## Corion Foundation CorionX Token

Quality assurance

## Table of content

Table of content	
Introduction	2
Code reuse	2
Unit test	2
Formal Code verification	2
Application	2
Smart Check	3
Using the approve function of the ERC-20 standard	3
No payable fallback function	3
Reentancy	4
Visibility	5
Delivery test	6
Test parameters	6
Checks after first deployment ethereum explorer	7
Transfer into a new account	10
Transferring more than balance: error expected	13
Transfering the amount back	15
Burn token with main account	18
Burn from another account	19
Transfer from without approvement	20
Approve transfer into test account	22
Increase approvement	24
Decrease approval	26
Transfer from bigger than allowed	27
Transfer from allowed amount	29

## Introduction

This documentation summarizes some of the quality assurance metrics and measures that were

taken into consideration during the development and deployment of the token.

## Code reuse

For most of the basic libraries standard libraries of the OpenZeppelin project were used.

## Formal Code verification

## **Application**

For formal source code verification two experimental tools, the free version of security and SmartCheck were used.





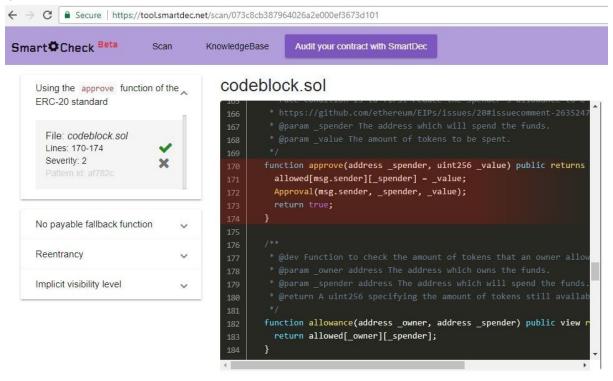
Securify shows all green from the possible checks:

#### **Smart Check**

Smart Check identifies the following sev 1 - 4 findings:

#### Using the approve function of the ERC-20 standard

it is really an approve function of an ERC-20 token

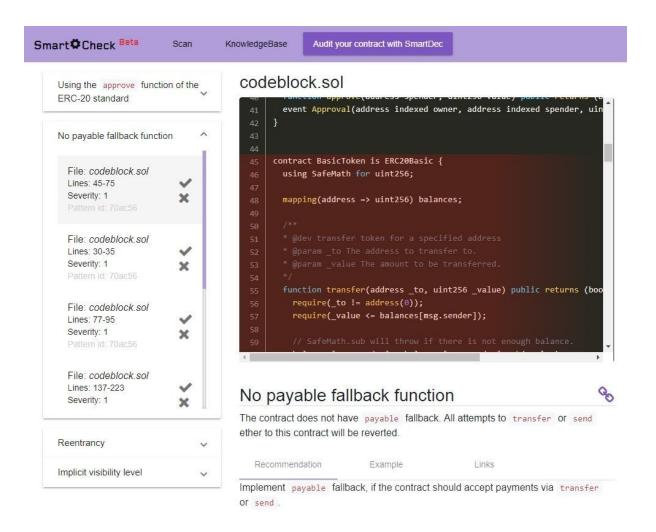


## Using the approve function of the ERC-20 standard



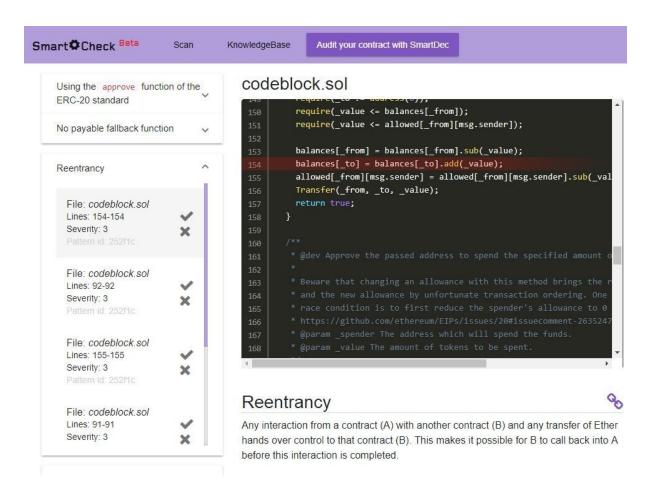
#### No payable fallback function

the token is not planned to contain payment



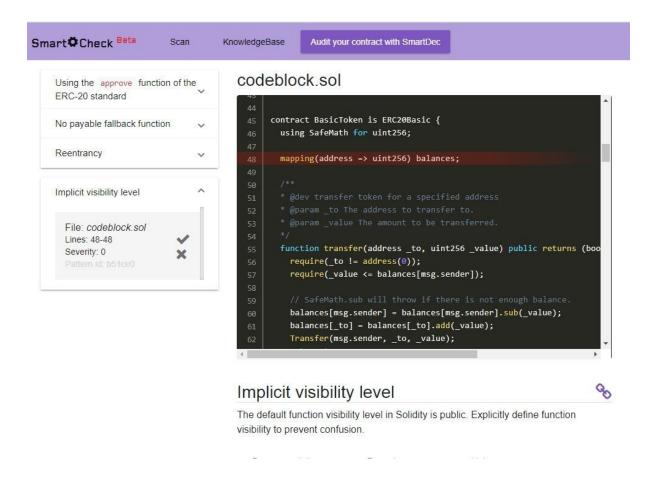
#### Reentancy

Some parts of the code might be vulnerable to special reentrancy attacks. As the indicated code fragments are part of the OpenZeppelin project and the indicated severity is only 3, we consider the risk as low.



#### Visibility

some visibility were not defined explicitly however they were manually checked if they contain the correct values.



