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# TCU IN THE ELECTIONS

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## — 2022 —



## **Auditing Brazil's electronic voting system**

General elections will be held in Brazil in 2022, under the supervision of the Superior Electoral Court (TSE), in which races will be held for President and Vice-President of the Republic, Governor, Federal Deputy, State Deputy and also for Senator.

In order to assess the Brazilian electronic voting system, the Brazilian Federal Court of Accounts (TCU) started in 2021, and is expected to finish in March 2023, an integrated audit, in the operational and compliance modalities, to assess all the stages of voting regarding its auditability, security, transparency and reliability.

### **Background**

Since the elections of 2000, due to Law 9,504/1997, Brazil has used the electronic system for voting and tallying the votes, without human intervention and without any proven record of fraud since its institution.

Over the years, however, some legislative proposals have arisen with the purpose of changing the current system, through the implementation of a device for printing the vote.

Given the relevance of the theme, and with the aim of producing an external technical assessment and providing input for a rational debate in relation to the eventual needs to improve the security and auditability mechanisms of the electronic ballot box, the TCU began inspection work to evaluate the reliability of the current electoral process.

In general terms, the results of the audit at the TSE allowed the TCU to conclude that the current electronic voting system is fully auditable, adhering to the established normative arrangement, although it requires improvements in terms of communication to avoid misinformation and increase the understanding of voters about the process, as well as operational improvements.

The audit team also concluded that the adoption of a device to print physical ballots that can be checked by the voter, besides being an excessively costly measure, would increase human intervention in the process and consequently leave the system more vulnerable to fraud, errors, and manipulation.

The main characteristics and information of the work carried out will be presented below.

### **Premises**

The work was carried out by a team of auditors from the permanent staff of the Federal Court of Accounts, and sought to respond to the following premises:

- Is the current electronic voting system sufficient to guarantee the auditability of the suffrage voting?
- Are the procedures established for the implementation and verification of electronic voting adequate to enable and guarantee the transparency and reliability of the process?

- Do the regulations and procedures established for the technical steps related to the electronic ballot boxes meet the auditability requirements defined in national and international standards?
- Do the implemented information security guidelines, policies and controls adhere to international legislation and best practices and ensure an adequate level of protection for the information, processes and resources involved?
- Are the policies, strategies, management and actions taken related to Business Continuity in line with legislation and international best practices, as well as ensuring an adequate level of protection so as not to allow the interruption of activities, prevent against the effects of failures or disasters and ensure their timely resumption?

## Methodology

The work was planned to be carried out in six stages. To date, the TCU Full Court has assessed three of them, with the following objectives:

- 1st stage: verify whether the electronic voting system is sufficient to ensure the auditability of the process (Court Decision 2,522/2021-TCU-Full Court);
- 2nd stage: to analyze the material aspects that could impact the performance of activities related to electronic voting, in particular budgetary risk management, human risk management, and information security focused on people (Court Decision 3,143/2021-TCU-Full Court);
- 3rd stage: to analyze aspects related to information security with a focus on processes, procedures, and systems, and also to analyze the Business Continuity Management (TCU-Full Court 1,611/2022).

The audit was conducted in accordance with the internal norms of the Federal Court of Accounts (TCU Auditing Standards, Operational Auditing Manual and Compliance Auditing Standards); it is also aligned with the fundamental principles of public sector auditing of the International Standards of Supreme Audit Institutions (ISSAI 100).

The information to support the analyses carried out by the audit team was obtained through requests made to the Superior Electoral Court (TSE), which were fully and timely attended to, which is why no additional measures were necessary.

## Audit Results

The work carried out by the TCU concluded that the Brazilian electoral system has control mechanisms in place that allow for the auditing of the electronic voting in all of its stages and bring a satisfactory degree of reliability and security to the electoral process and the understanding that the non-existence of printed ballots does not compromise the auditability of the vote.

The audit team also evaluated the risks of adopting a device for printing votes in the election system and concluded that, besides being an excessively onerous measure, it would increase human intervention in the process and consequently leave the process more vulnerable to fraud, errors, and manipulation.

In relation to the material aspects that could impact the performance of the activities related to electronic voting, the audit team concluded that the Superior Electoral Court has a reasonable level of security implemented in relation to information security focused on people and that several actions are underway to improve it.

It was verified that the physical security and the physical access control to the critical areas of the datacenter of the Superior Electoral Court meet the good practices indicated in international standards and that the acquisition of a solution to expand the external backup capacity (offsite storage) is in the technical studies phase.

Finally, with regards to the management of Business Continuity and information security focused on systems, the inspection team identified several operational deficiencies, which, although they do not compromise the electronic voting process, open room for improvement.

Examples of operational deficiencies and challenges are: technological complexity and the absence of a more comprehensive information policy, which has led to the dissemination of fake news and the presentation of proposals for legislative amendments to modify the current system; absence of a formalized information security risk management process; inexistence of a permanent program of training and awareness raising activities on information security for all those involved in the electoral process; absence of a formally designed Business Continuity Process; need for budgetary, human and material resources, in the case of an eventual change in the current voting system.

## **Actions and measures taken**

Although the results presented by the inspection do not compromise the security of the current electoral process, the Federal Court of Accounts made recommendations with the aim of improving it.

In order to mitigate the deficiencies, the Federal Court of Accounts recommended to the Superior Electoral Court, among other measures, that it review the practices adopted in compliance with the policies of communication and information to society, in order to promote information about the security of the voting system; adopt measures to give greater visibility to the tests carried out on the electronic ballot boxes, in order to make them a mechanism of inspection for society; promote studies to encourage the participation of entities qualified as inspectors in the various stages of the voting system; review the competencies of its units to improve the information security management process; formalize the information security risk management process, as well as implement a permanent training program; and formalize the Business Continuity Process.

Since the first stages of the inspection, the Superior Electoral Court adopted several measures in order to comply with and make effective the recommendations made by the Federal Court of Accounts.

As an example, one can cite the adoption of several communication actions, in counterpoint to the dissemination of misinformation about the security of the electoral process; the edition of normative acts with the purpose of improving the procedures of inspection and auditing of the electronic ballot boxes, also providing for an increase in the participation of society and inspection entities; various actions to spread the security of the electoral process, such as the creation of a new electronic portal of the Electoral Justice and the publication of information on social networks; the institution of the Elections Transparency Commission, with the participation of civil society and public institutions; and the revision of the information security risk management process.

## **Conclusions**

In view of the steps taken thus far, and without prejudice to future deliberations in subsequent steps, the Federal Court of Accounts can conclude that no risks relevant to the holding of the 2022 elections have been identified to date, within the scope addressed.

It was also possible to point out that, in relation to the analysis of the information security structure with focus on processes, procedures and systems, as well as in relation to the Business Continuity Management, the Superior Electoral Court is very adherent to international good practices.

Therefore, although the Brazilian electronic electoral process is well established, the recommendations made by the Federal Court of Accounts will undoubtedly contribute to its improvement.

### **Mission**

Improve Public Administration through external control to benefit society.

### **Vision**

Be a reference in promoting an effective, ethical, fast, and accountable Public Administration.

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