from future sales of their art pieces, grow their accumulated Art Value, request curation and easily organize auctions to bring value of their art upwards. Size, space and time are no longer an obstacle if they use the VR-All-Art platform. With an easy calculation of the total market cap of an artist by summing up the total Art Value of their art pieces, we are enabling a wider community to understand how much value is associated to the artist's work. This can serve as a benefit to the artist to raise the value of his future work, and to collectors to invest by purchasing art from new and rising artists. With All-Art coins smart contracts, artists could sell not only their current work, but also sell their future work by creating pre-orders. They will be auctioning their time and talent on the All-Art coins platform.

The gallery

Galleries are creating a demand for art. For them, the global growth of the art market is essential for business. The virtual world opens new possibilities where space and time are no longer a concern. They can have unlimited space for their collections and additional profits from enlisting their artists on a global platform. Through the All-Art coins platform they are able to benefit from a global customer base not only from selling their art pieces, but also from exhibition fees, renting art and engaging into the art market like never before. Curation-on-demand is also an important segment of their opportunities as are easy auctions and bidding for artworks that are already sold. Understanding the need for privacy and the closed circle of collectors galleries are usually working with, the All-Art coins platform will enable private exhibition spaces and invitation-only exhibitions.
The curator
Curators are a very important element of the All-Art coins ecosystem. Their involvement brings credibility to the art market and drives demand for specific artists. With curation-on-demand they will be able to profit from their expertise and earn coins. The position of curators will become more valuable to the whole art community, while their estimations of Art Value will drive market growth. Collectors will follow the work of their favorite curators and follow up on their recommendations. In VR-All-Art curators are involved in the creation of virtual exhibitions while benefiting from art sales, too.

The collector
Collectors are users that bought art pieces with All-Art coins or have inserted their own artworks in possession inside the All-Art coins blockchain. The All-Art coins platform, driven by smart contracts, enables additional benefits to art collectors, where they have greater interest in engaging into sales through it. These benefits range from collecting premiums from future sales of art pieces from artists they already acquired, to easy sales of their collections on auctions or bidding for pieces that are no longer on sale. The trading of art becomes easier and more accessible through an open art market. Cross-border access to quality art is no longer a problem and trading becomes a global investment opportunity.

The museum
Museums are special institutions that hold and present art, usually without the ability to trade with their collections (depending on jurisdiction). By creating virtual exhibitions in VR-All-Art they gain new audiences and change their reach into global institutions. All-Art coins are used by museums to rent or lease art pieces, while also charging entry fees to particular virtual exhibitions. As the demand for virtual art grows, museums could benefit from digitizing artworks in their possession, creating digital art pieces that could be sold. The dissemination of cultural heritage through VR-All-Art and the All-Art coins platform will bring more awareness of art in their local and international communities, thus bringing more people into museums to enjoy real-life art pieces. In case of artworks that are not presented to the public (in depots or during conservation works), museums could still exhibit them in the virtual reality space.
The university

Universities hold a unique position on the art scene. They are the initial points of mastering new skills and adopting new technologies in the creation of art. Through the use of VR-All-Art's platform they will now learn the practice of curatorship first-hand. They no longer require the physical artworks to move them around or even the physical spaces that they will be curating. VR-All-Art enables them to virtually “walk into” the gallery or museum and set up an exhibition. With this teaching aid, the professors can explain the ambient creation process that can include changing lighting, wall colors etc but what is most important, it can also be used to change the position of the artwork anywhere in the room. It means that they can now see the full display of the artworks, within minutes and that they can grasp the whole experience of preparing the exhibition.

The user

Exploring the art world through virtual reality exhibitions is no longer bound to geographical or time limits. Regular users, even if they don't engage into art purchases will learn more about the art world, understand art trends and enjoy great pieces of art. If they choose to buy art, they will have an opportunity to understand how art can enrich their functions in their life space through an augmented reality mobile application. The All-Art coins ecosystem will enable them not only to easily purchase art, but also to sell it in an open marketplace. This is the first time a regular art buyer is converted into a collector, while he becomes an investor in art at the same time. In this way more people will be invited to engage in art trade, thus driving demand for art and bringing more global value into the art market and All-Art coins.
Seamless integration and easy user adoption

Our primary objective is to ensure easy art purchases using All-Art coins. Early adopters will pave the way for future users so our foremost goal is to simplify a complex process, making it fun and engaging through an elegant application layer. Our mission is to ensure art can be purchased by any standard fiat currency, cryptocurrency or even cash and easily integrated into the All-Art coins blockchain. Our team will work for immediate and automated integration with exchanges and credit card providers to solve crucial steps in ensuring the end customer (art buyer) will not even feel his first purchase is done on a blockchain.

