



ONLINE ELECTION SERVICES

Free **Voting Service**  
Secured on the **Stellar Blockchain**

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Free **Voting Service**  
Secured on the **Stellar Blockchain**

Transparent



Immutable

For Everybody

# Free Voting – Introduction

## Motivation + Requirements

- 1) Free voting platform secured by the Stellar ledger/ blockchain
- 2) Voters receive immediate a receipt on their vote
- 3) Election setup and results are saved into the blockchain
- 4) Decentralized client-browser submission to network
- 5) Voter don't need a crypto account
- 6) Authentication by email
- 7) Easy to use on desktop and mobile

## Admin Steps

- 1) Define election setup by using webform
- 2) Activate election to be ready for voting.
- 3) Send voting link to all voters
- 4) Election gets closed after end date

## Voting Steps

- 1) Authenticate by Email
- 2) Vote by webform
- 3) Receive your voting receipt (transaction id)

## Technical Key Features – Using Stellar Network

We use three important Stellar features to enable the voting:

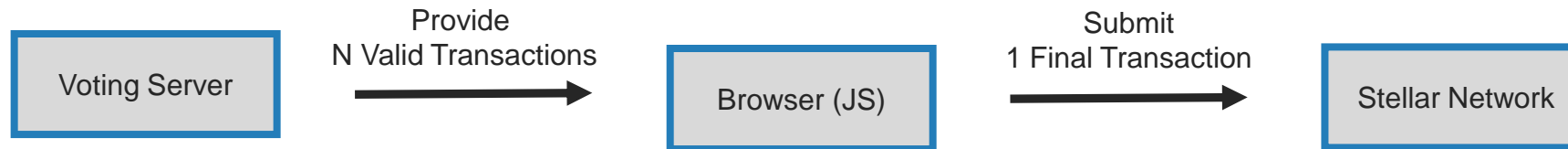
- 1) **Election specific token**: We create a specific token on the Stellar network to make sure only the transaction using this token are counted as valid votes.

Also it provides an easy way to view the whole voting history with blockchain explorer like stellar.expert

- 2) Stellar's **fast transaction times** under 5sec. By this we can show the transaction ID to the voter immediatly after the vote was done within the websession.
- 3) **Channel accounts plus sequence number**: As we want the final submission to be done from client side (browser) we send x presigned transactions with the same sequence number to the client. The user selects the voting option, then with Javascript we submit the correct transaction to Stellar.

As we use the same sequence number for all transactions of one vote-process, the user can not cheat. After one submission is done, the sequence number is used and invalid for all future transactions.

# Technical: Using presigned transactions with same sequence number



## Vote Option: Tom Miller

```

AAAAIObf2G1qHd68vUUBrwV+NnoXjsbwToHqI6LxmFJE/D2AAAAZAAL94kAAAABAAAAAAAA
AEAAAAKV9tIE1pbGxlcgAAAAAAAAQAAAAEAAAAELXDGyJWWNwLmQS25wn2sDSpL5c0fK
m0xiYKaU2/MGMAAABAAAAAB/ME8/aV56aOzs5nan6MzYAPGIO5BWAprt42qIHhU4AAAAA
VsZWN0aW9uMjE1AAAAAAfzBPP2leemjs7OZ2p+jM2ADxpTuQVgKa7eNqpRzYVOAAAAA
mJaAAAAAAAAAAAJE/D2AAAAQHxdyN7q02qF37p1DVbpM8w2N3Ggash+py942ZWfw+F7WGNZ
CyhL4i/nafEhF+m6ulDvBoY0E/oloVm/ehnGQxNvzBjAAAAQFbv1n969IsmqXgwAE/dLmf8/hDvSSq
4fDsJefx+80cRWQvbbDSfHWzKec5B6c7BT9FEJdn/cLFY+kWYwfN8CwE=
  
