

How to handle an ever-growing
abundance of digital evidence

7 COMMON CHALLENGES & SOLUTIONS

DIGITAL EVIDENCE MANAGEMENT



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INTRODUCTION

The explosion of digital evidence

Today, police forces are adopting new tools for surveillance to gather evidence. From CCTV systems on-site to the use of body-worn cameras, drones, biometrics, and more – the amount of digital evidence is increasing. Since almost everyone has the capability to capture photos and videos using mobile phones, crowdsourced evidence has also had a significant impact on crime investigations.

In addition, police forces have increasingly begun to digitize records to make information more searchable, auditable, and reliable, while reducing the administrative burden and reducing the workload on officers. Further, the use of digital evidence has significantly increased in the past few decades since the courts started accepting most digital files as evidence. As the amount of digital evidence grows enormously, many law enforcement agencies face a variety of complex issues managing it.

One of the biggest issues of the abundance of digital evidence concerns the security associated with the sharing of this data. A recent study on criminal justice by the EU* stated that stakeholders participating in the criminal justice system need to securely communicate and exchange information via digital means.

This calls for solutions to allow stakeholders to communicate in a secure way, including sending and receiving sensitive and confidential data.

The study stated that “the lack of appropriate tools in cross-border cooperation can raise significant risks, such as shared information is incomplete, or not updated; time is lost; data may be transmitted in an unsecured way; links between cases are not identified, and conflicts of jurisdiction are not detected or solved on time. The recent COVID-19 crisis and its impact on judicial cooperation in criminal matters has endorsed the need for further digitalization of justice and has increased the need for immediate reaction and change.”

Based on the information provided by the EU, most of the experienced issues could be easily overcome through the availability of appropriate digital tools, thereby allowing most of the cooperation to continue as normal.

In this eBook, we take a closer look at seven common challenges experienced throughout the lifecycle of digital evidence - from the time of capture and initial transfer to the management and sharing aspect - and examine how a Digital Evidence Management solution can help to solve them.

SOURCE: "[Study on digital criminal justice](#)" by the Justice and Home Affairs Council, September 2020

What is digital evidence?

Digital evidence is any information stored or transmitted in digital form as part of a criminal investigation. Types of digital evidence include, but are not limited to:

- **IMAGES:** crime-scene photography, fingerprints, mugshots, suspect sketches, screenshots of emails, or text messages.
- **VIDEO:** video camera footage, body-worn camera footage,
- **CCTV:** stills & clips, drone footage, footage from dashcams in private and commercial vehicles, computer screen recordings.
- **AUDIO:** confidential informant recordings, recorded witness statements, and confessions, telephone intercepts, voicemail, and 911 calls.
- **TEXT:** Word processing documents, emails, text messages, and chat logs.

Other data: ATM transaction logs, spreadsheets, internet browser history, computer memory, and storage contents, computer backups, and geolocation data.



Photo by Gorodenkoff Productions OU

What is Digital Evidence Management?

Digital Evidence Management (DEM) is the process of storing, finding, and handling files pertaining to an investigation, as well as the ability to share these files with relevant staff and stakeholders, both internally and externally. A Digital Evidence Management solution facilitates this by providing a highly secure system for police forces and other law enforcement and government agencies to handle digital evidence files reliably and efficiently.

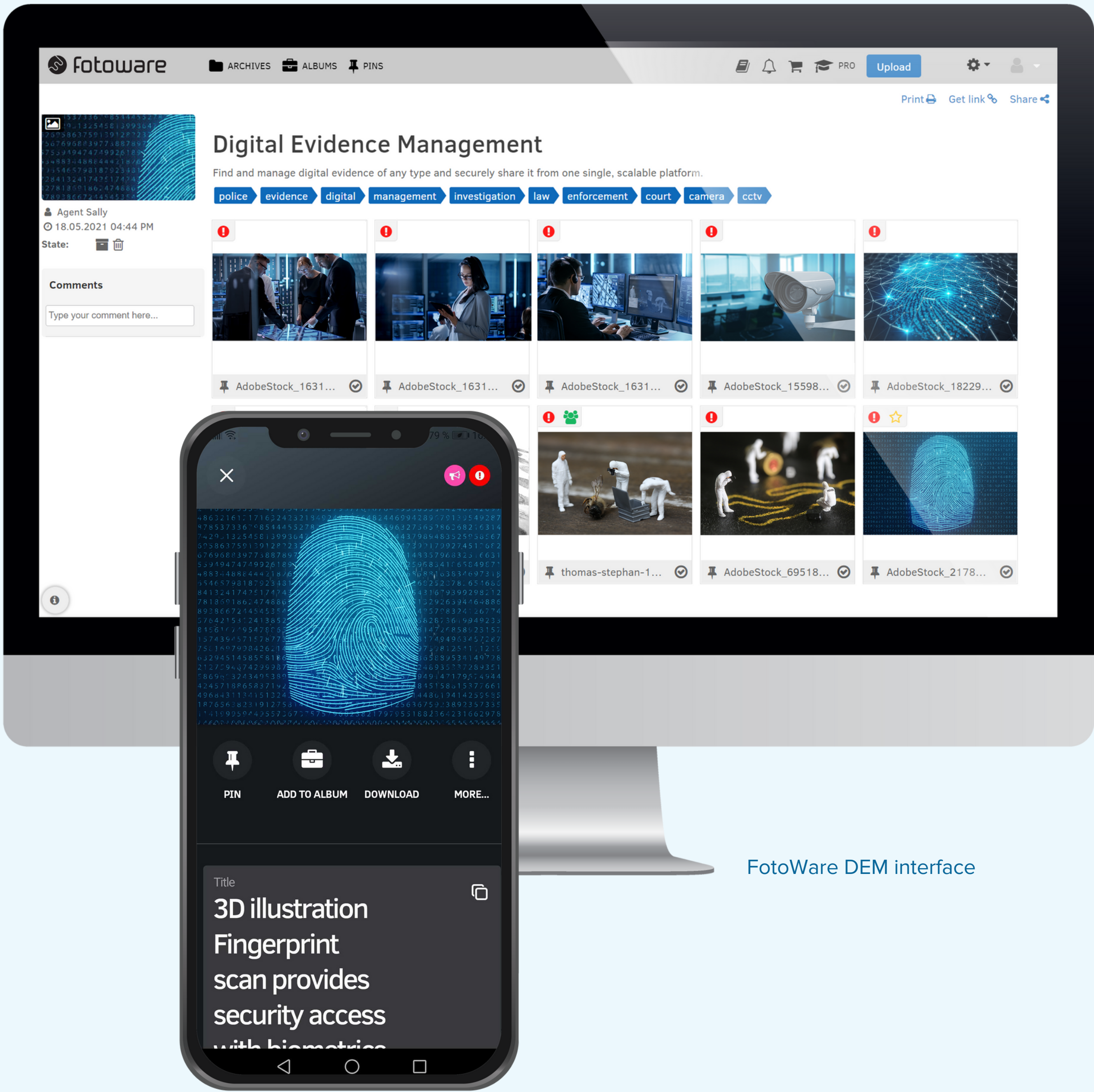


With a CAGR of 8.0% in the forecast period of 2021 to 2025, Digital Evidence Management Market Size is expected to reach USD 5081.2 million by 2025, from USD 3730.6 million in 2019.

SOURCE: "Digital Evidence Management Market" by 360 Research Reports, 2021

Successful investigations rely on an investigator's ability to connect the dots between many different types of digital evidence.

