

# Barriers to Effective Internet Voting for UOCAVA voters

Douglas W. Jones  
University of Iowa

Aug 6, 2010  
UOCAVA Workshop, Washington DC



supported, in part by  
NSF Grant CNS-05243



Opinions expressed here are those of the author and not necessarily those of the University of Iowa nor any agency of the United States Government.

# How to make Internet Voting Difficult

- Use a single service point
- To serve over 7000 local election offices
- With around 100,000 ballot styles
- Without using a standard identity framework

*In the United States*

***This is Exactly What We Are Doing***

# Some Good Ideas from Elsewhere

*Internet Voting has been used in:*

- Estonia
- Geneva
- The Netherlands

The constraints in each of these countries are different from those in the US.

# Estonia

*Uses a national ID card*

- Smart card
- Basis of national Public Key Infrastructure
- Used for broad range of public and private services

*Estonian Internet Voting System*

- Rests on this framework

# Barriers to Use of the Estonian Model

*We have trouble with National ID Cards but*

- Uniform smart military ID cards are accepted.
- Uniform smart passports are accepted.

*A possible basis of secure UOCAVA voting but:*

- PCs for UOCAVA voting don't work with them!
- The problem: Each is deliberately limited use.
- Passports are routinely turned over to others.

# The Netherlands

## *Only One Ballot Style Nationwide*

- Parties free to run different lists in different regions, but they don't!

## *All Expatriate Voters Register in One District*

- The election office in The Hague

## *Short-term Expats can Vote by Proxy*

- Sign over voting card to trusted proxy before travel

## *RIES System worked pretty well in this context*

# The Netherlands

## *Parallel testing of Internet Voting*

- During the election, vote test ballots
- Test ballots indistinguishable from real ballots
  - All E-ballots have authorization codes
  - Codes assigned to test ballots are pre-invalidated
- At poll closing, audit test ballots from ballot box

Ideally, test ballots should be voted from random locations on the Internet, to identify attacks on ballot delivery or content.

# Barriers to Use of the Dutch Model

*Just one Ballot Style?*

- UOCAVA voters vote on their "home ballot"

*A Modest Proposal*

## **Constitutional Amendment:**

- UOCAVA voters vote in DC.
- New DC congressional districts for expats.
- Full voting rights for DC

*Thinking (way) Outside the Box*

# Geneva

*All Voters May Vote by:*

- Postal ballot
- In person at a polling place
- By Internet

*State mails postal ballots to all voters*

- Lottery scratch-game technology used

Scratch off the paint, ballot becomes provisional, only to be counted if validation number not used by internet.

# Geneva

An interesting post-election audit model:

*Phone a random sample of voters*

- Did you receive your ballot/authorization?
- Did you vote?
- If so, by post, by polling place, or by Internet.
- If by Internet, was there a problem?

A key observation:

- Election observers need access to training
- Election observers need access to manuals

# Geneva and The Netherlands

Expat needs were primary motive for Internet vote

In both countries:

- Postal delivery of internet voting authorization

For Expats:

- File Change of Address, typically by post
- Await postal delivery of authorization
- Vote by Internet

# Geneva and The Netherlands

Unanswered question:

Internet voting in these countries

- Eliminated just one of 3 postal transactions
- Relied on paper authorization document

Therefore, it should be compared with

- Internet ballot belivery
- Internet filing of change of address/ballot request

Is there any good paperless model?