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*Bring trust into your projects*

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

MADE IN GERMANY

# **Super World DApp**

# **Audit**

**Security Assessment**  
**28. February, 2022**

**For**



**SUPERWORLD**

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Version	Date	Description
1.0	28. February 2022	<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://www.superworldapp.com/>

## **Telegram**

<https://t.me/superworldtoken>

## **Twitter**

<https://twitter.com/superworldapp>

## **Facebook**

<https://m.facebook.com/superworldapp/>

## **Instagram**

<https://www.instagram.com/superworldapp>

## **Discord**

<https://discord.com/invite/ZUMJjrg4nx>

## **Youtube**

<https://www.youtube.com/channel/UCqkWtBF9d5Xtj1lcCtUiBiw>

## **TikTok**

<https://vm.tiktok.com/ZMJH13mHH/>

## **LinkedIn**

<https://www.linkedin.com/company/superworldapp/>

## Description

TBA

## Project Engagement

During the 23rd of February 2022, **SuperWorld DApp 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**

- Github
  - [https://github.com/superworldapp/nftsalonv2\\_contracts](https://github.com/superworldapp/nftsalonv2_contracts)
  - Commit: 0bc1e83ce5a32d53bc9204b8bc1324ccca0c9d0b

# 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:

Dependency / Import Path	Count
@openzeppelin/contracts-upgradeable/access/OwnableUpgradeable.sol	1
@openzeppelin/contracts-upgradeable/security/ReentrancyGuardUpgradeable.sol	1
@openzeppelin/contracts/access/Ownable.sol	3
@openzeppelin/contracts/interfaces/IERC165.sol	1
@openzeppelin/contracts/interfaces/IERC2981.sol	3
@openzeppelin/contracts/security/ReentrancyGuard.sol	3
@openzeppelin/contracts/token/ERC1155/IERC1155.sol	3
@openzeppelin/contracts/token/ERC721/ERC721.sol	1
@openzeppelin/contracts/token/ERC721/IERC721.sol	3
@openzeppelin/contracts/token/ERC721/extensions/ERC721Enumerable.sol	1
@openzeppelin/contracts/utils/Strings.sol	1
@openzeppelin/contracts/utils/cryptography/ECDSA.sol	1
@openzeppelin/contracts/utils/introspection/ERC165Storage.sol	1
@openzeppelin/contracts/utils/structs/EnumerableSet.sol	1



## Tested Contract Files

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

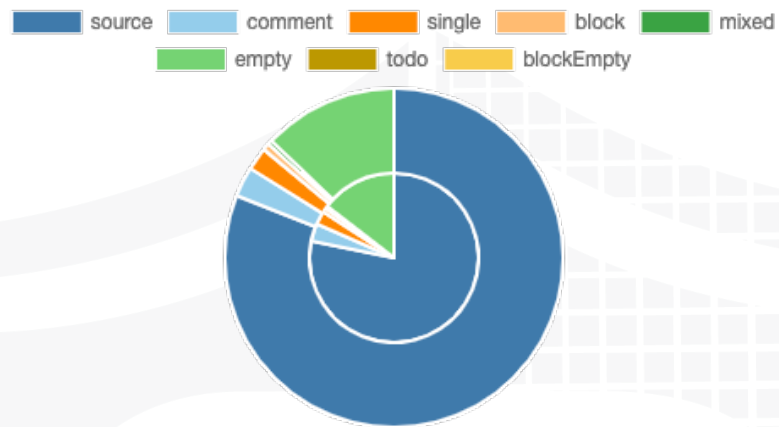
*A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.*

