Sovereign Objects.

A new structure for digital art that carries its own identity, rules, royalties, history, and capacity to evolve.

What is a Sovereign Object?

A Sovereign Object is a digital artwork with its own on-chain rulebook and official record. It can answer the work's core questions: What is the work? Who controls it? How may it change? How do supported sales and royalties work? Which history is official? What rights and preservation information travel with it?

The innovation is not simply that the artwork uses a smart contract. NFTs already do. The innovation is architectural: the artwork itself becomes the authoritative place for its identity, valid changes, supported transactions, active economics, and official history.

That authority lives in one **sovereign root**, the artwork's main smart contract. The current reference profile carries the relevant logic directly in that contract. In the broader architecture, the root may also govern the files and component contracts that together make up the work.

Storage systems, display software, marketplaces, galleries, archives, and websites may still help people access the work. The difference is that those services do not get to redefine its identity or rules.

An NFT is usually a certificate attached to a digital work. A Sovereign Object is the work's own governing object.

SMART CONTRACT

Software on a blockchain that executes stated rules.

SOVEREIGN ROOT

The artwork's main on-chain contract and durable source of truth.

In this paper, control means the object's on-chain record of who currently controls it. It does not automatically determine legal ownership in every jurisdiction.

What NFTs solved, and what remained outside.

NFTs decentralized the record of scarcity and transfer. They did not fully decentralize authority.

Decentralization is not only about where the token lives. It is about whether any single interface can redefine the work's identity, economics, or validity.

NFTs were a real breakthrough. They made digital art natively collectible through scarce, transferable tokens. They created public records of token control, global markets, and a durable way for collectors to recognize digital works as assets.

But the token was usually a record **about** the artwork rather than the artwork's governing structure. The media, code, active version, royalty enforcement, display logic, rights documents, and preservation requirements often lived elsewhere.

For a fixed image, that separation may be acceptable. For a work made of code, interaction, time, live data, changing state, or several on-chain contracts, it creates uncertainty about what the work actually is and who has the authority to change it.

WHAT THE TOKEN USUALLY RECORDS	WHAT OFTEN REMAINS ELSEWHERE
Which token represents the work	The code and assets that make up the work
Which account currently holds it	The official version or current state
Where its metadata points	The rules for changing the work
	The software environment needed to run it
	Royalty enforcement and sale logic
	The meaning of provenance and rights
	The information needed to preserve it

The token was on-chain. The work's governing power often was not.

From certificate to constitution.

NFTs work best as certificates for static files. Sovereign Objects work better as constitutions for digital works.

This is a distinction of architecture, not a claim that NFTs cannot point to dynamic art. NFTs can reference HTML, generative, interactive, AI-native, or blockchain-native work. The limitation is that a conventional token usually does not carry the complete identity and lifecycle of that work.

A certificate identifies an asset. A constitution defines what the asset is, what rules govern it, who may change it, how it may be sold, and which history is official.

WHAT IS NEW

The claim is not that every individual mechanism is unprecedented. The newness is architectural: identity, governed change, supported transactions, active economics, official history, rights, and, where needed, component composition converge at the artwork's own authoritative root.

A CERTIFICATE ANSWERS	A CONSTITUTION ANSWERS
Which token?	What constitutes the work?
Who holds it?	Which version and state are official?
Where does it point?	Who may change them?
	How do supported sales and royalties work?
	Which contracts belong to the work?
	What must be preserved?

An NFT can point to a dynamic artwork. Pointing is not constituting.

The work does not need to store or execute every component. It needs to define what belongs to it and which changes are valid.

Consider an HTML artwork.

PROPOSED EXECUTABLE ART PROFILE

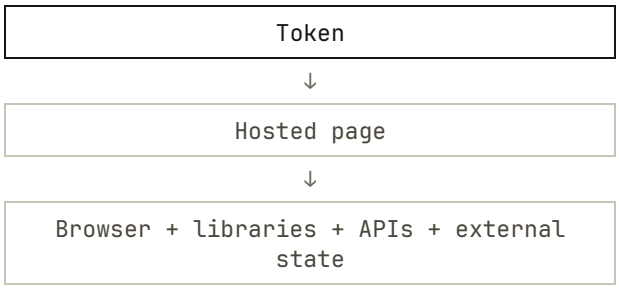
Imagine an HTML artwork that changes over time and responds to its collector.

