

## **Whitepaper v1.0**

### **The Tokenised Micro Flat Tax (TMFT)**

**with Proof of Compliance (PoCo) and Proof of Transaction (PoTr)**

**as Foundational Mechanisms of Governance, Transparency and Tax Certainty and  
Security**

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**References: [LinkedIn](#) / [ResearchGate](#)**

## Foreword: Bridging Code, Capital, and Conscience

In an age defined not by scarcity of solutions but by misalignment of intent, we find ourselves standing at the fault lines of progress. We are accelerating economically, technologically, ecologically yet often in conflicting directions.

We do not lack innovation. **We lack alignment.**

Between the engineers of tomorrow's systems and the policymakers tasked with governing them. Between the momentum of digital capital and the fragility of social contracts. Between code that scales with elegance and institutions that fragment under strain.

This whitepaper does not offer a manifesto. It offers a **protocol**.

The **Tokenised Micro Flat Tax (TMFT)** is an attempt to reconcile tensions that have long appeared irreconcilable: between decentralisation and sovereignty, privacy and transparency, voluntary participation and public revenue. It is not maximalist.

It is not idealist. It is, deliberately, **a pragmatic bridge**, architected to serve both liberty and law.

To those who believe in freedom from coercion: TMFT is **consensual by design**. It requires no invasive surveillance, no disproportionate disclosure. It binds no one through force but through clarity. Sovereignty remains digital and personal.

To those who advocate for funding science, climate action, and social equity: TMFT enables **revenue without friction**, without distortion, and without regressivity. It flows with the same efficiency as the assets it seeks to tax. If deployed intelligently, it becomes a modest, yet resilient stream of public financing, levied not in spite of innovation, but through it.

To defenders of legal order and national sovereignty: TMFT is not a subversion of the tax state. It is a **layer**, not a revolution. Programmable and jurisdiction-aware, it permits nations to reclaim oversight, not by replacing the old, but by augmenting it. Interoperability, reversibility, and accountability are embedded, not appended.

To regulators: This is not a libertarian trap. Nor a technocratic overreach. It is a method to **make the invisible visible**, to illuminate, not obfuscate, flows of value that already exist but remain untaxed and/or misunderstood. It offers a voluntary interface to participate in a global system that emerged without your invitation but not without your consequence.

To those who feel unequipped by technical complexity: You do not need to master blockchain to understand **fairness**. TMFT's architecture is not just legible to machines, it is also designed to be humane in its expectations. No gated knowledge. No privileged access. Just a simple premise: a **micro tax** on the movement of value, at the point of transaction, with full transparency and minimal cognitive burden.

This proposal is neither comprehensive nor final. It will evolve. But it is anchored in the belief that **fiscal imagination is a civic act**. That legal design can – and must – anticipate not just how we code, but how we coexist.

*"You may never know what results come of your actions. But if you do nothing, there will be no result."*

Attributed to Mahatma Gandhi

Let this whitepaper stand not as an answer, but as a sincere effort to ask **better questions** with a **legal mind**, a **fiscal hand**, and a **civic heart**.

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## Executive Summary

Digital asset activity presents growing enforcement challenges for tax authorities. Traditional declarative systems fail to capture transaction-level events that happen across borders, pseudonymously, and sometimes at high frequency.

**The Tokenised Micro Flat Tax (TMFT)**<sup>1</sup> proposes a fundamental redesign of taxation for digital economies, grounded in technological neutrality, fiscal sovereignty, and programmable legal compliance. In contrast to traditional tax regimes, built around taxpayer declarations, administrative filings, and retroactive enforcement, the TMFT introduces a transaction-based, smart contract-executed micro-tax applicable to digital asset flows and blockchain-based economic activity.

At its core, TMFT is a consent-based fiscal mechanism that levies a micro-tax (e.g., 0.2%) at the moment of transaction. It operates autonomously via integrated smart contracts, embedding the tax directly into digital financial infrastructure. This structure is designed to replace, rather than layer over, complex indirect and direct tax instruments (such as PIT, CIT, VAT, and WHT), particularly in contexts where tax evasion, opacity, and administrative overhead undermine fiscal legitimacy. As detailed in the national implementation blueprint for France (Appendix 6), TMFT is legally structured to comply with constitutional tax principles, procedural safeguards, and digital invoicing mandates.

Technically, TMFT is secured through two cryptographic layers:

- **Proof of Transaction (PoTr)** recording economic data, asset value, network ID, timestamp, and jurisdictional markers; and
- **Proof of Compliance (PoCo)** embedding taxpayer consent, fiscal identity, and applicable ruleset parameters at the point of execution.

These proofs ensure real-time, tamper-resistant tax collection, radically reduce the need for post hoc filings, and create a verifiable audit trail native to the digital asset layer. For tax authorities, TMFT delivers a cost-effective, fraud-resistant mechanism of compliance-by-design (Appendix 3). For taxpayers, it eliminates uncertainty and reduces friction, aligning the cost of compliance with the velocity and automation of the underlying economy.

TMFT's architecture is also designed to accommodate sovereign and supranational implementation pathways. It is fully compatible with EU-level coordination mechanisms (e.g., under ViDA or DAC8), and offers optional standardisation through the OECD's Forum on Tax Administration or the UN Committee of Experts on International Cooperation in Tax Matters (Appendices 10 and 11). These supranational channels enable technical interoperability and policy harmonisation without eroding national tax autonomy. A draft legal framework for TMFT implementation under French law is presented in Appendix 7.

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<sup>1</sup> So-called « Rajan Tax ».

Beyond its legal and technical innovations, TMFT represents a normative shift in fiscal governance:

- From retroactive enforcement to real-time collection;
- From declarative systems to cryptographic verification;
- From centralised administration to decentralised protocol execution.

Importantly, TMFT aligns with the economic architecture of decentralised systems (permissionless, pseudonymous, and cross-border) without compromising on auditability, revenue collection, or constitutional oversight. It establishes a new class of fiscal identity that is opt-in, metadata-driven, and legally enforceable under smart contract execution logic (Appendix 4).

Whether implemented unilaterally by a national treasury, regionally within a fiscal union, or globally through standard-setting bodies, TMFT offers a sovereign-compatible foundation for tax certainty in the digital age. It repositions taxation as an embedded feature of digital infrastructure—secure, transparent, and programmatically fair.

TMFT's international deployment architecture recognises the complementary yet distinct roles of global institutions. The **OECD**, as a non-fiscal body, may serve as a *normative standard-setter*, issuing technical implementation guides, smart contract templates, and peer review protocols (see Appendix 10). In contrast, the **United Nations** offers a treaty-based platform to institutionalise TMFT through a global fiscal convention that embeds programmable redistribution and SDG-aligned exemptions (see Appendix 11). This bifurcated pathway allows jurisdictions to select between *soft law harmonisation* and *binding multilateralism*, without compromising national sovereignty.

## Glossary of Key Concepts

This glossary is intended to ensure terminological consistency and support legal, fiscal, and technical clarity across national and supranational TMFT deployments.

**Tokenised Micro Flat Tax (TMFT):** A blockchain-native, programmable tax mechanism that applies a flat-rate micro-levy (e.g., 0.2%) automatically at the moment of digital asset transaction. TMFT replaces traditional declarative tax systems with a real-time, embedded fiscal protocol anchored in user consent and transaction metadata.

**Proof of Transaction (PoTr):** A cryptographic record attached to each taxed transaction under the TMFT regime. It captures economic and jurisdictional metadata such as transaction value, timestamp, asset type, network identity, and wallet location. PoTr enables auditability, traceability, and enforcement across borders.

**Proof of Compliance (PoCo):** A second-layer cryptographic proof confirming the taxpayer's consent, legal status, fiscal residence, and compliance with applicable rules. PoCo is initiated at the point of opt-in and ensures legal enforceability and protocol governance.

**Micro-levy:** A very low-rate tax (typically between 0.1% and 0.5%) applied to the full value of a transaction. Under TMFT, the micro-levy is designed to be non-disruptive to liquidity and cumulative over high-volume activity.

**Smart Contract:** Self-executing code deployed on a blockchain that automates the tax collection process under TMFT. It embeds both PoTr and PoCo logic and acts as the enforcement engine of the regime.

**Consent-based Taxation:** A legal principle whereby the taxpayer's agreement to the TMFT regime is recorded cryptographically (via PoCo). This ensures the tax remains constitutionally valid, particularly in jurisdictions requiring formal consent or notice.

**Jurisdictional Anchor:** The metadata element within PoCo that defines the applicable tax jurisdiction for the transaction, based on wallet location, user IP, node geography, or legal status. It resolves source/residence conflicts in a decentralised environment.

**Digital Fiscal Identity:** A pseudonymous, metadata-linked identity that functions as the taxpayer identifier within TMFT systems. It allows for legal enforcement without requiring direct KYC disclosure, preserving user privacy while ensuring compliance.

**Sovereign-compatible Compliance:** The principle that TMFT can be adopted unilaterally by any national tax authority without requiring treaty-based harmonisation. It embeds sovereign tax logic into the code layer while remaining interoperable across borders.

**Supranational Alignment:** The ability of TMFT to be harmonised or standardised at regional or global levels (e.g., via OECD, EU, or UN mechanisms) without infringing national fiscal sovereignty. Appendix 10 (OECD) and Appendix 11 (UN) detail these pathways.

**Programmable Redistribution:** A feature of TMFT-enabled smart contracts allowing tax revenue to be automatically redirected, shared, or allocated based on predefined policy parameters. This includes cross-border fiscal equity models (e.g., redistributing tax from high-income to low-income jurisdictions).

**Real-time Enforcement:** The shift from declarative, retroactive taxation to automated, transaction-time tax collection. TMFT's smart contracts execute at the moment of value transfer, reducing fraud and improving fiscal certainty.

**Metadata-Driven Taxation:** A tax enforcement model that relies on embedded transaction data—rather than user-reported declarations—to determine taxability. This includes value, location, token type, time, and network information.

**Flat Tax Architecture:** A simplified, rate-uniform taxation model where a single rate is applied across all eligible transactions, avoiding the need for complex brackets or exemptions. TMFT implements this via a micro-flat tax logic.

**Digital Public Goods:** Infrastructure and software that are open-source, accessible, and beneficial to global users. TMFT contributes to digital public goods by proposing a non-proprietary tax infrastructure usable by any jurisdiction or protocol.



## 1. Context and Current Challenges for National Tax Administrations

The shift toward decentralised finance, tokenised assets, and cross-border digital value flows exposes critical structural and operational limitations in existing tax regimes. While tax remains a sovereign function, the tools available to fiscal authorities are increasingly inadequate in scope, speed, and enforceability.

### 1.1. Digital Asset Taxation Gaps

The taxation of digital assets presents fundamental and unresolved challenges for national administrations across legal, technical, and operational domains. As blockchain-based financial ecosystems become more decentralised, composable, and pseudonymous, traditional tax tools fail to capture the complexity, scope, and jurisdictional ambiguity of digital economic activity.

The principal gaps include the following:

#### 1.1.1. Identification and Visibility Gaps

**Invisibility of Taxable Events:** Many transactions that generate economic value—staking rewards, token swaps, NFT sales, DeFi lending interest, governance token distributions—do not produce formal receipts or third-party reports and are not visible to tax authorities unless voluntarily disclosed.

**Composability and Aggregation Risk:** Smart contracts automatically trigger secondary or composite transactions (e.g., flash loans, yield strategies), generating taxable consequences that neither taxpayers nor authorities can easily trace or apportion.

**Cross-Chain Transactions:** Transfers using bridges (e.g., Arbitrum to Polygon) or inter-protocol swaps evade conventional tracking and produce no jurisdictional anchor, leading to non-declared or misclassified events.

**Lack of Standardised Classification:** No global taxonomy defines when digital actions constitute income, capital gain, consumption, or corporate activity, leading to uncertainty in tax treatment and heterogeneous reporting by taxpayers.

#### 1.1.2. Enforcement and Withholding Gaps

**Absence of Withholding Agents:** Unlike traditional finance (TradFi), where banks and employers act as tax remitters, DeFi, P2P platforms, and DAOs lack accountable intermediaries to withhold taxes or issue compliance records.

**Disintermediated Payment Flows:** Many digital asset transfers occur directly between pseudonymous parties (e.g., wallet-to-wallet payments), bypassing financial institutions, exchanges, and licensed service providers.

**Non-Executable Filing Obligations:** Even where tax obligations are known, taxpayers cannot always comply: wallets and dApps do not generate downloadable tax statements; multiple addresses are used to fragment identity; and key management or account loss may impede access to records.

#### 1.1.3. Jurisdictional and Legal Gaps

**Pseudonymity of Users:** Wallet addresses are not directly tied to national identity systems, meaning that tax residency is often impossible to establish without external metadata or legal compulsion over platforms.

**Undefined Source of Income:** For digital services or royalties paid in tokens, determining the source country or location of value creation is legally ambiguous, impeding allocation of taxing rights under domestic law and double tax treaties.

**Overlapping or Conflicting Residency Rules:** In a globally connected ecosystem, digital nomads, DAOs, and cross-border contributors often fall within multiple potential jurisdictions, yet are taxed in none—a vacuum the TMFT seeks to resolve via metadata-based fiscal anchoring.

**Treaty Incompatibility:** Most bilateral tax treaties were drafted for physical presence and passive income categories, lacking provisions for real-time, transactional taxation based on smart contract execution.

#### 1.1.4. Reporting and Information Exchange Gaps

**Unstructured or Missing Data:** National tax administrations often receive crypto-asset data that is incomplete, unstructured, or lacks contextual tags, making automated classification impossible.

**No Integration with Exchange of Information Protocols:** Unlike banks subject to CRS or FATCA, most crypto platforms operate outside multilateral tax transparency frameworks, and CARF implementation remains incomplete or unenforceable.

**Inability to Detect Non-Compliant Entities:** Platforms and wallet providers operating under foreign or anonymous ownership structures evade national licensing requirements and are beyond audit or enforcement reach.

#### 1.1.5. Operational and Audit Gaps

**Resource Deficits in Audit Capability:** Tax administrations lack trained staff, forensic tools, and secure infrastructure to audit on-chain activity, leading to enforcement asymmetry between taxpayers and the state.

**Delayed Discovery of Non-Compliance:** Digital transactions often come to light years after execution, and tax authorities may be statute-barred from enforcing claims, creating moral hazard for voluntary non-reporting.

**High Volume, Low Value Transactions:** Micro-transactions common in gaming, streaming, or Web3 platforms generate taxable flows too small to audit manually, yet collectively represent significant leakage when unreported.

**Wallet Fragmentation and Intentional Obfuscation:** Taxpayers frequently spread activity across multiple addresses, exchanges, and Layer 2 networks to avoid detection, with no legal obligation to aggregate reporting.

#### 1.1.6. Systemic and Policy Gaps

**Compliance Fatigue and Legal Ambiguity:** Taxpayers often face unclear or conflicting obligations across personal, corporate, and capital gains categories—discouraging good faith compliance and incentivising minimal disclosure.

**Inflexibility of Legacy Tax Forms:** Existing filing systems do not accommodate token classifications, gas fees, airdrops, or dynamic staking protocols, leading to poor data integrity even when declarations are made.

**Insufficient Guidance and Jurisprudence:** Many tax administrations have not published binding guidance on the treatment of NFTs, DAOs, wrapped tokens, or synthetic assets, and case law remains scarce or contradictory.

This multidimensional failure to observe, categorise, and enforce tax obligations in digital asset ecosystems necessitates a structural solution—one that enables **real-time, low-friction, programmable tax enforcement** at the point of transaction. TMFT responds to these gaps through cryptographic compliance, jurisdictionally-tagged transaction metadata, and consent-based integration with sovereign tax frameworks.

### 1.2. Structural Weaknesses of Legacy Tax Systems

National tax systems were designed in an industrial-era context—anchored in wage-based income, centralised recordkeeping, and identifiable counterparties. These systems now face fundamental structural incompatibilities with a digital asset economy characterised by decentralised execution, real-time liquidity, pseudonymous actors, and cross-border programmability.

The core structural weaknesses are as follows:

#### 1.2.1. Manual Reporting Dependency

Contemporary tax compliance frameworks continue to rely on retrospective self-declarations, third-party statements, and ex-post audits. This legacy architecture is fundamentally inadequate in the context of high-velocity, non-custodial digital ecosystems. Specific vulnerabilities include:

**Fraud Risk:** Wallets, exchanges, and Layer 2 transactions may be deliberately excluded from self-declared income or capital gain reports. The lack of automatic reporting channels means underreporting is difficult to detect.

**Compliance Arbitrage:** Taxpayers strategically exploit mismatches in reporting standards, thresholds, and enforcement capacity by routing assets through favourable jurisdictions or transacting through offshore platforms.

**Human Error and Technical Omission:** Even well-intentioned taxpayers face difficulties in assembling transaction histories, especially across multiple chains, wallets, and protocols—resulting in accidental misreporting or incomplete filings.

**Lack of Machine-Readable Integration:** Existing tax filing systems are not designed to import data from blockchain explorers, DeFi dashboards, or wallet analytics tools, creating high friction and low data integrity.

### 1.2.2. Jurisdictional Fragmentation

The global tax landscape remains deeply fragmented, with each state adopting divergent legal definitions, tax bases, thresholds, and classifications for digital assets. This structural incoherence results in:

**Inconsistent Tax Treatment:** The same token may be treated as a commodity, a financial instrument, or a taxable voucher across different jurisdictions, creating uncertainty for taxpayers and barriers to cross-border compliance.

