

Blockchain Security | Smart Contract Audits | KYC Development | Marketing

MADE IN GERMANY

BillionAir

Audit

Security Assessment 22. June, 2023

For







Disclaimer	3
Description	5
Project Engagement	5
Logo	5
Contract Link	5
Methodology	7
Used Code from other Frameworks/Smart Contracts (direct imports)	8
Tested Contract Files	9
Source Lines	10
Risk Level	10
Capabilities	11
Inheritance Graph	12
CallGraph	13
Scope of Work/Verify Claims	14
Modifiers and public functions	23
Source Units in Scope	25
Critical issues	26
High issues	26
Medium issues	26
Low issues	26
Informational issues	26
Audit Comments	27
SWC Attacks	28

Disclaimer

<u>SolidProof.io</u> reports are not, nor should be considered, an "endorsement" or "disapproval" of any particular project or team. These reports are not, nor should be considered, an indication of the economics or value of any "product" or "asset" created by any team. SolidProof.io do not cover testing or auditing the integration with external contract or services (such as Unicrypt, Uniswap, PancakeSwap etc'...)

SolidProof.io Audits do not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technology proprietors. SolidProof Audits should not be used in any way to make decisions around investment or involvement with any particular project. These reports in no way provide investment advice, nor should be leveraged as investment advice of any sort.

SolidProof.io Reports represent an extensive auditing process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology. Blockchain technology and cryptographic assets present a high level of ongoing risk. SolidProof's position is that each company and individual are responsible for their own due diligence and continuous security. SolidProof in no way claims any guarantee of security or functionality of the technology we agree to analyze.

Version	Date	Description
1.0	19. June 2023	Layout projectAutomated-/Manual-Security TestingSummary
1.1	22. June 2023	· Summary

Network

Binance Smart Chain

Website

http://www.billionair.com/

Telegram

https://t.me/billionair_app

Twitter

https://twitter.com/billionair_app

Instagram

https://www.instagram.com/BillionAir_app/

Discord

https://discord.gg/y4M3w93QS6

Medium

https://medium.com/@billionair_app

Description

BillionAir is creating a betting platform that capitalises on blockchain technology to organise global raffle and wagering contests. BillionAir transcends the geographical restrictions of traditional raffles by utilising NFT-based tickets. With raffles at the epicentre of the ecosystem, BillionAir maximises user engagement and entertainment by introducing a series of betting games, including CoinFlip, Crash, Cases (loot boxes), Roulette, and Dice games.

Project Engagement

During the Date of 16 June 2023, **Billion Air Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

Logo



Contract Link

v1.0

https://github.com/Inno-Platforms/airb-contracts/blob/main/src/presale/AirBPresale.sol

https://github.com/Inno-Platforms/airb-contracts/blob/main/src/token/AIRB.sol

· Commit: cbb0cb8

Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
Critical	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
High	7 – 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon aspossible.
Medium	4 – 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
Low	2 – 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
Informational	O – 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

Methodology

The auditing process follows a routine series of steps:

- 1. Code review that includes the following:
 - i) Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
 - ii) Manual review of code, which is the process of reading source code line-byline in an attempt to identify potential vulnerabilities.
 - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
- 2. Testing and automated analysis that includes the following:
 - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
 - ii) Symbolic execution, which is analysing a program to determine what inputs causes each part of a program to execute.
- 3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
- 4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.

Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

Dependency / Import Path	Count
@chainlink-contracts/src/v0.8/interfaces/AggregatorV3Interface.sol	1
@openzeppelin-contracts-upgradeable/access/OwnableUpgradeable.sol	1
@openzeppelin-contracts-upgradeable/proxy/utils/Initializable.sol	1
@openzeppelin-contracts-upgradeable/security/PausableUpgradeable.sol	1
@openzeppelin-contracts-upgradeable/token/ERC20/ERC20Upgradeable.sol	1
@openzeppelin-contracts/access/Ownable.sol	1
@openzeppelin-contracts/security/ReentrancyGuard.sol	1
@openzeppelin-contracts/token/ERC20/IERC20.sol	2
@openzeppelin-contracts/token/ERC20/utils/SafeERC20.sol	1
@openzeppelin-contracts/utils/Address.sol	1

Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

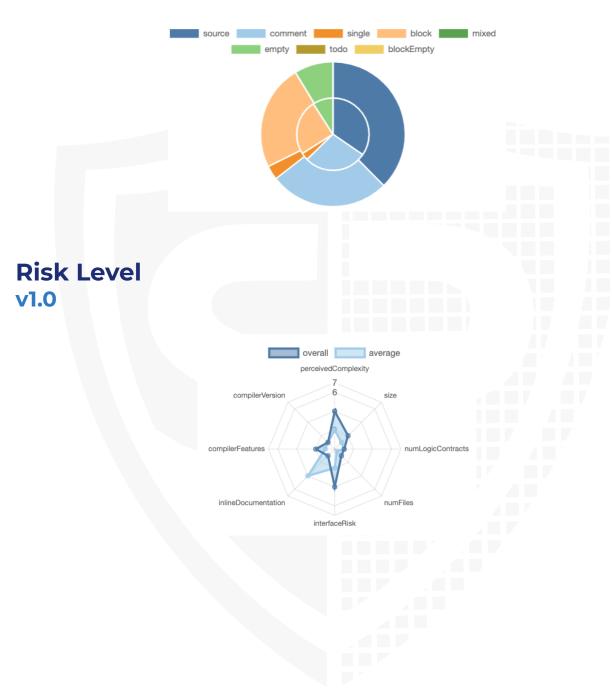
A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.

v1.0

File Name	SHA-1 Hash
src/presale/AirBPresale.sol	a6c3ab3266cc07d23990d8876bb67b9 575f01862
src/token/AIRB.sol	920738c458201abc99f5f87aaee07de6 ce23a7ab

Metrics

Source Lines v1.0



Capabilities

Components



Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

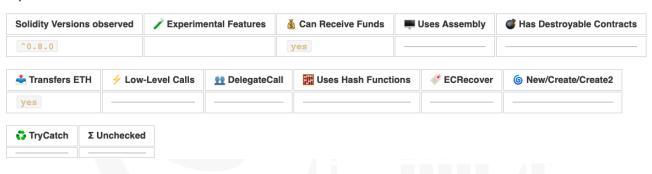


External	Internal	Private	Pure	View
17	23	0	0	11

StateVariables



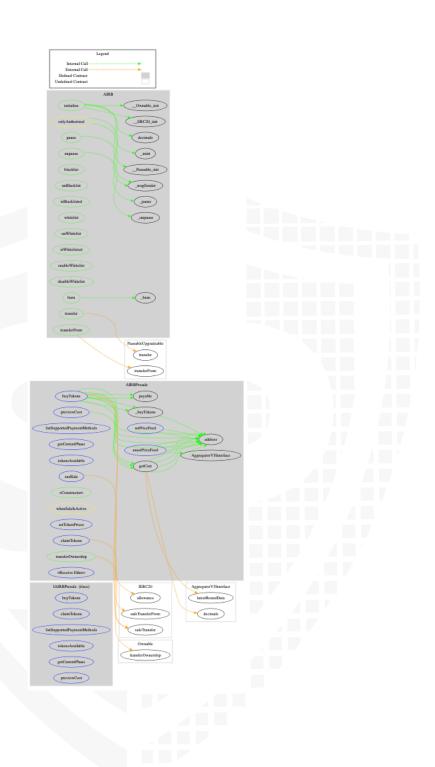
Capabilities



Inheritance Graph v1.0



CallGraph v1.0



Scope of Work/Verify Claims

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

- 1. Is contract an upgradeable
- 2. Correct implementation of Token standard
- 3. Deployer cannot mint any new tokens
- 4. Deployer cannot burn or lock user funds
- 5. Deployer cannot pause the contract
- 6. Deployer cannot set fees
- 7. Deployer cannot blacklist/antisnipe addresses
- 8. Overall checkup (Smart Contract Security)

