



European Commission United Nations Development Programme International IDEA

In collaboration with

**Spanish Ministry of Foreign Affairs and Cooperation
International Organization for Migration
Canadian International Development Agency
Organization of American States**

Thematic Workshop: Elections, Violence & Conflict Prevention

*Barcelona, 22-26 March,
2010*

Organized within:



With the support of:



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Partners:





Introduction to Electronic Voting

- ☐ **Two main categories of e-voting**
- ☐ **E-voting in controlled environments (EVM or DRE voting)**
- ☐ **E-voting in uncontrolled environments (internet voting, PDA or mobile telephone voting)**



E-voting in uncontrolled environments

- ☐ Internet voting is being piloted in more than 30 established democracies
- ☐ Estonia, October 2005, first country-wide elections with the possibility to vote through internet
- ☐ Tests on Internet voting have not given yet a definite answer on how to ensure the secrecy of the vote and eliminate the potential coercion exerted on remote voters
- ☐ Internet voting will soon be available for countries which enjoy a deep trust in their respective EMB and have a relatively conflict-free society, where the secrecy issue has a more limited weight than in other younger democracies, where the trust in the institutions and in the EMB might not be a given.



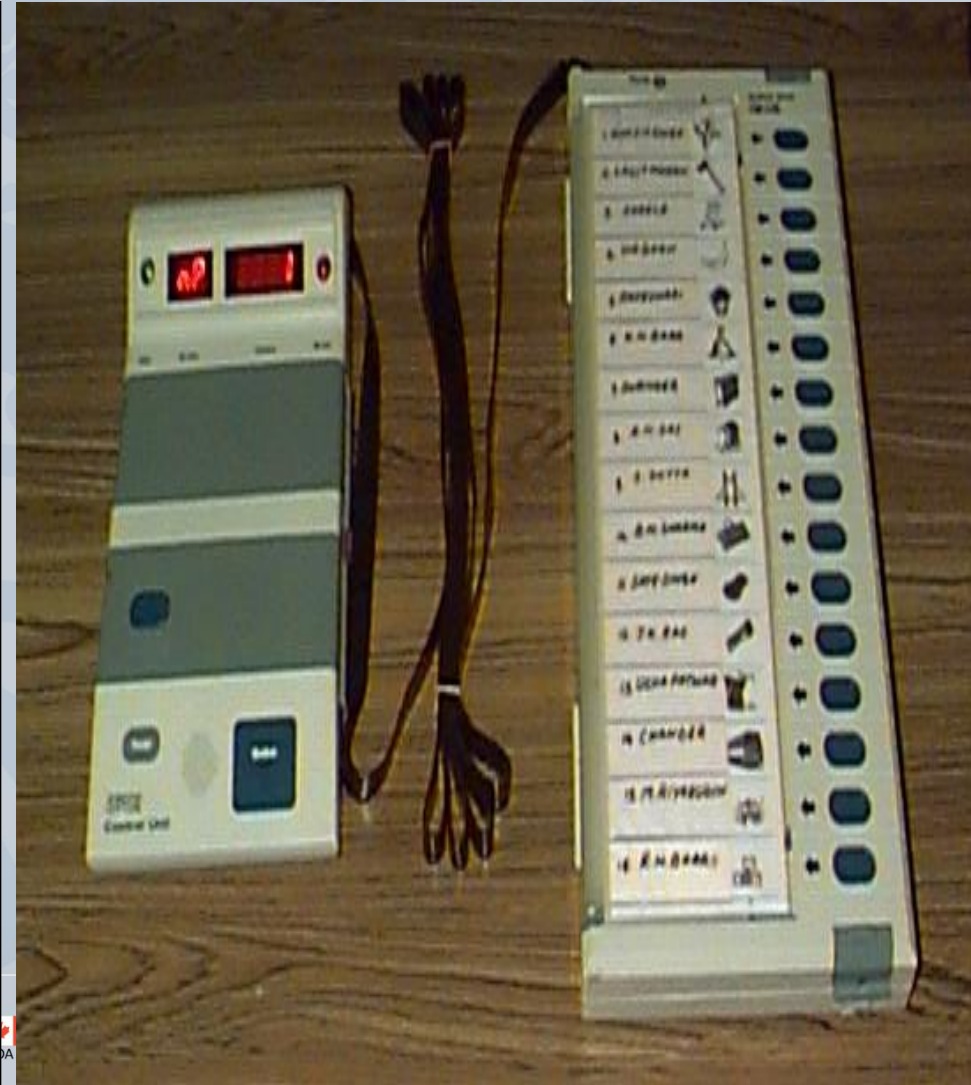
E-voting in controlled environments