Under a common NFT architecture, the token may point to an `animation_url`. That page may depend on a website, browser version, JavaScript libraries, fonts, APIs, image assets, and a database. If one of those changes, the token often cannot answer which version is authentic, which persistent state belongs to the artwork, or how the work should be reconstructed later.

The current reference Sovereign Object profile already addresses part of this problem. It can bind required artwork, metadata, constitution, and license materials to exact digital fingerprints; refuse trading when required bindings fail; govern metadata versions; and make earlier offers fail after material changes to the object's official state.

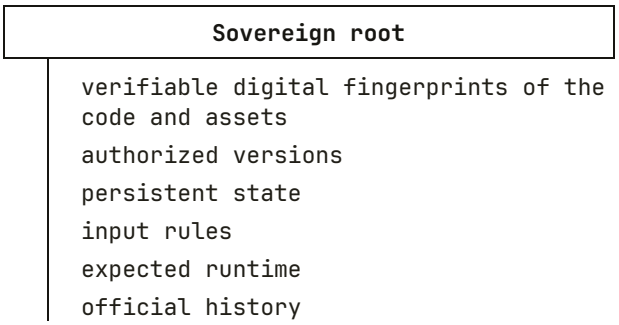
A proposed Executable Art Profile would extend that constitutional core to the executable system itself. It could identify the code-and-asset bundle, entry point, persistent artistic state, permitted inputs, network behavior, expected runtime, artist-authorized versions, and preservation fallback.

COMMON NFT ARCHITECTURE



The token points to an execution that other systems define.

SOVEREIGN OBJECT + PROPOSED EXECUTABLE PROFILE



The work defines the system a viewer is expected to reconstruct.

CURRENT: verified content, fail-closed readiness, governed metadata, and exact-state-bound offers.

PROPOSED: executable manifests, persistent artistic state, input policies, runtime definitions, and conservation versions.

Already today, offers bind to the object's exact current state: a collector cannot agree to buy one work and complete the sale after its official state has materially changed. Under the proposed profile, that protection could extend to the executable bundle and persistent artistic state that materially define the work.

A digital fingerprint identifies exact content without requiring the content itself to be stored in the contract. This does not make browsers permanent or guarantee that every external service will survive. It creates a durable definition of what future viewers and conservators are trying to run.

What the object governs.

WHAT IS THE WORK?	The object identifies the files, code, contracts, versions, persistent state, and other components that make up the artwork.
WHO CONTROLS IT?	The object records the current on-chain controller and defines the valid paths by which control may move.
HOW MAY IT CHANGE?	The object states whether the work is frozen, versioned, or allowed to evolve under declared rules. Earlier authorized versions remain part of its history.
HOW DO SALES AND ROYALTIES WORK?	Supported sales complete through the object's own rules. When active royalty terms are nonzero, those terms are applied as part of the sale rather than left to marketplace policy.
WHICH HISTORY IS OFFICIAL?	The object preserves an append-only record of sales, control changes, authorized versions, and other changes that matter to the work.
WHAT RIGHTS AND PRESERVATION INFORMATION TRAVEL WITH IT?	The object can carry verifiable commitments to rights documents, display instructions, preservation materials, and the software environment the work expects. The contract can make those documents verifiable and visible; legal interpretation and enforcement remain external.

Read everywhere. Write through the constitution.

Anyone may build a viewer, gallery, marketplace, archive, or indexer around the same object. Open access does not mean open mutation: every surface can read and relay the work, while only the work's declared rules can change its official state.

One artwork. One sovereign root.

