

Table 1								
Sl. No.	Test case ID	Test scenario	Test Steps	Prerequisites if any	Test data	Expected/Intended Results	Actual Results	Test Status – Pass/Fail
1	TC001	Garbage Detection on Street	1. Fly the drone over designated street.	Pre-configured flight path for drone	Drone images of street with visible garbage	Garbage detected with >99% accuracy.	Garbage detected with 99.99% accuracy.	Pass
			2. Capture images and send data to analysis system.					
			3. Process images using TensorFlow model.					
			4. Classify detected objects.					
2	TC002	Pothole Detection on Roads	1. Drone captures images over roads.	Clear weather conditions	Drone images showing potholes	Large potholes detected accurately with classification by size.	Large potholes detected with 99.96% accuracy.	Pass
			2. Analyze images for pothole detection.					
			3. Classify detected potholes by size.					
			4. Notify concern if large potholes found.					
3	TC003	Clean Road Identification	1. Drone flies along a clean road.	Drone calibration for clear imaging	Clean road images	System recognizes clean roads without misclassification of minor objects.	Road classified as clean with 99.71% accuracy.	Pass
			2. Capture images and analyze for garbage or potholes.					
			3. Confirm classification as a clean road.					
4	TC004	Small Pothole Detection and Filtering	1. Capture images on roads with small potholes.	Weather suitable for drone flying	Images with small potholes	Small potholes detected and correctly filtered out, no notification triggered.	Small potholes detected; no notification sent.	Pass
			2. Analyze and classify potholes.					
			3. Verify that notification is not sent for small potholes					
5	TC005	Less Garbage Detection and Filtering	1. Drone flies over lightly littered street.	Minimum system processing load	Images with <25% garbage coverage	Garbage detected but falls below threshold; no notification sent to cleaning personnel.	Detected <25% garbage, no notification triggered.	Pass
			2. Analyze garbage percentage.					
			3. Confirm that notification is not sent for less garbage (<25% coverage).					