From No-Action to No Doctrine

From Davos to the SEC and the ECB
The Structural Gap

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This memorandum examines a structural shift that is currently observable within institutional tokenization initiatives.

The market has largely resolved the technical question of how to move tokenized representations at scale. What remains unresolved, and is increasingly exposed through regulatory practice and production deployments, is the institutional definition of what is being issued, under which legal regime, and with what enforceable consequences.

Recent discussions in Davos, the issuance of no-action letters by the SEC, and the operational questions raised by systemic infrastructures such as DTCC converge on a single point: the absence of a shared ex ante framework capable of anchoring tokenized issuance prior to its exposure to the market.

A concrete on-chain case illustrates how this gap materializes in practice.

I. INTRODUCTION

In 2026, institutional tokenization has entered a phase of systemic transition. It no longer operates merely as a representational device or as a post trade optimization tool, but has begun to function as a constitutive mechanism capable of producing and circulating objects with immediate legal and economic effects. At this stage, the central question is no longer technological sufficiency. Issues such as latency, scalability, traceability, or atomicity have ceased to occupy the core of the debate, because the infrastructure has demonstrated its operability and its adoption by systemically relevant actors.

The qualitative shift occurs on a different plane. The center of gravity moves away from the engineering of movement, understood as custody, issuance and destruction, reconciliation, bridges, and settlement, toward the ontological and normative determination of that which is being issued. Put precisely, when transfer becomes programmatic, the foundational question ceases to be how settlement occurs and becomes what exists at the moment of issuance and under which legal regime the existence of that object can be affirmed. The reason is structural. smart contracts introduce a property that places strain on the historical order of financial law, as they execute rules ex ante with determinism and persistence, while legal qualification and enforcement mechanisms operate ex post, with slower institutional temporalities and inevitable margins of interpretation. This temporal asymmetry between code that acts in real time and law that responds with delay transforms any prior ambiguity into a market risk. Not because of the possibility of failure, but precisely because of the flawless execution of a logic whose legal status has not yet been stabilized. When the system allows for automatic circulation before having precisely defined the object, including the embedded rights, enforceable restrictions, the authoritative source of title, the condition of the issuer, the servicing mechanisms, and the exception pathways, friction does not disappear. It is displaced downstream toward the regulator, critical infrastructure, and the custodian, all of whom are forced to reconstruct ex post that which, by its very nature, should have been determined ex ante.

EWithin this framework, the questions that are beginning to be raised by authorities such as the SEC, by market infrastructures, and by systemically important banks are neither contingent nor merely technical. They are questions of institutional design that bear on the localization of the record of ownership, the coherence between legal documentation and executable logic, the attribution of enforceable responsibilities when a token circulates outside traditional perimeters, the protection of investor rights under schemes of irreversible transfer, and the functional threshold at which a record begins to acquire properties characteristic of trading, clearing, or market infrastructure.

Accordingly, this text seeks to describe this displacement of the debate and to isolate its central implication. Tokenization at scale is not resolved through the addition of architectural layers, but through the production of an ex ante normative definition of the issued object that is coherent, verifiable, and repeatable. Architecture can execute rules with precision, but it cannot, by itself, confer legal legitimacy on that which it executes.

II.TOKENIZATION AT SCALE (2026): FROM THE DISPLACEMENT OF ASSETS TO THE ONTOLOGICAL AND LEGAL DETERMINATION OF WHAT IS ISSUED

Over the course of recent months, driven by the debates articulated in Davos, by recent statements from U.S. authorities, including the SEC, regarding tokenized securities, and by the increasingly explicit positions adopted both by the European Central Bank and by European regulators within sandbox environments, it has become evident that institutional tokenization has entered a qualitatively distinct phase of its development.

The axis of the debate is no longer situated in technological viability or in tokenization's capacity to reduce operational frictions, increase traceability, or compress settlement cycles. That discussion has, in substantive terms, been closed. The infrastructure exists, operates with demonstrated reliability, and is being deployed in production or in advanced stages of industrialization by systemically relevant actors. What has changed is not the technology, but the nature of the questions that are beginning to be asked and, more significantly still, the institutional locus from which those questions emerge. The issues now raised by the SEC, by market infrastructures, by systemically important banks, by major custodians, and by asset managers are neither contingent nor technical. They are structural questions, characteristic of a system that has moved beyond experimentation and is beginning to confront, directly, the legal, regulatory, and systemic implications of operating at scale.

At the 2026 World Economic Forum in Davos, held from January 19 to 23, tokenization of real world assets consolidated itself as one of the central axes of the global financial debate. The consensus among institutions, regulators, and industry leaders was clear. The question is no longer whether tokenization will be adopted, but how it will be integrated into coherent and trustworthy legal, regulatory, and market frameworks. Davos made evident that tokenization has moved beyond the experimental phase and is beginning to operate as financial infrastructure, with projects progressing from pilots toward institutional deployments. This advance, supported by a market that already exceeds USD 21 to 22 billion in tokenized value and by projections of significant growth toward 2030, coexists with a shared conclusion. The principal barriers at this stage are not technological, but legal, regulatory, and related to interoperability.

The full statement of the SEC can be read here.

The Eurosystem will accept negotiable assets issued in central securities depositories (CSDs) using distributed ledger technology (DLT) as eligible collateral for Eurosystem credit operations starting on March 30, 2026.

1. Where is the record of ownership located when a relevant fraction of holdings exists on-chain?

2. What occurs when issuance documentation establishes legal restrictions that the smart contract neither executes nor renders technically enforceable?

3. Who holds the status of legal issuer when a token circulates beyond traditional market perimeters?

4. How are investor rights guaranteed, including voting, redemption, priority, and collateral, when transfer occurs automatically and programmatically?

5. At what functional threshold does a registration mechanism begin to acquire attributes characteristic of trading, clearing, or market infrastructure?

6. What prevents third parties from structuring wrappers that dilute, distort, or confuse rights, economic expectations, and risk profiles?

7. How is it ensured that regulatory qualification is not determined ex post, once systemic damage has already materialized?

These questions do not arise as a consequence of a regulatory vacuum. They arise because smart contracts automatically execute legally enforceable logic, and because the automation of rules, when not preceded by a clear, coherent, and structurally consistent legal definition of the issued object, inevitably displaces the point of friction toward the regulator, the custodian, or systemically significant infrastructure.

It is at this point that the market begins to exhibit discomfort.

This is not a technological issue.
It is not a problem of latency, cost, scalability, or interoperability.

These structural questions emerge from public debates, institutional panels such as those held at Davos 2026, official speeches and statements by the SEC on tokenized securities, technical materials from <u>DTCC and DTC</u> on tokenization, and documents issued by European authorities on digital trust and DLT.

It is an ontological, legal, and structural question.

What exactly exists at the moment a token is issued, under which legal regime it comes into being, who assumes enforceable obligations, and what consequences follow from its automatic circulation before the market discovers them abruptly in a stress event. Attempting to resolve these tensions exclusively through technical architecture, by delegating normative legitimacy to software, is neither desirable nor sustainable. This is not because technology *lacks the capacity to execute sophisticated controls, but because legal legitimacy cannot be externalized to code.*

Architecture can execute rules, but it cannot, by itself, determine the legal nature of that which it executes. There is, moreover, a structural temporal asymmetry that the market is beginning to recognize. Code executes in real time. Law reacts with delay.

When programmatic logic produces immediate legal and economic effects, irreversible transfers, automatic locks, enforcement of guarantees, before there is normative consensus on the nature of the instrument, the system does not fail due to technological error, but due to institutional misalignment. In this context, the risk does not lie in the possibility of non performance, but in the perfectly correct execution of a logic whose legal legitimacy has not yet been defined. It is precisely this inversion of the traditional order, execution first, qualification afterward, that turns tokenization at scale not into a challenge of efficiency, but into a problem of ex ante normative design.

This shift in focus explains why, as tokenization definitively leaves the experimental domain and approaches institutional scale, the debate ceases to concentrate on plumbing, custody, mint and burn, bridges, reconciliation across ledgers, and moves to an earlier and more fundamental plane. The ex ante definition of the legal regime under which the token exists from its origin.

That is the point of friction that is now beginning to surface. And it is precisely the point the market has not yet resolved.

III.NO-ACTION LETTERS: THEY ARE NOT THE PROBLEM; THEY ARE THE SYMPTOM OF A MARKET WITHOUT A SHARED STRUCTURAL DOCTRINE

For years, the debate focused on plumbing: custody, mint and burn mechanics, bridges, settlement, wallets, ledger reconciliation, and operational continuity. That layer, while not trivial, is comparatively the most resolvable part of the problem, and today infrastructure already exists that is capable of moving value at internet speed under institutional constraints.

The maturity of that layer, however, has exposed with greater clarity what lay beneath.

 The deficit is not one of execution, but of constitution.