**Uncoordinated Policy Development:** While some countries pursue innovation through tax exemptions (e.g., Portugal), others apply harsh presumptions of income or gains. The absence of a unified framework hinders platform design, investor mobility, and regulatory harmonisation.

**Legal Conflict and Double Taxation Risk:** Overlapping residency rules and source-based taxation claims result in multiple jurisdictions asserting taxing rights over the same economic event, often without clear treaty resolution mechanisms.

**Regulatory Arbitrage and Base Erosion:** Digital firms, DAOs, and mobile workers strategically locate in low-tax or non-reporting jurisdictions, leading to fiscal base erosion and domestic tax revenue loss.

### 1.2.3. High Administrative Overhead and Enforcement Inflexibility

Legacy tax systems require costly, personnel-heavy infrastructure to enforce compliance, resolve disputes, and detect evasion. These methods are increasingly unfit for the scale, speed, and opacity of blockchain ecosystems:

**Cost-Intensive Expertise:** Blockchain forensics, smart contract analysis, and pseudonymous transaction tracing require highly specialised auditors and software systems—resources unavailable in many jurisdictions.

**Time-Intensive Investigations:** Investigations into crypto tax evasion may span years and involve multiple agencies, resulting in low audit yield relative to cost.

**Obsolescence Risk:** Enforcement frameworks rapidly become outdated due to the emergence of Layer 2 rollups, zero-knowledge proofs, privacy protocols, and non-custodial platforms.

**Reactive, Not Preventive Architecture:** Enforcement is typically initiated only after declarations are filed—or not filed—placing the burden on audit teams to detect misreporting long after the taxable event has occurred.

#### **1.2.4. Delayed Fiscal Capture and Poor Liquidity Management**

Tax collection under legacy systems is inherently delayed, contributing to liquidity challenges and increased fiscal risk:

**Deferred Revenue Recognition:** Most tax obligations are declared and remitted on a quarterly or annual basis, decoupling fiscal capture from the moment of value creation.

**Volatile Revenue Flows:** Governments suffer from irregular cash flow cycles, particularly when taxpayers delay payments, request deferrals, or challenge assessments.

**Evasion During High-Value Windows:** Taxpayers may realise substantial crypto gains or income during bull markets and relocate or liquidate assets before fiscal capture occurs.

**Incompatibility with Real-Time Treasury Needs:** In an era of programmable finance, government treasuries lack tools to capture, route, or forecast real-time inflows from taxable activity—limiting their ability to engage in agile public finance management.

These structural weaknesses point to the need for a programmable, protocol-level fiscal instrument that ensures tax capture at the source, reduces manual compliance burdens, harmonises digital tax treatment, and ensures fiscal visibility in pseudonymous environments. The Tokenised Micro Flat Tax (TMFT) addresses these gaps by embedding legal, compliance, and enforcement functions directly into transaction flows.

### **1.3. Policy Need**

In light of the structural and functional breakdowns outlined above, national tax authorities face a critical policy imperative: to design and deploy a digital-native fiscal protocol that is **enforceable, modular, and future-proof**, yet remains **grounded in sovereign legal authority**. The system must address compliance

failures without overburdening taxpayers, enable international coordination without ceding jurisdictional autonomy, and ensure that taxation evolves in step with the tokenisation of economic activity.

To meet this need, the following criteria must be fulfilled:

#### **1.3.1. Enables Seamless Integration with Existing Tax Codes**

A viable fiscal solution must not attempt to displace or abolish existing statutory tax regimes. Instead, it must:

- Operate as a **modular compliance layer** that coexists with or substitutes for selected tax instruments;
- Be capable of integration with existing Personal Income Tax (PIT), Corporate Income Tax (CIT), Capital Gains Tax (CGT), Value-Added Tax (VAT), and Withholding Tax (WHT) structures;
- Allow for **optional opt-in elections**, legal designation via statute, or application through regulatory sandbox regimes without requiring constitutional tax reform.

This overlay model ensures that the Tokenised Micro Flat Tax (TMFT) can be embedded gradually, tested sectorally, and refined administratively without disrupting foundational tax law.

#### **1.3.2. Supports Global and Supranational Alignment Without Ceding Sovereignty**

While international coordination is increasingly required to manage tax base erosion and digital asset mobility, states must retain the **exclusive legal authority to define, collect, and allocate** their own tax revenues. A compliant protocol must therefore be:

**Legally Sovereign:** Defined and enacted through national legislation, enforceable under domestic legal procedures, and anchored in jurisdiction-specific compliance rules;

**Technically Interoperable:** Built on shared compliance standards such as Proof of Transaction (PoTr) and Proof of Compliance (PoCo), which facilitate integration into the OECD Crypto-Asset Reporting Framework (CARF), EU's ViDA proposals, and G20 digital tax initiatives;

**Politically Compatible:** Designed to complement, not contradict, global regulatory frameworks including:

- OECD Pillar 1 and Pillar 2;
- MiCA (Markets in Crypto-Assets Regulation);
- UN Model Tax Convention and Digital Tax Treaty Models;
- CRS 2.0, FATF Travel Rule, and CARF-compliant metadata exchange.

This enables **network-wide regulatory harmonisation** while preserving the principle of fiscal self-determination at the national level.

### 1.3.3. Enforces Tax at Source, Automatically and Irrefutably

The TMFT paradigm replaces the **ex-post enforcement model** with protocol-based, real-time compliance logic that executes autonomously at the point of economic transfer. This requires:

- **Deterministic smart contract execution** that applies tax rates directly to token flows;
- **Metadata tagging and classification oracles** that identify the taxable nature of each transaction (e.g., income, sale, exempt);
- **Instantaneous treasury routing**, ensuring that revenue is received by government-controlled wallets in real time, eliminating payment delays and reducing reliance on debt issuance for short-term fiscal liquidity.

This model offers **certainty, finality, and enforceability** that traditional audit and penalty systems cannot match, especially in a pseudonymous environment.

### 1.3.4. Minimises Compliance Friction for Taxpayers and Administrators

Tax compliance must be reconceived not as a retrospective burden, but as a **frictionless byproduct of economic activity**. TMFT satisfies this criterion through:

- **Programmable consent mechanisms** that establish a digital legal basis for taxation and reduce reliance on paperwork, filings, and declarations;
- **Built-in exemption logic** that automatically excludes low-volume or non-taxable flows (e.g., transfers between personal wallets, microtransactions, or pre-defined social goods);
- **Elimination of subjective reporting obligations** by embedding fiscal classification in token standards and transaction metadata;
- **Real-time audit trails** available via blockchain explorers, public PoTr repositories, and verifiable smart contract logs—enabling oversight with minimal administrative intervention.

This model simplifies compliance and promotes equity by reducing the advantage of high-cost legal arbitrage and tax structuring only available to large taxpayers.

### 1.3.5. Is Scalable, Cost-Effective, and Jurisdictionally Neutral

The ideal tax solution must work across jurisdictions of varying regulatory maturity, technical infrastructure, and economic scale. TMFT is designed to be:

**Horizontally Scalable:** Capable of deployment on Layer 1, Layer 2, or sidechain infrastructure across multiple blockchains;

**Cost-Minimising:** Operable with negligible gas or processing fees, reducing burden on both taxpayers and state infrastructure;

**Compatible with Pseudonymity and Multisig Structures:** Enforceable even where user identity is obfuscated, provided that wallet activity and metadata are properly classified and jurisdictionally tagged;

**Jurisdictionally Neutral:** Not contingent on physical location, but instead on metadata, residency flags, and registered wallet declarations—allowing enforcement across traditional and digitally-native boundaries.

In sum, the policy response to the challenges outlined above must be **programmable, enforceable, and jurisdictionally anchored**, yet sufficiently modular to respect national legislative autonomy. The TMFT framework is designed to fulfil this policy mandate by embedding compliance into the protocol layer itself, creating a new category of sovereign-ready, metadata-based taxation.



## **2. Core Concept**

### **2.1. The TMFT is an Integrated Fiscal Infrastructure for the Digital Economy**

The Tokenised Micro Flat Tax (TMFT) is a next-generation taxation protocol that replaces fragmented and retrospective legacy tax regimes with a single, micro-percentage, transaction-triggered levy. It applies across both personal and corporate tax domains, capturing economic activity at its source, be it income, consumption, capital gains, or cross-border payments.

By embedding programmable tax logic into blockchain infrastructure, TMFT delivers:

- Real-time compliance;
- Legal configurability;
- Sovereign revenue routing; and
- Certainty in taxation within a pseudonymous, borderless digital economy.

### **2.2. Principles and Features**

#### **2.2.1. Foundational Principle**

The TMFT is a micro-percentage tax (e.g., 0.2%) applied at the moment of a taxable digital transaction. Its central innovation lies in decoupling tax assessment from taxpayer identity and jurisdictional presence:

- It levies tax on value flows (wealth creation), not on taxpayers;
- It is resilient to pseudonymity, jurisdictional ambiguity, and decentralised financial systems.

This makes TMFT especially suited to an economy where:

- Users operate under digital identities not linkable to their real identities and/or wallet addresses;
- Transactions bypass traditional financial intermediaries;
- Geographic presence is obfuscated by VPNs, Tor networks, or zero-knowledge layers.

#### **2.2.2. Administrative Features for National Tax Authorities**

Automation is achieved through smart contracts. Indeed, the tax logic is embedded directly into decentralised applications, wallets, and protocols, ensuring automatic, fraud-resistant and tamper-proof enforcement.

At the same time, revenue flows in real time into designated government wallets, ensuring transparency, control, and traceability for National Treasury Routing purposes. In the meantime, on the tax administration side, control becomes cost-efficient as it requires less human-intensive monitoring and control.

2.2.3. Configurable Legal Parameters

Jurisdictions may define the applicable rate (e.g., 0.2%), thresholds for reporting or exemption, residency criteria, compliance metadata (PoTr/PoCo). However, where TMFT is deployed in a cross-border context or within a supranational framework (e.g., under DAC8, OECD CARF, or UN model coordination), jurisdictions may be required to align their TMFT rates within mutually recognised thresholds. Such alignment ensures that programmable interoperability, treaty compliance, and mutual recognition of PoTr/PoCo metadata are preserved.

2.2.4. Taxable Events Covered by TMFT

The TMFT captures a comprehensive range of digital transactions, including:

- Crypto-to-Fiat Conversions: Via centralised exchanges or OTC desks;
- Crypto-to-Crypto Swaps: On-chain token trades and liquidity interactions;
- On-Chain Payments: For goods or services, whether B2B or B2C;
- High-Volume Transfers: Treated as dividends, remittances, royalties, or intra-group flows;
- NFT Minting and Sales: Including primary NFT issuance (minting), secondary transfers, and programmable royalty distributions via marketplaces or P2P channels;
- Digital Asset Disposals, including tokenized RWAs (subject to their taxonomy): Including realised capital gains in tokenised portfolios.

Each transaction is tagged via Proof of Transaction (PoTr) and verified for jurisdictional compliance through Proof of Compliance (PoCo).

2.3. TMFT as Unified Personal Taxation: Replacing PIT, VAT, WHT, and CGT

2.3.1. Consolidating Multiple Tax Categories<sup>2</sup>

Tax Category	Traditional Regime	TMFT Equivalent
Personal Income Tax	Annual declaration and withholding	Real-time TMFT on income-related flows
Capital Gains Tax	Realised gains from asset disposals	TMFT on token swaps, conversions, and exits
Value-Added Tax (VAT)	Output minus input with credit mechanisms	TMFT on on-chain consumer payments
Withholding Tax (WHT)	Deducted at source, especially cross-border	TMFT on outbound payments to foreign wallet addresses

TMFT is agnostic to the nature of the recipient or payer as it applies a uniform, low-rate levy based on transactional metadata, enabling a holistic and efficient tax system.

<sup>2</sup> “Flat” refers to the uniform application of a base micro-rate to eligible transactions. However, programmable exemption logic and conditional thresholds may apply under national tax law or individual PoCo consent configurations (see Section 4 and Appendix 2).

2.3.2. Individual Opt-In Framework: Avoiding Double Taxation

To ensure no duplication of liability, individuals may elect between two frameworks:

Option 1: Legacy Regime (PIT + CGT + VAT + WHT)

Individuals continue to pay: Income tax on earnings; Capital gains tax upon disposal of assets (crypto to fiat); VAT on consumption; WHT on outbound payments where applicable.

Option 2: TMFT Regime (Unified Personal Taxation, UPT)

Subject to jurisdictional discretion, TMFT may either fully substitute for or coexist with legacy instruments through statutory designation or regulatory sandbox regimes: Personal Income Tax (PIT); Capital Gains Tax (CGT); Value-Added Tax (VAT); Withholding Tax (WHT). All applicable events are taxed at source, in real time, removing administrative burdens and increasing certainty. Subject to jurisdictional discretion, TMFT may either fully substitute for or coexist with legacy instruments through statutory designation or regulatory sandbox regimes. This flexibility allows gradual implementation or parallel operation where legacy systems remain entrenched.

This system particularly benefits Freelancers and creators earning through tokens; Cross-border digital workers; Retail investors and traders; Individuals operating in pseudonymous digital ecosystems.

2.4. Corporate Taxation: Optional Replacement for CIT and CGT

2.4.1. TMFT vs Corporate Taxation: A Dual-Pathway Model

Corporate Tax Category	Legacy System	TMFT Equivalent
Corporate Income Tax (CIT)	Annual profit declarations and deductions	TMFT on business-related revenue and outflows
Corporate Capital Gains Tax	Gains on asset sales and equity transfers	TMFT on token disposals and treasury movements

2.4.2. Corporate Elective Regime

Option 1: Legacy Corporate Taxation (CIT/CGT)

- Companies remain under standard tax laws;
- CIT and CGT continue to apply, with standard reporting and filing obligations.

Option 2: TMFT Corporate Regime

- Corporate entities (including DAOs and tokenised startups) may opt to: Waive corporate income and capital gains taxes; Adopt TMFT in full as a substitutionary flow-based tax; Automate tax remittance via embedded transaction logic.

- Election to the TMFT corporate regime shall be binding for a minimum of three (3) fiscal years, unless otherwise specified by national legislation. Entities may return to the legacy corporate tax system upon expiry of the binding period, subject to transitional reporting requirements and tax authority approval. This election may apply to the entire corporate entity or be limited to distinct digital operations, wallets, or business lines, as allowed by national legislation.
- This dual-framework respects existing regulatory traditions while creating a future-proof compliance pathway for digital-native entities.

## **2.5. Institutional Advantages and Policy Impact**

- Eliminates filing burdens: No annual declarations or reconciliations;
- Reduces audit risk: Smart contracts enforce rule-consistent deductions;
- Enhances transparency: All flows are trackable via on-chain records;
- Improves liquidity management: Real-time treasury inflows support cash-flow sensitive public budgets.

## **2.6. Legal Basis and Fiscal Sovereignty**

- TMFT respects constitutional principles of tax law clarity and legal certainty;
- National tax authorities retain complete control over TMFT design and enforcement;
- TMFT is compatible with OECD's two-pillar approach (when rate thresholds are respected); EU standards on digital taxation and indirect tax coordination; International treaties, if dual taxation is contractually mitigated via opt-in architecture.

## **2.7. Final Assessment: TMFT as a Foundational Protocol for Fiscal Modernisation**

The Tokenised Micro Flat Tax is not merely a novel tax—it is a comprehensive fiscal layer for the decentralised, tokenised, and pseudonymous future of economic activity.

It offers a unified, low-friction system for both individuals and corporations; Legal flexibility to co-exist or replace legacy PIT, CGT, VAT, WHT, and CIT; Programmable enforcement and revenue certainty, bridging the gap between innovation and compliance.

As the world transitions from paper-based declarations to smart contract economies, TMFT stands as the digital equivalent of a social contract: simple, just, and sovereign.

### 3. Proof of Transaction (PoTr)

See Appendix 1 for further details.

Proof of Transaction (PoTr) is a cryptographically secure, protocol-level record of a taxable event. It serves as the foundation for real-time, automated fiscal compliance under the TMFT regime. By embedding tax-relevant information at the transaction layer, PoTr replaces the need for ex-post reporting with deterministic, verifiable on-chain proof of economic activity.

#### 3.1. National Tax Utility

PoTr functions as a **legally admissible fiscal receipt**, digitally signed and time-stamped at the moment of execution. It enables tax authorities to:

- **Identify and capture taxable events in real time;**
- **Anchor jurisdiction over flows** based on programmable metadata (e.g., wallet registration, protocol domicile, or oracle-determined criteria);
- **Recognise transactions as legally binding** for compliance, audit, and accounting purposes, without requiring traditional invoices or manual declarations.

Each PoTr entry is functionally equivalent to a VAT receipt, corporate sales ledger, or dividend coupon—adapted to pseudonymous and tokenised economies.

#### 3.2. Technical Elements

A valid PoTr contains the following non-reversible, verifiable data fields:

- **Hashed Metadata Fields** (encrypted or publicly accessible depending on privacy settings):
  - **Asset Type** (e.g., fungible token, stablecoin, NFT, wrapped security);
  - **Transaction Value** (in token units and converted fiat equivalent via time-stamped oracle feed);
  - **Jurisdictional Anchor:**
    - Derived from wallet registration, protocol registration (under VASP, MiCA, SEC, etc.), or node domicile;
    - Can include multiple flags for cross-border traceability;
  - **Timestamp and Block Height** of transaction confirmation;
  - **Unique Transaction ID (TxID)** for PoTr look-up and referencing.
- **Immutable Storage Layer:**

- On-chain ledger (public chain or Layer 2);
  - Mirrored to a tax authority's compliance node or treasury-controlled index;
  - Alternatively, hash of the PoTr stored on-chain, with full payload stored off-chain in verifiable compliance vaults.
- **Event Classification Tags:**
    - Smart contract-generated or oracle-supplied tagging for event type, including but not limited to:
      - Income (e.g., payment for services rendered, staking rewards),
      - Capital gain (e.g., asset disposal),
      - Consumption (e.g., NFT purchase, ticketing),
      - Transfer (e.g., exempt movement between personal wallets),
      - Treasury Flow (e.g., DAO distributions),
      - Protocol Revenue (e.g., fee extraction).

