Kinesense

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Smarter Video Evidence Investigations

CCTV evidence is one of the fastest growing evidence sources.

- **64% of cases involve CCTV**
- **74% of CCTV evidence comes from private sources**
- **Up to 95% time and cost reductions can be achieved**

Police forces today are particularly concerned with increased efficiency, collaborative working and reducing crime.

Video evidence is one key area where Police agencies can make significant changes by introducing smart technologies to deliver effective crime prevention, detection and prosecution. Video evidence is used every day in major crime investigations, surveillance operations, and to prosecute and convict criminals in petty crime situations. In the UK it is estimated that CCTV is used in over 75% of Major investigations and in over 64% of all cases [(1)]. CCTV is an increasingly valuable source of evidence but the time and effort required to retrieve, view, analyse and report on video footage as evidence, can be a huge drain on resources.

Using a robust video evidence management strategy that incorporates **Kinesense's** smart video technology across your entire organization can help overcome the issues with video evidence, save up to 95% of back office reviewing time and ensure collaborative working whilst maintaining the chain of evidence. The result is solving more crimes and convicting criminals quickly with fewer resources.

Four reasons your CCTV evidence costs more than it needs to:

- Trying to get different formats into a viewable format
- Transferring and sharing video across the organization
- Manually searching and sifting through footage to find key events
- Preparing intelligence, court, and disclosure reports

How much does video evidence cost your organization every year?

CCTV investigations typically encompass three stages; retrieval, reviewing and reporting of video evidence. The main cost during video investigations is the time spent watching and sifting through hours of CCTV. In some departments, the viewing of footage takes so much time that it's being outsourced to private organizations at expensive contract rates. Intelligence, court and disclosure reporting are also time intensive and it can take video specialists and senior investigating officers' days if not weeks to prepare reports. The retrieval process can require specialist retrieval teams in order to ensure evidence is collected quickly. Other often hidden costs include the drive time associated with transferring video evidence from one location to another, evidence handling processes and so on.

Video footage from the estimated 1.85 million CCTV cameras in the UK, highlights it is used in 64% of the 3.9 million criminal cases annually[1] [2] That's 2.5 million cases using CCTV evidence, making video vital to everyday police work.

However, few law enforcement agencies collect data on how long this all takes, and therefore how much it costs them every year. Our conservative estimate for the UK puts the total amount of time spent by officers watching CCTV evidence at around 39 million man hours across 43 police forces. That's if we estimate that officers spend about two hours per week viewing video evidence. At a basic rate of pay, this brings the lowest estimate of the cost to £1.17 billion every year.

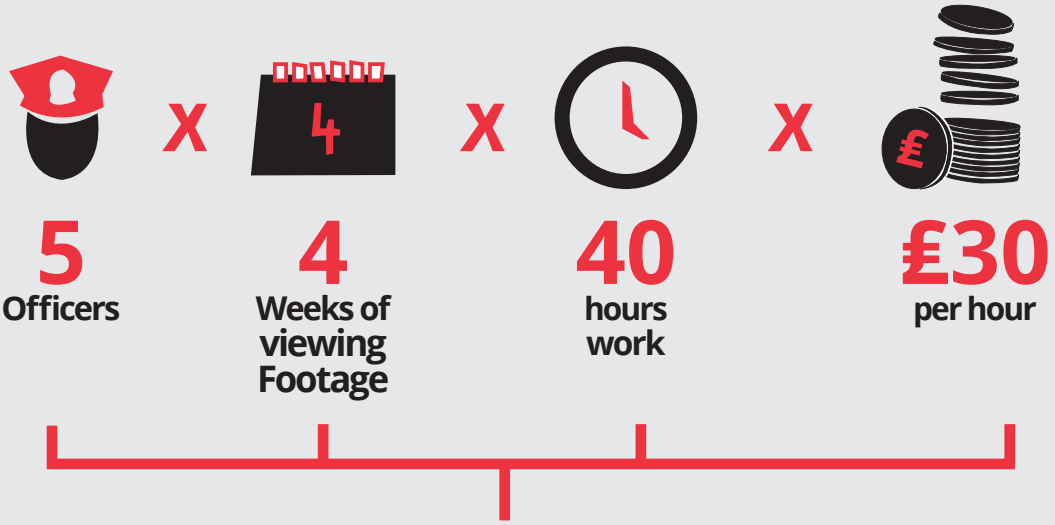
Each type of case has a different set of retrieval, review, and reporting challenges and will vary in costs. Using an organization-wide solution to manage CCTV evidence can help you collect information about CCTV evidence processing. It can help you plan resource allocation and staffing and understand the usefullness and cost of CCTV investigations. Furthermore, by implementing a smart video evidence management technology that helps automate reviewing and reporting, significant cost reductions can be achieved.

