



Cyberscope

Audit Report

MetaSpark

April 2022

Type BEP20

Network BSC

Address 0x789b9edbd036c8b73dcdb1c25e7d9661b0cdc8c1

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Contract Review

Contract Name	MetaSpark
Compiler Version	v0.8.7+commit.e28d00a7
Optimization	200 runs
Licence	None
Explorer	https://bscscan.com/token/0x789b9edbd036c8b73dcdb1c25e7d9661b0cdc8c1
Symbol	SPARK
Decimals	18
Total Supply	1,000,000,000
Domain	metaspark.cc

Source Files

Filename	SHA256
contract.sol	35bc06b0c2108d5da633d1a4e0875791a90e3bef8a5902cf097332ced0f0b1f8

Audit Updates

Initial Audit	17th April 2022
Corrected	

Contract Analysis

● Critical ● Medium ● Minor ● Pass

Severity	Code	Description
●	ST	Contract Owner is not able to stop or pause transactions
●	OCTD	Contract Owner is not able to transfer tokens from specific address
●	OTUT	Owner Transfer User's Tokens
●	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
●	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
●	MT	Contract Owner is not able to mint new tokens
●	BT	Contract Owner is not able to burn tokens from specific wallet
●	BC	Contract Owner is not able to blacklist wallets from selling

Contract Diagnostics

● Critical ● Medium ● Minor

Severity	Code	Description
●	L01	Public Function could be Declared External
●	L02	State Variables could be Declared Constant
●	L04	Conformance to Solidity Naming Conventions
●	L05	Unused State Variable
●	L07	Missing Events Arithmetic
●	L13	Divide before Multiply Operation

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L399,407,769,911,915,919,923,928,941,945,949,1123,1139,1155,1161,1165,1178,1207,1215,1455,1459

Description

Public functions that are never called by the contract should be declared external to save gas.

```
isExcludedFromDividends  
isExcludedFromFee  
claimProcess  
__claimRewards  
switchToken  
includeMyRewards  
purgeBeforeSwitch  
whitelistPreSale  
updateSellFees  
...
```

Recommendation

Use the external attribute for functions never called from the contract

L02 - State Variables could be Declared Constant

Criticality

minor

Location

contract.sol#L602,615,828,827,829,838

Description

Constant state variables should be declared constant to save gas.

```
_totalSupply  
ZERO  
WBNB  
DEAD  
dividendsPerShareAccuracyFactor
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L442,646,647,593,601,602,1155,1207,1427,1432,1441,1442,827,828,829,831,832,834,835,836,838,840,841

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_allowances  
_balances  
_totalSupply  
_decimals  
_symbol  
_name  
REWARD  
SWAPTOKEN  
ZERO  
...
```

Recommendation

Follow the Solidity naming convention.

<https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions>

L05 - Unused State Variable

Criticality

minor

Location

contract.sol#L829

Description

There are segments that contain unused state variables.

ZERO

Recommendation

Remove unused state variables.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L645,680,1123,1139,1450

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
distributorGas = gas
sellBurnFee = burn
buyDividendRewardsFee = reward
dividendsPerShare =
dividendsPerShare.add(dividendsPerShareAccuracyFactor.mul(amount).div(totalShares))
minPeriod = _minPeriod
```

Recommendation

Emit an event for critical parameter changes.

L13 - Divide before Multiply Operation

Criticality

minor

Location

contract.sol#L1075

Description

Performing divisions before multiplications may cause lose of prediction.

