



Security Assessment Report

Monaco Protocol v0.10.1

July 3, 2023

Summary

The sec3 team (formerly Soteria) was engaged to do a thorough security analysis of the Monaco Protocol Solana smart contract at <https://github.com/MonacoProtocol/protocol>. The initial audit was done on the source code of the following version

- **Contract “monaco_protocol”:**
 - v0.10.1, commit `bbc9275600c00712976fb4db82bb24c0f8ecf2ba`

The review revealed an informational issue, which has been acknowledged and addressed by the team.

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Result Overview

In total, the audit team found the following issues.

MONACO PROTOCOL v0.10.1		
Issue	Impact	Status
[I-1] Initiate inplay transition whenever the status is checked	Informational	Resolved

Findings in Detail

MONACO_PROTOCOL

[I-1] Initiate inplay transition whenever the status is checked

Before performing their operations, multiple instructions check the in-play status of the market or the pool.

Since the inplay status can be inferred by comparing the timestamps, as an optional feature, it might be a good idea to automatically trigger the conditional inplay status transition whenever such checks are performed.

Resolution

The team acknowledged the finding and decided to use two inplay status transition instructions to ensure the transition happens in a timely manner, especially when there is little interaction for a given market.

Appendix: Methodology and Scope of Work

The sec3 (formerly Soteria) audit team, which consists of Computer Science professors and industrial researchers with extensive experience in Solana smart contract security, program analysis, testing, and formal verification, performed a comprehensive manual code review, software static analysis, and penetration testing.

Assisted by the sec3 Scanner developed in-house, the audit team particularly focused on the following work items:

- Check common security issues.
 - Missing ownership checks
 - Missing signer checks
 - Signed invocation of unverified programs
 - Solana account confusions
 - Arithmetic over- or underflows
 - Numerical precision errors
 - Loss of precision in calculation
 - Insufficient SPL-Token account verification
 - Missing rent exemption assertion
 - Casting truncation
 - Did not follow security best practices
 - Outdated dependencies
 - Redundant code
 - Unsafe Rust code
- Check program logic implementation against available design specifications.
- Check poor coding practices and unsafe behavior.
- The soundness of the economics design and algorithm is out of the scope of this work

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ABOUT

Founded by leading academics in the field of software security and senior industrial veterans, sec3 (formerly Soteria) is a leading blockchain security company that currently focuses on Solana programs. We are also building sophisticated security tools that incorporate static analysis, penetration testing, and formal verification.

At sec3, we identify and eliminate security vulnerabilities through the most rigorous process and aided by the most advanced analysis tools.

For more information, check out our [website](#) and follow us on [twitter](#).