Considering we understand that first time users, not familiar with blockchain concepts, might be scared of the new knowledge they need to acquire in order to fully understand the new paradigm, we will work to ensure this learning process is fun and easy for every new user no matter how they first came into contact with VR-All-Art and All-Art coins.

The biggest challenge of crypto startups and the crypto community is user integration, acquisition and adoption. We understand that this challenge is not only present in the digital arena and in the online world, but also very present in an offline world. Therefore we will put extreme efforts into educating the wider public from arts & culture space into this exciting new world of possibilities.
Galleries
Galleries will have three main use-cases for VR-All-Art. First and foremost is they can use it as a tool for easier exhibition planning. Using devices like Microsoft HoloLens and our mixed reality app, they can position art pieces in their real space as holograms, or use virtual reality in digital replica of their own gallery. This cuts cost and time, while bringing freedom both to the gallerist and to the artist. Second use case is they can use VR-All-Art as archiving platform, where they can showcase past exhibitions and sell art pieces for artists that are not on the display in real-space. Third use case is reaching new customers through publishing exhibitions on VR-All-Art, which will be accessible anywhere in the world.

We see that if galleries are hesitant on implementation of virtual reality, as they think technology is not-there-yet, best use-case is using VR-All-Art as a planning tool and then jump into virtual reality when they get familiarized with the new concepts of VR and Blockchain.

Certainly we will focus first on galleries and curators interested and excited about new technologies, as they find this transition into virtual reality as a natural next step and are more than willing to implement and grow the concept, while blue-chip galleries will come in later stages when there are potential collectors looking to buy new art pieces in this new way.

Museums
Using VR-All-Art in museums has different implications and challenges. Best use-case for museums is showing pieces that are unavailable to the public inside virtual reality spaces. Virtual reality exhibitions can be created much faster then real-life exhibitions without interfering with permanent exhibition space. Digital objects can be rented through VR-All-Art platform so that local audiences can experience artifacts from many corners of the world in one virtual space. Exchange of virtual objects between museums and galleries will become new way to create narratives and inspire and engage audiences into arts & culture space. VR-All-Art allows creation of localized exhibitions bound to specific location, so that visitors can have exclusive content and there is a need to come and visit the museum.
Collectors

Today, collectors are in difficult position to showcase their pieces to the public, or privately across the globe. Many precious art pieces in collections are stored in vaults, sometimes in tax free zones, and are never seen either by collector or public. Trade between collectors is hard as the art market is not an open play-field. For collectors, certification of art on the blockchain and virtual reality present new opportunity not yet seen in art market. Their involvement is solving a real problem and will provide them with tools necessary to encourage their passion.

Note on privacy

We understand the need for privacy is an essential factor in the art market - especially in the area of high value artworks. Blockchain provides this infrastructure through anonymous transactions and we understand that high profile acquisitions wish to remain protected and private. The All-Art coins system will not require private information and will enable protection of privacy both for sellers and for buyers.
ICO
Initial Coin Offering (ICO) or so-called Token Generation Event (TGE) will be used to create the initial supply of All-Art coins.

All-Art coin supply growth
The initial number of All-Art coins is set at 2.5 billion. Out of this number, a total of 1.38 billion All-Art coins are for public sale. The remaining 1.12 million will be distributed in the Initial Art Call, among the founders, team members, advisors and reserved for future token sales if needed. Post-ICO, the number of All-Art coins will increase at an ever decreasing rate, reaching approximately 3.1 billion after one year, 3.6 billion after two years, 4.1 billion after three years, etc. The maximum number of All-Art coins is capped at 10 billion, and the total number will converge to this cap asymptotically. The decrease of the reward will keep on continually until the reward rate reaches almost zero.

Usage
A new piece of art must be registered through the system to receive additional coins. Subsequently the auctions determine its Art value, which is then converted into the corresponding All-Art coin value at the current rate. At the end of each auction cycle, the new All-Art coins will be mined and distributed to the party that registered the artwork into the system. The total quantity of All-Art coins for a given auction cycle is determined by the supply growth formula. The newly mined All-Art coins are distributed in proportion to the Art Value created.

For example, assume that a weekly auction cycle is applied and we are in the 35th month after the TGE (Token Generation Event). The total quantity of new All-Art coins set for this month is around 40 million. Consider a weekly auction with new All-Art coins set to 10 million. The auction results in four transactions, with values set at 40, 20, 16 and 4 million All-Art coins, respectively. The following table illustrates the value of All-Art coins being generated and distributed to the party that registered the artwork into the system.

Inflation-free mechanism
The controlled growth formula for All-Art coin supply prevents any inflation or market glut. On the other hand, it does not impose any boundary on the Art Value of any individual piece of art itself, nor
the exchange rate between All-Art coins and fiat currencies: both are determined in an open market, independently of any supply growth of All-Art coins.