Digital Evidence Management solutions enable law enforcement to manage a large volume of media files in one place and process these files from A (initial capture and documentation) to Z (presenting the evidence in court).



FotoWare DEM interface

7

KEY CHALLENGES OF HANDLING DIGITAL EVIDENCE

1



Collection

2



Preservation

3



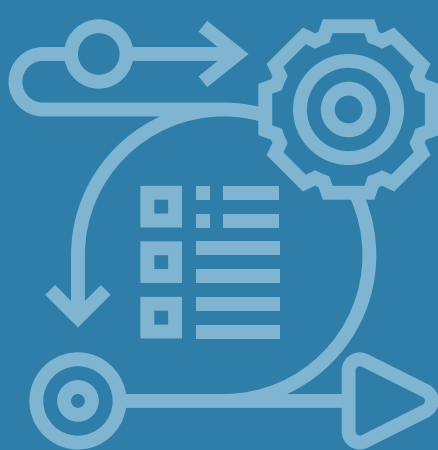
Search & analysis

4



Sharing & collaboration

5



Workflow

6



Integration & APIs

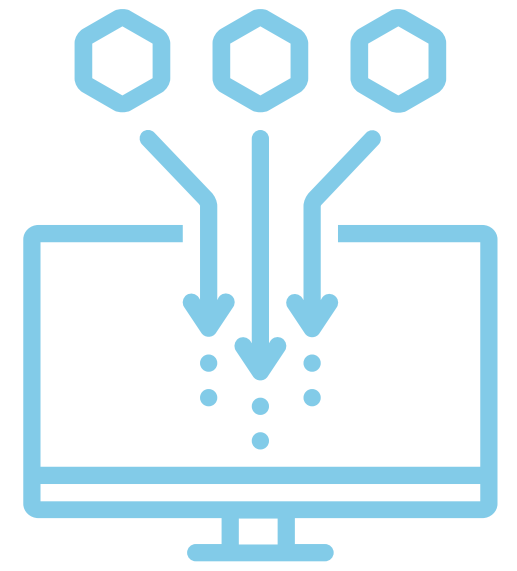
7



Security

CHALLENGE 1. Collection

The process of gathering and uploading evidence is complicated and time-consuming.



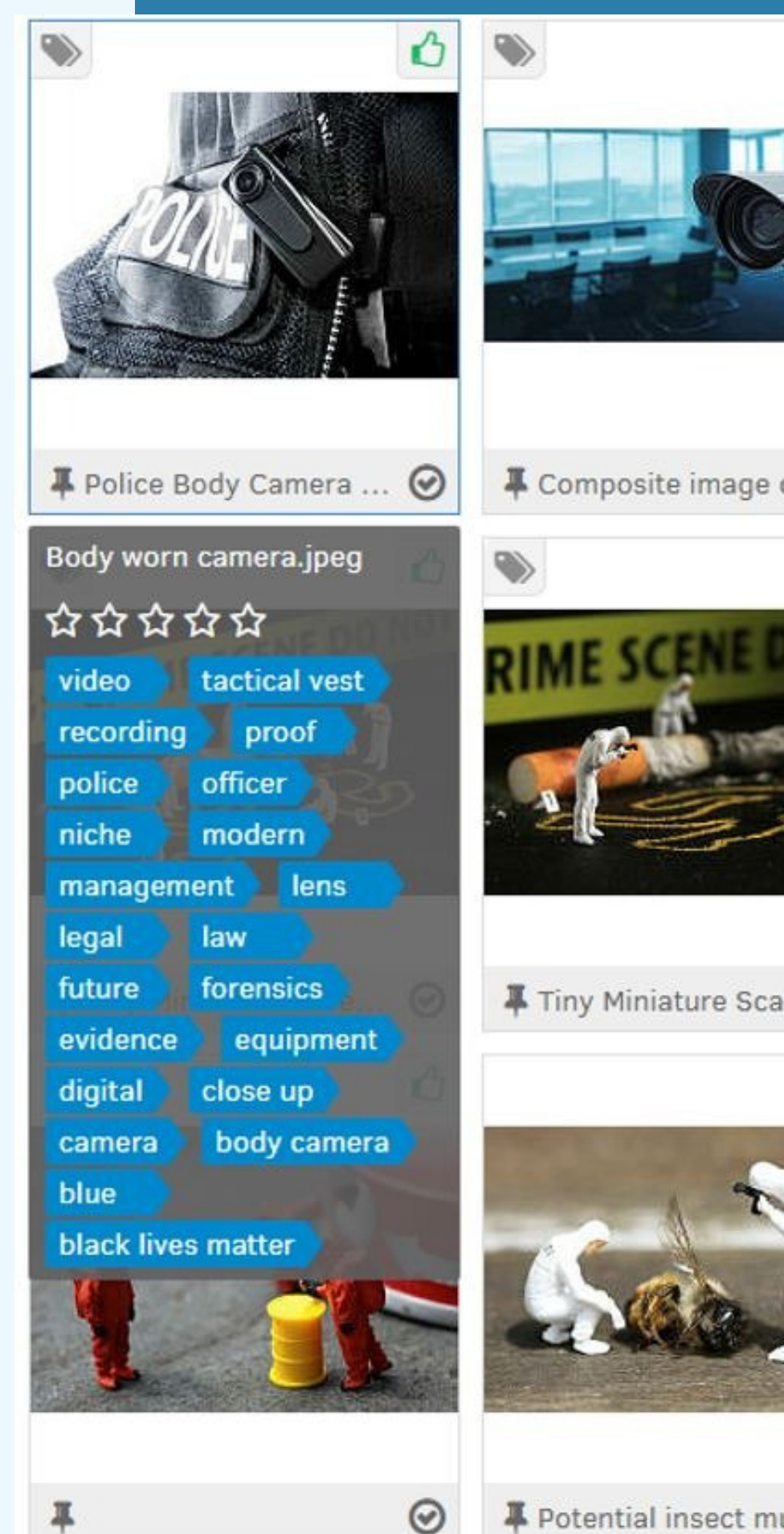
Evidence data is being gathered from CCTV, forensics, biometrics, wearables, Internet of Things devices (IoT), and even social media. Digital evidence is no longer limited to documents, photos, and videos.

With the increase of different sources and file formats, effective data entry and ingestion from various sources are key to the investigation process.

FotoWare's Digital Evidence Management system enables users to upload evidence directly to the system using a mobile, tablet, or desktop device.

When uploading files, you can tag them with important information with defined metadata fields to ensure that standard procedures are followed when uploading.

Metadata is key to making all this work. FotoWare allows you to extract data from different systems and streamlining the input process. By doing so, you can reduce the amount of data input by each user, and ensure the data being input is correct at the same time.



The FotoWare Mobile App also allows police forces to directly upload evidence on-site to a secured centralized location with essential metadata. With the app, officers no longer have to wait until they are logged onto a computer to upload pictures and videos. Instead of storing important files on their devices, they can now upload all files immediately, add them to the correct archive, and safely store them within the department's DEM system.

All information can be added and edited on the go.

