

G-Cloud 15 Service Definition

Bedroq Capture ANPR - Fully Managed ANPR Solution

Bedroq Ltd – Lot 3 Cloud Support



Contents

1	Introduction	4
1.1	Company Overview	4
1.2	Value Proposition	4
1.3	What the Service Provides	4
1.4	Social Value	5
1.4.1	Covid-19	5
1.4.2	Tackling economic inequality	5
1.4.3	Fighting climate change	5
1.4.4	Equal Opportunity	6
1.4.5	Wellbeing	6
2	Overview of the G-Cloud Service	7
2.1	ANPR Equipment	7
2.2	ANPR Core Applications & Hosting	8
2.3	ANPR Clients	8
2.4	Resilience & reliability	8
2.5	Associated Services	9
3	Data Protection	9
3.1	Information Assurance	9
3.2	Data Back-Up and Restoration	10
3.3	Business continuity statement/plan	10
3.4	Privacy by Design	10
4	Using the service	11
4.1	Ordering and Invoicing	11
4.2	Availability of Trial Service	11
4.3	On-Boarding, Off-Boarding, Service Migration, Scope etc.	11
4.4	Training	11
4.5	Implementation Plan	12
4.6	Service Management	12
4.7	Service Desk	13
4.8	Service Constraints	13
4.9	Service Levels	13
4.10	Outage and Maintenance Management	14



4.11	Financial Recompense Model for not Meeting Service Levels	14
5	Provision of the service	14
5.1	Customer Responsibilities	14
5.2	Technical Requirements and Client-Side Requirements	15
5.3	Outcomes/Deliverables	15
5.4	After-sales Account Management	15
5.5	Termination Process	16
6	Our experience	16
6.1	Case Studies	16
6.1.1	Greater Manchester Police	16
6.1.2	Cumbria Constabulary	18
6.2	Clients	20
6.3	Contact Details	20



1 Introduction

1.1 Company Overview

Bedroq provide critical technology solutions built on solid foundations. We help organisations that rely on technology for critical operations, achieve and maintain a high-performance steady state. Bedroq have delivered projects for almost every police force and law enforcement agency in the UK, providing secure resilient networks and managed IT solutions. Challenging geographies, covert operations or highly regulated environments mean the solutions we provide are specialist and mostly unique to each customer but our tried and tested processes, underpinned and audited by ISO 27001 standards, mean they are delivered consistently.

1.2 Value Proposition

With years of experience working with law enforcement we understand the pressures teams are working under, and our detailed planning and testing ensures we're implementing the right technology that works first time. Bedroq Capture ANPR is a vendor agnostic service that gives police personnel a highly secure, resilient and reliable Automatic Number Plate Recognition service to support their critical operations. The entire network, from cameras to datacentre, is managed and maintained by Bedroq. We handle the testing requirements to ensure compliance to NASPLE standards, allowing system users to get on with the job in hand.

1.3 What the Service Provides

- Consultation and Planning:
 - Our detailed planning and testing ensure that we're implementing the right technology that works first time.
 - Detailed analysis and consultation to help you choose the right BOF and hardware options.
- Deployment and Networking:
 - The ANPR solution is hosted in our UK-eyes-only PASF private datacentre, making it cost-effective and resilient.
 - Bedroq deploy cameras and car kits, making this a true end-to-end ANPR solution.
- Operational Support and Compliance:
 - Our proactive monitoring, management and strategic support keeps critical vehicle assets delivering data feeds, all in line with NASPLE standards.
- Secure Data Storage and Interface Management:
 - Only security-cleared, UK staff will be able to access our Police Assured Secure Facility (PASF) datacentre.
 - Interfaces can be configured as required, including NAS, NADC, PNC, MIDAS, MMC.



1.4 Social Value

1.4.1 Covid-19

Bedroq is committed to supporting people in their return to work, especially in the context of Covid-19, by offering flexibility in working location and the opportunity for remote working. Those worst affected by the Covid-19 pandemic or those who are shielding are encouraged to continue their work in support of the project in a way that is safe for them and in many cases Bedroq offer the opportunity to continue working remotely. In addition, as an expanding organisation within a high growth sector Bedroq are able to create employment opportunities for additional staff. Recruitment practices follow the five foundational principles of quality work set out in the Good Work Plan (fair pay, participation and progression, voice and autonomy) in order to attract good candidates from all backgrounds. We recognise that following Covid-19 further action is required to invest in the physical and mental health of employees within Bedroq and our supply chain. Loneliness and isolation has had a major impact on people's mental health during the pandemic, and we understand the need for a safe work environment in which staff can meet and socialise if they wish. To support this, we have implemented effective social distancing measures in the office and health awareness training for all staff. In order to measure the success of the initiatives Bedroq have implemented to support Covid-19 recovery we will report on the number of full-time equivalent employment opportunities created under the contract, by UK region, for those who were made redundant due to Covid-19. We will also report the percentage of all companies in the supply chain under the contract to have implemented the 6 standards in the Mental Health at Work commitment.

