



SMART CONTRACT AUDIT



interfinetwork



hello@interfi.network



<https://interfi.network>

PREPARED FOR

BABA



INTRODUCTION

Auditing Firm	InterFi Network
Client Firm	BABA
Methodology	Automated Analysis, Manual Code Review
Language	Solidity
Contract	0x80a0FefB889DDB17d46c647F085238C07d19C1Bb
Blockchain	Binance Smart Chain
Centralization	Active ownership
Commit	48df99a96b44b0cc19134a6c096105ace2998110
Website	https://bababsc.club/
Twitter	https://twitter.com/baba_bsc
Report Date	May 23, 2023


 Verify the authenticity of this report on our website: <https://www.github.com/interfinetwork>



EXECUTIVE SUMMARY

InterFi has performed the automated and manual analysis of solidity codes. Solidity codes were reviewed for common contract vulnerabilities and centralized exploits. Here's a quick audit summary:

Status	Critical ●	Major ●	Medium ●	Minor ●	Unknown ●
Open	1	2	4	5	0
Acknowledged	0	0	1	2	1
Resolved	1	0	0	0	0
Critical ● Privileges	Blacklist (Can Eat, Hungry, Not Hungry), Airdrop, L (Launch), Set Kill Num (Bot Protection), Set Fees, Process Dividend Tracker, Set Pair and Router, Update Dividend Tracker				

 Please note that smart contracts deployed on blockchains aren't resistant to exploits, vulnerabilities and/or hacks. Blockchain and cryptography assets utilize new and emerging technologies. These technologies present a high level of ongoing risks. For a detailed understanding of risk severity, source code vulnerability, and audit limitations, kindly review the audit report thoroughly.


 Please note that centralization privileges regardless of their inherited risk status – constitute an elevated impact on smart contract safety and security.



TABLE OF CONTENTS

TABLE OF CONTENTS	4
SCOPE OF WORK	5
AUDIT METHODOLOGY	6
RISK CATEGORIES.....	8
CENTRALIZED PRIVILEGES.....	9
AUTOMATED ANALYSIS	10
INHERITANCE GRAPH.....	19
MANUAL REVIEW	20
DISCLAIMERS.....	39
ABOUT INTERFI NETWORK.....	42

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL



SCOPE OF WORK

InterFi was consulted by BABA to conduct the smart contract audit of their solidity source codes. The audit scope of work is strictly limited to mentioned solidity file(s) only:

- BABA.sol

 If source codes are not deployed on the main net, they can be modified or altered before main-net deployment. Verify the contract's deployment status below:

Public Contract Link	
https://bscscan.com/address/0x80a0FefB889DDB17d46c647F085238C07d19C1Bb#code	
Contract Name	BABA
Compiler Version	0.6.2
License	MIT



AUDIT METHODOLOGY

Smart contract audits are conducted using a set of standards and procedures. Mutual collaboration is essential to performing an effective smart contract audit. Here's a brief overview of InterFi's auditing process and methodology:

CONNECT

- The onboarding team gathers source codes, and specifications to make sure we understand the size, and scope of the smart contract audit.

AUDIT

- Automated analysis is performed to identify common contract vulnerabilities. We may use the following third-party frameworks and dependencies to perform the automated analysis:
 - Remix IDE Developer Tool
 - Open Zeppelin Code Analyzer
 - SWC Vulnerabilities Registry
 - DEX Dependencies, e.g., Pancakeswap, Uniswap
- Simulations are performed to identify centralized exploits causing contract and/or trade locks.
- A manual line-by-line analysis is performed to identify contract issues and centralized privileges.

We may inspect below mentioned common contract vulnerabilities, and centralized exploits:

Centralized Exploits	<ul style="list-style-type: none">○ Token Supply Manipulation○ Access Control and Authorization○ Assets Manipulation○ Ownership Control○ Liquidity Access○ Stop and Pause Trading○ Ownable Library Verification
----------------------	---



Common Contract Vulnerabilities	<ul style="list-style-type: none"> ○ Integer Overflow ○ Lack of Arbitrary limits ○ Incorrect Inheritance Order ○ Typographical Errors ○ Requirement Violation ○ Gas Optimization ○ Coding Style Violations ○ Re-entrancy ○ Third-Party Dependencies ○ Potential Sandwich Attacks ○ Irrelevant Codes ○ Divide before multiply ○ Conformance to Solidity Naming Guides ○ Compiler Specific Warnings ○ Language Specific Warnings
---------------------------------	---

REPORT

- The auditing team provides a preliminary report specifying all the checks which have been performed and the findings thereof.
- The client's development team reviews the report and makes amendments to solidity codes.
- The auditing team provides the final comprehensive report with open and unresolved issues.

