Cyberscope

Audit Report

Star Link Satellite

September 2022

SHA256 6440ac559d5123eb3d0ab5f3657681b1d49fc1a4ba5d2eb345cfa69f06b511e2

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Table of Contents

Contract Review

Contract Name	StarLinkSatellite
Compiler Version	v0.8.11+commit.d7f03943
Testing Deploy	https://testnet.bscscan.com/token/0x9FBa04eCdB26A0909ee6781825f601b648C687f8
Decimals	18
Domain	https://gsls-finance.web.app

Audit Updates

Initial Audit	2nd July 2022 https://github.com/cyberscope-io/audits/blob/main/gsls/v1/audit.pdf
Corrected Phase 1	19th August 2022 https://github.com/cyberscope-io/audits/blob/main/gsls/v2/audit.pdf
Corrected Phase 2	21st September 2022 https://github.com/cyberscope-io/audits/blob/main/gsls/v3/audit.pdf
Corrected Phase 3	26th September 2022

Source Files

Filename	SHA256
@openzeppelin/contracts-upgradeable/access/OwnableUpgradeable.sol	da66c17044345dc892d85bd7ddc9745d25df0b3dacfba8f84eb87c60d6e40fe3
@openzeppelin/contracts-upgradeable/proxy/utils/Initializable.sol	cd823c76cbf5f5b6ef1bda565d58be66c843c37707cd93eb8fb5425deebd6756
@openzeppelin/contracts-upgradeable/security/PausableUpgradeable.sol	c05b019a0b3bee8f3fac2da7c929f7d665b97d6d046aa35126615fff11205119
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/IERC20MetadataUpgradeable.sol	68bcca423fc72ec9625e219c9e36306c726a347e43f3711467c579bd3f6500c8
@openzeppelin/contracts-upgradeable/token/ERC20/IERC20Upgradeable.sol	4e09a7479aa3e7c313f8fc141c4c8fc04e0abfeb8754615ef7d78ec94c298b07
@openzeppelin/contracts-upgradeable/utils/AddressUpgradeable.sol	35fb271561f3dc72e91b3a42c6e40c2bb2e788cd8ca58014ac43f6198b8d32ca

@openzeppelin/contracts-upgradeable/utils/ContextUpgradeable.sol	5fb301961e45cb482fe4e05646d2f529aa449fe0e90c6671475d6a32356fa2d4
@openzeppelin/contracts/token/ERC20/IERC20.sol	94f23e4af51a18c2269b355b8c7cf4db8003d075c9c541019eb8dcf4122864d5
@openzeppelin/contracts/utils/math/SafeMath.sol	0dc33698a1661b22981abad8e5c6f5ebca0dfe5ec14916369a2935d888ff257a
contracts/ERC20Upgradeable.sol	896db1575ce3d842cca6c9666c356b5d8a9d493ce111836e414012f6a546be88
contracts/GovernableUpgradeable.sol	e6f6dd62f0d386d4f53c1fae04011d1ceae962f65197e4b9bc68e1102af98a71
contracts/IFeeDistributor.sol	e6a57d28902c4c5f0e4c8d5ce345fb97230a7fac4d99f02612637dad264776b1
contracts/IPriceRegulator.sol	dff020426b10229a77c1875f12f6829acb2459468c4ca28f73446e336e68bfeb
contracts/IUniswapV2Factory.sol	3dd4c1f051cee242d1c81b3868d19d983706f47dc6d4e61c83e8645dab7b190f
contracts/IUniswapV2Pair.sol	d031a0cf0541e16cc08a0772453796dcbf77727976822ac038dbea47e16171cb
contracts/IUniswapV2Router01.sol	9e9232b0ab8af12bf698a622047a0057ab2b5b068360e24c8599576a40653601
contracts/IUniswapV2Router02.sol	add2f9ec336a24dfe0fcf25cd27fd11860fa09f8e303867f5188b2b1769b31e4
contracts/StarLinkSatellite_audit.sol	6440ac559d5123eb3d0ab5f3657681b1d49fc1a4ba5d2eb345cfa69f06b511e2

Notes

The Star Link Satellite contract implements a token functionality enriched with a funds distribution mechanism. The functionality of the contract heavily depends on external sources. The contracts that depend on external sources should be extra careful since they could be manipulated. This audit focuses on the Star Link Satellite contract. The auditing of the external sources are out of the scope of the audit.

