Election-Supporting Technology Anomaly Root Cause Analysis Template v.1 2024

Instructions

This form provides for the reporting of a root cause analysis of an election-supporting technology anomaly by election officials or manufacturers. This form is part of the EAC's Election Supporting Technology Evaluation Program's Quality Monitoring Program. The use of this form is voluntary for Election Officials, and mandatory for Election-Supporting Technology Developers/Manufacturers. Information regarding its use can be found in the Election Supporting Technology Evaluation Program Manual. If you need additional space, attach letter-size sheets (8.5" X 11"). Include the manufacturer name, date and section heading on each sheet.

If there are any questions regarding this form, please contact ESTEP via estep@eac.gov.

The root cause analysis (RCA) is applicable when an anomaly is identified that has potential impact on fielded election-supporting technologies, regardless of where and when the anomaly was initially identified.

The RCA provides a record of the approach taken to identify and document the root cause of a particular problem and the follow-up actions necessary to thoroughly address the root cause.

The purpose of an RCA in the EAC Election Supporting Technology Evaluation Program (ESTEP) is to find effective solutions to election technology anomalies and to determine what factors need to be corrected to prevent such problems from reoccurring in the future.

RCAs shall be provided to the EAC for:
- All previously EAC certified election-supporting technologies when an anomaly is identified whether it affects fielded systems or not.
- Election Supporting Technologies under test that have been shown to have a general fault that might affect fielded systems and
- State Certified version of election-supporting technologies that may have a common flaw with an EAC version but is not specifically an EAC certified election-supporting technology.

RCAs shall be provided to the EAC at the earliest opportunity, but no later than fifteen business days after the analysis is completed and corrected actions and solutions have been documented. While the RCA is underway, the EAC should be kept informed of progress.

To provide assurance that the goals of the RCA will be met, the election-supporting technology RCA should meet the following criteria:
1. Clearly define the anomaly and its effect on the election jurisdiction(s) and on the election-supporting technology manufacturer.
2. Clearly delineate the known causal relationships that combined to cause the anomaly.
3. Clearly establish causal relationships between the root cause(s) and the defined anomaly.
4. Clearly present the evidence used to support the existence of identified causes of the anomaly.
5. Clearly explain how the corrective actions will prevent recurrence of the defined anomaly.
6. Clearly explain how the solution(s) will be managed in the future.
7. Clearly document the above criteria in this analysis report so election officials and the voting public can easily follow the logic of the analysis.

Election-Supporting Technology
Anomaly Root Cause Analysis Template v.1 2024

Root Cause Analysis for:

Anomaly Analyzed:

System Classification:

| | Electronic Poll Book | | Electronic Ballot Delivery System | | Election Night Reporting | | Voter Registration Portal/Database |

| | **Other (Describe):** |

EAC Certification #:

EAC Certified System Name & Version:

Reporter Classification: Manufacturer

System Manufacturer:

Manufacturer Address:

City: **State:**   **Zip Code:**

Date: /   /

Anomaly Description

Complete all sections. Descriptions must be as detailed as possible, while being clear and concise since the anomaly is the source of the entire RCA. This detail should include a complete list and/or description of the "symptoms" of the anomaly and the conditions present which the symptoms occurred.

Date of Anomaly: [ ] / [ ] / [ ]   Time of Anomaly: [ ]   AM

Place of Anomaly: [ ]

Person identifying Anomaly: [ ]

Expected results of actions leading up to anomaly:

Detailed description of event/anomaly:

If the anomaly is repeatable, provide step by step instructions to recreate it:

Chronology of Events / Timeline

Provide a detailed chronology of the events leading up to, and following, the anomaly. Add additional events if necessary.

ID	Date/Time	Description	Entity Org/person	Result / Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Investigative Team and Method

This section shall describe how the investigative team is assembled by the election-supporting technology manufacturer, who it consists of, and how it gathers the data to be used in the analysis. Include the RCA method employed by the manufacturer in conducting the analysis and why this method was used. Please use additional pages if necessary.

Names and Positions of members of the investigative team:

Describe the data gathering process:

Describe which methodology(s) is used to conduct the root cause analysis:
These methods include but are not limited to:
- *Events and Causal Factors charting*
- *Fault Tree Analysis*
- *RPR Problem Diagnosis*
- *Ishikawa Diagrams*
- *Pareto Analysis*
- *5 Whys*

Findings and Root Cause

Describe the findings of the investigation and explain the root cause(s) based on these findings. If the RCA results in findings that are not directly related to the root cause of the anomaly, these should also be captured as manufacturer product/process improvement steps in an effort to improve the election-supporting technology.

Corrective Action(s)

As the purpose of the RCA is to determine the root cause of a voting system anomaly, the RCA should result in corrective actions that are taken to ensure the same anomaly does not recur. The most preferable corrective actions are those that eliminate failure root causes through some hardware or software redesign. Corrective actions may include:

- Design upgrades to eliminate or mitigate the problem.
- Training. In many instances, anomalies can be eliminated by providing training to election officials, assemblers, or other personnel.
- Additional testing or inspection.
- Special operational or process actions. The least preferable from a long-term perspective is to rely on special operational or process steps (work-around) as a problem solution.

Once corrective actions have been identified, evaluated, and selected, the final steps of the RCA consist of implementing the corrective action and evaluating the effectiveness of the corrective action.

Solution Management

The purpose of this section is to manage the corrective action(s) moving forward. This should detail all process changes to manage those corrective actions, and steps taken to ensure the actions eliminate the anomaly over time.

I certify that, to the best of my knowledge and belief, all of the information on and attached to this Election-Supporting Technology Root Cause Analysis Template, including any attached application materials, is true, correct, complete, and made in good faith.

Reporter Signature: **Date:**   /   /