- ☐ More than one billion voters in the world already use this form of voting in two of the most populous world democracies (India and Brazil)
- ☐ Does not present the same range of advantages normally attributed to uncontrolled internet e-voting (better turnout, enable voters' mobility, facilitate disadvantaged categories)
- ☐ It does not endanger the fundamental requisite of the secrecy of the vote
- ☐ It does offer some important answers on the issue of transparency through a development of various forms of auditing mechanisms. Possibility to introduce Voter Verified Audit Trails (VVATs)
- ☐ Increase in requests by EU partner countries



Indian Voting Machines

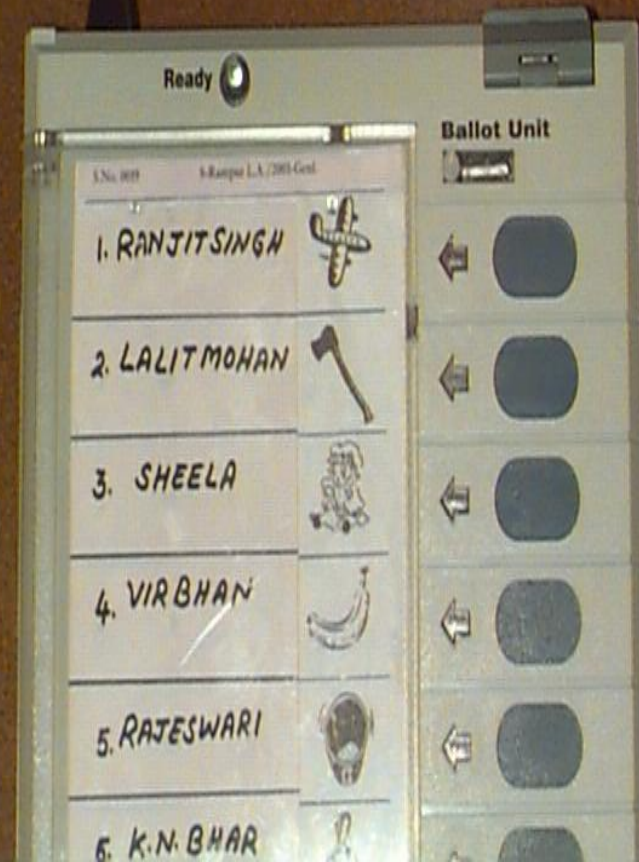
- ❑ Two sub units, control and **balloting**
- ❑ Linked with 5 meter long cable
- ❑ 7.5 volt single alkaline battery





Indian Voting Machines – Balloting Unit Detail

- ☐ Provision for conventional ballot paper
- ☐ Voting by pressing button *instead* of marking.
- ☐ Can be used for 64 candidates and 3840 voters.
- ☐ No provision for invalid votes





Indian Voting Machines Control Unit Details

- **Manned by the PS Chair**
- **Displays the number votes who voted**
- **Informs the PS Chair of when the voter has voted**
- **Get the results by pushing the results button**





US voting machines 1





US voting machines 2





The Venezuelan voting machines

- ☐ Touch Screen to support multiple electoral races
- ☐ Printer Attached to produce VVAT
- ☐ Two memories available







