Milestone 1

REMOTELY CONTROLLED CAR VIA LTE OR WI-FI

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Overview

- Project: Remotely Controlled Car via LTE or Wi-Fi
- Milestone 1 focuses on tool investigation, initial demos, requirements, and design
- Built Electron + JavaScript UI demo with latency/time-to-display metrics
- Made UDP client and server connection

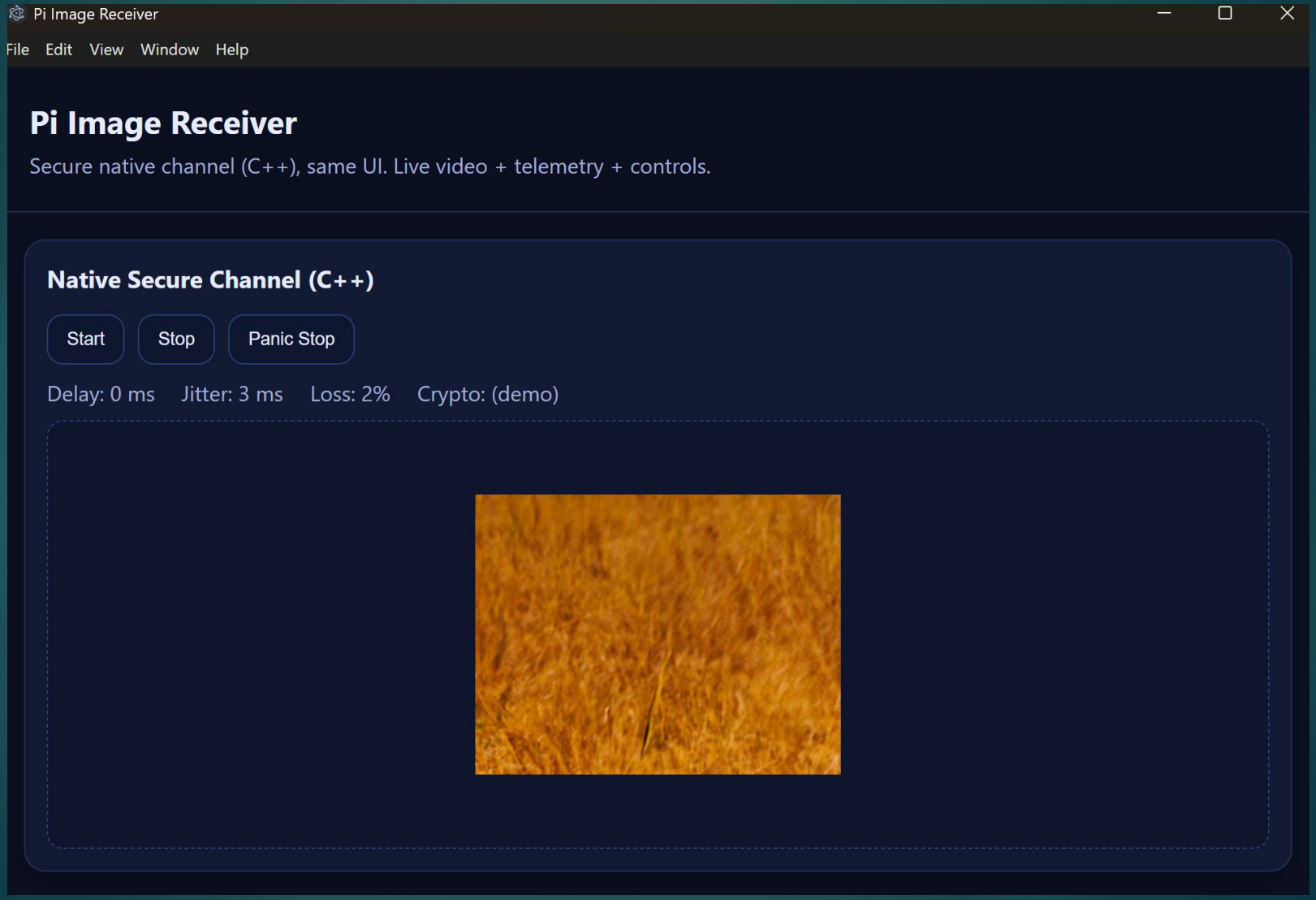
Progress Matrix

Task	Completion %	To Do
Investigate tools	100%	none
Hello World demos	100%	none
Requirement Document	100%	none
Design Document	90%	Finalize Designs and add missing diagrams

