

# Towards a More Unified Regime for Security Interests in Financial Instruments and Digital Assets?

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## Abstract

*The European Union's financial markets face significant fragmentation regarding security interests in financial instruments and digital assets, stemming from diverse national property laws, perfection techniques, and conflict-of-laws rules. This legal uncertainty impedes cross-border transactions, inflates collateral costs, and hinders the EU's Capital Markets Union and digital finance innovation goals. This article critically assesses these structural gaps, particularly categorisation asymmetries, inconsistent perfection and priority rules, and unsettled conflict-of-laws regimes, which are exacerbated by the rise of tokenisation and crypto-assets. It argues for the urgent need for harmonisation to ensure legal certainty in modern collateral markets and facilitate the transition to T+1/T+0 settlement. To address these challenges, the article proposes a comprehensive legislative blueprint: the Security Interests in Financial Instruments and Digital Assets Regulation (SIFIDAR). SIFIDAR aims to establish a unified taxonomy, uniform perfection and priority rules for all asset classes, and a robust conflict-of-laws framework, thereby creating a single, predictable regime essential for the EU's financial stability and innovation.*

## Introduction

The European Union's (EU's) financial markets are technologically sophisticated yet legally fragmented. Nowhere is this more evident than in the treatment of

security interests over financial instruments and digital assets. Despite an increasingly integrated prudential and market-conduct framework—comprising the Financial Collateral Directive (FCD), the Settlement Finality Directive (SFD), the European Market Infrastructure Regulation (EMIR), the Central Securities Depositories Regulation (CSDR), MiFID II and MiFIR, the DLT Pilot Regime Regulation, and the Markets in Crypto-Assets Regulation (MiCAR), each as amended and supplemented—the EU still relies on a mosaic of national property law categories, perfection<sup>1</sup> techniques and conflict-of-laws rules.

This patchwork, with various degrees of divergences at the EU and national law level, results in significant legal uncertainty concerning the creation, perfection, priority and enforcement of security interests in financial instruments and digital assets. In cross-border transactions, the lack of harmonisation in perfection methods and conflict-of-law rules complicates credit risk modelling, inflates collateral haircuts, and disincentivises the use of tokenised or digitally native assets as eligible collateral. The resulting cumulative effect is to undermine the EU's twin ambitions: to achieve a Capital Markets Union (CMU), which since March 2025 has been rebranded as a Savings and Investments Union (SIU) and to lead in digital finance innovation.

This article assesses the current state of play, identifies the principal fault lines and advances the debate on harmonising security interests across both traditional and digital asset classes. It integrates a legislative and policy blueprint to harmonise security interest categorisation and comparability across financial instruments and digital assets, while ensuring greater pan EU legal certainty through, what is proposed herein through a future EU Regulation—the *Security Interests in Financial Instruments and Digital Assets Regulation*, or "SIFIDAR".<sup>2</sup>

This article also explores the opportunity cost of non-reform, and doctrinal evaluations of custody and collateral asymmetries as highlighted by Huertas's earlier comparative research.<sup>3</sup> It concludes that a directly applicable EU Regulation—establishing a single taxonomy, uniform perfection and priority rules, and a comprehensive conflict-of-laws framework—is essential to deliver legal certainty and to formalise the EU's transition to T+1 settlement by 11 October 2027 and T+0 real-time settlement for digital assets.

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<sup>1</sup> Generally, refers to the legal steps needed to complete, secure, or record (a claim, right, or interest) in final conformity with the law.

<sup>2</sup> Or such other title and acronym that may be politically more palatable.

<sup>3</sup> See the 2020 discussion in Huertas, Michael "Custody, Collateral and Client Money Regulation in the post-crisis world: a comparative study" available: [https://qmro.qmul.ac.uk/xmlui/bitstream/handle/123456789/68583/HUERTAS\\_Michael\\_PhD\\_final\\_290620\\_Edited.pdf?sequence=3&isAllowed=y](https://qmro.qmul.ac.uk/xmlui/bitstream/handle/123456789/68583/HUERTAS_Michael_PhD_final_290620_Edited.pdf?sequence=3&isAllowed=y) see also 2019 discussion in Huertas, Michael, "Too Big to Reform or Too Important to Miss?" Why the EU Needs More Consistency on the Rules on Collateral and Custody of Client Assets and

Since finalisation of this article in early November 2025, two important developments have been published:

1. On 2 December 2025 the UK's Property (Digital Assets etc) Act 2025 received Royal Assent.<sup>4</sup> The Act is a narrowly framed property-law reform: it provides that certain digital assets are not prevented from being the objects of personal property rights merely because they do not fit the traditional categories of property under English law. In short, it removes a doctrinal obstacle so courts can treat crypto-tokens and other digital representations as property where the facts justify it. This is the Law Commission's earlier recommendations and established case law principles on the subject put into statute. The Act itself is technical and does not create a full regulatory regime for issuance, custody, or market conduct—those remain in the hands of the UK's financial regulators (FCA, PRA) and sectoral regulation. Nevertheless, the Act clears an important legal fog that previously complicated ownership, remedies, and insolvency treatment. From an EU financial-services-law perspective, the UK's intervention is striking mainly because it provides foundational private-law clarity: digital assets *can* be objects of personal property rights even if they do not fall neatly into traditional civil-law categories (e.g., corporeal vs. incorporeal things, claims, rights in rem, etc.). The EU, however, operates within a very different constitutional, legislative, and private-law framework and it remains to be seen whether and if yes, how the EU may create similar clarity—this article explores certain options for consideration to achieve just that—ideally through SIFIDAR.
2. On 4 December 2025, the European Commission published its long-awaited "Market Integration and Supervision Package" (MIP). The package includes a cross-cutting "Master Regulation" to migrate core trading-venue rules into MiFIR and expand ESMA's direct supervisory remit, a "Master Directive" to

streamline fund passports and cross-border distribution, and a new Settlement Finality Regulation (SFR) that replaces the SFD with a directly applicable rulebook. These measures pursue maximum harmonisation in market plumbing, consolidate supervision at the EU level in selected high-impact perimeters and explicitly accommodate DLT-based issuance, trading and settlement. The package strengthens the case for a SIFIDAR-style Regulation: while the SFR modernises finality, clarifies conflict-of-laws anchors for settlement and updates the FCD for DLT-recorded assets, it does not harmonise the proprietary law mechanics for creation, perfection and priority of security interests across financial instruments and digital assets. Precisely because the MIP accelerates tokenised issuance and compresses settlement cycles towards T+1 and, for DLT native instruments, T+0, the residual private law fragmentation on the third party effects of security interests becomes more acute. Without a uniform EU rulebook on perfection and priority for intermediated and DLT native assets, operational finality risks outpacing proprietary certainty, creating avoidable enforcement and insolvency traps. The SIFIDAR blueprint advanced in this article is therefore complementary to the MIP: it would align the law of secured transactions with the MIP's market structure reforms by codifying control and registry based perfection, a bright line priority ladder, and a coherent conflict of laws anchor for proprietary effects across accounts, intermediated holdings and distributed ledgers.