## **Delivery test**

First delivery of the token to the rinkeby test network was analyzed and documented in details.

Please note that the tests and use-cases were initially with 8 decimals tested and initial supply 400 000 000 000 000.

## Test parameters (ropsten)

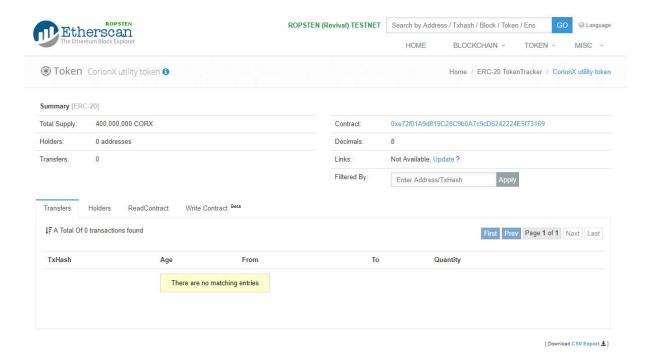
TEST1	0x9b46BE2116F52f63B81bd98961efCDb4B0397540
TEST2	0x53cb49375f1A3f1331Cdf87054D73BBA08215634
MAIN	0x18921a0F96805AbAEF9ce33ee0fD653f15f88B7d
CONTRACT	0xe72f01A9d819C28C9b0A7c9cD6242224E5f73169

#### Youtube video list

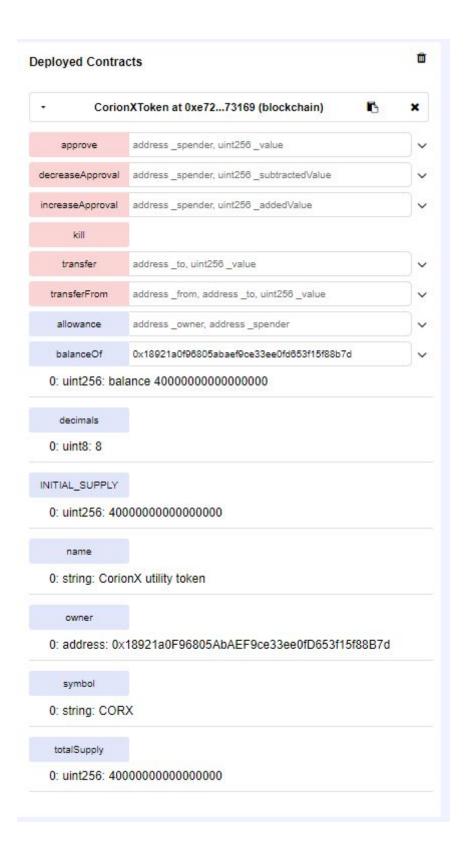
https://www.youtube.com/playlist?list=PLs1AlTaVDA13odBE TvxwejXpiowCeHOY

