

Metaverse Standards Forum

NFT Royalties: Low Frequency Trading within NFT Marketplaces

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Status: Approved for Public Distribution

Version: 1.0

Reviewer	Due Date	Status	Contact
Digital Asset Management Working Group	June 18, 2024	Complete	digital_asset_management@lists.metaverse-standards.org
MSF Domains (Peer Review)	March 05, 2025	Complete	oversight@lists.metaverse-standards.org
Use Case Taskforce	May 06, 2025	Complete	use_case_task_force@lists.metaverse-standards.org

The purpose of this template is to provide a structured framework for collecting and documenting use cases within the Metaverse Standards Forum (MSF). Use cases are essential for understanding real-world scenarios where metaverse technologies are applied and where interoperability challenges may arise. This template guides MSF members in providing a concise yet comprehensive description of a use case, including its title, identifier, and summary. It also encourages contributors to list the benefits of the use case, identify actors or entities involved, and describe the use case scenario in detail, emphasizing interactions, challenges, and requirements. Additionally, it prompts the inclusion of relevant technical information, such as implementations, success metrics, and challenges faced. This template aims to facilitate the gathering of valuable use-case data to inform standards development and foster collaboration within the MSF community.

MSF members and MSF Domain Groups are invited to submit use cases.

NOTE: Organizations such SDOs who want to submit and add a use case would need a sponsor that is an MSF member. This process is established in order to have a contact person in MSF that can handle discussions and resolve open issues within regular meetings.

Eligible submitters:

- MSF Domain Groups
- MSF Members (Principal and Participant)
- External Organizations with Liaison Agreements (with the support of a MSF member that acts as sponsor)



- Standard Development Organizations (with the support of a MSF member that acts as sponsor)

Minimum Requirements for MSF Member Submissions not part of a Domain Group:

- Minimum required number of proposers: 3
- Minimum required number of supporters: 5

NOTE: Use cases submitted by SDOs and Liaison Organizations would also need to fulfill the same requirements (and would need a sponsor) unless they are submitted by a Domain Group.

MSF: Metaverse Standards Forum

POG: Pre-qualified Organizations and Groups

SPP: Standards Related Publications and Projects

DWG: Domain Working Groups

WG: Working Group

SDO: Standards Development Organization

Use Case Title
Low Frequency Trading within NFT Marketplaces
Use Case Identifier
MSF2024-001-LFT • Version 1.0 • Year of Release: 2025
Summary of Use Case
Description: This use case focuses on royalties in low frequency trading (LFT) within NFT marketplaces. It encompasses the lifecycle of NFTs from creation, minting, listing, to the point of sale, particularly in high-value transactions. The case emphasizes the unique challenges and dynamics of trading high-value digital assets in specialized marketplaces and the subsequent distribution of royalties. Benefits of LFT within NFT Marketplaces: • Fair Compensation for Creators: ensures that artists and creators receive equitable royalties from NFT transactions. • Enhanced Transparency: improves transparency in the trading and provenance tracking of high-value digital assets. This use case appears similar to High Frequency Trading, which is a separate use case (MSF2024-001-HFT), but may require a different solution.

Contributors and Supporters

- Digital Asset Management Working Group
- MSF Domains (Peer Review)
- Use Case Taskforce

Keywords

NFT, Low Frequency Trading, High-Value Digital Assets, NFT Marketplaces, Royalty Distribution, Blockchain Interoperability, Digital Art, NFT Collectibles, Ethereum Blockchain, Smart Contracts.

Actors/Entities

- **Creator:** entity that originates the NFT, responsible for its initial creation and minting.
- **Secondary Creators/Collaborators:** entities involved in the NFT's creation process or holding contractual rights, such as publishers, distributors, or collection societies.
- **Wallets:** digital wallets facilitating NFT transactions.
- **NFT:** a digital asset governed by an NFT Contract.
- **NFT Contract:** various types of governing smart contracts for NFTs, including those that are immutable, upgradeable, and those representing real-world assets.
- **Blockchain Network:** the foundational technology enabling NFT minting, trading, and royalty distribution.
- **Holders:** includes both Sellers (current NFT owners) and Buyers (collectors, liquidity providers).
- **Marketplace:** digital platforms for the listing and trading of NFTs, inclusive of curators and online galleries.

Detailed Description of Use Case/Scenario

Preconditions:

- The Creator mints an NFT and associated NFT Contract specifying royalty terms using the System.
- Buyers, including collectors and liquidity providers, are active in the Marketplace.
- The Blockchain Network is in place to support the transaction and royalty distribution.

Main Flow:

1. The NFT is listed in a Marketplace by Seller
2. A Buyer identifies NFT on the Marketplace and decides to purchase it.
3. The purchase transaction is executed through the Buyer's Wallet, with the price and terms clear on the Marketplace.