### **The Persisting Problem: Fragmented Categories, Divergent Perfection Rules and Unsettled Conflicts of Law**

Across EU Member States, collateral law remains anchored in domestic property and insolvency traditions. While the FCD promoted some functional convergence

Client Money as Part of CMU 2.0 Available at SSRN: <https://ssrn.com/abstract=3508665> Both papers' comparative study of EU client-asset and collateral frameworks underscores the conceptual and functional gaps that persist despite regulatory convergence in market conduct and infrastructure. □ His tabulated analysis highlights six persistent deficiencies:

1.
  1. Scope divergence and optional exclusions in national transpositions of MiFID II client-asset rules;
  2. Inconsistent treatment of title-transfer collateral (TTC) versus pledges or security assignments;
  3. Absence of a single perfection or priority mechanism for financial and digital instruments;
  4. Asymmetries in segregation and insolvency protection of client assets and client money;
  5. Weaknesses in intermediary-chain disclosure and rehypothecation transparency; and
  6. Registry and identifier fragmentation limiting cross-border verification of rights.

Huertas terms these mismatches "*translation risks*" between national legal concepts and EU-level regulatory regimes—risks that directly undermine legal certainty for cross-border investors and intermediaries.

<sup>4</sup> Property (Digital Assets etc) Act 2025, [https://www.legislation.gov.uk/ukpga/2025/29/pdfs/ukpga\\_20250029\\_en.pdf](https://www.legislation.gov.uk/ukpga/2025/29/pdfs/ukpga_20250029_en.pdf).

for certain market actors and assets, Member States have retained divergent doctrines and techniques for taking and perfecting security over intangibles.

The FCD's (current) scope is also limited to certain "financial collateral arrangements" between defined counterparties (in certain Member States excluding certain client categorisation types - including retail and small and medium-sized enterprises (SMEs)) and excludes a broad range of assets, including crypto-assets that fall within MiCAR's domain. For crypto-assets that are financial instruments and thus within the MiFID II regime, the application of the FCD remains largely untested. Consequently, there is no EU-wide alignment on how concepts such as possession, control, or book-entry should be mapped to modern dematerialised and intermediated holding structures. For instance, it is unclear whether granting a creditor a claim over a pool of assets, where the debtor retains a right of substitution subject to maintaining a minimum value (akin to what certainly English but equally Irish law considers floating charge), would satisfy a legal test for 'control'. The divergence becomes even more pronounced for tokenised instruments and crypto-assets, where national regimes have adopted non-uniform approaches to classification and perfection.

- **Traditional financial instruments (dematerialised / intermediated)**

Under MiFID II and CSDR, most securities exist as book-entry positions in CSD systems. Legal title sits with the CSD or its nominee; investors hold contractual claims against intermediaries in a tiered chain:

*Issuer → CSD → global custodian → sub-custodian → broker → investor.*

Transfers occur via credit and debit of securities accounts. The applicable law for proprietary aspects typically follows the place of the relevant intermediary (PRIMA) approach. Security interests are created through account entries or control agreements and perfected by possession proxies or notice.

- **Tokenised financial instruments**

Tokenised instruments are financial instruments within MiFID II, represented on DLT rather than in a CSD database. They often mimic traditional intermediated chains but with a hybrid structure:

*Issuer → DLT market infrastructure (acting as registrar or CSD-equivalent) → custodian/CASP → investor.*

Here, the ledger entry itself may constitute both record of ownership and perfection. However, national property laws diverge on whether on-chain<sup>5</sup> control equals possession or whether an off-chain registry entry is required. Without SIFIDAR, a pledge over a tokenised bond recorded on a French DLT platform may not be recognised as perfected in Germany, undermining cross-border enforceability.

- **Native digital assets (crypto-assets under MiCAR)**

Native crypto-assets—such as general crypto-assets, stablecoins, or utility tokens—lack a central registrar. Ownership and transfer rely on private-key control. Custody is provided by CASPs or self-custodians. Security interests may be created via smart contracts or multi-signature arrangements, but EU law currently provides no uniform recognition of these measures as perfected rights.

In insolvency, national courts may differ on whether key-based custody equates to possession, whether rehypothecation is valid, and how priority is determined among competing interests. These uncertainties make such assets unattractive as collateral for institutional investors.

Given the above, absent the proposals argued for in this article for inclusion in a future SIFIDAR, the following three structural gaps currently impede legal certainty and have structural implications.

1. **Categorisation asymmetries persist**

National law recognises differing forms of security interests—pledges, charges, assignments by way of security, title transfer collateral and fiduciary structures—often subject to formalities, publicity requirements and anti clogging norms that vary markedly. Financial collateral enjoys some harmonisation in scope and enforceability, but there is no EU wide alignment on how "control," "possession," or "book entry" concepts map to modern holding structures, nor a common taxonomy for security interests over intermediated and dematerialised assets. As suggested above, the divergences are starker still for crypto assets and tokenised claims, where Member States

<sup>5</sup> Generally defined as any activity, transaction or data recorded directly on a blockchain network (and have been verified and recorded to the blockchain by miners or validators).

have developed non uniform approaches to classification, perfection and priority of interests.

*To eliminate value destructive uncertainty, SIFIDAR should establish a simple, uniform priority ladder. First, a public law registry entry in a designated financial instruments register should prevail over competing claims, reflecting the primacy of title systems where they exist. Second, in the absence of a registry of proprietary effects, a perfected control interest should outrank other non registry interests, with priority between competing control interests determined by the time of control's effectiveness. Third, a residual filing system—confined to assets and holding models not captured by registries or control—should provide notice based priority, with tie breakers keyed to filing timestamps. Purchase money and netting set carve outs should be narrowly tailored and technology neutral. These rules would interlock with the SFR's finality moments, allowing market participants to align operational settlement, registry updates and control attestations with predictable proprietary outcomes.*

2. **Perfection (making a security interest effective against third parties—varies markedly between jurisdictions) and priority rules (who has ownership to what, when, where and how) are inconsistent and (now equally quite) technologically outdated**

Some Member States traditionally rely on possession or control proxies in intermediated holding chains for securities; others demand registrations, debtor notifications, or account-level entries. Determining priority may depend on time, publicity, notice, or control, without a consistent and uniform hierarchy among connecting factors.

Such inconsistencies are anachronistic in a market infrastructure environment dominated by CSDs, CCPs, and DLT platforms. They fail to reflect today's operational reality that "control" may be exercised via private keys, smart contracts, or custodian account mandates, none of which map neatly to traditional notions of possession. The absence of a uniform EU concept of "control as perfection" for digital assets—and a standardised, registry- or

account-based notice regime—creates a barrier for cross-border secured transactions.

For digital assets and tokenised instruments specifically, there is not yet an EU level concept analogous to "control as perfection" calibrated to on chain mechanics, nor a standardised approach to registry or account based notices. Without common or uniform methods and priority rules, parties cannot reliably predict outcomes in multi jurisdictional financings or enforcement scenarios.

3. **Conflict of laws remains unsettled and in parts incomplete**

EU law provides coherent conflict rules for contracts and netting (through the Rome I Regulation and sectoral safe harbours) and for settlement finality under the SFD and CSDR. However, for proprietary aspects of intermediated securities and digital assets, connecting factors diverge. Some national regimes favour the place of the relevant intermediary (i.e. PRIMA); others (outside of the EU) look to the location of the register or the habitual residence of the debtor. The location of the relevant securities account, the place of the intermediary, or the register may each prevail under different national regimes, and the EU has not comprehensively adopted a single PRIMA style rule (place of the relevant intermediary approach) or an equivalent for DLT held assets.

For DLT-held assets, no EU-level rule determines the *lex rei sitae*.<sup>6</sup> The resulting conflicts trap is acute in cross-border collateral pools: a secured creditor may find its interest perfected under one national law but void against third parties or an insolvency administrator under another. These uncertainties undermine cross-border enforceability and inflate legal-opinion costs, acting as a barrier to the EU's policy objectives.

