Cyberscope

Audit Report

PoSciDonDAO Token

July 2024

Repository	https://github.com/PoSciDonDAO/poscidondao_contracts
Commit	ab6e8a947e29e76bef93aca4eee8bbc6a46338e5
Files	tokens/SCI.sol
Audited by	© cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Acknowledged
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Table of Contents

Review

Contract Name	Sci
Repository	https://github.com/PoSciDonDAO/poscidondao_contracts
Commit	ab6e8a947e29e76bef93aca4eee8bbc6a46338e5
Testing Deploy	https://testnet.bscscan.com/address/0x1743f4ec53cf0857e61b8464d52288f95b12d7db
Symbol	SCI
Decimals	18

Audit Updates

Initial Audit	10 Jul 2024 https://github.com/cyberscope-io/audits/blob/main/2-sci/v1/audit.pdf
Corrected Phase 2	17 Jul 2024

Source Files

Filename	SHA256
contracts/SCI.sol	5ecb900ad27e43503283e706c8e2960b0b850a8111340ddb7bc678573a73e547
contracts/ISci.sol	abad75be8e2bd2abc0361c4b36041c7cc3cca40cca745a36f586e0e6d9b9ef1f
@openzeppelin/contracts/utils/Strings.sol	cb2df477077a5963ab50a52768cb74ec6f32177177a78611ddbbe2c07e2d36de

@openzeppelin/contracts/utils/Context.sol	b2cfee351bcafd0f8f27c72d76c054df9b571b62cfac4781ed12c86354e2a56c
@openzeppelin/contracts/utils/math/SignedMath.sol	420a5a5d8d94611a04b39d6cf5f02492552ed4257ea82aba3c765b1ad52f77f6
@openzeppelin/contracts/utils/math/Math.sol	85a2caf3bd06579fb55236398c1321e15fd524a8fe140dff748c0f73d7a52345
@openzeppelin/contracts/utils/introspection/IERC165.sol	701e025d13ec6be09ae892eb029cd83b3064325801d73654847a5fb11c58b1e5
@openzeppelin/contracts/utils/introspection/ERC165.sol	8806a632d7b656cadb8133ff8f2acae4405b3a64d8709d93b0fa6a216a8a6154
@openzeppelin/contracts/token/ERC20/IERC20.sol	7ebde70853ccafcf1876900dad458f46eb9444d591d39bfc58e952e2582f5587
@openzeppelin/contracts/token/ERC20/ERC20.sol	d20d52b4be98738b8aa52b5bb0f88943f62128969b33d654fbca731539a7fe0a
@openzeppelin/contracts/token/ERC20/extensions/IERC20Metadata.sol	af5c8a77965cc82c33b7ff844deb9826166689e55dc037a7f2f790d057811990
@openzeppelin/contracts/token/ERC20/extensions/ERC20Burnable.sol	0344809a1044e11ece2401b4f7288f414ea41fa9d1dad24143c84b737c9fc02e
@openzeppelin/contracts/access/IAccessControl.sol	d03c1257f2094da6c86efa7aa09c1c07ebd33dd31046480c5097bc2542140e45
@openzeppelin/contracts/access/AccessControl.sol	afd98330d27bddff0db7cb8fcf42bd4766dda5f60b40871a3bec6220f9c9edf7

Findings Breakdown

Critical	0
Medium	0
Minor / Informative	1

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	0	1	0	0

MT - Mints Tokens

Criticality	Minor / Informative
Location	contracts/SCI.sol#L74
Status	Acknowledged

Description

The `govOpsAddress` has the authority to mint tokens to the `treasuryWallet`, which is an address specified during contract deployment and cannot be changed afterwards. The `govOpsAddress` take advantage of it by calling the `mint` function. As a result, the contract tokens will be highly inflated.

```
function mint(uint256 amount) external onlyGovOps {
    _mint(treasuryWallet, amount);
}
```

Recommendation

The team should carefully manage the private keys of the owner's account and the treasury wallet. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions.

Temporary Solutions:

These measurements do not decrease the severity of the finding

- Introduce a time-locker mechanism with a reasonable delay.
- Introduce a multi-signature wallet so that many addresses will confirm the action.
- Introduce a governance model where users will vote about the actions.

Permanent Solution:

- Renouncing the ownership, which will eliminate the threats but it is non-reversible.