4. Upon successful transaction, the Marketplace records the sale and triggers the closing process.
5. The Marketplace, NFT Contract, and System together initiate the distribution of royalties, as specified in the NFT Contract, to the Creator and any Secondary Creators/Collaborators involved.
6. All parties (Creator, Secondary Creators, Buyer) receive confirmation of the transaction and royalty distribution on the Blockchain Network.

Postconditions

- The NFT ownership and transaction details are updated in the Blockchain Network.
- Royalties are distributed as per the NFT Contract terms.
- The Marketplace updates its listings to reflect the sale.

Implementations and Demonstrations or Technical Feasibility

- NFT Contracts, Marketplaces, and royalty payouts are already implemented by existing companies including the following:
 - **Magic Eden:** implements Marketplaces on Solana, Ethereum, Bitcoin, and more.
 - **X2Y2:** runs a Marketplace on Ethereum.
 - **SuperRare:** an Ethereum-based Marketplace specializing in single-edition art NFTs.
 - **Binance NFT:** NFT Marketplace on the Binance Smart Chain,
 - **Mintable:** runs a marketplace on Ethereum, ImmutableX, and Ripple (XRP).

Challenges:

- **Royalty Compliance:** ensuring Marketplaces honor royalties when it is not in their interest to do so from a short term perspective. Currently royalties are not enforced at the smart contract level and must be enforced by the Marketplace. (ERC-2981)
- **Market Liquidity:** managing liquidity in a market where transactions are low frequency but high-value digital assets can be challenging. This affects price stability and the ability to execute trades efficiently.
- **Smart Contract Complexity:** the intricacy of smart contracts that handle high-value transactions and royalty distributions can be technically demanding, requiring advanced blockchain solutions.
- **Regulatory Compliance:** high-value NFT trades may attract more stringent regulatory scrutiny, necessitating compliance with various legal frameworks.
- **Verification and Authenticity:** ensuring the authenticity and provenance of high-value NFTs is critical, especially in a low frequency trading environment.
- **Royalty Distribution:** accurately calculating and distributing royalties in high-value trades, particularly when multiple creators or rights holders are involved, can be complex.

Requirements:

Technical and Functional Requirements:

- **Advanced and Scalable Blockchain Networks:** high-value LFT transactions within NFT Marketplaces demands blockchain networks that are not only secure but also highly scalable to handle such transactions efficiently.
- **Robust Algorithmic Frameworks:** algorithms used in LFT must be robust, efficient, and transparent. They should be designed to minimize market manipulation risks and ensure fairness in trading.
- **Transparent and Fair Royalty Distribution:** implementing Smart Contract capabilities, with clear and transparent mechanisms to handle complex royalty calculations and distributions involving multiple creators or right holders, is essential to maintain trust among all parties involved.
- **Compliance with Regulatory Standards:** as the regulatory landscape evolves, LFT systems must be adaptable to comply with new regulations and standards, especially those concerning market integrity and consumer protection.

Interoperability Requirements:

- **Standardized Trading Protocols:** developing and implementing standardized trading protocols and APIs across different NFT marketplaces is necessary to facilitate interoperability and efficient market operations.

Other Key Considerations:

- **Privacy:** ensure that the LFT process respects user privacy, with mechanisms to achieve transparency while protecting personal information from unauthorized access or exposure.
- **Cybersecurity:** apply adequate security measures commensurate with the level of risk, especially related to high-value digital asset transactions. This includes advanced encryption methods, secure trading protocols, and real-time monitoring systems to prevent cyber threats.
- **Identity Verification:** develop reliable identity verification processes for buyers and sellers to prevent fraud and ensure trustworthiness within the ecosystem.
- **Networking and Latency:** optimize network performance to handle the transactions and interactions involved in LFT without significant delays or downtime.
- **Ownership:** clearly define and enforce the ownership rights of parties to the exchanged digital assets, ensuring they retain full control over their buying and selling activities.
- **Digital Ethics:** address ethical considerations related to LFT, including digital assets exchange, equitable access, and responsible trade of digital assets.
- **Provenance:** maintain accurate and transparent records of digital assets provenance, including trading log / history, to ensure authenticity and ownership history.
- **Accessibility:** make LFT platforms and services accessible to a wide range of users, including those with disabilities, to promote inclusivity within the digital economy.

Relevant Domain Working Group (WGs):

- NA

Relevant Pre-qualified Organizations and Groups (POGs):

- NA

Relevant Specifications, Publications and Projects (SPPs):

- NA

Related Use Cases

- High Frequency Trading within NFT Marketplaces (MSF2024-001-HFT)

Additional Comments

- This document is a living artifact and may be subject to revisions on a periodic basis to reflect the future state of NFT Royalties, and or based on feedback received from MSF stakeholders that warrants an update in the future.