



# Improving transparency, accountability and responsiveness

# RIES:

Rijnland Internet Election System

A fully Transparent Election System

Marco Rijkschroeff

Het Waterschapshuis · RIES

### **Outline**



- The Dutch water boards
- The demand for e-voting
- Our Main goals and criteria
- History of RIES
- Challenges for RIES
- Demonstration of e-voting
- Q+A

Het Waterschapshuis - RIES

# Government



- Dutch Waterboards
- 26 boards
- Organization
  - Dijkgraaf
  - Daily board
  - General board
- Specific tasks
  - Water quantity
  - Water quality

### **Background**



- Dutch policy: 65% all public services admissible trough Internet in 2007
- Specific Water Board objectives for elections
  - 1.maximum accessibility
  - 2.maximum user-friendliness
  - 3.lowest cost possible

Het Waterschapshuis - RIES

### Government perspective: Main goals for e-voting



- Combine with postal-mail voting, without any requirement for the voter to preregister his preferred way of voting.
- Fully transparent and verifiable by voters and independent experts.
- · Increase of usability for handicapped and visual handicapped
- Simplification in back-office organization

Het Waterschapshuis - RIES

### Users perspective: Comfort and reliability





- Ability to cast vote in different ways (mail/Internet) and several times
- Ability to check if own vote was actually cast and counted in the tally; 70% of the voters stressed this as important
- 99% should be able to use the system on a regular Internet attached PC,
- Meets the formal government criteria for elections (transparency, etc etc)

### Formal criteria of any **E-election**



- Authentication
- Uniqueness
- Secrecy
- Integrity
- Accuracy
- Verifiability
- Auditability
- · Non-coercibility
- Flexibility
- Certifiability • Cost-effectiveness
- · Recount tally

Convenience

 Accessibility Reliability

Transparency

RIES meets all these requirements!

Het Waterschapshuis - RIES

### Water board election in 2004



- 35% of the voters used internet voting of RIES
- 86% positive user feedback and no negative response
- Flawless in processing
- Full validation performed by independant parties
  - Radboud Universiteit, TNO, Ithaka
  - Madison Ghurka Cryptomathic

. et Waterschapshuis - RIES

### **Dutch general** election 2006 - KOA





- 63% of the registered voters abroad selected internet voting of RIES
- 90% positive user feedback and no complaints about internet voting
- Flawless in processing
- Full validation performed by a variety of independant parties
  - -TNO, CiBIT, Radboud University

# Users point of view

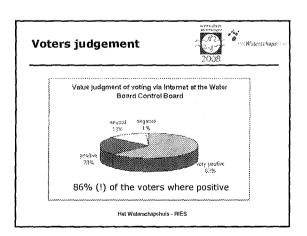


- Be able to validate: highly important
   70% of the voters stated the ability to validate if their vote had actually been cast highly important
- No modifications to their home pc

Voter's needs are comfort and transparency

Het Waterschapshuis - RIES

# Transparency and accountability appreciated Evaluation internet voting Evaluation internet voting Output Description Output Descr



### **Reaction of voters**



- 'Saves time'
- 'Otherwise, I would not have voted'
- 'I can vote whenever I please'
- 'I don't have to leave home for voting'
- · 'Fast and easy'





# Challenges for RIES



- 2004: 2.200.000 eligible voters
- 2006: 20.000 Dutch voters abroad
- 2008: 12.400.000 eligible voters postal mail and Internet



