

Draft
Security Assessment for

143-2022-07-juicebox (1Negative-FR) (10K-UT) (10K-FLP)

July 23, 2023



Executive Summary

Overview	
Project Name	143-2022-07-juicebox (1Negative-FR) (10K- UT) (10K-FLP)
Codebase URL	https://github.com/ZhangZhuoSJTU/Web3Bugs
Scan Engine	Al Analyzer
Scan Time	2023/07/23 21:43:19
Commit Id	DFF _{ICIAL} a1b9d458

Total		No
Critical Issues	PIAL AUDIT REPORT	
High risk Issues	2	
Medium risk Issues	0	
Low risk Issues	0	
Informational Issues	0	A/a

Critical Issues	The issue can cause large economic losses, large-scale data disorder, loss of control of authority management, failure of key functions, or indirectly affect the correct operation of other smart contracts interacting with it.
High Risk Issues	The issue puts a large number of users' sensitive information at risk or is reasonably likely to lead to catastrophic impacts on clients' reputations or serious financial implications for clients and users.
Medium Risk Issues	The issue puts a subset of users' sensitive information at risk, would be detrimental to the client's reputation if exploited, or is reasonably likely to lead to moderate financial impact.
Low Risk Issues	The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low-impact in view of the client's business circumstances.
Informational Issue	The issue does not pose an immediate risk but is relevant to security best practices or Defence in Depth.





Summary of Findings

MetaScan security assessment was performed on July 23, 2023 21:43:19 on project 143-2022-07-juicebox (1Negative-FR) (1OK-UT) (1OK-FLP) with the repository

https://github.com/ZhangZhuoSJTU/Web3Bugs on branch default branch. The assessment was carried out by scanning the project's codebase using the scan engine Al Analyzer. There are in total 2 vulnerabilities / security risks discovered during the scanning session, among which 0 critical vulnerabilities, 2 high risk vulnerabilities, 0 medium risk vulnerabilities, 0 low risk vulnerabilities, 0 informational issues.

ID Mo	Description	Severity
MSA-001	MWE-207: Unauthorized Transfer	High risk
MSA-002	MWE-200: Insecure LP Token Value Calculation	REPORT High risk





Findings



Critical (0)

No Critical vulnerabilities found here TCIAL AUDIT REPORT



High risk (2)

1. MWE-207: Unauthorized Transfer



High risk



Security Analyzer

The contract allows transferring tokens from an address different from the message sender without checking the approval of the address owner.

File(s) Affected

contracts/143/juice-contracts-v2-code4rena/contracts/JBToken.sol #182-191

```
function transferFrom(
 uint256 _projectId,
 address _from,
address _to,
  uint256 _amount
) external override {
  _projectId; // Prevents unused var compiler and natspec complaints.
  transferFrom(_from, _to, _amount);
```

Recommendation

Check the business logic about the transfer and add the approval check if necessary.



2. MWE-200: Insecure LP Token Value Calculation





Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

contracts/143/juice-contracts-v2-code4rena/contracts/JBSingleTokenPaymentTerminalStore.sol #804-835

```
function _overflowDuring(
  IJBSingleTokenPaymentTerminal _terminal,
  uint256 _projectId,
  JBFundingCycle memory _fundingCycle,
  uint256 _balanceCurrency
) private view returns (uint256) {
  // Get the current balance of the project.
  uint256 _balanceOf = balanceOf[_terminal][_projectId];
  // If there's no balance, there's no overflow.
if (_balanceOf == 0) return 0;
  // Get a reference to the distribution limit during the funding cycle.
  (uint256 _distributionLimit, uint256 _distributionLimitCurrency) = IJBController(
   directory.controllerOf(_projectId)
  ). \verb|distributionLimitOf(\_projectId, \_fundingCycle.configuration, \_terminal, \_terminal.token())|;\\
  // Get a reference to the amount still distributable during the funding cycle.
  uint256 _distributionLimitRemaining = _distributionLimit -
   usedDistributionLimitOf[_terminal][_projectId][_fundingCycle.number];
  // Convert the _distributionRemaining to be in terms of the provided currency.
oif (_distributionLimitRemaining != 0 && _distributionLimitCurrency != _balanceCurrency)
    _distributionLimitRemaining = PRBMath.mulDiv(
      _distributionLimitRemaining,
     10**_MAX_FIXED_POINT_FIDELITY, // Use _MAX_FIXED_POINT_FIDELITY to keep as much of the `_amount
     prices.priceFor(_distributionLimitCurrency, _balanceCurrency, _MAX_FIXED_POINT_FIDELITY)
  // Overflow is the balance of this project minus the amount that can still be distributed.
  return _balanceOf > _distributionLimitRemaining ? _balanceOf - _distributionLimitRemaining : 0;
```

