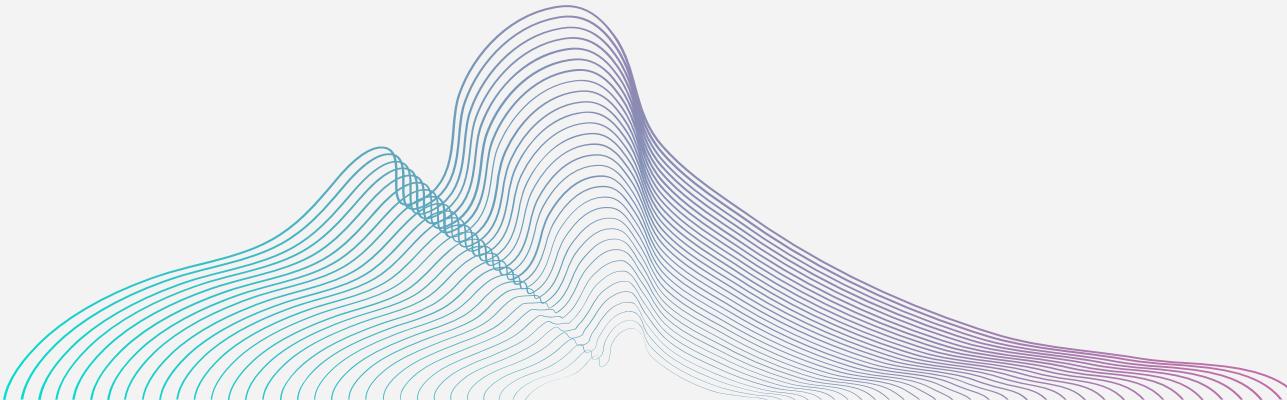




SoundRise

Powering Music Through Smart Blockchain



Project Overview

1

Eliminate intermediaries to ensure fair pay for artists

2

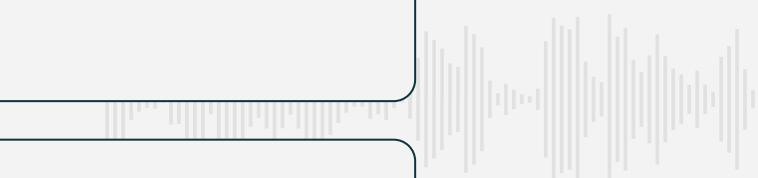
Enable direct artist-fan interactions via blockchain

3

Gamify engagement with SoundToken (rewards) and NFTs

4

Ensure transparency between transactions



Problem Overview

1
2
3
4

Disintermediation:

Middleman (labels, platforms) take significant revenue cuts

Unfair Royalties:

Opaque payment models delay and reduce artist earning

Lack of Control:

Artists surrender creative and distribution rights

Micropayment Barriers:

High fees make small transactions (e.g. voting, tipping) impractical

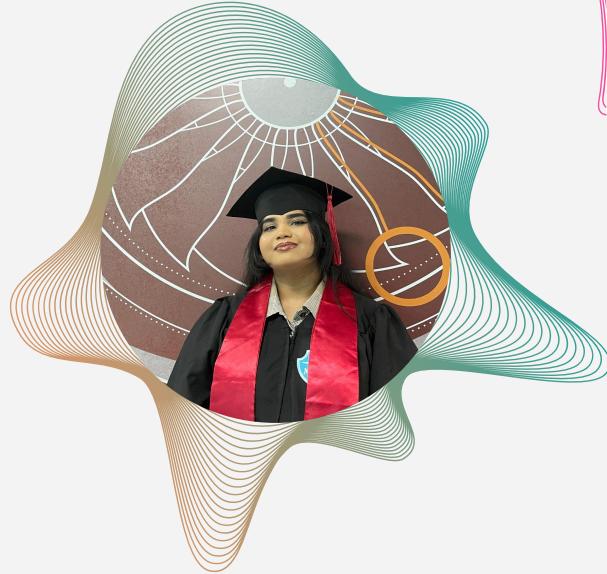
Our Team



Thanakrit Lerdmatayakul
Team Lead



Nguyen Hung Khang
Testing



Fathma Bintay Islam
Blockchain Dev

Problem Overview

Unfair Revenue Distribution

Artists are often paid **a small fraction of the revenue** generated by streaming platforms (e.g., Spotify, Apple Music), despite millions of streams.