These elements form the foundation of **tax metadata stratification**, enabling automated decision trees, exemption logic, and levy rate determination.

### 3.3. Administrative Value

PoTr dramatically reduces the administrative burden of tax enforcement while increasing audit precision and fiscal visibility. Specific administrative functions enabled include:

- **Verifiable Audit Trail Generation:**
  - Immutable transaction records reduce fraud, omission, and dispute risk;
  - Accessible to tax authorities, courts, or auditors through permissioned APIs or direct blockchain queries.
- **Triggering of Automated Tax Obligations:**
  - Each PoTr can autonomously initiate:
    - TMFT deduction at source;
    - Filing of declarative metadata to tax nodes;
    - Real-time routing of funds to fiscal wallets;

- Cross-border tagging and treaty conflict analysis.
- **Integration with Digital Invoicing Systems:**
  - PoTr fields can be harmonised with e-invoicing mandates (e.g., EU ViDA or SAF-T), allowing seamless plug-in to existing ERP, accounting, or compliance systems;
  - Smart invoice wrappers or APIs enable export of PoTr into XML, JSON, or tax authority-compliant formats.
- **Facilitating Real-Time Treasury Monitoring:**
  - Tax inflows can be visualised through PoTr analytics dashboards, enabling macro- and micro-level revenue tracking;
  - Fiscal authorities gain visibility over transaction classes, economic sectors, and jurisdictional sources.

In essence, PoTr transforms tax enforcement from a retrospective, paper-based process into a **proactive, real-time, and metadata-driven system**. It supports fiscal certainty, reduces latency in revenue collection, and embeds compliance at the moment economic value is exchanged.

#### 4. Proof of Compliance (PoCo)

See Appendix 2 for further details.

Proof of Compliance (PoCo) is the mechanism by which taxpayer consent, legal eligibility, and regulatory status are cryptographically documented, verified, and stored in relation to any taxable transaction. Together with PoTr, PoCo completes the compliance layer of the Tokenised Micro Flat Tax (TMFT), enabling **verifiable tax enforceability grounded in programmable legal consent**.

Where PoTr proves the transaction, PoCo proves that the taxpayer was subject to the TMFT at the moment of the transaction, under a valid legal regime and within a recognised jurisdictional scope.

##### 4.1. Legal Status and Juridical Function

PoCo is designed to function as a **legally binding digital representation of tax compliance status**, akin to a registered taxpayer certificate, opt-in election form, or digital filing confirmation.

Its legal function is threefold:

- **Establishes Consent:** Records voluntary or statutory opt-in to TMFT regime, in accordance with national digital tax laws and GDPR Article 7 (freely given, informed, unambiguous consent);
- **Defines Legal Status of the Transaction:** Confirms that the relevant wallet or smart contract was operating under TMFT coverage at the time of the transaction, either:
  - By default (statutory application of TMFT in law); or
  - By election (programmable consent or voluntary application);
- **Grants Evidentiary Weight:** The PoCo can be produced as legally admissible evidence in tax audits, court proceedings, or dispute resolution processes under national administrative law or international agreements (e.g., eIDAS Regulation in the EU, UETA in the US).

##### 4.2. Technical Components

Each PoCo is composed of the following elements, cryptographically hashed and stored on-chain or in a compliance vault (off-chain) depending on privacy requirements:

- **Wallet or Address Identifier:**
  - Public key or address that generated or received the transaction;
  - Mapped to national taxpayer ID or KYC/AML metadata where jurisdictionally required.
- **Consent Token or Registry Entry:**
  - Digital signature indicating voluntary participation in TMFT regime, including:



- Date and time of opt-in;
  - Jurisdiction or protocol domain of application;
  - Optional revocation or expiry clause.
- **Regulatory Anchors:**
  - Tags or linked registry references showing:
    - Registration with national digital tax portal;
    - Legal entity status (natural person, SME, DAO, etc.);
    - Applicable legal framework (e.g., MiCA, FATF VASP, OECD Pillar 1 designation).
- **Policy Conditions (Optional):**
  - Inclusion of exemption thresholds, progressive rate rules, or audit triggers applicable to this taxpayer or wallet;
  - Stored as metadata conditions within the PoCo structure and referenced during real-time levy calculation.
- **Cryptographic Signature:**
  - Proof that the consent and status claim were issued by or acknowledged by a legitimate tax authority node or delegate oracle.

#### 4.3. Compliance Automation and Regulatory Integration

PoCo enables a shift from voluntary self-declaration to automatic, standards-compliant tax compliance. Its regulatory advantages include:

- **GDPR Compliance:**
  - Captures proof of opt-in as required under GDPR Article 7;
  - Minimises data processing through pseudonymisation and consent-based invocation only;
  - Supports revocation of consent in compliance with GDPR Articles 6 and 25 (data minimisation and privacy by design).
- **eIDAS and e-Signature Equivalence:**

- Under EU law, PoCo may qualify as a “qualified electronic seal” or “electronic timestamp” under Article 25(2) of the eIDAS Regulation, granting it legal effect equivalent to paper-based certifications or filings.
- **OECD and FATF Compatibility:**
  - PoCo records can be structured to comply with OECD Crypto-Asset Reporting Framework (CARF) by including wallet jurisdiction, beneficial owner mapping, and consent to cross-border data exchange;
  - FATF Travel Rule requirements can be met by including VASP-to-VASP compliance logs anchored in PoCo metadata.

#### 4.4. Administrative Value

PoCo reduces compliance risk and documentation overhead for both tax authorities and taxpayers:

- **Enables Consent-Based Enforcement:**
  - Proof of consent allows authorities to verify that TMFT was legally applied, removing ambiguity over applicability or jurisdictional reach;
- **Facilitates Audit Defence and Legal Certainty:**
  - Taxpayers can produce PoCo logs in case of audit, proving proper enrolment, rate application, and jurisdictional anchoring at time of transaction;
- **Improves Taxpayer Classification and Governance:**
  - Public or semi-public PoCo registries can assist in wallet classification, tax residency mapping, and automated eligibility screening for exemptions or reduced rates.
- **Interoperable with Traditional Compliance Systems:**
  - PoCo can interface with:
    - National taxpayer databases,
    - Digital invoicing platforms,
    - e-filing portals, and
    - Customs or withholding declarations.

Together, PoCo and PoTr comprise a **trustless, audit-proof, and sovereign-compatible infrastructure** for taxation in tokenised economies. They ensure legal enforceability, compliance auditability, and human rights alignment—without sacrificing efficiency, privacy, or fiscal scalability.

#### 4.5. Bridging Technical Execution with Legal Enforcement

The Tokenised Micro Flat Tax (TMFT) framework is engineered not only as a technical innovation, but as a fully enforceable legal instrument. Its core strength lies in the seamless integration of protocol-based compliance mechanisms with recognised principles of fiscal sovereignty, taxpayer consent, and administrative legality.

Through its dual-layered cryptographic architecture — Proof of Transaction (PoTr) and Proof of Compliance (PoCo) — TMFT encodes legally actionable metadata into each transaction, creating a verifiable link between the economic event and its jurisdictional treatment. PoTr functions as a real-time fiscal receipt, capturing economic and geographical data points that meet audit and evidentiary standards (see Appendix 1). PoCo establishes the legal capacity and consent of the taxpayer, anchored in national law and compliant with international data protection norms (see Appendix 2).

This combined infrastructure ensures that taxation under TMFT is:

- **Legally grounded:** Consent is embedded through digitally signed proofs and revocable declarations (GDPR Art. 7; eIDAS Reg. Art. 25);
- **Jurisdictionally valid:** Metadata such as wallet registration, oracle-fed location data, and residency flags are used to allocate taxing rights in real time;
- **Procedurally fair:** All levies occur under deterministic rules coded into smart contracts, eliminating arbitrary or retroactive enforcement;
- **Auditable:** Both proofs are exportable to national tax authorities and compliant with EU SAF-T, OECD CARF, and FATF Travel Rule frameworks.

Thus, TMFT represents not a technological overlay, but a juridical innovation: it translates constitutional tax principles — legality, proportionality, consent, and due process — into programmable form. By doing so, it enables national tax administrations to move from paper-based ex-post systems to real-time, code-based enforcement without compromising legal legitimacy or fiscal control.

The sections that follow demonstrate how this legal-technical integration is deployed at the national level (France, Appendix 7), under supranational coordination (OECD and UN, Appendices 11–12), and in model legislative clauses designed to operationalise TMFT within existing fiscal codes.

## 5. Legal Safeguards and Fundamental Rights

The TMFT regime is engineered to uphold the core legal principles of tax justice, constitutional rights, and procedural safeguards. As taxation is an exercise of public authority, any programmable or automated levy must comply with foundational norms—especially in digital systems where enforcement is instantaneous and potentially opaque. This section outlines the safeguards designed into the TMFT protocol to preserve taxpayer autonomy, ensure legal certainty, and protect fundamental rights.

### 5.1. Right to Fiscal Election

Participation in TMFT is either:

- **Statutory**, when a national law mandates TMFT application to a given class of transactions, wallets, or persons; or
- **Voluntary**, when the taxpayer opts in via programmable consent.

In both cases, TMFT incorporates clear legal procedures for:

- **Voluntary opt-in and revocation**, recorded via PoCo;
- **Transparent jurisdictional notification**, including metadata tagging to the relevant national authority;
- **Election durability**, such that taxpayers are protected against unanticipated retroactive taxation due to regime shifts.

This satisfies principles of legal foreseeability, autonomy, and lawful delegation under public law doctrines in both civil and common law systems.

### 5.2. Prohibition of Retroactive Application

TMFT is bound by the constitutional principle of **non-retroactivity in fiscal matters**, as recognised in:

- Article 16 of the Declaration of the Rights of Man and of the Citizen (France),
- Article 25(2) of the Universal Declaration of Human Rights,
- EU Charter of Fundamental Rights, Article 49(1).

No transaction may be taxed ex post unless:

- The wallet was subject to TMFT at the time of execution; and
- The taxpayer had visibility of legal basis and levy rules in advance.

Retroactive enforcement is prohibited by both legal design and protocol logic. Each PoTr includes the jurisdictional rule set hash applied at the time of transaction execution.

### 5.3. Due Process and Redress Mechanisms

Even when taxation is executed automatically, TMFT ensures access to **procedural remedies**:

- **Contestation of Incorrect Classification:** Taxpayers may challenge the tagging or metadata designation of a transaction (e.g., income vs. exempt transfer).
- **Dispute Over Levy Accuracy or Jurisdiction:** PoCo and PoTr records are admissible in administrative or judicial review, and conflict resolution frameworks (e.g., smart legal contracts, public ombuds) may be embedded.
- **Appeal and Correction Channels:** A rollback function or equivalent compensatory mechanism can be authorised by national tax authorities upon validation of an erroneous levy or classification.

These mechanisms preserve the taxpayer's right to be heard and challenge a fiscal burden, satisfying fair trial norms under administrative procedure laws.

### 5.4. Data Sovereignty and Privacy

The TMFT regime complies with EU and global data protection norms, including:

- **GDPR Article 6** (lawful basis of processing): Tax authority or smart contract execution based on consent or public interest;
- **GDPR Article 7** (conditions for consent): Digital consent to TMFT is captured, verifiable, and revocable;
- **GDPR Article 25** (data protection by design and by default): Only minimum metadata required for tax calculation is processed or stored;
- **GDPR Article 17** (right to erasure): Applies to off-chain records and may be enforced at the registry level, subject to tax authority retention laws.

Additionally:

- Metadata is **pseudonymised**, unless KYC linking is legally required;
- PoTr and PoCo are designed to be **non-invasive** and **selectively disclosable**, only revealing fields necessary for compliance verification.

### 5.5. AML/TF Compliance by Design

In alignment with international standards, TMFT incorporates AML/TF (Anti-Money Laundering and Counter-Terrorism Financing) safeguards at the protocol level. Through programmable metadata embedded in PoTr and PoCo, the system enables:

- Risk-based wallet classification (e.g., high-risk jurisdictions, PEP indicators, exchange-linked addresses);
- Transaction pattern analytics for anomalous flows (e.g., structuring, layering);
- Threshold-based reporting triggers (e.g., aggregate micro-levy limits);
- Optional integration with Travel Rule compliance logs or national AML registries.

These capabilities do not compromise pseudonymity by default, but provide regulators with optional hooks for conditional traceability. TMFT thus aligns with FATF Recommendations 10, 15, and 16, and is interoperable with VASP reporting protocols under the Crypto-Asset Reporting Framework (CARF).

#### 5.6. Proportionality and Fairness of TMFT

While TMFT applies a flat rate, its equity lies in proportional impact. High-volume users pay proportionally more, while **programmable exemption thresholds** (e.g., €200 de minimis) shield small-value users. This satisfies:

- **Article 13 of the French Declaration of the Rights of Man (1789)**: all contribute to public burdens in proportion to their means;
- **Decisions of the Conseil Constitutionnel**, e.g., **Decision no. 2012-662 DC** (concerning wealth tax thresholds);
- **Article 1 of Protocol No. 1 to the ECHR**, interpreted to allow progressive differentiation in tax design if justified by public interest and legal predictability.

#### 5.7. Avoidance of Double Taxation and Fiscal Neutrality

To ensure **non-discrimination and neutrality**, TMFT design includes:

- **One-time levy per taxable flow**, preventing double taxation from multi-protocol routing;
- **Metadata tags for cross-border flows**, enabling treaty application or exemption where bilateral agreements exist;
- **Flat-rate application without income class bias**, ensuring the system is progressive through proportional participation, not regressive through complex structures.

By embedding these safeguards into the technical architecture and legal narrative of TMFT, the protocol balances enforcement efficiency with democratic legitimacy. It becomes not only a mechanism of revenue collection, but a fiscal institution respecting the rights and dignity of its participants.

## **6. Implementation at Country Level**

### **6.1. Core Infrastructure**

- EVM-Compatible Smart Contract Layer: Deployed on public or permissioned chains.
- Treasury Wallets: Verified recipient wallets under fiscal authority control.
- Compliance Oracle: Verifies rate parameters, exemptions, and correct routing.

### **6.2. Legal Anchoring in National Fiscal Codes**

The legal viability of the TMFT rests on its integration within each jurisdiction's existing fiscal architecture. To ensure enforceability, clarity, and taxpayer protection, national tax administrations must embed TMFT within a recognised legal base—typically via amendment to the general tax code or digital tax statute.

#### **6.2.1. Statutory Basis**

Implementation may be achieved through:

- The creation of a new tax category under existing codes (e.g., \*micro flat transaction tax\* under Title I or Title II of national income tax laws);
- Delegated legislative authority permitting the Ministry of Finance to determine rate, exemptions, and procedural integration by regulation;
- Legal equivalence of digital receipts (PoCo) with traditional tax filings and invoices.

#### **6.2.2. Enforcement Authority**

TMFT enforcement must be grounded in domestic law recognising:

- Smart contract-executed levies as valid tax deductions at source;
- Cryptographically signed Proof of Consent as valid expression of taxpayer election;
- PoTr as a compliant substitute for manual declaration or reporting.

#### **6.2.3. Budgetary Integration**

Collected funds should be routed directly into designated fiscal wallets under treasury control, with integration into the national budgetary cycle. TMFT inflows may be reflected in digital sub-accounts or earmarked for innovation or tax simplification funds, depending on political mandate.

This legal structure ensures that TMFT functions not merely as a technological overlay but as a constitutional fiscal instrument aligned with national sovereignty and public finance law.

### **6.3. Identity and Residency Logic**

- DID Tagging: Wallets tagged to national identity systems or residence-based rules.
- Cross-Check with National Registries: Integrate with existing TIN or VAT IDs.

- Privacy Thresholds: Apply thresholds before triggering PoTr/PoCo issuance to protect de minimis users.

6.4. Tokenised Real-World Assets (RWAs) as TMFT-Compliant Tax Objects

6.4.1. Introduction and Relevance

Tokenised Real-World Assets (RWAs) are on-chain representations of off-chain assets that carry enforceable claims to ownership, rights, or underlying value. These include, but are not limited to, tokenised real estate, corporate equity, government bonds, carbon credits, supply chain receivables, physical goods, and even regulated commodities.

As the TMFT architecture expands into on-chain economic domains, RWAs constitute a critical category of tax-relevant instruments. They connect physical capital markets to decentralised infrastructure and offer tax authorities a new vector for enforceable compliance, visibility, and revenue certainty.

6.4.2. Why RWAs Matter for TMFT

RWAs meet the two foundational criteria for TMFT application:

1. **Transactionality:** RWAs are exchanged, collateralised, transferred, or fractionalised on-chain, triggering **Proof of Transaction (PoTr)** events.
2. **Identifiability:** RWA holders can be mapped via wallet identity layers and sovereign ID rails, permitting **Proof of Compliance (PoCo)** metadata to embed lawful ownership and tax residency.

These qualities make RWAs programmable, traceable, and subject to micro-tax enforcement mechanisms in ways previously unfeasible for off-chain analogs.