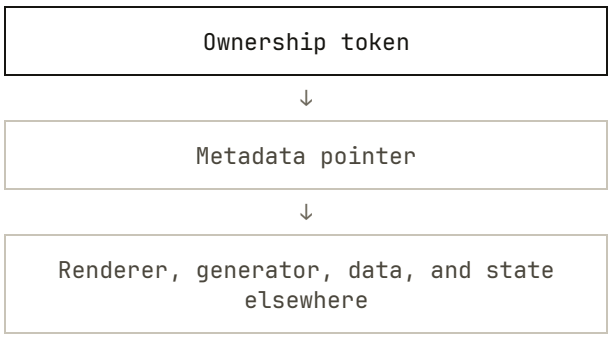
The sovereign root is the artwork's permanent on-chain home and rulebook.

Some works can be implemented in one contract. Other works, especially blockchain-native works, may be made from several contracts that handle rendering, generation, persistent state, interaction, or data.

In the broader Sovereign Object architecture, the root governs the exact contracts that make up the work. It may control them, deploy them, or bind them as immutable components. It is not enough merely to store their addresses: an outside administrator must not be able to silently redefine the artwork.

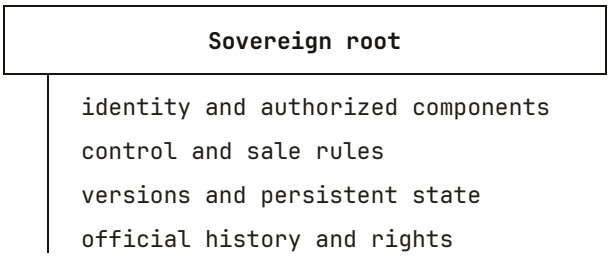
The current profile is monolithic. The composite structure below describes the broader proposed architecture.

COMMON NFT-BASED BLOCKCHAIN ART ARCHITECTURE



The ownership token points outward to a contract system it may not control.

COMPOSITE SOVEREIGN OBJECT



The root governs the components it recognizes as part of the work.

CURRENT REFERENCE PROFILE

One permanently non-upgradeable contract per artwork.

PROPOSED COMPOSITE PROFILE

One sovereign root governing a declared set of component contracts.

The test is simple: can an outside party materially change what the work is without passing through the work's rules? If yes, authority still lives outside the object.

The work settles its own sale.

A supported sale is one completed through a sale path the object recognizes and governs.

1 · DISCOVERY CAN HAPPEN ANYWHERE	A marketplace, gallery, wallet, website, or direct collector interaction may surface or relay a sale opportunity.
2 · THE OBJECT CHECKS ITS CURRENT TERMS	The work verifies the buyer, price, active version, current controller, and any other state that materially affects the sale.
3 · FUNDS ARE ALLOCATED BY THE WORK	The object allocates the seller's proceeds and any active creator and collaborator royalties according to the terms currently recorded by the work.
4 · CONTROL AND HISTORY ADVANCE TOGETHER	The sale changes the on-chain controller and enters the official history in the same transaction. If a required part fails, the sale does not complete.

When nonzero royalty terms are active, the work does not request a royalty. It refuses to complete a supported sale without settling it.

No marketplace policy or separate enforcement service stands between the work's active terms and its supported settlement path.

Royalty selection and royalty execution are different. The terms may be zero or nonzero. After birth, the creator may propose a new pair of royalty rates, but only the exact current controller may accept it. Once nonzero terms are active, neither a marketplace, seller, buyer, nor interface chooses whether to honor them on a supported sale.

The object governs sales completed through its supported paths. It cannot detect payment or other value exchanged privately outside those paths.

The current reference profile supports an on-chain ask, an object-funded bid, and a controller-signed ask relayed by any surface. All three use the same internal sale path.

A non-sale transfer follows a separate path: the named recipient must accept it, and the object records only that control moved without a sale settled by the work. Any legal or custodial meaning remains external.

A digital work can evolve without losing its identity.

Digital art does not always need to remain frozen. It does need clear rules for change.

A Sovereign Object's constitution can declare whether a work is fixed or allowed to evolve under stated rules. In the current reference profile, this applies to metadata versions. A proposed executable profile would extend the same structure to code bundles, persistent artistic state, runtime definitions, and conservation versions.