1.4.2 Tackling economic inequality

The technology provisioned within this contract includes cloud computing, a high growth sector in which there is a skills shortage. Bedroq are committed to building awareness of careers and recruitment opportunities related to this skills shortage and promoting the opportunities available in the technology sector. The Bedroq head office is located within the Bradford local authority district, rated amongst the 20% most deprived neighbourhoods in the country according to the 2019 Indices of Deprivation published by the Ministry of Housing, Communities and Local Government. We will use our HR reporting processes to measure the number of employment opportunities created for local people under the contract. Bedroq already employ and develop apprentices, and we will continue to identify opportunities to deliver apprenticeships as part of this contract, giving people the opportunity and support to begin their careers in this high growth sector. We will measure the success of this programme by reporting on the number of resulting recognised qualifications obtained by apprentices to the contract. In order to support and create opportunities for economic growth and business creation, we will take measures to make the supply chain to the contract accessible to a diverse range of suppliers and growing businesses. We will structure the supply chain selection process in a way that ensures fairness and encourages participation by new and growing businesses. Where possible, we will partner with businesses in the supply chain for collaborative performance management, using feedback to continuously improve processes.

1.4.3 Fighting climate change

As part of our ongoing commitment to work towards net zero greenhouse gas emissions, Bedroq use a platform called Ecologi to plant sustainable forest. In doing so, we have so far offset around 20 tonnes of carbon, and will continue to contribute to this cause, bringing additional environmental benefits in the performance of the contract. We will report on the number of trees planted and the net reduction of carbon as



a result of the contract. By sharing this initiative in a transparent way we also hope to encourage and influence staff, suppliers and customers to assess the steps they can take to support environmental protection and improvement as a result of the contract. Bedroq supports its staff to support environmental objectives by highlighting volunteering opportunities and giving time for staff to get involved with community projects. In order to report on this we will collate the number of people-hours spent protecting and improving the environment under the contract, by UK region. The technology implemented during this project can be used to support the creation of low-emissions zones, delivering additional environmental benefits and improving air quality.

1.4.4 Equal Opportunity

Bedroq are a registered Disability Confident Committed Employer as part of our aim to contribute to the reduction of the disability employment gap. Where possible, we also encourage the inclusion of Disability Confident Employers in the contract supply chain. By taking advice from disabled people and their representative groups we build an understanding of how best to support disabled people or applicants. We provide inclusive and accessible recruitment practices, communicating vacancies in an accessible way, offering an interview to disabled people, and providing reasonable adjustments. We will measure the impact of this commitment by reporting on the number of full-time equivalent disabled people employed under the contract. The working conditions at Bedroq promote an inclusive working environment, giving employees the flexibility to choose to work from home or in an office environment. Jobs at all levels are open to flexible working from day one, helping to increase the number of people from groups under-represented in the workforce. As part of our overall commitment to training and development, we offer inclusive and accessible development practices, with a range of quality opportunities and routes for progression. There is transparency in promotion, pay and reward processes, and regular pay audits are conducted.

1.4.5 Wellbeing

Bedroq are committed to supporting and having a positive impact on the health and wellbeing of our staff, contract workforce, customers and communities. We have implemented the six standards in the Mental Health at Work commitment and promote these standards through regular staff communications and internal meetings. Our goal is to influence the businesses in our supply chain to implement these standards as well, and we will measure the success of this by reporting on the percentage of all companies in the supply chain under the contract to have done so. We will gather data on staff engagement with the programme of activity and adapt to any changes in the results, deciding on the most important issues to address. In order to support wellbeing within the community, Bedroq support a charity called Resurgo by donating to its Spear Programme. The Spear Programme helps young people facing barriers getting into work or education, by equipping them with confidence, motivation and the vital skills they need to succeed in long-term employment. The solution provided under this contract will have a positive impact on community safety and the reduction of crime in the region where the contract is implemented. Bedroq will commit to working alongside the customer to help improve community integration and understanding of the solution. We will assist with measures to build trust, gain credibility and build relationships to increase community integration, trust and influence on how the contract is performed. We will report on the number of people-hours spent supporting local community integration under the contract, identifying the activities that have aided community engagement and integration.



2 Overview of the G-Cloud Service

Bedroq provides all aspects of ANPR services from simple equipment supply to delivery of a fully managed service where all aspects of the ANPR service are managed and delivered against defined Service Level Agreements (SLA's). Bedroq are agnostic to technology and manufacturers and are therefore able to flexibly tailor ANPR services to client technical and operational requirements. Bedroq uniquely offer all aspects of the supply, installation and ongoing management of ANPR systems as part of a managed service.