## Checks after first deployment ethereum explorer

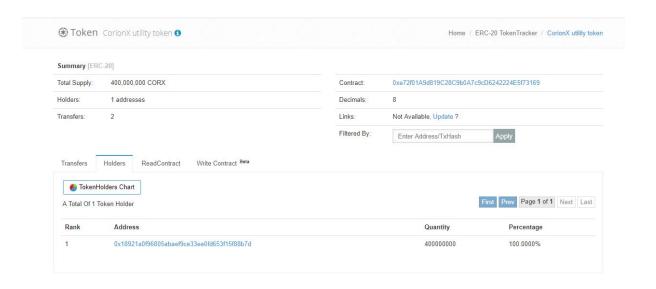
https://youtu.be/zKT6iazOSJ4



Balance of owner mist:



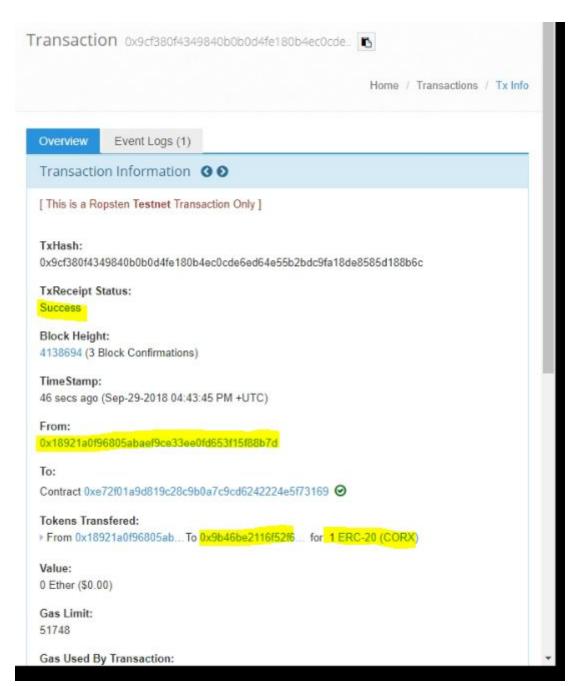
Token holder ethereum explorer



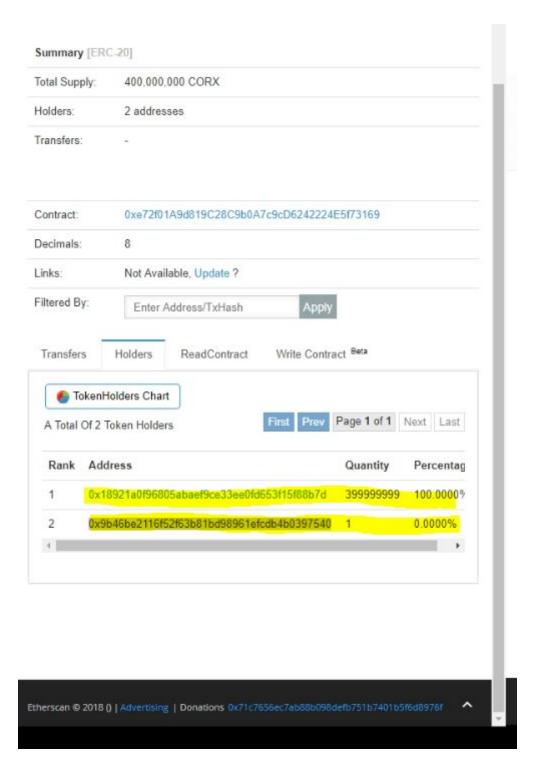
## Transfer into a new account

https://youtu.be/vTbCm-AiFXw



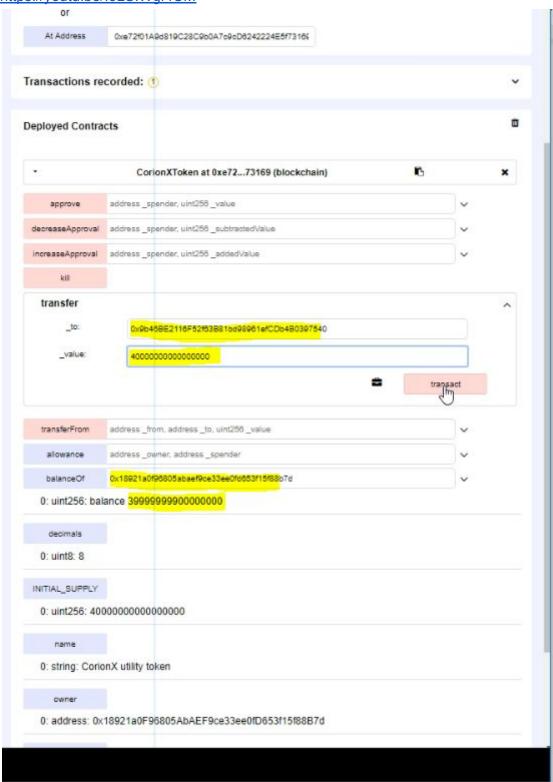


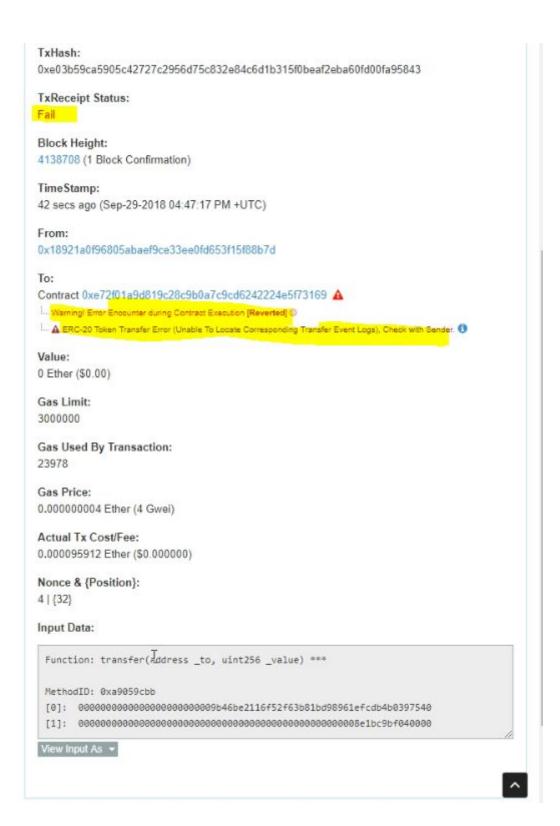
New balances:



## Transferring more than balance: error expected

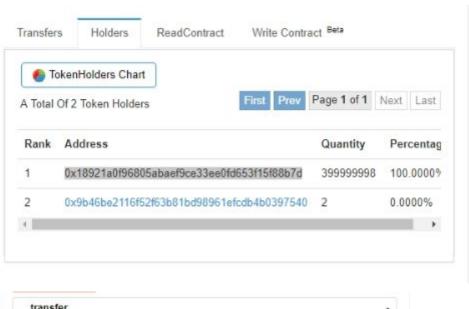
https://youtu.be/loLSIWgf4UM



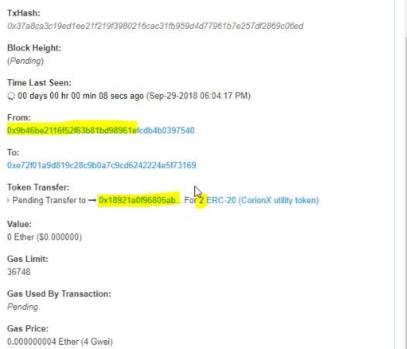


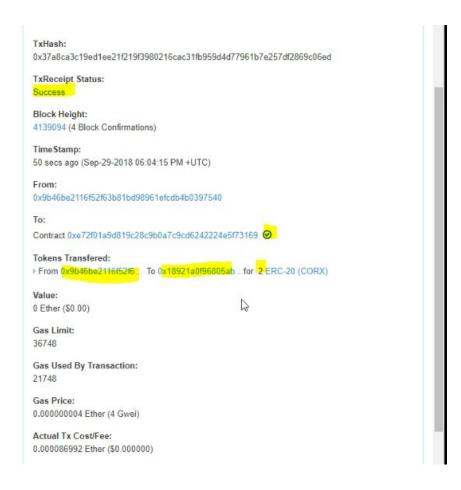
## Transfering the amount back

#### https://youtu.be/5TtTGj5WXZA

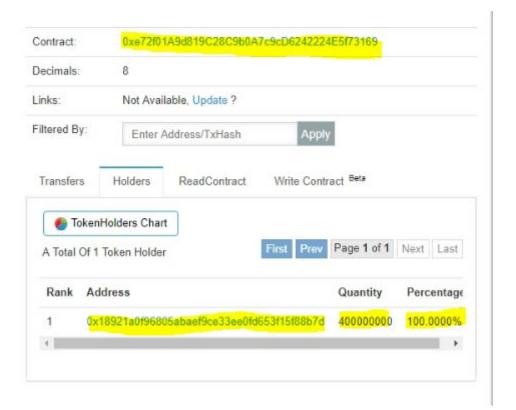












## Transfer from without approvement

https://youtu.be/t5tw-SvMhsA

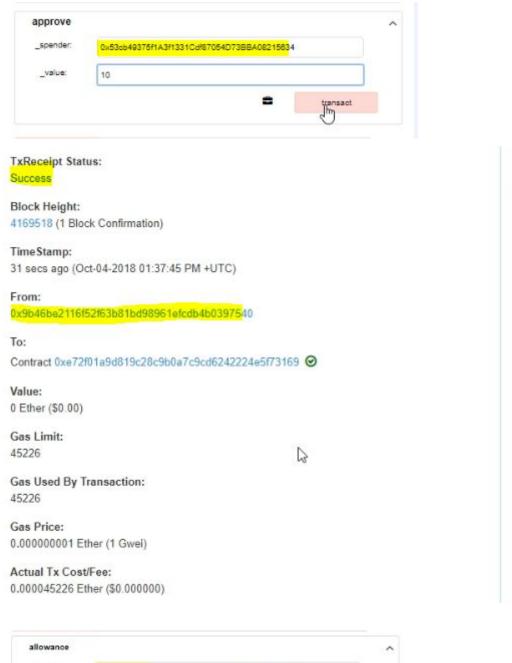


TxReceipt Status: Fail Block Height: 4169421 (5 Block Confirmations) TimeStamp: 53 secs ago (Oct-04-2018 01:01:08 PM +UTC) 0x53cb49375f1a3f1331cdf87054d73bba08215634 Contract 0xe72f01a9d819c28c9b0a7c9cd6242224e5f73169 A Warning/ Error Encounter during Contract Execution [Reverted] © Value: 0 Ether (\$0.00) Gas Limit: 3000000 B Gas Used By Transaction: 25678 Gas Price: 0.000000001 Ether (1 Gwei) Actual Tx Cost/Fee: 0.000025678 Ether (\$0.000000) Nonce & {Position}:

1 | {23}

## Approve transfer into test account

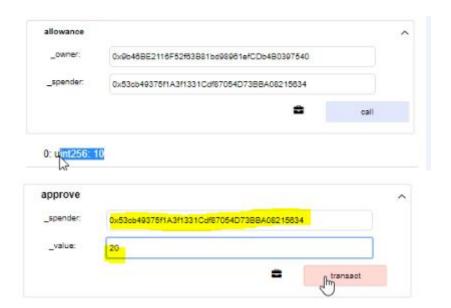
https://youtu.be/ qZSMcT TIY

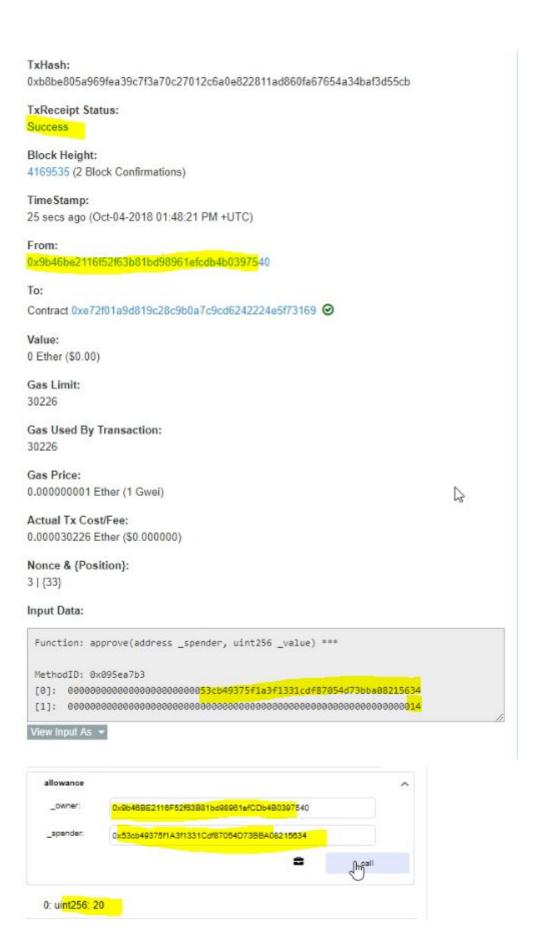




## Increase approvement

https://youtu.be/ZdjDzwV1Q1c

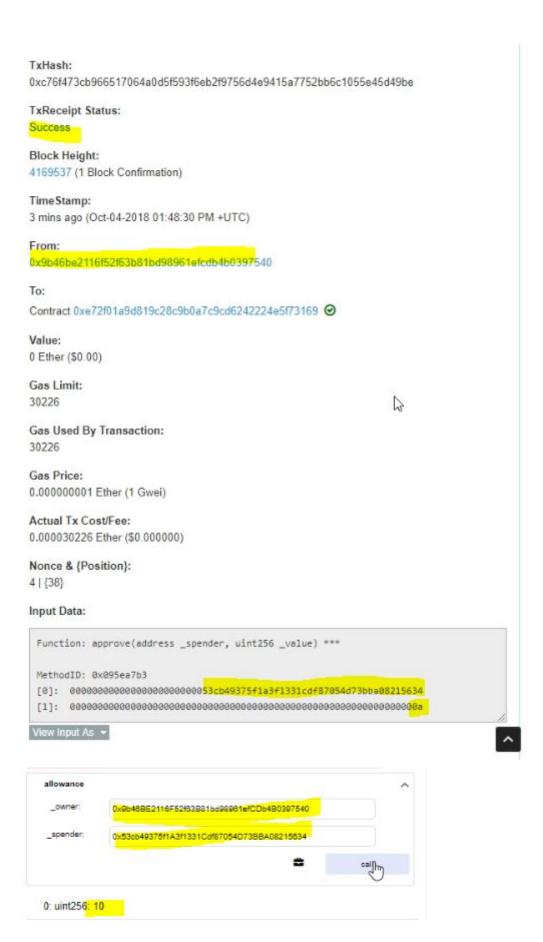




## Decrease approval

#### https://youtu.be/NuegkLuxjUo





## Transfer from bigger than allowed

#### https://youtu.be/mgjlVPSddto



## [ This is a Ropsten Testnet Transaction Only ] TxHash: 0x724d2fb23bb9e068f0fb616dc26abcac8f60f398a56f1b374733e60bf83d6035 TxReceipt Status: Fail Block Height: 4169546 (1 Block Confirmation) TimeStamp: 1 min ago (Oct-04-2018 01:54:27 PM +UTC) 0x53cb49375f1a3f1331cdf87054d73bba08215634 Contract 0xe72f01a9d819c28c9b0a7c9cd6242224e5f73169 A -- Warning! Error Encounter during Contract Execution [Reverted] @ 0 Ether (\$0.00) Gas Limit: 3000000 Gas Used By Transaction: 25486 Gas Price: 0.000000001 Ether (1 Gwei) Actual Tx Cost/Fee: 0.000025486 Ether (\$0.000000) Nonce & {Position}: D 2 | {7} Input Data: Function: transferFrom(address \_from, address \_to, uint256 \_value) \*\*\* MethodID: 0x23b872dd [1]: 00000000000000000000000000018921a0f96805abaef9ce33ee0fd653f15f88b7d View Input As ▼

# TxHash: 0x724d2fb23bb9e068f0fb616dc26abcac8f60f398a56f1b374733e60bf83d6035 TxReceipt Status: Fall

Block Height:

4169546 (1 Block Confirmation)

TimeStamp:

1 min ago (Oct-04-2018 01:54:27 PM +UTC)

From:

0x53cb49375f1a3f1331cdf87054d73bba08215634

To:

Contract 0xe72f01a9d819c28c9b0a7c9cd6242224e5f73169 A

--- Warning! Error Encounter during Contract Execution [Reverted] ©

Value:

0 Ether (\$0.00)

Gas Limit:

3000000

Gas Used By Transaction:

25486

Gas Price:

0.000000001 Ether (1 Gwei)

Actual Tx Cost/Fee:

0.000025486 Ether (\$0.000000)

Nonce & {Position}:

2 | {7}

W

#### Input Data:

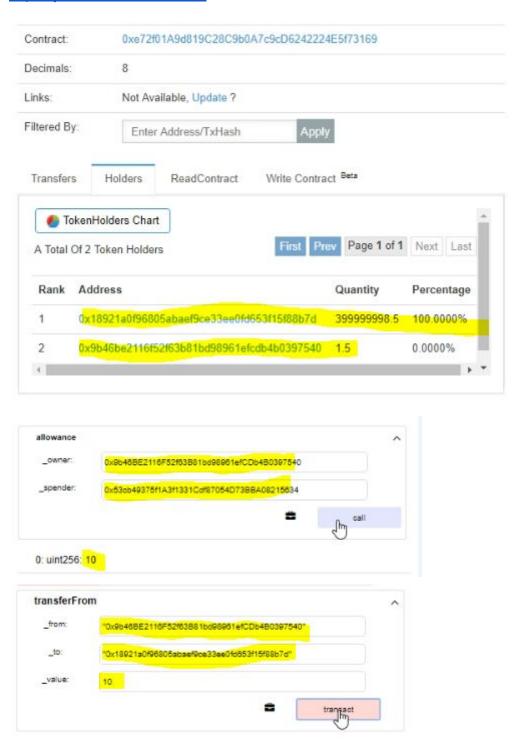
Function: transferFrom(address \_from, address \_to, uint256 \_value) \*\*\*

MethodID: 0x23b872dd

View Input As ▼

#### Transfer from allowed amount

#### https://youtu.be/nzDfPYDY-K8



TxHash:

0x092698234d542a28f1ce5e4e1afdaf31c67d019dc6ed4615733f30b1ec81d976

TxReceipt Status:

Success

Block Height:

4169552 (1 Block Confirmation)

TimeStamp:

43 secs ago (Oct-04-2018 01:58:18 PM +UTC)

From:

0x53cb49375f1a3f1331cdf87054d73bba08215634

To:

Contract 0xe72f01a9d819c28c9b0a7c9cd6242224e5f73169 @

Tokens Transfered:

From 0x9b46be2116f52f6... To 0x18921a0f96805ab...for 0.0000001 ERC-20 (CORX)

Value:

0 Ether (\$0.00)

Gas Limit:

44122

Gas Used By Transaction:

29122

Gas Price:

0.000000001 Ether (1 Gwei)

Actual Tx Cost/Fee:

