

Proposal: Automatic Bodycam Activation for Enhanced Law Enforcement Accountability

Background Scenario:

In recent incidents, we had a case in Germany where policeman shot a person who finally died. Since the body cam was not activated, it is difficult to prove that the person has utilized a knife or not as the policeman reported.

In Germany, bodycams are not mandated to remain active at all times, and activation depends on individual officers' judgment. Now, the government is thinking about technical solutions that ensure critical events are reliably recorded, even if manual activation is missed.

Zepcam would probably be the first company that provides such a function, and this would further help to kickstart the project and help to improve our market presence.

Situations:

- Bodycams deployed in the field are often intentionally or unintentionally kept off to preserve battery and storage. In this state, if a threat or critical event occurs suddenly—such as a confrontation involving a weapon or distress—**it may not be captured unless the officer manually activates the camera!**
- In high-stress situations, officers may not be able to manually activate the bodycam while drawing a firearm. As a result, key moments are missed, reducing the reliability of video evidence. Automatically triggering recording when a weapon is drawn would ensure coverage of such incidents.

Rapidise Proposed Solution:

Integrating a Low-Power (Sleep) Mode in the BodyCam rather than a Switch Off function, this will ensure the devices deployed in the field, records in time-lapse mode preserving the Battery until the Start button is pressed or below triggers are activated (A pre-buffered duration (e.g., last 30–60 seconds) will also be saved to preserve context before the trigger event):

- **Solution 1: AI Based Activation:**

- Onboard AI algorithms that run continuously to detect high-risk events and automatically trigger full-resolution recording, including saving pre-event time laps footage for context.

- **Solution 2 Hardware Based Activation:**

- A Hardware based approach is also possible where a Reed Switch will be custom developed to retrofit in the Gun holsters whenever the Gun is drawn the switch will get activated and accordingly it will signal the body camera to start recording in full resolution and framerate. (The Reed Switch can be Wired or Wireless that can be discussed separately).

Solution 1: AI-Based Automatic Activation

The Algorithms include:

- **Gun/Gunshot Detection:** Detects both visual cues (weapon presence) and acoustic signatures (gunshots).
 - Ref-Gun Detection Video: <https://youtu.be/le8t1SAZKpE?si=9oHYd0XjhBzT88w4>
 - Ref-Gun Shot Detection Video: <https://youtu.be/le8t1SAZKpE?si=9oHYd0XjhBzT88w4>
- **Knife Detection:** Uses visual processing to identify bladed weapons.
 - Can be Custom Developed.
- **Violence Detection:** Identifies elevated violence indicative of conflict.
 - Ref-Video: https://youtu.be/tys6lj3oHkg?si=2Sh4tcvOl_5zvE05
- **Help/Distress Detection:** Recognizes specific keywords or tonal patterns such as "Help", "Stop", etc.
 - Video Can be arranged shortly.

When such a trigger is detected:

- The bodycam switches from sleep/timelapse mode to full-resolution recording.
- A pre-buffered duration (e.g., last 30–60 seconds) is saved to preserve context before the trigger event.
- Full audio-video recording continues until manually stopped or based on predefined logic.

Benefits

- No hardware modification required; deployable on current systems.
- Enables proactive and intelligent recording without officer intervention.
- Enhances evidentiary quality and contextual recording.
- Strong differentiation in competitive bodycam market.
- Reduces Heating of the Devices resulting Saving the Battery

Solution 2: Hardware-Based Trigger Activation

Reed Switch Integration: Push-Button Strap Integrated Reed Switch:

- The Reed Switch is embedded in or affixed to the push-button strap of the holster—commonly used to secure the firearm.
- When the strap is released, the switch is triggered and sends a signal to the body camera.
- On detection of firearm access, the body camera instantly switches from Low-Power Time-lapse Mode to full-resolution recording.
- A pre-buffered clip (e.g., 30–60 seconds) of the footage before the event is also saved, preserving the lead-up context.

Connection Options:

- The Reed Switch system can use either wired or wireless (BLE/RF) communication, depending on deployment feasibility.
- Wireless connectivity enables easy retrofit into current setups without modifying the camera or uniform layout.

Benefits

- Hands-Free Activation: Ensures automatic camera triggering as soon as a weapon is drawn—no action needed from the officer.
- Utilizes Existing Mechanism: Leverages the existing push-button strap, avoiding the need for specialized holster redesign.
- Enhanced Evidence Collection: Captures video from the moment of threat emergence, with both pre-event and real-time footage.
- Customizable & Scalable: Adaptable to different holster designs and firearm models.
- Energy Efficient: Works in tandem with Low-Power Mode to optimize battery life while maintaining readiness.

Optional Dual-Layer Safety:

- This solution can complement AI-Based Detection (Solution 1), enabling a hybrid system that ensures footage is captured both by environmental triggers (e.g., shouting, gunshot) and by direct firearm access (Holster Strap Attached ReedSwitch).