For both "traditional" financial instruments (including where DLT-held) and for MiCAR crypto-assets insolvency (including analogous events of equivalent effect as well as regulator led recovery and resolution interventions), the interaction between *lex rei sitae*, *lex concursus* (law of insolvency proceedings) and sectoral safe

<sup>6</sup>The issue of digital assets and conflict-of-laws is only in an emerging and incomplete state, see UNIDROIT Digital Assets and Private Law Principles, <https://www.unidroit.org/wp-content/uploads/2024/01/Principles-on-Digital-Assets-and-Private-Law-linked.pdf>.

harbours adds further complexity. The result is a classic conflicts trap for cross border collateral pools.

#### 4. **Structural Implications**

The cumulative result of categorisation asymmetries, inconsistent perfection rules, and fragmented conflict-of-laws regimes as set out above is a regime that remains unsuited to modern collateral markets. It hampers legal certainty, impairs collateral mobility, and may increase systemic risk. Financial institutions, faced with cross-border uncertainty may be forced to (disproportionately) over-collateralise and retain large liquidity buffers. Meanwhile, the lack of clarity around perfection and priority rules in DLT-based holding structures may deter more meaningful and large-scale institutional participation in tokenised markets over the longer-term (or at least to the full potential offered by DLT), in particular absent interoperability standards amongst tokenised markets as well as with traditional market infrastructures and principles.

The persistence of this legal heterogeneity throughout the EU reflects both constitutional sensitivities—property law being a traditional domain of Member States as opposed to the EU level—and the inertia of established market practice under the FCD. Yet the EU's policy trajectory toward shorter settlement cycles, digital asset issuance, and cross-border collateral interoperability renders this inaction increasingly untenable. The move from crypto-assets from the relative periphery of financial markets to a more established central role in EU markets, in part courtesy of MiCAR, has exposed gaps further. It also raises the questions if the problems explored in this article are now too big to ignore why have they been perceived for so long as too big to reform?

### **So why has reform been missed to date?**

Harmonisation of property and security-rights law has long suffered under the EU's constitutional boundary between the internal market and Member-State competence over private law. Property law touches constitutional identity and, as comparative lawyers would suggest, conceptually differs between a division of national legal systems into legal families; several Member States have resisted conferring rule-making authority in this domain. This explains why earlier initiatives, such

as the FCD, adopted only a minimalist, functional approach rather than a codified-driven system of proprietary rights.

In addition to the political and constitutional constraints, regulatory and prudential integration has outpaced private-law harmonisation. Policy asymmetry has resulted as sequencing has not always been respected. MiFID II/MiFIR, EMIR and CSDR focused on conduct, transparency and market infrastructure, leaving the ownership and priority effects of transactions to national law, more recent statutes such as MiCAR and the DLT Pilot Regime are suffering from the this lack of clarity as well. The DLT Pilot Regime and MiCAR replicate this asymmetry: they deliver operational regulation without private-law uniformity.

Financial-centre competition also plays a role in hampering pan-EU wide reforms. Some Member States benefit from national collateral-registry systems or from legal-opinion exports. Centralising these functions under an EU registry could redistribute market power and fee income. Likewise, national insolvency regimes form part of domestic policy autonomy; resistance to EU-level harmonisation is predictable even though the SIU is making strides with efforts to further "Europeanise" insolvency regimes. Regulator-led recovery and resolution regimes have made great strides and demonstrated that such a problem was indeed "too big to ignore and thus also not too big to reform" as many had thought.

Finally, harmonising perfection rules across digital and traditional assets requires bridging law and code. Questions such as what constitutes "exclusive control" on-chain, how to timestamp perfection, or how to give legal effect to smart-contract enforcement mechanisms are technically demanding. Legislators have preferred to observe pilot outcomes before legislating. The digital inflection however changes all of that.

### **The Digital Inflection: Tokenisation and Crypto-assets Expose the Gaps**

The legal architecture governing security interests was conceived for a world of paper certificates and centralised ledgers and registries, not for distributed ledgers and composable financial contracts. Technology neutrality in MiFID II means that tokenised shares, bonds and fund units remain "financial instruments" irrespective of the ledger, but the infrastructure of control, transfer and settlement now operates in fundamentally different ways.

The DLT Pilot Regime permits limited-scale experimentation in trading and settlement of DLT-based financial instruments, allowing CSDs and trading venues to issue and settle securities natively on distributed ledgers. Meanwhile, MiCAR establishes licensing, disclosure, and conduct standards for crypto-asset service providers (CASPs) and for crypto-assets not qualifying as financial instruments.

Neither framework, however, harmonises the property-law effects of holding, transferring, or granting security interests in such assets. In many aspects, MiCAR

expressly defers to national law. The DLT Pilot confines itself to operational and prudential aspects. The result is a regulatory infrastructure that is technologically advanced but legally incomplete.

The original design choice described above was reasonable at the outset, but tokenisation has moved from pilot to production. Issuance and collateral management on DLT, composable settlement workflows, and crypto collateral in institutional liquidity, repo and derivatives settings have become more tangible realities. Tokenised bonds, fund units, and repo collateral are increasingly issued and managed on DLT. Crypto-collateral is entering institutional liquidity management and derivatives margining. Yet without EU-level clarity on how to perfect and rank security interests, institutions face asymmetric enforceability risks and uncertain capital treatment.

A modern collateral framework must be capable of handling both account based and token based holding models, allow enforceable control based perfection for digital assets, and interoperate with legacy systems as well as preserve MiFID II/MiCAR segregation and investor-protection standards. Without EU level clarity, market participants face asymmetric enforceability, harder capital and risk modelling, and higher legal frictions that ultimately transmit into costs of finance. The EU's SIU cannot be realised without proprietary law coherence across all asset forms.

In parallel, settlement cycles are compressing. As the EU officially moves to T+1 for transferable securities by 11 October 2027 and while many digital assets settle at T+0, the margin for legal error collapses. Collateral must be mobile cross border in real time, client asset protections must travel intact through rapid rehypothecation chains, and finality triggers must be uniform across infrastructures. Without harmonised proprietary rules, operational finality on chain or in CSDs can diverge from legal finality, creating settlement and prudential risks.

## Policy Objectives for an EU Level Reform

The policy imperatives are clear: to restore legal certainty to modern collateral markets, ensure technology-neutral rules that recognise operational realities and technological specificity where it matters, preserve and promote proportionality, ensure uniform market integrity and to preserve financial stability. In practical terms, reforms should:

1. Harmonise core concepts and categories to ensure functional comparability of security interests across Member States, irrespective of technology.
2. Provide clear, uniform methods of perfection and priority for financial instruments and digital assets, calibrated to intermediated, account based and DLT native models (including amendment to facilitate decentralised finance applications)

and supported by objective indicia (registries, timestamps, unique identifiers, custody records).

3. Establish a comprehensive, predictable conflict of laws framework for third party effects, priority and enforcement, with a clear hierarchy that privileges registry law and control record law.
4. Preserve and update existing safe harbours for netting, collateral use and settlement, extending them consistently to tokenised instruments and qualifying crypto assets, together with harmonised client asset and client money protections.
5. Minimise disruption to existing market practices and infrastructures while allowing migration paths to modernised techniques such as control based perfection and EU level notice filing, and mandating EU level supervisory and technical standards to ensure interoperability.

A directly applicable EU Regulation—not a Directive—is the only legislative form capable of delivering this outcome. Only a Regulation can ensure uniformity of proprietary and insolvency effects across Member States. The following sections provides an overview of the necessary and guiding elements that should be passed into law under such a Regulation.

