Cyberscope

Audit Report

Disney

June 2023

SHA256 a67f5ea55cad9c4770408007bda51f1eaefe32e02dfcb3e089c1253639476c3a

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Analysis

Critical Medium Minor / Informative Pass

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

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
	L19	Stable Compiler Version	Unresolved

Table of Contents

Review

Contract Name	Disney
Testing Deploy	https://testnet.bscscan.com/address/0x1dfb7fff601bcb8bb16f1ff260b3459e97f3bccc
Decimals	18

Audit Updates

Initial Audit	02 Jun 2023

Source Files

Filename	SHA256
@openzeppelin/contracts-upgradeable/access/OwnableUpgradeable.sol	1fbf2a131b895514f0027866cc0deff151ea16424b4aed2b8c573d2275cfa9e8
@openzeppelin/contracts-upgradeable/governance/utils/IVotesUpgradeable.sol	f1546747e3834205ca3358625f8a8e1de2e17912b94d0c3c9703a6a57e93d0b4
@openzeppelin/contracts-upgradeable/interfaces/draft-IERC1822Upgradeable.sol	a94576fd98585c07b2a9725f7c89c910a3a1909a03f49ec2df465327c6a0ffc3
@openzeppelin/contracts-upgradeable/interfaces/IERC1967Upgradeable.sol	167828e6f725b1d47d82bc912fd0f1c6ed0fb67a4e5e06a4d62e72b4a53e95cf
@openzeppelin/contracts-upgradeable/interfaces/IERC5267Upgradeable.sol	6a0d92d0222dd70cdc073029b6fe979e03e65d9c9ea4f2b8ffb774e144d2a51e
@openzeppelin/contracts-upgradeable/interfaces/IERC5805Upgradeable.sol	ae6f56560f3313a609ab2878ead6ec287d27615c4d258194c244cceeeedd3ee3
@openzeppelin/contracts-upgradeable/interfaces/IERC6372Upgradeable.sol	a651c2fe286001386424f9ee592ffe45d8675d3512cce47e4274b587f4794772
@openzeppelin/contracts-upgradeable/proxy/beacon/IBeaconUpgradeable.sol	e0ac7115916f0dce0a8e80769694736f3e674bdc5b2e5853964c82004b1e1cc5
@openzeppelin/contracts-upgradeable/proxy/ERC1967/ERC1967UpgradeUpgradeable.sol	40dd5b14a370eea51ba94eb1b66a89638c6c54d86cc9f406599075c273e5e4c6
@openzeppelin/contracts-upgradeable/proxy/utils/Initializable.sol	a2c4e5c274a586f145d278293ae33198cd8f412ab7e6d26f2394c8949b32b24b
@openzeppelin/contracts-upgradeable/proxy/utils/UUPSUpgradeable.sol	04338003a3be8f5f38595048b591d80fdc147bf95cc7c6285e1e1a5f1afa2b47

@openzeppelin/contracts-upgradeable/security/PausableUpgradeable.sol	c05b019a0b3bee8f3fac2da7c929f7d665b97d6d046aa35126615fff11205119
@openzeppelin/contracts-upgradeable/token/ERC20/ERC20Upgradeable.sol	9619cf23b549a5126042a4e20b09a2eb12dc8c2975258e3b8cde79cc593b6926
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/draft-ERC20PermitUpgradeable.sol	a08be4078da127929eb0d760949376defa730f6af97f022822399b0ad880ad03
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/ERC20BurnableUpgradeable.sol	ca660e828b0c4be205a9f56f3b87b91c1fa67cfd0f6e9dbd431faea7a6280d36
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/ERC20PermitUpgradeable.sol	dbd6de9e5c4479ed83e3106f5e1d03ed91a4d37e97b24e65e345366ec879d979
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/ERC20VotesUpgradeable.sol	b89e9ae4dcbdd5b05db7ef2c7ee993f416d03b0787e613c33324dc480a65bbc0
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/IERC20MetadataUpgradeable.sol	68bcca423fc72ec9625e219c9e36306c726a347e43f3711467c579bd3f6500c8
@openzeppelin/contracts-upgradeable/token/ERC20/extensions/IERC20PermitUpgradeable.sol	cf0f8a5ee1c560ad1c5b0847a1531c5904cee45d0ec811cd83d0d95cbd5a333b
@openzeppelin/contracts-upgradeable/token/ERC20/IERC20Upgradeable.sol	78a6bc84bbb417f0d8a6b12e181e0f783151774f4f0c054c5d3f920e70d69f8c
@openzeppelin/contracts-upgradeable/utils/AddressUpgradeable.sol	db92fc1b515decad3a783b1422190877d2d70b907c6e36fb0998d9465aee42db
@openzeppelin/contracts-upgradeable/utils/ContextUpgradeable.sol	5fb301961e45cb482fe4e05646d2f529aa449fe0e90c6671475d6a32356fa2d4
@openzeppelin/contracts-upgradeable/utils/CountersUpgradeable.sol	5c1ac829a429b0c2ca9b4c9ed8b78d412320e9175e45f088c4e9056ef95fbf21
@openzeppelin/contracts-upgradeable/utils/cryptography/ECDSAUpgradeable.sol	aefb3039d0aae994ad64c397dfa0bcc1ab6e675e2fd97b2fdfc0e7739def0b5b