**All-Art coins Pre-ICO**
Pre-ICO is targeting investors interested in cryptocurrencies, innovative technologies like VR, AR and MR and art collectors that intend to use All-Art coins from pre-sale for acquisitions of real art pieces through VR-All-Art platform.

**Initial Art-Call**
Initial Art-Call and ICOs are a mechanism of sparking the system. We will distribute 8,000,000 All-Art coins to artists, galleries, curators, art dealers, auctioneers, banks and insurance companies involved in the art industry in order to include as many stakeholders as possible from the very beginning. The number of All-Art coins awarded to each individual or legal entity will be based on the total Art Value pledged to the system, and equal to its All-Art coin equivalent. In this way, the system will have a significant number of registered art pieces ready for future trading, lease or virtual exhibitions.

**Vision**
By overcoming space and time boundaries, introducing a decentralized art market and All-Art coins cryptocurrency, we will create an explosion of art experiences between artists and art-lovers. VR-All-Art and All-Art coins will enable a global change in the way we see and consume art. Many artists will become available in countries where they normally would never have had a chance to reach audiences. The Art market will grow and develop in ways our civilization has never experienced before.
Roadmap
We are aware that putting up a roadmap for such a disruptive endeavor is very difficult. And we know that development won't follow a straight line - especially as we can't foresee how the stakeholders and the world around us evolve. Thus we will follow a clear vision of what is the goal in each phase and adjust the planning according to real life circumstances.

**Alpha stage (finished)**
- First virtual gallery spaces created
- Backend setup with web interface for managing exhibitions, art, artists, galleries, etc.
- First exhibition planning tool prototype
- First exhibitions created with planning tool
- Mobile Augmented Reality app
- Mixed Reality HoloLens app

**Beta stage**
- More 3D galleries created
- First online version of VRAA
- Closed Beta program opened (Art-Call)
- First virtual art exhibitions on art shows
- Wallet implementation and smart-contract development

**Pre-ICO**
- Private sales
- Pre-launch stage
- Public beta version of VRAA
- Integration of All-Art coins into VRAA user-experience

**ICO**
- Token Generating event and opening of public All-Art coin sales

**Lift off stage**
- Public launch of full VR-All-Art version
- All-Art coins wallet and payment infrastructure fully integrated with web and VR
- Integration of All-Art coins with exchanges
- First sale of Art piece with All-Art coins
- Extensive marketing and PR activities in the art world
VR-All-Art beta access

We will open an exclusive beta access program for interested individuals and companies, giving them an early access to the platform. The beta program will be split into three phases:

The first phase will be an invitation-only phase where we are pre-selecting participants for first access to the VR-All-Art platform. These will be professionals from the art world, VR community and IT industry experts. (ongoing phase)

The second phase is a closed beta program, where people can apply for access and selected individuals will be invited for the program. We expect this closed group to be active members of the community that are ready to comment and help the development of the VR-All-Art and All-Art coins platforms.

The third phase will be an open beta program that will allow everybody to participate and test the platform. It is necessary for all three groups to have access to VR equipment.
The team
Vitomir Jevremovic
Founder & CEO

Vitomir Jevremović is a founder and a CEO of VR-All-Art, the first platform and a new marketplace for artists, galleries, museums and the general public to exhibit, explore and acquire art in the virtual and augmented worlds. Run on a blockchain implemented protocol layer, VR-All-Art brings certification of art, and trade of art through smart contracts developed according to CIDOC-CRM, ISO-approved standard. VR-All-Art brings much-needed liquidity in the art space through the new token economy model and expansion of real-life galleries and museums in infinite virtual reality spaces.

Vitomir has a background in both development and business. He has been running a production company Digital Mind, creating VR, AR, web and mobile applications in the fields of marketing, culture, and education. He has been involved in marketing, digital production and development for more than 20 years, working on various projects from software tools in archeology to interactive 3D reconstructions of ancient sites, computer and mobile games, interactive installations, animated movies and now Virtual Reality projects. He has authored one of the first virtual reality museum installations - VR museum of Nikola Tesla.

He has a degree in archeology and a passion for digital museums and arts.
Alexander Fuerer
Co-Founder & COO

Alexander is a Swiss citizen and runs the corporate office of VR-All-Art in Zug. He graduated in business management and journalism (M.A., dipl. journ.) at the University of Fribourg (Switzerland). He worked over 10 years as an advertising creative and copywriter for international agencies in Zurich and Berlin (Draft Worldwide, TBWA, Scholz & Friends and Havas). During that time he won numerous international awards. Besides his engagement at VR-All-Art Alexander is a partner, digital strategist and member of the executive board at TKF Kommunikation & Design, a design and communications agency in St.Gallen and Zurich.