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contracts/143/juice-contracts-v2-code4 rena/contracts/JBS ingleTokenPaymentTerminalStore.sol~#414-522

```
function recordRedemptionFor(
  address _holder,
  uint256 _projectId,
  uint256 _tokenCount,
  string memory _memo,
bytes memory _metadata
  external
  override
  nonReentrant
  returns (
   JBFundingCycle memory fundingCycle,
    uint256 reclaimAmount,
    IJBRedemptionDelegate delegate,
    string memory memo
  // Get a reference to the project's current
fundingCycle = fundingCycleStore.currentOf(_projectId);
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// Get a reference to the project's current funding cycle.
  if (fundingCycle.redeemPaused()) revert FUNDING_CYCLE_REDEEM_PAUSED();
  // Scoped section prevents stack too deep. `_reclaimedTokenAmount`, `_currentOverflow`, and `_tota.
  {
    // Get a reference to the reclaimed token amount struct, the current overflow, and the total toke
    JBTokenAmount memory _reclaimedTokenAmount;
    uint256 _currentOverflow;
    uint256 _totalSupply;
    // Another scoped section prevents stack too deep. `_token`,
                                                                   `_decimals`, and `_currency` only us
       // Get a reference to the terminal's tokens.
      address _token = IJBSingleTokenPaymentTerminal(msq.sender).token();
      // Get a reference to the terminal's decimals.
      uint256 _decimals = IJBSingleTokenPaymentTerminal(msg.sender).decimals();
      // Get areference to the terminal's currency.
      uint256 _currency = IJBSingleTokenPaymentTerminal(msg.sender).currency();
      // Get the amount of current overflow.
      // Use the local overflow if the funding cycle specifies that it should be used. Otherwise, use
      _currentOverflow = fundingCycle.useTotalOverflowForRedemptions()
        ? _currentTotalOverflowOf(_projectId, _decimals, _currency)
        : _overflowDuring(
          IJBSingleTokenPaymentTerminal(msg.sender),
          _projectId,
          fundingCycle,
          currency
        );
      // Get the number of outstanding tokens the project has.
      _totalSupply = IJBController(directory.controllerOf(_projectId)).totalOutstandingTokensOf(
                                                        ICIAL AUDIT REP
       _projectId,
         fundingCycle.reservedRate()
```



```
// Can't redeem more tokens that is in the supply.
   if (_tokenCount > _totalSupply) revert INSUFFICIENT_TOKENS();
   if (_currentOverflow > 0)
     // Calculate reclaim amount using the current overflow amount.
     reclaimAmount = _reclaimableOverflowDuring(
       _projectId,
       fundingCycle,
 _tokenCount,
       _totalSupply,
       _currentOverflow
     );
   _reclaimedTokenAmount = JBTokenAmount(_token, reclaimAmount, _decimals, _currency);
 // If the funding cycle has configured a data source, use it to derive a claim amount and memo.
  if (fundingCycle.useDataSourceForRedeem()) {
    // Create the params that'll be sent to the data source.
   JBRedeemParamsData memory _data = JBRedeemParamsData(
                                                  FICIAL AUDIT REPORT
  IJBSingleTokenPaymentTerminal(msg.sender),
     _holder,
     _projectId,
     fundingCycle.configuration,
     tokenCount,
     totalSupply,
     _currentOverflow,
     _reclaimedTokenAmount,
     fundingCycle.useTotalOverflowForRedemptions(),
     fundingCvcle.redemptionRate(),
     fundingCycle.ballotRedemptionRate(),
                                        VON-OFFICIAL AUDI
     _memo,
    _metadata
   (reclaimAmount, memo, delegate) = IJBFundingCycleDataSource(fundingCycle.dataSource())
     .redeemParams(_data);
  } else {
   memo = _memo;
// The amount being reclaimed must be within the project's balance.
if (reclaimAmount > balanceOf[IJBSingleTokenPaymentTerminal(msg.sender)][_projectId])
 revert INADEQUATE_PAYMENT_TERMINAL_STORE_BALANCE();
                                                          AUDIT REPORT
// Remove the reclaimed funds from the project's balance.
if (reclaimAmount > 0)
 balanceOf[IJBSingleTokenPaymentTerminal(msg.sender)][_projectId] =
   balanceOf[IJBSingleTokenPaymentTerminal(msg.sender)][_projectId] -
    reclaimAmount;
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.



♠ Medium risk (0)

No Medium risk vulnerabilities found here



A Low risk (0)

No Low risk vulnerabilities found here es ic. IL AUDIT REPORT



(?) Informational (0)

No Informational vulnerabilities found here



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