## A Legislative Blueprint: The Security Interests in Financial Instruments and Digital Assets Regulation (SIFIDAR)

To achieve real convergence, a directly applicable, maximum harmonisation Regulation that provides a horizontal, technology-neutral framework governing security rights over both financial instruments (as defined in MiFID II) and digital assets (as defined in MiCAR) must be achieved.

Such a Regulation should mirror the tested approach of international private law instruments adapted to EU market structure: a unified proprietary rulebook (creation, perfection, priority, enforcement), drawing on UNIDROIT's *Principles on Digital Assets and Private Law* and the *European Law Institute (ELI) Principles*, adapting their functional concepts to the EU's market-infrastructure ecosystem, as well as applying harmonised connecting factors plus explicit integration with MiCAR, MiFID II/MiFIR, CSDR and the FCD along with technical standards for identifiers and interoperability as mandated by the European Securities and Markets Authority (ESMA).

## Part I: Unified Taxonomy and Scope

A future SIFIDAR should establish definitions that track economic function rather than national labels.

- "*Security interest*" should cover any proprietary interest in financial instruments or digital assets created to secure performance of an obligation, irrespective of domestic label (pledge, charge, title-transfer collateral arrangements (including those already recognised under the FCD) or fiduciary transfer), to the extent aligned with market safe harbours.
- "*Financial instruments*"<sup>7</sup> would adopt the MiFID II Annex I C definition, expressly including tokenised forms.
- "*Digital assets*" would include crypto-assets defined under MiCAR and any other ledger-recorded asset representing transferable value not qualifying as financial instruments but capable of being represented and controlled via DLT.
- "*Control*" should be defined functionally as the exclusive or effectively exclusive practical ability to dispose of the asset or to prevent others from doing so, including via keys, smart-contract authorisations, or account mandates with qualified intermediaries (thus including security financial collateral arrangements recognised under the FCD).

## Part II: Perfection and Priority—Account Based, Intermediated and DLT Native

Perfection should be possible through methods aligned with holding models, anchored in objective indicia and evidentiary standards capable of supporting automation and cross border recognition. In short, this means:

1. Registry-based perfection—via entry in either an EU-recognised (i) registry operated by a CSD, (ii) authorised DLT market infrastructure, or (iii) MiCAR-licensed CASP.
2. Control-based perfection—via demonstrable exclusive control or custody over the asset.

For intermediated and account based financial instruments, perfection should be achieved by crediting the security interest to the debtor's securities account and recording the secured party's interest on the books of the relevant intermediary, with "control" achieved where the intermediary agrees to comply with the secured party's instructions without further consent of the debtor.

"*Exclusive control*" should then be defined functionally and evidenced by (i) binding control agreements with intermediaries, (ii) system permissions that give the secured party instruction rights without further grantor consent, and (iii) timestamped audit logs maintained to

common technical standards. Priority should follow a clear "control beats registration beats time" ladder, with first in time rules among equals and protected purchase rules for good faith acquirers credited free of a competing security interest.

For DLT native digital assets and tokenised instruments held on chain without an intermediary, perfection should be achievable by "control" evidenced by on chain rights or multi signature/smart contract arrangements (including MPC schemes) that deliver effective exclusivity to the secured party or an independent collateral agent. Control must be supported by verifiable cryptographic credentials and timestamped audit logs. Alternatively, perfection by registration in an EU level notice filing system should be available, particularly where control is not technologically or operationally feasible throughout the life of the collateral. Priority should favour control over registration, and registration over later control, with bright line timestamps and protected purchaser rules calibrated to on chain transfers.

For title transfer collateral arrangements commonly used in margining, the SIFIDAR should preserve enforceability and close out netting safe harbours while clarifying their interaction with the new perfection and priority scheme and with MiCAR custody and segregation obligations for crypto asset service providers. Prudential frameworks should recognise perfected positions consistently to avoid unnecessary margin add ons and haircuts once uniform criteria are met.

In all instances priority must follow a clear hierarchy: control supersedes registration, which in turn supersedes time. Protected-purchaser rules should be unequivocally clearly set out to preserve market liquidity by shielding good-faith acquirers.

## Part III: EU Level Notice Filing Registry

The EU should introduce a single electronic notice filing registry for non possessory security interests in financial instruments and digital assets. Filing would be simple, low cost and information minimal yet sufficiently structured to support automation. At a minimum, the entry into such single registry should include: (i) debtor identifier (e.g., LEI), (ii) secured party identifier (e.g., LEI), (iii) collateral class and, where applicable, a unique asset identifier (token ISIN or equivalent), (iv) type of security interest, (v) timestamp of perfection or filing, and (vi) a short free text description or standardised code. Entries must be publicly searchable, with privacy safeguards for sensitive data, and exposed via API to enable automated diligence, settlement and collateral workflows across CSDs, DLT market infrastructures and custodians.

Filing is not mandatory for perfection where control is used, but it provides an alternative or a belt and braces approach and determines priority among registrants

<sup>7</sup> Also taking into account already issued regulatory guidance, ESMA, Final Report Guidelines on the conditions and criteria for the qualification of cryptoassets as financial instruments, 2024, [https://www.esma.europa.eu/sites/default/files/2024-12/ESMA75453128700-1323\\_Final\\_Report\\_Guidelines\\_on\\_the\\_conditions\\_and\\_criteria\\_for\\_the\\_qualification\\_of\\_CAs\\_as\\_FLs.pdf](https://www.esma.europa.eu/sites/default/files/2024-12/ESMA75453128700-1323_Final_Report_Guidelines_on_the_conditions_and_criteria_for_the_qualification_of_CAs_as_FLs.pdf)

lacking control. Recognised registries and custodians should implement an emergency judicial gateway obliging cross border updates within defined service levels upon presentation of an enforceable order, subject to ex post review. The registry network can be extended to secured assignments of receivables to promote coherence with broader claims based financing.

#### **Part IV: Conflict of Laws**

The SIFIDAR should provide a comprehensive set of connecting factors for third party effects, priority and enforcement, distilled into a clear hierarchy to facilitate rapid diligence and algorithmic settlement logic.

For intermediated financial instruments, the EU should adopt a PRIMA style rule that the law governing third party effects is the law expressly chosen in the account agreement with the relevant intermediary, provided that the intermediary's office maintaining the account is in that Member State, with robust safe harbours for protected purchasers and CSD/CSDR workflows. In the absence of an effective choice, the law of the place of the relevant intermediary's office maintaining the account should apply.

For DLT native assets and tokenised instruments, the primary connecting factor should be the law of the recognised registry or system in which the asset or security right is recorded, where that registry or system discloses its governing law and meets EU technical standards. The fallback should be the law of the establishment of the custodian or intermediary maintaining the control record. As a residual rule, the law of the debtor's registered seat (or habitual residence for consumers) should apply, unless the parties have filed a notice designating an applicable Member State, in which case that law governs third party effects and priority. Party autonomy should be limited to contractual aspects and must not defeat third party priority rules.

For enforcement, the SIFIDAR should align with the Insolvency Regulation's framework but ring fence collateral enforcement akin to existing sectoral safe harbours, ensuring that validly perfected and prioritised security interests remain immune from local formality traps and suspect period challenges, subject to a uniform set of avoidance rules and a fast track mechanism for effecting cross border registry updates on the basis of enforceable orders.

#### **Part V: Insolvency and Safe Harbours**

The SIFIDAR should articulate uniform avoidance and suspect period rules for security in financial instruments and digital assets, including protections for margining and close out netting. Transfers made to maintain collateralisation under pre existing master agreements should benefit from a safe harbour if the secured party acted in good faith and without intent to prefer, harmonising with EMIR margin and settlement finality protections.

