

 **smart state**

> Smart
Contract

Audit #

AXES

METaverse

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METHODOLOGY

MAIN TESTS LIST:

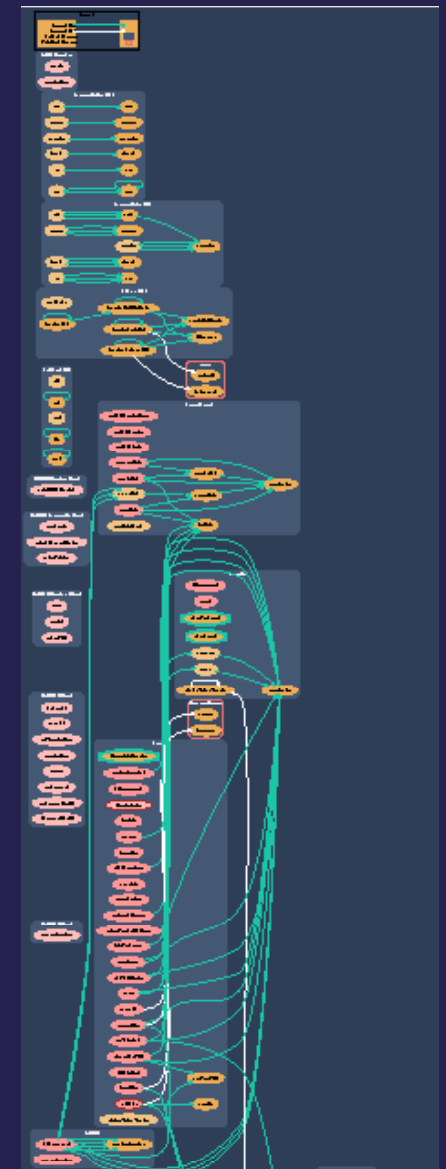
- ◆ Best code practices
- ◆ ERC20/BEP20 compliance (if applicable)
- ◆ Logical bugs
- ◆ General Denial Of Service(DOS)
- ◆ Locked ether
- ◆ Private data leaks
- ◆ Using components with known vulns
- ◆ Weak PRNG
- ◆ Unused vars
- ◆ Unchecked call return method
- ◆ Code with no effects
- ◆ Pool Asset Security (backdoors in the underlying ERC-20)
- ◆ Function visibility
- ◆ Use of deprecated functions
- ◆ Authorization issues
- ◆ Re-entrancy
- ◆ Arithmetic Over/Under Flows
- ◆ Hidden Malicious Code
- ◆ External Contract Referencing
- ◆ Short Address/ Parameter Attack
- ◆ Race Conditions / Front Running
- ◆ Uninitialized Storage Pointers
- ◆ Floating Points and Precision
- ◆ Signatures Replay

STRUCTURE OF CONTRACT

AXES721.SOL

CONTRACT METHODS ANALYSIS:

- ◆ `startStopItemsSale () public virtual returns (bool success)`
Function can be declared external. Function should emit an event.
- ◆ `itemInfo(string memory _item) public view returns (uint _price, bool _active)`
Vulnerabilities not detected
- ◆ `addChangeItem(string memory _item, uint _price, bool _item_bool)`
Vulnerabilities not detected
- ◆ `itemsList() public view returns (string[] memory)`
Vulnerabilities not detected



Pic. 1.1

Axes721.sol

- ◆ `setItemsAddresses(address _contract, address _withdraw)`
Vulnerabilities not detected
- ◆ `seasonInfo(uint256 seasonId)`
Vulnerabilities not detected
- ◆ `seasonOptions(uint256 seasonId)`
Vulnerabilities not detected
- ◆ `currentId()` public view returns (uint _currentId)
Vulnerabilities not detected
- ◆ `tokensBoughtByAddress(uint256 _season, address _buyer)`
Function can be declared external
- ◆ `saleMint(address _to, uint _season)`
Vulnerabilities not detected
- ◆ `itemMint(address to, string memory _item)`
Vulnerabilities not detected
- ◆ `systemMint(address to, string memory _item)`
Vulnerabilities not detected
- ◆ `initNewSeason(uint _seasonStart, uint _seasonStop, uint _seasonPrice, uint _seasonAmount, bool _whitelist, address _withdraw, address _tokenContract, string memory _seasonItem, string memory _seasonName, uint _tokensPerBuyer)`
Vulnerabilities not detected

