



**SOLIDProof**  
*Bring trust into your projects*

**Blockchain Security | Smart Contract Audits | KYC**

MADE IN GERMANY

# Audit

**Security Assessment**  
**15. December, 2021**

**For**



**CELESTIAL**  
**UNITY**

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
Scope of Work	13
Inheritance Graph	13
Verify Claims	14
Modifiers	20
CallGraph	21
Source Units in Scope	22
Critical issues	23
High issues	23
Medium issues	23
Low issues	23
Informational issues	23
Audit Comments	24
SWC Attacks	25

# Disclaimer

SolidProof.io 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	15. December 2021	<ul style="list-style-type: none"><li>• Layout project</li><li>• Automated- /Manual-Security Testing</li><li>• Summary</li></ul>

## **Network**

Binance Smart Chain (BEP20)

## **Website**

<https://celestialunity.com/>

## **Telegram**

<https://t.me/CelestialUnity>

## **Twitter**

[https://twitter.com/Celestial\\_Unity](https://twitter.com/Celestial_Unity)

## **Facebook**

<https://www.facebook.com/CelestialUnity>

## **Youtube**

<https://www.youtube.com/channel/UC-4Ti1WBli00giaUxjOHKQg>

## **Reddit**

<https://www.reddit.com/user/CelestialUnity/>

## Description

Celestial Unity PHX Innovations created Celestial Unity token as its utility token for the proposal of a Commercial Bank built for the cryptocurrency industry, while the banking functionalities will run as a traditional bank to provide financial services to the public and business while ensuring economic and social stability and sustainable growth.

The Celestial ecosystem is designed for the continued growth of value without volume. Our Ecosystem benefits from the celestial unity token and PHX innovations in a revolutionary way from our innovations brought to the cryptocurrency world.

## Project Engagement

During the 9th of December 2021, **Celestial 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://bscscan.com/address/0x3370a0377d4a1b1a1865b5a8e6e77f51e85198ef#code>

# 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)
<b>Critical</b>	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.
<b>High</b>	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 as possible.
<b>Medium</b>	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.
<b>Low</b>	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.
<b>Informational</b>	0 – 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-by-line 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:

```
Context.sol
DividendPayingToken.sol
DividendPayingTokenInterface.sol
DividendPayingTokenOptionalInterface.sol
ERC20.sol
IERC20.sol
IERC20Metadata.sol
IterableMapping.sol
IUniswapV2Factory.sol
IUniswapV2Pair.sol
IUniswapV2Router.sol
Migrations.sol
Ownable.sol
SafeMath.sol
SafeMathInt.sol
SafeMathUint.sol
```



## Tested Contract Files

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

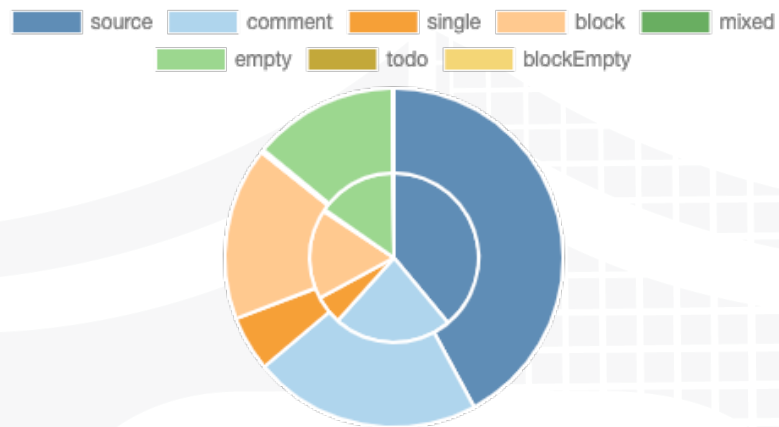
*A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.*

