**SYSTEM\_JERICHO**

**Subsystem: SYS\_SURVEILLANCE\_CAM**

**Version: 1.0.2**

**📁 Folder Structure**

SYSTEM\_JERICHO/

├── src/

│ └── sys\_surveillance\_cam/

│ ├── \_\_init\_\_.py

│ ├── main.py # Entry point for launching all camera configs

│ ├── router.py # Optional API endpoints (future dashboard/API hook)

│ ├── exceptions.py # Subsystem-specific exception classes

│ ├── constants.py # Codec constants, path templates, thresholds

│ ├── schema.py # (Optional) Pydantic/YAML schema validators

│ ├── src/ # Core logic components

│ │ ├── camera.py # Camera capture thread and controller

│ │ ├── config\_loader.py # Validates and loads YAML camera configs

│ │ ├── event\_logger.py # Event logging as JSON for alerts

│ │ └── utils.py # UUID, timestamps, safe paths

│ ├── movement\_detection/ # Motion detection logic

│ │ └── motion\_detector.py # Frame differencing and movement analysis

│ └── cam\_control/ # Webcam control, drivers, audits

│ ├── video\_writer.py # Handles dynamic MP4 video writing

│ └── camera\_driver.py # (Optional) abstraction over OpenCV or OS-level control

├── config/

│ └── sys\_surveillance\_cam/

│ ├── camera1.yaml

│ └── camera2.yaml

├── data/

│ └── sys\_surveillance\_cam/

│ ├── recordings/<camera\_id>/<YYYY-MM-DD>/motion\_<HH-MM-SS>.mp4

│ ├── events/<camera\_id>/event\_<YYYY-MM-DD>\_<HH-MM-SS>.json

│ └── logs/<camera\_id>/surveillance.log

├── scripts/

│ └── sys\_surveillance\_cam/

│ ├── disable\_device\_windows.py

│ ├── enable\_device\_windows.py

│ ├── disable\_device\_linux.py

│ ├── enable\_device\_linux.py

│ └── audit\_camera\_processes.py

├── tests/

│ └── sys\_surveillance\_cam/

│ ├── test\_utils.py

│ ├── test\_motion\_detector.py

│ ├── test\_event\_logger.py

│ ├── test\_config\_loader.py

│ └── test\_camera.py

└── utilities/

├── logging\_setup.py

├── notification\_client.py

└── deployment\_helpers.py

**🔧 Modules**

**main.py**

Entry point. Discovers camera configs and spawns threads.

**camera.py**

Captures frames, detects motion, writes video, logs events.

**motion\_detector.py**

Frame differencing-based motion detection with Gaussian blur.

**video\_writer.py**

Encapsulated OpenCV video writer with .mp4 output.

**event\_logger.py**

Logs events as structured JSON for downstream systems.

**config\_loader.py**

Loads YAML configs. Validates schema. Raises on error.

**utils.py**

Helpers: ISO timestamps, UUID, safe path joins.

**exceptions.py**

Custom error types like CameraLoadError, InvalidConfigError, etc.

**constants.py**

Centralized settings: default codec, directory structures, FPS range.

**router.py**

Optional: can expose FastAPI endpoints (future monitoring dashboard).

**schema.py**

(Optional) Pydantic models for strict config and event validation.

**🧾 YAML Camera Config**

Each camera has a dedicated YAML:

camera\_id: "camera1"

source: 0

frame\_width: 1280

frame\_height: 720

fps: 20

codec: "mp4v"

**🛠️ Scripts**

**disable\_device\_windows.py / enable\_device\_windows.py**

Uses pnputil to toggle webcam at Windows driver level.

**disable\_device\_linux.py / enable\_device\_linux.py**

Uses modprobe to remove/reinsert webcam kernel module.

**audit\_camera\_processes.py**

Audits /dev/video\* or uses handle.exe on Windows. Outputs to data/audit/.

**✅ Compliance Checklist**

| **Feature** | **Status** |
| --- | --- |
| JerichoFormat | ✅ |
| Rotating Loguru logs | ✅ |
| ISO 8601 timestamps | ✅ |
| YAML + Schema Validation | ✅ |
| Modular components | ✅ |
| Event JSON export | ✅ |
| System Control Scripts | ✅ |

**📤 Integration Ready**

This subsystem can now:

* Send events to SYS\_ENCRYPTED\_NOTIFICATION
* Be watched by SYS\_WATCHDOG
* Feed honeypot context to SYS\_HONEYPOT

**📥 To Regenerate**

Use the command:

SubsysDocPDF++ SYS\_SURVEILLANCE\_CAM

To regenerate this PDF from any chat.

Generated by SYSTEM\_JERICHO — Powered by CarWant++, OmniSync, SovereignPurge, and MemoryWeave protocols.