



Centro Universitario de los Valles

Maestría en Ingeniería de Software

Software Configuration Management Project

Change request and policies Virtual Assistant for Recognizing Dangerous Roads.

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Master in software engineering

Nov 17, 2023

Ameca, Jalisco

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1. Introduction

This document delineates change requests submitted by the client, accompanied by a comprehensive analysis to facilitate policy execution and informed decision-making for acceptance determination.

2. Policies

To make any change to the established baseline, acceptance of the following policies is necessary.

1. Any change request outside of what is stipulated in the baseline will require a maximum of 1 week to be analyzed.
2. Accepted change requests must have time and budget that will be added to what is already stipulated in the baseline.
3. Change requests requiring new staff will have a low priority.
4. Change requests that affect more than 3 modules will not be approved.
5. Establish a review committee that includes representatives from different functional areas to ensure a comprehensive evaluation of change requests.
6. Require detailed documentation for each change request, including the reason, expected benefits, and any potential impacts on the project scope, time, and budget.
7. Establish a tracking system that allows stakeholders to get regular updates on the status of change requests, including milestones and key results.
8. Each change request shall include a detailed assessment of potential associated risks and challenges, as well as mitigation strategies.
9. All change requests will be prioritized based on their impact on project objectives, urgency, and alignment with the overall strategy.
10. If the risk is greater than 5-6 points, the change request is rejected.

2.1 Process for approved Change Request.

1. Any team member or stakeholder submits a Change Request (CR) containing details about the proposed change.
2. A designated responsible party reviews the CR to determine its relevance and initial feasibility.
3. If the RFC passes the initial assessment, the development team conducts a comprehensive technical analysis, including effort estimations, risk identification, and assessment of the impact on the project.
4. The team prioritizes the RFC based on its importance, impact, and urgency.
5. The team, along with the Scrum Master or team leader, makes the final decision to approve the RFC.

6. The approval of the RFC is communicated to all stakeholders, and the implementation of the change is planned.
7. The change is implemented in accordance with the team's development and version control practices.
8. Follow-up is conducted after implementation to assess the impact and whether the objectives are met.

2.2 Process for Not approved Change Request

1. Any team member or stakeholder submits a Change Request containing details about the proposed change
2. A designated responsible party reviews the RFC to determine its relevance and initial feasibility.
3. If the RFC does not pass the initial assessment or the technical analysis, reasons for denial are documented.
4. The decision to not approve the RFC is communicated to the requester, with clear explanations of the reasons behind the denial.
5. All non-approved RFCs, along with their denial reasons, are archived for future reference
6. The requester is informed that the RFC may be reviewed in the future if circumstances change or if additional information is provided.

3. Scale for measure Risk

Table 3.1 Scales for measure risk

| Budget | Time | Human resources | Affected Modules | Work Effort | Risk |
|---------------|---------------|------------------------|-------------------------|--------------------|-------------|
| 10% | 1 to 3 Months | 0 | 1 | 10% | Low (1) |
| 10% to 15% | 3 to 5 months | 1 to 2 | 2 to 3 | 10% to 20% | Medium (2) |
| >15% | >5 months | >2 | >= 3 | >20% | High (3) |

The following table will discuss how work effort is measured based on the affected modules, which in turn will be classified as new modules or modifications to those already established.

Table 3.2 Measure for work effort

| Work effort | | % |
|--------------------|--------|----------|
| New module | 1 | 15% |
| | 2 to 3 | 25% |
| Modified | 1 | 5 % |
| | 2 to 3 | 10 % |

4. Change request CR-01

Table 4.1 CR-01 Specifications and introduction

| | | | |
|---|------------|-----------------|-------------------------|
| Change Request ID: | CR-01 | Requestor | Omar Ali Zatarain Durán |
| Date | 08/09/2023 | Project manager | Rodrigo Resendiz Avila |
| Describe the Requested Change | | | |
| <p>Incorporate criminal behavior history on the road; this includes the following:</p> <ul style="list-style-type: none">• Hit and run cases by road, GPS location, year, daytime.• Shootings between gangs and solo shooters• Murders and mass murders.• Kidnapping• The system is expected to be connected to a criminal records database to accomplish the criteria above. | | | |