```

## Vote Option: David Lee

```

AAAAIObf2G1qHd68vUUBrwV+NnoXjsbwToHqI6LxmFJE/D2AAAAZAAL94kAAAABAAAAAAAA
AEAAAAJRGF2aWQgTGVIAAAAAAAAAQAAAAEAAAAELXDGyJWWNwLmQS25wn2sDSpL5c
0fKmx0xiYKaU2/MGMAAABAAAAAB/ME8/aV56aOzs5nan6MzYAPGIO5BWAprt42qIHhU4AAA
AAkVsZWN0aW9uMjE1AAAAAAfzBPP2leemjs7OZ2p+jM2ADxpTuQVgKa7eNqpRzYVOAAAA
AAmJaAAAAAAAAAAAJE/D2AAAAQOpDCGvvXvAfBYPokmk6lgj70/+1bHhs0wyatJekDsVG/uxIX
vOVUY6udwRGy3w0FPtW4GhA997mxAuXFjFkw9NvzBjAAAAQN+iUijbsVD0IKbxM3UwvYppcGG
7M+VnZLvRoiNtOxi+1sC1uvmE2Yxn7c80RXxFkt54em9K5U1HSG2pc4CfBQA=
  
```

## Vote Option: Maria Parcon

```

AAAAIObf2G1qHd68vUUBrwV+NnoXjsbwToHqI6LxmFJE/D2AAAAZAAL94kAAAABAAAAAAAA
AEAAAAMTWFyYWUyY29uAAAAQAAAAEAAAAELXDGyJWWNwLmQS25wn2sDSpL5c
0fKmx0xiYKaU2/MGMAAABAAAAAB/ME8/aV56aOzs5nan6MzYAPGIO5BWAprt42qIHhU4AAA
AAkVsZWN0aW9uMjE1AAAAAAfzBPP2leemjs7OZ2p+jM2ADxpTuQVgKa7eNqpRzYVOAAAA
AAmJaAAAAAAAAAAAJE/D2AAAAQJGFH3j77xh+3valwoIkBeA7UcfM6GaGz+XKzIH5dWiX+aCe
rBZGJtGWdKK2fwYmSnEWI1SZ0OszylsDKgk3cwnNvzBjAAAAQNjBy+mzSSMPuzUzleVv0Xom
lWnmMdZWNafZu2TK4VSNAsUboUvIr+OWb+7H1PAF0Bf3p8blgAee0RERCuEAW8=
  
```

# Create **Your Election** in 3 steps

To create your own election fill out the form below. It is easy and takes only some minutes. You need to have the voting options ready and all emails of the voters.

All votes and election results will be written into the Stellar Blockchain. This service is free to use.

Step 1

Step 2

Step 3

# Admin Step 1) Provide Election Data

## Election Title

Board Member Election 2020

## Election Description

Provide your vote to one of the listed candidates.

## Election Options (comma seperated)

Tom Miller, David Lee, Maria Parcon

## Voter Authentication

- Open Election (no authentication)  
 Email Verification (comma seperated)



# Admin Step 2) Provide Admin Email + Period

Step 1 Step 2 Step 3

Your Email Address

admin@email.com

Start Date

02.07.2020

End Date

02.07.2020

Back ← Next →

# Admin Step 3) Confirm Data

Step 1

Step 2

Step 3

Your Admin Email

web@artspirit.com

Election Title

Board Member Election 2020

Election Description

This election nominates the board members of 2020. Provide your vote to one of the listed candidates.

Election Options

- Tom Miller
- David Lee
- Maria Parcon

Email list of Voters (2)

hw@artspirit.com, web@artspirit.com

Start Date

2020-07-02

End Date

2020-07-02

# Documents: Setup PDF

## Election Settings

This document shows the election settings and the list of voters defined by the election admin. For immutable proof the hash of this document is stored in the blockchain. Voting transactions need to transfer exactly 1 token and have to be transferred between start and end date.

Election ID	Election226
Title	Board Member Election 2020
Description	This election nominates the board members of 2020. Provide your vote to one of the listed candidates.
Start	2020-07-02 (UTC: 2020-07-01 22:00)
End	2020-07-02 (UTC: 2020-07-02 21:59)
Number of invited voters	2
Election Admin	web@artspirit.com
Document Creation	2020-07-02 17:17 UTC

## Election Documents

- 1) Blockchain History [stellar.expert](#)
- 2) Election Setting This document, is visible to the admin and all voters.
- 3) Election Results Accessible after election is closed. Visible to the admin and all voters.