6.4.3. Treatment of RWAs under TMFT

The following treatment logic applies:

RWA Category	Taxable Event	TMFT Application
Tokenised Equity	Transfer of ownership, exit, dividend tokenisation	Flat tax on gross value of on-chain transfer or token payout
Tokenised Real Estate	Primary sale, resale, lease payments	TMFT on net movement or tokenised cash flow event
Tokenised Carbon Credits	Sale, retirement, offset trade	TMFT on transfer; exemption possible for offsets verified under PoCo
Tokenised Trade Receivables	Purchase, discounting, repayment flow	TMFT applied on gross receivable movement or settlement



RWA Category	Taxable Event	TMFT Application
Commodity Tokens (e.g. gold, grain)	Spot or futures transaction	TMFT on smart contract settlement or asset delivery

#### 6.4.4. Metadata Requirements (PoTr + PoCo)

For RWAs to be TMFT-compliant, each RWA token must carry or be verifiably linked to:

- **PoTr fields:** transaction amount, token ID, timestamp, smart contract execution hash.
- **PoCo fields:** verified residency and legal classification of the sender/receiver wallet, including business type and KYC level.

This creates a lawful bridge between national tax obligations and on-chain financial events.

#### 6.4.5. Jurisdictional Allocation and Dual-Anchor Logic

In cross-border deployments, RWAs will often involve:

- **Issuer Jurisdiction (J1):** where the asset is registered or its legal wrapper is domiciled.
- **Holder Jurisdiction (J2):** where the wallet-holder (PoCo ID) claims tax residency.

TMFT enables programmable allocation between J1 and J2 using treasury-splitting smart contracts (see Appendix 12). This ensures that **taxation follows both legal provenance and economic benefit**, compliant with OECD and UN models for cross-border asset flows.

#### 6.4.6. Legal Anchoring and Recognition

RWAs present a distinct legal recognition challenge: the link between the token and the underlying asset must be legally enforceable. TMFT's deployment model requires:

- Recognition of tokenised title or claim in local property/civil code.
- Clarity on who is responsible for remitting TMFT (issuer, holder, intermediary).
- Legal interoperability with existing financial regulation (e.g., MiCAR, SEC token guidelines, ADGM/VARA/Finma frameworks).

#### 6.4.7. Policy Implications and Opportunities

Governments that enable RWA tracking through TMFT achieve:

- **Wider tax net capture** of capital markets without raising nominal tax rates.
- **On-chain auditability** of high-value assets (e.g. real estate, public bonds).
- **Inclusive asset registration** even in informally titled economies, where RWA tokenisation can create an auditable legal record for taxation and inheritance purposes.

## 6.5. Optional DAO Component

While not mandatory, national authorities may deploy:

- A governance DAO to manage updates to rates, exemptions, and dispute resolution.
- Nodes could be controlled by ministries of finance, tax departments, or supervisory boards.

## 6.6. Fiscal Impact Summary

The Tokenised Micro Flat Tax (TMFT) introduces a sovereign-compatible, digitally-native tax mechanism that recalibrates core fiscal indicators. By integrating taxation directly into the transaction layer, TMFT enables national administrations to realise systemic efficiencies previously unattainable under legacy regimes.

The following comparative table summarises the expected fiscal and administrative impacts of TMFT, measured against conventional tax collection models:

Fiscal Metric	Legacy Tax Regimes	TMFT Architecture
<b>Compliance Burden</b>	High – reliant on taxpayer filings, with recurring deadlines and complex declarations	Low – tax is deducted automatically at point of transaction; no filings required
<b>Administrative Cost</b>	High – requires audit personnel, filing infrastructure, and fraud investigation units	Minimal – enforcement logic embedded in smart contracts and treasury routing
<b>Audit Risk Exposure</b>	Substantial – discretionary, post-facto, and resource-intensive	Marginal – deterministic audit trail via PoTr and PoCo
<b>Revenue Liquidity</b>	Lagged inflows; seasonal volatility	Real-time inflow to fiscal wallet at moment of transaction
<b>Economic Coverage</b>	Limited – only registered taxpayers and declared flows	Broad – captures pseudonymous, cross-border, and high-frequency digital activity
<b>Budget Forecasting Capability</b>	Reactive – reliant on periodic submissions and reconciliations	Proactive – transaction metadata supports real-time fiscal dashboards

Through these attributes, TMFT operates not as a parallel tax, but as a fiscal infrastructure layer—one that embeds compliance, ensures transparency, and maximises the immediacy and traceability of national revenue flows.

6.7. Use Cases for National Tax Administrations

Category	Description
Domestic Crypto Traders	TMFT enables real-time taxation of crypto/crypto and crypto/fiat conversions via licensed exchanges.
Self-Employed and Freelancers in Digital Economy	Smart contracts executing service payments can deduct TMFT automatically and issue a PoCo receipt for filing.
VAT and Withholding Tax Prototypes	TMFT logic can be adapted to withhold token-based VAT or tax on capital outflows, especially for outbound wallet transactions.

## 7. Advantages for National Revenue Systems

The Tokenised Micro Flat Tax (TMFT) provides governments with a fiscal infrastructure that is both **digitally native and sovereignty-preserving**. By embedding compliance, traceability, and levy execution into transaction logic, TMFT delivers significant advantages to national revenue systems across liquidity, enforcement, risk management, and international interoperability.

### 7.1. Real-Time Collection and Liquidity Gains

**Benefit:** Immediate treasury inflow at the moment of transaction execution.

- TMFT enables automatic transfer of levied amounts to treasury-controlled wallets without delay.
- This resolves structural liquidity constraints in tax systems that depend on quarterly or annual remittance cycles.
- Governments gain **continuous cash flow visibility**, reducing reliance on short-term borrowing and enabling dynamic budget execution.

**Legal Foundation:** Under domestic law, TMFT-collected revenue can be recognised as an accrual or cash-based inflow, depending on statutory budget accounting rules (e.g., French LOLF or IPSAS frameworks).

### 7.2. Administrative Efficiency and Cost Reduction

**Benefit:** Sharp reduction in operational tax administration overhead.

- TMFT **replaces manual filings** with PoTr-initiated automated reporting.
- Reduces need for audits, reassessments, and paper-based enforcement actions.
- Removes dependency on complex taxpayer declarations and intermediary data flows.

**Fiscal Impact:** Administrative cost per dollar collected decreases significantly, allowing reallocation of resources toward strategic oversight and policy development.

**Comparative Note:** Traditional systems spend an average of 1–2.5% of revenue on collection (OECD); TMFT reduces this via deterministic smart contracts and compliance vaults.

### 7.3. Transparency, Auditability, and Risk Scoring

**Benefit:** Immutable, accessible data for fiscal control and audit prioritisation.

- Each taxable transaction is logged via PoTr and matched with PoCo metadata, creating **verifiable audit trails** resistant to tampering or omission.
- Authorities can implement **real-time dashboards** to:
  - Identify high-risk flows,

- Classify actors (e.g., compliant, exempt, suspicious),
- Flag anomalies in frequency, volume, or asset class.

**Governance Utility:** Enables intelligent resource allocation within tax authorities and early detection of fraud typologies across asset classes.

**Legal Recognition:** PoTr and PoCo may be admissible as primary evidence in administrative and fiscal tribunals (subject to national procedural rules and eIDAS/UNCITRAL equivalents).

#### 7.4. Fraud Mitigation and Evasion Prevention

**Benefit:** Structural elimination of underreporting, misreporting, and base erosion.

- By integrating the tax levy into the execution layer of the transaction, TMFT **prevents post-facto evasion**.
- Taxpayer intention is irrelevant at the point of levy—compliance is enforced **by protocol**, not post-declaration.
- **Metadata-based exemptions** ensure fairness, while real-time enforcement ensures universality.

**Impact:**

- Reduces informal economy leakage;
- Disincentivises wallet fragmentation or reporting avoidance;
- Curtails manipulation of tax residence and asset characterisation.

#### 7.5. Global Interoperability and Treaty Compliance

**Benefit:** TMFT is structurally compatible with multilateral fiscal coordination efforts.

- PoTr and PoCo can be formatted to comply with:
  - **OECD Crypto-Asset Reporting Framework (CARF)**;
  - **EU VAT in the Digital Age (ViDA)** requirements for real-time reporting;
  - **UN Model Tax Convention**, especially Articles 5 (PE), 7 (Business Profits), and 13 (Capital Gains);
  - **FATF Travel Rule** metadata expectations for traceability.
- Jurisdictional metadata and programmable consent allow the TMFT to:
  - Avoid treaty override issues;

- Respect data sovereignty and taxpayer protection norms;
- Enable **bilateral and multilateral information exchange**, if elected.

**Future-Proofing:** TMFT allows for layered deployment of Pillar 1 & Pillar 2 (OECD) rules, and programmable exemptions for double taxation relief—making it ideal for hybrid compliance environments.

## 7.6. Additional Strategic Advantages

- **Macroeconomic Intelligence:** Governments gain continuous insight into digital asset flows, allowing for targeted policy responses (e.g., sector-specific taxation, consumption analysis).
- **Regulatory Sandboxing:** TMFT modules can be deployed in pilot jurisdictions or sectors (e.g., gaming, Web3 freelancers) before full-scale implementation.
- **Alignment with ESG and SDG Objectives:** TMFT can earmark collected revenues for green finance, digital inclusion, or public service funding—programmable at the protocol level.

In summary, TMFT enables national revenue systems to transition from **reactive administration to proactive governance**, by fusing legal enforceability with technological determinism. It offers fiscal certainty, administrative efficiency, and global adaptability—without sacrificing legal autonomy or taxpayer protections.

## 7.7. Transfer Pricing Clarity and OECD Alignment

### 7.7.1. Clarifies Arm’s Length Valuation for Intra-Group Crypto-Asset Services

Under OECD TP Guidelines, **controlled transactions** between related parties (e.g., intra-group DeFi platform usage, liquidity provision, staking services, or internal treasury functions involving crypto assets) must comply with the **Arm’s Length Principle (ALP)**, using recognised methodologies (e.g., CUP, cost-plus, TNMM).

#### Problem in current systems:

- Crypto-asset services are hard to value due to high volatility, fragmented markets, absence of third-party benchmarks, and pseudonymous flows.
- Intra-group flows often lack invoices or consistent pricing data, exposing firms to TP adjustments, double taxation, and audit disputes.

#### TMFT resolution:

- **PoTr records the actual market value** of token transfers at the time of transaction using real-time oracles.

- The **jurisdictional anchor, wallet roles, and economic function** (e.g., service payment, cost reimbursement) are tagged and traceable.
- This creates a **verifiable, time-stamped benchmark** for intra-group services, enabling regulators and tax auditors to:
  - **Apply CUP or cost-plus methods** more effectively;
  - Detect deviations from normal pricing;
  - Avoid speculative valuation during TP audits.

**Result:** TMFT increases legal certainty, reduces compliance cost, and lowers risk of TP adjustment or penalty.

#### 7.7.2. Supports TP Documentation and Benchmarking

BEPS Action 13 requires multinational groups to maintain:

- **Master file** (global operations),
- **Local file** (jurisdictional TP detail), and
- **Country-by-Country Reports (CbCR).**

**TMFT with PoTr/PoCo enhances compliance by:**

- Providing **objective, timestamped pricing data** for crypto-asset transactions between related entities;
- Embedding the economic rationale (e.g., staking-as-a-service, software licensing, internal bridging infrastructure) directly in transaction tags;
- Linking intra-group digital flows to **wallet-level residency and legal structure**, thereby aligning TP policy with factual conduct.

This reduces the margin for interpretation and improves **OECD-compliant TP documentation**.

#### 7.7.3. Mitigates BEPS Risks (Actions 8–10 & 12)

BEPS Actions 8–10 target base erosion through intangible transfers, risk shifting, and hard-to-value intangibles—particularly relevant in crypto.

**With TMFT:**

- Transfers of crypto-assets and related IP flows (e.g., tokens representing platform rights, DAO governance, royalties) become **transparent, timestamped, and jurisdiction-tagged**.

- PoTr exposes **economic ownership and location of value creation**, while PoCo demonstrates opt-in to the fiscal regime, reinforcing the legal framework.
- **BEPS Action 12** (mandatory disclosure of aggressive tax planning) is made easier to enforce where TMFT metadata shows real-time movement of assets and functions between jurisdictions.

**Result:** TMFT discourages artificial profit shifting, improves audit defensibility, and supports nexus-based allocation.

#### **7.7.4. Enhances Application of Simplified TP Measures for SMEs or Digital-Only Entities**

For smaller or digital-native MNEs, TP is often complex and disproportionate to their structure.

With TMFT:

- A **flat-rate levy on intra-group token transfers** may act as a **de facto simplified TP methodology**, replacing complex benchmarking with pre-approved deterministic taxation.
- Jurisdictions may elect to treat PoTr-logged transfers as **safe-harboured transactions**, assuming ALP compliance if certain TMFT thresholds are respected.



## 8. Model Legislative Clauses for TMFT Opt-In / Opt-Out

These are template clauses suitable for inclusion in a digital tax code, fiscal reform act, or blockchain taxation statute. They create clear legal pathways for both *individuals* and *corporate entities* to opt into the TMFT regime and be exempted from corresponding legacy obligations.

### 8.1. Clause: TMFT Opt-In and Exemption for Natural Persons

#### Section X.1 – Election by Individuals for TMFT Regime

1. Any resident or non-resident natural person subject to personal income tax, value-added tax (VAT), capital gains tax, or withholding tax under the [Income Tax Act / General Tax Code] may elect to be assessed under the Tokenised Micro Flat Tax regime.
2. Such election shall be made via digital declaration through an authorised tax interface or wallet connected to the national TMFT protocol registry.
3. Upon election:
  - The individual shall be deemed exempt from periodic filing obligations relating to personal income tax, capital gains tax, VAT, and withholding tax;
  - All qualifying transactions by the individual shall be subject to TMFT at the legally prescribed rate.
4. Election is valid for a minimum of [one] fiscal year and renewable annually unless revoked before the start of the following tax year.
5. Revocation of the election shall reinstate the individual's obligations under the legacy taxation framework effective from the first day of the next fiscal period.

### 8.2. Clause: TMFT Opt-In and Exemption for Legal Persons (Corporates)

#### Section X.2 – Election by Corporate Entities for TMFT Regime

1. Any incorporated entity, partnership, foundation, or decentralised autonomous organisation (DAO) registered or operating in the jurisdiction may elect to be assessed under the Tokenised Micro Flat Tax regime.
2. Upon filing of the election:
  - The electing entity shall be exempt from corporate income tax, capital gains tax, and VAT obligations imposed under [Corporate Tax Act / General Fiscal Code];
  - The entity shall remit TMFT in real time via eligible smart contract applications or transaction interfaces.
3. Election shall be binding for a minimum period of [three] fiscal years, after which the entity may opt back into the legacy regime by written notice and compliance transition.
4. The national tax authority may refuse or suspend an entity's election if it determines that:
  - The primary objective is to avoid other tax liabilities;
  - The entity fails to meet reporting or compliance thresholds under the TMFT implementation rules.

9. TMFT vs Traditional Tax Burdens Across Taxpayer Profiles<sup>3</sup>

Profile	Traditional Tax Regime	TMFT Regime
Salaried Worker	- Personal Income Tax (20–45%) - VAT on goods (20%) - Possible CGT on assets	- TMFT flat rate (e.g., 0.2%) on all income and spending - No declarations or filings
Freelancer/Web3	- Income Tax + quarterly self-assessment - VAT registration - WHT on platforms	- TMFT deducted at source on inbound/outbound token transfers - Auto-compliance and registry logging
Small Enterprise	- Corporate Income Tax (25%) - VAT on sales and purchases - CGT on asset sales	- Option to opt into TMFT: - Flat rate on transaction flows - No quarterly filings or audits
Multinational	- CIT + CGT across multiple jurisdictions - TP documentation - BEPS compliance	- Possible TMFT adoption for cross-border digital divisions - Simplified compliance for digital flows
DAO / Protocol	- Often unregistered, non-compliant - Exposure to regulatory ambiguity	- TMFT enables compliant treasury operations - Recognised flow-based taxation without centralisation

The comparison table in Section 9 of your TMFT Whitepaper ("TMFT vs Traditional Tax Burdens Across Taxpayer Profiles") implicitly draws from widely accepted tax principles, statutory rates, and international fiscal frameworks. Below is a clarification of the legal and fiscal references—by profile and regime—underpinning each row of the table.

9.1. Salaried Worker

Traditional Regime:

- Personal Income Tax (20–45%)
  - Based on progressive marginal rates in OECD countries and EU jurisdictions (e.g., France: 11–45%, Germany: 14–45%, UK: 20–45%).
  - Source: OECD Taxing Wages Report (2023); national tax codes (e.g., CGI Article 197, France).
- VAT on goods (20%)
  - Standard VAT rate in many EU states, including France and Germany.
  - Source: EU VAT Directive 2006/112/EC; DG TAXUD VAT Rates Database.
- Capital Gains Tax (CGT)

<sup>3</sup> “Flat” refers to the uniform application of a base micro-rate to eligible transactions. However, programmable exemption logic and conditional thresholds may apply under national tax law or individual PoCo consent configurations (see Section 4 and Appendix 2).

- Applicable in cases of asset disposals, often at 19–30% in the EU or taxed as ordinary income (e.g., USA).
- Source: European Commission CGT comparison (Taxud Working Papers), CGI Article 150 U (France).

**TMFT Regime:**

- Replaces all these with a 0.2% transaction-based levy, applied on income and expenditure flows regardless of source.
- No obligation to file income declarations or VAT returns.
- Legal basis derived from TMFT model clauses and programmable consent structure under national law (as drafted in Section 7 and Appendix 6 of the whitepaper).