### v1.0

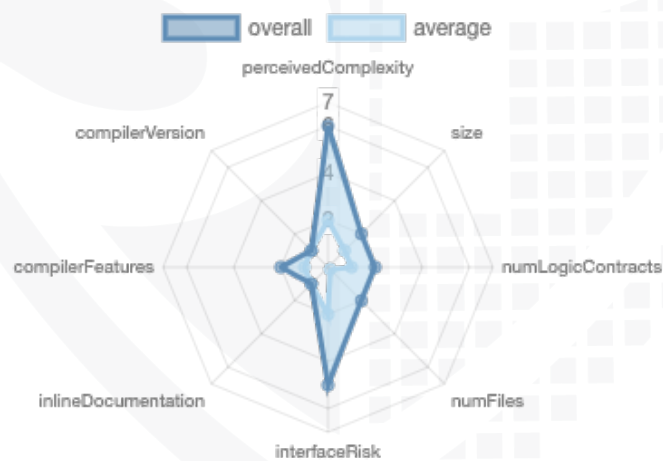
File Name	SHA-1 Hash
contracts/DividendPayingToken.sol	840f5abb4b32e434bfc71fcd4b0f8c9d59ed337f
contracts/IUniswapV2Pair.sol	7207d056afb16ab682366921ca9999716fdf0856
contracts/SafeMathUint.sol	6f99bcb4dd5ead52b8228c5b87f19e99fa52bc0a
contracts/Context.sol	8ccec9893723e51ed8050e79c3165f9e053fad9d
contracts/IUniswapV2Factory.sol	525f9ecf7bd7b4dd8a44a976211127f7a668f9e2
contracts/DividendPayingTokenInterface.sol	79bd44d69ac17efddb8a7e009ad37665676046a8
contracts/IERC20Metadata.sol	606030b128b534388035e75cb6134b39eb548dc3
contracts/SafeMathInt.sol	bb7854f7dc17282a4ac110b658449dfbebec1327
contracts/celestial.sol	d0446f087200a1b40694e644aca2ad79d5cf8a31
contracts/SafeMath.sol	6affa39a0c096511d93fe5c75a9f0a7abbd60bab
contracts/IUniswapV2Router.sol	9e3917429e23e27635ee08260deaeef1f0b628a01
contracts/Ownable.sol	bbe4bd73a5bbc3a23530eb251389825c43bf35e9
contracts/IterableMapping.sol	5cce9efb0720a00a04add294b5ba94ea2fceecc7
contracts/ERC20.sol	66c486ace86e7a4cb4be33fbd2f89f59191e6280
contracts/DividendPayingTokenOptionalInterface.sol	2699e35292de5292c15e74a69c28c34cc03eebb2
contracts/IERC20.sol	a9401814cae232061d41e31ccfc85d2243edcecd

# Metrics

## Source Lines v1.0



## Risk Level v1.0



## Capabilities

### Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	5	4	8	1

### Exposed Functions

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

Version	Public	Payable
1.0	140	5

Version	External	Internal	Private	Pure	View
1.0	95	117	9	25	60

### State Variables

Version	Total	Public
1.0	37	22

### Capabilities

Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	<code>^0.6.2</code>		<code>yes</code>	**** (0 asm blocks)	

Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	ECRecover	New/ Create/ Create2
1.0	yes					yes → New Contract: CUDividendTracker



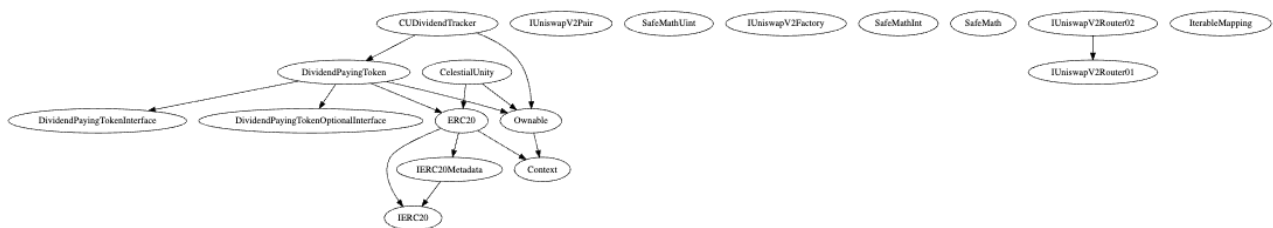
## Scope of Work

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. Correct implementation of Token standard
2. Deployer cannot mint any new tokens
3. Deployer cannot burn or lock user funds
4. Deployer cannot pause the contract
5. Overall checkup (Smart Contract Security)