- 2005 Good Practice Label European Commission
- 2006 UN: Public sector award

Het Waterschapshuis - RIES

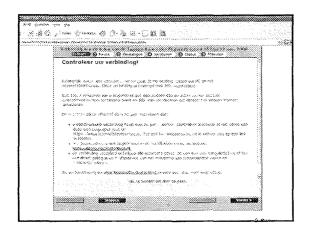


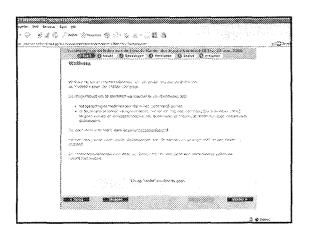


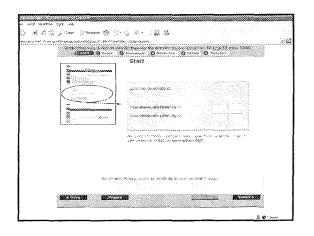
# **RIES** internet voting

Screen shots

April 200



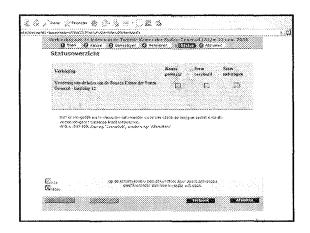


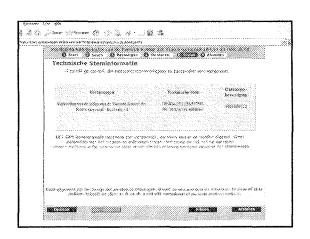


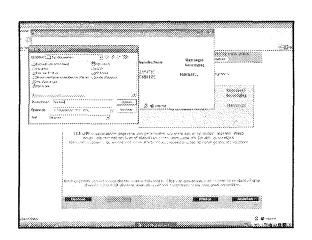
my traver to	proses	
en echardraturiy	Character products in Production (Publisher)  O there (MINING) Control (Publisher) (Publisher)  Selection of the production production of the Control  Selection of the Control	
	1 Common Neurogenter (CD)	
	○ 7 %sterios at paliky vi	
	2 3 - 2000 - 2000 May - 2000 2000	
	2: X Njaros VII (400 Sa); (400)	200
	7, 5 germas Dentigres (CLD)	100
	**************************************	
	(	
	C. A. Ago, Science geocogomes, C. Chair	
	desilitika ekindisilda desileksi karasa ole asartaksi ki ekindera Barasa ekindisik ekindisil	*
	5.7.20	<b></b>
ě		0000

	3 Same Bearing Q Or 9 21 - 12 12 12
net edite	Company and the Control of Contro
	Selectear de kandidaat van oor voorkeur.
	(S) - Advance William (S)
	en de Sagetigen (* 1900) en e Engelsege
	Section (Control of Control of Co
	(2) No company of the American (201) Species
	\$20,000 C \$2,000 CC
	: T
	Specific to project produces or <b>W</b> ang Vermon?
	SAVETES SECTION

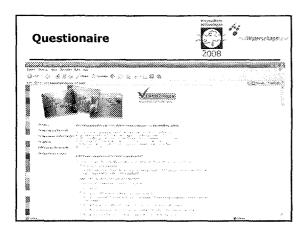
- 26 28 3	A Date Chance & Co. Car. Land
395 <u>852</u>	Star Star Star Commission Starter Commission Starter
	Bevestiging lemze
	o neeft de voigende kerdidaat gebelecteurs:
	Maria (Company) Maria (Company) Maria (Company) (Company) (Company) Andrews
	2000: 2000:
	BARRAN SAMBARA SER NAVERS POSSIBLE I LILILIA. LIBERTARIA E
	recipio de la companya del companya de la companya del companya de la companya del la companya de la companya d
	SECULTS:

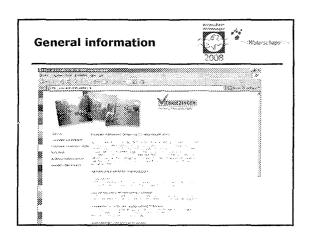






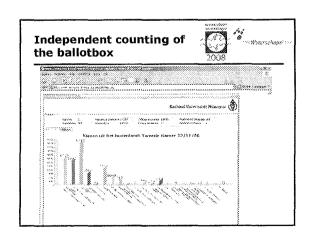
	Some Courses & St. S. H M. H.
is not and all energy and	O Seal O King D Onester O Sealer S Seale ONLINERS
	Hartell is dank soor ow declaranc as: do verklezing.
	W67/7/2008

