ERC11 (1:1): Introduction

The ERC11 is an experimental token standard that combines aspects of the ERC20 and ERC1155 to create a new class of semi-fungible tokens. This standard opens up new creative possibilities not just for memecoins but also for other concepts as well.

Some examples include:

- Memecoins with pictures
- Music Tokens
- Two-sided tokens

The only limit is one's imagination.

Origins

Non-Playable Coin was born from an idea of creating the memecoin answer to NFTs back in July 2023. We not only created the first memecoin NFT hybrid but also the first proper implementation of an NFT hybrid where both sides of the coin mattered equally, rather than just being an afterthought. We realized the Non-Player Character was the perfect meme for a project of this nature due to billions of the same profile picture being completely on-brand for the meme. To make this project a reality, we utilized the ERC1155 multi-token standard, which allows for multiple tokens within the same contract. Additionally, one of the common features of most memecoin projects is not only the memes themselves but also large token supply. Unlike the ERC721 standard, the 1155 allows for batch transfers, which means a user can transfer large quantities of the NFT all at once rather than individually. For a project with an 8 billion+ supply, this is absolutely essential.

Enter the 404

Roughly 7 months after the release of NPC, a radical new experimental token standard hit the scene called the ERC20721 by Serec Thunderson. While there had been instances of 721s trading as ERC20 in the past (NFTX, etc.), its initial implementation, Emeralds, brought powerful new dynamics along with an immediacy and simplicity that its wrapped counterparts lacked, albeit with certain trade-offs (more on that later). Unfortunately, Emeralds was exploited rather quickly, highlighting one of the many downsides of "testing in prod." Luckily, one of the holders impacted by the Emerald exploit, CTRL, realized this was a concept too good to let go to waste and promptly created a new and improved version of the ERC20721 called the ERC404, along with his co-creator 0xAcme. Since then, the 404 exploded and brought on a wave of NFT experimentation crypto had not seen since 2021.

Why the ERC11?

As mentioned before, a couple of the best elements of the 404 are its immediacy and simplicity. We are firm believers that for crypto to grow to billions of users, costs are not only important but ease of use as well. The ERC1155 is a battle-tested and gas-efficient token standard, but it does require wrapping/unwrapping to take advantage of its multitoken elements. One of our major takeaways from the launch of Pandora is that people appreciate the ability to see both the NFT and ERC20 at the same time without wrapping. The 404, however, does not have a batch transfer feature since it is based on the ERC721 non-fungible token standard. This is not ideal for projects that have millions if not billions of supply since the user would have to transfer each token individually should they choose to do so on the NFT side of the coin. The ERC11, however, does, which makes it ideal for large supply hybrid projects (e.g., memecoin NFT hybrids, music tokens, etc.).

The trade-offs

As tempting as it is to go full tribal mode and pretend the ERC11 is the standard to end all standards, ultimately the 721, 404, 1155, 11, etc., are all just tools in a creator's toolbox. The 721 makes sense in certain applications, same as the 404 or 1155. It's not one size fits all. It purely depends on a project's needs. One of the potential trade-offs of the ERC404 and now ERC11 is higher gas costs compared their non-experimental counterparts. Additionally, both of these standards are experimental and have not gone through years of testing nor an EIP process. The 404 also has the possibility of duplicate images over time. While the 11 and 1155 are not ideal for projects featuring images with unique traits, and, as mentioned before, the 404 and 721 are not ideal for projects with large supply.

Use cases

We will be launching a series of "experiMINTs," as we like to call them, to demonstrate what's possible with an experimental standard like this. These will be limited to 100 mints per wallet, and the total supply will be the maximum integer in Solidity. These are not intended to be speculative.

The first example is relatively straightforward: a memecoin with a picture, or, if you will, a memecoin actually tied to the meme. This is something we've already created with Non-Playable Coin, but not without the need to "transform."

To give this concept an additional twist, we've added a song to this picture. This is meant to showcase how the ERC11 is a natural fit for music tokens or MusicFi. Imagine trading the latest Taylor Swift song on Uniswap, longing something from Kendrick Lamar, or shorting the latest diss track from Drake. This opens new possibilities and features that the Music NFTs of old lacked.

The second example is a "two-sided token," meaning you have the ERC20 side named one thing and the NFT side named another. There are myriad creative ways to do this. We've opted for a Biden vs. Trump coin where the ERC20 side is named Biden while the NFT is named

Trump. Additionally, the metadata can be updated to reflect who won the election, while the loser loses their blockchain real estate until the next election cycle.

As hinted at in the name itself, these experiMINTs, along with the ERC11 standard, are experimental in nature. While we have gone through the process of having our code audited, that is not a guarantee everything will work as intended. We highly recommend using a fresh wallet before minting any of these proof-of-concepts.

Conclusion

Our goal for the ERC11 is to battle-test this standard over time, have additional audits completed, then go through the EIP process assuming all goes well and the concept is not fundamentally broken. We hope to see more novel concepts launched not just using our experimental standard but also utilizing whichever tools are available to you.

- Non-Playable Community