## Inheritance Graph v1.0



## Verify Claims

### Correct implementation of Token standard

Tested	Verified
✓	✓

Function	Description	Exist	Tested	Verified
TotalSupply	provides information about the total token supply	✓	✓	✓
BalanceOf	provides account balance of the owner's account	✓	✓	✓
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	✓	✓	✓

## Write functions of contract

1. approve

2. claim

3. decreaseAllowance

4. excludeFromDividends

5. excludeFromFees

6. excludeMultipleAccountsFromFees

7. increaseAllowance

8. processDividendTracker

9. renounceOwnership

10. setAutomatedMarketMakerPair

11. setBUSDRewardsFee

12. setLiquidityFee

13. setMarketingFee

14. setMarketingWallet

15. setStakePoolFee

16. setStakePoolWallet

17. transfer

18. transferFrom

19. transferOwnership

20. updateClaimWait

21. updateDividendTracker

22. updateGasForProcessing

23. updateUniswapV2Router

## Deployer cannot mint any new tokens

Name	Exist	Tested	Verified
Deployer cannot mint	✓	✓	✓

Max / Total Supply: 1.000.000.000





## Deployer cannot burn or lock user funds

Name	Exist	Tested	Verified
Deployer cannot lock	✓	✓	✓
Deployer cannot burn	✓	✓	✓

Comments:

**v1.0**

- `_setBalance` function will burn/mint tokens in `DividendPayingToken`

## Deployer cannot pause the contract

Name	Exist	Tested	Verified
Deployer cannot pause	—	—	—



## Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

### Legend

Attribute	Symbol
Verified / Checked	✓
Partly Verified	⚠
Unverified / Not checked	✗
Not available	—

## Modifiers

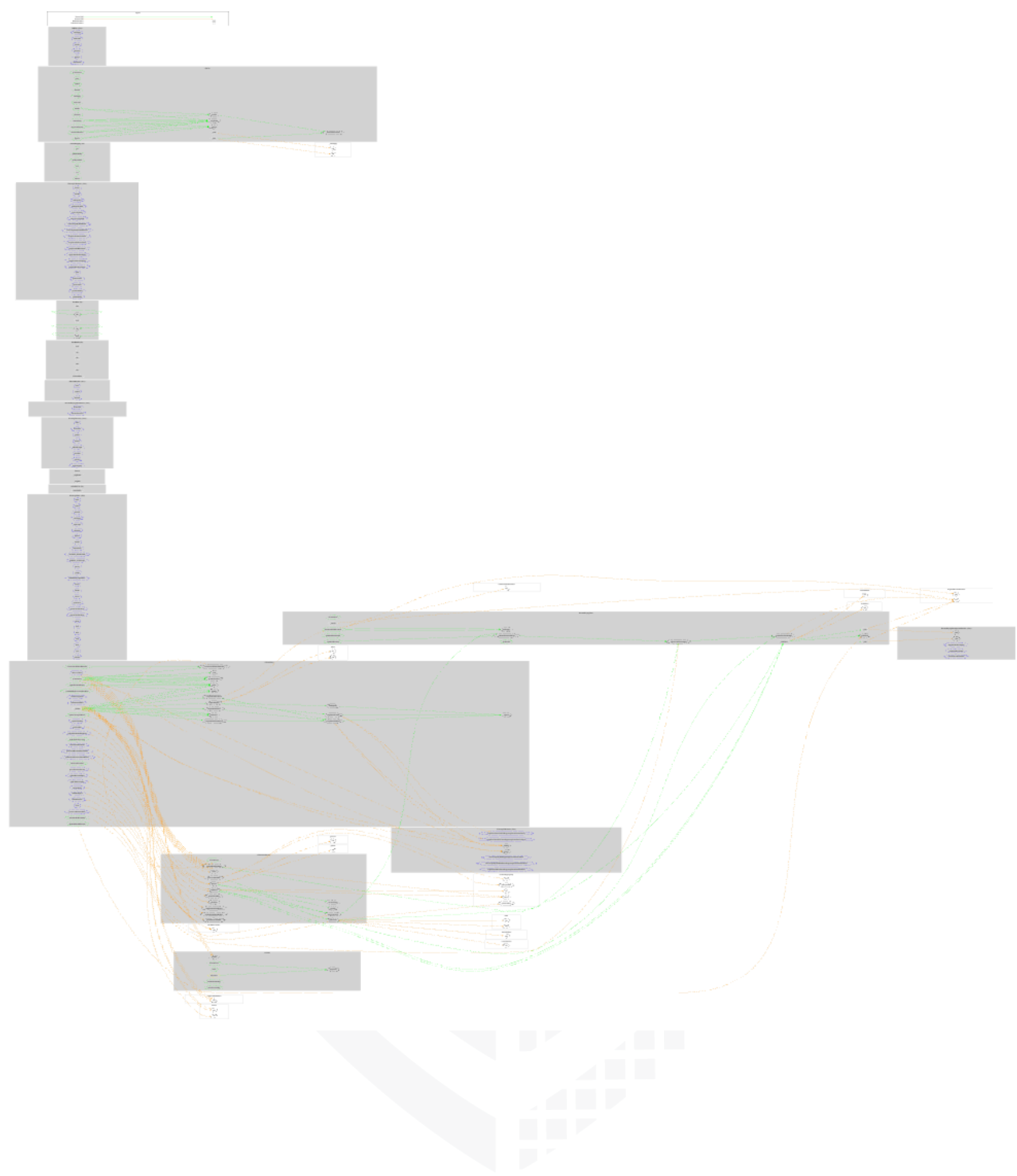
onlyOwner

```
updateDividendTracker
updateUniswapV2Router
excludeFromFees
excludeMultipleAccountsFromFees
setMarketingWallet
setStakePoolWallet
setBUSDRewardsFee
setLiquidityFee
setMarketingFee
setStakePoolFee
setAutomatedMarketMakerPair
updateGasForProcessing
updateClaimWait
excludeFromDividends
```

