Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
000

Random Sample Voting

Nicolas K. Blanchard, RSVP Team

IRIF, Random Sample Voting Project

Global Forum on Modern Direct Democracy
17th of November 2016

Introduction
ooooo

Random Sample Voting
oooo

How to vote
ooooooo

Properties of RSV
ooo

Conclusion
ooo

What if you had a secure, scalable and inexpensive voting system?

Common ideas for direct democracy

- Every citizen's opinion should count

Common ideas for direct democracy

- Every citizen's opinion should count
- The people should choose which issues to put to a vote

Common ideas for direct democracy

- Every citizen's opinion should count
- The people should choose which issues to put to a vote
- Frequent votes should be the norm

Common ideas for direct democracy

- Every citizen's opinion should count
- The people should choose which issues to put to a vote
- Frequent votes should be the norm
- It should scale to all population sizes

Introduction

Random Sample Voting

How to vote

Properties of RSV

Conclusion

Introduction

Good news

Good news

Introduction
○●○○○

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

Introduction

Good news

Good news

We can have all that!

Introduction
○○●○○
Introduction

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

The Random Sample Voting Project Team

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First public vote

- This is the first real public vote with this system

First public vote

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- Ballots and instructions will be given shortly

First public vote

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- Ballots and instructions will be given shortly
- Voting starts today at noon, ends tomorrow at 21:30

First public vote

- This is the first real public vote with this system
- Ballots and instructions will be given shortly
- Voting starts today at noon, ends tomorrow at 21:30
- Results on Saturday morning

Introduction
○○○○○●

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

Introduction

First public vote

Two questions for you:

First public vote

Two questions for you:

- Should voting in national elections be compulsory?

First public vote

Two questions for you:

- Should voting in national elections be compulsory?
- Should negative campaigning be prohibited?

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
000

Random Sample Voting

Introduction
○○○○○

Random Sample Voting
●○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

Basic idea

Simple protocol introduced by D. Chaum

Introduction
00000

Random Sample Voting
●000

How to vote
0000000

Properties of RSV
000

Conclusion
000

RSV

Basic idea

Simple protocol introduced by D. Chaum

1 Choose a random subset of the population

Introduction
○○○○○

Random Sample Voting
●○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

Basic idea

Simple protocol introduced by D. Chaum

1. Choose a random subset of the population
2. Give them a ballot with a unique set of IDs

Basic idea

Simple protocol introduced by D. Chaum

1. Choose a random subset of the population

2. Give them a ballot with a unique set of IDs

3. Have them cast their votes online

Basic idea

Simple protocol introduced by D. Chaum

1. Choose a random subset of the population
2. Give them a ballot with a unique set of IDs
3. Have them cast their votes online
4. Publish results

Introduction
ooooo

Random Sample Voting
oooo

How to vote
ooooooo

Properties of RSV
ooo

Conclusion
ooo

RSV

What is new

- Verifiable representativity of the population's wishes

Introduction
○○○○○

Random Sample Voting
○●○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

What is new

- Verifiable representativity of the population's wishes
- Strong anonymity

Introduction
○○○○○

Random Sample Voting
○●○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

What is new

- Verifiable representativity of the population's wishes
- Strong anonymity
- No vote buying

Introduction
00000

Random Sample Voting
0●00

How to vote
0000000

Properties of RSV
000

Conclusion
000

RSV

What is new

- Verifiable representativity of the population's wishes
- Strong anonymity
- No vote buying
- Easy to audit

What is new

- Verifiable representativity of the population's wishes
- Strong anonymity
- No vote buying
- Easy to audit
- Very limited hacking possibilities (through audits)

What is new

- Verifiable representativity of the population's wishes
- Strong anonymity
- No vote buying
- Easy to audit
- Very limited hacking possibilities (through audits)
- For a fraction of current costs

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
000

RSV

Anonymity

Three guarantees:

Introduction
○○○○○

Random Sample Voting
○○●○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

Anonymity

Three guarantees:

- No one can find who voters are

Anonymity

Three guarantees:

- No one can find who voters are
- Voters can't prove who they voted for

Anonymity

Three guarantees:

- No one can find who voters are
- Voters can't prove who they voted for
- Voters can't prove they are voters

Introduction
00000

Random Sample Voting
000●

How to vote
0000000

Properties of RSV
000

Conclusion
000

RSV

Verifiability

Everyone can audit the different steps to make sure that:

Introduction
○○○○○

Random Sample Voting
○○○●

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

Verifiability

Everyone can audit the different steps to make sure that:

- The choice of voters was random

Introduction
00000

Random Sample Voting
000●

How to vote
0000000

Properties of RSV
000

Conclusion
000

RSV

Verifiability

Everyone can audit the different steps to make sure that:

- The choice of voters was random
- The votes cast were well recorded

Introduction
○○○○○

Random Sample Voting
○○○●

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

RSV

Verifiability

Everyone can audit the different steps to make sure that:

- The choice of voters was random
- The votes cast were well recorded
- The tally is correct

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
000

How to vote in practice

Introduction
ooooo

Random Sample Voting
oooo

How to vote
●ooooooo

Properties of RSV
ooo

Conclusion
ooo

How to vote

The voting ballot

Random-Sample Voting Ballot

Copy Vote Code voted from other half here:

QUESTION: Should voting in national elections be compulsory?

