

Smart Pet Collar – Project Specification (V1)

Project Overview:

We are developing a battery-only smart pet collar for North American cats and dogs. The goal is to provide an “Apple Watch for pets” – combining GPS location tracking, cellular connectivity, and health/activity monitoring in a lightweight, rugged, waterproof device.

Category	Specification
Power	Primary AA Lithium (Energizer L91), replaceable, no charging
Radios	LTE-M / NB-IoT + GNSS + BLE (setup & nearby finding)
Sensors	IMU (motion, steps), Temperature sensor
Size/Weight	≤ 45 g total; compact, chew-resistant, comfortable for 24/7 wear
Enclosure	IP67 sealed, quarter-turn battery door with O-ring
Operating Modes	Idle, Active, Lost, Battery-Saver (alerts at 20%, 10%, 5%)
Battery Life	Standard mode: 4–6+ weeks; Saver mode: 1–3 months; Lost mode: 8–12 hours
Firmware	MQTT over TLS, OTA updates, low-power state machine
Cloud/App	AWS IoT Core (or similar), iOS/Android app for live map, geofence, health data, battery alerts
Certifications	FCC, ISED (Canada), PTCRB, carrier approval (AT&T, Rogers, Bell, TELUS)

Next-Step Milestones:

- EVT (20–50 units) – functional prototypes for field testing
- DVT (100–300 units) – validation with tooled plastics
- PVT (500–1,000 units) – production validation run
- FCC/ISED/PTCRB certification