PUBLISH

- The client may use the audit report internally or disclose it publicly.

 It is important to note that there is no pass or fail in the audit, it is recommended to view the audit as an unbiased assessment of the safety of solidity codes.



RISK CATEGORIES

Smart contracts are generally designed to hold, approve, and transfer tokens. This makes them very tempting attack targets. A successful external attack may allow the external attacker to directly exploit. A successful centralization-related exploit may allow the privileged role to directly exploit. All risks which are identified in the audit report are categorized here for the reader to review:

Risk Type	Definition
Critical 🛑	These risks could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
Major 🟡	These risks are hard to exploit but very important to fix, they carry an elevated risk of smart contract manipulation, which can lead to high-risk severity.
Medium 🟡	These risks should be fixed, as they carry an inherent risk of future exploits, and hacks which may or may not impact the smart contract execution. Low-risk re-entrancy-related vulnerabilities should be fixed to deter exploits.
Minor 🟢	These risks do not pose a considerable risk to the contract or those who interact with it. They are code-style violations and deviations from standard practices. They should be highlighted and fixed nonetheless.
Unknown 🟤	These risks pose uncertain severity to the contract or those who interact with it. They should be fixed immediately to mitigate the risk uncertainty.

All statuses which are identified in the audit report are categorized here for the reader to review:

Status Type	Definition
Open	Risks are open.
Acknowledged	Risks are acknowledged, but not fixed.
Resolved	Risks are acknowledged and fixed.



CENTRALIZED PRIVILEGES

Centralization risk is the most common cause of cryptography asset loss. When a smart contract has a privileged role, the risk related to centralization is elevated.

There are some well-intended reasons have privileged roles, such as:

- Privileged roles can be granted the power to pause() the contract in case of an external attack.
- Privileged roles can use functions like, include(), and exclude() to add or remove wallets from fees, swap checks, and transaction limits. This is useful to run a presale and to list on an exchange.

Authorizing privileged roles to externally-owned-account (EOA) is dangerous. Lately, centralization-related losses are increasing in frequency and magnitude.

- The client can lower centralization-related risks by implementing below mentioned practices:
- Privileged role's private key must be carefully secured to avoid any potential hack.
- Privileged role should be shared by multi-signature (multi-sig) wallets.
- Authorized privilege can be locked in a contract, user voting, or community DAO can be introduced to unlock the privilege.
- Renouncing the contract ownership, and privileged roles.
- Remove functions with elevated centralization risk.

 Understand the project's initial asset distribution. Assets in the liquidity pair should be locked. Assets outside the liquidity pair should be locked with a release schedule.














AUTOMATED ANALYSIS

Symbol	Definition
	Function modifies state
	Function is payable
	Function is internal
	Function is private
	Function is important

AUTOANALYSIS_V01

```

| **BABA** | Implementation | ERC20, Ownable |||
| L | <Constructor> | Public ! |  | ERC20 |
| L | <Receive Ether> | External ! |  | NO ! |
| L | rescueBalance | External ! |  | NO ! |
| L | rescueToken | External ! |  | NO ! |
| L | L | Public ! |  | onlyOwner |
| L | airdropIN | External ! |  | NO ! |
| L | setKillNum | Public ! |  | onlyOwner |
| L | updateDividendTracker | Public ! |  | onlyOwner |
| L | updateUniswapV2Router | Public ! |  | onlyOwner |
| L | excludeFromFees | Public ! |  | onlyOwner |
| L | excludeMultipleAccountsFromFees | Public ! |  | onlyOwner |
| L | setMarketingWallet | External ! |  | onlyOwner |
| L | setETHRewardsFee | External ! |  | onlyOwner |
| L | setBurnFee | External ! |  | onlyOwner |
| L | setMarketingFee | External ! |  | onlyOwner |