What remains unresolved, and what now emerges forcefully within regulators and systemic infrastructures, precedes any operational efficiency. Under which legal regime does a token exist from its origin, what kind of legal object it is, and what consequences flow from that status before the market encounters them through conflict, insolvency, operational incident, litigation, or reputational contagion. Put differently, institutional tokenization has shifted the center of gravity from how value moves to what exists at the moment of issuance.

This shift does not imply that tokenization is being challenged for its technical capacity. It is being challenged for the absence of a shared framework capable of determining, prior to issuance, under which regime the token exists, which rights it actually represents, which limits on transferability are effective rather than merely declarative, and what consequences its automatic circulation produces within open or semi open infrastructures.

When technical design executes rules ex ante, legal indeterminacy ex ante ceases to be a doctrinal inconvenience and becomes a market risk.

In this context, the proliferation of no-action letters should not be read as problematic in themselves, nor as an indicator of regulatory weakness. They are a legitimate tool of management and containment. Their recurrence, however, is symptomatic, as it reveals that the ecosystem still lacks a consistent, structural, verifiable, and repeatable method for answering, prior to issuance, the most basic question:

Are we dealing with a financial instrument, a mere registrational representation, a contractual right of access or use, or a hybrid structure whose nature depends on its actual behavior in the secondary market?

When that boundary is not clear, the burden inevitably shifts.

The regulator must respond on a case by case basis. Infrastructure becomes the last firewall. Uncertainty is transferred to custodians, clearinghouses, and registry systems. Risk emerges ex post, when the costs of correction, reversal, or containment are higher.

That dynamic is not sustainable if the objective is to scale toward institutional volumes.

From a comparative analysis of recent no-action letters issued by the SEC, including cases related to infrastructure tokenization, utility tokens, functional schemes, and institutional custody, several consistent structural patterns emerge.

First, none of these letters constitutes a regulatory approval or a positive validation of the token design or of the underlying architecture. All operate as defensive instruments of containment. The staff states that, under a specific set of facts and declared representations, it will not recommend enforcement action. The SEC explicitly avoids pronouncing on the general nature of the instrument, its replicability, or its suitability as a standard. This confirms that no-action letters are not being used as a mechanism of doctrinal construction, but rather as a relief valve in response to structures that do not clearly fit within existing categories.

Second, all of the letters rely to a significant extent on narrative descriptions provided by the applicant. The analysis is grounded in how the issuer describes the function, rights, restrictions, and economics of the token, rather than in a systematic and standardized verification of its executable technical behavior. There is no uniform ex ante audit framework in these letters that requires demonstration of technical coherence between documentation, code, and legal classification as a structural condition.

Third, no-action letters are inherently non extrapolable. Each is framed as a response strictly limited to specific facts and circumstances, with explicit disclaimers that prevent their use as precedent. This reinforces the interpretation that the regulator is managing exceptions rather than defining general rules. The institutional consequence is that the market cannot reuse these determinations as ex ante guidance, thereby perpetuating the need for new individual requests.

All of the letters reflect the same shift in burden. In the absence of a prior structural definition of the issued object, the regulator is compelled to intervene on a case by case basis. Infrastructure absorbs residual risk. Legal clarity is deferred until after issuance. Taken together, no-action letters function as a thermometer of prior indeterminacy, not as a solution to it.

There is no publicly consolidated official figure published by the Securities and Exchange Commission (SEC) that aggregates all no-action letters issued, nor a specific, up to date count for the digital assets or tokenization sector. However, we have been able to identify at least several recent and relevant cases linked to digital assets, tokenization, and DLT infrastructures, including the following.

DTC Tokenization Pilot. A no-action letter issued by the Division of Trading and Markets that allowed The Depository Trust Company (DTC) to pilot the tokenization of certain custodial securities, subject to specific operational conditions, December 2025.

MegPrime Rewards Token. A no-action letter from the Division of Corporation Finance concluding that the MegPrime token did not constitute a security, conditional on strict compliance with the functional characteristics described by the issuer, January 2026.

Fuse Crypto Limited. A no-action letter permitting the offer and sale of tokens without registration as securities, based on the facts and circumstances presented by the company, November 2025. DoubleZero DePIN Token. A no-action letter from the Division of Corporation Finance relating to the distribution of tokens associated with a decentralized physical infrastructure project, DePIN, September 2025.

State Trust Company Crypto Custody. A no-action letter issued by the Division of Investment Management that allowed advisers and institutions to use certain state trust companies for the custody of cryptoassets under specific compliance frameworks, September 2025.

Prior to 2025, the SEC had issued a limited number of no-action letters related to digital tokens, such as TurnKey Jet, Pocketful of Quarters, and IMVU between 2019 and 2020, generally focused on utility token schemes rather than on institutional or market level tokenization structures. The recent evolution reflects a qualitative shift in the nature of the inquiries received and in the role these letters are playing within the regulatory ecosystem.

III.I Relevant differences, what they delimit and what they avoid

The differences among the letters do not lie in the use of radically different legal criteria, but in the type of problem that each one manages to confront, or to avoid. Some letters, such as the one linked to the DTC tokenization pilot, deliberately position themselves within a perimeter in which the ontology of the asset is not in dispute. The underlying value already exists as a recognized financial instrument, the legal record remains intact, and the token functions as an operational twin. In these cases, the no-action letter does not resolve the market's structural problem; it merely sidesteps it, assuming that the legitimacy of the object is given ex ante. Other letters, such as those relating to functional or limited-use tokens, rely on a negative reading of the Howey test to conclude that, under certain conditions, the instrument does not constitute a security. Here, the SEC accepts the characterization proposed by the issuer, but without establishing a reusable standard to verify that such characterization withstands technical execution or the evolution of the secondary market.

The most strained cases, particularly those associated with infrastructure, indirect economic incentives, or hybrid schemes, highlight the unstable boundary between utility, economic expectation, and effective circulation. In these scenarios, the no-action letter does not eliminate ambiguity; it merely freezes it under specific conditions, making clear that any deviation reopens the regulatory perimeter. In sum, the differences among the letters do not amount to a coherent taxonomy of tokens, but rather to a map of controlled evasion of the central problem: defining, in a structural and ex ante manner, what kind of legal object is being issued when tokenization occurs.

The most relevant signal is that the problem arises earlier, before the issuer seeks authorization or regulatory comfort. When an issuer requests and the SEC must grant no-action relief, what is exposed is not a procedural gap or an unavoidable gray area. What is exposed is a prior indeterminacy regarding the very object of the issuance.

In operational terms, the party seeking to issue has not precisely defined, or has not verifiably demonstrated, what it is issuing, under which regime, with what consequences for tradability, and with which enforcement mechanisms. In institutional terms, the supervisor is being pushed to opine on structures that the market itself is not yet able to describe with ontological rigor.

This is exacerbated by the fact that many structures reach the regulator as deliberately boundary artifacts, hybrid, ambiguous, or formally limited in their transferability. In theory, limitations on transferability could orient classification outside the perimeter of financial instruments in certain cases. In practice, if such limitations are not technically enforceable, or if the real economics of the scheme generate expectations of profit and circulation, the boundary shifts again.

Here emerges the dilemma now facing supervisors and infrastructures. ***If the structure does not qualify as a financial instrument, the full body of securities regulation should not apply. If it does qualify, intervention is not optional.*** When this distinction is not clear even to the issuer, or is used strategically, the consequence is not neutral. Supervisory burden increases, infrastructure absorbs residual risk, and correction is deferred until the moment when the market has already internalized the damage.

For this reason, no-action letters should be understood as a thermometer of a doctrinal void of a new kind. Not a void of principles, but a void of shared structural doctrine. The market has not yet converged on a shared, legally robust, and technically verifiable understanding of what it is issuing when it tokenizes. In the absence of that ex ante understanding, regulatory interpretation is forced into ad hoc resolutions that, by definition, do not scale as a standard.

When this boundary is not clearly defined ex ante, three inevitable effects occur.

First, regulators are required to issue individual determinations even for structures that, if properly designed and correctly defined, might not require case by case intervention.

Second, market infrastructures, custodians, clearinghouses, and registries, become de facto safeguards of last resort, assuming containment functions that do not normatively belong to them and that, moreover, they cannot absorb indefinitely without eroding efficiency, accountability, and clarity of role.

Third, risk does not disappear. It is deferred. And when it emerges ex post, it does so at the worst possible moment: when there are real holders, executed transfers, asserted rights, open disputes, and institutional reputation at stake.

In sum, the problem is not no-action letters. The problem is that the market still operates without a shared structural framework that precisely defines what the token it seeks to issue is, under which legal regime it comes into being, which rights it incorporates, which restrictions are truly enforceable, and what consequences its circulation entails before the system learns through crisis.

That is the point at which tokenization ceases to be innovation and becomes either sustainable institutional infrastructure or deferred structural ambiguity.