The Venezuela Paradox

- ☐ The extreme sophistication and high reliability of the voting system does not make up for the lack of trust in the EMB among several stakeholders
- ☐ The huge investment in technology has not been yet matched by a similar effort in capacity building and voter information
- ☐ The higher the distrust in the EMB, the higher the need for transparency and security measures



Main consideration in favour of e-voting

- ☐ **Longer-term cost reduction**
- ☐ **Speed and accuracy of the results**
- ☐ **Potential turn-out increase**
- ☐ **Fraud prevention**



Main consideration against e-voting

- ☐ **Lack of transparency**
- ☐ **Increased training and voter information needs**
- ☐ **Vendor “dictatorship”**
- ☐ **Increased potential for central manipulation**

Issues for Discussion



- ☐ There is an inverse relationship between the degree of sophistication and security measures applied to EVMs and the degree of trust enjoyed by the EMB
- ☐ The key role played by independent auditing procedures
- ☐ What role observation can play in electoral processes using e-voting in controlled environment?
- ☐ E-voting in controlled environment with touch-screen machines producing VVAT appears to be the most reliable and transparent way forward for e-voting in developing countries. It will not be the cheapest option.



BRAZIL: 26 STATES AND 1 FEDERAL DISTRICT





ELECTORAL DATA 2006

SURFACE	8.547.403,5 km²	
POPULATION	187.200.000	
VOTERS	125.913.479	
ELECTORAL PRECINCTS	380.945	
VOTING STATIONS	91.244	
ELECTORAL ZONES	3.073	
MUNICIPALITIES	5.658	

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DATA July/2006



Ajuntament de Barcelona

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ELECTORAL DATA – STATE OF MINAS GERAIS

SURFACE	588.383,6 km²
POPULATION	19.200.000
VOTERS	13.778.493
PRECINCTS	43.948
VOTING PLACES	10.294
ZONES	349
MUNICIPALITIES	853

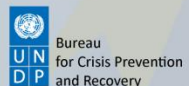


Dados de Novembro/2007

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ORGANIZATION OF THE BRAZILIAN ELECTORAL JUSTICE

**In Brazil elections are made by a special branch of the Judiciary:
THE ELECTORAL JUSTICE, which is composed by:**

- **01 Supreme Electoral Court**
- **27 Electoral Regional Courts (one for each State of the Federation)**
- **3.073 Electoral Judges (one for each “Electoral Zone”)**



ORGANIZATION OF THE BRAZILIAN ELECTORAL JUSTICE

The Supreme Electoral Court (TSE)

COMPOSITION

- **3 Justices of the Supreme Court.**
- **2 Judges of the Superior Court of Justice.**
- **2 Lawyers chosen by the Supreme Court and appointed by the Chief of State for a 2 year term each.**
- * **One of the Supreme Court Justices shall be the Chief Judge and another one the Deputy Chief Judge**



ORGANIZATION OF THE BRAZILIAN ELECTORAL JUSTICE

Regional Electoral Courts (TRE) COMPOSITION

- **2 Judges of the State Court of Appeals.**
- **2 Judges of first instance.**
- **1 Federal Judge chosen by the Federal Court of Appeals.**
- **2 Lawyers chosen by the State Court of Appeals and appointed by the Chief of State**



ORGANIZATION OF THE BRAZILIAN ELECTORAL JUSTICE

ELECTORAL JUDGES

There is one Judge for each one of the country's 3.073 Electoral Zones.

The Electoral Judge is chosen by the Regional Electoral Court.



HISTORICAL INFORMATION



1986

A informatização teve início no ano de **1986**; Recadastramento eletrônico de cerca de **70.000.000** de eleitores;



1995

Em **1995**, na presidência do Ministro **Carlos Velloso**, iniciaram-se os trabalhos de informatização do voto; Uma comissão de informática, formada por consultores e técnicos do **TSE**, apresentou um protótipo da urna eletrônica.