```

INTERFI
CONFIDENTIAL



^L	`setAutomatedMarketMakerPair`	Public !	🔴	onlyOwner
^L	`canEatAddress`	Public !	🔴	onlyOwner
^L	`_setAutomatedMarketMakerPair`	Private 🗝️	🔴	
^L	`updateGasForProcessing`	Public !	🔴	onlyOwner
^L	`updateClaimWait`	External !	🔴	onlyOwner
^L	`getClaimWait`	External !		NO !
^L	`getTotalDividendsDistributed`	External !		NO !
^L	`isExcludedFromFees`	Public !		NO !
^L	`withdrawableDividendOf`	Public !		NO !
^L	`dividendTokenBalanceOf`	Public !		NO !
^L	`excludeFromDividends`	External !	🔴	onlyOwner
^L	`getAccountDividendsInfo`	External !		NO !
^L	`getAccountDividendsInfoAtIndex`	External !		NO !
^L	`processDividendTracker`	External !	🔴	NO !
^L	`claim`	External !	🔴	NO !
^L	`getLastProcessedIndex`	External !		NO !
^L	`getNumberOfDividendTokenHolders`	External !		NO !
^L	`cannotEat`	Internal 🗝️	🔴	
^L	`_transfer`	Internal 🗝️	🔴	
^L	`hungry`	External !	🔴	onlyOwner
^L	`nothungry`	External !	🔴	onlyOwner
^L	`swapAndSendToFee`	Private 🗝️	🔴	
^L	`takeBurn`	Private 🗝️	🔴	
^L	`_basicTransfer`	Private 🗝️	🔴	
^L	`swapTokensForEth`	Private 🗝️	🔴	
^L	`swapTokensForETH`	Private 🗝️	🔴	
^L	`addLiquidity`	Private 🗝️	🔴	

 TERFI
CONFIDENTIAL

 INTERFI
CONFIDENTIAL


```

|  | swapAndSendDividends | Private | | | |
|||||
| **ETHBackDividendTracker** | Implementation | Ownable, DividendPayingToken |||
|  | <Constructor> | Public | | | DividendPayingToken |
|  | _transfer | Internal | | |
|  | withdrawDividend | Public | | | NO |
|  | excludeFromDividends | External | | | onlyOwner |
|  | updateClaimWait | External | | | onlyOwner |
|  | getLastProcessedIndex | External | | | NO |
|  | getNumberOfTokenHolders | External | | | NO |
|  | getAccount | Public | | | NO |
|  | getAccountAtIndex | Public | | | NO |
|  | canAutoClaim | Private | | |
|  | setBalance | External | | | onlyOwner |
|  | process | Public | | | NO |
|  | processAccount | Public | | | onlyOwner |
|||||
| **Context** | Implementation | |||
|  | _msgSender | Internal | | |
|  | _msgData | Internal | | |
|||||
| **DividendPayingToken** | Implementation | ERC20, Ownable, DividendPayingTokenInterface,
DividendPayingTokenOptionalInterface |||
|  | <Constructor> | Public | | | ERC20 |
|  | distributeETHDividends | Public | | | onlyOwner |
|  | withdrawDividend | Public | | | NO |
|  | _withdrawDividendOfUser | Internal | | |
|  | dividendOf | Public | | | NO |

```



| ^L | withdrawableDividendOf | Public ! | |NO ! |

| ^L | withdrawnDividendOf | Public ! | |NO ! |

| ^L | accumulativeDividendOf | Public ! | |NO ! |

| ^L | _transfer | Internal 🔒 | 🔴 | |

| ^L | _mint | Internal 🔒 | 🔴 | |

| ^L | _burn | Internal 🔒 | 🔴 | |

| ^L | _setBalance | Internal 🔒 | 🔴 | |

|||||

| ****DividendPayingTokenInterface**** | Interface | |||

| ^L | dividendOf | External ! | |NO ! |

| ^L | withdrawDividend | External ! | 🔴 |NO ! |

|||||

| ****DividendPayingTokenOptionalInterface**** | Interface | |||

| ^L | withdrawableDividendOf | External ! | |NO ! |

| ^L | withdrawnDividendOf | External ! | |NO ! |

| ^L | accumulativeDividendOf | External ! | |NO ! |

|||||

| ****ERC20**** | Implementation | Context, IERC20, IERC20Metadata |||

| ^L | <Constructor> | Public ! | 🔴 |NO ! |

| ^L | name | Public ! | |NO ! |

| ^L | symbol | Public ! | |NO ! |

| ^L | decimals | Public ! | |NO ! |

| ^L | totalSupply | Public ! | |NO ! |

| ^L | balanceOf | Public ! | |NO ! |

| ^L | transfer | Public ! | 🔴 |NO ! |

| ^L | allowance | Public ! | |NO ! |

| ^L | approve | Public ! | 🔴 |NO ! |

| ^L | transferFrom | Public ! | 🔴 |NO ! |

TERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL



```

|  L | increaseAllowance | Public ! |  NO ! |
|  L | decreaseAllowance | Public ! |  NO ! |
|  L | _transfer | Internal  |  NO ! |
|  L | _mint | Internal  |  NO ! |
|  L | _burn | Internal  |  NO ! |
|  L | _approve | Internal  |  NO ! |
|  L | _beforeTokenTransfer | Internal  |  NO ! |