IV. EXECUTABLE ARCHITECTURE: WHEN THE NORM CEASES TO BE TEXT AND BECOMES EXECUTION

The questions currently circulating within the SEC, DTCC, major custodian banks, and global asset managers are neither naive nor poorly framed. They are structural questions characteristic of a system that has entered a phase of institutional maturation. They do not arise from technological ignorance, but from the collision of two historically separate logics that are now converging: a normative logic grounded in text, interpretation, and ex post control, and a logic of automatic execution grounded in code, determinism, and ex ante enforcement. The concerns are recurrent and revealing.

1. Where does the record of ownership reside when part of the holding exists on-chain and part off-chain?

2. How is coherence ensured between what a white paper, a prospectus, or an issuance document declares, and what the smart contract actually permits or prohibits?

3. Who is the legal issuer when a token circulates outside traditional perimeters of issuance, custody, and distribution?

4. How are essential investor rights ensured, voting, redemption, priority, collateral, enforcement in the event of default, when transfer is automatic, atomic, and potentially irreversible?

5. At what point does a registration mechanism cease to be a simple ledger and begin to functionally resemble trading, clearing, or market infrastructure?

And what prevents third parties from constructing wrappers, technical derivatives, or abstraction layers that distort rights, risks, and expectations, particularly for non professional investors?

The Depository Trust Company (DTC) is the primary securities custody and settlement clearinghouse in the United States and a subsidiary of DTCC. Its central function is to act as a central securities depository, maintaining records of holdings, facilitating the clearing and settlement of transactions in equity and fixed income markets, and reducing operational and counterparty risk within the financial system. DTC is referenced in this document in connection with its recent tokenization pilot, authorized through a no-action letter issued by the SEC, which allows for the tokenized representation of certain securities held within its infrastructure. This pilot is relevant not because of its technological novelty, but because it illustrates how a systemically important infrastructure approaches tokenization through a logic of legal continuity, regulated custody, and institutional control, thereby reinforcing the broader debate on the need for clear structural frameworks prior to the issuance and circulation of tokens at institutional scale.

These questions do not arise because regulation is lacking. They arise because DLT based architectures introduce a qualitatively distinct characteristic: rules are not only described, they are executed. In a system built on smart contracts, the norm ceases to be merely a text interpreted by humans and becomes computable logic that executes automatically under predefined conditions. A smart contract does not interpret legal principles, does not weigh intent, does not assess factual contexts or regulatory exceptions. It executes, deterministically, what was encoded ex ante.

This shift does not reduce the need for regulation. It intensifies it. It raises the regulatory threshold by relocating the critical point of control from ex post enforcement to ex ante coherence. When an authority approves or tolerates a structure whose execution is automatic, the distance between what is authorized and what is executed becomes practically nil. If what is written in the issuance documentation does not align with what the code permits, the problem is not technological or accidental. It is a structural failure of design and prior validation. A legitimate and profound tension emerges here. The more deterministic and self executable the infrastructure becomes, the more critical a clear definition of the normative framework that legitimizes it becomes.

In traditional systems, many inconsistencies could be corrected a posteriori through supervision, sanctions, nullities, or reversals. In executable architectures, ex post correction is costly, limited, or outright impossible without introducing ad hoc discretionary authority, which in turn erodes the promise of legal and operational certainty. This shift explains why regulators and systemic infrastructures persist in asking questions that, at first glance, may seem redundant or excessively conservative. The objective is not to slow innovation, but to prevent normative legitimacy from being implicitly delegated to code by omission. Resolving everything by design without a clearly defined legal framework does not strengthen the system. It weakens it, because it turns technical architecture into a functional substitute for decisions that should be normative.

In this context, executable architecture should not be understood as a replacement for the regulator, but as an unforgiving mirror of its definitions. When the norm becomes execution, any prior ambiguity ceases to be tolerable. The question, therefore, is not whether technology can execute rules, that has already been demonstrated, but who defines those rules, with what legitimacy, and under which verifiable criteria before the market internalizes them as accomplished facts.

V.THE "WHITE PAPER VS. SMART CONTRACT" CASE: A STRUCTURAL FAILURE PATTERN IN DLT ARCHITECTURES

For decades, the architecture of financial systems rested on a relatively stable functional separation between norm and execution. The norm was articulated through legal texts, laws, regulations, prospectuses, contracts, while execution was mediated by institutional intermediaries, with control mechanisms that were predominantly ex post: periodic reporting, audits, supervisory inspection, and ultimately judicial or administrative enforcement. That model admitted, without legitimizing it, the possibility of temporal misalignments between what was declared and what was actually executed, precisely because there existed an operational and temporal margin for detection, correction, or sanction.

The introduction of infrastructures based on distributed ledger technologies substantively alters this logic.

When a structure is approved and subsequently executed automatically through smart contracts, the distance between norm and execution contracts to the point of virtually disappearing. Ex ante coherence ceases to be a recommendation of good practice and becomes a structural condition of the system.

Once code is deployed, execution does not interpret principles, weigh legal context, or admit tacit adjustments. It executes the logic that was previously defined, in a deterministic and persistent manner. In this context, when an issuance document, white paper, disclosure, or other informational instrument declares restrictions relating to transferability, tradability, eligibility, or use that find no effective correspondence in the executable logic of the smart contract, the problem is neither technological nor the result of an emergent risk inherent to innovation. It is a failure of ex ante coherence.

This point is central. DLT infrastructures do not, in themselves, introduce new legal risks. They render visible, with objective and verifiable traceability, risks that already existed in the conceptual architecture of the issuance. The dissonance is not created by technology. It is exposed by it.

From this perspective, the questions now being posed by regulators, market infrastructures, and systemically significant entities do not evidence technical ignorance of how blockchain functions. They reveal a deeper issue: the absence of a shared structural control point capable of auditing, prior to issuance, the coherence between the legal narrative of an instrument and its technically executable behavior. Traditional financial systems relied on ex post controls to resolve these tensions. Automatic execution removes that margin. In DLT environments, validation must necessarily occur before the object exists and circulates. This issue acquires empirical relevance when concrete on-chain cases are examined. Analysis of smart contracts deployed on public networks such as Polygon reveals recurrent patterns: issuance documents that assert limitations on transferability or the absence of a secondary market, while observable on-chain activity shows effective, repeated, and non exceptional transfers.

In certain cases, the contract's source code is not publicly verified, which makes it impossible to confirm whether real restriction mechanisms exist, such as whitelists, transfer limits, or role based controls, or whether such restrictions exist solely at a declarative level.

A specific case allows this pattern to be illustrated with analytical precision.

The smart contract deployed on the Polygon network and observable on PolygonScan at address 0x6f7a7dd1bbe3c3c1c3ee169abf9b7e29df641788 does not have its source code publicly verified. This circumstance alone precludes any independent technical audit of its internal logic and any potential control mechanisms. Nonetheless, even with a limited number of holders, the on-chain history records 360 transfers. The volume and nature of this activity are objectively incompatible with a narrative of non transferability or of strictly limited circulation.

From an infrastructural perspective, the token is deployed on Polygon, an EVM compatible, public, and permissionless network, explicitly designed for generalized transferability of digital assets, interoperability with DeFi infrastructures, and execution of widely adopted ERC standards.

Polygon does not constitute a private DLT or a closed registry infrastructure, but rather an environment optimized for the open circulation of tokens within a global market.

The reference to this case is included exclusively for analytical and illustrative purposes, as an example of a potential divergence between a token's issuance documentation and its effective technical behavior. It does not constitute an allegation of bad faith, regulatory breach, nor an assessment of the intent of the issuer or any third parties involved. From a general technical and regulatory perspective, the mere description of a token as "non transferable" or of "limited transferability" is insufficient if the underlying smart contract, deployed on a public blockchain and based on a standard designed for free transferability, does not incorporate technically enforceable restrictions.

In the cited case, publicly available on-chain information shows the existence of transfers among a limited set of holders, despite the informational documentation asserting the absence or limitation of transferability. This objective divergence, observed on the basis of public and verifiable sources, including the Polygon network block explorer and the project's own issuance documentation, may, in the abstract, raise legitimate questions from the standpoint of the legal and regulatory classification of the instrument, without prejudging its final qualification or its compliance with applicable regulation. It highlights the need for frameworks capable of evaluating ex ante the coherence between issuance documentation, technical behavior, and regulatory classification.

The contract analyzed corresponds to a fungible token deployed under an ERC standard and, based on its observable behavior and functional structure, is consistent with ERC-20 or a technically equivalent variant. This element is determinative. The ERC-20 standard is designed, by definition, for free transferability, unless explicit, programmed, and technically enforceable restrictions are incorporated within the code itself. The standard does not, by default, contemplate notions of "non-tradability" or "limited transferability". Any restriction must be:

1. explicitly programmed,
2. technically enforceable,
3. independently verifiable.