Middlemen (labels, distributors) take a large percentage of the revenue.

Limited Fan Engagement

Fans are limited to listening to music but have little interaction with the artists they support. They have no incentive to engage with the platform beyond streaming.

Lack of Transparency



Royalty distribution is not clear and artists have little visibility into how their revenue is calculated or where it goes.

Solution

SoundRise's Blockchain-Driven Approach

Direct Transactions

Automated Royalties

Artists sell music/royalties directly to fans via smart contract

Instant, transparent payouts using predefined rules

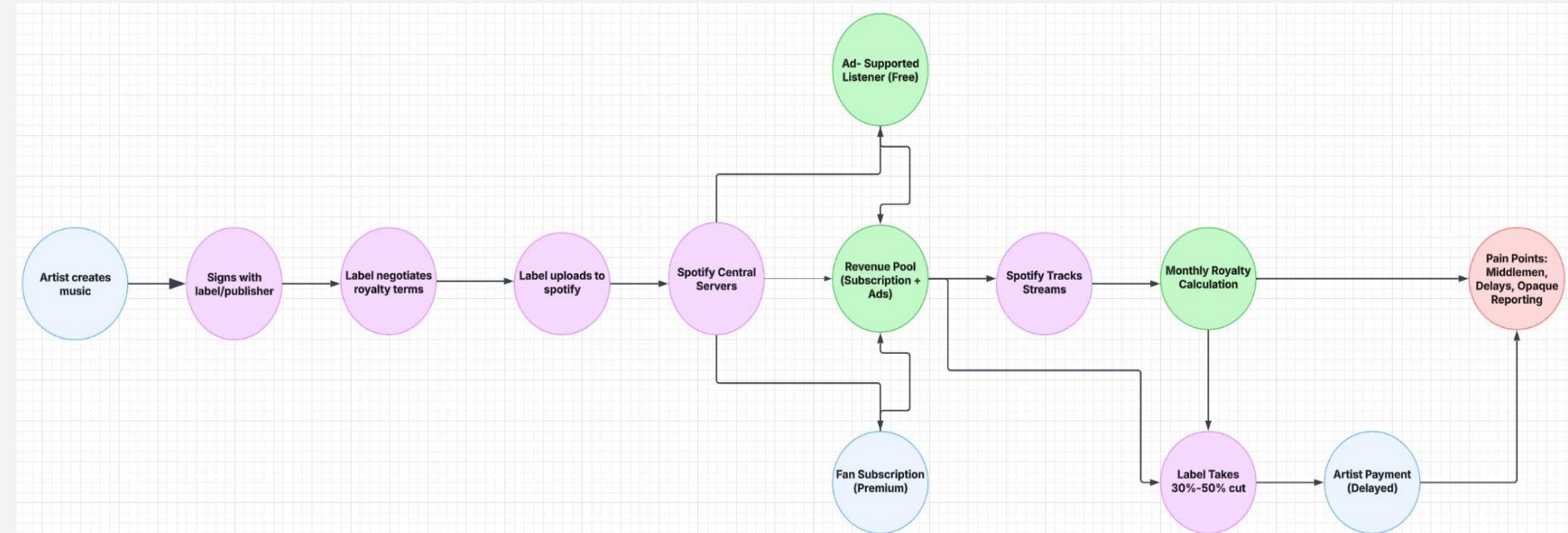
Artist Empowerment

Full control over pricing, distribution, and revenue tracking

Low-cost SRT rewards for voting, early access, and exclusive content

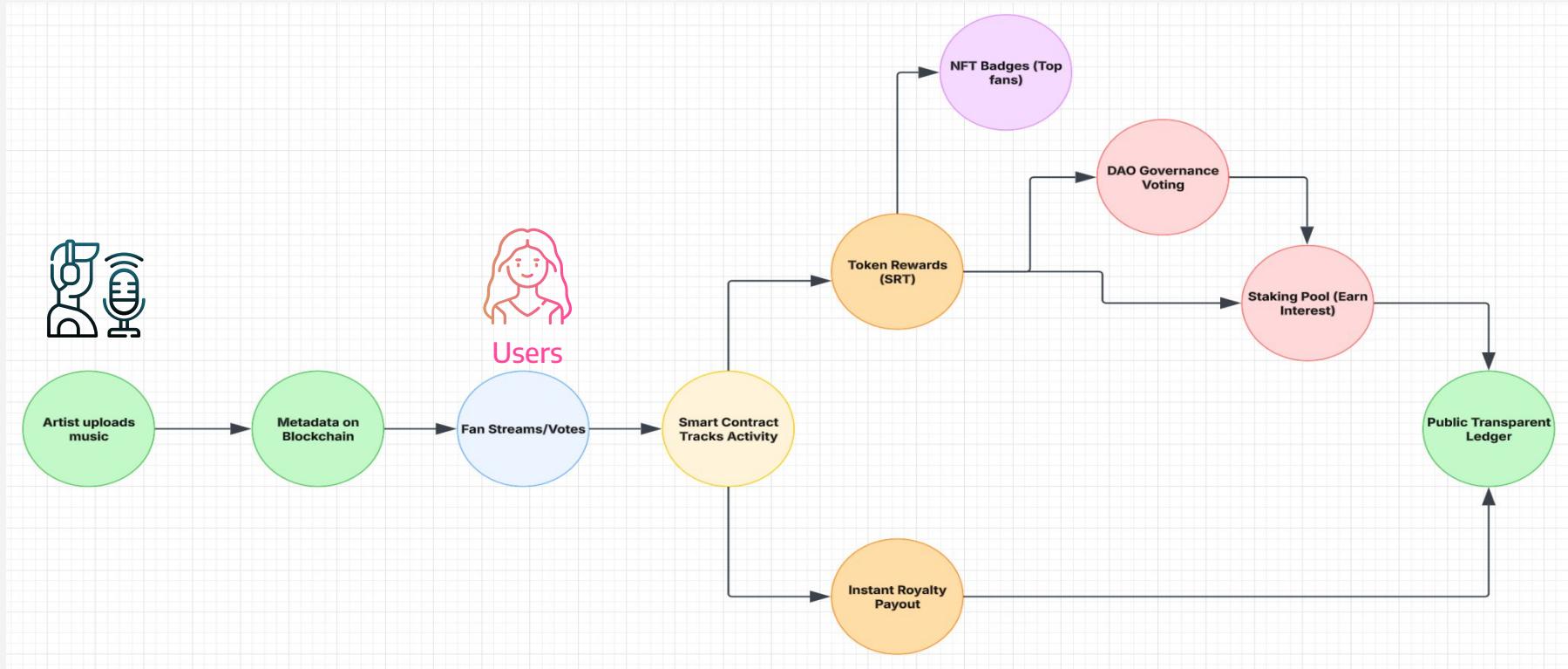
Micropayments and Engagement

Current Platforms Pay Structure (Centralized)



<https://support.spotify.com/us/artists/article/royalties/>

SoundRise's Solution (Decentralized)



<https://support.spotify.com/us/artists/article/royalties/>

Tokens



Actual ETH

- For User Purchasing song
- Artist receives ETH
- Premium subscription
 - Access to lossless audio (.wav)