Accomplished Tasks

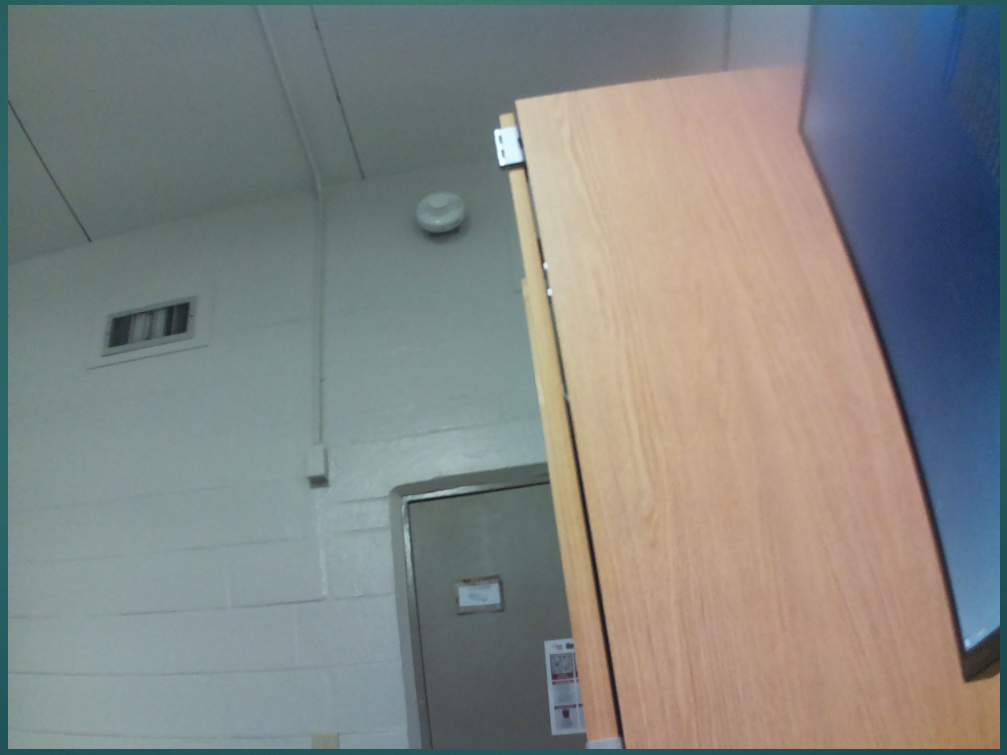
- Investigated tools: Electron + JS chosen for UI
- Hello World demos for UDP and UI
- Requirement document completed
- Draft design document created
- Built Electron + JS demo showing latency, jitter, loss, and image-display delay

UI Demo


Pi Image Receiver
File Edit View Window Help
Pi Image Receiver
Secure native channel (C++), same UI. Live video + telemetry + controls.
Native Secure Channel (C++)
Start
Stop
Panic Stop
Delay: 0 ms
Jitter: 3 ms
Loss: 2%
Crypto: (demo)

UDP and Camera Demo

```
nicks@raspberrypi:~/Server $ ./Server
Client : 1819043144
hello
Sent: Hello, UDP server!
Received: hello
```



Team Contributions

- Christian Prieto: Video capture tests
- Joseph Digafe: Electron UI demo
- Nicholas Shenk: ESP32 UDP sender
- Donoven Nicolas: Windows UDP harness

Plan for Next Milestone

- Implement secure channel (crypto integration, replay protection)
- Expand UI with live video and controls
- Test control loop, dead-man stop
- Improve telemetry (latency, jitter, bitrate)
- Plan failover (LTE/Wi-Fi)

Meetings & Feedback

- Advisor meeting: Sep 02, oct 1, 2025 + follow-ups
- Feedback: Improvement to JPEG is too hard for this project. Better some parallelization, requirements adequate, design draft solid