4.1 Affected Modules

- User Interface (1)
- Integration with criminal history database (1)

4.2 New modules

- Criminal data base (3)
- Criminal Behavior Recording (3)

Table 4.2 CR-01 SWOT Matrix specification.

| SWOT | |
|--|--|
| STRENGTHS (+) | WEAKNESSES (-) |
| The System will contain detailed information on the vehicle history, to provide a correct response to those traveling on the road. | <p>The system will have a very robust database that would be incapable of processing data in the shortest possible time.</p> <p>The antecedents may vary according to the power that dictates them, which causes more processing time.</p> |
| OPPORTUNITIES (+) | THREATS (-) |
| - Attract government investment so that the system can support the robustness of the database. | It completely deviates from the project proposed in the baseline. This would affect the requirements raised. |

Table 4.3 budget impact

| Budget impact | | | | |
|---------------|---------|-----|-------------|------------------|
| Money | Time | H.R | Work effort | Affected modules |
| \$ 7,200 | 1 Month | 4 | High | 4 |

The work effort is high due to the affected modules and the new modules, which, as mentioned in table 4.2, obtain a high percentage and according to table 4.1 a high result is obtained.

4.4 Conclusion for change request CR-01

Because the change request requires too many modifications from the baseline, and takes a high percentage of the budget (\$ 7,200), the decision is made to reject the request and leave it for future updates.

5. Change request CR-02

Table 5.1 CR-02 Specifications and introduction

| | | | |
|--|------------|-----------------|-------------------------|
| Change Request ID: | CR-02 | Requestor | Omar Ali Zatarain Durán |
| Date | 06/10/2023 | Project manager | Rodrigo Resendiz Avila |
| Describe the Requested Change | | | |
| The client requests to include an alarm sent to the police when the user encounters a risky situation while on the street. | | | |

5.1 Affected Modules

This change request is not affected by any module, since in the baseline it is present in module 7 “Notifications to Authorities and Emergency Services”, so we will only talk about it in more detail.

5.2 SWOT Matrix

Table 5.2 CR-02 SOWT Matrix

| SWOT | |
|--|---|
| STRENGTHS (+) | WEAKNESSES (-) |
| Having direct interaction with emergency services could help reduce the rate of incidents on the road, in turn alerting users about what is happening, the season in which it occurs and the times in which they occur most frequently. | Possible Misuse: There is a risk that the alarm function may be misused, generating false alarms. User Privacy: Implementing an alarm function must carefully manage user privacy to avoid potential concerns. |
| OPPORTUNITIES (+) | THREATS (-) |
| Increased User Trust: Improving security could increase user trust in the virtual assistant. Collaboration with Authorities: The alarm feature could open opportunities for collaborations with local authorities for a more effective response. Market Expansion: The inclusion of robust security features could attract new users concerned about their security. | Legal Concerns: The alarm feature could face legal and regulatory challenges related to privacy and the transmission of information to authorities. Negative Perception: If the feature is not implemented correctly, it could result in a negative perception of the virtual assistant as intrusive or excessive. |

5.3 Conclusion for change request CR-02

Because this requirement is present in the baseline, it is necessary to inform the client who requests it, to clarify doubts and continue if any other changes are necessary. Therefore, this request is on hold.