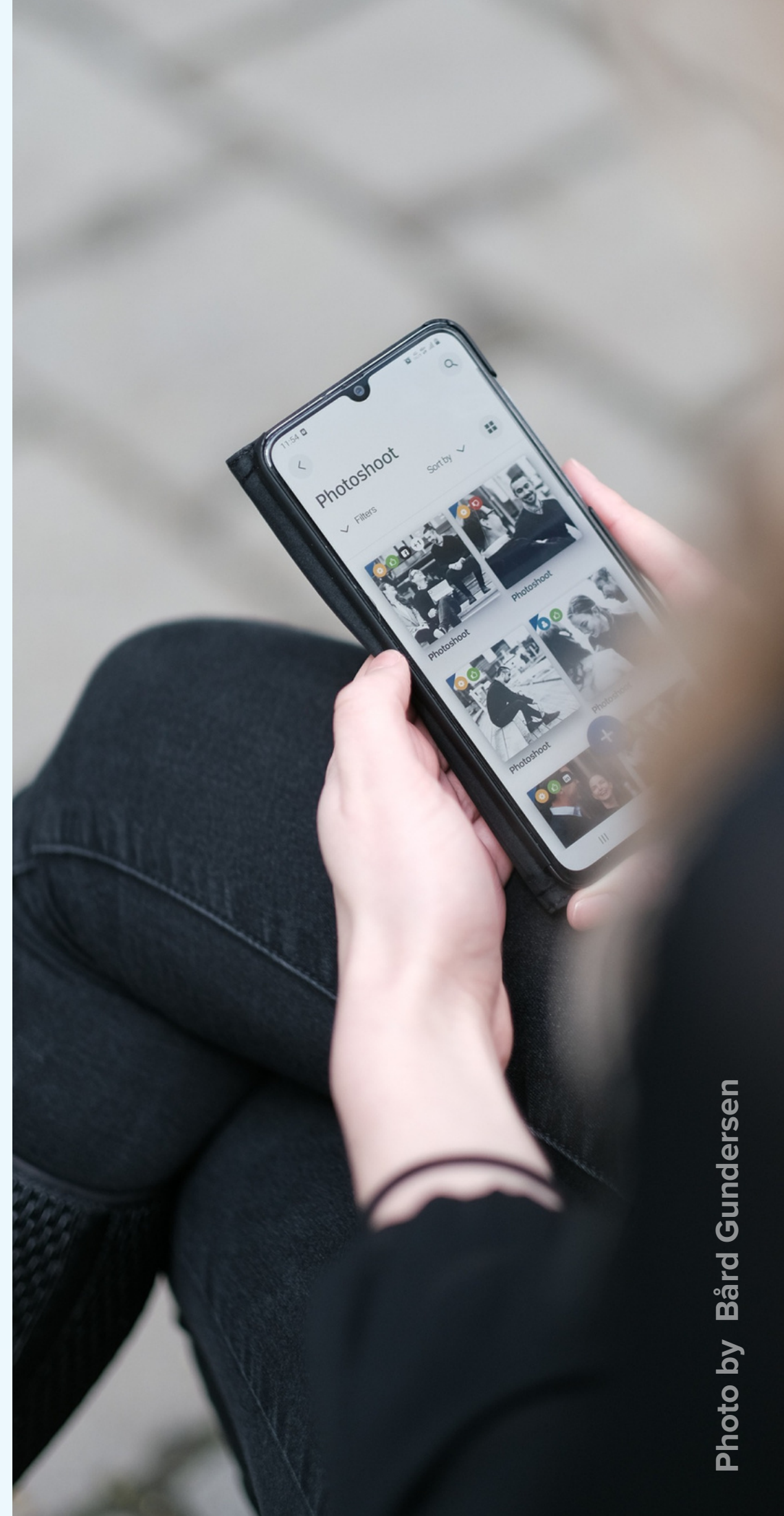


Photo by Bård Gundersen

Evidence crowdsourcing from the public

Police forces in Germany have integrated their FotoWare DEM solution with public reporting platforms, enabling citizens to actively provide a variety of digital evidence, including photo, video/audio, and text directly from a crime scene. The integration also helps prompt investigation of large incidents like G20, terror attacks, and riots, by acquiring several clips from the public.

Learn more about FotoWare
Digital Evidence Management

FREE WORKSHOP

CHALLENGE 2. Preservation

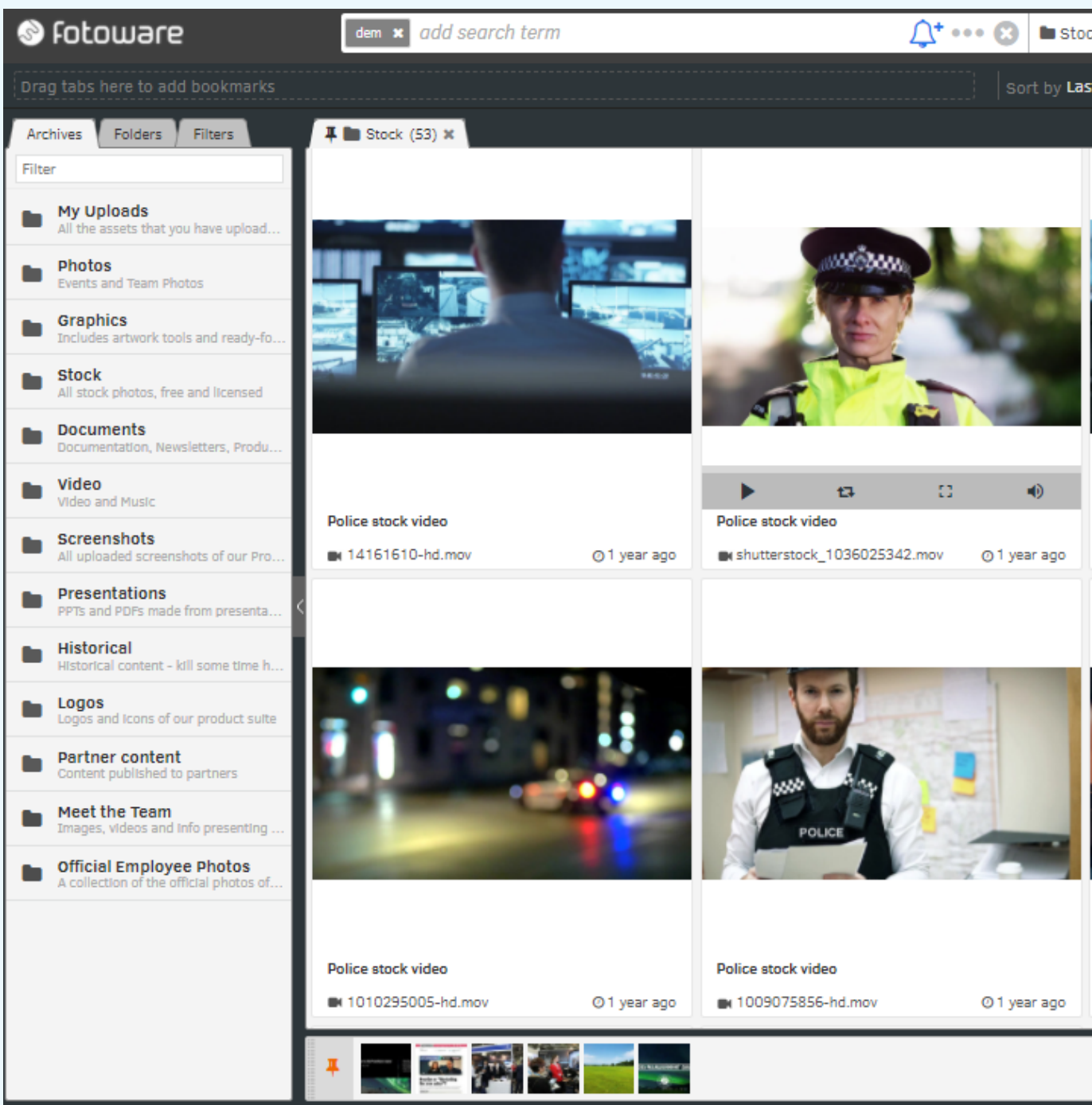
Evidence files are scattered and stored in different places, resulting in their getting lost or difficult to find, slowing down the investigation process.