SRT

SoundRise Token

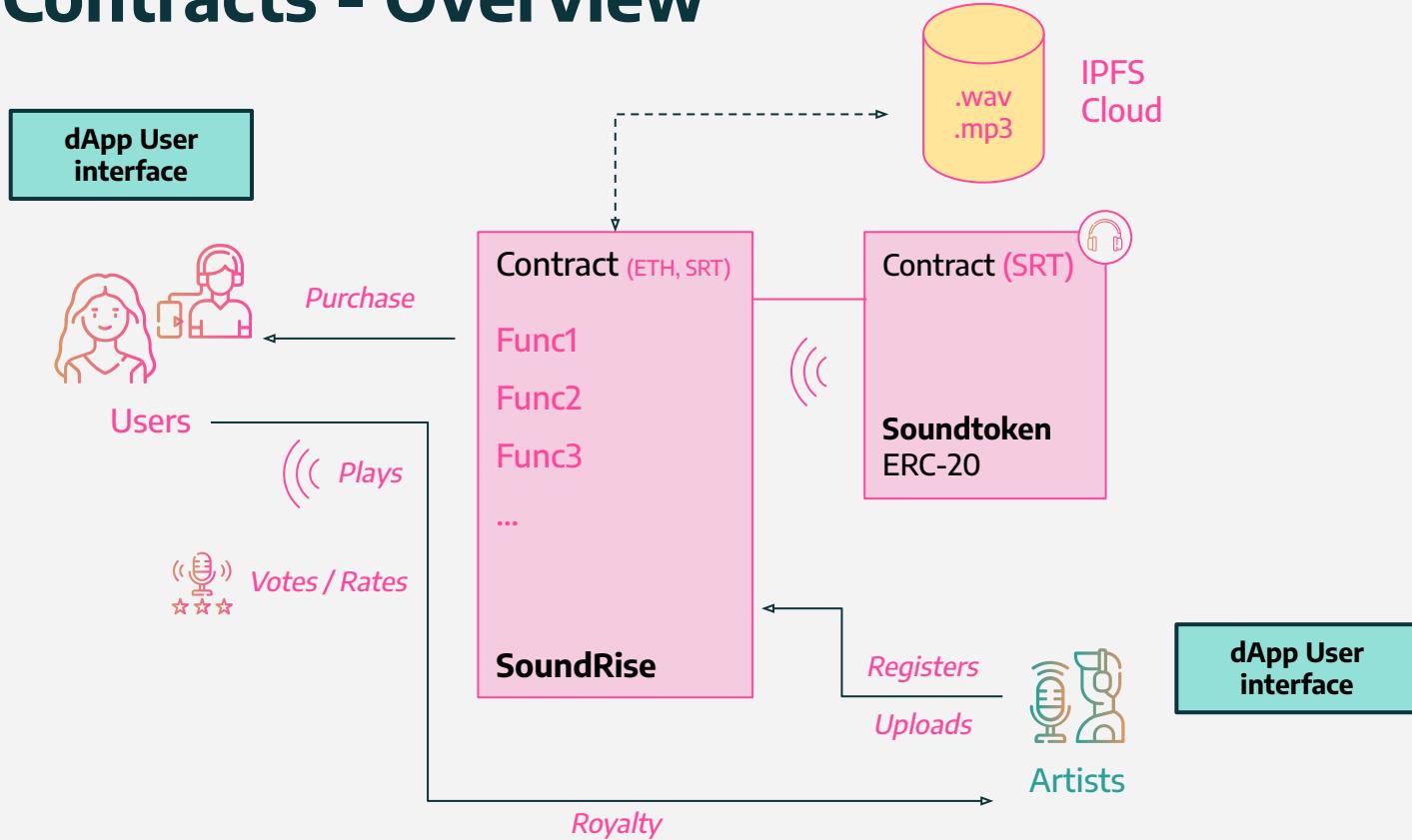
- Incentivise fan to vote and interact with the system
- Users receive SRT which can be redeemed
 - Early access to newly release songs / Fans only
 - Signed merchandise from artists

