G-Cloud 15

Service Definition

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THEMIS: Legacy Evidence Digitisation, Secure Cloud Storage and Management Solution

Executive Summary:

Legacy evidence poses a significant challenge for law enforcement agencies, hindering investigations, compromising data security and eroding public trust. THEMIS tackles these challenges head-on, offering a comprehensive solution for secure, efficient and cost-effective legacy evidence digitisation and management.

The solution has the following key areas of delivery:

- Secure Digitisation Facility
- Server hosted Infrastructure and secure storage
- Secure Cloud access portal

This document outlines the scope of services, technical specifications, project deliverables and benefits of THEMIS.

THEMIS:

Legacy evidence presents a critical challenge for law enforcement agencies across the UK and Europe. Vast amounts of evidence remain trapped on outdated formats like VHS tapes, paper records, and audio recordings. This creates a domino effect of problems hindering investigations, compromising data security and ultimately eroding public trust in the criminal justice system.

THEMIS, a revolutionary solution ***developed jointly with police forces***, tackles this challenge head-on.

The Problem:

Physical evidence storage is expensive. Police forces require dedicated physical space to house bulky outdated formats. Maintaining this storage infrastructure incurs significant ongoing costs for facilities management.

Traditional evidence retrieval is a time-consuming process and historic archives of evidence lie in storage, unreviewed and in a perishable format. Officers rarely choose to investigate historic archive footage when dealing with more recent allegations due to a lack of time and an inability to query the data.

Locating specific files can involve manually sifting through archives; delaying investigations and hindering potential case resolutions. This inefficiency translates to reduced productivity

for investigators and potential costs associated with prolonged investigations.

The physical nature of legacy evidence creates inherent vulnerabilities. Sharing evidence through traditional methods like postal mail or unsecured file transfers exposes sensitive data to potential breaches. This not only compromises investigations but also undermines public confidence in law enforcement's ability to safeguard vital information.

The risk of data degradation threatens the integrity of evidence. Physical media like VHS and audio tapes deteriorate over time, potentially jeopardising crucial details and raising questions about the validity of evidence in court. The magnetic coding upon such media, even when stored appropriately, corrupts and perishes after 20 years. Most forces are required to retain such media from the 1990s and sometimes 1980s.

If action is not taken swiftly, this evidence will be lost in perpetuity.

The Solution:

THEMIS leverages cutting-edge digitisation technologies to transform legacy evidence formats into secure, searchable and readily accessible digital files which are stored in the cloud. This includes VHS tapes, audio recordings, paper documents, CDs/DVDs, microfiche, and USB storage devices.

THEMIS offers a comprehensive package that empowers law enforcement agencies to gain full control of their evidence:

- **Enhanced Security and Compliance:** THEMIS prioritises data security with features like industry-standard encryption, national accreditation (Police Digital Services) and an approved audit log of all activity.

- **Streamlined Efficiency and Productivity:** Investigators can instantly retrieve any piece of evidence, eliminating wasted time searching through physical archives and watching historic footage on outdated technology. Seamless integration with existing systems and advanced search capabilities further enhance productivity.

- **Improved Investigative Capabilities:** Faster evidence retrieval and analysis empower investigators to uncover hidden patterns and connections potentially holding valuable leads. This can lead to stronger cases, improved conviction rates and, ultimately, a more effective justice system.

- **Reduced Storage Costs:** Eliminate the need for dedicated physical storage facilities for outdated evidence formats; freeing up valuable resources for sale or re-use.

- **Enhanced Public Trust:** Transparency and accountability fostered through secure digital evidence storage and retrievals strengthen public confidence in law enforcement's ability to handle evidence effectively and fairly. Additionally, prioritising support for victims and witnesses during the digitisation process can further enhance the overall experience within the justice system.

THEMIS seamlessly integrates with the National Police Chiefs' Council (NPCC) Digital Policing Strategy. By addressing data security, information sharing, and efficient investigations, THEMIS empowers law enforcement to achieve the goals outlined by the NPCC. This alignment demonstrates a commitment to leveraging leading-edge technology for a more modern and effective police service.

Investing in THEMIS translates to a substantial return on investment for police forces:

- **Reduced Storage Costs:** Eliminate physical storage expenses.
- **Improved Productivity:** Maximise investigator time through efficient evidence retrieval, thereby encouraging better practice by reviewing historic archives as part of all investigations.
- **Stronger Case Building:** Access to readily available digital evidence leads to stronger cases.
- **Faster Case Resolution:** Streamlined processes expedite case progression.
- **Enhanced Public Confidence:** Build trust through transparent and secure evidence management.
- THEMIS is not just a technological solution; it's a strategic investment in a more efficient, secure, and trusted criminal justice system. By addressing the challenges of legacy evidence, THEMIS empowers law enforcement agencies to unlock the true potential of their evidence, ultimately leading to a safer and more just society.

