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Geojam ERC20 Token Audit

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1. Project Information

1.1 Project Scope

This audit process pertains to Geojam's ERC20 Token smart contract provided by the Geojam development team on November 20th, 2021. The files within scope of this audit are:

File	MD5
./contracts/JamEth.sol	27e7492ce1c1e8347360767eba16c9e5
./contracts/UsingLiquidityProtectionService.sol	057c55b511de7b3027b69b52f211b70a
./contracts/IPLPS.sol	e9f9307a8b52a3f51e9b4270660d6059
./contracts/external/UniswapV2Library.sol	9823946160674327a4f26924edbf5ec8
./contracts/external/UniswapV3Library.sol	d0022e842175f83fbed7544af6886932

And can be found at here https://github.com/GeojamMaster/GeoJam-ERC20 on git commit 5351c1c2ce186b73d620a12feea8b9e12a6819bc.

In addition to the ERC20 code, this smart contract has been equipped with an optional anti-sniper project guard that is active upon a Uniswap DEX listing.

1.2 Issue Classification

Informational

This issue relates to style and security best practices but does not pose an immediate risk.

Low

An issue classified as informational does not pose an immediate threat to disruption of functionality and could not be exploited on a recurring basis, however, it should be considered for security best practices or code integrity.

Medium

An issue classified as medium has relatively small risk and isn't exploitable to circumvent desired functionality and could not have financial consequences but could put user's sensitive information at risk.

Critical

These issues in the smart contract can have catastrophic implications that could ruin your reputation, disrupt the contract's functionality, and impact the client and your user's sensitive information.

1.3 Issues We Look For

Best code practices ERC compliance Logical bugs
Locked ether Weak PRNG Uncheked call return method
Code with no effects Function visibility
Re-entrancy Over/Under Flows
External Contract Referencing Short Address Parameter Attacks
Race Conditions / Front Running Uninitialized Storage Pointers
Floating Points and Precision Signatures Replay

2. Process Details

2.1 Analysis

This audit is a review of security best practices of the Geojam ERC20 smart contract. This audit process pertains to a github repository provided by Geojam at the following url: https://github.com/GeojamMaster/GeoJam-ERC20

The JAM token was built using the industry standard smart contracts from @openzeppelin/contracts which is code that has been thoroughly audited and battle tested. As part of our auditing process we tested and verified the behavior of the JAM ERC20 and anti sniper bot smart contracts. Through the process we found:

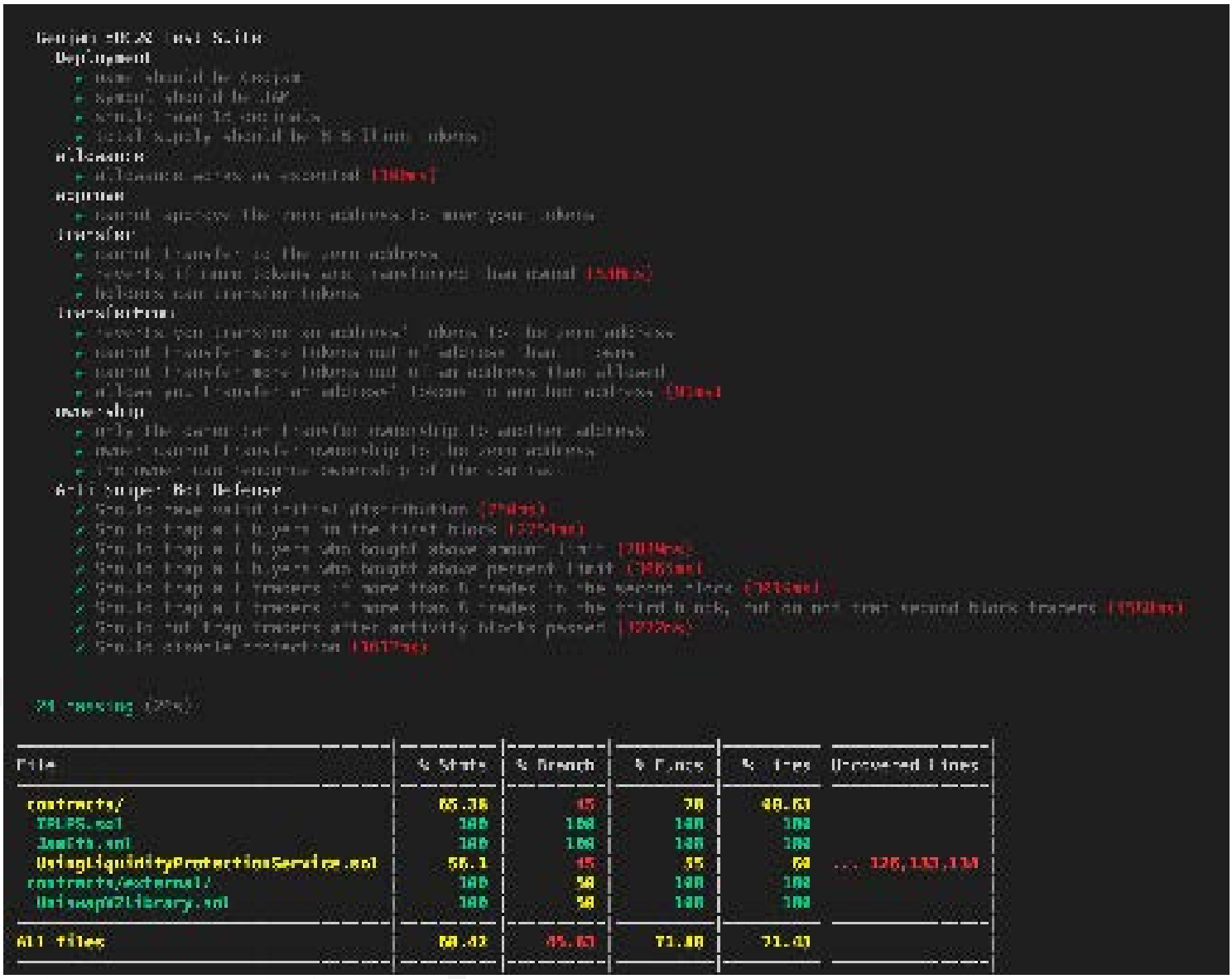
0	0	0	0
Critical Issues	Medium Issues	Low Issues	Informational Issues

In this analysis, we did not find any issues in the provided contract.