All the data related to investigations - from office documents, fingerprints, and footprints to minute details of a crime scene - must be securely stored and protected. The majority of evidence files should never be removed from storage since they can be used to track down vital information that might have been missed. They can also be used as a reference or for related cases that might occur in the future, for example for identifying a serial crime.

Therefore, the amount of data grows exponentially over time, and it is essential to keep all data in one location, making it accessible to a variety of stakeholders including police, forensic scientists, profilers, and super-recognizers.

The FotoWare DEM solution supports many different types of files with preview, including video playback. Forces can store and process vital evidence obtained from multiple sources in a single repository. By doing so, they can relieve the mundane task of logging into multiple different systems and pulling data.



CHALLENGE 3. Search & analysis

It takes too long to find files, or it is difficult to search for them as information about the files is missing or outdated.



Each evidence file will not be able to fulfil its role properly unless it is logged with right information; case reference, date, time and location of evidence seizure, a description of the evidence, and the person(s) associated with the case. Each piece of evidence should be tagged with all relevant information so that it can be retrieved and used as needed by whoever is looking for it.

For example, an evidence repository should be searchable by a suspect’s name to get all the related data to him/her, such as fingerprints, a mugshot, CCTV footage where he/she is identified, and so on.

Add metadata

Copy from:

Previous job

Or, select a job

Title (Required)

Description (Required)

Tags (Required)

Tap to set tags

The FotoWare DEM provides customizable upload fields which allow users to tag all the relevant metadata when uploading a file. By doing so, you can ensure that a standard procedure is followed when uploading content and reduce the time spent on registering and searching for files.

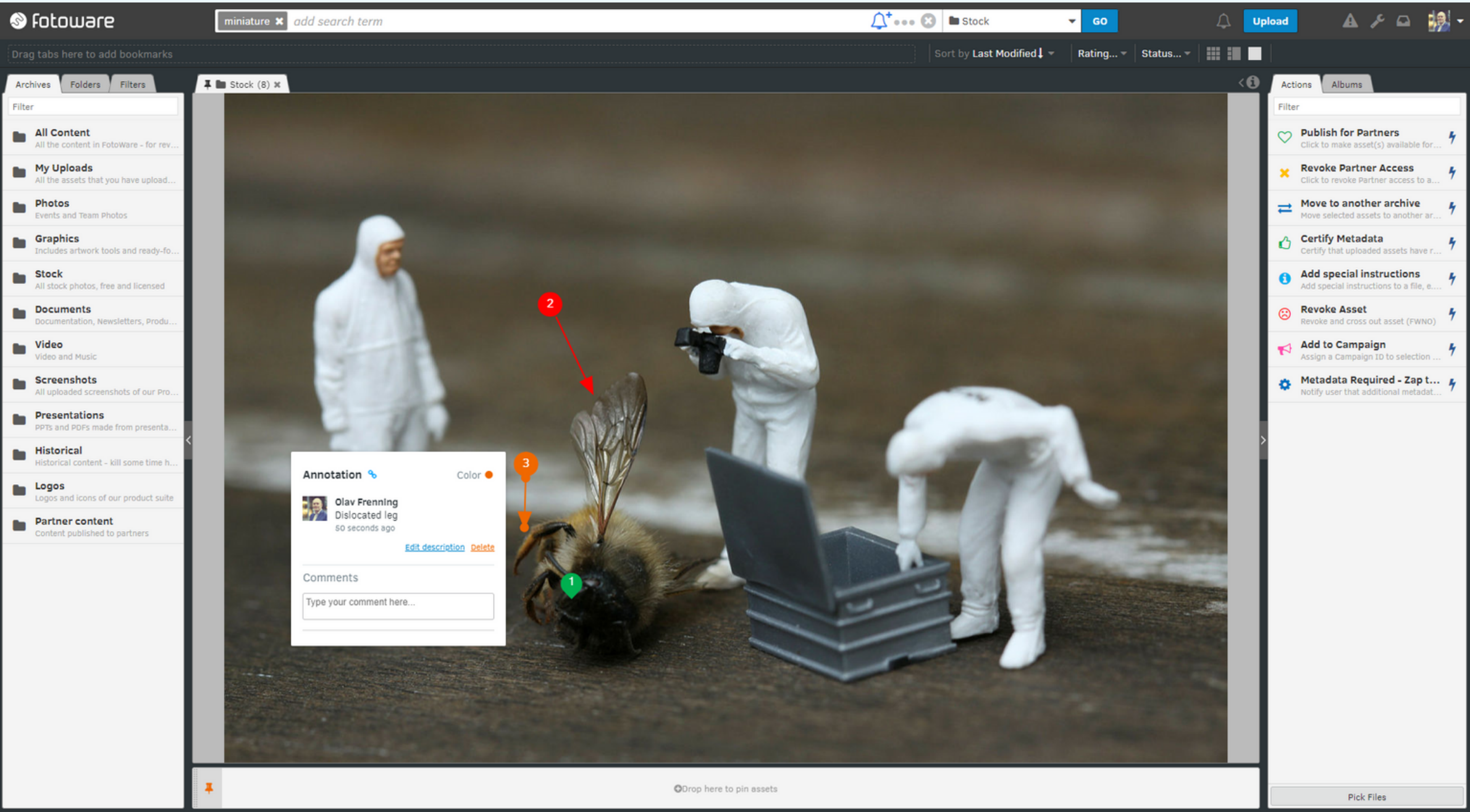
CHALLENGE 4. Sharing & collaboration

Transferring a large volume of files can be complicated and may jeopardize data security.



Crime scene investigators often need to work together with various departments, such as the law enforcement officials at crime scenes or forensic science technicians in the laboratory. Hence, file-sharing/distribution and collaboration are vital parts of handling digital evidence.

The FotoWare DEM enables collaborative analysis using albums and annotations on images. With albums, you can easily share a subset of files in the system internally and externally. You can also annotate images by adding comments and analysis directly on an image, making forensic collaboration a lot more efficient.



One of the vital tasks of law enforcement agencies is to produce a document when the case goes to court. Any incident that police officers are involved in should be documented in a report that contains all evidence and related materials. Moreover, with a redaction tool in the system, forces can easily blur out faces, license plates, and other sensitive information before sharing assets with external parties, such as the press.

The FotoWare DEM solution saves a significant amount of time spent on back-office tasks. This is also thanks to plugins to tools like Microsoft Word, PowerPoint, and SFR (Streamlined Forensic Reporting). These plugins enable users to easily access images, video, and audio files from the FotoWare system, which they can drag and drop directly into documents without ever having to leave the program.

In addition, creating document packages and transmitting pieces of evidence to the courts is a lot easier and faster with the automated workflow options. By setting up certain metadata fields, files can be directly submitted to Case Management Systems or other 3rd party systems, enabling judges to have evidence in hand at the earliest stages of a case. Since evidence instantaneously goes directly to the key players, cases can move faster. Besides, by transferring files through a secured single channel, it decreases the risk of files being lost, misplaced, or even getting found by unauthorized people.