1996

Planejou-se o voto eletrônico, nas eleições de **1996**, de cerca de **1/3** do eleitorado, **74.127** urnas eletrônicas



1998

Nas eleições de **1998**, votariam, eletronicamente, **2/3** terços, **152.370** urnas eletrônicas



2000

Finalmente, no ano **2000**, **todo o eleitorado votaria na urna eletrônica**. **300.428** urnas eletrônicas



PREPARATION FOR THE ELECTRONIC VOTING 1986

NATIONAL VOTERS REGISTRATION

- **1986 – The country registered 70 million voters,**
 - **creation of the voters database;**



PATHS ACCOMPLISHED TO REACH THE ELECTRONIC VOTING SYSTEM

1st Step

**Information.
Guidelines**

2nd Step

Preparation of the Electoral Justice

3rd Step

Developpment of both hard and software

4th Step

Acquisition of hardware and the necessary materials and supplies



PATHS ACCOMPLISHED TO REACH THE ELECTRONIC VOTING SYSTEM

5th Step

**Developpment of the prototype of the eletronic voting machine
Approval of the prototype and making the voting machines**

6th Step

**Quality control
Testing the voting machines.**

7th Step

Using the voting machines in the 1996 elections and post elections evaluations



ELECTORAL LOGISTICS IN A COUNTRY OF 8.547.403,5 km²





ELECTORAL LOGISTICS IN A COUNTRY OF 8.547.403,5 km²





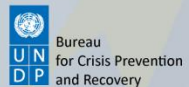
ELECTORAL LOGISTICS IN A COUNTRY OF 8.547.403,5 km²



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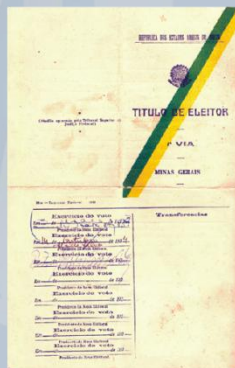


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HISTORIC EVOLUTION OF VOTERS ID



1888

1933

1960



VOTERS ID

Provável Modelo do novo Título Eleitoral



PRESENT

FUTURE



ELECTRONIC VOTING MACHINE



Biometry

MODEL 2008



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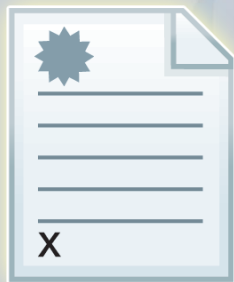


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SEGURANÇA/CONFIANÇA



Assinatura Digital



Criptografia



Resumo Digital (Hash)