**9.2. Freelancer / Web3 Worker**

**Traditional Regime:**

- Income Tax + Quarterly Advance Payments
  - Obligatory in many jurisdictions for self-employed workers under systems like France's "régime réel", UK's self-assessment.
  - Source: CGI Articles 93–103; HMRC SA103S.
- VAT Registration
  - Required above threshold turnover (e.g., €85,800 in France); complex input-output crediting.
  - Source: EU VAT Directive 2006/112/EC; CGI Articles 256–261.
- Withholding Tax (WHT)
  - Typically applied on platform income paid cross-border (e.g., U.S. 30% default WHT, OECD Model Tax Convention Articles 10–12).

**TMFT Regime:**

- Tax withheld at source via smart contract logic embedded in dApps, wallets, or gig platforms.
- No need for VAT registration or quarterly declaration, as PoTr and PoCo handle traceability and compliance.

- Legal substitute grounded in digital tax code clauses (see Section 7) and metadata equivalence to income type.

### 9.3. Small Enterprise

Traditional Regime:

- Corporate Income Tax (CIT)
  - Approx. 25% standard rate in EU/UK, applied to net profits.
  - Source: OECD Corporate Tax Statistics 2023; CGI Article 219-I (France).
- VAT on Sales and Purchases
  - Standard regime with VAT filing obligations; often burdensome for SMEs.
  - Source: EU VAT Directive; CGI Articles 266–290.
- Capital Gains Tax
  - On disposals of business assets or shareholdings.
  - Source: CGI Article 39 duodecies; HMRC CT600 Guidance.

TMFT Regime:

- Optional regime replaces CIT/CGT with a flat levy on gross flows;
- TMFT opt-in enables real-time treasury updates and avoidance of compliance overhead (see Sections 5.3 and 7 of the whitepaper).
- Legal anchoring in corporate election clauses (e.g., Section X.2).

### 9.4. Multinationals

Traditional Regime:

- CIT + CGT across multiple jurisdictions
  - MNEs face taxation on global income, subject to DTA relief and residency rules.
  - Source: OECD Model Tax Convention; BEPS Inclusive Framework.
- Transfer Pricing (TP) Documentation
  - Mandatory in most jurisdictions; high compliance burden.
  - Source: OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations (2022).

- BEPS Compliance (Pillar 1/2)
  - Global Minimum Tax and Digital Service Tax rules coming into effect across the EU, US, and OECD members.
  - Source: OECD/G20 Inclusive Framework on BEPS; EU Directive 2022/2523.

TMFT Regime:

- Adoption for digital business units or wallet flows offers simplification and borderless traceability.
- Especially relevant for digital-native divisions operating on-chain or within DAOs.
- Interoperable with Pillar 2 if floor rates are respected (see Section 4.2 and Section 10).

## 9.5. DAO / Protocol

Traditional Regime:

- Non-registered, non-compliant status
  - Most DAOs fall outside corporate or legal person frameworks, exposing them to enforcement uncertainty.
  - Source: FATF Guidance on Virtual Assets and VASPs (2021); MiCA/DeFi position papers.
- Regulatory Ambiguity
  - Lack of beneficial ownership, national registration, or VAT/CIT identifiers creates legal friction.

TMFT Regime:

- Compliant-by-design treasury function enabled through embedded tax smart contracts;
- DAO treasury flows subject to TMFT upon execution (regardless of entity status);
- No need to incorporate to comply with tax laws, if TMFT proof and routing meet regulatory thresholds.
- Legal basis: Optional DAO fiscal governance rules (see Section 5 and Appendix 5).

## 9.6. General References Supporting TMFT Regime Design

**OECD Crypto-Asset Reporting Framework (CARF):** compliance-by-design traceability for digital transactions.

**EU Digital Services Act (DSA) and Markets in Crypto-Assets Regulation (MiCA):** pseudonymous service provider rules

**French General Tax Code (CGI) and LPF:** modelled in Appendix 6 for implementation of TMFT via national amendments

**GDPR Art. 6, 7, 25 – used to construct PoCo consent mechanisms:** The TMFT regime, including its PoTr and PoCo architecture, complies with the General Data Protection Regulation (Regulation (EU) 2016/679), particularly:

- Article 6 Lawfulness of Processing: TMFT metadata processing is based on lawful grounds, including (a) consent of the data subject, and (e) performance of a task carried out in the public interest or in the exercise of official authority vested in the controller (i.e., tax administration).
- Article 7 Conditions for Consent: Consent is digitally expressed via programmable interfaces (e.g., wallet-level or transaction-level opt-in), stored in verifiable metadata form, and revocable under defined legal conditions. This meets the standard for freely given, specific, informed, and unambiguous consent.
- Article 25 Data Protection by Design and by Default: The TMFT architecture applies strict minimisation of metadata, pseudonymisation where feasible, and off-chain storage options for sensitive compliance elements. Smart contract logic is designed to ensure that only the minimum data necessary for tax calculation and audit purposes is processed.

These GDPR provisions are directly integrated into the compliance vaults and consent layers of the TMFT, thereby ensuring legal interoperability across EU and GDPR-aligned jurisdictions.

**OECD Model Tax Convention (2021):** respected via opt-in treaty logic embedded in PoTr metadata.

## **10. Supranational Coordination and Implementation**

### **10.1. OECD Forum on Tax Administration (FTA)**

- TMFT is compatible with digital reporting initiatives like the Crypto-Asset Reporting Framework (CARF).
- Standardisation potential: FTA could issue implementation guidance and allow country-level customisation.

### **10.2. UN Tax Committee**

- TMFT offers a modular digital tax tool for developing countries with limited enforcement infrastructure.
- UNTC could integrate TMFT into its guidance on taxing cross-border digital income and services.

### **10.3. FATF and MiCA Compliance**

- TMFT complements the Travel Rule (FATF Recommendation 16) through on-chain traceability.
- Modular smart contracts comply with MiCA rules on token transparency, suitable for EU jurisdictions.

## 11. TMFT as a Normative Fiscal Architecture for Tokenised Economies

The Tokenised Micro Flat Tax (TMFT) is not merely a technical innovation—it is a normative shift in how fiscal systems are conceived, embedded, and executed in the digital age. It redefines the tax function as a foundational infrastructure layer in tokenised economies, aligning legality, automation, and public purpose.

TMFT internalises compliance by design. Rather than taxing income ex-post or relying on voluntary disclosures, TMFT levies arise precisely at the moment value is exchanged—capturing economic substance, not just legal form. This offers a forward-compatible model of taxation: one that anticipates the disappearance of tax intermediaries, the rise of decentralised financial infrastructure, and the fragmentation of jurisdictional authority.

Its foundational characteristics include:

**Programmable Tax Logic:** Embedded in smart contracts, capable of enforcing tax rules without human discretion or retroactive application;

**Technological Neutrality:** In compliance with the **principle of neutrality of technology**, enshrined in French digital law and the EU’s e-Government Action Plan (2016–2020), TMFT is infrastructure-agnostic. The regime does not mandate a particular blockchain or software stack; accepts multiple smart contract standards (e.g., ERC-20, ERC-3643); allows jurisdictions to host compliance nodes on permissioned or public ledgers; ensures interoperability with **DINUM** technical standards and **EBSI** (EU Blockchain Services Infrastructure). This avoids vendor lock-in and preserves institutional adaptability in line with **Conseil d’État, 28 Sept. 2018 (CE 417782)**, which prohibits discrimination based on technological implementation in public services.

**Legally-Rooted Consent:** Participation is secured through explicit or threshold-based digital consent, ensuring constitutional alignment and regulatory legitimacy;

**Metadata-Based-Jurisdictionality:** Fiscal anchoring occurs through wallet registration, oracle verification, or decentralised identifiers, not physical residency alone;

**Audit-Resistant Proofs:** PoTr and PoCo function as cryptographic, jurisdictionally recognised fiscal proofs, enabling seamless compliance with domestic and supranational reporting frameworks;

**Sovereign Treasury Routing:** Real-time fiscal inflows support cash-flow-responsive budgeting and minimise leakage, delay, and fraud.



### **11.1. Transfer Pricing Certainty and OECD Alignment**

As an architectural innovation, TMFT redefines fiscal transparency within multinational group structures. By capturing real-time value and transactional context through PoTr and PoCo, TMFT brings intra-group crypto-asset transactions into alignment with the OECD Transfer Pricing Guidelines.

This enables: Objective benchmarking under the Comparable Uncontrolled Price (CUP) or Cost-Plus methods; Full traceability of intra-group token transfers; Smart contract-based logging of related-party economic functions; Reduced risk of TP audit disputes and improved legal defensibility under BEPS Actions 8–10.

For both tax authorities and multinational entities, TMFT provides a streamlined path toward compliant, predictable, and jurisdictionally anchored transfer pricing in tokenised corporate environments.

### **11.2. Simplifying International Taxation and Treaty Interpretation**

TMFT also offers a structural solution to long-standing ambiguities in the application of double tax treaties to digital asset flows. The OECD Model Convention does not yet contain a dedicated article for crypto-assets, nor clear rules on their classification under Articles 7 (Business Profits), 12 (Royalties), or 13 (Capital Gains). As a result, tax authorities and taxpayers alike face legal uncertainty regarding the allocation of taxing rights, especially for cross-border peer-to-peer, DeFi, or DAO-based transactions.

By embedding jurisdictional metadata, residency tagging, and economic classification directly into the transaction layer, TMFT allows sovereigns to pre-define which flows are subject to taxation, under which source/residence rule, and with what applicable treaty override logic. This creates a de facto alignment between transaction structure and treaty eligibility, reducing disputes, supporting mutual agreement procedures (MAP), and enabling programmable treaty relief (e.g., exemption or credit) based on PoTr conditions.

In doing so, TMFT simplifies international tax coordination without requiring wholesale renegotiation of bilateral treaties—a protocol-level bridge between emerging digital value chains and legacy legal infrastructure.

### **11.3. TMFT as Fiscal Operating System for a Decentralised World**

As economies evolve toward autonomous machine payments, synthetic assets, and cross-border token flows, TMFT stands as a sovereign-ready protocol. It is equally suitable for advanced economies seeking real-time liquidity, and for developing states requiring compliance without coercion. In this sense, TMFT is more than a tax—it is the fiscal operating system for a decentralised world. It provides certainty without friction, transparency without surveillance, and jurisdictionality without borders. In its logic, structure, and safeguards, TMFT transforms taxation from a burden into an embedded right—a foundational layer of fiscal legitimacy in the digital century ahead.

## **12. The Future of Fiscal Sovereignty**

The transition to programmable, pseudonymous, and jurisdictionally fluid economies poses a direct challenge to the fiscal sovereignty of nation-states. In this evolving context, the Tokenised Micro Flat Tax (TMFT) offers a proactive legal and technological response—embedding sovereign tax collection directly into the digital value layer.

Unlike international reporting frameworks that rely on exogenous enforcement, or tax treaties that presuppose state-to-state cooperation, TMFT enables unilateral fiscal authority over taxable events by design. Its architecture shifts enforcement from administrative capacity to protocol logic, creating a new equilibrium between state control and digital decentralisation.

### **12.1. Reinforcing Legal Sovereignty**

TMFT empowers national legislatures to define taxable events through deterministic transaction categories; Set rates, exemptions, and opt-in conditions through statutory instruments; Anchor fiscal jurisdiction in compliance metadata (PoTr/PoCo) rather than physical presence.

This restores tax jurisdiction to the point of value creation and enforces it without requiring invasive identification or manual reporting.

### **12.2. Resilience to Disintermediation**

In an economic environment where users, assets, and applications operate across borderless architectures, TMFT maintains relevance and enforceability by: Embedding tax into smart contracts, wallets, and dApps; Leveraging programmable consent and national oracles for compliance classification; Supporting enforcement even when traditional intermediaries (banks, exchanges, employers) are absent or non-cooperative.

### **12.3. Modular Instrument for Global Coordination**

TMFT also serves as a modular layer for supranational coordination. Through common schemas for PoTr and PoCo, and opt-in harmonisation via the OECD, UNTC, or regional unions, states may retain sovereign autonomy while enabling cross-border compliance, digital trade, and tax transparency.

Whether deployed as a domestic instrument or embedded within international standards, TMFT supports the principle that fiscal power must evolve—not erode—in the digital era.

It therefore offers a constitutional answer to a technological challenge: a programmable, auditable, and jurisdictionally recognised expression of fiscal sovereignty for the tokenised century ahead.

### 13. Attribution and Intellectual Property

The conceptual and technical framework presented under the name Tokenized Micro Flat Tax (TMFT), also referred to as the “Rajan Tax”, is the original intellectual creation of:

- **Inventor and Author:** Izzat-Begum Badouraly-Rajan, commonly known as Izzat-Begum B. Rajan,
- **Contact details:** [ibr@imanipartners.com](mailto:ibr@imanipartners.com),
- **LinkedIn:** [IBR on LinkedIn](#),
- **ResearchGate:** [IBR on ResearchGate](#).

This framework (including its components such as the Proof of Transaction (PoTr), Proof of Compliance (PoCo), smart contract logic, and its modular fiscal governance architecture) constitutes a distinct legal and economic innovation authored by the inventor.

#### 13.1. Citation and Attribution

Any use, reproduction, implementation, academic analysis, or public dissemination of the TMFT framework in part or in whole must include proper attribution to the author, as follows:

##### 13.1.1. Required Citation Format (Academic or Policy)

Rajan, Izzat-Begum B. (2025). *Tokenized Micro Flat Tax (TMFT): A Blockchain-Based Framework for Real-Time Taxation and Compliance*. Whitepaper v1.0, last revised 17 May 2025.

Referenced as: "Rajan Tax" or TMFT.

[LinkedIn](#) | [ResearchGate](#)

##### 13.1.2. When Referencing the Mechanism Only

The “Rajan Tax” (TMFT), developed by Izzat-Begum B. Rajan (2025), introduces a programmable micro-flat tax for digital transactions via smart contracts.

#### 13.2. Licensing and Use Permissions

Use and adaptation of the TMFT framework is permitted under the following licensing conditions:

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### **13.2.2. Custom Licensing:**

Special use cases (e.g., governmental adoption, commercial platform integration, fiscal pilot projects) may be negotiated under:

- Custom administrative-use licenses (for Ministries of Finance, Revenue Authorities)
- Dual licensing (commercial + academic)
- Technology transfer or patent registration collaborations

Please contact the author directly at [ibr@imanipartners.com](mailto:ibr@imanipartners.com) for any licensing discussions, institutional partnerships, or formal implementation agreements.

### **13.3. Protection and Traceability**

- The invention has been documented, timestamped, and attributed via blockchain-based proof of authorship.
- The author reserves the right to register the framework under applicable intellectual property laws, open-source software registries, and academic repositories.
- Public references to TMFT or “Rajan Tax” must not misrepresent the origin, scope, or licensing terms of the concept.

### **13.4. Academic and Institutional Collaborations**

The author welcomes scholarly engagement, pilot testing, and collaborative refinement under transparent and non-commercial terms. Institutions are encouraged to:

- Cite the whitepaper in research or regulatory proposals.
- Use TMFT components in sandboxed policy simulations.
- Acknowledge the author's contribution in any derivative or localized adaptation.

## **Appendix 1 – Proof of Transaction (PoTr)**

### **1. Conceptual Overview**

Proof of Transaction (PoTr) is a foundational compliance mechanism within the TMFT framework. Unlike traditional consensus protocols such as Proof of Work (PoW) or Proof of Stake (PoS), PoTr is not a block validation system, but a cryptographic evidentiary protocol designed to establish the fiscal reality of a taxable event. It serves to formally document that a digital transaction has occurred, that the associated tax was calculated, withheld, and directed to the appropriate public treasury, and that this sequence is legally auditable and cryptographically secure.

PoTr operates as the fiscal analogue of a legal invoice, a tax withholding certificate, and a timestamped receipt, fused into a deterministic record generated by the transaction itself. It provides an immutable audit trail that satisfies both evidentiary standards under national administrative law and technical thresholds for blockchain-native compliance.

### **2. Legal and Functional Architecture**

A valid PoTr record captures the identities of the parties (pseudonymous or identified), the transactional payload, the applicable fiscal treatment, and the cryptographic fingerprint of the transaction and its tax classification. These data points are harmonised through an architecture comprising the following legal and functional elements:

First, the initiator and receiver of a transaction—whether individuals, legal entities, or smart contracts—are identified through wallet addresses or pseudonymous identifiers. This establishes the fiscal parties to the transaction. The transactional payload includes the economic data required for tax characterisation: asset type, transaction value, time of execution, and purpose.

A tax oracle—either a decentralised module or a legally recognised validator node—retrieves or computes the applicable TMFT rate. This determination is based on jurisdictional metadata (e.g., wallet residency), asset class (fungible token, stablecoin, NFT), and the nature of the transaction (e.g., capital gain, income, consumption).

The Tax Smart Contract (TSC), embedded at the protocol layer, performs the role of fiscal executor. It computes the levy, deducts the TMFT, routes the funds to the correct treasury-controlled wallet, and generates a Proof of Transaction hash (PoTr\_hash). This hash functions as a unique, tamper-proof identifier comprising the transactional metadata, the tax rate applied, the timestamp, and a digital signature from the oracle.