Icelandic Police and the National University Hospital of Iceland winning the Media Management Award 2019 for the unique collaboration using the FotoWare solution.

Image copyright: Iceland Monitor, Mbl.is

How do the Icelandic Police and the National University Hospital of Iceland collaborate in forensics?

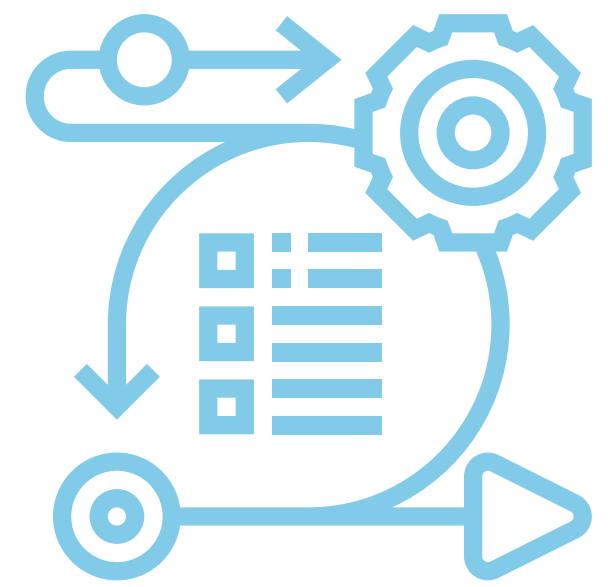
Many crime scene photographs include people, and in that case, evidence often needs to be shared with the medical professionals for further examinations. Lately, the Icelandic Police and the National University Hospital of Iceland have developed a workflow around the FotoWare DEM system to share evidence files in a secure and easy way. Previously, sensitive data were shared manually using CDs or USB sticks. A detective had to either deliver or pick up the file, which could take up to an hour of his/her time, no need to mention a risk of permanent loss of evidence or the data being stolen.

To solve these problems, the police force and hospital have decided to set up an automated workflow on their FotoWare system that both have used over the past decade. The workflow enables the investigator to send selected images to another institute with one click. The evidence files are transferred via a secured encrypted tunnel and synced with case number metadata between the two organizations' FotoWare solution.

[Read the full story.](#)

CHALLENGE 5. Workflow

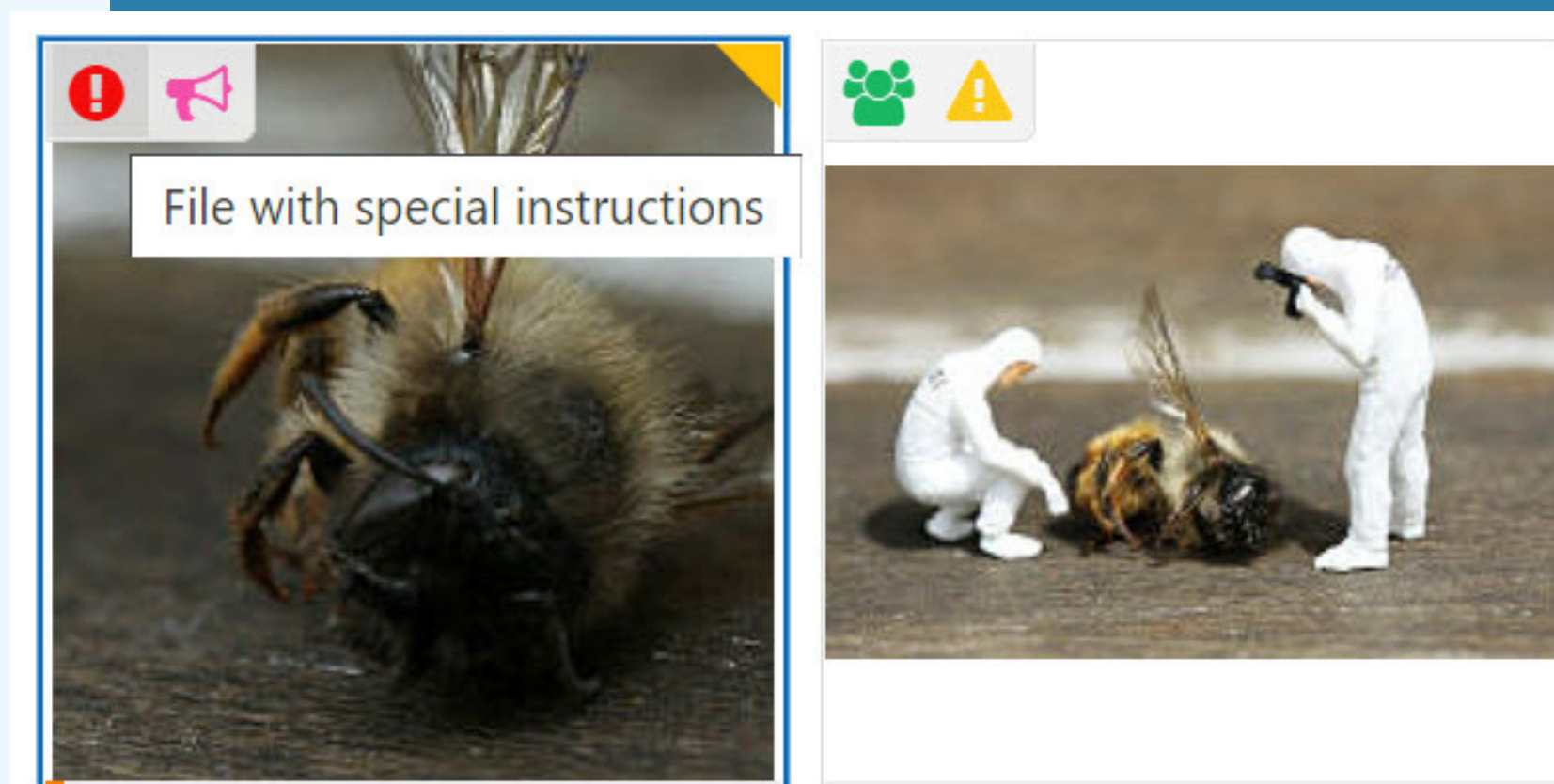
Handling of digital evidence processes involves mundane and repetitive tasks.



Once an image is in the system, that's not the end of the story. As an investigation, there's a lot more work to be done to make sure the image has served its purpose of solving the crime and convicting the offender. It's important that you have the right tools to get the job done when working with digital evidence. Forensic processes tend to involve several repetitive and time-intensive tasks, requiring collaborations with various stakeholders. A system that can optimize the processes and automate routines will help police forces save crucial time.

You can further streamline your workflows in the FotoWare system. For example, by creating visual markers that alert users of the state of an image, users can quickly determine whether an asset can be used or not, without having to contact another officer and wait for the approval. One can also set an alert for a specific keyword and receive a notification immediately, or even share it directly when new evidence including the chosen keyword is added. By doing so, you can minimize the time spent on gathering and processing evidence.

The workflows running in the DEM system can be audited and tracked, so you always have full control of how your assets are used.



We now have a system that is available 365 days a year, which means that Police Officers can view images they need to see at any time. This has solved the problem of having to print images and send them around the Force only to find they weren't needed, reducing costs, and providing a more efficient service.