Is contract an upgradeable

Name Is contract an upgradeable? Yes

Comments:

v1.0

- The owner can deploy a new version of the token contract which can change any limit and give the owner new privileges
 - Be aware of this and do your own research for the contract which is the contract pointing to

Correct implementation of Token standard

	ERC20				
Function	Description	Exist	Tested	Verified	
TotalSupply	Provides information about the total token supply	√	√	✓	
BalanceOf	Provides account balance of the owner's account	\checkmark	√	\checkmark	
Transfer	Executes transfers of a specified number of tokens to a specified address	√	√	✓	
TransferFrom	Executes transfers of a specified number of tokens from a specified address	√	√	√	
Approve	Allow a spender to withdraw a set number of tokens from a specified account	√	√	√	
Allowance	Returns a set number of tokens from a spender to the owner	√	1	√	

Deployer cannot mint any new tokens

Name	Exist	Tested	Status
Deployer cannot mint	\checkmark	\checkmark	\checkmark
Max / Total Supply	1_000_0	00_000	

Comments:

v1.0

· The owner cannot mint new tokens

Deployer cannot burn or lock user funds

Name	Exist	Tested	Status
Deployer cannot lock	\checkmark	√	X
Deployer cannot burn	-	-	-

Comments:

v1.0

· The owner can lock user funds by blacklisting addresses

Deployer cannot pause the contract

Name	Exist	Tested	Status
Deployer cannot pause	\checkmark	√	X

Comments:

v1.0

· The owner can pause the token contract



Deployer cannot set fees

Name	Exist	Tested	Status
Deployer cannot set fees over 25%	-	-	-
Deployer cannot set fees to nearly 100% or to 100%	-	_	_



Deployer can blacklist/antisnipe addresses

Name	Exist	Tested	Status
Deployer cannot blacklist/antisnipe addresses	\checkmark	√	X

Comments:

v1.0

· Owner is able to blacklist addresses



Overall checkup (Smart Contract Security)



Legend

Attribute	Symbol
Verified / Checked	\checkmark
Partly Verified	×
Unverified / Not checked	X
Not available	-

Modifiers and public functions v1.0

AirBPresale

buyTokens whenSaleIsActive nonReentrant

- claimTokens
- <Constructor>
- setTokenPrices
- setPriceFeed
- unsetPriceFeed
- endSale
- transferOwnership

AIRB

- initialize
- transfer

- transferFrom
- M whenNotPaused
- blacklist
- unBlacklist
- whitelist
- unWhitelist
- enableWhitelist
- disableWhitelist
- pause
- unpause
- burn

Ownership Privileges

- * AirBPresale. sol -
 - Set the token price to any arbitrary value
 - End the presale but cannot enable it again
 - Set/Unset Price Feed address for a given payment method
- AIRB.sol.sol -
 - The owner can enable/disable the whitelist. Thus, if it is enabled then only whitelisted users will be able to transfer tokens.
 - Pause/Unpause the transfer of tokens.

Please check if an OnlyOwner or similar restrictive modifier has been forgotten.

Source Units in Scope v1.0

File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score
src/presale/AirBPresale.sol	1		418	396	219	135	170
src/token/AIRB.sol	1		107	100	72	5	69
Totals	2		525	496	291	140	239

Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalised lines of the source unit (e.g. normalises functions spanning multiple lines)
nSLOC	normalised source lines of code (only source-code lines; no comments, no blank lines)
Comment Lines	lines containing single or block comments
Complexity Score	a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces,)

Audit Results

Critical issues

No critical issues

High issues

No high issues

Medium issues

Issu e	File	Type	Line	Description	Status
#1	AIRB. sol	Owner can lock funds	96, 100	The owner can manually stop transfer of tokens at any point in time. This can also stop the users from claiming thier tokens after the presale.	ACK