### v1.0

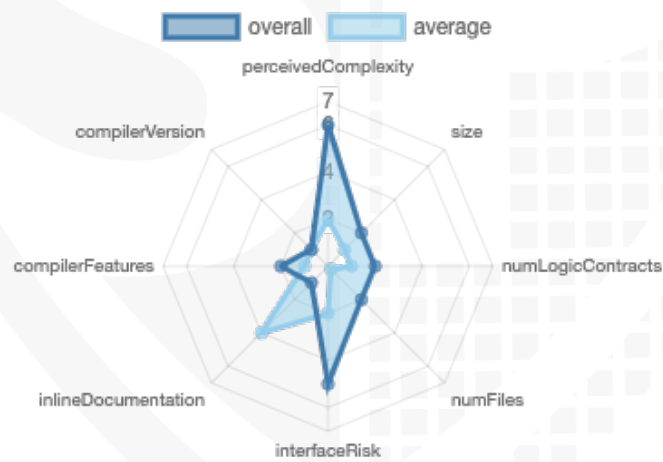
File Name	SHA-1 Hash
contracts/interfaces/IMultiRoyalty.sol	d477345c5d8a89eaeed6e41ab8438fab2b492dfe
contracts/interfaces/ISuperAssetV2.sol	8db004f9571687302e3864d186d07fb7ec6a2c63
contracts/PerTokenRoyalties.sol	0a1be46f5cb068bec5548b9c3e4472720a59e7ec
contracts/SuperAssetV2ERC721.sol	033f3ef085305e0d318596057b60ee41764c1982
contracts/structs/TokenMintData.sol	cbab9521f29d1adb42c82a78472c18787d48ae06
contracts/PlaceOfferERC1155.sol	28891399981e7005bd8517049ff6030f1fe203dc
contracts/PlaceOfferERC721.sol	5f65d21c1f89b2069fbadb0672a5a9b3e9c99c74
contracts/library/CompactArray.sol	05b152e1682facb7945e1c6ff3c608cdb7f13a12
contracts/library/SignatureValidator.sol	c68e3c8641fac20e81d39286f6cad23909e2d8a5
contracts/library/TokenType.sol	cdc935c62f97730e2423169abe10806dabc40814
contracts/NFTSalonV2.sol	ca747b2bcd954634a2eb2bf7b3b338fac3c5e3d7

# Metrics

## Source Lines v1.0



## Risk Level v1.0



## Capabilities

### Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	4	3	2	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	58	12