Kevin Clark, North Wales Police UK (2016)



Photo by Gilda Fernandez

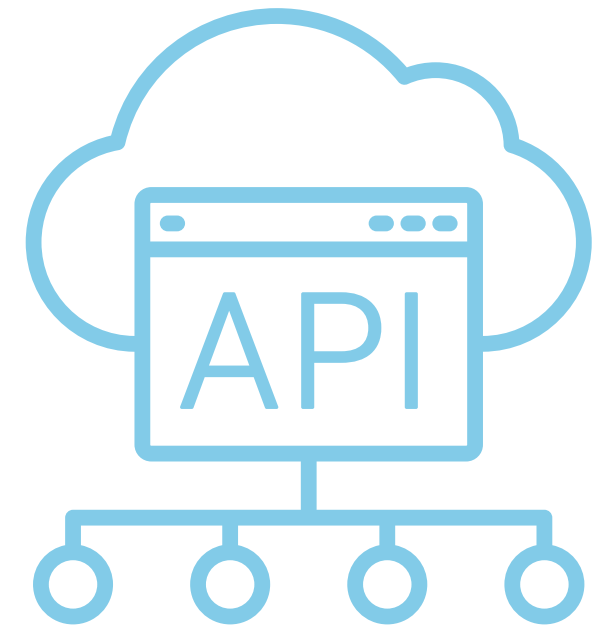
North Wales Police UK streamlines evidence submission process

North Wales Police in the UK had Crime Scene Investigators (CSI) and other specialist units uploading media to the system, where it is tagged with metadata from integrations with police systems, and then that determines which officers and departments can see the evidence.

Once officers select the images they need and produce albums, these are automatically forwarded to the CPS (Crown Prosecution Service) for use in the courts.

CHALLENGE 6. Integration & APIs

Forensic processes require collaboration between multiple different systems.



As more and more police departments across the world are deploying new technology and tools at a rapid pace, the need for integration with different systems has arisen. When selecting a DEM system, forces should look for a flexible and versatile solution that enables the organization to build a digital evidence ecosystem by connecting various 3rd party systems using APIs.

Integrations in FotoWare DEM with other mission-critical systems such as Case Management and Records Management Systems (RMS) aids the investigation and subsequent prosecution process by ensuring the relevant parties receive the evidence on time.

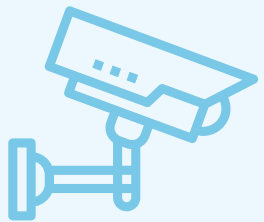
The FotoWare system is light, intuitive, scalable, runs in your browser, and is easy to customize and integrate with other solutions. You can collaborate with other systems using API technology, assured that data is relevant and accessible at any time by authorized persons. We have seen this successful approach with our systems connected across multiple forces, leading to increased collaboration between investigative teams across the country.



EXAMPLES OF INTEGRATIONS WITH THE FOTOWARE DEM



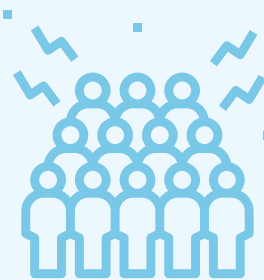
Facial recognition AI and automated tagging



Easy playback of multiple video formats:
body-worn camera, CCTV, etc



Geographic information systems to
visualize geo data in images/video



Public reporting platforms enabling
evidence crowdsourcing



Secure desktop uploader that allows the
user to log out while the upload continues



PDF+ for generating PDF documents
of selected images to present in court



An IT Security system to ensure clean
and valid assets

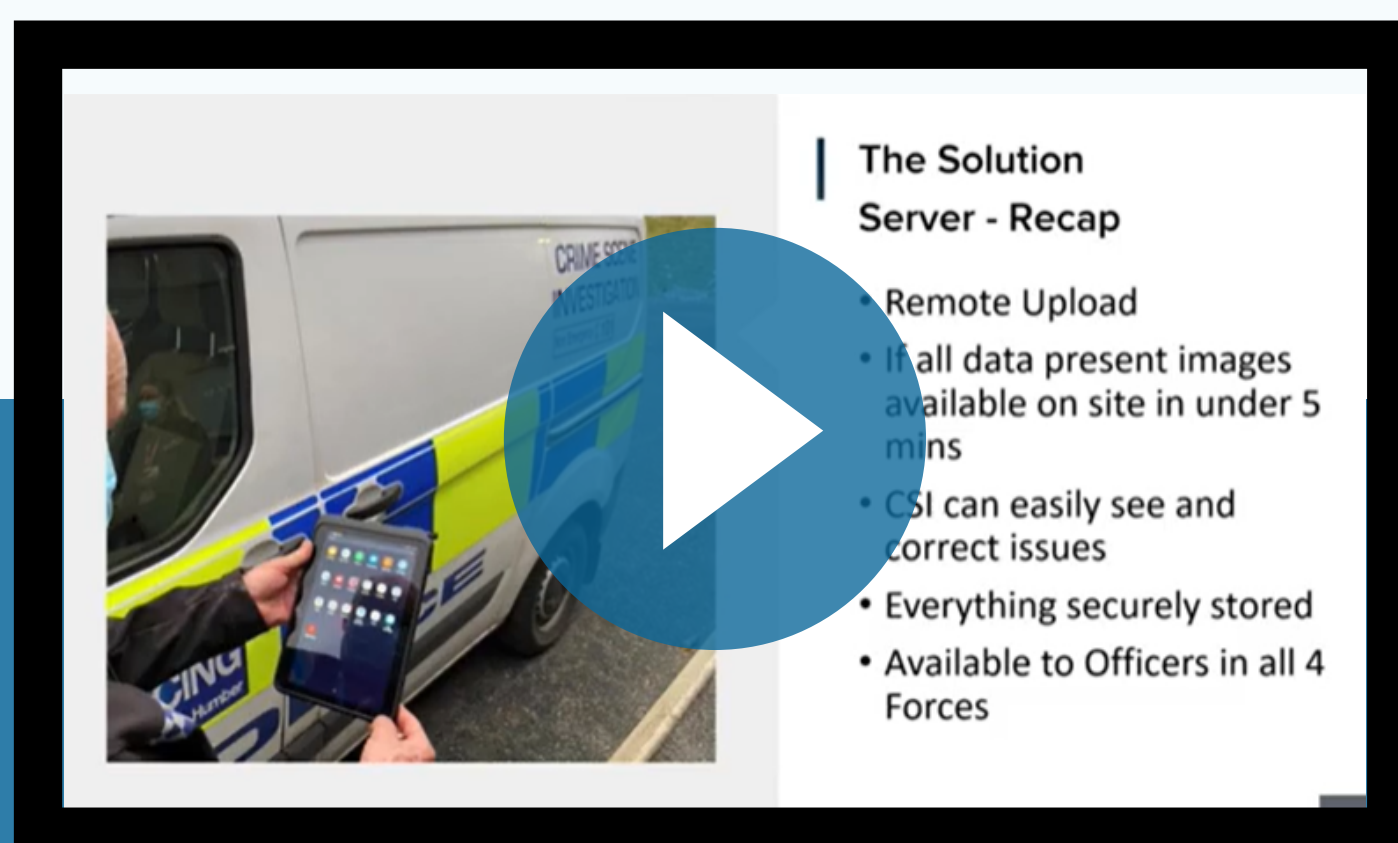
How 4 different police forces in the UK collaborated in crime investigation

With regionalization happening with all police forces in the UK, they needed a solution that could cover 4 police forces. Two of the forces already used the FotoWare DEM solution, while the others did not. Using SAML for authentication, the users on different police networks could connect to the FotoWare system and access the images relating to their cases only.

