**PROJECT PLAN**

**Mean Green solution**

**Clean Chickens and Co. LLC**

**Goat Observation and Assessment Technology (G.O.A.T) Document Revision #: 3**

**Date of Issue: 01/27/25 Project Manager: Jack Follett**

Table of Contents

[Document Change Control 3](#_Toc189223133)

[1. Project Overview 4](#_Toc189223134)

[2. Managerial Process Plans 5](#_Toc189223135)

[3. Work Breakdown Structure (WBS) 6](#_Toc189223136)

[4. Risk Management Plan 7](#_Toc189223137)

[5. Configuration Management 8](#_Toc189223138)

[6. Communication Plan 8](#_Toc189223139)

[7. Project Evolution & Follow-up 9](#_Toc189223140)

# Document Change Control

This section provides control for the development and distribution of revisions to the Project Plan. The Project Plan is a living document and may be updated throughout the project life cycle to reflect changes in scope, objectives, or requirements. The table below includes the revision number, date of update/issue, the author responsible for the changes, and a brief description of the changes made.

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| --- | --- | --- | --- |
| **Revision Number** | **Date of Issue** | **Author(s)** | **Brief Description of Change** |
| 1 | 9/20/24 | Jack Follett Jesus Chavez Albert Kileo | Initial creation |
| 2 | 1/29/25 | |  |  | | --- | --- | |  | Jack Follett,  Jesus Chavez,  Albert Kileo | | Comprehensive revision including updates to milestones, budget allocation, WBS, risk management, configuration management, communication plan, and project evolution. Clarified AI model accuracy and regulatory compliance measures. Expanded deployment and testing strategy. Added long-term sustainability plan. |

## Project Overview

#### ****1.1 Purpose, Scope, and Objectives****

The G.O.A.T. project aims to automate the grading and pricing of live goats using AI-based image recognition and database management. The software will:

* Capture multi-angle images of goats.
* Analyze features to assign grades.
* Store grading information in a structured database.
* Ensure minimal human interaction to improve efficiency.

#### ****1.2 Assumptions, Constraints, and Risks****

* **Budget:** Project is limited to a **$2,000 budget**.
* **Schedule:** Must be completed by **April 30, 2025**.
* **Risks:** Potential hardware procurement delays, AI accuracy, and regulatory compliance.
* **Constraints:** AI accuracy needs refinement to ensure proper grading.

#### ****1.3 Problem Statement****

Currently, **no automated grading system exists for goats** in the U.S. The project will bridge this gap, enabling **accurate, fast, and objective grading** with minimal human intervention.

#### ****1.4 Project Deliverables****

1. **Software application** with AI-based grading.
2. **SQL database** storing goat records.
3. **User-friendly interface** for processing images and retrieving goat details.
4. **Hardware integration** for multi-angle image capture.
5. **Comprehensive documentation** for installation, usage, and maintenance.

## Managerial Process Plans

#### ****2.1 Milestones****

* **Project Plan Approval:** September 23, 2024 - Approval of project scope and objectives by stakeholders.
* **SRS Completion:** September 30, 2024 - Finalization of software requirements specification detailing system functionalities.
* **Preliminary Design Approval:** October 4, 2024 - Approval of system architecture, component interactions, and high-level design.
* **Alpha Version of Software:** December 2, 2024 - While we did not have a working version last year, development is starting this year, and this milestone will focus on delivering an initial working prototype with core functionalities available for internal testing.
* **Testing and Refinements:** January - March 2025 - Iterative testing, bug fixing, and performance optimization based on user feedback.
* **Final Deployment:** April 1, 2025 - Full system release, deployment to the client’s infrastructure, and final validation.

#### ****2.2 Budget Allocation****

* **Hardware (Cameras, Computer):** $1,000
* **Software Development (Licensing, Tools):** $500
* **Testing & Deployment:** $300
* **Miscellaneous Expenses:** $200

## Work Breakdown Structure (WBS)

1. **Planning and Research** (2 weeks)
   * Define project objectives and scope.
   * Identify key system requirements and constraints.
   * Conduct market research and feasibility study.
   * Develop initial risk assessment and mitigation strategies.
2. **System Design** (2 weeks)
   * Create architectural diagrams and define system components.
   * Design database schema and establish relationships.
   * Develop initial wireframes and user flow diagrams.
   * Outline technical specifications and software stack.
3. **Software Development** (8 weeks)
   * Implement image recognition module with AI models.
   * Develop database functionalities for data storage and retrieval.
   * Create user interface for efficient system interaction.
   * Implement error handling, logging, and security features.
   * Conduct unit testing and integrate software components iteratively.
4. **Integration & Testing** (4 weeks)
   * Integrate cameras and ensure real-time image capture.
   * Conduct AI model accuracy testing and performance evaluation.
   * Perform system-wide functional and regression testing.
   * Gather user feedback and refine system performance.
5. **Deployment and Training** (2 weeks)
   * Deploy the system to the production environment.
   * Provide training sessions and documentation for end users.
   * Conduct system validation and final quality assurance.
   * Establish a post-deployment support plan for maintenance.