Client asset and client money protections should be harmonised. Assets held in custody under MiFID II and MiCAR must be segregated and excluded from the custodian's insolvency estate, with express recognition that functionally cash equivalent instruments—such as tokenised fiat and stablecoins recognised under MiCAR—are treated as client money for segregation and insolvency purposes. Re use of collateral should be permitted only where there is explicit, granular consent specifying scope, duration and reuse limits, with enhanced disclosures and safeguards for retail clients. To monitor this, periodic reporting of rehypothecation exposures to clients should be mandated.

Prudential alignment should ensure that once security interests meet uniform perfection and segregation criteria, prudential frameworks recognise those positions consistently, reducing undue haircuts and margin additions.

#### **Part VI: DLT Registry Infrastructure and Supervision**

Similar to that described above, an EU-level electronic notice-filing registry should record non-possessory security interests in financial instruments and digital assets. Filing would be optional where control exists but decisive for determining priority among registrants. ESMA could coordinate supervisory and technical standards, including token identifiers (token ISINs), audit-trail protocols and registry interoperability.

#### **Part VII: Interoperability with Existing EU Law**

The new regime should be expressly technology neutral and allow for interlinkages with existing frameworks. Financial instruments retain their classification under MiFID II whether paper based, account based or tokenised. The DLT Pilot Regime continues to govern market infrastructure experimentation, but security interest treatment is harmonised across infrastructures. MiCAR remains the licensing and conduct framework for crypto asset service providers, with SIFIDAR supplying the proprietary law backbone for taking, perfecting, ranking and enforcing security over crypto assets within MiCAR's scope. The FCD's core principles—rapid enforcement, formalities disapplication, and netting protection—should be consolidated and updated within SIFIDAR, avoiding parallel regimes. SFD and CSDR maintain settlement stability; SIFIDAR clarifies third party effects around account entries and collateral credits. Data protection, consumer law and anti money laundering considerations are preserved through targeted cross references.

Supervisory and standards governance should be explicit. ESMA should act as lead coordinator, in cooperation with EBA and national competent authorities, and be mandated to develop regulatory and implementing technical standards specifying: (i) minimum registry data

fields and formats; (ii) timestamp and audit log standards for control evidence; (iii) unique identifier schemas (e.g., token ISIN and security interest IDs); and (iv) interoperability protocols (APIs) between CSDs, DLT market infrastructures, CASPs and the EU notice registry. Conforming amendments to MiCAR, MiFID II/MiFIR, CSDR and the FCD should cross reference SIFIDAR perfection mechanics and recognise DLT records that satisfy ESMA criteria as book entry systems for perfection and priority purposes.

## Comparative Snapshot: Today's Patchwork vs. a Proposed SIFIDAR

### *T+1/T+0 Settlement Imperatives and Holding Chains*

Shrinking settlement cycles and heterogeneous holding models underscore the need for harmonised proprietary rules. Under T+2, intermediaries had two business days to verify beneficial ownership, complete credit and collateral transfers, and resolve documentation discrepancies. T+1 halves that window; T+0 eliminates it. Consequently, any legal ambiguity about ownership, perfection or priority becomes an instant settlement-risk factor.

Without harmonised perfection rules, a security interest might be perfected in one Member State but void or unrecognised in another at the moment of delivery. In a T+0 environment, this translates directly into failed settlement and systemic contagion.

Traditional intermediated chains (issuer → CSD → custodians → investor) rely on account level entries and settlement finality under SFD/CSDR; tokenised financial instruments may be held in hybrid models where a DLT record mirrors or substitutes the CSD record; native digital assets reside directly on chain with control evidenced by keys or smart contract permissions. Legal rights (title, perfected security interests) must attach predictably and uniformly at the operational moment of delivery or control across all three models to avoid settlement failures and collateral immobility.

- **Traditional instruments:** indirect holding, book entry at CSD; perfection typically via account control or account entries; risk arises from cross border conflicts and segregation asymmetries.
- **Tokenised instruments:** hybrid or DLT CSD models; dual record risks unless on chain entries are given statutorily recognised legal effect; control based perfection must be recognised EU wide.
- **Native digital assets:** on chain, T+0 settlement; without an EU "control = perfection" rule and custody segregation, collateralisation remains legally fragile.

In summary, the time for harmonisation is now. An opportunity which is no longer too complex to ignore as:

- **Shorter cycles heighten the need for intraday collateral mobility across borders.** Fragmented perfection standards impede the rapid substitution or reuse of collateral, forcing firms to pre-fund or over-collateralise. Harmonised, registry-based perfection would allow immediate legal recognition of collateral movements, reducing liquidity costs potentially worth billions annually.
- **With reduced settlement windows, firms increasingly pre-position client assets.** In jurisdictions with divergent title transfer collateral arrangements or pledge rules, such pre-positioning can inadvertently extinguish client-asset status, exposing investors in insolvency. A harmonised rule under SIFIDAR ensures that segregation and perfection standards apply uniformly across Member States, even under accelerated settlement.
- **T+1/T+0 settlement relies on algorithmic matching and DvP engines that require a deterministic legal definition of "finality."** Divergent national definitions under the SFD and local property laws create uncertainty that cannot be resolved in real time. Uniform SIFIDAR timestamps would provide a single digital–legal finality trigger, enabling automated settlement and cross-system netting. Ultimately SIFIDAR could enable T+1 and T+0 settlement with ex ante finality.
- **If private-law uncertainty persists, prudential frameworks will magnify its cost.** Banks and CCPs will have to hold larger intraday liquidity buffers under CRR/CRD, and supervisors may impose conservative margin add-ons. ESMA's T+1 impact analysis anticipates a €20–30 billion annual liquidity cost if legal harmonisation lags.

In a T+0 environment, legal latency equals settlement failure. The private-law framework must evolve from static, ex-post recognition of rights to real-time, ex-ante certainty. SIFIDAR achieves this by unifying perfection events with settlement events—registry timestamp = legal perfection = settlement finality. Absent such alignment, the EU risks further operationally fragmented markets and elevated systemic risk. More simply put, such issues may push business outside of the EU – the very opposite of what T+0 and many of the other CMU/SIU reforms are trying to achieve.

## What the MIP's as well as the SFR's proposed changes currently do and do not solve

The proposed SFR would deliver a uniform, transparent framework for settlement finality across the EU, with centralised disclosure of designation decisions, harmonised definitions of entry, irrevocability and final settlement, and a clear mapping for DLT-based systems to achieve deterministic legal finality. In parallel, targeted amendments to the FCD would confirm the inclusion in scope of "cash," "financial instruments" and "credit claims" issued or recorded on DLT, align the "account" concept with technology-neutral records and validate cryptographic instructions and notifications. These are consequential improvements that will reduce operational frictions and legal uncertainty around settlement and collateral use for both traditional and tokenised assets. However, the SFR and FCD changes expressly stop short of establishing EU-wide, uniform concepts of possession or control for the third-party effectiveness and priority of security interests. As a result, national divergences in perfection and ranking will persist, particularly acute for on-chain control, multi-signature custody and registry-versus-control priority contests. The reforms therefore complement—but do not substitute for—the comprehensive proprietary-law harmonisation advanced in this article.