Currently, over 27 million images are loaded in one centralized system and are searchable from any force. The assets are also viewable via the Forensic Management System. Essentially, the police can cooperate better by accessing the same system, meaning that suspects can be identified and apprehended in a neighboring county, and evidence can then be uploaded and shared with all.

Law enforcement authorities in the UK must follow the Management of Police Information (MoPI) guidelines. In compliance with the General Data Protection Regulations (GDPR) and the Law Enforcement Directive, MoPI specifies the retention, examination, and disposal of police information (LED). The FotoWare solution assists police departments in complying with these laws by allowing officers to take full responsibility for their actions.

[Watch this video to learn more](#)



CHALLENGE 7. Security

Evidence is at risk of being destroyed, eliminated, or removed.



Security is one of the most fundamental aspects of dealing with any digital evidence. Massive emphasis is placed on security and traceability in the police, and it isn't just as simple as storing important evidence on CDs, hard drives, or as printed hard copies, especially if this was to go missing or be misplaced. A big benefit of the system is that once the evidence is in the system, it's in the system and it's secure.

The FotoWare DEM system prevents unauthorized access by requiring a secured login based on approved users.

It also audits the use and access of an evidence file; this means that if someone attempts to access evidence without permission, the system will catch and log this. This way, the system prevents confidential data from falling into the wrong hands. In addition, you can set the permission level for each file with a specific group or user, so those without permission is not allowed to access and download files.

FotoWare's Digital Evidence Management Software-as-a-service (SaaS) solution runs on Microsoft Azure Services, which is highly acclaimed for its security, providing Single sign-on (SSO) that enables users to securely authenticate and access the system.



Photo by rGorodenkoff Productions - stock.adobe.com



Photo by Gorodenkoff Productions OU / ADOBE STOCK

How police forces and super-recognizers in the UK work together while keeping high security

Super-recognizers are people with a unique talent to identify people. Super-recognizers work with many police forces in the UK for the identification of suspects, and the FotoWare DEM is the main tool in their daily work. The DEM system is configured based on their security requirements, ensuring only those who have the appropriate permissions can access the evidence files. While they can access the system, they cannot see other assets that they do not have the right to see.

[Read the full story.](#)

TOP 3 VALUES OF THE FOTOWARE DEM SOLUTION

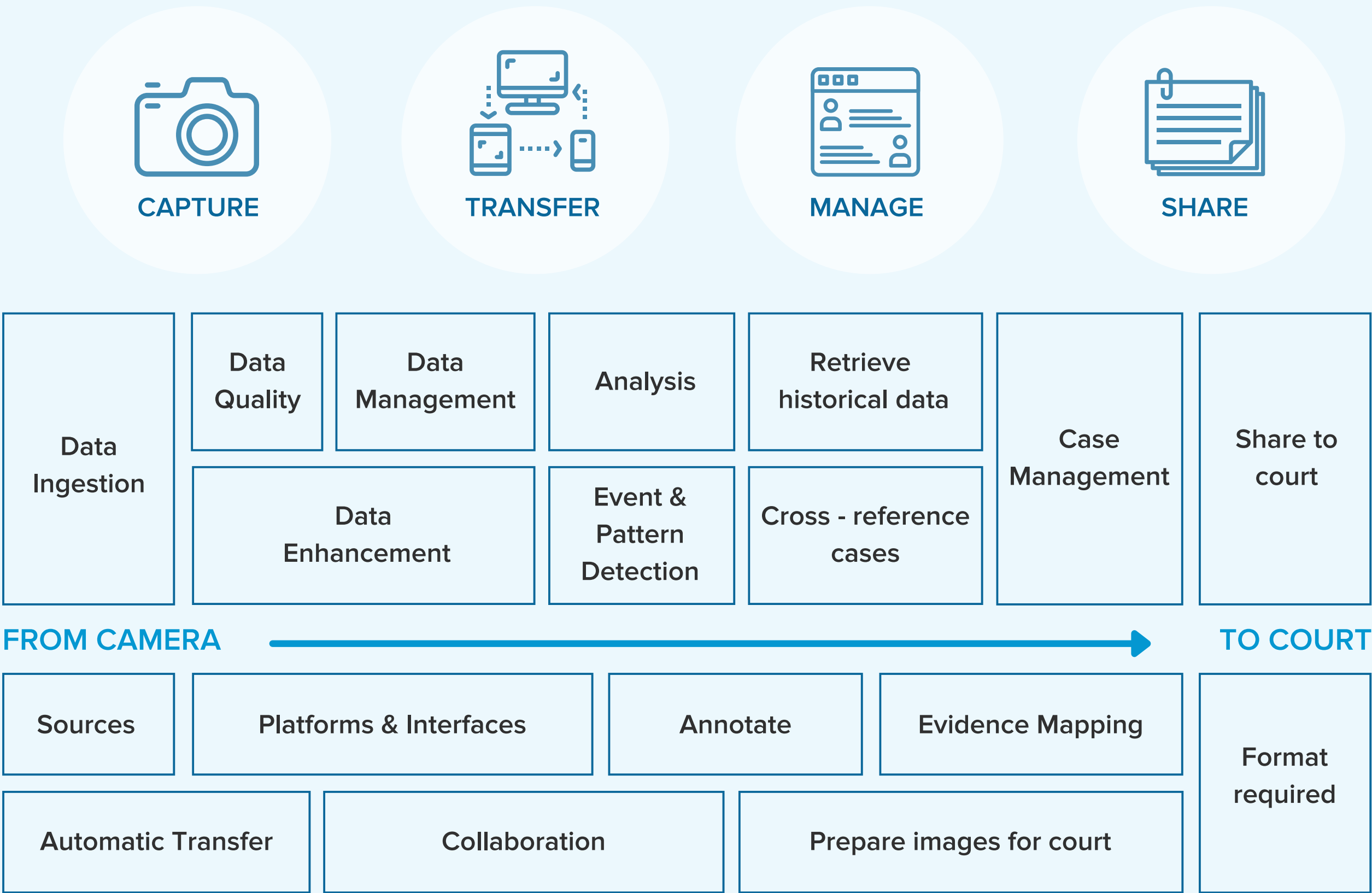


1

Building an ecosystem to streamline the investigation process

The FotoWare DEM is a flexible, versatile, and hardware neutral solution. It enables forces to build an ecosystem that streamlines the whole investigation process by connecting various 3rd party systems using the powerful RESTful APIs.

Police systems are very complex and FotoWare brings together all the sources of evidence into a common place where it can be shared with other evidence-gathering systems. Build and control a tailored DEM system that facilitates collaboration between police departments and beyond.



2

Access your digital evidence securely from anywhere

Police officers and other staff have a need to upload media files quickly and securely into a central system for processing. Simply having a system for storing evidence is never enough. You need to be able to access, find, and process files quickly during an investigation, as well as share it with the relevant staff, both internally and externally. With FotoWare, you can access your digital evidence securely from anywhere.