In this case, the associated smart contract presents a technically relevant fact: the absence of public verification of the source code. From a forensic perspective, this implies that the existence, or the absence, of the following cannot be confirmed:

1. whitelists of authorized addresses,
2. quantitative transfer limits,
3. administrative role-based controls,
4. revocation mechanisms,
5. ex ante restrictions on circulation.

Nor is it possible to audit the real transfer logic, detect undocumented administrative functions, or identify potential vulnerabilities. In institutional environments, an unverifiable contract is, in practical terms, an opaque contract, and an opaque contract cannot sustain legal assertions of restriction with any claim to effectiveness. Beyond the technical structure, the relevant fact is empirical. Despite a documentary narrative of limited transferability and a small number of holders, the token exhibits 360 effective on-chain transfers.

This does not concern isolated technical events, initializations, or punctual corrections, but rather functional circulation recorded on a public network and verifiable by any third party. Such behavior is incompatible with a characterization of non-tradability or with an alleged technical impossibility of transfer. The white paper explicitly declares limitations on transferability, the absence of generalized trading, and non-assimilation to negotiable securities. However, the selected technical environment, Polygon and a fungible ERC standard, is designed for open circulation without inherent restrictions, and the deployed smart contract does not demonstrate technical enforceability of the declared restrictions.

From a scientific-structural perspective, this constitutes a design dissonance, not a mere narrative inconsistency. The restriction exists solely as text, not as execution. In DLT systems, that which is not executed lacks operative existence. This pattern acquires an additional dimension when the same architecture is used or offered across multiple regulatory jurisdictions, CNMV, SEC, CNV, each assessing different declarative documents, while the technical behavior of the circulating object is singular, global, and uniform. The result is the circulation of an asset whose legal definition lacks interjurisdictional stability, as it is contradicted by its observable technical behavior. In this context, the absence of code verifiability and the impossibility of auditing real restrictions generate a zone of indeterminacy that benefits none of the involved actors: neither issuers, exposed to ex post regulatory reproach; nor regulators, forced to resolve matters case by case; nor infrastructures, which absorb residual risk without an explicit normative mandate.

The "white paper vs. smart contract" pattern does not constitute an isolated episode, but rather a recurrent manifestation of a system that has advanced significantly in execution capability, yet has not resolved how to structurally validate what it places into circulation before that circulation occurs.

VI. FINANCIAL INSTRUMENTS AND THE RECURRENT ERROR

The MegPrime case illuminates the problem with a clarity that is particularly useful for an institutional reading. The no-action letter issued by the SEC rests on a precise narrative architecture: the token, as described to the staff, does not confer financial rights, does not incorporate a reasonable expectation of profit, and is confined to instrumental functionality (payments, rewards, access). In regulatory terms, the letter does not amount to an authorization nor to an endorsement of the asset. It is a conditional tolerance. The staff states that, if the issuer behaves exactly as described, it will not recommend enforcement action.

What matters is not the token as an isolated artifact, but the systemic signal that the letter reveals. The SEC, and this is consistent with the evolution of the debate from Davos to the European sandboxes, is compelled to operate on descriptions when the market still lacks a shared structural doctrine that would allow ex ante verification of the correspondence between:

(i) what the issuer claims to be creating,

 (ii) what the code actually executes, and

 (iii) the legal regime under which that object must exist before it circulates.

In other words, in the absence of a verifiable standard, classification is displaced into a casuistic terrain, dependent on narrative and on assumptions of future behavior, precisely when what is at stake is an object whose execution is, by design, automatic. For that reason, the conclusion that matters for the market is not "the SEC approved a token".

The U.S. Securities and Exchange Commission (SEC) issued a "no-action letter" authorizing, in practical terms, that the project proceed without the SEC seeking enforcement action against it. A "no-action" letter is a document issued by SEC staff in response to a request from a company. In it, the SEC states that, if the company acts exactly as described in the letter, the staff will not recommend to the Commission that enforcement action be taken (SEC: No Action Letters).

A no-action letter is not an approval and does not substitute for the normative perimeter. The meaningful lesson lies elsewhere. When a structure requires no-action relief, the system is effectively acknowledging that it still lacks a common framework to determine, prior to issuance, what is being issued and when it falls within or outside the securities perimeter.

At that point, the Howey Test functions as a reality check. It does not assess labels. It assesses economic substance and the reasonable expectation of profit derived from the efforts of others. The recurrent error, which our texts have been highlighting from the CNMV and SEC perspective, is the assumption that it is sufficient to declare "security" or "utility", "non-transferable" or "limited" in documentation. Institutionally, what matters is not the disclaimer, but the enforceability of the restriction and the coherence between rights, commercialization, effective transferability, and the distribution mechanism. This point connects directly with the pattern observed in issuances where the restriction exists as text, but not as execution.

When the market attempts to avoid classification as a financial instrument through declarative limitations on tradability, yet deploys tokens on public infrastructures designed for generalized circulation and, moreover, without sufficient verifiability of the smart contract, the result is not innovation but structural indeterminacy. And that indeterminacy is precisely what pushes the regulator toward ad hoc responses. Not because regulation is lacking, but because the issued object does not come into being with a stabilized and verifiable legal definition.

In parallel, the European institutional shift reinforces the same diagnosis from a different point of entry. The fact that the European Central Bank has formally opened the possibility of accepting assets issued via DLT as collateral, subject to eligibility criteria, moves the debate onto an even more demanding plane. Collateral is not a use case. It is a systemic privilege that presupposes legal recognizability, robustness of title, jurisdictional coherence, governance under stress, and operational continuity. That threshold is not satisfied by plumbing. It requires that the tokenized asset exist under a regime capable of withstanding audit, supervision, and crisis.

For this reason, the real discussion ceases to be how value moves and becomes what the object is before it circulates. ***From an infrastructure perspective, the DTCC approach is instructive precisely because it operates from this systemic realism.***

Its insistence on finality, reconciliation, omnibus accounts, registered wallets, fail management, buy ins, corporate actions, breaks, and resilience does not reflect conservatism. It reflects an operational understanding of where systems collapse when they scale. DTCC is not engaging in narrative. It is delineating the failure space that emerges when the lifecycle of an instrument is partially on chain and partially anchored to off chain registries, custodians, and rights frameworks.

When DTCC describes tokenization services with conversion orders between traditional and tokenized form, registered wallets, and a digital twin model of assets custodied at DTC, what is implicit is an infrastructural golden rule: continuity first, expansion afterward. Tokenization, to become market infrastructure, cannot afford ambiguity in the source of truth for ownership, nor discontinuities in corporate actions, nor operational uncertainty in the face of disputes, reversals, or settlement failures.

For that reason, its central questions define real scalability: finality and reconciliation in bidirectional conversion; omnibus aggregation while preserving rights and restrictions at the level of the ultimate beneficial owner; an operational, and auditable, definition of what constitutes a registered wallet; the treatment of fails, buy-ins, and corporate actions when part of the lifecycle is executed through smart contracts; resilience and interoperability without loss of legal anchoring.

This reading also explains why, even in architectures of the highest technical quality, such as those formalized on Wall Street through patents and pilots oriented toward regulated custody, controlled bridges, and issuance and redemption mechanisms, the silent assumption that now becomes a point of friction is the same. Infrastructure optimizes the how, but presupposes that the what and the legal regime under which the token exists have already been resolved before issuance.

That assumption was tolerable in experimental phases. In institutional deployments, and especially in collateral and systemically relevant use cases, it is no longer tolerable.

From the perspective of systemic infrastructure, the approach adopted by DTCC is particularly instructive because it translates these concerns into concrete architecture. The schemes presented by DTC to the SEC and that form part of the no-action relief granted by the staff are not illustrative or exploratory material. They describe an operational extension of existing market infrastructure, explicitly designed to enable tokenization without displacing the prevailing legal regime or altering the role of the central securities depository.

Within these schemes, tokenization appears not as a redefinition of the asset, but as a subordinate layer of representation and execution, constructed precisely to absorb the risks that today generate regulatory indeterminacy.