### *ESMA's expanded supervisory role and DLT enablement: implications for secured transactions*

The package would also transfer direct supervision of significant trading venues, selected CCPs and CSDs, and all crypto-asset service providers (CASPs) to ESMA, institute a horizontal enforcement toolbox and migrate venue rules into MiFIR to curb gold-plating. The DLT Pilot Regime would be broadened materially, with caps lifted, time limits removed and a proportionate pathway created for smaller DLT infrastructures; CSDR would be calibrated to enable DLT account-keeping under authorised settlement schemes. These changes will accelerate institutional adoption of tokenised issuance and settlement and re-anchor operational finality in a uniform framework. Yet they will also compress the margin for legal ambiguity as the EU moves to T+1 settlement by 11 October 2027 and as DLT-native assets routinely settle at T+0. In this compressed environment, the absence of a single EU rule for "control as perfection," a uniform priority ladder and a predictable conflicts framework for third-party effects risks translating operational finality into uncertain legal outcomes—precisely the misalignment that SIFIDAR would correct.

Moreover, the MIP's horizontal move to ESMA supervision for significant venues, selected CCPs and CSDs, and all crypto asset service providers, coupled with a broadened DLT Pilot Regime and calibrated CSDR

overlays for DLT account keeping, will normalise institutional adoption of tokenised issuance and settlement. As the supervisory centre of gravity shifts to ESMA and as market structure evolves towards consolidated, interoperable rails, secured transactions law must provide equally uniform, predictable outcomes. A control as perfection rule, aligned with registry based methods where relevant, would ensure that evidentiary indicia of control in DLT environments—multi sig schemes, quorum gated transfers, operator policed dynamic pools—translate into third party effectiveness and priority in the same way across the Union. Absent such a rule, pan EU infrastructures and ESMA level supervision will coexist with national perfection idiosyncrasies, undermining the very scale efficiencies the MIP seeks to unlock.

### *Conflict-of-laws clarification from the SFR—and the remaining proprietary-law conflicts trap*

By establishing a directly applicable regime for finality and clarifying connecting factors—including lex loci registri with explicit DLT coverage and a functional fallback to system law where location is indeterminate—the SFR significantly reduces uncertainty around settlement and collateral enforcement in cross-border settings. Nevertheless, these are sectoral, settlement-centric anchors. The SFR does not unify the law governing third-party effects, priority or enforcement of security interests in intermediated and DLT-native assets beyond the settlement finality perimeter. The result is a narrowed—but not eliminated—conflicts trap, in which a security interest may be operationally settled but remain contestable under divergent national perfection and priority rules. A SIFIDAR style instrument should complete this picture by adopting a consistent connecting factor for proprietary effects that works across holding models and ledgers, avoids party autonomy fragmentation risks and privileges registry and control indicia in a bright line hierarchy. This would align the law governing logic for perfection and priority with the SFR's finality concepts and eliminate the residual forum shopping incentives left by divergent national secured transactions rules.

### *Policy calibration: aligning SIFIDAR to the MIP*

The Commission's MIP offers a ready-made architecture into which SIFIDAR can be integrated with minimal disruption and maximum effect. Concretely, SIFIDAR should (i) recognise SFR-defined finality moments as legal timestamps for perfection and priority purposes where applicable; (ii) embed ESMA-coordinated technical standards for evidencing control (including multi-signature and MPC schemes), registry data fields and audit logs; (iii) interoperate with the SFR's central database architecture through an EU notice-filing layer for non-possessory interests; and (iv) incorporate

MiFIR/CSDR/DLT Pilot taxonomy to maintain technology neutrality while giving on-chain control and EU-recognised registries clear legal effect. In doing so, SIFIDAR would operate as the proprietary-law backbone to the package's market, supervision and finality reforms—ensuring that operational and prudential harmonisation are matched by uniform third-party effects and priority outcomes across Member States and holding models.

A core contribution of SIFIDAR should be a technology neutral definition of control that is fit for both intermediated accounts and DLT native assets. Control should rest on contemporaneous practical exclusivity over the power to transfer or appropriate, evidenced by (i) sole or quorum based signing authority over the relevant key material or smart contract permissions; (ii) an operator enforced rulebook preventing unauthorised disposals; or (iii) a register entry that blocks adverse dispositions. Where control relies on operator policed dynamic pools—common in tri party, omnibus and tokenised custody—SIFIDAR should codify a safe harbour that deems control present if the operator's rulebook, technical controls and attestation processes prevent unauthorised transfers and ensure time stamped, immutable audit trails.<sup>8</sup> A rebuttable presumption against control should apply where monitoring is purely ex post or where no effective blocking or appropriation right exists. This approach mirrors the evidentiary logic of the SFR and provides clear, auditable indicia that map to DLT consensus and account operator controls alike.

### Practical consequences of the MIP and timeline alignment

If adopted broadly as proposed, the MIP's reforms will phase in over the next 12–24 months, with ESMA's horizontal procedures applying after 12 months and direct supervision of significant infrastructures and CASPs shifting at around 24 months. The SFR would enter into force directly, with staged application and a multi-year transition for re-designations and third-country system registrations, while targeted FCD amendments would be transposed within 18 months. Against this calendar, the case for legislating SIFIDAR on a parallel track is compelling. Without it, market participants will operate in an environment where settlement finality and DLT operability are harmonised, but perfection and priority of security interests remain subject to national divergence—particularly problematic as T+1/T+0 compresses legal latency. With SIFIDAR in place, registry timestamps and control evidence would align with finality moments, prudential recognition would be consistent and

cross-border enforceability would be predictable, materially reducing collateral haircuts, legal opinion dependency and systemic liquidity buffers.

Taken together, the package compresses timelines and reduces administrative layering for cross border operations, but it also replaces national familiarity with EU level intensity. Boards and senior management should sponsor an enterprise level programme with three workstreams: legal mapping from national discretions to harmonised rules; operating model redesign to exploit PEMO, passporting upon authorisation and intra group resourcing; and supervisory engagement readiness for ESMA's direct and convergence powers. Early engagement with stakeholders—NCAs, ESMA, depositaries, CCPs/CSDs, distributors—will be critical to anticipate delegated standards, align data platform interfaces, and stage the transition away from legacy notification workflows. In parallel, impact assessments should quantify compliance cost savings against one off transition costs, and investor facing timelines should be communicated to capture the commercial upside of faster market access and broader distribution.

### Comparative context: proprietary recognition of digital assets—UK and EU divergence

The rapid proliferation of tokenised instruments and crypto-native rights raises a threshold private-law question: can a digital object be the subject of property rights? The United Kingdom now answers yes in statutory form -i.e., in the UK's Property (Digital Assets etc) Act 2025, making clear that digital or electronic objects are not excluded from proprietary recognition merely because they do not fit within traditional categories. By contrast, the EU's framework—most notably MiCAR—deliberately avoids taking a position on private-law characterisation, regulating issuance, custody and services without defining the proprietary status of the assets themselves. This divergence creates practical friction for cross-border custody, collateral and insolvency analysis and strengthens the case for an EU functional solution that delivers equivalent certainty without overstepping competence constraints.

#### *The UK's model: minimalist statutory clarity built on judicial foundations*

The UK has coupled case law recognising crypto-tokens as capable of supporting proprietary remedies with a short, technology-neutral statute that removes doctrinal barriers to recognising "data objects" as property. The approach is intentionally minimalist: it does not exhaustively define digital assets, but ensures they are not excluded from

<sup>8</sup> In terms of clarifying "control" for dynamic collateral pools, in line with prevailing practice for intermediated assets—where the debtor may substitute assets within a managed pool provided a minimum-value threshold is maintained and monitored by the system operator (an arrangement economically analogous to an English floating charge)—SIFIDAR's "control" test should be framed functionally. Control would be satisfied where the secured creditor (or its agent) benefits from: (i) an enforceable, system-recognised right to block outflows or appropriate the pool upon covenant breach or enforcement; (ii) continuous operator- or protocol-level monitoring of the threshold with automated alerts and, where feasible, hard limits that prevent depletion below the threshold; and (iii) reliable, time-stamped audit trails evidencing these controls. Debtor-side substitution within limits would not, of itself, negate control provided that the creditor's enforcement and blocking rights do not depend on further debtor consent and cannot be unilaterally overridden once enforcement conditions are met.

ownership and security solely by taxonomy. This legislative clarity supports robust remedies, segregation, and collateralisation, and it aligns naturally with control-based perfection rules in commercial law.

