 

Project Initialization and Planning Phase

|  |  |
| --- | --- |
| Date | 22 June 2025 |
| Team ID | SWTID1749918275 |
| Project Name | Bulls Eye Target Detection Using Transfer Learning |
| Maximum Marks | 3 Marks |

**Define Problem Statements:**

In many real-world applications, accurate target detection is essential for performance, safety, and decision-making, yet current methods—such as manual scoring, human observation, or basic video analysis—are often slow, inconsistent, and prone to error. This challenge spans multiple domains: in military operations, real-time identification of bullseye-like targets is vital for situational awareness and strategic responses, where delays or misjudgments can have serious consequences. In sports such as archery, shooting, or darts, athletes and coaches rely on subjective scoring or delayed feedback, which limits opportunities for immediate performance improvement. In high-precision manufacturing industries like aerospace and automotive, bullseye markers are used for alignment and calibration, where any deviation can compromise product quality and lead to costly defects or recalls. An automated bullseye detection system, powered by computer vision, can address these challenges by providing fast, accurate, and objective feedback. Its integration across these sectors enhances operational efficiency, reduces human error, supports data-driven insights, and ultimately improves outcomes in environments where precision is paramount.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Problem statements** | **I am** | **I am trying to** | **But** | **Because** | **Which makes me feel** |
| PS-1 | A coach or athlete in competitive shooting sport | Improve performance by analyzing shot accuracy and consistency | I rely on manual scoring or video replay, which is slow and limited | I want objective, real-time feedback during practice or matches | Frustrated and unsure how to improve |
| PS-2 | A military surveillance operator | Accurately identify bullseye-like targets in real-time footage | Manual target recognition is time-consuming and prone to error | Quick and accurate decisions are critical for mission success | Stressed and at risk of making life-critical errors |
| PS-3 | A quality control inspector in a manufacturing plant | Ensure product alignment and calibration using visual markers | Visual inspections for bullseye markers are manual and inconsistent | Precision is crucial to prevent defective products and costly recalls | Overwhelmed and concerned about quality failures |