Scope of THEMIS

THEMIS encompasses two key phases:

Phase 1: Secure Legacy Evidence Digitisation

- Documented chain of custody procedures.
- High-fidelity digitisation with professional-grade equipment, minimising video jitter and ‘artefacts’ (e.g. VHS decks with Time Based Correction).
- Regardless of the format, THEMIS employs a consistent quality control process:

- **Pre-digitisation Inspection:** Each piece of evidence undergoes a thorough inspection to identify potential damage or degradation.
- **Format-Specific Expertise:** Our team utilises specialised equipment and techniques optimised for each media type, ensuring optimal digital capture.
- **Verification and Analysis:** Every digitised file is meticulously checked for accuracy and fidelity using checksum verification tools and frame-by-frame analysis (for video) to identify and rectify any digital artefacts.
- **Quality Assurance:** Random sampling for in-depth quality checks (video clarity, audio quality, colour accuracy).
- **Advanced Quality Control Procedures:** Timecode synchronisation between source and digitised file for accurate referencing during playback or future forensic analysis.

Phase 2: Cloud Hosting and Secure Storage

Secure upload and storage of digitised files in a compliant cloud storage solution utilising strong encryption (AES-256).

Implementation of a user-centric cloud-based software application designed for efficient evidence management. The software leverages a secure API allowing for seamless integration with existing law enforcement case management systems (optional, based on client needs).

Comprehensive user training and ongoing support for the cloud software solution.

THEMIS Deliverables

- High-resolution digital copies of all legacy evidence in pre-determined formats (e.g. uncompressed or lossless compression for storage optimisation).
- Secure cloud storage with robust access control for the digitised evidence files.
- A user-friendly cloud-based software solution designed for efficient evidence management.
- A detailed chain of custody report documenting the entire process.
- User training materials and ongoing technical support for the cloud software.

THEMIS offers a comprehensive solution for digitising a wide range of legacy evidence formats used by law enforcement agencies. Our meticulous approach ensures the highest quality digital reproductions while maintaining the integrity of the evidence chain of custody.

Supported Media Formats:

- **Video Tapes:** VHS (standard, VHS-C, S-VHS, VHS-HQ) and similar cassette format used for professional video recording i.e. Betamax.

- **Audio Recordings:** We can handle various audio formats, from cassette tapes and reel-to-reel audio to minidiscs and digital audio files on outdated storage devices.

- **Paper Documents:** High-resolution scanning technology accurately captures documents for easy digital storage and retrieval.

- **Optical Media:** CDs, DVDs, blurays and even older formats like floppy disks or Zip drives can be securely digitised and integrated within your digital evidence management system.

- **Microfiche:** Specialised scanners efficiently convert microfiche films & sheets into digital images for convenient access and analysis.

- **USB Storage Devices:** Data recovery and forensic extraction techniques ensure the secure retrieval of evidence from old USB drives or other external storage devices.

We fully recognise and understand that client needs may vary. THEMIS offers customisable options such as:

- **Target Resolution:** Choose the desired video resolution (e.g. minimum HD or higher) based on your requirements.

- **Audio Quality:** Lossless codecs for audio recordings, considering storage space needs and fidelity requirements.

- **Colour Correction (Optional):** Enhance the visual clarity of older video tapes by addressing minor colour shifts or inconsistencies.

By leveraging our expertise and advanced technology, THEMIS ensures the secure and high-fidelity digitisation of your entire legacy evidence collection, empowering your law enforcement agency to effectively manage and analyse evidence in a digital format.

Equipment and Software

State-of-the-art Equipment:

- VHS decks utilising Time Base Correctors (TBC) to minimise video jitter and artefacts.
    - High-end capture cards and computing with dedicated video processing capabilities for optimal image and sound quality.
    - Scanners specifically designed for high-resolution document capture (for paper documents).

- **Specialised Software for:**
    - Video capture (VHS, audio recordings)
    - Document scanning (if applicable)
    - Colour correction (optional)
    - Format conversion (supporting lossless and lossy compression formats)

- **Additional Software for:**
    - Checksum verification
    - Timecode synchronisation
    - Frame-by-frame analysis

Secure Cloud hosting

Data Security and Compliance

- Cloud storage adheres to the highest industry standards for data security and privacy:
- Encryption of data at rest and in transit (AES-256).
- Rigorous access control mechanisms with multi-factor authentication (MFA).
- Role-Based Access Control (RBAC) within the software for granular user permission control.
- Regular security audits and penetration testing by independent firms to identify and mitigate vulnerabilities.
- Compliance with relevant data protection regulations (e.g., GDPR).

Cloud-Based Software Features

The user-centric software provides intuitive functionalities for managing and accessing digitised evidence:

- Secure user login and role-based access control.
- Streamlined upload and download capabilities (optional drag-and-drop, progress bars).
- Advanced metadata management for detailed tagging and indexing (pre-defined and custom fields for comprehensive search ability).
- Powerful standard search functionality based on keywords, metadata, or file type (advanced search options like date ranges, specific keywords within audio transcripts).
- Advanced search features allow users to interrogate the database using specific fields with narrow criteria. Complex queries can be saved to the account page for rapid access to common searches.
- Faceted searching with result filters and sorting controls
- Flexible results formatting – choose list, grid or dynamic page view
- Advanced searches based on individual field query
- Spatial annotations highlight areas within media
- Saved searches for fast repeatable queries
- Quick access to previously saved searches from any search box on the site
- Version control to track changes made to files (with rollback capability for maintaining data integrity).
- Annotations and note-taking capabilities directly on evidence for streamlined analysis.
- Secure video sharing functionalities with temporary access controls for collaboration with prosecutors or external agencies (optional).
- Integration capabilities with existing law enforcement case management systems (optional, secure API).