VOTING TIME: 2:00PM UTC Tuesday 8 November 2016 through 4:25PM UTC Tuesday 8 November 2016

INSTRUCTIONS:
1. Choose either half of this sheet randomly (ballot number and password are the same for both halves).
2. Use a web browser to visit the webpage: http://vbb.rsvoting.org/rsv/vbb/gfmdd2016test
   Your ballot number is your login: 00
   Your password is: smps-yjrb-lens-fehm
3. When prompted, enter the vote code that is printed adjacent your vote.
4. You should discard or destroy at least the half of this sheet that you used to vote; it is recommended, however, that you keep the other half of this sheet and write down on it in the space provided your vote code for later use in the audit.

Choice	Vote-Code
Yes	8462-5623-2890
No	2267-1563-4324

(lower half, printed upside-down:)

Choice	Vote-Code
Yes	9696-5777-0517
No	9183-7879-8083

code for later use in the audit.
4. You should discard or destroy at least the half of this sheet that you used to vote; it is recommended, however, that you keep the other half of this sheet and write down on it in the space provided your vote
3. When prompted, enter the vote code that is printed adjacent your vote.
   Your password is: smps-yjrb-lens-fehm
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VOTING TIME: 2:00PM UTC Tuesday 8 November 2016 through 4:25PM UTC Tuesday 8 November 2016

QUESTION: Should voting in national elections be compulsory?

Random-Sample Voting Ballot

Copy Vote Code voted from other half here:

Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○●○○○○○

Properties of RSV
○○○

Conclusion
○○○

How to vote

The voting ballot

Random-Sample Voting Ballot

Copy Vote Code voted from other half here:
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Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○●○○○○

Properties of RSV
○○○

Conclusion
○○○

How to vote

The voting ballot

Random-Sample Voting Ballot

Copy Vote Code voted from other half here:

_ _ _ _ – _ _ _ _ – _ _ _ _

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Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○○○●○○○

Properties of RSV
○○○

Conclusion
○○○

How to vote

The voting ballot

Random-Sample Voting Ballot

Copy Vote Code voted from other half here:
_ _ _ _ – _ _ _ _ – _ _ _ _

QUESTION: Should voting in national elections be compulsory?

VOTING TIME: 2:00PM UTC Tuesday 8 November 2016 through 4:25PM UTC Tuesday 8 November 2016

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No	2267-1563-4324

Introduction
00000

Random Sample Voting
0000

How to vote
0000●00

Properties of RSV
000

Conclusion
000

How to vote

The online voting website

Voter Bulletin Board
Random-Sample Voting

LOGIN HERE TO VOTE:

Login ballot serial number ❶   00

Login password ❶   aaaa   -   bbbb   -   cccc   -   dddd

Submit

ELECTION DETAILS

Question voted on:

Should voting in national elections be compulsory?   Yes/No

Polls have opened: Polls will close:

Nov. 8, 2016, 2 p.m. UTC   Nov. 16, 2016, 4:25 p.m. UTC

Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○○○○●○

Properties of RSV
○○○

Conclusion
○○○

How to vote

The online voting website

Enter vote-code to cast your vote!   ✕

Vote-code ❶: | 1111 | - | 2222 | - | 3333

You should discard or destroy at least the half-ballot with this vote-code on it. It is recommended, however, that you keep the other half-ballot and write on it, in the space provided, your vote-code for later use in audit.

Submit

The online voting website

HELP AUDIT THE ELECTION

Download the data on this page   Visit audit bulletin board

BALLOTS CAST SO FAR

#	Serial Number	Vote Code	#	Serial Number	Vote Code	#	Serial Number	Vote Code
1	00 →	2267-1563-4324	2	06 →	1500-7642-2860	3	07 →	5507-4906-0709
4	15 →	9181-0698-4119	5	17 →	4709-0410-0424			

Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○○○

Properties of RSV

Fully secure

- Indisputable tally

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
●00

Conclusion
000

Properties

Fully secure

- Indisputable tally
- No fraud or vote selling

Fully secure

- Indisputable tally
- No fraud or vote selling
- No coercion

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
●00

Conclusion
000

Properties

Fully secure

- Indisputable tally
- No fraud or vote selling
- No coercion
- Fully auditable

More democratic

- Ensured voting access

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
0●0

Conclusion
000

Properties

More democratic

- Ensured voting access
- High turnout

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
0●0

Conclusion
000

Properties

More democratic

- Ensured voting access
- High turnout
- Well-informed voters

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
○●○

Conclusion
000

Properties

More democratic

- Ensured voting access
- High turnout
- Well-informed voters
- Harder to manipulate through advertising

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
00●

Conclusion
000

Properties

Effective

- Easy to use, low cost

Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○●

Conclusion
○○○

Properties

Effective

- Easy to use, low cost
- Frequent votes shape governance

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
00●

Conclusion
000

Properties

Effective

- Easy to use, low cost
- Frequent votes shape governance
- Possibility of re-running if too close

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
000

Conclusion

Summary of RSV

- Secure, cheap and democratic
- Has been refined for the past few years
- Has been tested for security purposes
- Social consequences need more study

Introduction
○○○○○

Random Sample Voting
○○○○

How to vote
○○○○○○○

Properties of RSV
○○○

Conclusion
○●○

Conclusion

Over the next three days

- Booth opens at 18:00 today to check the technology
- Shorter talk Friday at 13:50 about the audit process
- Workshop tomorrow at 15:30 to discuss social effects
- Results of the vote on Saturday at 11:00
- Don't hesitate to ask me for more information

Introduction
00000

Random Sample Voting
0000

How to vote
0000000

Properties of RSV
000

Conclusion
00●

Conclusion

The end

Thank you for your attention
Don't forget to vote!