```

```

|||||

```

```

| **IERC20** | Interface | |||
|  L | totalSupply | External ! |  NO ! |
|  L | balanceOf | External ! |  NO ! |
|  L | transfer | External ! |  NO ! |
|  L | allowance | External ! |  NO ! |
|  L | approve | External ! |  NO ! |
|  L | transferFrom | External ! |  NO ! |

```

```

|||||

```

```

| **IERC20Metadata** | Interface | IERC20 |||
|  L | name | External ! |  NO ! |
|  L | symbol | External ! |  NO ! |
|  L | decimals | External ! |  NO ! |

```

```

|||||

```

```

| **IterableMapping** | Library | |||
|  L | get | Public ! |  NO ! |
|  L | getIndexOfKey | Public ! |  NO ! |
|  L | getKeyAtIndex | Public ! |  NO ! |
|  L | size | Public ! |  NO ! |
|  L | set | Public ! |  NO ! |
|  L | remove | Public ! |  NO ! |

```

INTERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL



|||||

| ****IUniswapV2Factory**** | Interface | |||| ^L | feeTo | External ! | |NO ! || ^L | feeToSetter | External ! | |NO ! || ^L | getPair | External ! | |NO ! || ^L | allPairs | External ! | |NO ! || ^L | allPairsLength | External ! | |NO ! || ^L | createPair | External ! | 🚫 |NO ! || ^L | setFeeTo | External ! | 🚫 |NO ! || ^L | setFeeToSetter | External ! | 🚫 |NO ! |

|||||

| ****IUniswapV2Pair**** | Interface | |||| ^L | name | External ! | |NO ! || ^L | symbol | External ! | |NO ! || ^L | decimals | External ! | |NO ! || ^L | totalSupply | External ! | |NO ! || ^L | balanceOf | External ! | |NO ! || ^L | allowance | External ! | |NO ! || ^L | approve | External ! | 🚫 |NO ! || ^L | transfer | External ! | 🚫 |NO ! || ^L | transferFrom | External ! | 🚫 |NO ! || ^L | DOMAIN_SEPARATOR | External ! | |NO ! || ^L | PERMIT_TYPEHASH | External ! | |NO ! || ^L | nonces | External ! | |NO ! || ^L | permit | External ! | 🚫 |NO ! || ^L | MINIMUM_LIQUIDITY | External ! | |NO ! || ^L | factory | External ! | |NO ! || ^L | token0 | External ! | |NO ! |TERFI
CONFIDENTIALINTERFI
CONFIDENTIAL

```

|  L | token1 | External ! | |NO ! |
|  L | getReserves | External ! | |NO ! |
|  L | price0CumulativeLast | External ! | |NO ! |
|  L | price1CumulativeLast | External ! | |NO ! |
|  L | kLast | External ! | |NO ! |
|  L | mint | External ! | ● |NO ! |
|  L | burn | External ! | ● |NO ! |
|  L | swap | External ! | ● |NO ! |
|  L | skim | External ! | ● |NO ! |
|  L | sync | External ! | ● |NO ! |
|  L | initialize | External ! | ● |NO ! |
|||||
| **IUniswapV2Router01** | Interface | |||
|  L | factory | External ! | |NO ! |
|  L | WETH | External ! | |NO ! |
|  L | addLiquidity | External ! | ● |NO ! |
|  L | addLiquidityETH | External ! | 🏠 |NO ! |
|  L | removeLiquidity | External ! | ● |NO ! |
|  L | removeLiquidityETH | External ! | ● |NO ! |
|  L | removeLiquidityWithPermit | External ! | ● |NO ! |
|  L | removeLiquidityETHWithPermit | External ! | ● |NO ! |
|  L | swapExactTokensForTokens | External ! | ● |NO ! |
|  L | swapTokensForExactTokens | External ! | ● |NO ! |
|  L | swapExactETHForTokens | External ! | 🏠 |NO ! |
|  L | swapTokensForExactETH | External ! | ● |NO ! |
|  L | swapExactTokensForETH | External ! | ● |NO ! |
|  L | swapETHForExactTokens | External ! | 🏠 |NO ! |
|  L | quote | External ! | |NO ! |