Where revision is enabled, the artist may author new eligible versions, but cannot unilaterally force one to become the controller's official selection. The controller may select among the artist's authorized possibilities, but cannot invent a new work. Earlier versions remain part of the record.

Artist agency without a post-sale backdoor. Collector control without authorship drift.

The constitution can remain fixed while the work governed by it changes. Immutability applies to the rules of change, not necessarily to every valid state of the artwork.

In the current reference profile, no creator, marketplace, or deployment administrator can later pause the object, seize it, or replace its governing code.

PERMANENT RULES	Who controls the work, which changes are allowed, how sales operate, and which authorities exist.
PERSISTENT ARTISTIC STATE	Seeds, parameters, completed interactions, accumulated events, or other values that materially change the work over time.
TEMPORARY VIEWER STATE	Cursor position, temporary settings, local preferences, and session effects that do not become part of the work's official history.

A transaction should be tied to the version and persistent state that materially define the work, not to every temporary input or live data update.

Why this matters.

The web gave artists global distribution, but often left durable leverage with platforms. Sovereign Objects let the work carry the artist's terms across compatible interfaces while giving collectors a clear, bounded account of what they control.

FOR ARTISTS

The artist establishes the work's birth terms, initial economics, authorship boundaries, and allowed forms of evolution. Later royalty changes require the current controller's acceptance. Those terms travel with the work across compatible interfaces instead of depending on each marketplace's policy or private database.

FOR COLLECTORS

The collector can verify what the work is, the exact version or state being acquired, what powers remain with the artist, which rights accompany control, and which history is official. Stale offers fail, and neither the artist nor a platform can silently substitute a materially different work at settlement.

FOR INSTITUTIONS AND CONSERVATORS

Museums and archives receive a clearer preservation target: the original components, intended runtime, authorized changes, and distinction between the original work and later conservation versions.

FOR GALLERIES AND PLATFORMS

Galleries and marketplaces remain important for discovery, curation, display, service, and context. They become replaceable interfaces around the work rather than the final authority over its identity, economics, or validity.

Decentralization here does not mean the absence of platforms. It means that platforms are replaceable services rather than irreplaceable authorities. Anyone can build a viewer, gallery, market, or archive around the same object; no one interface gets exclusive power to define the work or waive its supported-sale rules.

Visibility remains a service. Validity stops being one.

The benefit is not identical for every artwork. For a fixed image, the largest gains may be royalties, provenance, rights, and platform independence. For a dynamic or system-based work, the gains also include identity, state, execution context, and preservation.

Some digital works are systems, not files.

HTML AND SOFTWARE ART

The work may include code, assets, dependencies, persistent state, interaction rules, and a browser or runtime environment.

GENERATIVE AND EVOLVING ART

The work may be the generator, seed system, parameter space, version history, and renderer rather than one exported image.

AI-NATIVE ART

The work may be a model, adapter, prompt system, inference configuration, and set of authorized outputs rather than one final result.

INTERACTIVE AND LIVE-DATA ART

The work may respond to viewers, sensors, public data, or network activity while distinguishing temporary inputs from persistent artistic change.

BLOCKCHAIN-NATIVE COMPOSITE ART

The work may consist of several renderer, generator, data, state, and interaction contracts governed beneath one root.

REAL-TIME, XR, AND INSTALLATION ART

The work may include a scene, engine, shaders, devices, synchronized channels, hardware assumptions, and exhibition instructions.

HTML art is not an edge case. It is the clearest example of a larger category in which the identity of the work exceeds a single static payload.

Preserving bytes is not always preserving the work.

A file can remain available while the artwork becomes impossible to run.

An HTML bundle may survive while a browser API disappears. A model may survive while its inference software does not. A real-time scene may remain intact while its engine, shaders, codecs, or hardware assumptions become incompatible.

For executable art, the work is not only the code or the rendered output. It is code + assets + state + inputs + runtime.