## Election Voting Options

Tom Miller,David Lee,Maria Parcon

## List of Voters

hw@\*\*\*, web@\*\*\*

# Blockchain: Election Setup

Operation	Details	Date
130641755409371137	⌵  GBVK...XMK4 transferred 0.001 Election226 to  GDJV...NHLL. Memo (TEXT): --- setup completed --- <sup>?</sup>	2020-07-02 17:19:02 UTC
130641746819379201	⌵  GBVK...XMK4 transferred 0.001 Election226 to  GDJV...NHLL. Memo (TEXT): file: /edoc/226-setup.pdf <sup>?</sup>	2020-07-02 17:18:51 UTC
130641738231685121	⌵  GBVK...XMK4 transferred 0.001 Election226 to  GDJV...NHLL. Memo (HASH): 86I3UZ9OD9XmOFPyY+sUWyXO2bm7pa3bjV6xMFXfVD8= <sup>?</sup> (base64 <input type="checkbox"/> format) <sup>?</sup>	2020-07-02 17:18:39 UTC
130641729642151937	⌵  GDJV...NHLL transferred 0.1 Election226 to  GBVK...XMK4. Memo (TEXT): Admin Token: 0.1 <sup>?</sup>	2020-07-02 17:18:25 UTC
130641712459550721	⌵  GDJV...NHLL transferred 2 Election226 to  GBVK...XMK4. Memo (TEXT): Voting Token: 2 <sup>?</sup>	2020-07-02 17:18:03 UTC
130641699574779905	⌵  GBVK...XMK4 established trustline to Election226 with limit 922,337,203,685.4775391 Election226. Memo (TEXT): Board Member Election 2020 <sup>?</sup>	2020-07-02 17:17:46 UTC

# Voter Step 1) Authentication



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## Authentication Board Member Election 2020



Step 1) Provide your election email to prove your voting rights for this election.

Send

# Voter Step 2) Vote



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## Board Member Election 2020



Step 2) Make your choice.

Description: This election nominates the board members of 2020. Provide your vote to one of the listed candidates.

- Tom Miller
- David Lee
- Maria Parcon

[Vote](#)

# Voter Step 3) Voting Receipt (transaction-id)



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## Board Member Election 2020



Thank you for voting.

Your vote

- is written into the Stellar Blockchain,
- can not be changed by anybody,
- is anonym and can not be tracked back to you,
- has a unique transaction id.

### Blockchain Proof

Your transaction id is



0c7e664747b8a904bdab111bdb9e1b22d0a6c2b9fbaf1210855dc015fd274bfb

[View your vote-entry in the blockchain](#)


Note: If voting results are hidden until end of the election, you will see a encoded value, which represents your vote. The encoded value will be published after the election is done.

# Blockchain: Vote Verification by Transaction-ID

stellar  expert [ASSETS](#) [MARKETS](#) [NETWORK STATS](#) [SERVICES](#) [BLOG](#)

Transaction [0c7e664747b8a904bdab111bdb9e1b22d0a6c2b9fbaf1210855dc015fd274bfb](#)   

## Summary

Status:  Successful 


Ledger: [30417558](#) 

Operations: [1](#) 


Source Account:  [GA6V26...NSZ3BC](#) 

Sequence Number: [126457615449325571](#) 

Memo (TEXT): [David Lee](#) 

Created: [2020-07-02 17:33:20 UTC](#) 

Max Fee: [0.00001 XLM](#) 

Fee Charged: [0.00001 XLM](#) 

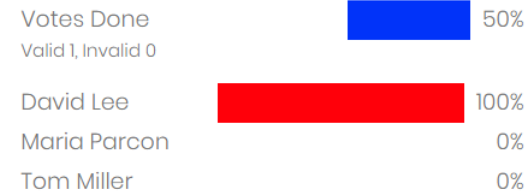


# Close Election: Show Voting Results

## Voting Results Board Member Election 2020

2 Voter

Start: July 02, 2020 End: July 02, 2020



### Election Documents

The hash of this document is stored in the blockchain. Election results are published here after election is closed.