**DISTRIBUTION CONTROLS FACILITATE COMPLIANT WALLET TO WALLET TRANSFERS**

Establishing a network of permissioned wallets that allows for the immediate exchange of Tokenized Entitlements between them enhances the efficiency of transfer and settlement processes, while also enabling innovative applications for the securities (such as their use as collateral in external platforms). Meanwhile, DTC continues to act as the central securities depository for the asset, offering risk management and ensuring compliance.
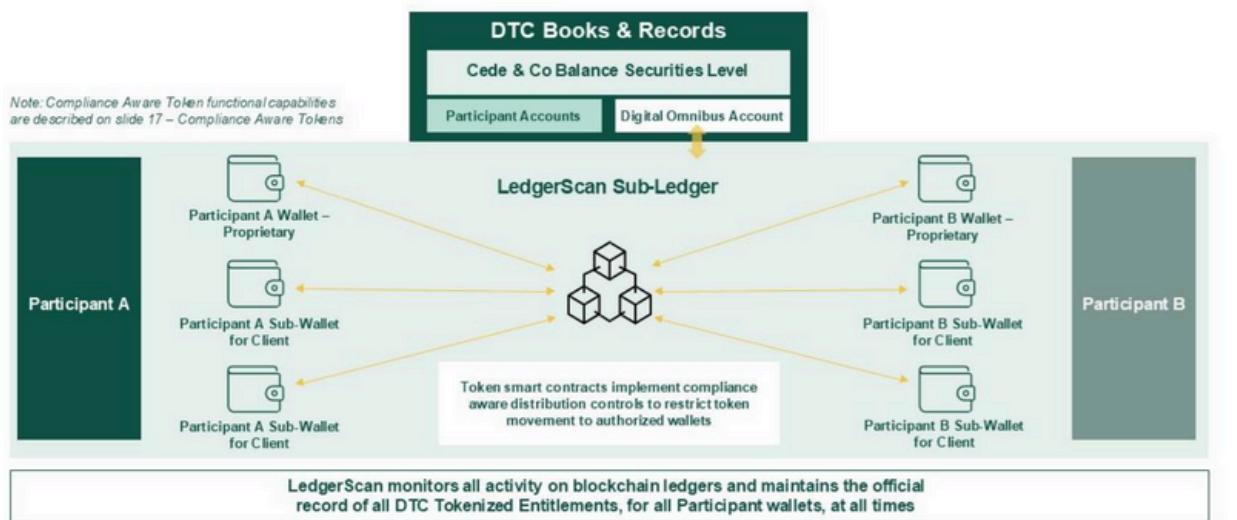
DTC ACCOUNT STRUCTURE ENABLES MARKET SCALE ADOPTION

DTC Books & Records will encompass both Book-Entry and Tokenized Entitlement forms
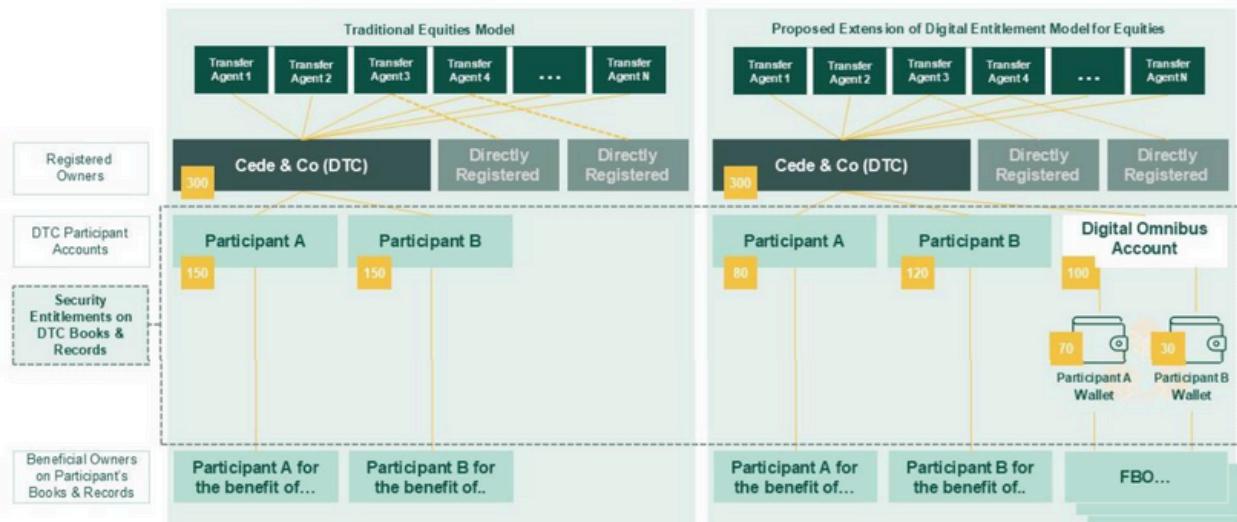
Both schemes form part of the no-action relief granted by the SEC to DTCC, through DTC, and describe a deliberately hybrid institutional tokenization architecture. The starting point is decisive. The objective is not to replace existing market infrastructure with blockchain, but to extend it in a controlled manner in order to enable tokenized representations of securities, tokenized entitlements, without altering the legal and operational foundations of the system.

Across the entire design, an explicit premise underlies the architecture: technological efficiency cannot be achieved at the expense of the legal record of ownership, settlement finality, the omnibus structure, or regulatory supervisory capacity, both ex ante and ex post. The first diagram illustrates how on-chain transfers between wallets can be enabled without introducing a permissionless environment. The model is grounded in a strict distinction between legal constitution and technical execution. DTC's books and records continue to serve as the authoritative ledger of ownership, at the level of Cede & Co and of participant accounts.

The blockchain does not acquire a constitutive function. The on-chain layer operates as a strictly subordinate sub-ledger, whose purpose is to monitor activity, facilitate reconciliation, and maintain a continuous correspondence with DTC's official records. Transfers may only occur between previously authorized wallets, whether participant-owned wallets or sub-wallets for end clients, and there is no open peer-to-peer circulation. In this context, the smart contract is not a neutral component. It incorporates explicit control logic that restricts transfers to the authorized perimeter and executes rules designed to be coherent with the applicable regulatory framework.

From a regulatory standpoint, this scheme responds directly to one of the SEC's central concerns: how to capture on-chain efficiencies without losing control over ownership or fragmenting the record of title. DTC's response is doctrinally clear and consistent with the tradition of the U.S. securities market. Blockchain is an execution layer. The legal ledger remains outside it. This design also reveals a fundamental difference from many market projects. It does not rely on narrative declarations or purely documentary limitations, but on verifiable technical controls aligned with the legal regime. The second diagram addresses the problem from the perspective of systemic scale. The traditional model, with Cede & Co at its core and participant accounts and beneficial owners reflected in their respective books and records, is not abandoned. What is introduced is a digital omnibus account in which tokens represent entitlements derived from the underlying asset, not autonomous securities.

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Participant wallets reflect operational positions, but remain integrated within the omnibus logic and permanently reconciled with the legal ledger. The fiduciary chain is not broken. The definition of the ultimate beneficial owner continues to exist off-chain, while certain aspects of servicing and execution are shifted to the on-chain layer. This design explicitly resolves three structural problems that condition any adoption at scale. First, it makes unequivocally clear that the record of ownership resides in DTC and not on the blockchain. Second, it enables scaling without atomizing the market or turning each token into an independent legal object. Third, it prevents the proliferation of unrecognized pseudo-instruments by defining tokens as operational representations of existing rights rather than as new securities.

Taken together, both diagrams express an unambiguous institutional position. Tokenization does not redefine what a security is, nor does it create a new legal object. It modifies the form of representation and execution, but not the nature of the asset. In ontological terms, the token is not the asset. It is a controlled and subordinate operational representation of a preexisting right. This approach stands in direct contrast to models that deploy tokens on public permissionless networks, without code verifiability, relying on non-executable legal narratives and subsequently seeking regulatory relief. DTCC does not delegate legitimacy to software nor shift ontological definition to the market. It designs architecture starting from the existing legal regime.

It is a legally sound solution, albeit demanding in operational and governance terms, and precisely for that reason it is illustrative of the institutional threshold toward which tokenization points as it leaves the experimental phase. These schemes do not describe a technological innovation, but rather a mechanism of systemic containment designed to enable tokenization without eroding the legal, operational, and supervisory foundations of the securities market.

MegPrime shows how the regulator can tolerate a structure when it is described as functional and lacking an expectation of profit. The "white paper vs smart contract" case shows how that narrative becomes fragile when there is no verifiable technical enforceability. DTCC shows why scalability does not depend on proclamations, but on the management of exceptions, finality, reconciliation, and the legal continuity of ownership. The error that repeatedly appears among issuers, designers, and sometimes intermediaries is the confusion of label with ontology, and of document with execution.

VII. BLACKROCK, JPMORGAN, WALL STREET: "MOVING FASTER" ONLY MATTERS IF ONE CAN "MOVE SAFELY"

In parallel with the regulatory debate, Wall Street has moved forward with notable speed in the construction of high-quality operational infrastructure. The technical language of this phase is no longer aspirational. It is production engineering. Regulated custody, controlled issuance and redemption, risk segregation, ledger reconciliation, access controls, operational traceability, and compatibility with business continuity frameworks.

