Stationary Greeter Robot — One-Page Spec Sheet (v0.1)

Owner: Stephen Perelgut | Date: 2025-10-15 | Status: Draft

# Product Snapshot

Desktop, non-mobile greeter for reception areas. Detects when a visitor approaches (1–2 m zone), greets politely, optionally recognizes enrolled individuals by name (opt-in with consent), and supports rapid handoff to a human via a companion app (BLE/Wi-Fi) with live view and push-to-talk. On-device perception for privacy and low latency.

# Key Features

* Approach detection via camera + auxiliary ToF/mmWave presence sensor
* On-device person detection; optional consent-based face recognition
* Clear audio I/O (mic array, speaker), visual status cues, optional small display
* Companion app: live view, push-to-talk, greet/handoff, enrollment, logs/export
* Local encrypted storage (SQLite); no cloud by default

# MVP Requirements (Targets)

|  |  |
| --- | --- |
| **Area of Measure** | **Target** |
| Approach detection | 98% entry detection; 1 false trigger/hour |
| Person detection | 95% recall in typical lobby lighting; 1 spurious greet/hour |
| Recognition (opt-in) | 95% top-1 with 2 enrollment images/person |
| Latency | DetectGreet < 500 ms; Handoff < 1.0 s |
| Uptime | Operates full 8-hour shift; 20 s power-cycle recovery |
| Privacy | Consent captured; one-click deletion; local-only by default |

**Hardware & Software Snapshot**

* Compute: Raspberry Pi 5 (+ Edge TPU optional) or Jetson Orin Nano
* Sensing: 1080p RGB + compact depth/ToF; ToF/mmWave presence
* Audio/UI: 2-mic array; 3–5 W speaker; status LEDs; optional 7–10" display
* Power/Enclosure: Single AC adapter; optional UPS HAT; desk-safe enclosure
* Runtime: Ubuntu 22.04; lightweight ROS2 or services; YOLO/MediaPipe; ArcFace/FaceNet-style embeddings; Whisper/Vosk; Flutter app

# Timeline & Budget (Indicative)

MVP 5–7 weeks: bring-up  approach/detect  enrollment/handoff  hardening & demo. Prototype BOM one-off: approximately CAD ~$400–$1,000 depending on compute and display choices.

# Compliance, Privacy & Safety Notes

Consent-first enrollment; signage with QR to policy; encryption at rest; admin PIN; audit logs. Stable enclosure, acoustic limits, LED pre-cues, thermal management.