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## LI.FI Security Review

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FeeForwarder.sol(v1.0.0)

### Security Researcher

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# 1 About Researcher

Sujith Somraaj is a distinguished security researcher and protocol engineer with over eight years of comprehensive experience in the Web3 ecosystem.

In addition to working as a Lead Security Researcher at Spearbit, Sujith is also the security researcher and advisor for leading bridge protocol LI.FI and also is a former founding engineer and current CISO at Superform, a yield aggregator with over \$170M in TVL.

Sujith has experience working with protocols / funds including Coinbase, Layerzero, Edge Capital, Berachain, Optimism, Ondo, Sonic, Monad, Blast, ZkSync, Decent, Drips, SuperSushi Samurai, DistrictOne, Omni-X, Centrifuge, Superform-V2, Tea.xyz, Paintswap, Bitcorn, Sweep n' Flip, Byzantine Finance, Variational Finance, Satsbridge, Rova, Horizen, Earthfast and Angles

Learn more about Sujith on [sujithsomraaj.xyz](https://sujithsomraaj.xyz) or on [cantina.xyz](https://cantina.xyz)

## 2 Disclaimer

Note that this security audit is not designed to replace functional tests required before any software release, and does not give any warranties on finding all possible security issues of that given smart contract(s) or blockchain software. i.e., the evaluation result does not guarantee against a hack (or) the non existence of any further findings of security issues. As one audit-based assessment cannot be considered comprehensive, I always recommend proceeding with several audits and a public bug bounty program to ensure the security of smart contract(s). Lastly, the security audit is not an investment advice.

This review is done independently by the reviewer and is not entitled to any of the security agencies the researcher worked / may work with.

## 3 Scope

- src/Periphery/FeeForwarder.sol(v1.0.0)

## 4 Risk classification

Severity level	Impact: High	Impact: Medium	Impact: Low
Likelihood: high	Critical	High	Medium
Likelihood: medium	High	Medium	Low
Likelihood: low	Medium	Low	Low

### 4.1 Impact

- High** leads to a loss of a significant portion (>10%) of assets in the protocol, or significant harm to a majority of users.
- Medium** global losses <10% or losses to only a subset of users, but still unacceptable.
- Low** losses will be annoying but bearable — applies to things like grieving attacks that can be easily repaired or even gas inefficiencies.

## 4.2 Likelihood

- High** almost certain to happen, easy to perform, or not easy but highly incentivized
- Medium** only conditionally possible or incentivized, but still relatively likely
- Low** requires stars to align, or little-to-no incentive

## 4.3 Action required for severity levels

- Critical** Must fix as soon as possible (if already deployed)
- High** Must fix (before deployment if not already deployed)
- Medium** Should fix
- Low** Could fix

## 5 Executive Summary

Over the course of 3 hours in total, [LI.FI](#) engaged with the [researcher](#) to audit the contracts described in section 3 of this document ("scope").

In this period of time a total of 2 issues were found.

Project Summary	
Project Name	LI.FI
Repository	<a href="#">lifinance/contracts</a>
Commit	<a href="#">5022c0ac</a>
Audit Timeline	October 10, 2025 - October 15, 2025
Methods	Manual Review
Documentation	High
Test Coverage	High

Issues Found	
Critical Risk	0
High Risk	0
Medium Risk	0
Low Risk	0
Gas Optimizations	1
Informational	1
<b>Total Issues</b>	<b>2</b>

## 6 Findings

### 6.1 Gas Optimization

#### 6.1.1 Optimize forwardERC20Fees() and forwardNativeFees() functions

**Context:** [FeeForwarder.sol#L58-L72](#)

**Description:** The function forwardERC20Fees() could be further optimized as following:

```
function forwardERC20Fees(
    address _token,
    FeeDistribution[] calldata _distributions
) external {
    .....
+   FeeDistribution calldata distribution;
-   for (uint256 i; i < _distributions.length;) {
+   for (uint256 i; i < _distributions.length; ++i) {
-       FeeDistribution calldata distribution = _distributions[i];
+       distribution = _distributions[i];

-       unchecked {
-           ++i;
-       }
    }

    emit FeesForwarded(_token, _distributions);
}
```

Similarly, the forwardNativeFees() could also be gas optimized (~10 GAS)

**Recommendation:** Consider optimizing the above mentioned two functions to save GAS.

**LI.FI:** Fixed in [dde9b3f](#)

**Researcher:** Verified fix.

### 6.2 Informational

#### 6.2.1 Replace hardcoded address(0) with LibAsset.NULL\_ADDRESS constant

**Context:** [FeeForwarder.sol#L117](#)

**Description:** The following code in FeeForwarder.sol contains a hardcoded address(0) value in the **FeesForwarded** event to indicate a native token transfer.

However, this can be changed to LibAsset.NULL\_ADDRESS constant is introduced for the very same purpose.

**Recommendation:** Consider increasing code quality by:

```
- emit FeesForwarded(address(0), _distributions);
+ emit FeesForwarded(LibAsset.NULL_ADDRESS, _distributions);
```

**LI.FI:** Fixed in [dde9b3f](#)

**Researcher:** Verified fix.