Low issues

Issu e	File	Туре	Line	Description	Status
#1	AirBP resal e.sol	Missing Zero Address Validation (missing-zero- check)	346	Check that the address is not zero	ACK
#2	AirBP resal e.sol	Missing Events Arithmetic	387	Emit an event for critical parameter changes	ACK
#3	AIRB. sol	Missing Events Arithmetic	All Setter Functio ns	Emit an event for critical parameter changes	ACK

Informational issues

Issu e	File	Туре	Line	Description	Status
#1	AIRB. sol	NatSpec documentation missing	<u>—</u>	If you started to comment your code, also comment all other functions, variables etc.	ACK

Audit Comments

We recommend you to use the special form of comments (NatSpec Format, Follow link for more information https://docs.soliditylang.org/en/latest/natspec-format.html) for your contracts to provide rich documentation for functions, return variables and more. This helps investors to make clear what that variables, functions etc. do.

22. June 2023:

- There is still an owner (Owner still has not renounced ownership)
- The owner can deploy a new version of the token contract which can change any limit and give the owner new privileges
- · Read the whole report and modifiers section for more information

SWC Attacks

ID	Title	Relationships	Status
<u>SW</u> <u>C-1</u> <u>36</u>	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	PASSED
<u>SW</u> <u>C-1</u> <u>35</u>	Code With No Effects	CWE-1164: Irrelevant Code	PASSED
<u>SW</u> <u>C-1</u> <u>34</u>	Message call with hardcoded gas amount	CWE-655: Improper Initialization	PASSED
<u>SW</u> <u>C-1</u> <u>33</u>	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	PASSED
<u>SW</u> <u>C-1</u> <u>32</u>	Unexpected Ether balance	CWE-667: Improper Locking	PASSED
<u>SW</u> <u>C-1</u> <u>31</u>	Presence of unused variables	CWE-1164: Irrelevant Code	PASSED
<u>SW</u> <u>C-1</u> <u>30</u>	Right-To-Left- Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
<u>SW</u> <u>C-1</u> <u>29</u>	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
<u>SW</u> <u>C-1</u> <u>28</u>	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED

<u>SW</u> <u>C-1</u> <u>27</u>	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
SW C-1 25	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
<u>SW</u> <u>C-1</u> <u>24</u>	Write to Arbitrary Storage Location	CWE-123: Write-what-where Condition	PASSED
<u>SW</u> <u>C-1</u> <u>23</u>	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
<u>SW</u> <u>C-1</u> <u>22</u>	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
SW C-1 21	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
SW C-1 20	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
<u>SW</u> <u>C-11</u> <u>9</u>	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	PASSED
<u>SW</u> <u>C-11</u> <u>8</u>	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
<u>SW</u> <u>C-11</u> <u>7</u>	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED

<u>SW</u> <u>C-11</u> <u>6</u>	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
<u>SW</u> <u>C-11</u> <u>5</u>	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
<u>SW</u> <u>C-11</u> <u>4</u>	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
<u>SW</u> <u>C-11</u> <u>3</u>	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED
<u>SW</u> <u>C-11</u> <u>2</u>	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
<u>SW</u> <u>C-11</u> <u>1</u>	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
<u>SW</u> <u>C-11</u> <u>O</u>	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
SW C-1 09	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
<u>SW</u> <u>C-1</u> <u>08</u>	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
SW C-1 07	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED
SW C-1 06	Unprotected SELFDESTRUC T Instruction	CWE-284: Improper Access Control	PASSED

<u>SW</u> <u>C-1</u> <u>05</u>	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
<u>SW</u> <u>C-1</u> <u>04</u>	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
SW C-1 03	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	PASSED
SW C-1 02	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
<u>SW</u> <u>C-1</u> <u>01</u>	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED
<u>SW</u> <u>C-1</u> <u>00</u>	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED







Blockchain Security | Smart Contract Audits | KYC Development | Marketing