## Comments

























- Deployer can set following state variables without any limitations
  - liquidityFee
  - marketingFee
  - stakepoolFee
-

# CallGraph



# Source Units in Scope

## v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/DividendPayingToken.sol	1	————	173	173	87	52	78	
	contracts/IUniswapV2Pair.sol	————	1	54	9	5	1	55	————
	contracts/SafeMathUint.sol	1	————	15	15	8	5	3	————
	contracts/Context.sol	1	————	24	24	10	12	1	————
	contracts/IUniswapV2Factory.sol	————	1	19	8	4	1	17	————
	contracts/DividendPayingTokenInterface.sol	————	1	36	13	3	16	5	————
	contracts/IERC20Metadata.sol	————	1	27	16	4	15	9	
	contracts/SafeMathInt.sol	1	————	92	92	33	47	16	————
	contracts/celestial.sol	2	————	680	640	438	32	423	
	contracts/SafeMath.sol	1	————	146	146	39	93	10	
	contracts/IUniswapV2Router.sol	————	2	142	7	4	2	64	
	contracts/Ownable.sol	1	————	57	57	27	21	25	————
	contracts/IterableMapping.sol	1	————	63	63	49	2	19	————
	contracts/ERC20.sol	1	————	310	294	85	178	82	————
	contracts/DividendPayingTokenOptionalInterface.sol	————	1	25	13	3	14	7	————
	contracts/IERC20.sol	————	1	81	26	17	57	13	
	<b>Totals</b>	<b>10</b>	<b>8</b>	<b>1944</b>	<b>1596</b>	<b>816</b>	<b>548</b>	<b>827</b>	

## Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
nSLOC	normalized 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

# AUDIT PASSED

## Critical issues

- no critical issues found -

## High issues

- no high issues found -

## Medium issues

- no medium issues found -

## Low issues

Issue	File	Type	Line	Description
#1	Celestial	Contract doesn't import npm packages from source (like OpenZeppelin etc.)	-	We recommend to import all packages from npm directly without flatten the contract. Functions could be modified or can be susceptible to vulnerabilities
#2	Celestial	A floating pragma is set	2	The current pragma Solidity directive is „^0.6.2”.
#3	Celestial	Missing Zero Address Validation (missing-zero-check)	160, 164, 136	Check that the address is not zero