Contract Analysis

● Critical ● Medium ● Minor ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OCTD	Transfers Contract's Tokens	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	ULTW	Transfers Liquidity to Team Wallet	Unresolved
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

ULTW - Unlimited Liquidity to Team Wallet

Criticality	minor / informative
Location	contract.sol#L349
Status	Unresolved

Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been accumulated from fees collected from the contract. The owner may take advantage of it by calling the `distributeNodeCreationFees` method.

```
function distributeNodeCreationFees(uint256 amount) external onlyGovernor {
  _distributeNodeCreationFees(amount);
}
```

Recommendation

The contract could embody a check for the maximum amount of funds that can be swapped. Since a huge amount may volatile the token's price.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Contract Diagnostics

🔴 Critical 🟠 Medium ● Minor

Severity	Code	Description	Status
🔴	US	Untrusted Source	Unresolved
●	L01	Public Function could be Declared External	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L05	Unused State Variable	Unresolved

US - Untrusted Source

Criticality	critical
Location	contract.sol#L472
Status	Unresolved

Description

The contract uses an external contract in order to determine the transaction's flow. The external contract is untrusted. As a result, it may produce security issues and harm the transactions.

Many features of the contract are working as a delegator to other contracts. For instance, the fees are delegated to a contract called "busdDistributor". The secured functionality of these contracts is essential for the Deck contract.

The auditing of these contracts is out of the audit scope.

```
IFeeDistributor _feeDistributor = IFeeDistributor(busdDistributor);
uint256 denominator = _feeDistributor.getMaxFeeResolution();
uint256 sent = 0;
uint256 i;
uint256 feeCount = _feeDistributor.getFeeCount();
require(feeCount <= 4, "Fee count too high");
```

Recommendation

- The contract should use a trusted external source. A trusted source could be either a commonly recognized or an audited contract.
- The pointing addresses should not be able to change after the initialization.
- The external calls could be wrapped by try-catch statements
- The returned value could be sanitised so they could not harm the contract’s flow.

L01 - Public Function could be Declared External

Criticality	minor / informative
Location	contracts/StarLinkSatellite_audit.sol#L206
Status	Unresolved

Description

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

```
transferFrom
```

Recommendation

Use the external attribute for functions never called from the contract.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor / informative
Location	contracts/GovernableUpgradeable.sol#L152,45,25,21,17,49,183
Status	Unresolved

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.

```
_newGovernor
Governable_init
reentryStatusPosition
pendingGovernorPosition
governorPosition
__Governable_init
_set
```

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 / informative
Location	contracts/StarLinkSatellite_audit.sol#L14 contracts/GovernableUpgradeable.sol#L29
Status	Unresolved

Description

There are segments that contain unused state variables.

```
StarLinkSatellite
_NOT_ENTERED
```

Recommendation

Remove unused state variables.

Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
OwnableUpgradeable	Implementation	Initializable, ContextUpgradeable		
	__Ownable_init	Internal	✓	onlyInitializing
	__Ownable_init_unchained	Internal	✓	onlyInitializing
	owner	Public		-
	_checkOwner	Internal		
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
Initializable	Implementation			
	_disableInitializers	Internal	✓	
PausableUpgradeable	Implementation	Initializable, ContextUpgradeable		
	__Pausable_init	Internal	✓	onlyInitializing
	__Pausable_init_unchained	Internal	✓	onlyInitializing
	paused	Public		-
	_requireNotPaused	Internal		
	_requirePaused	Internal		
	_pause	Internal	✓	whenNotPaused
	_unpause	Internal	✓	whenPaused
IERC20MetadataUpgradeable	Interface	IERC20Upgradeable		
	name	External		-
	symbol	External		-

	decimals	External		-
IERC20Upgradeable	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
AddressUpgradeable	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	verifyCallResult	Internal		
ContextUpgradeable	Implementation	Initializable		
	__Context_init	Internal	✓	onlyInitializing
	__Context_init_unchained	Internal	✓	onlyInitializing
	_msgSender	Internal		
	_msgData	Internal		
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		
ERC20Upgradeable	Implementation	Initializable, ContextUpgradeable, IERC20Upgradeable, IERC20MetadataUpgradeable		
	__ERC20_init	Internal	✓	onlyInitializing
	__ERC20_init_unchained	Internal	✓	onlyInitializing
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-

	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_spendAllowance	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
	_afterTokenTransfer	Internal	✓	
GovernableUpgradeable	Implementation	Initializable, PausableUpgradeable		
	Governable_init	External	✓	initializer
	__Governable_init	Internal	✓	onlyInitializing
	governor	Public		-
	_governor	Internal		
	_pendingGovernor	Internal		
	isGovernor	Public		-
	_setGovernor	Internal	✓	
	_setPendingGovernor	Internal	✓	
	transferGovernance	External	✓	onlyGovernor
	claimGovernance	External	✓	-
	_changeGovernor	Internal	✓	
	pause	External	✓	onlyGovernor
IFeeDistributor	Interface			
	getMaxFeeResolution	External	✓	-
	getFeeCount	External	✓	-
	getFeeShare	External	✓	-
	getFeeAddress	External	✓	-
IPriceRegulator	Interface			
	regulateBuy	External	✓	-
	regulateSell	External	✓	-