A Sovereign Object can preserve verifiable commitments to the materials and environment the artist recognized: code, assets, versions, state, inputs, component contracts, display instructions, and runtime expectations.

The object can also distinguish the original work from later migrations or conservation builds. A future compatibility version does not need to pretend that it is the original.

Durability also means that the work's sale rules, authorized versions, rights commitments, and official history do not disappear with a marketplace database or hosted application.

> **The object does not preserve the work alone. It preserves the authoritative record of what must be preserved.**

Archives, emulators, storage systems, conservators, institutions, and future viewers still perform the preservation work. The Sovereign Object gives them a durable reference against which later implementations can be evaluated.

A runtime commitment does not make browsers permanent, guarantee identical rendering, or make external code safe.

The primitive, the current profile, and what comes next.

The broader Sovereign Object primitive is the architectural idea: one artwork, one sovereign root, and one authoritative system for identity, control, economics, change, history, and rights.

The current reference Art Profile is the first implementation of that idea. It is intentionally narrower than the full architecture.

CURRENT REFERENCE ART PROFILE	PROPOSED EXTENSIONS
One permanent contract per artwork	Composite contract-based works
The work itself records its current on-chain controller and governs the supported sale paths	Executable manifests and persistent artistic state
Mandatory execution of active nonzero royalties on supported sales	Input, network, runtime, and medium-specific policies
Verified content routes and governed metadata versions	Conservation-version governance
State-bound offers and recipient-accepted non-sale transfers	Richer standard reading interfaces
Append-only history, rights commitments, and no administrative backdoor	Reference viewers and archival tools

The current contract demonstrates the constitutional core. The proposed profiles extend that core to works whose identity exceeds a single contract or file.

Current Reference Profile

- Each artwork is one permanently non-upgradeable contract; finite editions are creator-scoped, and every work in an edition is born as its own contract.
- Canonically recognized births occur at predictable addresses through a controlled gateway; a creator may sign exact birth instructions for another party to relay.
- Settlement is ETH-only: an on-chain ask, an object-funded bid, and a relayed controller-signed ask converge on one internal settlement path.
- Proceeds become pull-based balances that recipients withdraw.
- Creator treasury, collaborator identities, and collaborator shares are fixed at birth.
- The creator may propose a royalty-rate pair; only the exact current controller may accept it, and each rate is independently capped at 10%.
- Trading fails closed until required routes verify against exact content commitments.
- Metadata versions are governed; canonical selection belongs only to the current controller.
- Offers bind to the object's exact current state; controller movement, official metadata selection, required-route changes, and accepted royalty-rate changes make earlier offers stale, and a one-way counter prevents them from returning.
- Non-sale transfers require acceptance by the named recipient.
- The object exposes no generic ERC-721 transfer or approval path. Control moves only through supported sales or recipient-accepted non-sale transfers, so an outside interface cannot move the work around its rules.
- Canonical history is append-only.
- No administrative switch can upgrade, pause, freeze, or seize an existing object's protocol state.

In this paper, "title" is shorthand for the object's on-chain controller state. It is not a claim that the contract automatically determines legal title in every jurisdiction.

SOVEREIGN ROOT
The artwork's main title-bearing contract and constitutional authority.

CONTROLLER
The account the object recognizes as the current on-chain title holder.

CREATOR AUTHORITY
The fixed artistic authority that can offer revisions, register routes, and propose royalty changes, but cannot move title alone.

CREATOR TREASURY
The fixed account receiving the creator portion of royalties.

DIGITAL FINGERPRINT
A fixed cryptographic identifier of exact content.

CANONICAL ROUTE
A controller-selected, verified route resolving to content matching its fingerprint.

What Sovereign Objects do not automatically solve.

- They cannot detect or prevent payment or other value exchanged outside supported sale paths.
- They do not decide legal enforceability or legal ownership by themselves.
- They do not recover lost controller keys.
- They do not guarantee that external files, APIs, fonts, libraries, models, devices, or networks will remain available.
- They do not guarantee that committed software will run identically in future environments.
- They do not make third-party code safe to execute.
- They do not eliminate the need for wallets, networks, indexers, storage systems, viewers, galleries, archives, or legal institutions.
- A component is not part of a sovereign work merely because the root stores its address. Its authority must be controlled by the root, made immutable, or explicitly disclosed and limited.
- The current reference profile is monolithic. General composite work graphs and executable-art schemas remain proposed.

A mutable URL is not an executable-art constitution.

A Sovereign Object is materially better for executable or composite work only when the relevant code, assets, contracts, state, runtime assumptions, and change rules are identified and governed, not when the root merely replaces one pointer with another.

The current profile intentionally excludes public minting, auctions, stablecoin settlement, signed bids, generic NFT transfers or approvals, upgrades, privacy features, and general composite-work components.

Canonical means officially recognized by the object.

Renderer or runtime means the software environment expected to display or execute the work.

Work manifest means the declared set of materials and components required to reconstruct the work.

Who decides, and what is the work?

NFTs proved that digital art could be collected on-chain. Sovereign Objects ask what comes next: can the artwork itself carry the identity, rules, economics, and history that define its life without depending on one marketplace to preserve them?

A Sovereign Object gives one artwork one sovereign root. The artist authors the constitution at birth. The collector acquires a legible object whose official state, active terms, and history can be verified. Any compatible viewer, gallery, archive, or market can read and relay the work, but none becomes its sole authority.

For a fixed work, that may mean a verified file, clear control, embedded sale rules, durable provenance, and rights commitments. For a dynamic work, it may also mean an executable bundle, persistent state, input rules, a runtime definition, and a governed set of component contracts.

External systems still store, retrieve, display, exhibit, index, and conserve the work. They remain necessary. They do not define the work's official identity or rules.

NFTs made digital art collectible on-chain.
Sovereign Objects make the work's identity, rules, economics, and history portable across the open network.

Not a better marketplace page.
Not a more decorative NFT.
A work that can travel without surrendering its terms.

The artist authors the constitution.
The collector controls the work within it.
Platforms remain services, not sovereigns.

One artwork. One sovereign root.

A constitution for the work.
A new primitive for digital art.

Patrick Amadon

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ADDENDUM

Prior Art in Contract-Native Art Markets

Sovereign Objects is the next step in a long line of innovations around decentralized ownership and art. Early projects placed trading and settlement inside shared collection contracts; later works moved ownership, pricing, and economic behavior into contracts dedicated to individual artworks. Sovereign Objects builds on this lineage by formalizing the artwork as a broader constitutional object governing title, settlement, creator economics, display, provenance, rights, delegation, and permitted interactions.

PIXELMAP 2016	The contract stored each tile's artwork state, owner, sale price, and direct-purchase logic.
CRYPTOPUNKS 2017	The canonical contract included listings, directed sales, bids, purchases, and withdrawals.
MOONCATRESCUE 2017	Its Adoption Center handled listings, purchase requests, ownership transfer, and settlement.
ETHERROCK 2017	The contract governed each rock's ownership, price, listing status, transfer, and purchase.
THIS ARTWORK IS ALWAYS ON SALE 2019	A dedicated contract governed the work's ownership, continuous sale price, artist patronage, and foreclosure.
ZORA MEDIA PROTOCOL 2020	Each media object received persistent asks, escrowed bids, settlement, creator economics, and content commitments through the protocol.
MEEBITS 2021	The contract included purchases, bids, asks, and many-for-many exchanges involving multiple works.
ERC-6105 2022	The proposal specified listings, purchases, offers, and royalty distribution directly within ERC-721 contracts.
HAN, 1 OF 1 2023	Each artwork combined on-chain media, ownership, direct sales, bids, and fixed royalty logic in a standalone contract.

Together, these precedents trace a progression from collection-native marketplaces to self-governing individual artworks. Sovereign Objects does not claim embedded market logic as novel; it extends that established trajectory into a generalized contract-as-asset architecture in which external marketplaces provide discovery and relay services rather than constitutional authority.