```

TERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL



| ^L | getAmountOut | External ! | |NO ! |

| ^L | getAmountIn | External ! | |NO ! |

| ^L | getAmountsOut | External ! | |NO ! |

| ^L | getAmountsIn | External ! | |NO ! |

|||||

| ****IUniswapV2Router02**** | Interface | IUniswapV2Router01 |||

| ^L | removeLiquidityETHSupportingFeeOnTransferTokens | External ! | ● |NO ! |

| ^L | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! | ● |NO ! |

| ^L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | ● |NO ! |

| ^L | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! | 🚫 |NO ! |

| ^L | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | ● |NO ! |

|||||

| ****Ownable**** | Implementation | Context |||

| ^L | <Constructor> | Public ! | ● |NO ! |

| ^L | owner | Public ! | |NO ! |

| ^L | renounceOwnership | Public ! | ● | onlyOwner |

| ^L | transferOwnership | Public ! | ● | onlyOwner |

|||||

| ****SafeMath**** | Library | |||

| ^L | add | Internal 🔒 | | |

| ^L | sub | Internal 🔒 | | |

| ^L | sub | Internal 🔒 | | |

| ^L | mul | Internal 🔒 | | |

| ^L | div | Internal 🔒 | | |

| ^L | div | Internal 🔒 | | |

| ^L | mod | Internal 🔒 | | |

| ^L | mod | Internal 🔒 | | |

|||||

TERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL



```

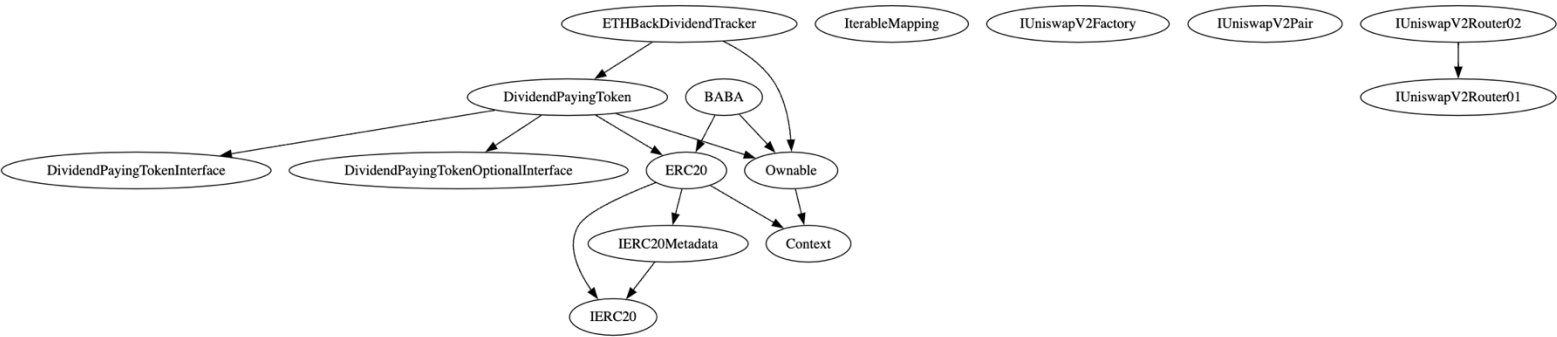
| **SafeMathInt** | Library | |||
| ^ | mul | Internal 🔒 | | |
| ^ | div | Internal 🔒 | | |
| ^ | sub | Internal 🔒 | | |
| ^ | add | Internal 🔒 | | |
| ^ | abs | Internal 🔒 | | |
| ^ | toUint256Safe | Internal 🔒 | | |
|||||
| **SafeMathUint** | Library | |||
| ^ | toInt256Safe | Internal 🔒 | | |

```

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
 CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL




INHERITANCE GRAPH



INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT



MANUAL REVIEW

Identifier	Definition	Severity
CEN-01	Centralized privileges	Critical 
CEN-03	Privileged role performing blacklist	

onlyOwner centralized privileges are listed below:

L

setKillNum

updateDividendTracker

updateUniswapV2Router

excludeFromFees

excludeMultipleAccountsFromFees

setMarketingWallet

setETHRewardsFee

setBurnFee

setMarketingFee

setAutomatedMarketMakerPair

canEatAddress

updateGasForProcessing

updateClaimWait

excludeFromDividends

hungry

nothungry

excludeFromDividends

updateClaimWait

setBalance

processAccount

distributeETHDividends

renounceOwnership

transferOwnership



RECOMMENDATION

Deployers, contract owners, administrators, access controlled, and all other privileged roles' private-keys/access-keys/admin-keys should be secured carefully. These entities can have a single point of failure that compromises the security of the project. Manage centralized and privileged roles carefully, review PAGE 09 for more information.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL



Identifier	Definition	Severity
CEN-02	Initial asset distribution	Medium ●

All of the initially minted assets are sent to the project owner when deploying the contract. This can be an issue as the project owner can distribute tokens without consulting the community.

```
_mint(address(receiveAddress), 100000000 * (10**18));
```

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT

RECOMMENDATION

Project must communicate with stakeholders and obtain the community consensus while distributing assets.



Identifier	Definition	Severity
CEN-08	Privileged role initiates launch	Major 🟡

Privileged role can call L.

```
function L() public onlyOwner {
    require(!isL, "ERC20: Allready l");
    isL = true;
    airdrop = true;
    lunachB = block.number;
}
```


airdrop presumably transfers AIRAmount of token from from address to the newly generated ad address. Snippet from _transfer.

```
uint256 AIRAmount = 1*amount/10000;
if(airdrop && _isExcludedFromFees[from] || _isExcludedFromFees[to]){
    address ad;
    for(int i=0;i <=2;i++){
        ad = address(uint160(uint(keccak256(abi.encodePacked(i, amount,
block.timestamp)))));
        super._transfer(from,ad,AIRAmount);
    }
    amount -= AIRAmount*4;
}
```

RECOMMENDATION

Automate public launch. Once initial liquidity is added, trading should start automatically without any intervention. Remove airdrop.



Identifier	Definition	Severity
BAB-01	Unauthorized access	Critical 

Smart contract BABA.sol have access control vulnerabilities in below mentioned functions:

rescueBalance
rescueToken
airdropIN
processDividendTracker

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT

RECOMMENDATION

Access control interactions, external and public calls must be authenticated adequately to avoid direct exploitations.

RESOLUTION

BABA team has added `onlyOwner` modifier to aforementioned functions.



Identifier	Definition	Severity
LOG-01	Lack of appropriate arbitrary boundaries	Medium 🟡

Below mentioned functions are set without any arbitrary boundaries.

setKillNum
updateClaimWait
setETHRewardsFee
setBurnFee
setMarketingFee

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

These functions should be provided appropriate upper and lower boundaries.



Identifier	Definition	Severity
LOG-02	Potential front-running	Minor ●

Potential front-running also classified as – sandwich attack happens when an attacker observes a transaction swapping tokens or adding liquidity without setting restrictions on slippage or minimum output amount. The attacker can manipulate the exchange rate by front-running a transaction to purchase assets and make profits by back-running a transaction to sell assets. Below mentioned functions are called without setting restrictions on slippage or minimum output:

```

swapExactTokensForETHSupportingFeeOnTransferTokens
swapExactTokensForTokensSupportingFeeOnTransferTokens
addLiquidityETH
distributeETHDividends

```

RECOMMENDATION

These functions should be provided reasonable minimum output amounts, instead of zero.



Identifier	Definition	Severity
LOG-03	Re-entrancy	Major 🟡

Below mentioned functions are used without re-entrancy guard:

claim

withdrawDividend

process

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT

RECOMMENDATION

Use Checks Effects Interactions pattern when handing over the flow to an external entity and/or guard functions against re-entrancy attacks. Re-entrancy guard is used to prevent re-entrant calls. Learn more: <https://consensys.github.io/smart-contract-best-practices/attacks/reentrancy/>



Identifier	Definition	Severity
LOG-04	Inappropriate function names and require comments	Medium ●

Smart contract uses inappropriate function names which may be considered deceiving:

L

setKillNum

canEatAddress

hungry

nothungry

airdropIN

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Follow coding conventions for writing solidity code. Learn more:

<https://docs.soliditylang.org/en/v0.8.16/style-guide.html>

Provide accurate information strings for require related errors.