SRT-Artist

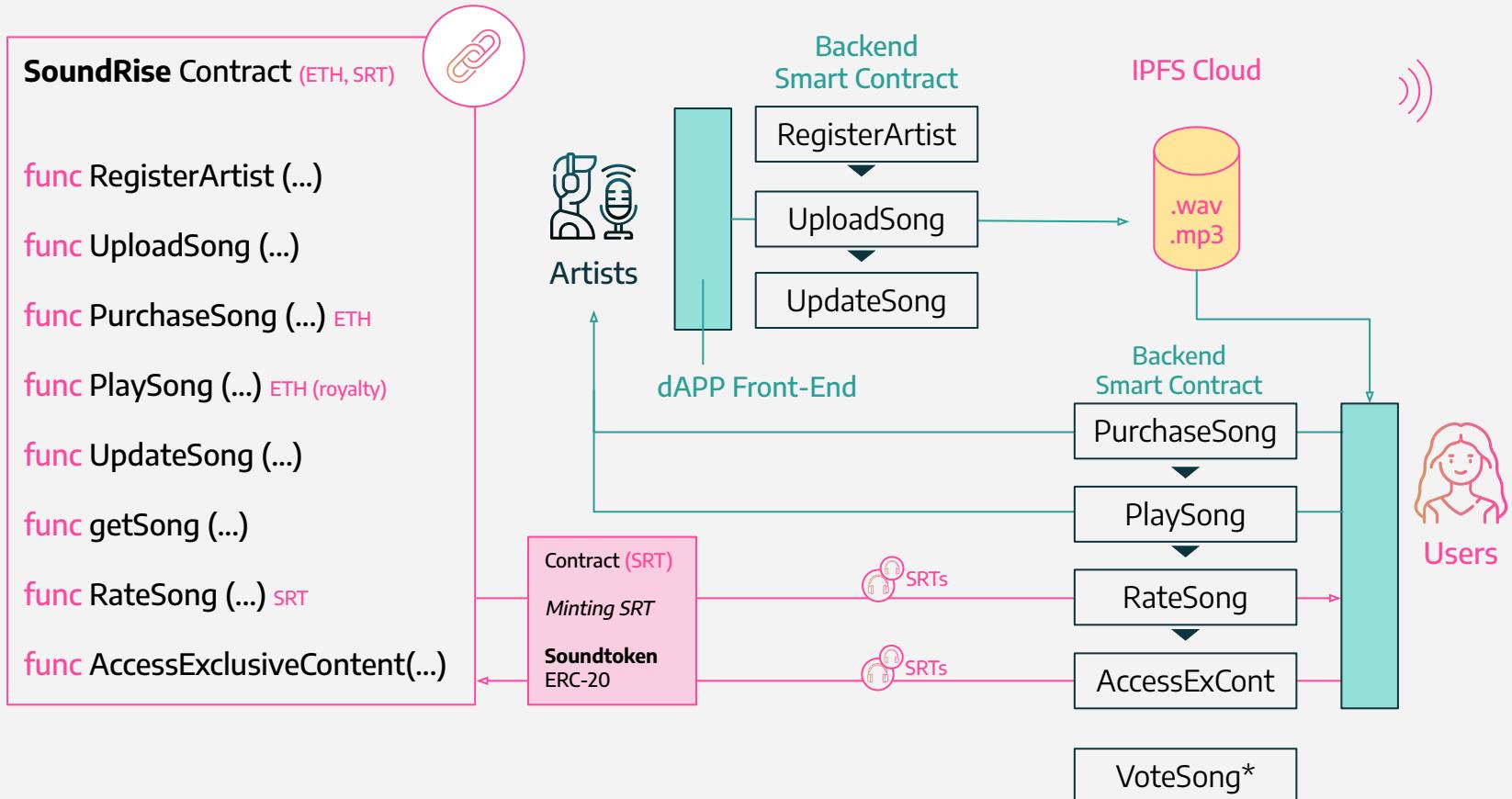
SoundRise Token

- Token Specific to Each Artist

Smart Contracts - Overview



Smart Contracts - Deep Dive



Smart Contracts - Fail Proofing [Artists]



RegisterArtist

Only registered artist can upload song and make money on SoundRise

UploadSong

Regular
(ETH)

Exclusive
(SRT only)

UpdateSong

```
[vm] from: 0x617...5E7f2
to: SoundRise.uploadSong(string,uint256,string,uint256,bool,bool,uint256) 0x9ec...dde84
value: 0 wei data: 0xbda...00000 logs: 0 hash: 0xc3b...5a123
transact to SoundRise.uploadSong errored: Error occurred: revert.

revert
The transaction has been reverted to the initial state.
Reason provided by the contract: "Not a registered artist".
If the transaction failed for not having enough gas, try increasing the gas limit gently.
```

Contract (SRT)

