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
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 of 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
The Venezuelan voting machines

- Touch Screen to support multiple electoral races
- Printer Attached to produce VVAT
- Two memories available
The Venezuelan context

- High level of mistrust in the EMB from various sections of the society

Introduction of a number of transparency measures to obviate the luck of trust

Massive effort in the VVAT allowed the EU EOM to express a solid evaluation on the genuineness of the results
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

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Surface</strong></td>
<td>8,547,403.5 km²</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>187,200,000</td>
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<tr>
<td><strong>Voters</strong></td>
<td>125,913,479</td>
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<td><strong>Election Precincts</strong></td>
<td>380,945</td>
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<tr>
<td><strong>Voting Stations</strong></td>
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<tr>
<td><strong>Electoral Zones</strong></td>
<td>3,073</td>
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<tr>
<td><strong>Municipalities</strong></td>
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</table>

**Data as of July 2006**
## Electoral Data – State of Minas Gerais

<table>
<thead>
<tr>
<th>Category</th>
<th>Data</th>
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<tbody>
<tr>
<td>Surface</td>
<td>588.383.6 km²</td>
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<tr>
<td>Population</td>
<td>19.200.000</td>
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<tr>
<td>Voters</td>
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<tr>
<td>Precincts</td>
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<tr>
<td>Voting Places</td>
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<tr>
<td>Zones</td>
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<tr>
<td>Municipalities</td>
<td>853</td>
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Dados de Novembro/2007
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.
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.
A informatização teve início no ano de **1986**; Recadastramento eletrônico de cerca de **70.000.000** de eleitores;

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.

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

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

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
Development of both hard and software

4th Step
Acquisition of hardware and the necessary materials and supplies
5th Step
Development of the prototype of the electronic 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
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HISTORIC EVOLUTION OF VOTERS ID

1888

1933

1960
VOTERS ID

Provável Modelo do novo Título Eleitoral

PRESENT

FUTURE
ELETRONIC VOTING MACHINE

MODEL 2008

Biometry
SEGURANÇA/CONFIANÇA

Assinatura Digital

Resumo Digital (Hash)

Criptografia

Correspondência
PERCENTAGE OF VOTERS USING THE ELECTRONIC VOTING MACHINES SINCE 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.

Instituto NEXUS
CREDIBILITY OF THE ELECTORAL JUSTICE

Positiva - 83,8%
Negativa - 13,2%

Instituto NEXUS
PEOPLE’S CREDIBILITY IN THE VOTING MACHINE

Instituto NEXUS

NS/NR
Péssima
Ruim
Regular -
Regular +
Boa
Ótima

1,7
2
1,8
4,9
23,6
48,4
17,5

Positiva - 89,5%
Negativa - 8,7%

Instituto NEXUS
PEOPLE’S CREDIBILITY IN THE VOTING MACHINE

POPULAR EVALUATION OF THE AGILITY OF THE VOTING MACHINE

Instituto NEXUS

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>NS/NR</td>
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<td></td>
</tr>
<tr>
<td>Pessima</td>
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<tr>
<td>Ruim</td>
<td>0,9</td>
<td></td>
</tr>
<tr>
<td>Regular -</td>
<td>1,4</td>
<td></td>
</tr>
<tr>
<td>Regular +</td>
<td>5,6</td>
<td></td>
</tr>
<tr>
<td>Boa</td>
<td></td>
<td>38,1</td>
</tr>
<tr>
<td>Otima</td>
<td></td>
<td>53</td>
</tr>
</tbody>
</table>

Positiva - 96,7% Negativa - 2,9%

Instituto NEXUS
### People’s Credibility in the Voting Machine

**People’s Level of Confidence and Credibility about the Electoral Justice**

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Desconfia</td>
<td>10.8</td>
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<tr>
<td>Confia em parte</td>
<td>49.6</td>
</tr>
<tr>
<td>Confia totalmente</td>
<td>38.1</td>
</tr>
</tbody>
</table>

Instituto NEXUS