```
feeAmount = amount.mul(sellTotalFees).div(100)
```

Recommendation

The multiplications should be prior to the divisions.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	tryAdd	Internal		
	trySub	Internal		
	tryMul	Internal		
	tryDiv	Internal		
	tryMod	Internal		
	add	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	mod	Internal		
	sub	Internal		
	div	Internal		
	mod	Internal		
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-

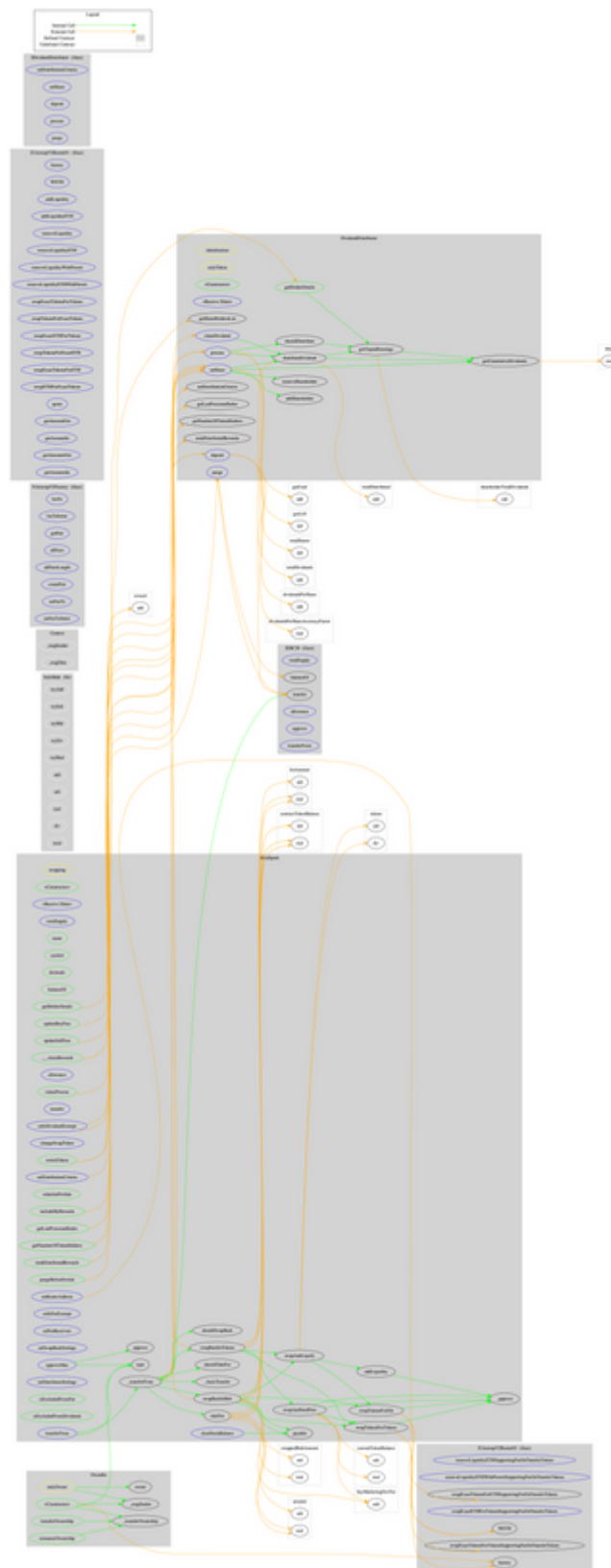
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-

	getAmountsIn	External		-
IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
IDividendDistributor	Interface			
	setDistributionCriteria	External	✓	-
	setShare	External	✓	-
	deposit	External	✓	-
	process	External	✓	-
	purge	External	✓	-
DividendDistributor	Implementation	IDividendDistributor		
	<Constructor>	Public	✓	-
	<Receive Ether>	External	Payable	-
	setDistributionCriteria	External	✓	onlyToken
	purge	External	✓	onlyToken
	setShare	External	✓	onlyToken
	deposit	External	✓	onlyToken
	process	External	✓	onlyToken
	shouldDistribute	Internal		
	distributeDividend	Internal	✓	
	claimDividend	External	✓	-
	getUnpaidEarnings	Public		-
	getHolderDetails	Public		-
	getCumulativeDividends	Internal		

	getLastProcessedIndex	External		-
	getNumberOfTokenHolders	External		-
	getShareHoldersList	External		-
	totalDistributedRewards	External		-
	addShareholder	Internal	✓	
	removeShareholder	Internal	✓	
MetaSpark	Implementation	IERC20, Ownable		
	<Constructor>	Public	✓	-
	<Receive Ether>	External	Payable	-
	totalSupply	External		-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	balanceOf	Public		-
	getHolderDetails	Public		-
	getLastProcessedIndex	Public		-
	getNumberOfTokenHolders	Public		-
	totalDistributedRewards	Public		-
	allowance	External		-
	approve	Public	✓	-
	_approve	Internal	✓	
	approveMax	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	_transferFrom	Internal	✓	
	_basicTransfer	Internal	✓	
	shouldTakeFee	Internal		
	takeFee	Internal	✓	
	shouldSwapBack	Internal		
	clearStuckBalance	External	✓	onlyOwner
	changeSwapToken	External	✓	onlyOwner
	updateBuyFees	Public	✓	onlyOwner
	updateSellFees	Public	✓	onlyOwner
	whitelistPreSale	Public	✓	onlyOwner

	purgeBeforeSwitch	Public	✓	onlyOwner
	includeMyRewards	Public	✓	-
	switchToken	Public	✓	onlyOwner
	___claimRewards	Public	✓	-
	claimProcess	Public	✓	-
	swapBackInBnb	Internal	✓	swapping
	swapBackInTokens	Internal	✓	swapping
	swapAndSendFees	Private	✓	
	swapAndLiquify	Private	✓	
	swapTokensForEth	Private	✓	
	swapTokensForTokens	Private	✓	
	addLiquidity	Private	✓	
	setIsDividendExempt	External	✓	onlyOwner
	setIsFeeExempt	External	✓	onlyOwner
	setFeeReceivers	External	✓	onlyOwner
	setSwapBackSettings	External	✓	onlyOwner
	setDistributionCriteria	External	✓	onlyOwner
	setDistributorSettings	External	✓	onlyOwner
	isExcludedFromFee	Public		-
	isExcludedFromDividends	Public		-
	setRouterAddress	External	✓	onlyOwner

Contract Flow



Domain Info

Domain Name	metaspark.cc
Registry Domain ID	169061461_DOMAIN_CC-VRSN
Creation Date	2022-01-03T04:27:06Z
Updated Date	2022-01-04T03:25:43Z
Registry Expiry Date	2023-01-03T04:27:06Z
Registrar WHOIS Server	whois.godaddy.com
Registrar URL	http://www.godaddy.com
Registrar	GoDaddy.com, LLC
Registrar IANA ID	146

The domain has been created 3 months before the creation of the audit. It will expire in 9 months.

There is no public billing information, the creator is protected by the privacy settings.

Summary

MetaSpark is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 25% fees.

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About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provides all the essential tools to assist users draw their own conclusions.



The Cyberscope team

<https://www.cyberscope.io>