Major crimes

It is estimated that CCTV is used in the majority of Major Investigations such as murders, kidnappings, robberies etc. It is used to verify witness, suspect and victim movements over extensive time periods. This means that video may have to be collected from hundreds of cameras that result in thousands of hours of video to retrieve, review and report on. Even more complicated, each camera might be owned and operated by a different private organization or individual. In the UK, around 74% of the footage used comes from third-party or privately owned cameras [3]. This means significant effort goes into retrieving video from different proprietary systems often requiring specialist retrieval units. The volume of CCTV collected in Major investigations and the technical difficulties mean that actually watching and reviewing CCTV gets substantially delayed while the organization focuses in on actually retrieving it.

Using **Kinesense's** smart video technology, different proprietary formats can be converted into a viewable video and shared quickly. At the same time, our intelligent video algorithms categorize events with in video, ensuring that investigators get to the events that matter fast. Objects and events are classified by colour, type and direction of movement. Investigators can search video by creating filters, highlighting only the desired events.

Specialist retrieval officers, investigators and everyone who is involved in Major investigations can collaborate together quicker using a shared intelligent technology platform. Finding key video evidence quicker means crimes are solved faster.



Covert Surveillance Operations

Surveillance operations produce a vast amount of video which needs to be watched. A week-long surveillance investigation, will generate between 168 (1 camera, 24/7) and 504 (3 cameras 24/7) hours of footage. Few officers can watch footage for an entire shift and remain effective. Investigators tired quickly, and can begin to miss events after only 22 minutes of viewing something on a screen [4]. Using **Kinesense's** search technology events are automatically highlighted to investigators and results in greater actionable intelligence at significantly reduced cost.

One operative manually reviewing 504 hours of surveillance footage would cost over £15,000 (at £30 an hour). Using **Kinesense's** search filters means that operatives are alerted only when something of interest is happening, freeing them up to do other tasks. Intelligence reporting is also made easier and faster. The ability to tag suspects and events as you watch video helps automate reporting and has the added advantage of being shared quickly with team members.

£24,000
cost

Volume crime

Hundreds of thousands of petty crimes take place every year, and many of them are caught on private camera. One of the most time-consuming challenges for officers in volume crime is dealing with the various different formats, getting them into a viewable format so they can be shared quickly with colleagues whilst ensuring the chain of evidence.

The easier it is to retrieve and share a relevant video clip, the more likely investigators are to elicit a guilty plea while a suspect is still in the custody suite. Getting video into a viewable format quickly and shared between colleagues not only means increased conviction rates but reduced costs. One **Kinesense** customer estimates that they spend at least £40,000 a year on petrol transporting the video evidence from the crime scene to the custody suite. By using network solutions that facilitate video transfer, costs can be significantly reduced and conviction rates increased.

Better policing at less cost

Smart technologies deployed across organizations make actionable intelligence into part of an efficient path from camera to courtroom prosecution. Developing a video evidence strategy on a smart IT platform across an organization can help security organizations provide the services the public deserves.

Kinesense has a range of solutions that help law enforcement agencies manage video evidence quickly, easily, and securely. Our video evidence management suite encompasses tools for CCTV retrieval, search and reporting.

Kinesense products are based on our own video processing algorithms, which eliminates much of the time normally spent sifting through video to look for key events. Our algorithms search for the key events investigators want to find. It works much like an internet search engine. When a user searches Google, for example, its servers don't run and find everything that matches that search term. The servers actually run continually. They send what are called "spiders" to search relevant pieces of content, indexing key terms all the time and storing them on its own servers. This means that when you search, Google's "spiders" quickly find sites that match the words and phrases you typed because those terms are already indexed.

Video content can be analyzed in a similar way, except with visual elements rather than text and code. When the software reads the video, it indexes objects and events by colour, shape and direction of movement. When a user searches by creating a visual filter, the software calls up what has already been detected as it indexed the footage, and shows only the desired events. It enables investigators to save up to 95% of time on investigations involving CCTV footage, reducing costs and freeing up staff resources.

We develop each product to meet needs identified by our customers, so that every tool in our **Kinesense** product range solves real problems. Our products can be used by individual teams or deployed across your organization. Using **Kinesense** across your organisation means that valuable management data on time spent processing video evidence can be captured, helping to identify trends, patterns and costs over time. When you run video evidence through a **Kinesense** product, the software tracks the time spent importing and watching video and making reports. All of this information is gathered on a central server, which compiles everything you need to understand the time and resources being put toward video evidence processing.

Management can view this on a secure dashboard, and create reports that help organizations to better understand their current resource allocation, and build a solid business case for future projects.

You can select to see:

- **No. of hours of CCTV evidence being processed per case**
- **Total time spent viewing video**
- **Number of reports made on video evidence**
- **Video evidence organized by case type**
- **Case audit trials**

Individual **Kinesense** products can help save time and money while processing and preparing CCTV evidence, but using **Kinesense** across an entire organization also helps inter-organization collaboration and crime convictions.

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[1] Pers comm: Lothian and Borders Police, Cheshire Police

[2] Police Recorded Crime Home Office. 2011/12, South Wales, United Kingdom.

[3] Pers comm: Cheshire Police

[4] Green, M. 1999. The Appropriate and Effective use of Security Technologies in U.S. Schools. National Institute of Justice. https://www.ncjrs.gov/school/178265.pdf