# SYSTEM PROJECTS & QUALITY MANAGEMENT (7173)

Project Proposal

Semester 2, 2025

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| **Student ID** | U3284513 |
| **Project Title** | Use of Surveillance and GPS to Develop Interactive Map for Wildlife Activity |
| **Tutorial Time** | Wednesday, 3:30 – 5:30pm |
| **Tutor Name** | Yasaman |
| **Number of Pages** | Alot |

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Table of Contents

[SYSTEM PROJECTS & QUALITY MANAGEMENT (7173) 1](#_Toc207751188)

[1. Project Summary 3](#_Toc207751189)

[2. Project and IT Project Management 3](#_Toc207751190)

[2.1. Problems addressed 3](#_Toc207751191)

[2.2. Project solutions 3](#_Toc207751192)

[2.3. Project domains and values 4](#_Toc207751193)

[2.4. Project and Project Management Definition 4](#_Toc207751194)

[2.5. Project and Project Management Success 4](#_Toc207751195)

[3. Project Scope and Measurable Organisational Values (MOV) 5](#_Toc207751196)

[3.1. Project scopes and out of scope 5](#_Toc207751197)

[3.2. Six steps of MOV 5](#_Toc207751198)

[1. Area of Impact 5](#_Toc207751199)

[2. Desired Value 5](#_Toc207751200)

[3. Project Metrics 5](#_Toc207751201)

[4. Timeframe 6](#_Toc207751202)

[5. MOV Verification 6](#_Toc207751203)

[6. MOV Summary 6](#_Toc207751204)

[3.3. Contributions of the MOV to the domain 6](#_Toc207751205)

[REFERENCES: 7](#_Toc207751206)

# Project Summary

Canberra faces a high percentage of wildlife – vehicle collision (WVC) and pet – related traffic incidents, with the city having the highest number of collisions out of all Australian cities (AAMI, 2022). These collisions could result in numerous damages, including but not limited to minor to serious injuries such as bleeding and broken bones, financial costs of health check up and vehicle damages, and loss of wildlife (Bissonette et al., 2008). This project proposed a hybrid solution that combines camera technology, mobile applications, GPS technology, network technology and database system for the domains of accident management of wildlife, interactive real time map and tracking and monitoring system. The proposed project aims to improve the survival rate of both wildlife and drivers and improve the response methodology for accidents. The project will begin with a pilot testing phase on the 10 busiest roads in Canberra as presented by dataACT (2020). The project aims to deliver a safer road experience for both drivers and the wildlife population, reducing the WVC incidents and raise awareness of the citizen about these incidents.

# Project and IT Project Management

## Problems addressed

* **High percentage of WVC in Canberra**: According to a report made by the ACT government, out of 5582 accidents reported in 2022, 1.45% of them is a collision with animal (ACT Government, 2022). This is an increase from the previous year of 0.94% (ACT Government, 2021).
* **Lack of detection and alert system:** Drivers and wildlife conservation authorities does not have a real time alert system to coordinate wildlife rescue efforts in the case of a WVC.

## Project solutions

The project provides the following solutions for the problem addressed above:

* Deploy animal detection system such as thermal/radar/LiDAR detection sensors (Townsend et al., 2024) that can identify wildlife movements near a road and trigger warnings in the mobile application.
* Present a platform with an interactive map that citizens can view hot spots and make reports on wildlife activities.
* Integrating alerts into traffic management systems to help authorities act on incident reports.

## Project domains and values

The proposed project spans the following domains:

* **Accident management of wildlife/pets**: Actively reducing the number WVC incidents in Canberra by having a monitoring and tracking system.
* **Interactive real-time map**: Real-time map data that displays hotspots of wildlife activity.
* Tracking and monitoring system: Camera and sensors to survey and capture wildlife activity.

Values: The project aims to reduce the risk of a WVC incident, therefore reducing the financial burden on the driver for the damage caused, increasing driver safety and awareness about wildlife movement and hotspots, and thus reducing the mortality rate of animals within WVC incidents.

## Project and Project Management Definition

Project is defined as a temporary endeavour which have a begin and end date, in this case a surveillance system with interactive real-time map to raise awareness about the wildlife activities surrounding busy roads in Canberra. The project will commence in a 2-year pilot testing period to ensure that all deliverables are up to standard and perform as expected. Project management refers to all the skills, process, resources knowledge and process that is needed to complete the project. Additionally, the project must follow the budge, follow the process of Planning, Executing and Closing (Kwak et al., 2014). In this case, the project would begin with sourcing the sensors and cameras that is to be used, development of the mapping and alert applications, programming languages such as Python and other expertise required. The project is expected to complete within 3 years and within the budget of 2 million AUD.

## Project and Project Management Success

# Project Scope and Measurable Organisational Values (MOV)

## Project scopes and out of scope

The project considers the following in the scope:

* Pilot deployments on roads with major wildlife activities
* Interactive map for citizen feedback and reports
* Alert system for drivers and authorities

The project considers the following out of scope:

* City-wide implementation beyond initial pilot testing deployment
* Maintenance of sensors and cameras
* Regulation changes regarding roads infrastructure or upgrades

## Six steps of MOV

### Area of Impact

The main focus of the proposed project is to improve the society aspect, particularly in reducing the number of WVC incidents on Canberra roads, improve the safety of drivers when participating in traffic and conserve the wildlife population and activity.

### Desired Value

The project aims to bring a safer road condition for Canberra drivers and reduce the risk of collision for animals on the road, regardless of time of day. This can be achieved with the real-time monitoring app and alert system proposed by the project.

### Project Metrics

The following metrics will be used to measure the project progress:

* Reducing the number of reported WVC incidents by at least 25% within the first 12 months of testing.
* Achieve a classification score of at least 80% during the day and 70% during the night when reporting animal activity.
* Reported at least 20% of all drivers in Canberra using the platform within the first 12 months.

### Timeframe

The project begins with the process of deciding the type of camera, sensors, cloud platform, database solutions and ML algorithms. Then we proceed to implement the necessary programs, database and classification algorithms begin the testing phase. This first phase of the project is expected to take 6 months out of the 2-year pilot testing period. The remaining 1.5 year will be used for pilot testing, which the equipment, i.e. camera and sensors, the interactive map and features will be tested and assessed based on the feedback, quality of data and the speed of transfer. The remaining year will be used to refine the system and implement said system into the hotspots on Canberra roads.

### MOV Verification

The project, it’s metrics, values, scope, timeframes and budget has been verified and approved by stakeholders.

### MOV Summary

The project is considered successful if the number of WVC incidents are reduced by 25% and the number of users reach 20% of all drivers within 2 months, and the system is to reach an accuracy in animal classification of 80% during the day and 70% during the night.

## Contributions of the MOV to the domain

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