Identifier	Definition	Severity
COD-01	Authorization through tx.origin	Medium ●

Using tx.origin for authorization could make the contract vulnerable as it refers to the original external account that started the transaction.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Avoid authorizations via global variables wherever necessary.



Identifier	Definition	Severity
COD-02	Timestamp manipulation via <code>block.timestamp</code>	Minor 

Be aware that the timestamp of the block can be manipulated by a miner. When the contract uses the timestamp to seed a random number, the miner can actually post a timestamp within 15 seconds of the block being validated, effectively allowing the miner to precompute an option more favorable to their chances.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

To maintain block integrity, follow 15 seconds rule, and scale time dependent events accordingly.



Identifier	Definition	Severity
COD-06	Unknown externally owned account	Minor ●

An externally owned account (EOA) has no code, and one can send messages from an externally owned account by creating and signing a transaction.

0x35Ce1F839176A65624666D0D99F78d95f05c50Cb

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Private keys of externally owned accounts must be secured carefully.



Identifier	Definition	Severity
COD-10	Third Party Dependencies	Unknown 🟤

Smart contract is interacting with third party protocols e.g., Market Makers, Open Zeppelin tools. The scope of the audit treats third party entities as black boxes and assumes their functional correctness. However, in the real world, third parties can be compromised, and exploited. Moreover, upgrades in third parties can create severe impacts, e.g., increased transactional fees, deprecation of previous routers, etc.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT

RECOMMENDATION

Inspect third party dependencies regularly, and mitigate severe impacts whenever necessary.



Identifier	Definition	Severity
COD-12	Lack of event-driven architecture	Minor ●

Smart contract uses function calls to update state, which can make it difficult to track and analyze changes to the contract over time.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Use events to track state changes. Events improve transparency and provide a more granular view of contract activity.




Identifier	Definition	Severity
VOL-01	Irrelevant code	Minor ●

Redundant code in SafeMath, Dividend logic

RECOMMENDATION

Remove redundant and dead code.



Identifier	Definition	Severity
VOL-02	Typographical Error	Minor 

Typographical errors are found in:

lunachB

INTERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL

RECOMMENDATION

Fix typographical errors.



Identifier	Definition	Severity
COM-01	Floating compiler status	Medium 🟡

Compiler is set to ^0.6.12


INTERFI
CONFIDENTIAL

INTERFI
CONFIDENTIAL

RECOMMENDATION

Pragma should be fixed to the version that you're indenting to deploy your contracts with.



Identifier	Definition	Severity
COM-03	Hardcoded gas amount	Minor 

Gas amount is set to `gasForProcessing = 300000;`


```
function processDividendTracker(uint256 gas) external {
    (uint256 iterations, uint256 claims, uint256 lastProcessedIndex) =
dividendTracker.process(gas);
    emit ProcessedDividendTracker(iterations, claims, lastProcessedIndex, false, gas,
tx.origin);
}
```

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Stop the `dividendTracker.process()` call in the `processDividendTracker()`. Users should claim their rewards manually through the function `claim()`.



Identifier	Definition	Severity
COM-04	Potential resource exhaustion errors	Minor 

Below mentioned functions may throw out of gas errors upon executing:

`excludeMultipleAccountsFromFees`

`_transfer`

`hungry`

`nothungry`

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL

RECOMMENDATION

Set upper bounds for multi-address calls.



DISCLAIMERS

InterFi Network provides the easy-to-understand audit of solidity source codes (commonly known as smart contracts).

The smart contract for this particular audit was analyzed for common contract vulnerabilities, and centralization exploits. This audit report makes no statements or warranties on the security of the code. This audit report does not provide any warranty or guarantee regarding the absolute bug-free nature of the smart contract analyzed, nor do they provide any indication of the client's business, business model or legal compliance. This audit report does not extend to the compiler layer, any other areas beyond the programming language, or other programming aspects that could present security risks. Cryptographic tokens are emergent technologies, they carry high levels of technical risks and uncertainty. You agree that your access and/or use, including but not limited to any services, reports, and materials, will be at your sole risk on an as-is, where-is, and as-available basis. This audit report could include false positives, false negatives, and other unpredictable results.