### *EU competence and fragmentation risks*

Substantive property law largely remains a Member State domain. In the absence of EU-level clarification, national civil and commercial codes may continue to diverge on whether and how digital assets attract proprietary status, producing uncertainty on enforceability, third-party effects and insolvency treatment. While the EU can legislate to support the internal market, politically viable paths will often be functional (focusing on effects and evidentiary standards) rather than doctrinal (redefining property categories).

### *Legislative pathways available to the EU*

A spectrum of policy and legislative options exists to emulate the clarity of the UK's Property (Digital Assets etc) Act 2025 changes:

- Direct EU regulation of proprietary status: Legally arguable under internal market powers but politically sensitive and likely contested.
- Directive mandating national recognition: More feasible, but slower and less uniform in outcome.
- Targeted MiCA amendments: Pragmatic for custody/insolvency segregation within MiCA's perimeter, without resolving the status of all digital assets.
- Conflict-of-laws harmonisation: A Rome-Regulations style solution to unify the law governing proprietary effects of transfers; indirect but impactful.
- Functional control-based regime (SIFIDAR-style): Define control, transfer, priority and minimum insolvency protections for digital and intermediated assets, avoiding doctrinal definitions while delivering market certainty.

### **Implementation considerations and transitional pathways for SIFIDAR**

How to introduce this long overdue update and apply lessons learned in other jurisdictions to the benefit of the EU's competitiveness? Experience with the CSDR and MiCAR demonstrates that major infrastructure legislation requires both a "big bang" and a phased approach. SIFIDAR should therefore be implemented in three sequential phases over 36 months, as adjusted to reflect the MIP's proposed changes, its delivery timing and the overall SIU timeline:

#### 1. **Foundational phase (Year 1):**

- Establish the ESMA–EBA joint technical committee to draft regulatory technical standards (RTS) on registry data, identifiers, and control verification.
- Launch pilot EU registry nodes operated by selected CSDs, DLT market infrastructures (DLT MIs), and large CASPs.
- Conduct stakeholder consultations with national property-law authorities to map divergences.

#### 2. **Integration phase (Year 2):**

- Extend registry connectivity to all Member States and cross-border linkages with existing CSDR infrastructure.
- Require new security interests in financial instruments or digital assets to be perfected via a recognised method (registry or control).
- Begin transitional filing of legacy collateral arrangements.

#### 3. **Consolidation phase (Year 3):**

- Full legal effect and exclusivity of SIFIDAR perfection rules.
- Automatic recognition of perfection timestamps across Member States.
- Integration of SIFIDAR perfection identifiers into MiFIR transaction reporting and ECB T2-Services settlement modules.

### *Legacy arrangements and grandfathering*

Legacy collateral arrangements perfected under national law should remain effective for a 24-month transition period. During that time, counterparties may register notices of existing interests to preserve their priority under SIFIDAR.

Title-transfer collateral arrangements entered before SIFIDAR's entry into force continue to benefit from FCD safe-harbours. After the transition, perfection and priority will be determined solely under SIFIDAR. This balanced grandfathering avoids retrospective invalidation while promoting convergence.

### *Supervisory governance*

ESMA should act as lead authority for technical standards and cross-market coordination, while EBA ensures prudential alignment with CRR/CRD VI. The ECB would

integrate SIFIDAR data into its collateral-management systems to harmonise eligibility criteria across Eurosystem credit operations.

Supervisory convergence should be coordinated through ESA level guidelines and Q&As to promote consistent interpretation, especially on "control" evidencing standards for both account based and on chain assets. Moreover, a joint ESMA–EBA–ECB "Collateral Harmonisation College" could publish annual reports on registry usage, cross-border recognition, and market efficiency gains—mirroring the role of the European Supervisory Coordination Network under the Digital Operational Resilience Act (DORA).

Finally, the SIFIDAR should include a review clause for ESMA and other ESAs to assess technological and market evolution, with a mandate to calibrate the control concept as custody, MPC and smart contract techniques evolve.

### *Interaction with national registries*

Member States operating existing collateral or movable-assets registries (e.g. France's RCS, Spain's Registro de Bienes Muebles, or the Dutch pandregister) may maintain them, provided they interoperate with the SIFIDAR registry network via standard APIs. Entries made solely in national registries will, after the transition, have domestic but not EU-wide perfection effect, incentivising migration to the EU system.

Another option would be for Member States to not decommission but instead to federate national chattel and pledge registries into the EU notice filing platform via technical gateways.

### *Judicial and procedural adaptation*

Courts must be equipped to interpret registry and control evidence in digital form. Training for commercial judges, insolvency administrators, and notaries will be essential to develop and refine jurisprudence. Uniform evidentiary presumptions should be inserted into the Brussels I Recast Regulation and Insolvency Regulation by amendment, ensuring consistent treatment of SIFIDAR-perfected interests across jurisdictions.

### *From digital assets to digital identity*

Once registry-based perfection is operational, it can anchor a broader digital legal-infrastructure layer. Integrating the ongoing efforts to establish an EU Digital Identity Wallet (EUDI), which would allow automated authentication of pledgors and secured parties, further reducing settlement latency and fraud risk.

### *Smart-contract enforcement*

Future delegated acts could recognise smart-contract execution as a form of self-help enforcement under SIFIDAR, provided it complies with proportionality and consumer-protection standards. This would make the EU framework genuinely code-native.

### **Addressing likely counterarguments to SIFIDAR reform**

Several objections can be anticipated to a bold proposal such as SIFIDAR. Some will argue that property law belongs to Member States and that harmonisation risks constitutional friction. Some might even go as far as asserting that maintaining fragmentation across Member States supports a healthy diversity of conceptual frameworks. The answer lies in SIFIDAR's functional focus and limited field: financial instruments and digital assets, where internal market objectives and financial stability justify a Regulation.

Others may resist an EU notice registry as duplicative. Yet the registry would be light touch and optional where control is used, serving primarily to unlock cross border transparency and predictable priority.

Public registries equally raise concerns under the GDPR. Under a proposed SIFIDAR registries would store only pseudonymised identifiers and permit access based on legitimate-interest criteria. Audit trails should employ zero-knowledge proofs or hashed references to prevent disclosure of counterparty identity while retaining verifiability.

A further objection will invoke technology neutrality as a reason to avoid DLT specific concepts. In truth, neutrality cannot mean blindness to the operational facts of control and transfer on DLT; codifying control in functional terms is neutrality in practice, ensuring legal effects reflect how assets are actually held and moved.

Finally, some may fear displacing market practice under the FCD. SIFIDAR can and should codify and modernise those practices, not disrupt them, while extending clarity to assets the FCD never anticipated. More importantly, including for SIU aims, while designed for institutional markets, SIFIDAR should permit simplified perfection (e.g. electronic-form notice) for SME lending and retail digital-asset pledges, avoiding excessive compliance burdens and ensuring inclusivity.