### **3. Compliance, Consent, and Evidentiary Use**

PoTr is not valid without legal consent. The system includes an opt-in or legally pre-defined Proof of Consent layer. This consent may be explicit (signed digitally on-chain) or implied through use of declared

wallets, dApps, or interfaces operating under the TMFT regime. The presence of this consent satisfies requirements under GDPR (Art. 7), eIDAS (qualified electronic signatures), and public law principles of voluntary tax submission.

The full PoTr record—including hash, oracle signature, timestamp, and consent record—is stored in a Compliance Vault. This may be on-chain or off-chain, depending on jurisdictional requirements and privacy thresholds. This vault serves as a tamper-proof audit repository, accessible to taxpayers, authorities, and courts as appropriate. It meets evidentiary standards for administrative review, judicial challenge, and fiscal dispute resolution.

#### **4. Legal and Operational Benefits**

PoTr addresses the evidentiary void in current digital asset taxation. It enables real-time verification of economic substance, ensures precise application of the TMFT, and removes reliance on voluntary self-declarations or forensic post-hoc audits. It allows for:

- Fiscal neutrality by applying a flat rate across asset classes.
- Administrative efficiency through automated levy calculation and routing.
- Legal certainty for taxpayers by providing immediate proof of compliance.
- Treaty compatibility by tagging jurisdictional origin and destination, facilitating double tax relief.

The architecture is interoperable across Ethereum Virtual Machine (EVM) chains, zk-rollups, and off-chain oracle frameworks. It can incorporate advanced features such as ERC-5169 metadata layers and ERC-4883 NFT receipts, and supports selective disclosure through zero-knowledge proofs.

#### **5. Regulatory Compatibility**

PoTr has been designed to satisfy legal requirements under:

- eIDAS: Validity of electronic timestamping and signatures.
- MiCA: Transparency obligations for CASPs and digital tax classification.
- TFR: Optional embedding of KYC/AML metadata for threshold-based disclosure.
- DORA: Data resilience and archiving for fiscal operations.
- GDPR: Pseudonymisation by default, revocability off-chain, data minimisation.

#### **6. Normative Role**

PoTr transforms the tax function into an embedded, sovereign-anchored process that is auditable, enforceable, and jurisdictionally valid by default. It embodies the core legal principle that taxation must

be certain, lawful, and non-discretionary, operationalised through cryptographic logic rather than administrative discretion.

As TMFT adoption expands, PoTr may serve as a legal and fiscal common language across jurisdictions—a standardised evidentiary layer for programmable taxation, capable of interfacing with treaty networks, supranational frameworks, and constitutional rights.

## **Appendix 2 – Proof of Compliance (PoCo)**

### **1. Overview**

Proof of Compliance (PoCo) is a modular compliance protocol that enables digital transactions to interface with tax enforcement mechanisms only upon confirmation of pre-defined legal and fiscal criteria. It operates as the counterpart to PoTr within the TMFT regime, ensuring that only qualified, registered, and lawfully consenting parties are subject to tax execution. PoCo is designed to be programmable, privacy-preserving, and compliant with data protection regulations such as the GDPR.

### **2. Legal Purpose and Operational Scope**

The central purpose of PoCo is to verify that a user or entity meets the jurisdictional and policy-based eligibility conditions necessary for TMFT enforcement. These conditions may include tax residency, legal status, income thresholds, treaty eligibility, and explicit or implicit consent. The process must occur prior to the application of a TMFT levy, thus acting as a procedural safeguard and a constitutional filter.

PoCo functions similarly to a pre-filing verification layer or taxpayer registration certificate in traditional systems. It assures the tax authority—or protocol executing the tax—that the conditions for enforcement are legally and technically satisfied.

### **3. Protocol Structure**

The PoCo protocol is comprised of four interlocking modules, each serving a distinct legal and computational function.

#### **a. Identity and Attestation Module**

This module attaches verifiable attributes to a user's on-chain identity. These attributes function as legal attestations (e.g., tax residency, individual or corporate status, income category) and are issued by trusted parties such as tax authorities, verified DAOs, or registered CASPs.

These attestations are encoded as:

- Soulbound Tokens (SBTs) or
- Verifiable Credentials (VCs)

Once attached to a wallet, these attestations allow the system to determine the user's legal relationship to the tax base without disclosing unnecessary personal data.

#### **b. Compliance Rules Engine**

This module codifies the eligibility rules for TMFT application. It defines the normative boundaries within which tax may be levied, such as rate thresholds, exemption criteria, or treaty adjustments. Rules can be written in smart contract form or managed through DAO governance.



For instance:

- A TMFT rate of 0.5% applies if the user's declared income is under €75,000;
- Partial exemption applies to users flagged under certain bilateral tax treaties.

The engine enables differentiation across taxpayer profiles while maintaining rule transparency and procedural fairness.

### **c. Privacy Layer (Zero-Knowledge Proof)**

To uphold data protection norms, PoCo incorporates a privacy-preserving proof mechanism. The user generates a Zero-Knowledge Proof (ZKP) locally, demonstrating compliance with relevant fiscal conditions (e.g., income range, residency) without revealing raw data.

ZKPs are implemented using zkSNARKs or zkSTARKs and are compatible with existing VC frameworks via protocols like zkLogin or Semaphore. This ensures compliance remains lawful, auditable, and non-intrusive.

## **4. TMFT Enforcement Contract**

The final module is a smart contract that verifies:

- The ZKP (fiscal compliance without exposure);
- The validity and freshness of attestations (SBT or VC);
- The presence of a verifiable signature expressing consent (e.g., EIP-712 standard).

Upon successful validation, the contract applies the TMFT levy, transfers the amount to the designated treasury wallet, and mints a non-transferable NFT or tokenised compliance receipt. This token may also trigger additional functions such as staking, redistribution, or reporting.

## **5. Execution Workflow**

The compliance workflow unfolds as follows:

1. The user is verified by an identity oracle or fiscal DAO, either on-chain or off-chain;
2. Upon successful verification, they are issued a credential or SBT containing their fiscal metadata;
3. The user generates a ZKP confirming their compliance status (without revealing sensitive data);
4. This proof, along with their signed consent, is submitted to the TMFT smart contract;
5. If validated, the TMFT is levied and a compliance receipt is issued and stored.

This sequence ensures due process, preserves data privacy, and enables traceable auditability.

## **6. Technical and Legal Compatibility**

PoCo is designed to interoperate with leading identity, compliance, and DAO governance stacks. Examples include:

- Identity: Verite, Fractal ID, Polygon ID, zkLogin
- Attestations: Ethereum Attestation Service (EAS)
- ZKP Protocols: Semaphore, Noir, SnarkyJS
- Smart Contracts: Solidity, Cairo (Starknet)
- DAO Frameworks: Aragon, Zodiac, Tally
- Receipts: ERC-721 NFTs with fiscal metadata

PoCo is GDPR-compliant by design. No personal data is stored on-chain; metadata is pseudonymised and revocable. Data minimisation and user control are default design principles.

## **7. Normative Significance**

PoCo acts as the procedural guarantee that TMFT only applies where it is lawful to do so. It enshrines user autonomy, ensures that fiscal enforcement complies with due process, and anchors tax execution in verifiable, rights-compatible protocol logic.

In this way, PoCo bridges traditional legal principles—such as consent, residency, and non-discrimination—with next-generation programmable enforcement systems. It completes the architecture of TMFT by embedding procedural legality and human rights protection into the code that underpins fiscal sovereignty.

## Appendix 3 – PoTr and PoCo Architecture

### 1. Introduction

The Tokenised Micro Flat Tax (TMFT) protocol is anchored by two interdependent cryptographic components: Proof of Transaction (PoTr) and Proof of Compliance (PoCo). These mechanisms are not merely technical instruments, but legal-functional enablers that underpin enforceability, jurisdictional tagging, auditability, and user consent. This appendix provides detailed definitions, logic, and practical applications for both PoTr and PoCo in TMFT deployment.

### 2. Proof of Transaction (PoTr)

Definition:

PoTr is a cryptographic record generated automatically at the time a taxable transaction occurs. It encodes economic metadata and serves as the factual basis of tax liability.

Core Metadata Fields:

- Transaction value (in fiat or stable equivalent)
- Token or asset class
- Timestamp (UTC)
- Sender and receiver wallet addresses
- Transaction hash and block ID
- Jurisdictional metadata (via IP, node location, oracles)

Functions:

- Establishes real-time audit trail
- Creates a hash-linked record of economic activity
- Enables automated triggers for TMFT smart contract execution

Technical Architecture:

- Deployed on-chain with deterministic logging
- Oracles feed off-chain data (e.g., exchange rates, location)
- Interoperable with existing token standards (ERC-20, ERC-3643, etc.)

Legal Role:

- Equivalent to an invoice or tax statement
- May be accepted as audit evidence by national tax authorities
- Satisfies transaction-level documentation for cross-border compliance

### **3. Proof of Compliance (PoCo)**

Definition:

PoCo is a cryptographic attestation tied to a user or protocol, confirming opt-in consent to the TMFT regime and establishing jurisdictional alignment.

Core Metadata Fields:

- User/public key identity hash
- Fiscal domicile or applicable legal regime
- Timestamp of consent
- Smart contract address executing the TMFT

Functions:

- Establishes taxpayer's consent under administrative law
- Records jurisdiction for revenue allocation
- Enables programmable exemptions or rate differentiation

Technical Architecture:

- Stored in a public or permissioned registry
- Can be updated periodically or revoked
- Auditable by tax authorities via zero-knowledge or selective disclosure

Legal Role:

- Equivalent to a digital tax registration certificate
- Enables ex ante verification of fiscal status
- Protects against retroactive enforcement claims

#### **4. Combined Functionality**

PoTr and PoCo function together to:

- Ensure tax liability is created only when lawful consent and taxable event coincide
- Allow enforcement without revealing personal data
- Support pseudonymous but legally determinable fiscal identity
- Enable smart contracts to route tax to correct jurisdictions

This logic supports implementation under national law (see Appendix 6–7) and harmonisation at the supranational level (see Appendix 10–11).

#### **5. Use Cases**

1. Cross-border Token Transfer:
  - PoTr captures transaction across two wallets.
  - PoCo defines source/destination jurisdictions for tax allocation.
2. Decentralised Exchange (DEX) Trade:
  - PoTr executes at trade settlement.
  - PoCo of each counterparty allows differentiated rates or exemptions.
3. NFT Royalty Payment:
  - PoTr records royalty transfer.
  - PoCo validates creator's fiscal regime for withholding logic.
4. Enterprise Treasury Management:
  - PoCo anchors enterprise wallets.
  - PoTr validates eligible intra-group transfers with transfer pricing logic.
5. Low-Income Threshold Exemption:
  - PoCo carries exemption credential.
  - Smart contract bypasses TMFT execution below daily limits.

Together, PoTr and PoCo offer the core cryptographic grammar of TMFT: transparent, interoperable, sovereign-compatible fiscal compliance by design.

## **Appendix 4 – Legal Whitepaper: The Tokenised Micro Flat Tax (TMFT)**

### **The Tokenised Micro Flat Tax (TMFT): A Unified, Programmable Fiscal Framework for the Digital Economy**

#### **Abstract**

This whitepaper introduces the Tokenised Micro Flat Tax (TMFT), a programmable, transaction-based tax system designed for blockchain-native economies. It proposes a unified tax mechanism that can optionally replace personal income tax, capital gains tax, VAT, withholding tax, and corporate income tax, offering real-time compliance, legal configurability, and enhanced revenue efficiency. It outlines a dual-framework regime allowing both individuals and corporate entities to opt into TMFT or remain under legacy tax laws, ensuring legal compatibility and avoiding double taxation.

#### **1. Introduction**

- Purpose of the paper
- Background: The challenges of taxation in decentralised and pseudonymous digital environments
- The need for innovation in fiscal architecture

#### **2. The Core Concept of TMFT**

##### **2.1 Definition and Objectives**

- TMFT as a micro-percentage (e.g., 0.2%) tax on digital transactions
- Value flow as the new nexus

##### **2.2 Functional Architecture**

- Proof of Transaction (PoTr) and Proof of Compliance (PoCo)
- Programmable smart contracts
- Treasury routing and national sovereignty

#### **3. Scope of Application**

##### **3.1 Taxable Events**

- Crypto-to-fiat conversions
- Crypto-to-crypto swaps
- Payments for goods and services
- High-volume and high-frequency transfers

- Token disposals and capital gains realisation

### 3.2 Subjects of Taxation

- Individuals (natural persons)
- Corporate entities (legal persons, DAOs)

## **4. TMFT as a Substitute for Legacy Tax Categories**

### 4.1 For Individuals

- Replacing personal income tax
- Replacing capital gains tax (optional)
- Replacing VAT and WHT
- Opt-in vs legacy CGT regime

### 4.2 For Corporates

- Replacing corporate income tax (optional)
- Replacing capital gains tax
- Dual framework: legacy vs TMFT election

## **5. Legal and Fiscal Design**

### 5.1 National Configuration Options

- Rate setting
- Exemptions and thresholds
- Residency and territorial logic

### 5.2 Avoidance of Double Taxation

- Opt-in legal mechanisms
- Election and waiver provisions

### 5.3 Compatibility with International Standards

- OECD Pillar One and Two
- EU VAT and DST frameworks
- Treaty compliance (PoTr and PoCo as metadata interfaces)

## **6. Implementation Roadmap**

- Legislative steps
- Pilot zones and sandbox regimes
- Transition plans and administrative capacity building

## **7. Economic and Governance Benefits**

- Real-time treasury inflows
- Simplicity and transparency
- Reduced compliance costs
- Greater inclusion and equity

## **8. Conclusion**

- TMFT as a foundational fiscal protocol
- Supporting sovereignty, innovation, and fairness in the tokenised age

## **Annexes (optional future additions)**

- Model legislative clauses for individual and corporate opt-in
- Sample smart contract tax logic
- TMFT vs legacy tax burden comparison tables
- Jurisdictional implementation map



## Appendix 5 — TMFT Smart Contract Pseudocode

This appendix presents a conceptual implementation of the TMFT execution layer in Solidity. It illustrates how the key principles of the TMFT protocol—automatic levy calculation, Proof of Transaction (PoTr) generation, Proof of Compliance (PoCo) issuance, and jurisdictional tax routing, can be embedded directly within smart contract logic. The pseudocode integrates core legal and fiscal safeguards, such as consent validation and deterministic compliance enforcement.

### 1. Illustrative Code (generated by ChatGPT v 4.0)

```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.20;

contract TMFT {
    address public complianceOracle;
    address public taxAuthorityWallet;
    uint256 public taxRateBasisPoints; // e.g., 20 = 0.2%

    event PoTrGenerated(
        bytes32 indexed txID,
        address indexed sender,
        address indexed receiver,
        string jurisdiction,
        string asset,
        uint256 value,
        uint256 timestamp
    );

    event PoColIssued(
        bytes32 indexed pocID,
        bytes32 indexed txID,
        address jurisdictionWallet,
        uint256 taxAmount,
        uint256 timestamp
    );

    constructor(address _oracle, address _wallet, uint256 _rateBps) {
        complianceOracle = _oracle;
        taxAuthorityWallet = _wallet;
    }
}
```

```

        taxRateBasisPoints = _rateBps;
    };

function executeTaxableTransaction(address payable _receiver, bytes calldata zkProof, bytes calldata consentSig) external payable
{
    require(msg.value > 0, "No value transferred");

    // Step 1: Validate ZK compliance proof via off-chain oracle
    require(verifyCompliance(zkProof), "Compliance criteria not met");

    // Step 2: Validate digital consent (e.g., EIP-712)
    require(verifyConsent(msg.sender, consentSig), "Valid consent not detected");

    uint256 taxAmount = (msg.value * taxRateBasisPoints) / 10000;
    uint256 postTax = msg.value - taxAmount;

    bytes32 txID = keccak256(abi.encodePacked(msg.sender, _receiver, msg.value, block.timestamp));

    emit PoTrGenerated(
        txID,
        msg.sender,
        _receiver,
        "FR", // placeholder for jurisdictional tag
        "ETH", // placeholder for asset type
        msg.value,
        block.timestamp
    );

    // Transfer post-tax amount to recipient
    (bool sent, ) = _receiver.call{value: postTax}("");
    require(sent, "Transfer to receiver failed");

    // Transfer tax amount to public treasury
    (bool taxSent, ) = taxAuthorityWallet.call{value: taxAmount}("");
    require(taxSent, "Transfer to tax authority failed");

    bytes32 pocID = keccak256(abi.encodePacked(txID, taxAmount, block.timestamp));

```

```

emit PoColIssued(
    pocID,
    txID,
    taxAuthorityWallet,
    taxAmount,
    block.timestamp
);
}

function verifyCompliance(bytes memory zkProof) internal view returns (bool) {
    // Placeholder: integrate off-chain oracle or ZK verifier
    return true;
}

function verifyConsent(address user, bytes memory consentSig) internal pure returns (bool) {
    // Placeholder: validate signed message
    return true;
}
}

```

## 2. Legal and Functional Notes

**Compliance Assurance:** This pseudocode embeds pre-execution compliance validation through external proof (ZKP) and digitally signed consent (Proof of Consent), consistent with GDPR Art. 7 and eIDAS qualified signature requirements.

**PoTr and PoCo Events:** These events establish on-chain, immutable records of the transaction and its compliant tax execution, forming part of the fiscal audit trail.

**Jurisdictional Tagging:** In a production version, asset and jurisdiction strings should be replaced by programmable registry lookups to support treaty application or exemption layers.

**Oracle Layer:** Compliance verification is modular, allowing integration with VC issuers, DAO attestations, or public authority nodes.