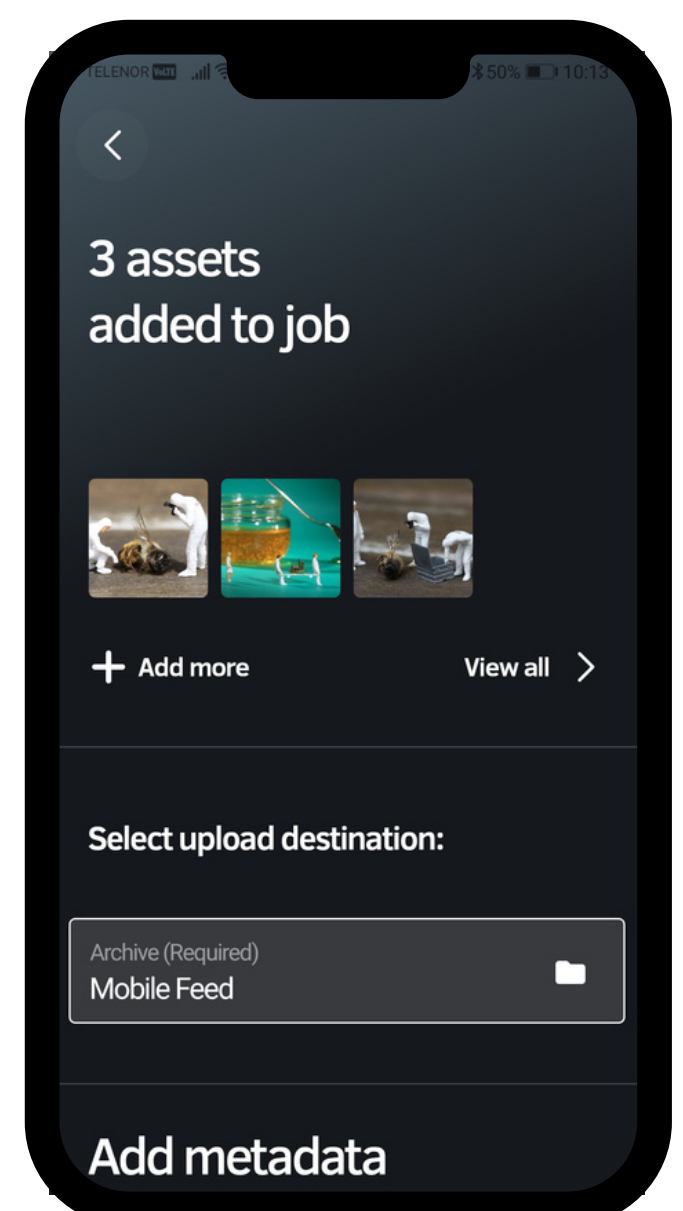
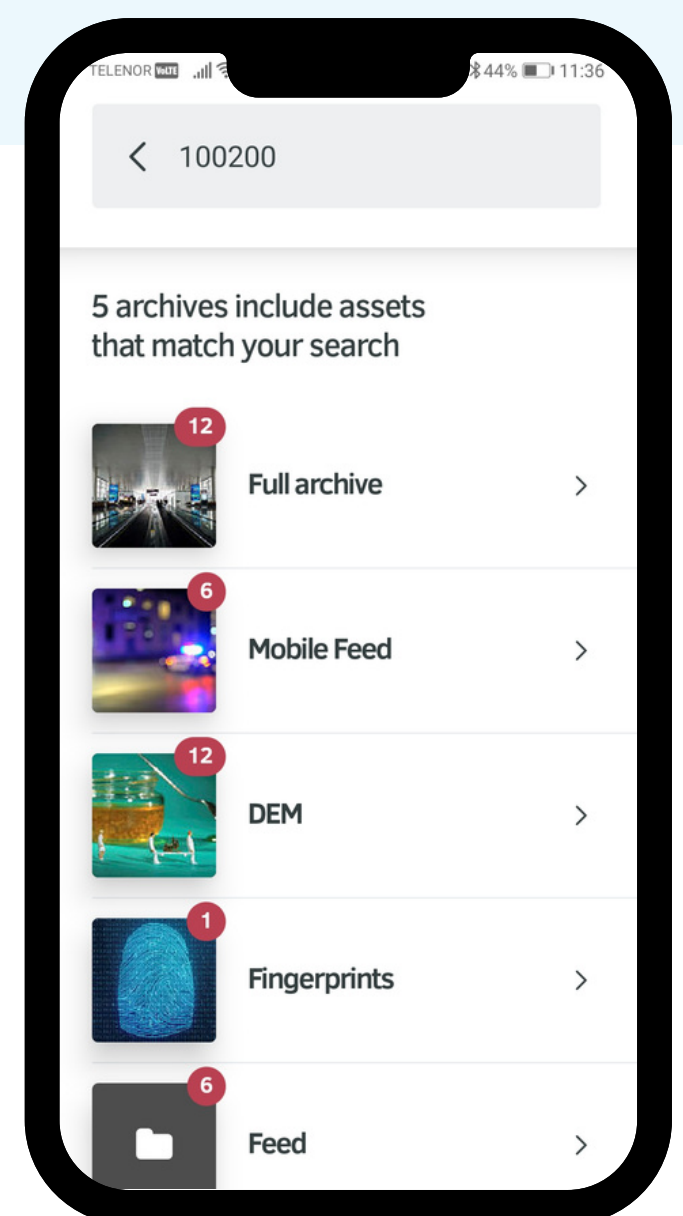
FotoWare DEM Mobile App

The new FotoWare mobile app for Police forces offers full Digital Evidence Management functionality directly from mobile devices.

It enables users to securely store all kinds of evidence files in a central location and access it no matter where they are.

Users can easily upload evidence files such as crime-scene photography, footage from a body-worn camera or drone, suspect documents at your fingertip while tagging all the essential information. Tag them with metadata on the go, so you keep all the vital information with files at the time of upload.

With the built-in search function, all files are easy to find: search by a specific keyword or the name of a suspect. You can also share files with any external parties in seconds. .



The app is available for download on [Android](#) and [iOS](#)

3

Our customers and global network

For 20 years now, FotoWare has been delivering DEM solutions to police forces worldwide. The solution is scalable and used by organizations of all sizes, from smaller local police offices to large departments of national interests and national security, including the Metropolitan Police, UK Ministry of Defense, Polizei Hamburg, Victoria Police and Icelandic Police. 35 of 42 UK police forces use the system, along with 3 of 6 state police forces in Australia, 4 of 16 state police forces in Germany, and 4 of 9 regional police forces in Iceland. FotoWare is also used by police forces in Norway, Canada, Belgium, The Netherlands and many more, with a proven track record of helping law enforcement agencies worldwide solve crime and protect society more efficiently.

FotoWare has a global network of dedicated experts in over 40 countries that can advise in best practices for installing and delivering DEM systems in your region.



POLITIET



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Hamburg



Photo by metamorworks from Getty Images Pro

FotoWare handles your DEM needs

Digital evidence has become increasingly valuable in criminal investigations, and all the evidence files must be handled carefully to preserve its integrity. By having the right tool, law enforcement and security agencies can store and organize all the relevant data in one place, as well as manage it more efficiently and securely throughout the evidence lifecycle.

FotoWare Digital Evidence Management has assisted in crime-solving by providing more efficient ways of working since the first police customer onboarded in 1998. We work with various law enforcement agencies worldwide, enabling them to streamline investigation processes and devote more time and effort to their primary role: the safety of society!

FREE WORKSHOP

Want to learn more about FotoWare Digital Evidence Management and how it can be used by your organization?

Book a free workshop with us! Our Digital Evidence Management experts will provide you with a customized solution and demo to meet your team's needs.

Ove Evensen:

Key Account Manager & Evangelist
- Police & Law Enforcement

BOOK OVE NOW



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