Concerns about supervisory burden and technical lock in can be mitigated by allowing multiple interoperable registries subject to common ESMA standards, private sector provision under certification, and a passport for cross border custodians and DLT operators. Limiting party autonomy for third party effects reduces forum shopping while preserving contractual flexibility.

In the simplest terms, such arguments - while they should be heard and debated - detract from the reality of the need for reform. More pressingly, global reform efforts and those in benchmark countries are already well underway. The EU achieved a first mover advantage with

MiCAR and must act to shore up standards lest it loses its competitive advantage—indeed a priority that the European Commission cannot afford to pass up where others are already active—namely:

- In the US, the Uniform Commercial Code (UCC): The 2022 UCC Amendments introduced Article 12 on controllable electronic records (CERs), recognising "control" as the perfection method for digital assets. SIFIDAR's control-based perfection mirrors this logic, though with stronger public-law supervision. Alignment would enable mutual legal-opinion recognition and reduce transatlantic collateral friction.
- Post-Brexit, the UK Law Commission's Digital Assets Final Report (2023) recommends a statutory "thing in action" category and a control-based perfection rule – the UK's Property (Digital Assets etc) Act 2025 achieves this and more. SIFIDAR would deliver a parallel framework, allowing UK–EU recognition agreements under the Financial Markets Law Committee (FMLC) templates.
- SIFIDAR would also align with the UNIDROIT Principles on Digital Assets and Private Law (2023) and could serve as a regional implementation. The Basel Committee's work on crypto-asset exposures (BIS Standard #545 (2023)) also relies on the legal certainty of collateral enforceability—SIFIDAR would meet that condition for EU banks.

### The opportunity cost of permitting inaction and non-reform to continue

Estimating the cost of non-harmonisation requires triangulating from (i) documented capital-market fragmentation losses, (ii) financing shortfalls relative to EU policy targets, and (iii) legal-operational frictions specific to collateral and custody. The figures below draw from Commission, ECB and ESMA studies and represent conservative ranges.

The European Commission estimates the EU requires approximately €620 billion annually to finance the green and digital transitions.<sup>9</sup> If harmonised proprietary-law rules enabling cross-border collateral mobilisation could unlock even 5–10 per cent of additional private capital, the incremental mobilisation would range from €30–62 billion per year.

Market-based financing in the EU lags the United States by several percentage points of GDP. Academic and industry analyses place the EU's annual capital-market financing gap at €300–600 billion.<sup>10</sup> Even modest improvements in collateral mobility and legal certainty—capturing 5–15 per cent of that gap—could yield €15–90 billion in additional funding annually.

Moreover, the current drastic difference in domestic versus cross-border loan activities by euro area shows how little euro area banks engage in euro area-wide activities. Fragmentation adds basis-point costs to financing. ESMA's analysis of market fragmentation suggests spreads and margin add-ons increase corporate funding costs by 10–50 bps in less-integrated segments.<sup>11</sup> Across roughly €10 trillion of outstanding corporate debt, that equates to €10–50 billion per year in excess costs—costs that harmonised perfection and priority rules could materially reduce.

Harmonised proprietary rules would facilitate cross-border collateral re-use and repo-market integration, deepening the euro-denominated capital market. Studies by AFME and ICMA estimate potential repo-market growth of €1–1.5 trillion once legal-opinion barriers are removed.<sup>12</sup> This supports the Commission's original CMU and now rebranded SIU objectives and enhances the international role of the euro.

Under CRR/CRD IV liquidity coverage rules, unrecognised or unperfected collateral cannot count toward high-quality liquid assets (HQLA). Fragmentation in perfection standards forces banks to hold larger liquidity buffers. ECB working papers estimate that harmonised collateral frameworks could reduce required buffers by 2–3 per cent of balance-sheet assets—releasing hundreds of billions in usable liquidity.<sup>13</sup>

Legal uncertainty over digital-asset custody has driven European tokenisation platforms to domicile in the UK, US, Switzerland or the UAE (which has its own tokenisation framework for real world assets – see standalone article from these authors on this point). Consultancy data suggest that over 60 per cent of EU-origin tokenisation projects are legally structured outside the EU. Lost platform revenues and employment represent an unquantified but significant opportunity cost.

Combining the ranges above suggests conservative annual efficiency and financing gains of €30–150 billion, with a five-year cumulative benefit of €150–750 billion. Even under pessimistic assumptions, the benefit–cost ratio of a SIFIDAR-style Regulation—whose drafting and implementation costs would be measured in tens of millions—remains extraordinarily high.

In terms of non-quantified yet material risks flowing from inaction and ultimately non-reform – these include:

- *Collateral inefficiency*: higher haircuts and capital charges for cross-border exposures.

<sup>9</sup> European Commission, *Strategy for Financing the Transition to a Sustainable Economy* (2021) COM(2021) 390.

<sup>10</sup> See J. Pisani-Ferry and M. Buti, *The New EU Economic Governance Framework* (Bruegel 2023); BNP Paribas CIB, *Capital Markets Union Progress Report* (2022).

<sup>11</sup> ESMA, *Report on Trends, Risks and Vulnerabilities* (2023) pp 33–37.

<sup>12</sup> ICMA, *European Repo Market Survey* (December 2024).

<sup>13</sup> ECB Occasional, *Collateral Mobility and Capital Markets Union* (2023), p.307.

- *Systemic fragility*: legal uncertainty about perfection or priority during market stress impedes CCP settlement.
- *Risk mitigation*: Uniform perfection rules reduce contagion risk during market stress by ensuring collateral enforceability across borders. In 2008 and again in 2020, uncertainty over national perfection rules delayed collateral liquidation and forced central-bank interventions. A SIFIDAR-based system would allow automated enforcement without jurisdictional disputes, improving resilience.
- *(Disproportionate) Legal-opinion dependency within the EU's Single Market*: regulated financial services firms and non-financial corporates incur recurring multi-jurisdictional legal-opinion costs, effectively a "fragmentation tax."—we appreciate that this may be an unpopular statement to our learned friends and wider colleagues and counsel, yet such legal opinions, including industry opinions, are constantly in a state of adaptation. SIFIDAR would merely provide greater certainty on which opinions could be issued.

## Outlook ahead

The EU's sophisticated regulatory framework for financial services, while comprehensive in scope, is critically undermined by a persistent lacuna in substantive private

law: the absence of a harmonised regime for security interests. This legal fragmentation across Member States acts as a direct impediment to the seamless functioning of the EU's Single Market, stifles digital innovation in finance, and creates unnecessary friction and risk that run counter to the EU's Single Market and CMU/SIU objectives as well as changes contemplate as part of the MIP.

The proposed SIFIDAR is not an incremental improvement but the essential structural reform required to bridge this gap. By delivering a uniform proprietary law backbone for both traditional and digital assets, borrowing from lessons learned from global peers such as but not limited to the UK where sensible to achieve EU-beneficial aims, SIFIDAR could provide the certainty needed to support institutional investment and cross-border collateral mobility. The urgency is acutely magnified by the market's inexorable shift towards T+1 and T+0 settlement, where legal ambiguity is not a theoretical risk but a direct driver of settlement failure and systemic instability.

By delivering ex-ante legal certainty on perfection and priority, SIFIDAR should be seen as a prerequisite for navigating this transition securely. A principled, technology aware framework—underpinned by ESMA led technical standards, interoperable registries and clear choice of law hierarchies—would allow European markets to scale with confidence, reduce prudential and operational costs materially, and unlock significant additional financing capacity across the Union. Moreover, as with changes advanced in the MIP and the broader SIU aiming to secure the EU's competitive advantage and realise its policy ambitions, the time for this foundational reform is now.