



METATRUST

Draft  
Security Assessment for  
**13-2021-06-  
realitycards (10K-FR)**

July 23, 2023

## Executive Summary

Overview			
Project Name	13-2021-06-realitycards (10K-FR)		
Codebase URL	https://github.com/code-423n4/2021-06-realitycards		
Scan Engine	AI Analyzer		
Scan Time	2023/07/23 21:38:19		
Commit Id	86a816a		






  

Total			
Critical Issues	0		
High risk Issues	1		
Medium risk Issues	0		
Low risk Issues	0		
Informational Issues	0		

Critical Issues		The issue can cause large economic losses, large-scale data disorder, loss of control of authority management, failure of key functions, or indirectly affect the correct operation of other smart contracts interacting with it.
High Risk Issues		The issue puts a large number of users' sensitive information at risk or is reasonably likely to lead to catastrophic impacts on clients' reputations or serious financial implications for clients and users.
Medium Risk Issues		The issue puts a subset of users' sensitive information at risk, would be detrimental to the client's reputation if exploited, or is reasonably likely to lead to moderate financial impact.
Low Risk Issues		The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low-impact in view of the client's business circumstances.
Informational Issue		The issue does not pose an immediate risk but is relevant to security best practices or Defence in Depth.



	Critical Issues	0%	0
	High risk Issues	100%	1
	Medium risk Issues	0%	0
	Low risk Issues	0%	0
	Informational Issues	0%	0

## Summary of Findings

MetaScan security assessment was performed on **July 23, 2023 21:38:19** on project **13-2021-06-realitycards (10K-FR)** with the repository **<https://github.com/code-423n4/2021-06-realitycards>** on branch **default branch**. The assessment was carried out by scanning the project's codebase using the scan engine **AI Analyzer**. There are in total **1** vulnerabilities / security risks discovered during the scanning session, among which **0** critical vulnerabilities, **1** high risk vulnerabilities, **0** medium risk vulnerabilities, **0** low risk vulnerabilities, **0** informational issues.

ID	Description	Severity
MSA-001	MWE-205: Front Running	High risk



## Findings

### Critical (0)

No Critical vulnerabilities found here

### High risk (1)

## 1. MWE-205: Front Running

 High risk Security Analyzer

Users are required to transfer assets in advance and minting token/liquidity/earning thus could be frontrun.

### File(s) Affected

contracts/RCTreasury.sol #703-745

```
703     function collectRentUser(address _user, uint256 _timeToCollectTo)
704     public
705     override
706     returns (uint256 newTimeLastCollectedOnForeclosure)
707     {
708         require(!globalPause, "Global pause is enabled");
709         assert(_timeToCollectTo != 0);
710         if (user[_user].lastRentCalc < _timeToCollectTo) {
711             uint256 rentOwedByUser = rentOwedUser(_user, _timeToCollectTo);
712
713             if (rentOwedByUser > 0 && rentOwedByUser > user[_user].deposit) {
714                 // The User has run out of deposit already.
715                 uint256 previousCollectionTime = user[_user].lastRentCalc;
716
717                 /*
718                  timeTheirDepsitLasted = timeSinceLastUpdate * (usersDeposit/rentOwed)
719                  = (now - previousCollectionTime) * (usersDeposit/rentOwed)
720                  */
721                 uint256 timeUsersDepositLasts =
722                     ((_timeToCollectTo - previousCollectionTime) *
723                     uint256(user[_user].deposit)) / rentOwedByUser;
724                 /*
725                  Users last collection time = previousCollectionTime + timeTheirDepsitLasted
726                  */
727                 rentOwedByUser = uint256(user[_user].deposit);
728                 newTimeLastCollectedOnForeclosure =
729                     previousCollectionTime +
730                     timeUsersDepositLasts;
731                 _increaseMarketBalance(rentOwedByUser, _user);
732                 user[_user].lastRentCalc = SafeCast.toUint64(
733                     newTimeLastCollectedOnForeclosure
734                 );
735                 assert(user[_user].deposit == 0);
736                 isForeclosed[_user] = true;
737                 emit LogUserForeclosed(_user, true);
738             } else {
739                 // User has enough deposit to pay rent.
740                 _increaseMarketBalance(rentOwedByUser, _user);
741                 user[_user].lastRentCalc = SafeCast.toUint64(_timeToCollectTo);
742             }
743             emit LogAdjustDeposit(_user, rentOwedByUser, false);
744         }
745     }
```

### Recommendation

Put asset transferring and token minting in the same function to keep atomicity.

## **Medium risk (0)**

No Medium risk vulnerabilities found here

## **Low risk (0)**

No Low risk vulnerabilities found here

## **Informational (0)**

No Informational vulnerabilities found here

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