## Informational issues

Issue	File	Type	Line	Description
#1	Celestial	State variables that could be declared constant (constable-states)	23, 21, 25,	Add the `constant` attributes to state variables that never change
#2	Dividen dPaying Token	State variables that could be declared constant (constable-states)	24	Add the `constant` attributes to state variables that never change

#3	Celestial	Unused return values	450, 275	Ensure that all the return values of the function calls are used and handle both success and failure cases if needed by the business logic
#4	Context	Functions that are not used	20	Remove unused functions
#5	SafeMath	Functions that are not used	126, 142, 82	Remove unused functions
#6	DividendPayingToken	Code with no effect	135-137	Code will never be executed
#7	SafeMathInt	Unused state variables	36	Remove unused state variables

## Audit Comments

**15. December 2021:**

[Read report for more information](#)



## SWC Attacks

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

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

<a href="#">SW C-11 6</a>	Timestamp Dependence	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	<b>PASSED</b>
<a href="#">SW C-11 5</a>	Authorization through tx.origin	<a href="#">CWE-477: Use of Obsolete Function</a>	<b>PASSED</b>
<a href="#">SW C-11 4</a>	Transaction Order Dependence	<a href="#">CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')</a>	<b>PASSED</b>
<a href="#">SW C-11 3</a>	DoS with Failed Call	<a href="#">CWE-703: Improper Check or Handling of Exceptional Conditions</a>	<b>PASSED</b>
<a href="#">SW C-11 2</a>	Delegatecall to Untrusted Callee	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	<b>PASSED</b>
<a href="#">SW C-11 1</a>	Use of Deprecated Solidity Functions	<a href="#">CWE-477: Use of Obsolete Function</a>	<b>PASSED</b>
<a href="#">SW C-11 0</a>	Assert Violation	<a href="#">CWE-670: Always-Incorrect Control Flow Implementation</a>	<b>PASSED</b>
<a href="#">SW C-1 09</a>	Uninitialized Storage Pointer	<a href="#">CWE-824: Access of Uninitialized Pointer</a>	<b>PASSED</b>
<a href="#">SW C-1 08</a>	State Variable Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>
<a href="#">SW C-1 07</a>	Reentrancy	<a href="#">CWE-841: Improper Enforcement of Behavioral Workflow</a>	<b>PASSED</b>
<a href="#">SW C-1 06</a>	Unprotected SELFDESTRUCT Instruction	<a href="#">CWE-284: Improper Access Control</a>	<b>PASSED</b>

<a href="#">SW</a> <a href="#">C-1</a> <a href="#">05</a>	Unprotected Ether Withdrawal	<a href="#">CWE-284: Improper Access Control</a>	<b>PASSED</b>
<a href="#">SW</a> <a href="#">C-1</a> <a href="#">04</a>	Unchecked Call Return Value	<a href="#">CWE-252: Unchecked Return Value</a>	<b>NOT PASSED</b>
<a href="#">SW</a> <a href="#">C-1</a> <a href="#">03</a>	Floating Pragma	<a href="#">CWE-664: Improper Control of a Resource Through its Lifetime</a>	<b>NOT PASSED</b>
<a href="#">SW</a> <a href="#">C-1</a> <a href="#">02</a>	Outdated Compiler Version	<a href="#">CWE-937: Using Components with Known Vulnerabilities</a>	<b>PASSED</b>
<a href="#">SW</a> <a href="#">C-1</a> <a href="#">01</a>	Integer Overflow and Underflow	<a href="#">CWE-682: Incorrect Calculation</a>	<b>PASSED</b>
<a href="#">SW</a> <a href="#">C-1</a> <a href="#">00</a>	Function Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>

The logo features the word "SolidProofed" in a white, handwritten-style script. The "P" is particularly large and stylized, with a long horizontal stroke that extends to the left. The background is a solid blue color with a faint, large shield emblem. The shield has a grid-like pattern on its right side and a solid blue area on its left side.

SolidProofed

**Blockchain Security | Smart Contract Audits | KYC**

A small horizontal bar representing the German flag, with black, red, and gold stripes.

MADE IN GERMANY