Version	External	Internal	Private	Pure	View
1.0	20	47	4	2	23

### State Variables

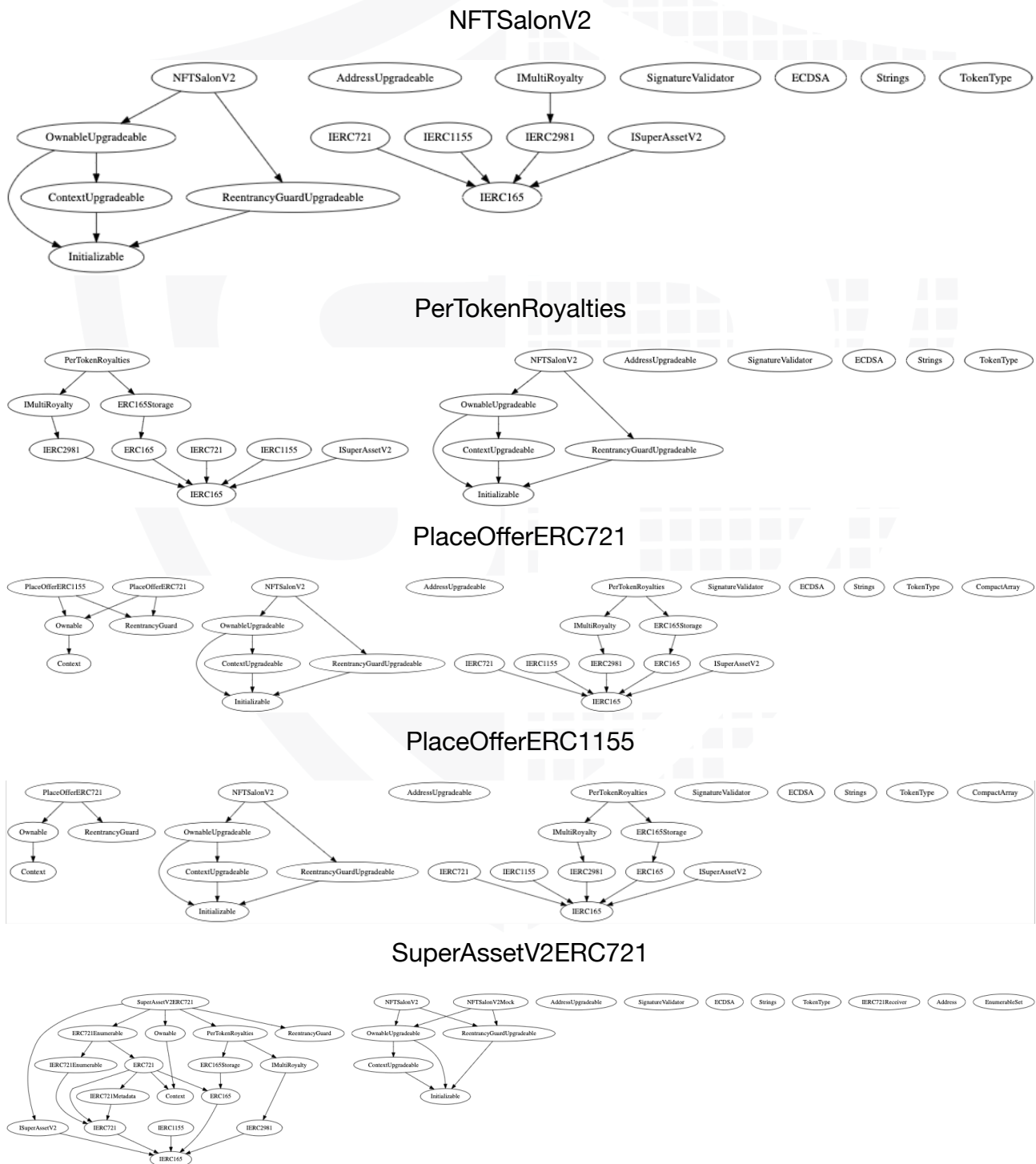
Version	Total	Public
1.0	26	14

### Capabilities

Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	<code>^0.8.0 &gt;=0.8.0 &lt;0.9.0</code>		yes		

Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	EC Recover	New/Create/Create2
1.0				yes		

## 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. Overall checkup (Smart Contract Security)



## Write functions of contract v1.0

▼ NFTSALONV2	▼ PLACEOFFERERC1155	▼ PLACEOFFERERC721	▼ SUPERASSETV2ERC721
addBid	acceptOffer	acceptOffer	approve
buyToken	addOffer	addOffer	burn
closeBid	changeOffer	changeOffer	mintToken
closeBidByBuyer	renounceOwnership	renounceOwnership	mintTokenBatch
closeBidByOwner	setPercentageCut	setPercentageCut	renounceOwnership
giftToken	transferOwnership	transferOwnership	safeTransferFrom
Initialize	withdrawOffer	withdrawOffer	safeTransferFrom
renounceOwnership	withdrawOwner	withdrawOwner	setApprovalForAll
setSignerAddress			setMarketplaceAddress
setSystemRoyaltyPercentage			setMaxRoyaltyPercentage
transferOwnership			setMetaUrl
withdrawSystemBalance			setSignerAddress
withdrawUserBalance			setTokenLocation
			setTokenRoyalties
			transferFrom
			transferOwnership

## Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

### Legend

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



# Modifiers and public functions v1.0

## NFTSalonV2

initialize	
initializer	
setSignerAddress	
onlyOwner	
setSystemRoyaltyPercentage	
onlyOwner	
buyToken	\$
nonReentrant	
addBid	\$
nonReentrant	
closeBid	
onlyOwner	
nonReentrant	
closeBidByOwner	
nonReentrant	
closeBidByBuyer	
nonReentrant	
giftToken	
withdrawSystemBalance	\$
onlyOwner	
nonReentrant	
withdrawUserBalance	\$
nonReentrant	
setMaxRoyaltyPercentage	

## PlaceOfferERC721

setPercentageCut	
onlyOwner	
addOffer	\$
nonReentrant	
changeOffer	\$
nonReentrant	
withdrawOffer	
nonReentrant	
acceptOffer	
nonReentrant	
isTokenOwner	
withdrawOwner	
onlyOwner	
nonReentrant	