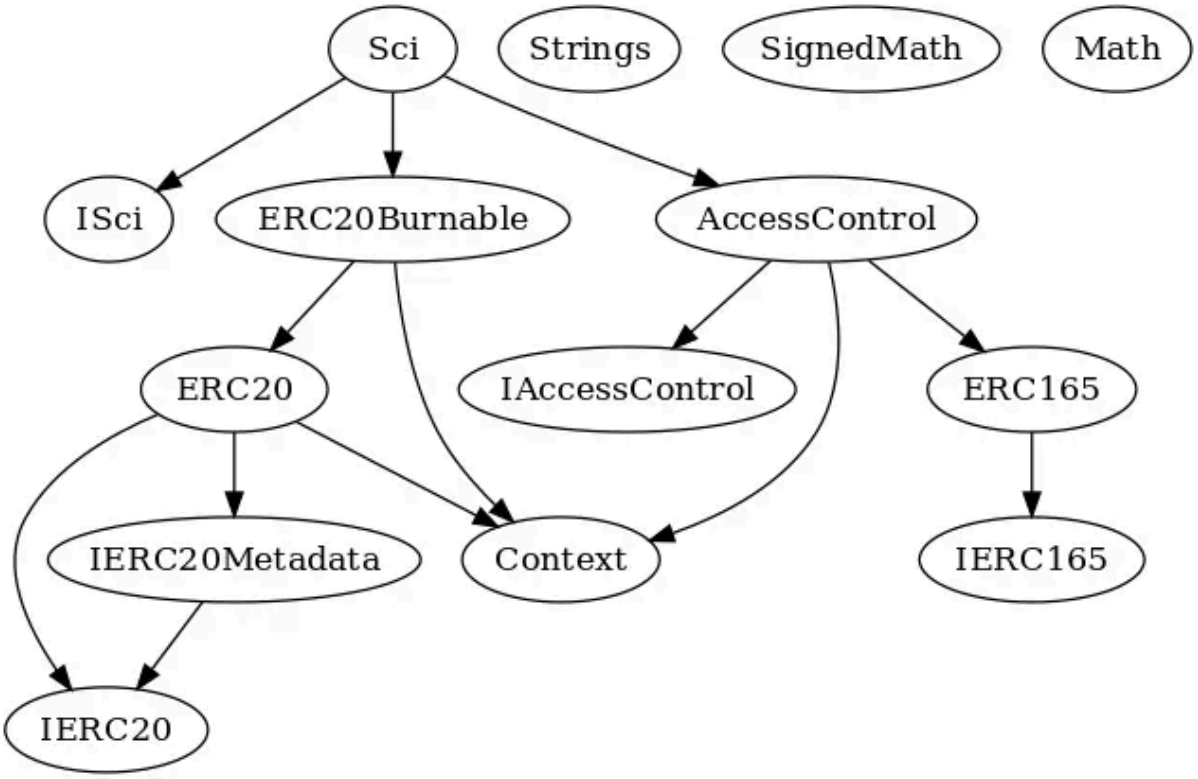
Team Update

The team has acknowledged that this is not a security issue and states: *To achieve full decentralization, SCI tokens can only be minted by the governance smart contract address. The DAO multi-sig is the sole authority that can change this contract address. The team acknowledges this as a temporary point of centralization. Once the correct governance smart contract address is set, the admin rights will be permanently renounced.*

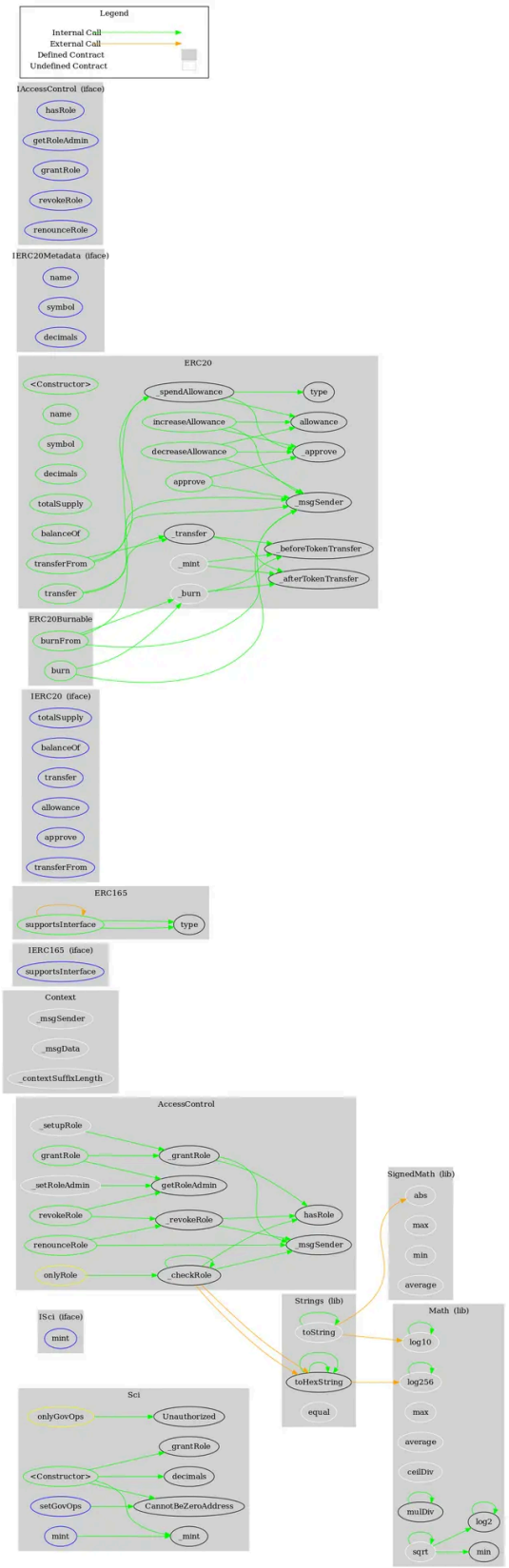
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Sci	Implementation	ISci, ERC20Burnable, AccessControl		
		Public	✓	ERC20
	setGovOps	External	✓	onlyRole
	mint	External	✓	onlyGovOps