In that context, the patent granted to JPMorgan Chase Bank in December 2025 formalizes exactly what is to be expected from a systemically important institution: a tokenization architecture that prioritizes regulated custody, bridges across networks, and mint and burn logic oriented toward controlled mobility across DLT infrastructures. It is institutional-grade plumbing. It describes how the tokenized asset circulates, how it is locked, how it is replicated, how it is burned, how it is redeemed, and how operational control, auditability, and custody discipline are preserved. The critical point, and this is where the qualitative shift outlined throughout this memorandum becomes evident, is that this layer of operational excellence deliberately presupposes that the object being tokenized is already legally constituted and regulatorily stabilized before it comes into existence as a token.

That presupposition was tolerable in an environment of limited pilots, where legitimacy rested on off-chain agreements and constrained risk perimeters. At institutional scale, that same presupposition becomes the primary point of friction. Executing a token with operational precision is not equivalent to legitimizing its normative existence.

Architecture resolves movement. It does not define ontology. It optimizes transfer. It does not guarantee that the rights being transferred are those declared in the documentation, nor that the applicable legal regime remains coherent when the token circulates outside its original perimeter, crosses jurisdictions, or is integrated into hybrid infrastructures. This distinction, operation versus constitution, is the reason why large asset managers have shifted their focus from efficiency to institutional survivability.

In BlackRock's framing, this is expressed with characteristic sobriety: modernization is acceptable, but only if "moving faster" does not degrade system reliability. Speed, in capital markets, is a subordinate attribute. It matters only insofar as it does not compromise auditability, enforceability of rights, control discipline, and robustness under stress. In other words, the problem is no longer how to reduce latency. It is how to prevent latency reduction from collapsing the historically useful distance between what is declared, what is executed, and what a regulator, an auditor, or a court will recognize as valid when a dispute arises. This is why the contemporary discussion turns toward ex ante safeguards, not as a slogan, but as an institutional specification.

Ex ante means, here, something technical and legal: that the system, before allowing circulation, can produce verifiable evidence, not narrative, of:

(i) which rights the token incorporates;

(ii) under which regime it exists;

(iii) which restrictions are executable;

(iv) who can modify the logic;

(v) how operational reversibility is managed without inventing post hoc authority; and

(vi) how the link with off-chain records and obligations is preserved when the token lives in an EVM, permissionless, or semi-open environment.

In the absence of this package of safeguards, the architecture does not fail due to lack of capacity. It fails due to constitutive ambiguity. And that ambiguity does not manifest under normal conditions. It manifests when there is bankruptcy, disputes over ownership, enforcement, insolvency, or cross-border conflict. For that reason, the real question is not "how do we tokenize?", but rather:

What ex ante safeguards are added so that "faster" does not mean "more fragile"?

How is trust demonstrated to auditors and regulators through evidence, logs, verifiability, and change controls?

How is fragmentation of standards avoided?

How is privacy balanced with transparency, particularly with respect to wallets and beneficial ownership?

In strictly technical terms, these questions translate into architectural requirements:

(a) traceability that is not merely on-chain, but evidentiary, capable of standing up to audit and supervision;

(b) change governance with version control, segregation of duties, and decision records, not merely commits;

(c) consistent identity and wallet registration models that allow mapping of beneficial ownership without indiscriminately destroying privacy;

(d) explicit mechanisms to prevent wrapping that repackages rights and risks, distorting investor understanding and regulatory interpretation; and

(e) interoperability that does not degrade legal anchoring, because interoperability without anchoring is, in practice, the multiplication of surfaces of ambiguity.

Discussions in Davos and the positioning of European authorities, including the European Central Bank, point to the same structural diagnosis: the gap is no longer technological, but one of legal and institutional architecture. European regulatory sandboxes have been valuable precisely because they have exposed, under controlled conditions, where the system breaks when industrialization is attempted. Not at the level of throughput, but at the level of coherence between issuance, registration, custody, investor rights, and cross-border validity.

At this stage, the question ceases to be where conflicts are litigated. It becomes how invalid transfers are prevented and how divergences in ownership are avoided before law must intervene, when the cost of correction is no longer marginal but systemic. Within this framework, "speed" ceases to be an autonomous objective and becomes a derivative one. It only makes sense if the infrastructure can demonstrate, through verifiable evidence and control discipline, that the token in motion is legally intelligible, regulatorily classifiable, and operationally defensible, not only on day zero of issuance, but throughout the entire lifecycle, under stress, and in interaction with heterogeneous infrastructures and jurisdictions.

VIII. ERC-GENESIS: THE MISSING LAYER IN THE INSTITUTIONAL STACK

The alternative of resolving everything through architecture and delegating legitimacy to code is neither desirable nor sustainable. Not because technology is insufficient, but because normative legitimacy is not a computable attribute. It is an institutional attribute that is constituted in law, recognized in infrastructure, and defended in crisis. This is not philosophy. It is market design. In this context, DTCC's work clearly illustrates the downstream infrastructural response to the challenge of introducing tokenization without eroding the legal foundations of the securities market. As reflected in the schemes presented to the SEC staff and covered by no-action relief, DTCC does not seek to redefine what a security is nor to displace the legal ontology of the instrument. It presupposes that the legitimacy of the asset exists prior to tokenization.

Accordingly, the chain is used as a subordinate execution layer, while the record of ownership, the omnibus structure, finality, and governance remain anchored within the existing institutional perimeter.

It is precisely at this point that the structurally relevant limit for this memorandum becomes visible. That architecture presupposes that the definition of the instrument, what it is, under which regime it exists, which rights it incorporates, and which restrictions are enforceable, has already been resolved ex ante, before the asset enters the infrastructure. DTCC does not define what may be issued. It defines how that which has already been validated may be represented and circulated.

The focus of contemporary risk lies one level earlier. It arises when objects are tokenized whose legal constitution has not been stabilized from the outset, and the task of reconstructing that definition is implicitly displaced ex post onto infrastructure or the regulator. It is at that point, prior to custody, rails, interoperability, and secondary markets, where ERC Genesis is positioned.

A smart contract can execute conditions with deterministic precision. It cannot, by itself, produce the predicates of validity that transform a transferable object into a legally enforceable right vis a vis third parties, across multiple jurisdictions, under supervision, and in stress scenarios. Technical execution is not equivalent to legal constitution. Code cannot verify whether an instrument has been issued in compliance with the perimeter of the federal securities laws, nor whether the issuance documentation is consistent, current, or materially aligned with the logic governing its operational behavior.

As long as these dimensions remain external to the architecture, institutional tokenization retains a fundamental asymmetry. Robustness in execution coexists with fragility in constitution. Infrastructure may be resilient, auditable, and efficient. The object that circulates, however, may lack a legally stabilized definition from its origin. That gap does not surface under normal market conditions, but emerges forcefully in scenarios of dispute, insolvency, operational failure, enforcement, or systemic contagion.

Here lies the structural gap the market faces today: the absence of an infrastructure capable of defining, at the protocol level, what may be issued, under which legal regime it exists, and with which operational limits a token must be born before it exists, before it circulates, and especially before a secondary market turns it into a cross border problem. ERC Genesis is positioned precisely at this prior layer, not as an ex post interpretation nor as an additional compliance layer, but as issuance infrastructure designed to produce ex ante coherence between the asset, the legal regime, enforceable rights, and executable logic.

ERC Genesis emerges exactly at that point. Not as a legal opinion, not as an ex post interpretative layer, nor as added compliance once the object is already circulating. ERC Genesis is conceived as issuance infrastructure, a layer prior and superior to custody, rails, and interoperability, designed to produce ex ante coherence between

(i) the registrable underlying asset,
(ii) the applicable legal regime,
(iii) the rights and restrictions that are born with the instrument, and
(iv) the executable logic that governs its lifecycle.

It does not compete with custodians, banks, or market infrastructure. It sits above them, providing the structural control point that is currently missing and that regulators and infrastructures are attempting to reconstruct on a case by case basis through no-action letters, sandboxes, and ad hoc frameworks.

Institutional tokenization will not stall due to lack of technology. It will stall if this gap is not addressed, due to structural ambiguity. The market has already solved how to move tokens. It has not yet solved what a token is in institutional terms.

To expand on these concepts, and to speak the same language as the SEC, DTCC, and Wall Street, we respond to the questions that recur, with minimal variations, in Davos, within the U.S. regulatory perimeter, and in the European dialogue.

Where does the record of ownership reside when part of the holding exists on-chain?

In an institutionally defensible scheme, the record of ownership cannot be an implicit concept nor be distributed in an ambiguous manner. There must exist an authoritative record defined ex ante, made explicit in the documentary set, and reflected in the operational architecture. From a design standpoint, this forces a choice, and that choice must be traceable, auditable, and jurisdictionally coherent.

Hybrid model: primary legal record plus on-chain reflection, which is the dominant institutional path.

Constitutive ownership resides in the system recognized by the applicable legal framework: securities register or transfer agent, depository or custodian, CSD or SSS, or an authorized infrastructure. The chain operates as an execution and evidence layer, providing traceability, automation of servicing, enforcement of restrictions, and operational synchronization.