## 3. Deployment Considerations

This pseudocode is illustrative and omits advanced production-grade features, including:

- ERC-20 and ERC-777 support for non-ETH assets
- Modular rate logic for multi-jurisdictional application
- DID-binding and wallet-level metadata hashing
- ZKP verification contracts (e.g., Plonk, Groth16 integration)

- Role-based access control and upgradeability via OpenZeppelin
- Interoperability with Layer 2 or cross-chain compliance modules

#### **4. Compliance Extensions**

In a future-ready implementation, the TMFT contract may:

- Interface with ERC-5169 for fiscal metadata embedding
- Issue ERC-721 receipts containing fiscal metadata, timestamp, and jurisdiction
- Export PoTr and PoCo data to public registries, enabling regulators and taxpayers to validate compliance in real time

This pseudocode illustrates how fiscal certainty, legal enforceability, and protocol-level governance can be embedded in the TMFT regime via deterministic and transparent smart contract architecture.

## Appendix 6 – TMFT Implementation Guide with Programmable Consent

### 1. Objectives and Benefits

- **Universal Capture:** Tax applied to all digital transactions (B2B, B2C, P2P).
- **Efficiency:** Low administrative overhead through automation.
- **Transparency:** Ledger-based tracking with real-time analytics.
- **Fairness:** Flat, minimal rate removes loopholes and simplifies compliance.

### 2. Tax Design Principles

#### A. Flat Micro Tax Model

- **Rate:** Set a minimal flat rate (e.g., 0.1%–0.5%) applied to the transaction value.
- **Scope:** Apply to all on-chain transactions, off-chain digital payments, and conversions.
- **Frequency:** Real-time or batched periodic settlements.

#### B. Tokenisation Layer

- **Tax Token (e.g., TaxCoin):**
  - Minted/burned as a receipt of tax.
  - Used to track compliance and incentivise early adoption.
- **Utility:** Can be integrated into reward systems, reputation scores, or governance participation.

### 3. Technology Architecture

#### A. Smart Contracts

- Embedded into transaction flows.
- Automatically calculate and route the micro tax to the tax wallet.
- Programmable for:
  - Rate adjustment (via DAO/Gov governance).
  - Consent triggers (based on KYC, jurisdiction, exemptions).

#### B. Consent Layer (Programmable)

- **Digital Identity Integration:**
  - Users grant programmable consent tied to wallet IDs.

- Consent governs whether transactions are tax-relevant.
- **Dynamic Consent Triggers:**
  - Based on thresholds (e.g., amount, frequency).
  - Based on purpose (e.g., commerce vs. gift).

**4. Legal and Regulatory Alignment**

- **Cross-Jurisdictional Compliance:**
  - Harmonise with AML, KYC, VAT/GST regimes.
  - Support mutual recognition of tax tokens for cross-border use.
- **Regulatory Sandboxes:**
  - Pilot with fintechs and digital service providers.
  - Measure performance, impact, and behavior.

**5. Implementation Roadmap**

Phase	Action	Outcome
1. Design	Consult stakeholders; define tax rate, scope, exemptions	Policy blueprint
2. Infrastructure Setup	Build or integrate blockchain and smart contract systems	Ready platform
3. Token Deployment	Launch tax token and programmable consent system	Functional ecosystem
4. Pilot	Test in controlled environment (e.g., gig economy, micro-payments)	Feedback and optimisation
5. Scale	National rollout; integrate with payment rails and digital ID systems	Broad adoption

**6. Considerations and Risks**

- **Data Sovereignty:** Respect user data while enforcing compliance.
- **Interoperability:** Use open standards (ERCs, ISO 20022) for maximum integration.
- **Digital Divide:** Support onboarding tools and local language interfaces.

**7. Use Case Examples**

- **Gig Economy:** Flat tax on each job payment with opt-in/opt-out consent.
- **Retail:** Point-of-sale terminals auto-deduct tax with traceable token.
- **P2P Transfers:** Threshold-based consent triggers taxable events.

## 8. Forward-Looking Vision

- Enable a **Decentralised Fiscal Layer** where taxation is embedded into economic flows.
- Transition from post-facto reporting to **real-time programmable taxation**.
- Use on-chain data for macroeconomic insights and responsive policymaking.

## Appendix 7 – France-Specific TMFT National Implementation Blueprint

### 1. Legal Basis

- Amendment to the French CGI (Code général des impôts) introducing a "micro-flat digital transaction tax" under a new Article (e.g., Art. 150 ZG).
- Legal recognition of PoCo as an official digital tax receipt, equivalent to traditional electronic invoices.
- Classification of TMFT as a "retenue à la source programmable" for digital asset flows.

### 2. Institutional Stakeholders

#### Stakeholder Role

<b>DGFIP</b>	Fiscal authority responsible for tax collection and enforcement
<b>ANSSI</b>	Ensures cybersecurity of smart contract audits
<b>ACPR/AMF</b>	Supervises integration into crypto-asset service providers (PSANs)
<b>DINUM</b>	Facilitates digital infrastructure standardisation and wallet certification

### 3. Deployment Components

#### 1. Smart Contract Library

- Developed under open-source license by DINUM with external audit by ANSSI.
- Hosted on an Ethereum-compatible chain (e.g., L2 on Starknet, Tezos wrapper).

#### 2. Taxpayer Registration

- Wallets linked to FranceConnect or eIDAS-compliant identity.
- Optional NFT-stamped fiscal identity linked to the tax regime (micro-BIC, autoentrepreneur, société, etc.).

#### 3. PSAN Obligations

- All PSANs required to integrate TMFT smart contracts at point of transaction.
- Automatic reporting to DGFIP via secure API bridges anchored to PoTr hashes.

#### 4. Exemptions

- Transactions < €200 (de minimis).



- Personal transfers between KYC-verified related wallets.
- Wallets exempted under status (e.g., NGOs, charities, EU institutions).

#### Tax Collection Routing

- Funds routed to a dedicated Treasury wallet managed by DGFIP.
- PoCo metadata stored on a French-operated compliance node (could be on IPFS or a permissioned L2).

#### **4. Proposition d'article pour le Code général des impôts (CGI), in French**

À insérer au sein du Titre I du Livre Ier — Dispositions générales d'assiette

Article 150 ZQ (nouveau) – [Expérimentation]

I. À titre expérimental, pour une durée de douze mois à compter de la publication du décret prévu au II, une micro-taxe forfaitaire est applicable aux transactions numériques réalisées à l'aide de technologies de registre distribué (blockchain ou assimilé), par des personnes physiques ou morales fiscalement domiciliées en France, ou dont les opérations présentent un lien économique significatif avec le territoire français.

II. La taxe est prélevée de manière automatisée au moment de la transaction, au taux forfaitaire unique maximal de 0,5 % de la valeur de la transaction, par l'intégration d'un contrat intelligent conforme aux spécifications fixées par arrêté du ministre chargé du budget.

III. Le recouvrement, la déclaration, le contrôle et les sanctions applicables à cette taxe sont fixés par décret en Conseil d'État, pris après avis de la Commission nationale de l'informatique et des libertés (CNIL) et de l'Autorité des marchés financiers (AMF).

IV. Un rapport d'évaluation est transmis au Parlement dans les trois mois suivant la fin de l'expérimentation, analysant les effets économiques, fiscaux et technologiques du dispositif, ainsi que les perspectives de généralisation.

V. Un arrêté conjoint des ministres chargés de l'économie et du budget peut étendre, modifier ou interrompre l'expérimentation dans la limite de la période définie au I.

#### **5. Proposition d'article pour le Livre des procédures fiscales (LPF) , in French**

À insérer dans le Titre II — Obligations des contribuables

Article L. 102 ZH (nouveau) – [Transactions numériques expérimentales]

I. Les contribuables participant à l'expérimentation prévue à l'article 150 ZQ du code général des impôts doivent tenir un journal numérique des transactions concernées, incluant la date, la valeur imposable, le consentement exprimé, et le jeton fiscal utilisé.

II. Ces données sont conservées pendant six ans dans un registre sécurisé, accessible à l'administration fiscale selon les modalités prévues à l'article L. 13 du présent livre.

III. L'administration peut, à titre de contrôle, accéder aux registres distribués utilisés par les plateformes ou protocoles participant à l'expérimentation, sous réserve des garanties prévues au chapitre IV du RGPD.

IV. Le ministre chargé du budget peut, par arrêté, définir les modalités de conservation, d'audit, et de transmission dématérialisée des éléments mentionnés au I.

#### **6. Arrêté ministériel autonome (Budget/Économie) – à publier au JORF), in French**

Prend effet dans le cadre de l'expérimentation autorisée par une loi de finances (ex. LF 2025)

Arrêté du [date] portant création à titre expérimental d'un dispositif de micro-taxa automatisée sur les transactions numériques

##### **Article 1er – Objet**

Il est institué à titre expérimental, pour une durée de douze mois à compter du [date], un dispositif de prélèvement fiscal automatisé sur les transactions numériques réalisées par le biais de technologies de registre distribué.

##### **Article 2 – Assiette et taux**

La taxe s'applique aux transferts de valeur numérique dont la valeur dépasse un seuil de 10 euros, réalisés entre porteurs numériques résidents fiscaux français ou relevant d'une activité économique en France. Le taux est fixé à 0,2 %.

##### **Article 3 – Modalités techniques**

La taxe est collectée via un contrat intelligent intégré dans l'environnement technique des prestataires agréés, lesquels assurent l'enregistrement du consentement au moment de la transaction. Un jeton fiscal numérique est émis pour chaque opération imposée.

##### **Article 4 – Déclaration et contrôle**

Les entités techniques doivent fournir à la DGFiP un rapport mensuel et mettre à disposition un audit cryptographique sécurisé en cas de contrôle. Ces éléments doivent être conservés pendant six ans.

##### **Article 5 – Gouvernance et évaluation**

Une commission interministérielle pilotée par la DGFIP, la DINUM, et l'ACPR évalue trimestriellement les effets du dispositif. Une synthèse est transmise au Parlement avant le [date + 15 mois].

#### Article 6 – Clause de révision

Le présent arrêté pourra être modifié, prorogé ou abrogé par arrêté conjoint des ministres chargés de l'économie et du budget, sur avis de la commission mentionnée à l'article 5.

#### Article 7 – Publication

Le présent arrêté sera publié au Journal officiel de la République française.

### 7. Detailed Technical Appendice, in French

#### ❖ Spécifications des contrats intelligents (smart contracts)

- **Standard technique** : ERC-3643 (Token Permissionné) – ajout de fonctions spécifiques "taxOnTransfer", "recordConsent", "emitTaxReceipt".
- **Fonctionnalités principales** :
  - Calcul automatique du montant de taxe à prélever sur la valeur de la transaction (en % ou montant fixe) ;
  - Enregistrement immuable de la preuve de consentement à la taxe dans les métadonnées de la transaction ;
  - Transfert de la taxe au portefeuille du Trésor public ou d'un contract proxy opéré par la DGFIP.
- **Interopérabilité EVM** : Compatible avec les blockchains Ethereum, Polygon, ou toute chaîne compatible EVM.
- **Auditabilité** : Code open source, vérification cryptographique, et intégration d'un hachage Merkle dans chaque bloc fiscal.

#### ❖ Structure du consentement programmable

- **Consentement ex ante** : L'utilisateur valide une autorisation initiale à travers une interface développée par les services fiscaux ou des prestataires agréés (wallets, dApps).
- **Modèles de consentement** :
  - **Opt-in volontaire**, avec seuil de valeur (par exemple, >10 €)
  - **Opt-out encadré** pour cas d'exemption (don familial, transaction d'essai, etc.)

- **Signature cryptographique** : Consentement signé par l'utilisateur avec sa clé privée ou via une identité souveraine (DID/SSI).
- **Journalisation** : Archivage horodaté, pseudonymisé, conforme au RGPD (principe de minimisation, droit à l'oubli, consentement granulaire).

❖ **Interopérabilité technique et juridique**

- **Formats de données** : Conformité à la norme **ISO 20022** pour la communication des métadonnées de transaction à l'administration fiscale.
- **Identité numérique** : Intégration optionnelle avec le **Répertoire national d'identités numériques (RNIN)** ou via des systèmes d'identité auto-souveraine.
- **Interopérabilité juridique** : Compatibilité avec le cadre MiCA, la loi PACTE, le RGPD et la directive eIDAS 2.0 sur l'identité numérique européenne.

❖ **Gouvernance adaptative de type DAO**

- **Comité consultatif technique** : DGFIP, DINUM, prestataires agréés, représentants de la société civile et acteurs blockchain.<sup>4</sup>
- **Protocole de gouvernance partagée** :
  - Vote tokenisé ou délibération par collège mixte pour la modification des taux, exemptions, ou ajout de nouvelles catégories de transactions.
  - Mécanisme de quorum avec validation de la DGFIP.
- **Clause de mise à jour automatique** : Intégration d'un oracle juridique pour déclencher l'actualisation des contrats en cas d'évolution législative (loi de finances, jurisprudence).

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<sup>4</sup> The DAO governance structure described here is provided as a high-transparency model and remains optional for jurisdictions. It may be replaced with conventional administrative oversight mechanisms as per national legal tradition.

## Appendix 8 – TMFT Impact Assessment in France (draft)

### 1. Purpose of this Impact Assessment

This document presents a comprehensive legal, economic, budgetary, and societal impact assessment of a proposed **Tokenised Micro Flat Tax (TMFT)** on digital transactions. The tax would be automatically collected using smart contract infrastructure and programmable user consent, applying a flat micro-rate to each eligible transaction.

This measure is intended to modernise tax collection, increase transparency, and provide real-time traceability in the digital economy.

### 2. Legal Analysis under French Law

**National Legal Basis:** The proposal relies on several provisions from the French General Tax Code (CGI) and the Tax Procedure Code (LPF):

- **CGI Article 34:** taxation of industrial and commercial profits;
- **CGI Article 209:** territoriality of corporate income tax;
- **CGI Articles 256 et seq.:** VAT framework for taxable services;
- **LPF Articles L10 et seq.:** obligations related to record-keeping and audits.

TMFT's legal recognition as a tax mechanism in France would be grounded in:

- **Article 34 of the French Constitution**, which reserves tax creation to Parliament;
- **LPF Article L. 252 and L. 10–13**, establishing the legal framework for digital fiscal records and verification;
- **Article 150 ZQ (proposed):** recognises smart contract-executed micro-taxes as “retenues à la source” (withholding-at-source) aligned with territorial nexus principles (CGI Art. 209).

The use of PoCo as a legal tax receipt aligns with the definition of digital invoices under **EU Directive 2014/55/EU** and **Order No. 2021-1190 (France)** on e-invoicing in public contracts, extended to B2B by **Finance Law 2024**.

**Constitutional Principles:** The TMFT respects the principles of:

- **Legality of taxation** (French Constitution, Article 34);
- **Equality before taxation:** same flat rate applied to all eligible digital transactions;
- **Necessity of taxation:** clearly justified public interest.

**Data Protection and GDPR:** The use of programmable consent complies with the **GDPR (EU 2016/679)**, including:

- Article 6: lawful basis for processing;
- Article 7: freely given consent;
- Article 25: data protection by design and by default.

### **3. Alignment with European Union Law**

**Compatibility with EU Tax Frameworks:** The TMFT aligns with:

- The **2006/112/EC VAT Directive**, especially regarding digital services;
- The European Commission's proposals for a **Digital Services Tax (DST)**;
- The regulatory framework of **MiCA** (Markets in Crypto-Assets Regulation).

**Tax Competence and EU Harmonisation:** Per **TFEU Article 113**, the EU may harmonise indirect taxes, not direct taxes. The TMFT could thus be proposed under enhanced cooperation among pioneering Member States.

**Legal and Technical Interoperability:** The system supports integration with **ISO 20022**, **eIDAS 2.0**, and future cross-border digital identity systems.

### **4. International Dimensions**

#### **1. OECD Framework and Bilateral Tax Conventions**

The TMFT does not infringe upon France's tax treaties, as it applies to territorial consumption and avoids double taxation. It supports the objectives of the **OECD/G20 Inclusive Framework on BEPS**, notably:

- **Pillar 1:** reallocating taxing rights;
- **Pillar 2:** implementing a global minimum tax.

#### **Transfer Pricing and French Fiscal Control of Intra-Group Crypto Transactions**

Article 57 of the French *Code général des impôts* (CGI) requires that profits indirectly transferred abroad by enterprises under common control be adjusted to reflect arm's length conditions. France follows the OECD Transfer Pricing Guidelines (TPG), including recent updates on hard-to-value intangibles and financial transactions.

The TMFT regime, by embedding *Proof of Transaction* (PoTr) metadata (price, wallet identity, jurisdiction), supports arm's length verification for intra-group crypto-asset flows (e.g., DAO-to-parent transfers, tokenised service agreements). In particular:

- The **CUP (Comparable Uncontrolled Price)** method becomes usable via real-time oracle-based market pricing;
- The **economic function** of the transaction (staking-as-a-service, software licensing, treasury routing) is tagged for auditors;
- Jurisdictional tagging via PoCo supports documentation under **BEPS Action 13 (Local File)** obligations.

These features reduce the compliance burden for French MNEs and support alignment with OECD BEPS Actions 8–10, as transposed in French law through **Ordinance no. 2019-1068** (relating to tax documentation for multinational groups) and **BOI-BIC-BASE-80-10-20** (Bofip guidance on transfer pricing adjustments).

## 2. Trade Rules and WTO Compatibility

As a generalised, non-discriminatory levy linked to value exchange, the TMFT is consistent with **GATS** rules and the **Most Favored Nation (MFN)** principle of the **WTO**.