@openzeppelin/contracts-upgradeable/utils/cryptography/EIP712Upgradeable.sol	ed30d96d25a360d320a807157db07b5bbb73392745ce8188b775787eb2d33fb9
@openzeppelin/contracts-upgradeable/utils/math/MathUpgradeable.sol	fbf7ebc0f3c2cf5aef908ecce85e69af53db4e2c6652f61c8ac1e3f416c2fa99
@openzeppelin/contracts-upgradeable/utils/math/SafeCastUpgradeable.sol	647d03e70d45c15cd9aa3afc3b32de945ec024a022614e263f33bb35c557ac94
@openzeppelin/contracts-upgradeable/utils/math/SignedMathUpgradeable.sol	4f06981f993ea4a96e078c2036b5a42e1edade38996e5180171d5fe4be2f18fe
@openzeppelin/contracts-upgradeable/utils/StorageSlotUpgradeable.sol	5b478023a1200e1364308ca06cdefec7cb7ab990a1cb904cbbdbaa7ba85076be
@openzeppelin/contracts-upgradeable/utils/StringsUpgradeable.sol	357c8d1a0fb673fa10a884d6e27b383171ecc3eaf8dee8211de75f88ff77843d
contracts/contract-1582e01724.sol	a67f5ea55cad9c4770408007bda51f1eaefe32e02dfcb3e089c1253639476c3a

Findings Breakdown

Critical	1
Medium	0
Minor / Informative	2

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	1	0	0	0
Medium	0	0	0	0
Minor / Informative	2	0	0	0

ST - Stops Transactions

Criticality	Minor / Informative
Location	contracts/contract-1582e01724.sol#L52
Status	Unresolved

Description

The contract owner has the authority to stop the transactions for all users. The owner may take advantage of it by calling the `pause` to method.

```
function _beforeTokenTransfer(
  address from,
  address to,
  uint256 amount
) internal override whenNotPaused {
  super._beforeTokenTransfer(from, to, amount);
}
```

Recommendation

The contract could embody a check for not allowing setting the `_maxTxAmount` less than a reasonable amount. A suggested implementation could check that the maximum amount should be more than a fixed percentage of the total supply. 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. Some suggestions are:

- Introduce a time-locker mechanism with a reasonable delay.
- Introduce a multi-sign wallet so that many addresses will confirm the action.
- Introduce a governance model where users will vote about the actions.
- Renouncing the ownership will eliminate the threats but it is non-reversible.

MT - Mints Tokens

Criticality	Critical
Location	contracts/contract-1582e01724.sol#L48
Status	Unresolved

Description

The contract owner has the authority to mint tokens. The owner may take advantage of it by calling the `mint` function. As a result, the contract tokens will be highly inflated.

```
function mint(address to, uint256 amount) public onlyOwner {
  _mint(to, amount);
}
```

Recommendation

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. Some suggestions are:

- Introduce a time-locker mechanism with a reasonable delay.
- Introduce a multi-sign wallet so that many addresses will confirm the action.
- Introduce a governance model where users will vote about the actions.
- Renouncing the ownership will eliminate the threats but it is non-reversible.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	contracts/contract-1582e01724.sol#L2
Status	Unresolved

