NFT Marketplace Specification

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Abstract

This document describes a simple NFT marketplace escrow validator designed for the Cardano blockchain. This validator allows users to create and cancel sale orders for NFTs at a predetermined fixed price in any Cardano native tokens. The implementation of this validator will be carried out across multiple programming languages, compiled into UPLC, and tested with a uniform test suite. While the validator is engineered with security in mind, certain functionalities necessary for a production environment may be absent.

1 Introduction

The validator allows users to lock a certain token in the script-owned UTxO, with datum specifying the NFT to be sold, and a price in any Cardano native token, address where the seller will receive the payment, and a key that can cancel the sale order and return the locked token to the seller.

2 Validator

The validator is not parameterized. Despite validator being intended as NFT marketplace, it operates on the UTxO level thus can be used to sell any bundle of tokens.

2.1 Data Types

```
data Redeemer = Buy | Cancel

data Datum = Datum
  { price :: Value
  , seller :: Address
  , cancelKey :: PubKeyHash
  }
```

2.2 Validation Checks

For a transaction to be valid, the following checks must pass:

Case 1: Cancel

- Transaction is signed by `cancelKey`.

Case 2: Buy

- `price` is paid to `seller` with a UTxO reference in inline datum. We are attaching a unique datum to prevent double satisfaction attack.