Correspondência



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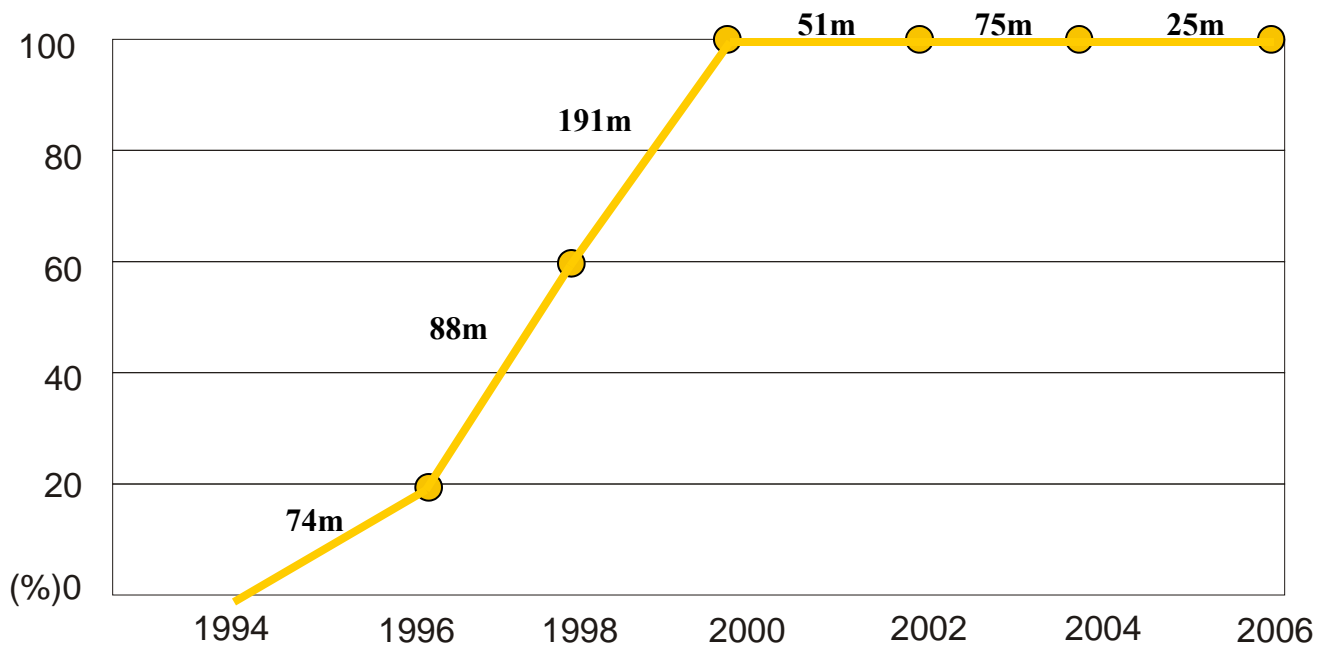


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PERCENTAGE OF VOTERS USING THE ELECTRONIC VOTING MACHINES SINCE DE 1996





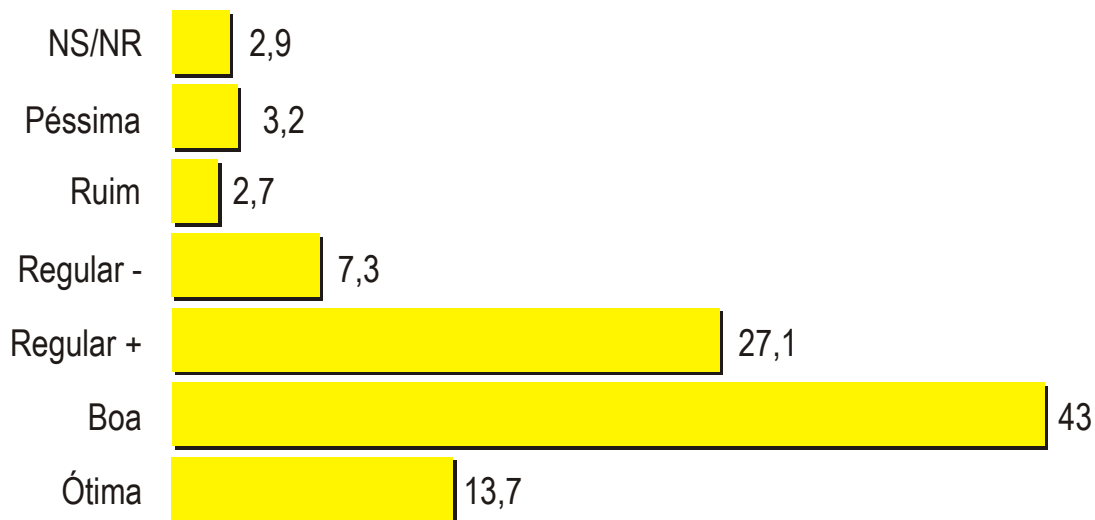
RESULTS OF RECENT POLLS ABOUT THE ELECTORAL JUSTICE

- The Electoral Justice has **81,5%** of the Brazilian people's approval and reliability.
- **83,8%** of the Brazilian people has a positive image of the Electoral Justice.