This model preserves legal continuity and reduces the risk of cross border collision, particularly where bidirectional conversion exists, such as digital twin or conversion orders, together with reconciliation and exception management.

On-chain as the primary ledger, only where the law expressly enables it.

This is viable only where the legal framework explicitly recognizes that a DLT record is equivalent to the constitutive ledger, or where the DLT infrastructure is authorized as an official registry. It is a strictly jurisdiction dependent case. To treat it as a general rule is to confuse evidence with constitution.

Our position, aligned with institutional discipline, is clear. There must be a verifiable legal anchor. On-chain can function as a mechanism of execution and operational recordkeeping. Enforceable ownership requires a legal foundation that is recognizable and defensible in audit, supervision, and litigation.

What happens if the issuance documentation declares restrictions that the smart contract does not technically enforce?

What occurs is what the market still resists naming with precision: a structural failure of ex ante coherence. In environments where execution is automatic, a declarative restriction is not a restriction. It is narrative. And narrative is not control. From an institutional perspective, this can be resolved in only two acceptable ways. Enforceability by design, which is primary. Restrictions must exist as executable logic: allowlists or whitelists, transfer hooks, eligibility rules, pauses and freezes, revocation mechanisms, circulation limits, role based restrictions, control of transfer windows, and change discipline through upgrade governance supported by evidence and procedures. If a token is deployed on a standard designed for generalized transferability, for example a fungible ERC type, the restriction must be explicitly coded and auditable.

Perimeter control, which is secondary. If by design restrictions are not imposed on-chain, then they must be imposed through the perimeter: closed platforms, custody with effective control, operational prohibition of peer to peer transfers, and contractual enforcement with real blocking capacity. This approach is more fragile and more costly, because it shifts control toward continuous surveillance and increases the risk of divergence between what is declared and what actually occurs. The framework we propose, and that this memorandum has been articulating throughout, is aimed precisely at eliminating the white paper versus code gap. It does so through ex ante coherence, auditability and verifiability of the contract prior to issuance, and rules embedded from the origin with evidentiary traceability.

The analysis is articulated around the principle of substance over form. What is determinative is not how a token is described, but what it effectively allows in practice. The white paper or issuance document sets out the legal narrative of the instrument: attributed rights, usage restrictions, limits on transferability, regulatory eligibility, and, where applicable, the absence of a secondary market. The smart contract, by contrast, does not describe or interpret. It executes rules automatically, deterministically, and without contextual judgment.

The so called white paper versus code gap emerges when documentation declares restrictions, for example non transferable, limited functional use, non negotiable, or circulation exclusively among authorized parties, that are not technically or programmatically implemented in the deployed code, or whose existence cannot be independently and audibly verified.

Who is the legal issuer when a token circulates outside the traditional perimeter?

Blockchain does not create the issuer. The issuer is a legal category: the party that assumes obligations, configures the documentary set, and is subject to disclosure duties and a liability regime. If the token represents an entitlement derived from an asset or contract, the issuer is the party that assumes the legal obligation: the issuing company, an SPV, the originator, a trustee, or the relevant entity depending on structure and jurisdiction. If a third party tokenizes on top through a wrapper, that party may become the economic issuer and potentially the legal issuer of a different instrument. It is not transporting the original right. It is constructing a new representation with a different risk profile and, therefore, may open an additional regulatory perimeter.

(i) the legal issuer must be defined ex ante in documentation, disclosures, the applicable regime, and governance;

(ii) the architecture must prevent or disincentivize confusion through verifiable authenticity, root token identification, mechanisms to verify authorized representations, and infrastructure, custody, and venue discipline to avoid recognizing representations not derived from the legitimized origin.

How are investor rights guaranteed, voting, redemption, priority, collateral, when transfer is automatic?

This requires rigorously separating two planes that the market too often conflates. Rights, which are legal in nature, arise from the contract, bylaws, prospectus, and applicable legal regime. Automation, which is operational, may be executed through smart contracts, roles, agents, and servicing logic.

Institutional scale requires a bridge between the two. This entails an explicit mapping of rights to executable events, such as coupons or dividends, redemptions, corporate actions, priorities, and collateral rules, and, critically, an identity and eligibility regime, including KYC and AML, that operates prior to acquisition and also in secondary markets, where such markets exist.

In addition, the architecture must include exception paths. These include freezing mechanisms, authorized reversals, controlled reissuance in cases of key loss or incidents, dispute procedures and reconstruction of ownership, and upgrade governance with change controls. This is not ancillary. It is the core of the resilience that infrastructures such as DTCC prioritize when they refer to breaks, fails, buy ins, and corporate actions in a lifecycle that is partially on chain.

At what point does a registration mechanism begin to resemble trading, clearing, or market infrastructure?

The threshold is not semantic. It is functional. What regulators and infrastructures observe is whether the system facilitates order interaction or matching, defines access and participation rules, enables standardized transfers among third parties with market logic, performs netting or settlement as a central function, or gives rise to price formation and trading dynamics.

When those functions appear, the system ceases to be a recordkeeping mechanism and begins to resemble a trading venue, a clearing or settlement system, or post trade market infrastructure, with the corresponding obligations and licensing requirements. Conceptual and operational protection depends on defining the role ex ante: recordkeeping and transfer agent versus marketplace. If a secondary market exists, it must operate within an authorized perimeter, such as ATS or MTF, or under clear access and circulation controls. Avoiding exchange characteristics, matching, market making, and open impersonal access is not a preference. It is the boundary that separates a registry from a market.

What prevents third parties from creating wrappers that confuse rights and risk profiles?

In practice, nothing prevents this if reliance is placed on narrative alone. This is why three layers are required simultaneously.

Legal layer. Contractual prohibition, enforcement by the issuer or custodian, and explicit disclosure that unauthorized representations do not generate entitlement. This delimits responsibility and reduces ambiguity, but it is not sufficient on its own.

Infrastructure layer. Verifiable authenticity of the root token, a registry of authorized representations, and discipline in acceptance by custodians and venues. Only tokens whose root and legal regime are verified are listed or accepted. This turns authenticity into a requirement for operational admissibility.

Technical layer. Designs in which relevant rights are activated only if holdings reside in registered wallets or under authorized roles, and mechanisms that make economically meaningful wrapping difficult, even if they do not prevent the creation of pseudo tokens, thereby reducing the incentive to create representations without rights.

Here, the concept of the root token is decisive. It does not prevent the existence of an imitative token. It renders it institutionally ineffective, because it cannot activate rights nor be recognized by serious infrastructure unless it derives from the legitimized origin.

ERC Genesis: the missing layer in the institutional stack, it does not compete with custodians and defines what may be issued.

Here the market's structural void becomes visible. There is a lack of infrastructure capable of producing, at the protocol level, the constitutive definition of the token. ERC Genesis emerges precisely at that point. Not as a legal paper, not as a regulatory opinion, not as a subsequent layer. ERC Genesis is issuance infrastructure that anchors the token to a registrable asset, to a determined legal regime, and to executable rules of governance and classification before a secondary market, liquidity, or fragmentation exist.

While financial infrastructure addresses how an asset moves, ERC Genesis addresses whether that asset can exist as a token, under which legal and regulatory consequences, and with what discipline of rights, restrictions, and governance.

ERC-Genesis (ERC-G)   **Mortgage Fund**   **Fund Details:**

liquidity pool
€2,000,000
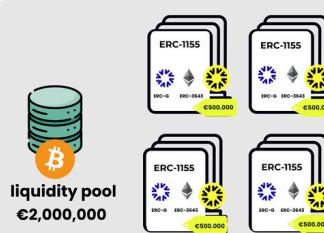
Fund Name: Real Estate Mortgage-Backed Token Fund (MBS Token Fund)

Blockchain Used: Ethereum

Management Smart Contract: 0x123456789abcdef...

Investment Currency: USDT or (€)

Recommended Investment Term: 5 years

Expected Return: 7% – 9% annually
Yield Distribution: Quarterly

Associated Risk: Mortgages backed by tokenized real estate assets

ASSET 1	ASSET 2	ASSET 3
Item: 4915709DF1741F0001q	Item: 4915709DF1741F0002q	Item: 4915709DF1741F0003q
Price: €292,076.40	Price: €560,329.90	Price: €507,555.70
Area: 89.32 m²	Area: 166.27 m²	Area: 150.61 m²
Status: Tokenized Debt	Status: Mortgaged	Status: Free of Liens

RISK TRANCHES

SENIOR A	MEZZ B	SUBD C
100% Collateral	80% Collateral	0% Collateral
Yield 3%	Yield 5.5%	Yield 7%
Investor Purchases Tokens A	**Investor Purchases Tokens B**	**Investor Purchases Tokens C**
100% Collateral	**80% Collateral**	**0% Collateral**
Yield 3%	**Yield 5.5%**	**Yield 7%**

VIII.I TOKEN GENESIS THEORY: THE "ROOT TOKEN" AS A BLOCK OF LEGITIMACY

Based on the Token Genesis Theory (registered IP 00/2025/7143), ERC Genesis introduces a unique and non replicable root token that encapsulates the original asset, whether property, mortgage, or registrable contract, incorporates verifiable legal metadata, maintains a bidirectional link with official registries such as property, cadastral, or notarial records, and programmatically governs the lifecycle. From this root token derive economic fractions and financial instruments, dynamic risk tranches, and programmatic collateralization, all under automated compliance rules.

