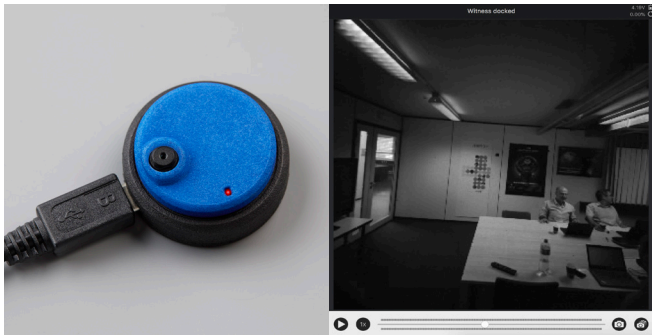# Witness

Autonomous surveillance recorder

WITNESS is an autonomous image logger that can record pictures based on scene activity detection. Deployed in the field like a sticker, it is powered by a flexible, adhesive PV-cell, which can wirelessly transmit information.

The camera functionality is embedded into a thin coin which is magnetically attached to the PV-cell during installation for ease of deployment. The activity detection and image capture are performed with a maximal frame-rate of 1 fps with a power budget close to 1 mW. The variable power from the solar cell is buffered internally to provide multiple hours of operations in darker condition.

The WITNESS camera architecture leverages an ERGO CMOS imager which captures pictures with extremely low power budgets, while reducing component costs- a constrain of many different IoT devices.

Features

- Resolution: QVGA (320 x 320 px) monochrome (VGA coming soon)
- Dynamic range: 120 dB intra-scene
- Wide angle field-of-view (107°)
- Custom MJPEG compression
- 64 M-bit flash storage
- Ultra-low power wireless communication
- Power consumption at 1 fps: 1 mW
- Flexible solar cell (2.5 mW **@** 1 kLux)
- USB cradle and GUI for images collection and storage in AVI format

Witness coin on dock (left) and app running on a computer (right)

The ultra-low power wireless protocol enables the camera to transmit processed and synthetized information from the captured scene, such as: event detection, people counting or a single compressed image.

Applications

- Quick to deploy unattended surveillance
    - Crime scene
    - Vacant premises check
- Camera trap
- Wildlife observation

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