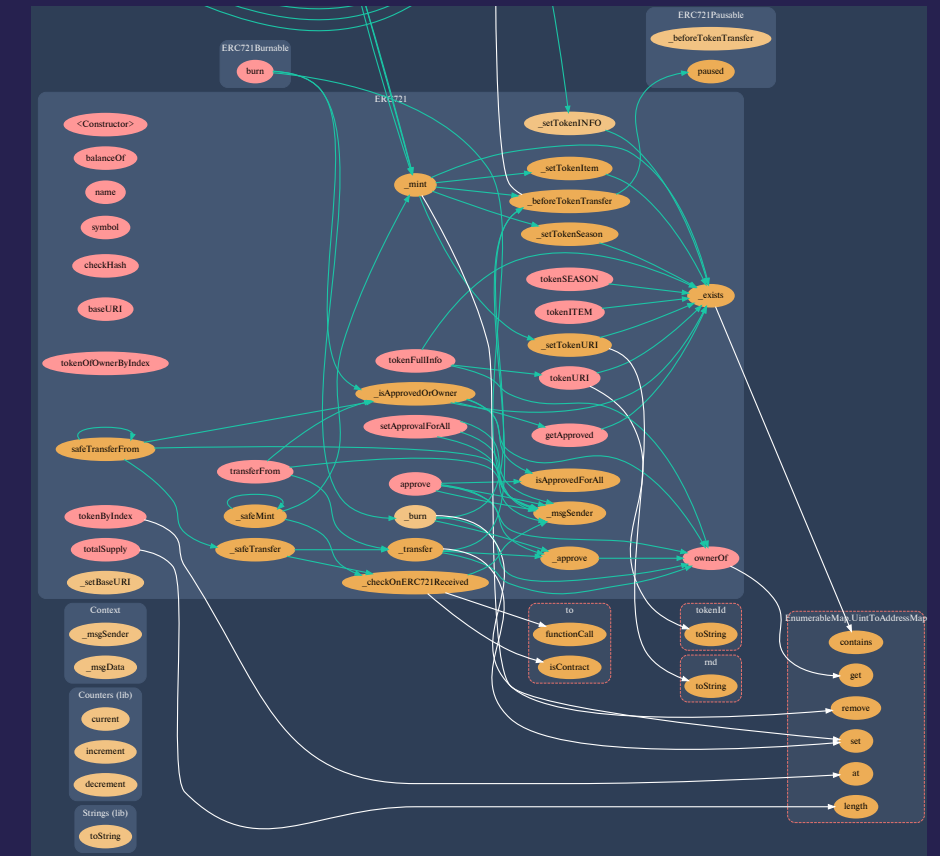
- ◆ `resetSeason(uint _season)`
Vulnerabilities not detected
- ◆ `changeBaseURI(string memory baseURI)`
Vulnerabilities not detected
- ◆ `setTokenInfo(uint256 tokenId, string memory tokenData)`
Vulnerabilities not detected
- ◆ `addToWhitelist(address[] memory _address, uint _season)`
Vulnerabilities not detected
- ◆ `isWhitelisted(address _address, uint256 _season)`
Vulnerabilities not detected
- ◆ `pause()`
Vulnerabilities not detected
- ◆ `unpause()`
Vulnerabilities not detected
- ◆ `_beforeTokenTransfer(address from, address to, uint256 tokenId)`
Vulnerabilities not detected

STRUCTURE OF CONTRACT

ERC721.SOL

CONTRACT METHODS ANALYSIS:

- ◆ `balanceOf(address owner)`
Vulnerabilities not detected
- ◆ `ownerOf(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `name()`
Vulnerabilities not detected
- ◆ `symbol()`
Vulnerabilities not detected
- ◆ `tokenURI(uint256 tokenId)`
Vulnerabilities not detected



Pic. 1.2
ERC721.sol

- ◆ `tokenFullInfo(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `tokenITEM(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `tokenSEASON(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `checkHash(string memory _key)`
Vulnerabilities not detected
- ◆ `tokenOfOwnerByIndex(address owner, uint256 index)`
Vulnerabilities not detected
- ◆ `totalSupply()`
Vulnerabilities not detected
- ◆ `tokenByIndex(uint256 index)`
Vulnerabilities not detected
- ◆ `approve(address to, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `getApproved(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `setApprovalForAll(address operator, bool approved)`
Vulnerabilities not detected

- ◆ `isApprovedForAll(address owner, address operator)`
Vulnerabilities not detected
- ◆ `transferFrom(address from, address to, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `safeTransferFrom(address from, address to, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `safeTransferFrom(address from, address to, uint256 tokenId, bytes memory _data)`
Vulnerabilities not detected
- ◆ `_safeTransfer(address from, address to, uint256 tokenId, bytes memory _data)`
Vulnerabilities not detected
- ◆ `_exists(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_isApprovedOrOwner(address spender, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_safeMint(address to, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_safeMint(address to, uint256 tokenId, bytes memory _data)`
Vulnerabilities not detected

- ◆ `_mint(address to, uint256 tokenId, string memory mintItem, uint _season)`
Vulnerabilities not detected
- ◆ `_burn(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_transfer(address from, address to, uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_setTokenURI(uint256 tokenId)`
Vulnerabilities not detected
- ◆ `_setTokenSeason(uint tokenId, uint _season)`
Vulnerabilities not detected
- ◆ `_setTokenINFO(uint256 tokenId, string memory tokenInfo)`
Vulnerabilities not detected
- ◆ `_setTokenItem(uint256 tokenId, string memory tokenItem)`
Vulnerabilities not detected
- ◆ `setBaseURI(string memory baseURI_)`
Vulnerabilities not detected
- ◆ `_checkOnERC721Received(address from, address to, uint256 tokenId, bytes memory _data)`
Vulnerabilities not detected
- ◆ `_beforeTokenTransfer(address from, address to, uint256 tokenId)`
Vulnerabilities not detected

VERIFICATION CHECK SUMS

| Contract Name | Solc version | Optimisation | Bytecode hash (SHA 256) |
|---------------|--------------|--------------|---|
| Axes721 | 0.7.6 | 200 | ceed0b8ac075867301ecc64 460c40cf223ae4823145795 ee903fe70ecl1a589f8 |



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