Election Setup



Election Results

### Blockchain Proof

[View Blockchain History](#)

Transaction	Vote	Date (UTC)
0c7e6..74bfb	David Lee	02.07.2020 17:33

# Document: Results PDF

## Election Results

This document shows the election results. For immutable proof the hash of this document is stored in the blockchain. Voting transactions need to transfer exactly 1 token and have to be transferred between start and end date.

Election ID	Election226
Title	Board Member Election 2020
Description	This election nominates the board members of 2020. Provide your vote to one of the listed candidates.
Start	2020-07-02 (UTC: 2020-07-01 22:00)
End	2020-07-02 (UTC: 2020-07-01 21:59)
Election Admin	web@artspirit.com
Document Creation	2020-07-02 17:37 UTC
Blockchain Link	<a href="#">stellar.expert</a>

## Election Results in %

Invited voters: 2  
Total votes done: 1  
Valid Votes: 1  
Invalid Votes: 0

Option	Votes	Percentage
Maria Parcon	0	0%
David Lee	1	100%
Tom Miller	0	0%

# Blockchain: Voting History

[All Operations](#)
[Payments](#)
[Offers](#)
[Trades](#)
[Orderbook](#)
[Trustlines](#)
[Asset Holders](#)

Operation	Details	Date
130642614402887681	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (TEXT): --- election closed ---	2020-07-02 17:37:28 UTC
130642610107920385	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (TEXT): file: /edoc/226-results.pdf	2020-07-02 17:37:23 UTC
130642601517928449	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (HASH): cYCbTUIV+vTweF2QwND1edB8nGNyNuWtrI+9ZT78= (base64 format)	2020-07-02 17:37:12 UTC
130642416834449409	GBVK...XMK4 transferred 1 Election226 to GDJV...NHLL Memo (TEXT): David Lee	2020-07-02 17:33:20 UTC
130641755409371137	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (TEXT): --- setup completed ---	2020-07-02 17:19:02 UTC
130641746819379201	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (TEXT): file: /edoc/226-setup.pdf	2020-07-02 17:18:51 UTC
130641738231685121	GBVK...XMK4 transferred 0.001 Election226 to GDJV...NHLL Memo (HASH): 86I3UZ90D9Xm0FPyY+sUWyX02bm7pa3bjV6xMFXfVD8= (base64 format)	2020-07-02 17:18:39 UTC
130641729642151937	GDJV...NHLL transferred 0.1 Election226 to GBVK...XMK4. Memo (TEXT): Admin Token: 0.1	2020-07-02 17:18:25 UTC
130641712459550721	GDJV...NHLL transferred 2 Election226 to GBVK...XMK4. Memo (TEXT): Voting Token: 2	2020-07-02 17:18:03 UTC
130641699574779905	GBVK...XMK4 established trustline to Election226 with limit 922,337,203,685.4775391 Election226. Memo (TEXT): Board Member Election 2020	2020-07-02 17:17:46 UTC

# Outlook – Next Steps

## 1) Finalize Prototype

For now we will finalize the prototype which needs some more testing and checks on security.

## 2) Running Test Elections

As BlueOrion is part of the Bavarian Blockchain NGO we will suggest to use the platform for future NGO elections. (<https://www.blockchain-bayern.de/>)

## 3) Finding Sponsor/Supporters

To be taken serious we need to have a kind of certification, especially on the client side programming that our core principles are working and our system can indeed provide a stable solution to execute elections.

# Give it a go

Our prototype is up and running, you can already create your own election in 5 minutes.

<https://blueorion.cc/voteadmin>

For testing we run the platform on the Stellar testnet. We will switch to public-net after beta tests are done.

Feedback and critic is always welcome.

For support how to setup an election write us on [contact@blueorion.cc](mailto:contact@blueorion.cc) or chat with us on keybase <https://keybase.io/team/blueorion>.

Your Blue Orion Team.