As COO Alexander oversees the commercial operations at VR-All-Art and has a seat in the board of directors of VR-All-Art AG, which is located in the Crypto Valley’s capital Zug, Switzerland.
Miloš Božović, PhD
Coin Economy

Miloš Božović is an Associate Professor at the Faculty of Economics, University of Belgrade, where he teaches several courses at undergraduate and graduate level. In addition, he is an External Lecturer at the Department of Management and Economics of European Business School in Germany. He obtained his PhD in Economics in 2009 at Barcelona Graduate School of Economics (Pompeu Fabra University, Barcelona, Spain). He also has a PhD in physics from University of Belgrade, received in 2005.

His expertise covers a range of topics in financial economics, with a focus on risk modeling, stochastic calculus, derivatives and banking. He received the Annual award of the Association of Spanish exchanges and markets (BMEX) for the best research paper in financial derivatives in 2006, and a nomination for the Global Association of Risk Professionals (GARP) Annual Award for the best paper in risk management in 2010. In the previous part of his career, he published several papers in theoretical physics, having over 100 citations, and received the Scientific Excellence Award of Serbian Ministry of Science in 2004.

Miloš is a co-founder of CIF, a Belgrade-based consultancy company specialized in risk modeling. As the chief architect of economic models for the company, he participated in more than 50 projects in Europe, North America and the Middle East. He has 15 years of experience in economic modeling and development of software tools for credit scoring, regulatory compliance and accounting standards for financial institutions.

He was a consultant for the World Bank, as well as several ministries of finance and central banks in the South Eastern Europe. He is a member of European Economic Association, European Finance Association and Global Association of Risk Professionals.
Tim Stockmar
Creative Director

Tim Stockmar is Creative Director at VR-All-Art, the first platform and a new marketplace for artists, galleries, museums and the general public to exhibit, explore and acquire art in the virtual and augmented worlds.

Tim received his master’s degree in communication design from the Hochschule Konstanz (Germany) back in 2001. He gathered more than 15 years of experience in advertising- and design agencies in Germany and Switzerland such as Scholz & Friends, BBDO, DDB, Jung von Matt or Nose. He was honored with numerous international creative awards for art direction and design. Since 2012 Tim partnered with Alexander Fuerer at the Zurich branch of the Swiss design agency TKF. Being part of the VR-All-Art team from the very beginning Tim is in charge of everything related to design - from UI/UX of the VR-All-Art apps to the web design. With passion and great vigor, he ensures that everything at VR-All-Art meets the high standards of Swiss design.
Appendix A

Surface scanner

Digitization and scanning of art pieces is an important element in bringing immersive experiences of art exhibitions into the virtual space, where the classical approach of taking a digital photo of an art piece is not sufficient to present all surface details.

We have developed our original solution for extracting surface details from paintings using special hardware based on VR technology and sophisticated mathematical algorithms that calculate the original color of the surface, the relief of the surface and its color reflections. Using the scanner it is possible to extract much higher details from an art piece bringing digitalization of art to a completely new level. As the scanning process is quick and easy, it will - in the future - be done by artists themselves using a digital camera, scanner and VR equipment. Scanned pieces will be automatically uploaded to the VR-All-Art platform to become part of the artist’s digital collection.

The Importance of the surface scanner

With the introduction of a new scanning process, art pieces will be presented in an unparalleled level of details while scanning will serve as proof of ownership of the original.

The 3D surface scanner brings a unique value proposition to the whole infrastructure of VR-All-Art and All-Art coins taking both the artwork and its visual representation to a new level and trust associated with the scanning process.
Appendix B

Fractional vs. original vs. virtual

An original art piece cannot be physically divided into pieces and shared among different locations. When people buy artworks they usually place them in their space for admiration and enjoyment. This is what the original purpose of art is.

Even though we can foresee the future of the VR-All-Art platform including mechanics for shared and fractional ownership of original art pieces, we don't believe this is necessary or even doable in the near future. Especially as shared ownership would be used mostly for trading and speculation, creating a system that would govern shared ownership of an art piece would demand a strict rule-set for majority owners, voting rights and other mechanics that would be incorporated in such a solution. The current art market has no room for such a system yet. We are leaving this idea for some future time, when art trading will be more developed and structured than it is today.

A virtual art piece can have shared ownership and multiple copies
While treating an original art piece as a single indivisible object, its virtual representation can have a completely different life and purpose. The virtual version can have multiple copies and shared ownership with benefits that span virtual worlds. A digital art piece can have a limited number of virtual copies where its value is determined on an open market of digital art.

Museums would have stimulation in selling digital copies of famous artworks in their possession to a limited number of buyers in order to finance digitization and preservation of art, as well as to gain profits while still keeping the original. We see that the transformation into virtual and mixed reality will generate more demand for digital copies of original artworks in the near future. Museums and national galleries would lead the way into this new world where we could experience even the most distant locations on the globe, visit virtual exhibitions and enjoy art. Our mission is to empower those institutions with the tools and platforms that can benefit the entire civilization.