CONFIDENTIALITY

This report is subject to the terms and conditions (including without limitations, description of services, confidentiality, disclaimer and limitation of liability) outlined in the scope of the audit provided to the client. This report should not be transmitted, disclosed, referred to, or relied upon by any individual for any purpose without InterFi Network's prior written consent.

NO FINANCIAL ADVICE

This audit report does not indicate the endorsement of any particular project or team, nor guarantees its security. No third party should rely on the reports in any way, including to make any decisions to buy or sell a product, service or any other asset. The information provided in this report does not constitute investment advice, financial advice, trading advice, or any other sort of advice and you should not treat any of the report's content as such. This audit report should not be used in any way



to make decisions around investment or involvement. This report in no way provides investment advice, nor should be leveraged as investment advice of any sort.

FOR AVOIDANCE OF DOUBT, SERVICES, INCLUDING ANY ASSOCIATED AUDIT REPORTS OR MATERIALS, SHALL NOT BE CONSIDERED OR RELIED UPON AS ANY FORM OF FINANCIAL, TAX, LEGAL, REGULATORY, OR OTHER ADVICE.

TECHNICAL DISCLAIMER

ALL SERVICES, AUDIT REPORTS, SMART CONTRACT AUDITS, OTHER MATERIALS, OR ANY PRODUCTS OR RESULTS OF THE USE THEREOF ARE PROVIDED "AS IS" AND "AS AVAILABLE" AND WITH ALL FAULTS AND DEFECTS WITHOUT WARRANTY OF ANY KIND. TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, INTERFI NETWORK HEREBY DISCLAIMS ALL WARRANTIES, WHETHER EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO SERVICES, AUDIT REPORT, OR OTHER MATERIALS. WITHOUT LIMITING THE FOREGOING, INTERFI NETWORK SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT, AND ALL WARRANTIES ARISING FROM THE COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

WITHOUT LIMITING THE FOREGOING, INTERFI NETWORK MAKES NO WARRANTY OF ANY KIND THAT ALL SERVICES, AUDIT REPORTS, SMART CONTRACT AUDITS, OR OTHER MATERIALS, OR ANY PRODUCTS OR RESULTS OF THE USE THEREOF, WILL MEET THE CLIENT'S OR ANY OTHER INDIVIDUAL'S REQUIREMENTS, ACHIEVE ANY INTENDED RESULT, BE COMPATIBLE OR WORK WITH ANY SOFTWARE, SYSTEM, OR OTHER SERVICES, OR BE SECURE, ACCURATE, COMPLETE, FREE OF HARMFUL CODE, OR ERROR-FREE.

TIMELINESS OF CONTENT

The content contained in this audit report is subject to change without any prior notice. InterFi Network does not guarantee or warrant the accuracy, timeliness, or completeness of any report you access using the internet or other means, and assumes no obligation to update any information following the publication.



LINKS TO OTHER WEBSITES

This audit report provides, through hypertext or other computer links, access to websites and social accounts operated by individuals other than InterFi Network. Such hyperlinks are provided for your reference and convenience only and are the exclusive responsibility of such websites' and social accounts' owners. You agree that InterFi Network is not responsible for the content or operation of such websites and social accounts and that InterFi Network shall have no liability to you or any other person or entity for the use of third-party websites and social accounts. You are solely responsible for determining the extent to which you may use any content at any other websites and social accounts to which you link from the report.

INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI INTERFI
CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL AUDIT REPORT CONFIDENTIAL



ABOUT INTERFI NETWORK

InterFi Network provides intelligent blockchain solutions. We provide solidity development, testing, and auditing services. We have developed 150+ solidity codes, audited 1000+ smart contracts, and analyzed 500,000+ code lines. We have worked on major public blockchains e.g., Ethereum, Binance, Cronos, Doge, Polygon, Avalanche, Metis, Fantom, Bitcoin Cash, Velas, Oasis, etc.

InterFi Network is built by engineers, developers, UI experts, and blockchain enthusiasts. Our team currently consists of 4 core members, and 6+ casual contributors.

Website: <https://interfi.network>

Email: hello@interfi.network

GitHub: <https://github.com/interfinetwork>

Telegram (Engineering): <https://t.me/interfiaudits>

Telegram (Onboarding): <https://t.me/interfisupport>



 interfinetwork

 hello@interfi.network

 <https://interfi.network>

SMART CONTRACT AUDITS | SOLIDITY DEVELOPMENT AND TESTING
RELENTLESSLY SECURING PUBLIC AND PRIVATE BLOCKCHAINS