Description

The `^` symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.8.9;
```

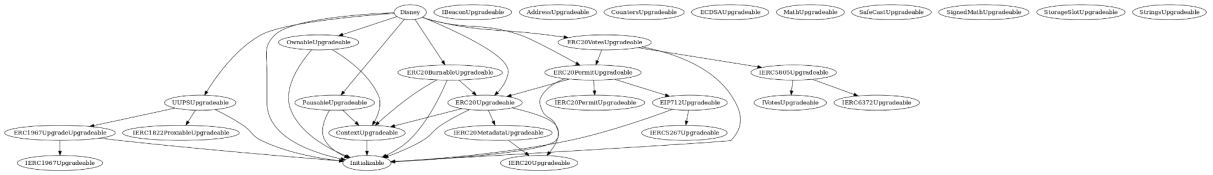
Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

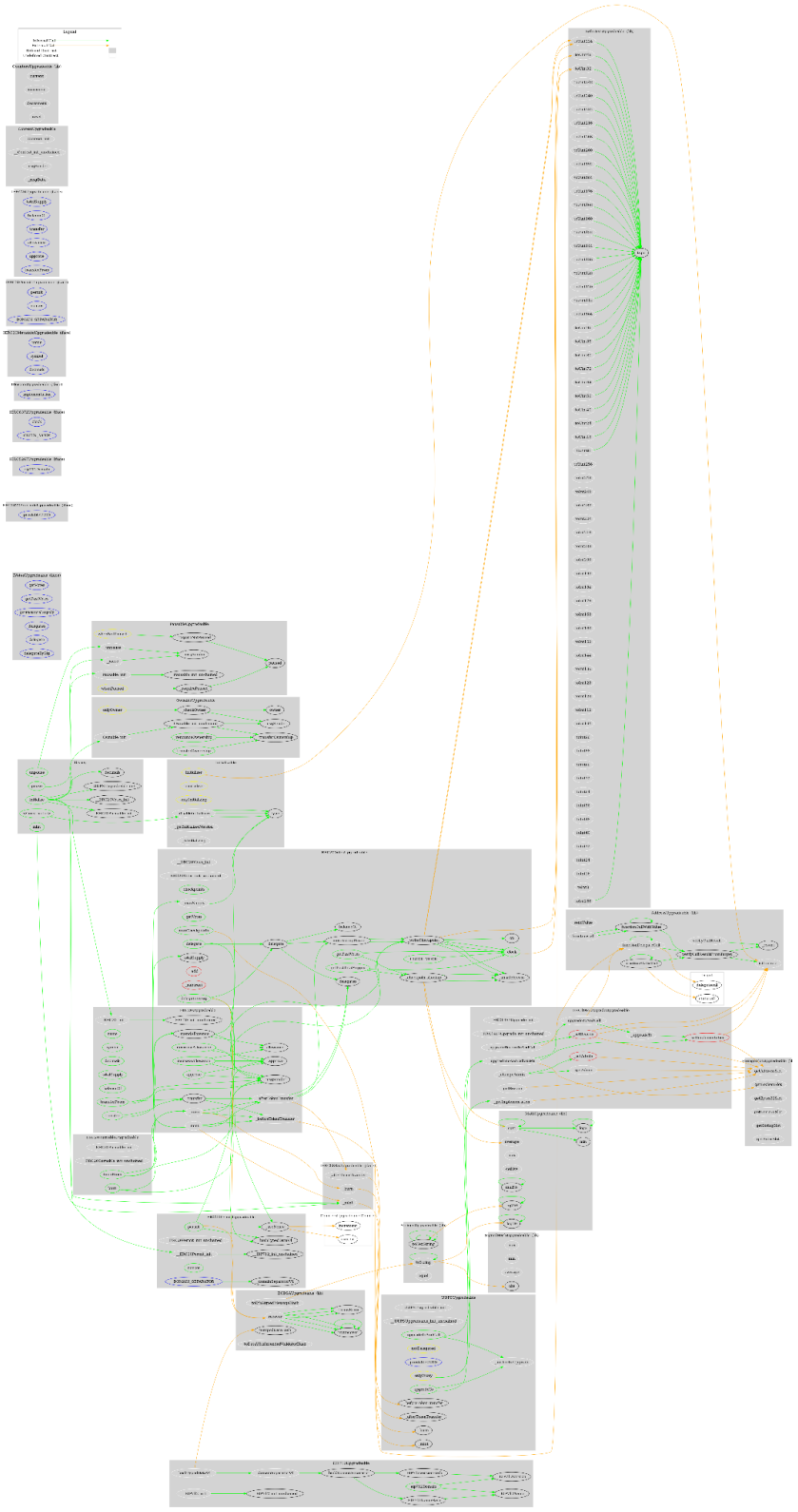
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Disney	Implementation	Initializable, ERC20Upgradeable, ERC20BurnableUpgradeable, PausableUpgradeable, OwnableUpgradeable, ERC20PermitUpgradeable, ERC20VotesUpgradeable, UUPSUpgradeable		
		Public	✓	-
	initialize	Public	✓	initializer
	pause	Public	✓	onlyOwner
	unpause	Public	✓	onlyOwner
	mint	Public	✓	onlyOwner
	_beforeTokenTransfer	Internal	✓	whenNotPaused
	_authorizeUpgrade	Internal	✓	onlyOwner
	_afterTokenTransfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	

Inheritance Graph



Flow Graph



Summary

Disney contract implements a token mechanism. The contract is implemented using an upgradable proxy pattern. This audit investigates security issues, business logic concerns and potential improvements. There are some functions that can be abused by the owner like stop transactions and 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.

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The Cyberscope team

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