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IAccessControl (iface)
hasRole
getRoleAdmin
grantRole
revokeRole
renounceRole
IERC20Metadata (iface)
name
symbol
decimals
ERC20
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transferFrom
transfer
_spendAllowance
increaseAllowance
decreaseAllowance
approve
_transfer
_mint
_burn
type
allowance
_approve
_msgSender
beforeTokenTransfer
afterTokenTransfer
ERC20Burnable
burnFrom
burn
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom
ERC165
supportsInterface
type
IERC165 (iface)
supportsInterface
Context
_msgSender
_msgData
_contextSuffixLength
AccessControl
_setupRole
grantRole
_setRoleAdmin
revokeRole
renounceRole
onlyRole
grantRole
getRoleAdmin
_revokeRole
_checkRole
hasRole
_msgSender
ISci (iface)
mint
Sci
onlyGovOps
<Constructor>
setGovOps
mint
Unauthorized
_grantRole
decimals
CannotBeZeroAddress
_mint
SignedMath (lib)
abs
max
min
average
Strings (lib)
toString
toHexString
equal
Math (lib)
log10
log256
max
average
ceilDiv
mulDiv
sqrt
log2
min

Summary

PoSciDonDAO Token contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. There are some functions that can be abused by the owner like mint tokens. if the contract owner abuses the mint functionality, then the contract will be highly inflated. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

Risk Classification

The criticality of findings in Cyberscope's smart contract audits is determined by evaluating multiple variables. The two primary variables are:

1. **Likelihood of Exploitation**: This considers how easily an attack can be executed, including the economic feasibility for an attacker.
2. **Impact of Exploitation**: This assesses the potential consequences of an attack, particularly in terms of the loss of funds or disruption to the contract's functionality.

Based on these variables, findings are categorized into the following severity levels:

1. **Critical**: Indicates a vulnerability that is both highly likely to be exploited and can result in significant fund loss or severe disruption. Immediate action is required to address these issues.
2. **Medium**: Refers to vulnerabilities that are either less likely to be exploited or would have a moderate impact if exploited. These issues should be addressed in due course to ensure overall contract security.
3. **Minor**: Involves vulnerabilities that are unlikely to be exploited and would have a minor impact. These findings should still be considered for resolution to maintain best practices in security.
4. **Informative**: Points out potential improvements or informational notes that do not pose an immediate risk. Addressing these can enhance the overall quality and robustness of the contract.

Severity	Likelihood / Impact of Exploitation
Critical	Highly Likely / High Impact
Medium	Less Likely / High Impact or Highly Likely/ Lower Impact
Minor / Informative	Unlikely / Low to no Impact

Disclaimer

The information provided in this report does not constitute investment, financial or trading advice and you should not treat any of the document's content as such. This report may not be transmitted, disclosed, referred to or relied upon by any person for any purposes nor may copies be delivered to any other person other than the Company without Cyberscope’s prior written consent. This report is not nor should be considered an “endorsement” or “disapproval” of any particular project or team. This report is not nor should be regarded as an indication of the economics or value of any “product” or “asset” created by any team or project that contracts Cyberscope to perform a security assessment. This document does not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technologies proprietors' business, business model or legal compliance. This report should not be used in any way to make decisions around investment or involvement with any particular project. This report represents an extensive assessment 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 Cyberscope’s position is that each company and individual are responsible for their own due diligence and continuous security Cyberscope’s goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. 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 Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

https://www.cyberscope.io