## 3. International Administrative Cooperation

The TMFT could feed into **automatic information exchange mechanisms** (e.g. **CRS**) and enhance traceability for global tax compliance.

# 5. Budgetary and Economic Impact

## 1. Estimated Revenue Potential

At a flat rate of 0.2% on digital transactions (estimated volume: €300 billion annually), the TMFT could generate up to **€600 million per year** in France alone.

## 2. Implementation Costs

- Smart contract deployment: low, replicable across sectors;
- Administrative overhead: minimal due to automation;
- Outreach and onboarding: fundable through the Public Transformation Fund.

## 3. Behavioral and Systemic Effects

- Encourages formalisation of digital activities;

- Higher taxpayer acceptability due to transparency and user control;
- Fosters innovation in tax policy design.

## **6. Conclusion and Policy Recommendations**

The Tokenised Micro Flat Tax represents a forward-looking, low-friction, real-time tax collection model adapted to the digital economy. It is:

- Fully compliant with French, EU, and international tax law;
- Technically interoperable and GDPR-compliant;
- Politically viable within experimental regulatory frameworks.

### **Recommendations:**

- Launch a 12-month experimental phase;
- Include a multi-stakeholder evaluation committee (DGFIP, DINUM, AMF, private sector);
- Explore cross-border cooperation mechanisms with EU and OECD partners.



Appendix 9 – EU Level Coordination

1. Legal and Institutional Framework

DG TAXUD Mandate

DG TAXUD (Taxation and Customs Union Directorate-General) is responsible for:

- Ensuring fair and efficient taxation across Member States.
- Developing interoperable IT systems and shared regulatory standards.

TMFT aligns with DG TAXUD’s push for:

- Digital-by-design tax collection
- Real-time VAT e-reporting (ViDA initiative)
- Sustainable tax bases for digital and decentralised economies

2. Proposed Coordination Architecture

Level	Function	Institutional Role
EU Regulation	Optional adoption under a new Digital Fiscal Instrument Directive (DFID)	European Commission (DG TAXUD), COM(2026)
Technical Norms	TMFT interoperability standard via EU Blockchain Services Infrastructure (EBSI)	CEF Digital + JRC
Governance Body	Formation of an EU TMFT Coordination Group	DG TAXUD, chaired with MS rotating
Legal Instrument	Implementing Regulation under Art. 114 TFEU for single market coherence	Council + EP co-decision

3. Implementation Phases

Phase 1 – Optional National Rollout (2025–2027)

- MS pilot TMFT nationally (e.g., France, Netherlands, Estonia).
- DG TAXUD provides toolkit: smart contracts, reference schemas, integration guides.

Phase 2 – EU Interoperability Layer (2028–2030)

- Establishment of PoTr/PoCo schema registry at EU level.
- Integration into EU Single Window for Customs and Tax.

- Cross-border recognition of PoCo under the DAC8 framework.

Phase 3 – Fiscal Harmonisation (2030+)

- TMFT used to replace or complement VAT micro-threshold schemes.
- Embed TMFT logic into EU Digital Euro smart contracts (jointly with ECB).

**4. Technical Coordination EU DG TAXUD in partnership with:**

- European Blockchain Services Infrastructure (EBSI) for ledger integrity and public key registries.
- ENISA to ensure cyber-resilience and anti-fraud measures.
- JRC Seville to develop impact simulations and fiscal modelling tools.

**5. Key Benefits for the EU**

Benefit	Detail
Fair Internal Market	Ensures level playing field for digital taxation across MS
Reduces Fraud & Gaps	Replaces manual VAT declarations for small actors
Boosts SME Participation	Removes compliance barriers to cross-border operations
Cross-Border Simplicity	Automates intra-EU tax recognition through PoCo mutual recognition

## Appendix 10 – Draft EU Directive

### Directive No. [XXXX] – Establishment of a Tokenised Micro Flat Transaction Tax System with Programmable Consent

#### Issued by:

The [Name of Tax Administration / National Competent Authority]

Date: [Insert Date]

Effective: [Insert Proposed Effective Date or Pilot Start Date]

#### I. Purpose and Scope

**1.1** This Directive establishes the regulatory framework for the implementation of a **Tokenised Micro Flat Tax (TMFT)** on eligible digital transactions, leveraging blockchain infrastructure, smart contracts, and programmable consent mechanisms.

**1.2** The TMFT system is introduced to enhance real-time tax compliance, reduce administrative burdens, and ensure equitable and transparent tax collection across digital and decentralised economies.

**1.3** This Directive applies to all natural and legal persons, including digital platforms, fintech providers, and decentralised applications (dApps) operating or transacting within the jurisdiction of [Country or Authority Name].

#### II. Definitions

For the purposes of this Directive:

- **“Micro Flat Tax”** means a fixed, minimal percentage levied uniformly on eligible digital transactions.
- **“Tax Token”** refers to a digital token used to record, settle, and verify tax payments on-chain.
- **“Programmable Consent”** means the digital pre-authorisation or conditional approval given by transacting parties to trigger taxation within smart contract logic.
- **“Eligible Transaction”** refers to any transfer of digital assets, tokens, or digital representations of value, whether on-chain or via regulated off-chain platforms.

#### III. Tax Design Specifications

**3.1 Rate:** The tax shall be imposed at a flat rate not exceeding **0.5%** of the transaction value unless otherwise revised by the competent authority.

**3.2 Calculation and Deduction:** The tax amount shall be computed automatically and deducted at the point of transaction settlement via smart contract.

**3.3 Exemptions:** The Authority may issue guidelines for exemptions or adjustments, including thresholds (e.g., transactions below [x amount]), intra-family transfers, or charitable donations.

#### IV. Technical Implementation Framework

**4.1 Smart Contracts:** All entities subject to this Directive shall ensure tax compliance by integrating standardised smart contracts approved by the Authority.

**4.2 Tax Token Functionality:** The Tax Token shall:

- Be non-speculative and pegged to the national currency;
- Serve as a verifiable receipt of tax paid;
- Enable real-time monitoring and audit trails.

**4.3 Consent Layer:** All users shall be provided with interfaces (web, mobile, or wallet-based) to manage programmable consent. Consent mechanisms must include:

- Jurisdiction-based rules
- Transaction-type differentiation
- Reversible opt-in or opt-out toggles (subject to approval)

**4.4 Privacy and Security:** Implementation must comply with national data protection laws. Tax tracking shall occur without compromising user identity beyond legal requirements (e.g., via zero-knowledge proofs or encrypted metadata).

#### V. Legal and Regulatory Compliance

**5.1 Licensing and Supervision:** Service providers implementing TMFT smart contracts or handling Tax Tokens must be registered with the Authority and subject to regulatory oversight.

**5.2 Interoperability:** Protocols must adhere to open standards, including but not limited to ISO 20022, ERC-20/ERC-3643 (for permissioned tokens), and other protocols as specified by the Authority.

**5.3 Reporting:** Monthly compliance reports, either automated or semi-automated, must be submitted by regulated entities, including summary statistics on:

- Volume of taxable transactions
- Tax Token issuance/burn records
- Exceptions or consent overrides

#### VI. Phased Implementation and Pilot Program

**6.1 Pilot Phase:** A 12-month pilot phase shall be initiated with selected participants in the following sectors:

- Gig economy platforms
- Digital goods marketplaces

- Remittance and microfinance providers

**6.2 Evaluation Metrics:** Key performance indicators shall include:

- Tax capture rate
- System latency and cost efficiency
- User consent opt-in ratios
- Public satisfaction and usability metrics

## **VII. Enforcement and Sanctions**

**7.1 Non-Compliance:** Entities failing to implement or obstructing TMFT mechanisms shall be subject to:

- Fines up to [X currency amount]
- Suspension or revocation of digital service licenses
- Public listing as non-compliant actors

**7.2 Dispute Resolution:** Users may file grievances regarding over-taxation, faulty consent execution, or denial of exemption. A digital resolution protocol shall be instituted.

## **VIII. Forward-Looking Provisions**

**8.1 DAO Governance Integration:** The Authority will explore mechanisms for stakeholder involvement in future rate-setting, exemption reviews, and protocol updates via decentralised governance frameworks.

**8.2 International Cooperation:** This Directive encourages alignment with international digital tax frameworks, including OECD guidance, and supports mutual recognition of TMFT systems for cross-border use.

## **IX. Entry into Force**

This Directive shall enter into force on [Date], subject to the completion of technical trials, sandbox regulatory clearance, and stakeholder consultations.

*For further information or to participate in the TMFT pilot program, entities are advised to contact: [Insert Contact Point / Digital Tax Innovation Unit].*

## **Appendix 11 – Optional Supranational Implementation Structures: the OECD**

### **1. Strategic Rationale for OECD Involvement**

The OECD (Organisation for Economic Co-operation and Development) occupies a central role in the architecture of global tax governance. While historically a standard-setter and policy advisor rather than a tax collector, the OECD's evolution in the post-BEPS era has positioned it as a viable institutional anchor for an international micro-tax framework such as the Tokenised Micro Flat Tax (TMFT).

The OECD's experience with consensus-building, dispute resolution mechanisms, and digital economy taxation (notably through the Inclusive Framework on BEPS and Pillar 1/Pillar 2 reforms) makes it particularly well-suited to host or certify a transaction-based tax regime applicable to digital assets.

### **2. Legal and Institutional Instruments Available to the OECD**

**Inclusive Framework on BEPS:** The OECD/G20 Inclusive Framework provides a multilateral negotiation and implementation platform with over 140 participating jurisdictions. It has been instrumental in establishing minimum tax standards, digital permanent establishment thresholds, and country-by-country reporting rules. TMFT could be introduced within this framework as a recommended good practice or a peer-reviewed standard, with flexibility for sovereign adaptation.

**OECD Model Tax Convention and the MLI:** The OECD Model Tax Convention on Income and on Capital, together with the Multilateral Instrument (MLI), form the legal backbone of treaty-based tax coordination. TMFT provisions could be integrated into the MLI through an additional protocol or interpretive statement, enabling jurisdictions to include TMFT logic into future double tax treaties and avoid conflicts with existing withholding regimes.

**Normative Soft Law and Guidance Papers:** The OECD regularly issues non-binding guidance with significant normative influence (e.g., Transfer Pricing Guidelines, Crypto-Asset Reporting Framework (CARF), and VAT/GST digital services guidance). A TMFT Technical Implementation Guide could be issued under this model to guide national implementations and ensure compatibility.

### **3. Potential Functional Roles for the OECD in the TMFT Ecosystem**

**TMFT Certification Authority:** The OECD could serve as a global certifier of TMFT-compatible protocols and smart contracts. This would involve setting technical and governance standards for PoTr and PoCo, including auditability, metadata sufficiency, consent mechanisms, and fiscal traceability. The OECD would not collect tax but would enable interoperable systems across jurisdictions.

**Secretariat for TMFT Peer Review:** As it does for BEPS minimum standards, the OECD could establish a peer review mechanism to assess TMFT implementation at the national level, measuring compliance, integrity, and fiscal outcomes. This would foster convergence while preserving fiscal sovereignty.

**Repository and Reporting Node:** The OECD could host a secure metadata reporting layer aggregating anonymised PoTr indicators for analytical use, policy benchmarking, and cross-jurisdictional comparison. This would enhance global fiscal visibility and support anti-base erosion efforts.

#### 4. Legal Feasibility and Precedents

While the OECD has no mandate to levy taxes, it already functions as a de facto rule-maker for international tax coordination. Precedents include: the Common Reporting Standard (CRS), now adopted in over 100 jurisdictions; the MLI, which entered into force with legally binding effect without the need for a new treaty organisation; BEPS Action 1, which introduced proposals for taxing the digital economy.

TMFT adoption under OECD auspices would require only the issuance of soft law instruments and voluntary member implementation, potentially reinforced via multilateral declarations or regional agreements (e.g., EU, ASEAN).

It is important to emphasise that the OECD, while influential in global tax coordination, does not possess a mandate to collect or administer taxes. Its role in the TMFT context is strictly *normative* — issuing soft law instruments such as model rules, implementation guidance, and technical standards — consistent with its work on the Common Reporting Standard (CRS), BEPS, and CARF. TMFT would be adopted voluntarily by member states, who retain full fiscal sovereignty and enforcement capacity.

#### 5. Administrative Benefits and Global Policy Impact

- Technical Interoperability: Facilitates TMFT standardisation across EVM and non-EVM blockchains.
- Policy Legitimacy: Anchors TMFT in an existing, politically neutral tax policy ecosystem.
- Capacity Building: Leverages OECD's Tax Inspectors Without Borders and Global Forum capacity for training tax authorities in TMFT audits.
- Political Feasibility: Avoids creation of a new supranational fiscal body while enabling coordination.

#### 6. Summary

The OECD pathway for TMFT offers a high-credibility, low-friction implementation route. It allows member states to retain fiscal sovereignty while benefiting from harmonised standards, peer review, and global fiscal insight. While limited by the OECD's non-fiscal mandate, this option provides the legal, political, and technical scaffolding needed to support cross-border adoption of the TMFT as a globally respected digital tax mechanism.

## **Appendix 12 – Optional Supranational Implementation Structures: the United Nations**

### **1. Strategic Rationale for UN Involvement**

The United Nations (UN), through its Committee of Experts on International Cooperation in Tax Matters, offers a uniquely inclusive platform for fiscal norm-setting, one that reflects the priorities and sovereignty of Global South jurisdictions often underrepresented in OECD-led tax architectures. Its institutional commitment to the Sustainable Development Goals (SDGs) and to capacity-building in low- and middle-income countries makes it a natural steward for equitable global tax innovation.

Anchoring the Tokenised Micro Flat Tax (TMFT) within a UN-led multilateral convention would mark a decisive shift toward a more balanced and representative model of international tax governance. It would enable developing states to participate meaningfully in shaping digital fiscal standards, while embedding redistributive mechanisms programmable in support of SDG-aligned outcomes such as climate resilience, health systems, and digital infrastructure.

A UN-administered TMFT regime would thus signal the emergence of a new fiscal multilateralism, grounded in fairness, digital sovereignty, and the rebalancing of global public finance toward the needs and aspirations of the Global South.

### **2. Institutional and Legal Infrastructure Available**

#### **▪ UN Committee of Experts on International Cooperation in Tax Matters**

This committee already develops model treaties and offers guidance on tax policy and administration for countries with limited capacity. It could serve as the primary policy-setting body for TMFT by:

- Issuing interpretive notes on how TMFT aligns with UN tax principles;
- Coordinating capacity-building efforts in TMFT deployment;
- Integrating TMFT into UN tax treaty models.

#### **▪ UN Framework Convention Model**

Following the precedent of UN conventions in climate (UNFCCC), biodiversity (CBD), and corruption (UNCAC), a **Framework Convention on Digital Fiscal Governance** could be proposed. It would:

- Establish TMFT as an optional but recognised international fiscal mechanism;
- Define governance, scope, exemptions, enforcement, and redistribution protocols;
- Offer states flexibility through optional annexes or modules.

#### **▪ Operational Support through UNDP and UNCTAD**



The UN Development Programme (UNDP) and UN Conference on Trade and Development (UNCTAD) could provide:

- Technical support for TMFT node deployment in developing economies;
- Policy support on digital infrastructure and tax digitalisation;
- Alignment with digital public goods infrastructure supported by the UN Tech Envoy.

Unlike the OECD, the United Nations — through its Committee of Experts or via a formal Framework Convention — may act as a **treaty-based administrator** for the TMFT, offering a platform for binding commitments, intergovernmental redistribution formulas, and jurisdictional dispute resolution. This model aligns with precedents in environmental, trade, and health governance, where fiscal and compliance obligations are codified in multilateral legal instruments.

### **3. Draft Elements of a UN Framework Convention on TMFT**

**Preamble:** Recalling the principles of the UN Charter, the Universal Declaration of Human Rights (particularly Articles 21 and 25), and the Sustainable Development Goals; Recognising the need for fair, effective, and transparent international fiscal cooperation; Affirming the importance of sovereign fiscal autonomy and equitable burden-sharing;

#### **Article 1 – Purpose and Scope**

This Convention establishes a multilateral framework for the adoption, implementation, and interoperability of a tokenised micro flat tax on eligible digital transactions.

#### **Article 2 – Certification and Smart Contract Standards**

Creates a UN Certification Authority to accredit TMFT-compatible protocols, smart contracts, and digital wallets, based on criteria including auditability, consent tracking, and cross-jurisdictional metadata tagging.

#### **Article 3 – Metadata and Interoperability Standards**

Mandates the use of standardised transaction metadata formats, such as PoTr and PoCo, to facilitate auditability and cross-border enforcement.

#### **Article 4 – Allocation and Redistribution Mechanisms**

Establishes a fiscal allocation mechanism enabling states to share tax proceeds derived from cross-border transactions, with weighted redistribution toward Least Developed Countries (LDCs).

#### **Article 5 – Governance and Compliance**

Assigns oversight to the UN Economic and Social Council (ECOSOC) and establishes a Conference of the Parties (COP) to review implementation, amend annexes, and publish compliance scorecards.

#### **Article 6 – Entry into Force and Amendments**

Details procedures for ratification, entry into force upon a minimum number of ratifying states, and future amendments.

#### **4. Advantages of the UN Route**

- **Developmental Equity:** Embeds fiscal capacity building and resource mobilisation for Global South.
- **Global Public Goods Alignment:** TMFT revenue could be earmarked for SDG-related uses (e.g., climate, health, education).
- **Institutional Legitimacy:** Builds on the UN's broad membership, especially in non-OECD jurisdictions.
- **Neutral Governance:** Ensures inclusive decision-making, reducing the perception of tax imperialism.