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CREDIBILITY OF THE ELECTORAL JUSTICE



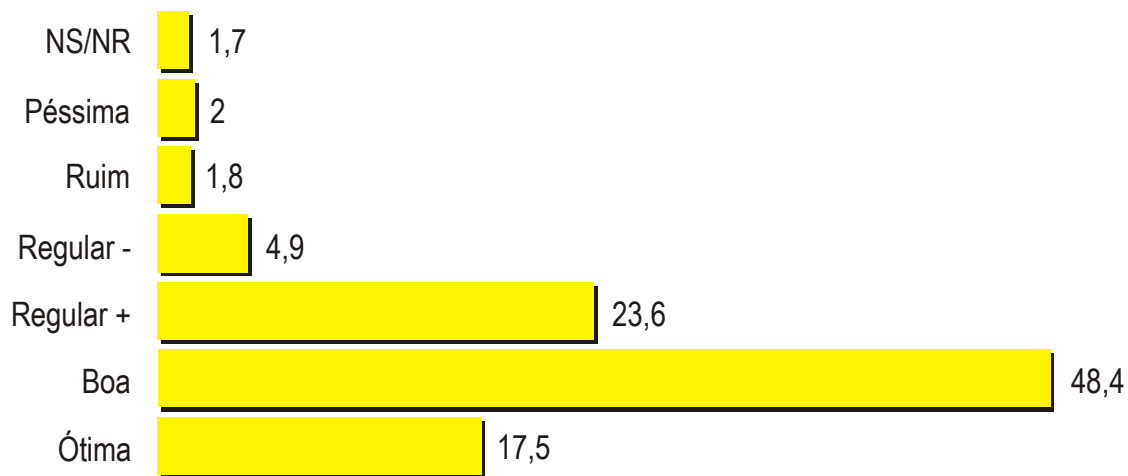
Positiva - 83,8%

Negativa - 13,2%

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PEOPLE'S CREDIBILITY IN THE VOTING MACHINE



Positiva - 89,5%

Negativa - 8,7%

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PEOPLE'S CREDIBILITY IN THE VOTING MACHINE

POPULAR EVALUATION OF THE AGILITY OF THE



Positiva - 96,7%

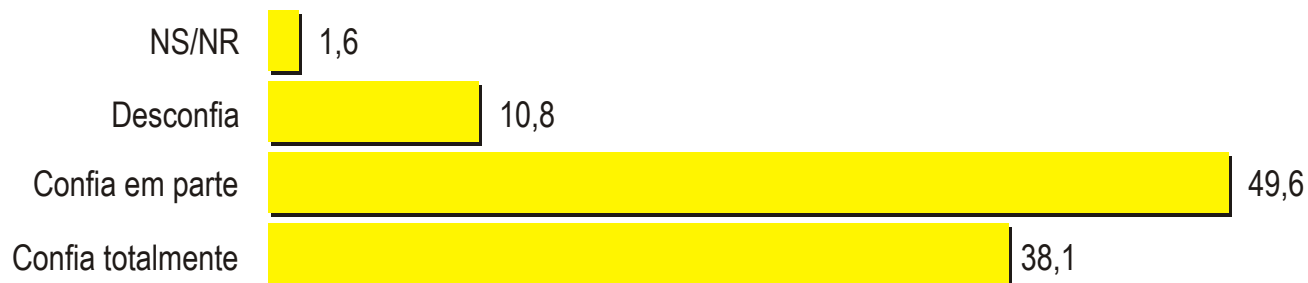
Negativa - 2,9%

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PEOPLE'S CREDIBILITY IN THE VOTING MACHINE

PEOPLE'S LEVEL OF CONFIDENCE AND CREDIBILITY ABOUT THE ELECTORAL JUSTICE



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http://www.tse.gov.br/eleicoes/urna_eletronica/simulacao_votacao/UrnaApplet.htm