## Risk Management Plan

Risk management is a crucial aspect of ensuring the successful execution of the G.O.A.T. project. The following measures will be implemented to mitigate potential risks and challenges:

* **AI Model Accuracy:** Regular testing and improvements will be carried out to enhance accuracy. Training data will be continuously updated to refine the AI model, ensuring consistent and reliable grading results.
* **Hardware Compatibility:** Early procurement and testing of necessary hardware components, including cameras and computing units, will be prioritized to prevent compatibility issues. Additionally, backup equipment will be available to minimize downtime in case of failures.
* **Regulatory Compliance:** Industry regulations and legal standards will be closely monitored to ensure adherence to food safety and traceability requirements. Expert consultations will be conducted to keep the system in compliance with evolving policies.
* **Data Security:** Robust security measures, including encryption protocols and role-based access controls, will be implemented to protect sensitive breeder and grading data. Regular security audits will be conducted to identify and mitigate vulnerabilities.
* **Operational Risks:** The system will undergo extensive real-world testing before deployment to identify operational challenges. A contingency plan will be established to handle unexpected disruptions, including potential power failures, internet outages, or database corruption.
* **Stakeholder Engagement:** Regular communication with stakeholders, including farmers, processors, and regulatory bodies, will be maintained to gather feedback and make necessary adjustments to meet user expectations and compliance requirements.

By addressing these risks proactively, the G.O.A.T. project aims to ensure a smooth and efficient implementation while minimizing disruptions and maintaining system reliability.

## Configuration Management

This section outlines the strategies for managing the project's software and hardware configurations to ensure consistency, version control, and effective change management.

* **Software Repository:** The project will use GitHub as the primary version control system to track code changes, manage collaborative development, and store documentation securely. Each release version will be tagged and documented.
* **Testing Strategy:** A bi-weekly sprint-based testing approach will be followed to systematically identify and address potential issues. Unit, integration, and system tests will be conducted to ensure smooth functionality.
* **Change Requests:** Any modifications or enhancements to the system will be formally logged in a change request document. Each request will be evaluated based on its impact on performance, budget, and schedule before approval.
* **Release Management:** The software will follow an iterative development approach, with staged releases. Each release will undergo rigorous testing before being deployed into the production environment to ensure stability and reliability.
* **Software Repository:** GitHub for version control.
* **Testing Strategy:** Bi-weekly sprint-based testing.
* **Change Requests:** Logged and evaluated before implementation.
* **Release Management:** Iterative development with staged releases.

## Communication Plan

Effective communication is key to ensuring alignment among stakeholders, team members, and the sponsor. This plan outlines the primary communication channels and frequencies.

* **Bi-weekly team meetings:** These meetings will focus on progress updates, task assignments, and addressing any development roadblocks.
* **Monthly client updates:** Formal progress reports and demonstrations will be provided to Clean Chickens and Co. LLC to gather feedback and make necessary adjustments.
* **Slack & Email:** Slack will serve as the primary internal communication platform for daily coordination, while email will be used for official documentation and stakeholder updates.
* **Final Presentation & Report:** The project will conclude with a comprehensive presentation summarizing the outcomes, challenges, and future recommendations, accompanied by a detailed final report.
* **Bi-weekly team meetings** for progress tracking.
* **Monthly client updates** for feedback and adjustments.
* **Slack & Email** for internal team communication.
* **Final presentation & report** submission in April 2025.

## Project Evolution & Follow-up

After the initial deployment, the system is expected to undergo continuous monitoring and iterative improvements to enhance performance and scalability.

* **Initial Deployment:** The system will operate at **20% capacity** in its first year to monitor performance and identify potential improvements.
* **Future Expansion:** Depending on the project's success, the software may be adapted to support additional livestock, such as sheep, using similar grading methodologies.
* **Continuous Support:** A post-launch maintenance schedule will be implemented to address bug fixes, introduce new features, and refine the AI grading model based on user feedback.
* **Long-term Sustainability:** Regular software updates, hardware upgrades, and AI model enhancements will ensure that the system remains relevant and continues to meet the evolving needs of the industry.
* **Initial Deployment:** First-year system runs at **20% capacity**.
* **Future Expansion:** System may extend to **sheep and other livestock**.
* **Continuous Support:** Maintenance and AI model improvements post-launc