6 Change request CR-03

Table 6.1 CR-03 Specifications and introduction

| | | | |
|---|------------|-----------------|-------------------------|
| Change Request ID: | CR-03 | Requestor | Omar Ali Zatarain Durán |
| Date | 06/10/2023 | Project manager | Rodrigo Resendiz Avila |
| Describe the Requested Change | | | |
| The client requested that the cell phone camera and microphone be activated, recorded, and uploaded to the cloud when in a risky situation. | | | |

6.1 Affected modules

- Monitoring and Maintenance (1)

6.2 New modules

- Recording and Cloud Upload Module (2)
- Cloud Server (2)

6.3 SWOT Matrix

Table 6.3 CR-03 SOWT Matrix

| SWOT | |
|--|--|
| STRENGTHS (+) | WEAKNESSES (-) |
| Improved Safety: Activating the camera and microphone in risky situations can improve the ability to collect relevant information. Real-Time Evidence: Real-time recording provides valuable evidence to evaluate risk situations and make informed decisions. Quick Response: The ability to upload data to the cloud can allow for a faster response from authorities or emergency services. | Privacy Concerns: Activation of the camera and microphone raises privacy concerns, and their management must be careful to avoid negative perceptions. Possible Misuse: There is a risk that the function will be misused or interpreted as invasive. |
| OPPORTUNITIES (+) | THREATS (-) |
| Collaboration with Authorities: The function can be a basis for collaborations with authorities to improve citizen security. User Trust: Secure and ethical implementation can increase user trust by providing an additional level of security. | Legal and Regulatory Challenges: The function may face legal and regulatory challenges related to privacy and the handling of sensitive data. Negative User Perception: Incorrect implementation or insufficient privacy management can lead to negative user perception. |

Table 6.4 budget impact

| Budget impact | | | | |
|--------------------------|----------------|-----|-------------|------------------|
| Money | Time | H.R | Work effort | Affected modules |
| \$ 3,500 (12%) (2) | 1 Month (1) | 0 | Medium | 1 |

6.4 Conclusion for change request CR-03

After the analysis carried out for this requirement and finding that the impact is not too serious, and falls within the budget established for the change requests. Therefore, it is approved.

7 Change request CR-04

Table 8.1 CR-03 Specifications and introduction

| | | | |
|---|------------|-----------------|-------------------------|
| Change Request ID: | CR-04 | Requestor | Omar Ali Zatarain Durán |
| Date | 06/10/2023 | Project manager | Rodrigo Resendiz Avila |
| Describe the Requested Change | | | |
| Due to government regulation, the system should transmit all the information encrypted. | | | |

7.1 Affected modules

- Notifications and Alerts (1)

7.2 New modules

- Data Encryption (2)
- Key Management

7.3 SWOT Matrix

Table 7.2 CR-04 SOWT Matrix

| SWOT | |
|---|--|
| STRENGTHS (+) | WEAKNESSES (-) |
| Regulatory Compliance: Implementation of encrypted transmission ensures compliance with government regulations. Improved Security: Encryption strengthens the security of information, protecting it against possible threats and unauthorized access. Improved User Confidence: Strengthened security can increase user confidence by ensuring the protection of their data. | Additional Resource Requirements: Implementing encryption may require additional resources, both in terms of time and computational capacity. Possible Performance Impact: Encryption can have an impact on system performance, and this should be managed carefully. |

| OPPORTUNITIES (+) | THREATS (-) |
|---|--|
| Competitive Differentiation: Complying with government regulations can differentiate the system as safe and reliable compared to the competition. Possibility of Government Collaboration: Adherence to regulations may open opportunities for government collaborations or strategic partnerships. | Changes in Regulations: Changes in government regulations may require frequent adjustments to the encryption implementation. Implementation Challenges: Improper implementation of encryption could result in security vulnerabilities, defeating the initial purpose. |

Table 7.3 budget impact

| Budget impact | | | | |
|--------------------------|----------------|-----|-------------|------------------|
| Money | Time | H.R | Work effort | Affected modules |
| \$ 4,000 (16%) (2) | 2 Month (1) | 1 | Medium | 1 |

7.4 Conclusion for change request CR-04

For this change request, the risk is medium, due to human resources considerations and the work effort marked in points 8.1 and 8.2, even with the consideration of medium risk, this request must be approved since the requirement is necessary to comply with the regularizations set by the government, therefore, are approved.