## SuperAssetV2ERC721

setMarketplaceAddress	
onlyOwner	
setSignerAddress	
onlyOwner	
setMetaUrl	
onlyOwner	
mintTokenBatch	\$
mintToken	\$
setTokenLocation	
setTokenRoyalties	
burn	
onlyTokenOwner	

## Comments

Information: Not listed functions are from libraries and don't have to be listed here






















- Deployer can set following state variables without any limitations
  - NFTSalonV2
    - systemRoyaltyPercentage
  - PlaceOfferERC721
    - percentageCut
- Deployer can enable/disable following state variables
- Deployer can set following addresses
  - NFTSalonV2
    - \_signer
  - SuperAssetV2ERC721
    - \_marketplaceAddress
    - \_signer

- metaUrl
- Everybody can set
  - PerTokenRoyalties
- Everybody can
  - mintTokenBath
  - Mint
- Marketplace can
  - set tokendetails location
  - Set token royalties

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

# Source Units in Scope

## v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/interfaces/IMultiRoyalty.sol	—————	1	22	18	4	11	5	—————
	contracts/interfaces/ISuperAssetV2.sol	—————	1	57	8	5	1	29	
	contracts/PerTokenRoyalties.sol	1	—————	82	68	54	1	58	—————
	contracts/SuperAssetV2ERC721.sol	1	—————	276	234	185	5	130	 
	contracts/structs/TokenMintData.sol	—————	—————	13	13	10	2	—————	—————
	contracts/PlaceOfferERC1155.sol	1	—————	159	151	126	9	88	
	contracts/PlaceOfferERC721.sol	1	—————	159	151	126	9	88	
	contracts/library/CompactArray.sol	1	—————	19	19	17	1	9	—————
	contracts/library/SignatureValidator.sol	1	—————	19	15	10	1	4	—————
	contracts/library/TokenType.sol	1	—————	30	30	23	1	16	—————
	contracts/NFTSalonV2.sol	1	—————	577	476	407	1	266	 
 	<b>Totals</b>	<b>8</b>	<b>2</b>	<b>1413</b>	<b>1183</b>	<b>967</b>	<b>42</b>	<b>693</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**

## High issues

**No high issues**

## Medium issues

**No medium issues**

## Low issues

Issue	File	Type	Line	Description
#1	All	A floating pragma is set	At the top of the source files	Modify pragma Solidity directives
#2	NFTSalo nV2	Missing Zero Address Validation (missing-zero-check)	59	Check that the address is not zero
#3	SuperAs setV2ERC721	Missing Zero Address Validation (missing-zero-check)	86, 50, 51	Check that the address is not zero
#4	SuperAs setV2ERC721	Local variables shadowing	244	Rename the local variables that shadow another component
#5	NFTSalo nV2	Missing Events Arithmetic	63	Emit an event for critical parameter changes
#6	PlaceOf ferERC1155	Missing Events Arithmetic	60, 153, 156	Emit an event for critical parameter changes

#7	NFTSalo nV2	Tautology	138	Uint cannot be negative
----	----------------	-----------	-----	-------------------------

## Informational issues

### No informational issues

## Commented Code exist

There are some instances of code being commented out in the following files that should be removed:

File	Line	Comment
PlaceOfferERC721	3-5	//import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/access/Ownable.sol"; //import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/security/ReentrancyGuard.sol"; //import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/token/ERC721/IERC721.sol";
PlaceOfferERC1155	3-5	//import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/access/Ownable.sol"; //import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/security/ReentrancyGuard.sol"; //import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/token/ERC721/IERC721.sol";

## Recommendation

Remove the commented code, or address them properly.

## Audit Comments

We recommend you to use the special form of comments (NatSpec Format, Follow link for more information <https://docs.soliditylang.org/en/v0.5.10/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.

## 28. February 2022:

- Read whole 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 Arguments	<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 Variable	<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 Attributes	<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>NOT 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>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 words "SolidProof" in a white, handwritten-style script. The "P" is 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.

SolidProof

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

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

MADE IN GERMANY