User Interface and Training

The cloud-based software features an intuitive and user-friendly interface with:

- Clean layout
- Clear icons
- Consistent navigation
- Minimised learning curve for investigators with varying technical backgrounds.

Comprehensive user training materials:

- Video tutorials
- User guides
- Interactive workshops

- Ongoing technical support through multiple channels (phone, email) for user queries and smooth software operation.

Using The Service

Web Browser Interface	Yes
Supported Browsers	Microsoft Edge, Chrome, Firefox, Safari
Application to Install	No
Use on Mobile Devices	Yes
User Support Accessibility	WCAG 2.2 AA or EN 301 549
API	Yes
Customisation Available	Yes
Description of Customisation	User can customise searches, tile lay-out, filters, display order, data fields, types and names

Asset Protection

Knowledge of Data Storage and Processing Locations	Yes
Data Storage and Processing Locations	United Kingdom
User Control and Data Storage and Processing Locations	Yes
Data Security Standards	ISO27001
Penetration and Testing Frequency	At least once a year
Penetration Testing Approach	Independent Assesment
Protecting Data at Rest	Physical Access Control, Encryption of all physical media

System and User Analytics

Service Usage Metrics	Yes
Metrics Types	Users can have usage, activity, audit & storage reports
Reporting Types	Reports on request

Simple to use dashboards giving you up to the minute information on platform performance and engagement rates, helping you to manage your media more effectively and improve the user experience.

- Browser based access to system health dashboards and full event logs
- Asset level reporting including storage analysis and consumption
- User demographics and traffic analysis

Advanced User Intelligence dashboards for viewership insight and up to the minute information on engagement rates including:

- Session activity
- Download and playback statistics
- Most active users
- Full user audit

Data-in-Transit Protection

Data Protection Between Data Centre and Police Networks	TLS (version 1.2 or above)
Data Protection Within Data Centres	TLS (version 1.2 or above)
Guaranteed Availability	99.9% excl planned down-time
Approach to Resillience	The service provides full replication in a physically separate datacentre with a 'Hot Standby'

Identity and Authentication

User Authentication Needed	Yes
User Authentication	Public key authentication (including by TLS client certificate) Username or password
Management Access Authentication	Public key authentication (including by TLS client certificate) Username or password

Standards and Certifications

ISO/IEC 9001 Certification	Yes
ISO/IEC 14001 Certification	Yes
ISO/IEC 27001 Certification	Yes
Who Accredited the ISO/IEC27001	UKAS
Cyber Essentials	Yes
Cyber Essentials Plus	Yes

Security and Governance

Named Board-level Person Responsible for Service Security	Yes
Security Governance Certified	Yes
Security Governance Standards	ISO/IEC 27001
Information Security Policies and Processes	All information, security policies and controls are based on the ISO 27001 guidelines. EBC has a dedicated board member responsible for governance

Project Timeline and Communication

A detailed project timeline with key milestones will be established:

- Mobilisation of legacy evidence
- Digitisation process completion (including quality control)
- Upload and secure storage of digitised files
- Software implementation and configuration
- User training and familiarisation with the software
- Project completion and handover

Regular progress reports will be communicated to the client throughout the project lifecycle, including details on completed tasks, encountered challenges, and upcoming milestones.

Acceptance Criteria

The project will be considered complete upon successful delivery of the following:

- High-resolution digital copies of legacy evidence in the specified format
- Secure cloud storage with robust access control for the digitised evidence files
- A fully functional and operational cloud-based software solution for managing and accessing the digitised evidence
- A detailed chain of custody report documenting the entire process from collection to archiving
- Comprehensive user training materials and ongoing technical support for the cloud software
- Optional integration with existing case management systems via API subject to quotation

Conclusion

THEMIS offers a comprehensive solution for secure and efficient legacy evidence management. By leveraging cutting-edge technology, rigorous quality control procedures and a user-centric software platform, THEMIS empowers law enforcement agencies to:

- **Safeguard Evidence Integrity:** Secure storage and robust access controls protect sensitive evidence from unauthorised access or data breaches.

- **Expedite Investigations:** Instantaneous retrieval and advanced search functionalities streamline investigative workflows, leading to faster case resolution.

- **Enhance Collaboration:** Secure evidence sharing capabilities facilitate collaboration with prosecutors and external agencies.

- **Reduce Costs:** Eliminate the need for dedicated physical storage facilities and minimise investigation delays.

- **Strengthen Public Trust:** Transparency and accountability through secure evidence management foster public confidence in the criminal justice system.

"Our investment into THEMIS exemplifies our strategic focus on a more efficient, secure and trusted criminal justice system" - Police Force User