Minting SRT

Soundtoken
ERC-20

AddMinter

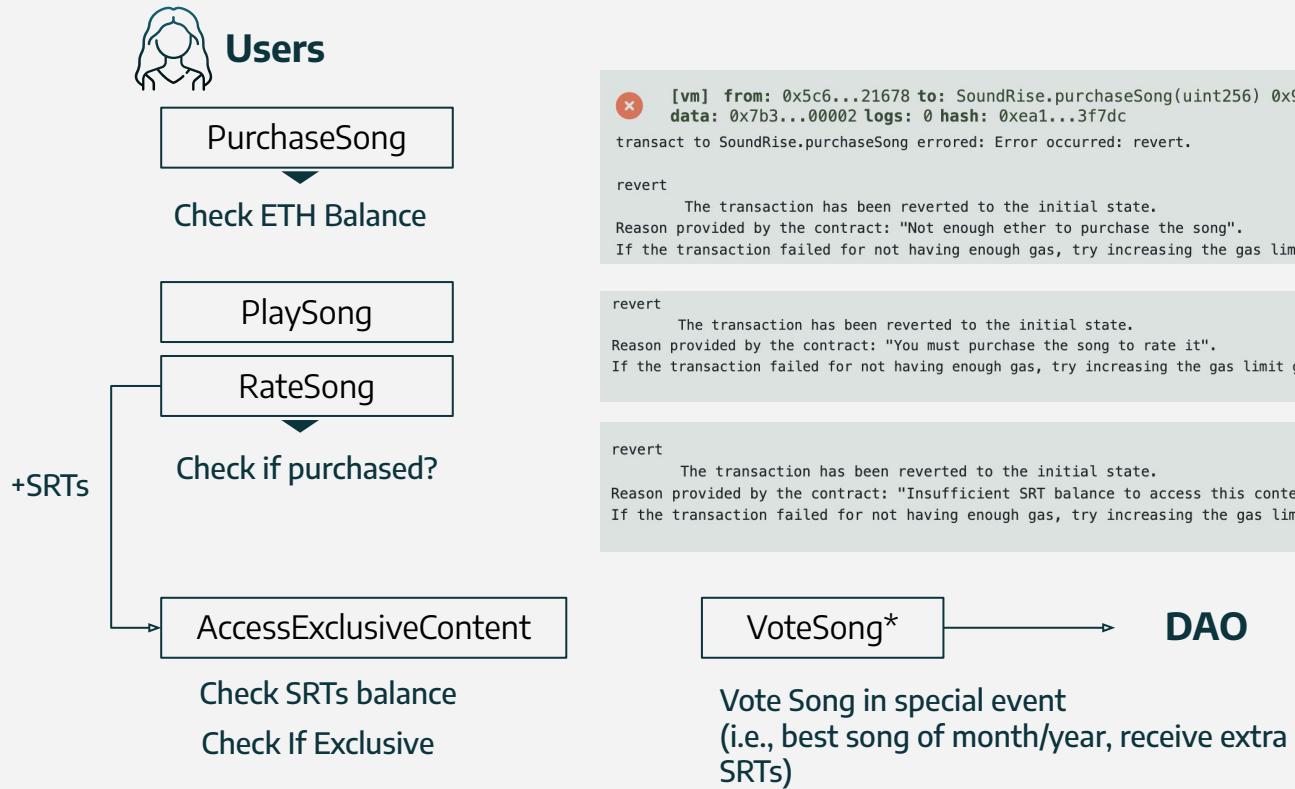
Only Main contract in added list can use SRT

Main Contract (ETH,
SRT)

SoundRise

```
// 🎵 Reward 5 SRT for rating
soundToken.mint(msg.sender, 5 * 10 **
18); // Mint 5 SRT tokens to the user
```

Smart Contracts - Fail Proofing [Users]



Testing

Why Testing?

- Functionality
- Security
- Efficiency

Methodology



Testing Process

```
> artifacts
> cache
< contracts
  ◆ ArtistBalance.sol
  ◆ Lock.sol
  ◆ SoundRise.sol
  ◆ SoundToken.sol
> ignition
> node_modules
< test
  JS Lock.js
  JS soundrise-extended-test.js
  JS soundrise-test.js
  .gitignore
  ℹ gas_calculator_extended.py
  ℹ gas_calculator.py
  JS hardhat.config.js
  {} package-lock.json
  {} package.json
  ⓘ README.md
```