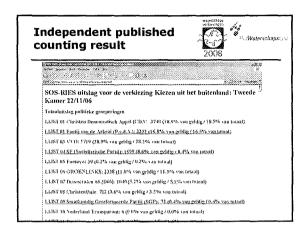


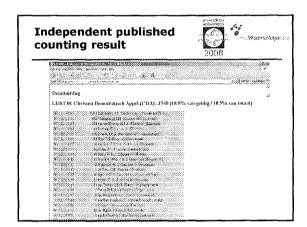


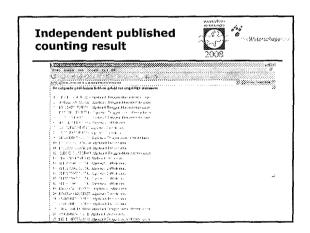
ublish	ed data		2008	Watersol
t management				99
Q 200 Y		4.4		
20000000000	The desired by the second of t		,	Decrees 5
<b>1</b>	Lancet		,l	=
8	Lineari Carreira		24.54.0	
	15 (0.1 4000)		11.22	
£.	14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	737 - 1 11		
	1000		Sant.	
pa .		- contraction in the		
<b>S</b>		- I		
100	6.70300	AT SEC. 18 TO LOSS	1.0	
į į	4.1.1		19	
	9 (1) 10 (1)	Commence of the second		
**	V 141 51 14	1000 000	40.00	
10	nate that	and the Spiles and the same	V- V-	4
	****			3
:	registrations.	Section Section	Such	1
8			1	3
	<u> </u>	7.19		1
鑁	1,100	an League de les les		3

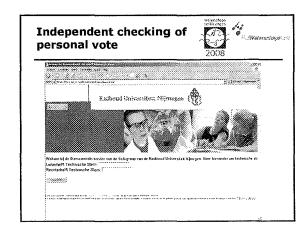
Independent check by t Radboud University	the 2008
1222	,,
TO Section on Section (Sec.	EQue n <del>ote</del>
Kiezen art het bostenkraft een onafhankelijke bijdrage door de R	tadboud Universiteit Ninnegen
control controllers also foreign a strange Color, therebeauth is a foreign experience of protection or provide the respective per the committee of controllers of the	samply element a material constant
: Particular de despris de proposition de la composition della com	
Typiner har har einer verendag pepter ud eitfans f. 1900 A. 1935 und haltern sommer reginner alle Eddoppa (e.g.) uden halternet alsonia overer etc. und ud fanter in globe (e.g.) eine men peldagskonder på til der indepter syn i synner addel har halternet av einer indepter verende in der einer	der 46 er massing ban de de des eer lauder. 4 maarte – Ar of tag latela i Harvall Proce
is the the company of the second of the sec	rando gastera arresasti. Exemplo engli e
Controle van ny eigen stein	
act progression transmission respectively. Techniques Stemples representations of the $r$ - $r$	
mattankelijke siktlag	
An annualization common and congruence containing the conjugate described to the part of the part of the containing of t	en ulaan ar sex-sags (i) yaar ser rasiarsat ii ii i

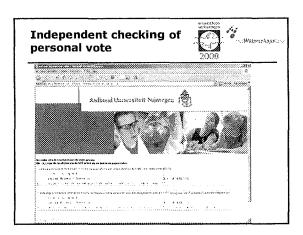












# Future of e-voting



A good election system has to meet the set of requirements as stated before

But the key factors for a successful voting system are:

- Convenience
- Accessibility
- Transparency

When meeting this requirements it possible to have 12 million voters in 2008

Q+A Waterschaps:	
2008	
• Thank you	
Marco Rijkschroeff	
Projectleider ICT Het Waterschapshuis M.Rijkschroeff@hetwaterschapshuis.nl	
Internet: www.hetwaterschapshuis.nl	
Hot Waterschapshuis - RIES	