There are no ambiguous representations here. There are native legal and financial rights, integrated into the protocol, with the possibility of ex ante verification.
What it resolves where current projects fail, including the most sophisticated ones.
ERC Genesis introduces, at the institutional level, a clear ontology of the token, defining what it represents and what it does not. It enables ex ante legal and regulatory classification, determining when it falls within securities law and when it does not. It embeds governance, with legal rules integrated into smart contracts and disciplined change control. It provides verifiable anchoring to legal registries. It supports a fully regulated lifecycle, including issuance, transfer, encumbrance, enforcement, and redemption. It offers a reusable framework, consistent across assets, markets, and jurisdictions.

For this reason, it can be positioned above infrastructures such as the architecture patented by JPMorgan. JPMorgan builds rails. ERC Genesis defines what may travel on those rails without becoming a systemic risk. One operates downstream, executing. The other operates upstream, qualifying and constituting.

JPMorgan built the bridge. DTCC is designing the digital twin. Wall Street is optimizing the plumbing. But the next phase requires the missing layer: the standard that defines what is permitted to cross, and under which regime, before markets exist, before liquidity exists, and before damage occurs. That is what separates pilots from real markets.

DTCC designs how an already legitimized asset can circulate without breaking the system. ERC Genesis designs which assets can be born as tokens without becoming a systemic problem.

IX. EXECUTIVE STRUCTURAL FINDING

Institutional tokenization has reached a level of operational maturity that no longer allows it to be treated as an experiment. Systemic infrastructures, global custodians, systemically important banks, and asset managers have demonstrated that assets can be represented and transferred via DLT with high levels of efficiency, traceability, and operational resilience. In that sense, the problem of execution, how to move assets safely, can be considered substantially addressed.

However, this progress has exposed with greater clarity a structural gap that precedes any question of plumbing: the absence of a common institutional mechanism capable of defining, prior to issuance, what exactly is being tokenized, under which legal regime it comes into existence, and with which operational and regulatory limits it must exist from its origin.

The tensions now emerging in the dialogue among regulators, infrastructures, and the market, including the proliferation of no-action letters, the emphasis on regulatory sandboxes, and the infrastructural caution observed in actors such as DTCC, do not stem from technological deficiencies or resistance to innovation. They stem from an ex ante indeterminacy regarding the legal constitution of the token as an institutional object.

Architectures based on smart contracts introduce a defining characteristic: the norm ceases to be exclusively declarative and becomes executable. In that context, any prior legal ambiguity ceases to be a doctrinal matter and becomes an operational and systemic risk. Automatic execution does not interpret intent nor weigh context. It executes what has been defined. When the definition of the object is incomplete, ambiguous, or dependent on narrative, friction is inevitably displaced ex post toward the regulator, the infrastructure, or the judicial system.

The most advanced infrastructural responses, such as those developed by DTCC under no-action relief, confirm this diagnosis. These architectures do not attempt to redefine the legal nature of instruments nor to transfer legitimacy to code. On the contrary, they explicitly preserve the record of ownership, the omnibus structure, finality, and governance within the existing institutional perimeter, using blockchain as a subordinate execution layer. This approach is correct and necessary, but it operates downstream. It presupposes that the instrument has already been legally constituted in a stable manner before entering the infrastructure.

The point of friction identified in this memorandum lies one level earlier. It arises when the market attempts to tokenize assets or rights whose legal constitution has not been precisely defined ex ante, and when the task of reconstructing that definition is implicitly delegated to infrastructure or to the regulator on a case by case basis.

In the absence of a common, verifiable, and reusable constitutive layer, regulatory classification becomes contingent, supervision fragments, and risk is deferred until it emerges in situations of stress, litigation, or systemic use.

The structural conclusion is clear.

Institutional tokenization does not face a technological limit, but a constitutive one. The market has learned how to execute. It has not yet consistently resolved how to produce, from the outset, tokenized objects that are legally stable, verifiable, and defensible at cross border scale.

Until this gap is addressed at the level of institutional design, prior to issuance, prior to circulation, and prior to the formation of secondary markets, tokenization will continue to advance through ad hoc solutions, regulatory tolerances, and infrastructural containment, rather than consolidating as fully integrated financial infrastructure.

This diagnosis is consistent with the conclusions of the Digital Assets Report published by the White House pursuant to Executive Order 14178, which acknowledges the need for coherent, coordinated, and ex ante frameworks for the integration of digital assets into the U.S. financial system.

ABOUT US

I work on the legal, regulatory, and market conditions under which tokenization can exist as regulated financial infrastructure, rather than as a speculative or purely technological experiment. My work focuses on the institutional design challenges that arise when distributed ledger technologies are deployed at scale in financial and real asset markets.

I am internationally recognized for applying blockchain technology to real estate and financial markets with an emphasis on institution-grade frameworks for the tokenization of real-world assets (RWA), where legal enforceability, regulatory classification, and operational integrity are foundational requirements rather than afterthoughts.

Through my independent work, I have developed an integrated body of research, education, and technical analysis addressing tokenization, smart contracts, token governance, and regulatory compliance. This work is specifically oriented toward enabling on-chain assets to function within existing legal and supervisory frameworks.

My work bridges law, finance, and technology to ensure that tokenized assets operate with legal enforceability, accountability, and market integrity across jurisdictions. I have published more than 115 specialized articles on blockchain, tokenomics, and real estate, and I am the author of four books distributed in over ten countries, including the United States, Spain, Mexico, Italy, Germany, France, Canada, the United Kingdom, and the Netherlands. My publications are used in academic programs and referenced in professional and institutional contexts.

I am also a university lecturer and academic contributor in blockchain and real estate innovation, and the creator of an international podcast with listeners in more than 20 countries, focused on the structural transformation of financial and real asset markets.

My mission is to design and articulate the theoretical, legal, and operational frameworks that connect smart contracts, legal traceability, and regulatory compliance, enabling tokenization to function as legitimate, transparent, and scalable market infrastructure.

```
00000000  45 52 43 2D 47 45 4E 45  53 49 53 20 47 45   ERC-GENESIS GE
00000010  4E 45 53 49 53 20 42 4C  4F 43 4B 0A 00 00   NESIS BLOCK...
00000020  44 65 66 69 6E 69 6E 67  20 74 68 65 20 6F   DEFINING THE O
00000030  6E 74 6F 6C 6F 67 79 20  6F 66 20 74 6F 6B   NTOLOGY OF TOK
00000040  65 6E 69 7A 65 64 20 61  73 73 65 74 73 0A   ENIZED ASSETS.
00000050  42 65 66 6F 72 65 20 6D  61 72 6B 65 74 73   BEFORE MARKETS
00000060  2E 20 42 65 66 6F 72 65  20 6C 69 71 75 69   . BEFORE LIQUI
00000070  64 69 74 79 2E 20 42 65  66 6F 72 65 20 72   DITY. BEFORE R
00000080  69 73 6B 2E 0A 00 00 00  45 52 43 2D 47 45   ISK.....ERC-GE
00000090  4E 45 53 49 53 20 69 73  20 6E 6F 74 20 63   NESIS IS NOT C
000000A0  6F 64 65 2E 20 49 74 20  69 73 20 63 6F 6E   ODE. IT IS CON
000000B0  73 74 69 74 75 74 69 6F  6E 2E 0A 00 00 00   STITUTION.....
000000C0  41 75 74 68 6F 72 3A 20  4D 6F 6E 69 63 61   AUTHOR: MONICA
000000D0  20 45 6C 69 7A 61 62 65  74 68 20 50 61 67    ELIZABETH PAG
000000E0  61 6E 6F 0A 00 00 44 6F  63 75 6D 65 6E 74   ANO...DOCUMENT
000000F0  3A 20 45 52 43 2D 47 65  6E 65 73 69 73 20   : ERC-GENESIS
00000100  4D 65 6D 6F 0A 00 00 00  46 65 62 72 75 61   MEMO....FEBRUA
00000110  72 79 20 32 30 32 36 0A  00 00 00 00         RY 2026.....
```

The following block serves as a genesis marker. It embeds, in machine-readable form, the authorship, intent and constitutive scope of the ERC-Genesis framework.