Functional Testing

```
SoundRise Contract with Gas Analysis
Register Artist: Gas Used = 70755
  ✓ should register an artist
Upload Song: Gas Used = 195241
  ✓ should upload a song
Purchase Song with ETH: Gas Used = 78384
  ✓ should allow purchasing a song with ETH
Play Song with Royalty: Gas Used = 58417
  ✓ should allow playing a song and paying royalties
Rate Song and Mint Tokens: Gas Used = 117507
  ✓ should allow rating a song and mint tokens
Redeem Exclusive Content: Gas Used = 90060
  ✓ should redeem exclusive content with SRT
Scenario 7: Full Flow - Register, Upload, Purchase:
Step 1:
  Gas Used: 52451
  Gas Price: 15.0 Gwei
  Cost: 0.00078677 ETH
  Cost: $2.36 USD
Step 2:
  Gas Used: 195241
  Gas Price: 15.0 Gwei
  Cost: 0.00292861 ETH
  Cost: $8.79 USD
Step 3:
  Gas Used: 78384
  Gas Price: 15.0 Gwei
  Cost: 0.00117576 ETH
  Cost: $3.53 USD
Total for Scenario 7: Full Flow - Register, Upload, Purchase:
  Total Gas Used: 326076
  Total Cost: 0.00489114 ETH
  Total Cost: $14.67 USD
```

Testing

Testing with Scenarios

- Artist Registration
- Song Upload
- Song purchase
- Exclusive Content Redemption
- Song Rating and SRT Rewards
- Event Emission
- Ownership and Access Control
- Token Mining and Transfer
- Edge Cases

Results

6. Full Flow: Register, Upload, Purchase:

Step 1:

Gas Used: 70755
Gas Price: 15.0 Gwei
Cost: 0.00106132 ETH
Cost: \$3.18 USD

Step 2:

Gas Used: 195241
Gas Price: 15.0 Gwei
Cost: 0.00292861 ETH
Cost: \$8.79 USD

Step 3:

Gas Used: 78384
Gas Price: 15.0 Gwei
Cost: 0.00117576 ETH
Cost: \$3.53 USD

Total for 6. Full Flow: Register, Upload, Purchase:

Total Gas Used: 344380
Total Cost: 0.00516570 ETH
Total Cost: \$15.50 USD

A Specific Scenario

Testing with Scenarios

An artist starts and a listener starts with the same tokens, the artist registers and uploads two songs, the listener buys 2 songs, listens to the 2nd song 10 times, then rates the purchased song and mints tokens.

Results

Initial Balances:

```
Artist ETH: 10000.0 ETH
Artist SRT: 100.0 SRT
Listener ETH: 10000.0 ETH
Listener SRT: 100.0 SRT
Artist Registration: Gas Used = 70755
Upload Song 1: Gas Used = 195217
Upload Song 2: Gas Used = 178117
Listener Buys Song 1: Gas Used = 78384
Listener Buys Song 2: Gas Used = 78384
Listen to Song 2 - Play 1: Gas Used = 58417
Listen to Song 2 - Play 2: Gas Used = 58417
Listen to Song 2 - Play 3: Gas Used = 58417
Listen to Song 2 - Play 4: Gas Used = 58417
Listen to Song 2 - Play 5: Gas Used = 58417
Listen to Song 2 - Play 6: Gas Used = 58417
Listen to Song 2 - Play 7: Gas Used = 58417
Listen to Song 2 - Play 8: Gas Used = 58417
Listen to Song 2 - Play 9: Gas Used = 58417
Listen to Song 2 - Play 10: Gas Used = 58417
Listener Rates Song 1: Gas Used = 117507
```

Final Balances:

```
Artist ETH: 10002.999379052825203374 ETH
Artist SRT: 100.0 SRT
Listener ETH: 9987.999004640346086655 ETH
Listener SRT: 105.0 SRT
Listener Minted Tokens: 5.0 SRT
```

Testing

Challenge 1: Ownership Conflicts

- "Minting tokens failed because SoundRise owned SoundToken, not the original deployer."
- "Solution: Adjusted test to mint before transferring ownership."

Challenge 2: Gas Estimation

- "Needed accurate costs for presentation."
- "Solution: Added gas logging and a calculator script."

Conclusion & Future work

SoundRise leverages blockchain technology to create a decentralized music platform that addresses several significant pain points in the traditional music industry

Impact & Potential



Empowering Artists

Fairer, more transparent way to distribute their musics, earn royalties, and engage with their audience.



Engaged Community

More ways to interact with their favorite artists, be rewarded for their engagement, and support the artists they love through token-based systems



Reduced Fees

Reduces the transaction fees associated with traditional payment processors, more earnings for artists.

Future Integration

Exclusive NFT Merchandise,
Song ownership, Album covers

Multi-Chain support



Thanks!



Let make music great again!