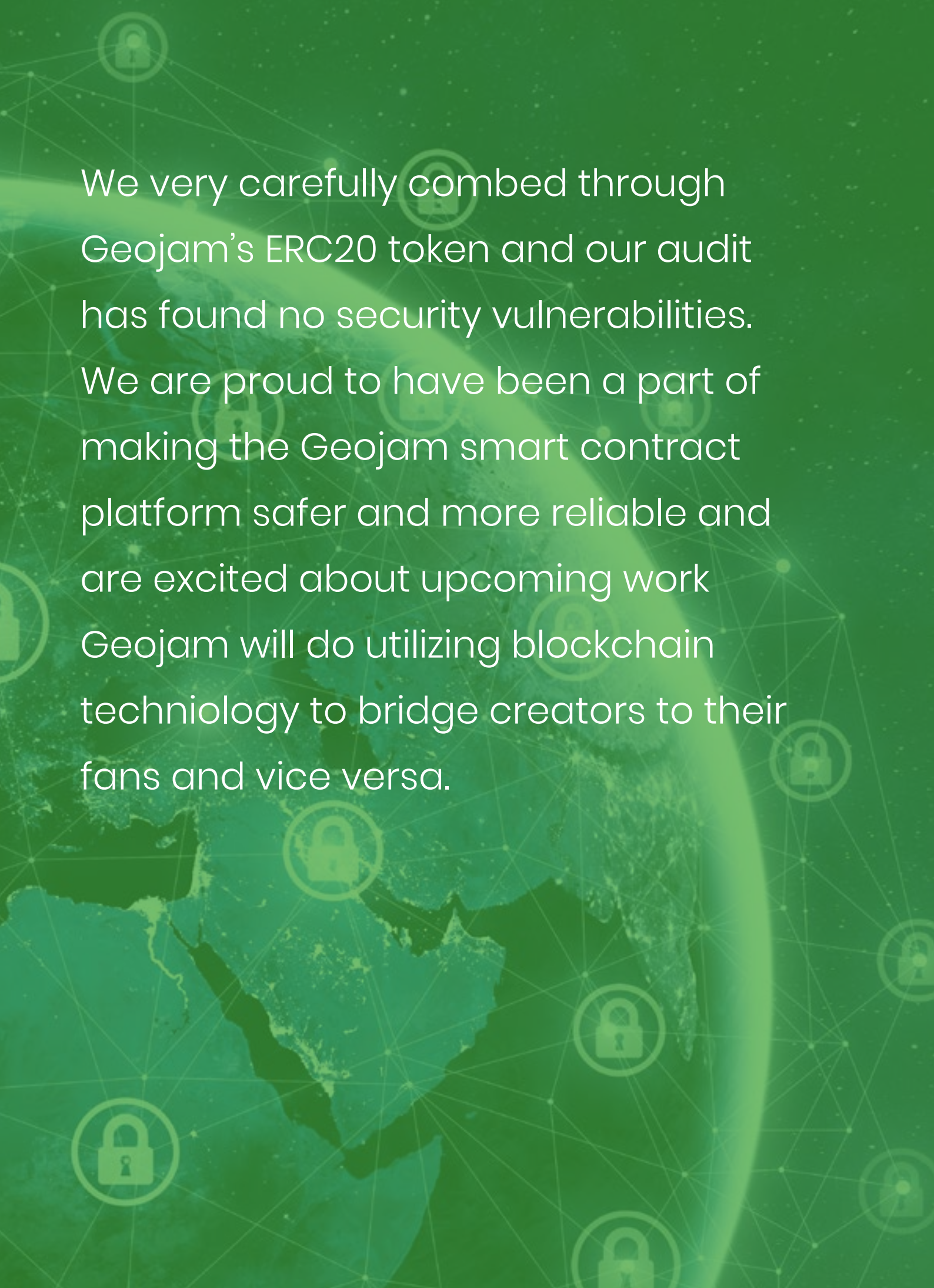
2..2 Auditing Process

This section describes the auditing process that was followed to test the JAM ERC20 token. We forked mainnet to create a testing environment that most realistically simulates the live environment. We created a pair and added liquidity to it so that simulated traders can swap tokens from the simulated liquidity pool and found the Liquidity Protection Service to have been perfectly integrated with the ERC20 standard.. There is only a slight gas cost increase for transfers but it will go away once the protection is disabled. Therefore, despite the modification done to the JAM token it is still ERC20 compliant. With the environment properly simulated we developed a custom test suite that covered the attack space. The requirements and specifications were inspected thoroughly while constructing the test suite to verify its intended functionality. This was achieved by tracking the balances and the amounts being swapped. The balance of the recipient is then compared to an amount calculated by us, to confim that the correct amounts are transferred. The results of the tests are detailed below in section 2.3.

2.3 Test Results



File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Lines
contracts/	65.38	45	70	68.63	
TPLPS.sol	100	100	100	100	
Imath.sol	100	100	100	100	
UniqLiquidityProtectionService.sol	56.1	45	55	60	... 126,133,134
contracts/external/	100	50	100	100	
UniswapV2Library.sol	100	50	100	100	
All files	80.43	65.63	71.88	71.43	



We very carefully combed through Geojam's ERC20 token and our audit has found no security vulnerabilities. We are proud to have been a part of making the Geojam smart contract platform safer and more reliable and are excited about upcoming work Geojam will do utilizing blockchain techniology to bridge creators to their fans and vice versa.

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