Audio visual expertise

forensic video analysis • facial mapping • CCTV analysis • Audio Visual • image enhancement • expert witness • forensic video analysis
LGC’s audio visual team (formerly Kalagate) has been providing advanced, expert analysis and interpretation of still photographs, video, CCTV, digital images and audio for over 25 years.

We have been applying our analytical expertise to imagery and audio material used in both criminal and civil cases and in doing so have developed innovative practices and techniques to analyse and present information in the most effective way.

Our specialist team works with police services, defence counsel, national government agencies and the private sector, enjoying an international reputation for the high quality of work. The team includes experts who have extensive knowledge and expertise in imagery and audio interpretation and technology, with access to state of the art imagery and audio processing and enhancement systems. They have in depth knowledge of imagery and audio systems and their use in the judicial system, having worked and given evidence on a high number of complex, major and volume crime police investigations.

Imagery and/or audio is the only permanent record of what actually happened during an event and therefore it is very important that imagery and audio evidence, where necessary, is made available.

In modern life we are increasingly familiar with many forms of imagery in the media. However, this familiarity may lead to misapprehensions and therefore it is essential that recorded imagery is analysed by properly trained, qualified and experienced imagery analysts.

Similarly, for audio, proper analysis by a qualified audio analyst is required to gain a full understanding of the contents of the recording.
Services

**Imagery analysis and photogrammetry:** Imagery analysts are able to understand the various factors involved in a recorded image, how usual aberrations occur and how lighting affects a scene; thereby correctly interpreting the subject matter. They are able to provide a variety of services comparing faces, bodies, clothing, vehicles and weapons and providing detailed chronological reports covering a sequence of events. Our analysts can also measure objects on the images using photogrammetric techniques which may be used in assessing someone’s height or an objects dimensions, confirming the make and model of vehicles involved in an accident and the assessment of vehicle speed involved in road collisions.

**Image enhancement:** Imagery is often mediocre in terms of the detail it provides making enhancement essential. We can:

a. De-multiplex and playback video regardless of the supplied format
b. Recover DVR imagery using the correct CODEC
c. Enhance images
d. Verify images as originals or copies.
e. Determine whether an image has been physically or electronically altered (Imagery Authentication)
f. Duplicate the enhanced video onto DVD or other formats as required.

**Audio enhancement:** Audio can often come from a number of poor quality sources, including mobile phone recordings or from the placement of covert audio recording equipment and is often mediocre in terms of the quality of the audio signal making enhancement essential. Our experience allows us to:

a. Extract audio from most types of analogue and digital formats including DAT, Compact Cassette, Micro and Mini Cassettes as well as a large number of digital formats from mobile phones and other digital recording devices
b. Enhance the audio including noise reduction, bandwidth filtering, level adjustment and signal normalisation or the application of various filters to aid the enhancement process
c. Verify audio as originals or copies
d. Determine whether an audio recording has been physically or electronically altered (Audio Authentication)
e. Duplicate the enhanced audio onto CD or other formats as required
f. Production of Transcripts are undertaken with the results being produced either as an enhanced audio disc with accompanying hard copy report, and/or as a subtitled DVD.
Image processing: Including the production of master copies from original recordings and high quality copies in a variety of formats. Imagery may be enhanced and people or vehicles tracked and highlighted during this process.

Audio processing: Including the production of master copies from original analogue or digital recordings and high quality copies in either CD or other required formats. The audio may be enhanced and transcripts produced during this process.

Data recovery: We can retrieve image data from various storage devices including, in some cases, imagery data that has been deleted or damaged, including smoke, fire and water damage.

Image/audio authentication: Where questions have arisen as to the authenticity of an image/audio recording or where it is believed the recording device has been tampered with, our experts are able to examine both the recorded imagery/audio and/or the recording device to determine what, if any, manipulation has occurred. It may also be possible to confirm the date and time a recording was created.

Expert evidence: We provide expert evidence in court supported by hard and soft copy imagery products. These packages help the jury to understand the subtle points of the evidence being presented and in a format that displays the relevant imagery evidence in the clearest, most practical way.

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Filming/Reconstruction

In order to make the best possible attempt at reaching a definitive judgment, it is most important that we are able to film your client; visit the scene of the incident; or reconstruct the incident for comparative purposes. This material will enable us to make comparative measurements and make the most stringent attempt to eliminate your client as a candidate for the offender. Not collecting suitable comparative material potentially places your client at a disadvantage.

Should you wish to carry out this important process yourself, it is essential that you obtain suitable comparative material of matching viewpoints, please contact us for advice.

Original imagery

Copies of imagery are invariably somewhat degraded. It is important for us to have examined the original imagery on our own equipment. It is usual for the Police Officer in the case to bring/send the original to us in order that we may electronically capture the relevant images. This procedure not only preserves the continuity principle, but also ensures that any technical difficulty can be overcome by using our own equipment for the image capture process. You should contact the officer concerned as soon as possible in order that the necessary arrangements can be made. We can either capture the necessary images while the officer waits or we can store the originals in a secure environment.

Outcomes (video)

It is recognised that two people/items can share similar proportions and morphology. It is also recognised that if two such people/items were recorded under similarly poor lighting conditions and on similar equipment, it would be difficult to distinguish one from the other. Whilst comparisons of this sort therefore are incapable of constituting positive identification, it could positively exclude a candidate.

Where no significant differences are found, any feature evident on the offender that corresponds to those on the defendant are generally seen as supporting evidence that the two people are one and the same.

No scale exists to precisely quantify the likelihood of two images being of the same person/item. There is currently no database that could give a statistical foundation to our findings; an accepted scale is therefore used by practitioners in this field to express a subjective opinion of significance that is informed by experience. The scale utilises the following phrases:

- Lends no support
- Lends limited support
- Lends moderate support
- Lends support
- Lends strong support
- Lends powerful support.

A similar scale exists to represent to finding relating to an audio investigation, particularly where an audio recording’s veracity has been questioned.
Quality assurance

All work completed by LGC follows strict quality assurance guidelines, including the use of an auditable trail and peer review approved processes to ensure that the integrity and continuity of the evidence is maintained at all times. The accuracy of the evidence is verified and every step of the analysis fully documented in strict adherence to the guidelines specified by the Forensic Science Regulator as well as following guidance laid down in the National Police Chiefs’ Council (NPCC) and Home Office Scientific Development Branch (HOSDB) guidelines.

Further information

Should you require any further information, wish to arrange a meeting or consultation, please do not hesitate to contact us.