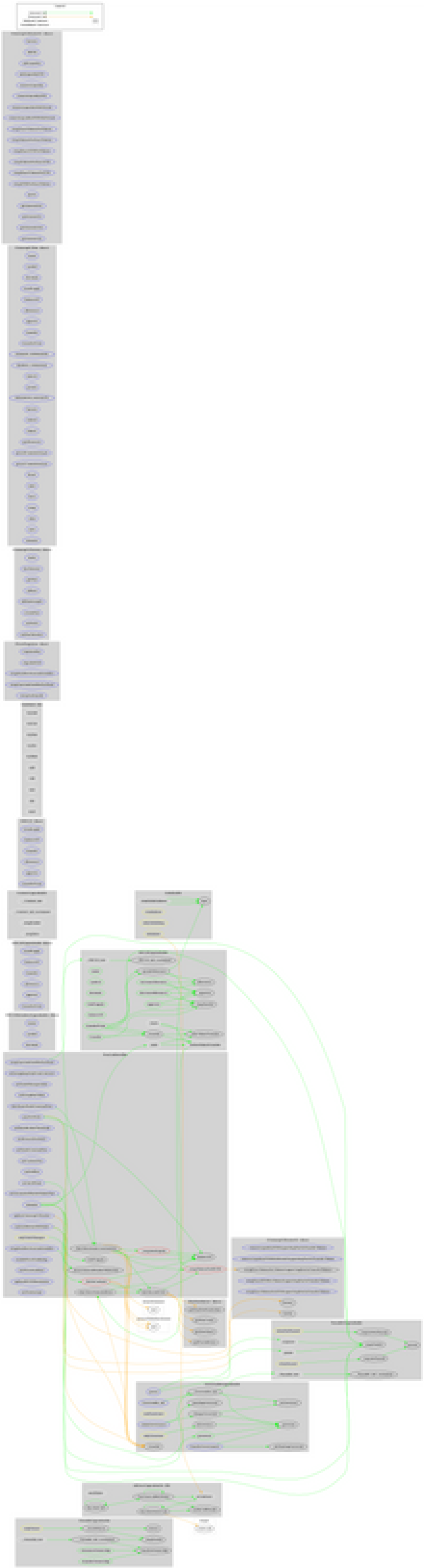
	swapBusdForStarLinkSatellite	External	✓	-
	swapStarLinkSatelliteForBusd	External	✓	-
	swapAndLiquify	External	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-

	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	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	✓	-
StarLinkSatellite	Implementation	ERC20Upgradeable, GovernableUpgradeable		
	setSwappingOnlyFromContract	External	✓	onlyGovernor
	setNodeManagerAddr	External	✓	onlyGovernor
	setSwapPairToken	External	✓	onlyGovernor
	initialize	External	✓	initializer
	updateUniswapV2Router	External	✓	onlyGovernor
	_beforeTokenTransfer	Internal	✓	
	transferFrom	Public	✓	-
	setDistributionThreshold	External	✓	onlyGovernor
	setRewardPoolAddr	External	✓	onlyGovernor
	setNodeCreationFees	External	✓	onlyGovernor
	setCashoutFee	External	✓	onlyGovernor
	setSellFee	External	✓	onlyGovernor
	setAutomatedMarketMakerPair	External	✓	onlyGovernor
	_setAutomatedMarketMakerPair	Private	✓	
	_swapAndLiquify	Private	✓	
	swapBusdForStarLinkSatellite	External	✓	-
	swapStarLinkSatelliteForBusd	External	✓	-
	_swapTokensForBUSD	Private	✓	
	payForNode	External	✓	onlyNodeManager
	distributeNodeCreationFees	External	✓	onlyGovernor
	_distributeNodeCreationFees	Private	✓	
	_feeOnCashout	Private	✓	

	cashoutRewardToNoder	External	✓	onlyNodeManager
	setAntiWhale	External	✓	onlyGovernor
	enablePriceStabilizing	External	✓	onlyGovernor
	setPriceStabilizer	External	✓	onlyGovernor
	updateBUSDDistributor	External	✓	onlyGovernor
	setFeeExempt	External	✓	onlyGovernor
	distributeTokenSellFee	Internal	✓	
	distributeBUSD	Internal	✓	

Contract Flow



Domain Info

Domain Name	web.app
Registry Domain ID	300A2C851-APP
Creation Date	2019-01-08T22:05:04Z
Updated Date	2021-12-12T09:32:53Z
Registry Expiry Date	2023-01-08T22:05:04Z
Registrar WHOIS Server	whois.nic.google
Registrar URL	http://www.markmonitor.com
Registrar	MarkMonitor Inc.
Registrar IANA ID	292

The domain was created 5 months before the creation of the audit.

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

Summary

The Smart Contract analysis reported one minor severity issue. The contract owner has the authority to transfer funds to the team's wallet. Other than that, 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 20% fees.

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

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

The Cyberscope team

https://www.cyberscope.io