Bedroq's fully managed ANPR solution, powered by our Secure, Resilient, Task-Led Operations Centre (SERTO) provides police and other law enforcement agencies with everything required to run a secure, reliable and compliant ANPR system. The end-to-end managed service handles everything required for your ANPR system, from camera deployment to datacentre management. Maintenance is handled by the Bedroq team, meaning you can rely on a system that will provide data for day-to-day and large-scale operations, saving time and money while also ensuring compliance to NASPLE standards.

Solution components:

Consultation & Planning	With years of law enforcement experience we understand the pressures teams are working under, and our detailed planning and testing ensures we're implementing the right technology that works first time.
Deployment & Networking	Your ANPR solution will be hosted in our UK-eyes-only private datacentre (SERTO), making it cost-effective and resilient. We're also experts in the deployment of cameras and car-kits, making this a true end-to-end ANPR solution.
Operational Support & Compliance	Our proactive monitoring, management and strategic support keeps critical vehicle and camera assets delivering data feeds, all in line with NASPLE standards. The resilience and reliability of our network is second to none.
Secure Data Storage & Interface Management	We guarantee only security-cleared, UK staff will be able to access our Police Assured Secure Facility (PASF) datacentre. Interfaces can be configured as required, including NAS, MIDAS, NADC, MMC, PNC.

2.1 ANPR Equipment



The following table provides a summary of the available suite of ANPR equipment and services:

ANPR equipment type & location	Vehicle	Re-deployable	Fixed
Overt	Yes	Yes	Yes
Covert	Yes	Yes	Yes

2.2 ANPR Core Applications & Hosting

Bedroq provide the core & Back Office Facility (BOF) ANPR applications and the associated hosting that are required to provide ANPR services to relevant law enforcement agencies & Police Forces. Bedroq also manage the interfaces to national ANPR & intelligence systems such as:

- NAS.
- NADC.
- PNC.

Bedroq provide core infrastructure & interfaces required to update the ANPR databases including:

- MIDAS.
- MMC (DVLA).

2.3 ANPR Clients

Bedroq implement and support a range of ANPR clients. Thick clients (full-featured computers that are connected to the network) are utilised where full ANPR BOF functionality is required, whilst thin clients (a more basic computing device that runs services and software from a centralised server) are deployed onto mobile devices to enable ANPR functionality to be delivered to mobile personnel.

2.4 Resilience & reliability

Bedroq can host all elements of the ANPR core systems and applications in either a single or dual fully fault tolerant datacentres. The datacentres conform to international standards for security and availability including:

- ISO 27001.
- Police Assured Secure Facilities (PASF).

All applications and associated ANPR data can be backed up and replicated across these datacentres and therefore meet client Disaster Recovery & Business Continuity requirements.



2.5 Associated Services

Clients can tailor their managed services to deliver the level of service that meets their expectations, budget and operational requirements. These variables are often around the installation, management and fault resolution to assets that are deployed in a range of permanent and temporary location and vehicles. Clients can choose to include some or all of these elements into the overall Bedroq managed service.

Items/services not included as part of the core service can be ordered separately, these include:

Communications – ANPR cameras require connectivity to be able to transmit data, this is not included as standard as options for this depend on requirements. Refer to pricing document for more information.

Cameras – ANPR cameras themselves are not included as part of the core service. These can be ordered separately and we provide an installation service. Refer to pricing document for more information.

Integrations – Every police force has their own requirements so integration with national functions such as NAS aren't included. Required services will need to be chosen by the customer. Refer to pricing document for more information.

Bedroq offers two levels of support with the following support hours;

- 24/7 - support service suitable for business-critical services.
- Standard Hours - Monday to Friday, excluding public holidays, 8am-6pm UK time, covering a flexible working day.

The Bedroq Service Desk is contactable from 24/7. The Service Desk responds to Incidents and Service Requests based on priority.

The level of support for this service will be agreed with the client and enterprise style deals and time limited discounts may be available.

3 Data Protection

3.1 Information Assurance

We have accreditations, certifications, and standards for different project types. Some clients require specific Faculty Security Clearance (FSC), and others need key staff to have security vetting.

For working within the nuclear industry, we have List N clearance for buildings where this work takes place. For working with Law Enforcement Agencies or Government Contracts, relevant staff have NPPV clearance, SC clearance or DV clearance.

For general good practice we maintain the highest levels of information security management, quality and environmental standards and adherence to best practice in occupational health and safety. Where appropriate, our teams are certified against the ISO 27001, ISO 9001, ISO 14001 and ISO 45001 standards.



3.2 Data Back-Up and Restoration

As part of the definition of the managed service & SLA, clients can choose to host the core ANPR applications, systems and data in two diverse secure datacentres. Core application and associated data can be replicated automatically and security between datacentres enabling seamless or rapid restoration of core ANPR and BOF functionality in the event of component or element failure of the service.

The definition of the service is undertaken collaboratively with our clients as part of the order process and clients receive detailed SLAs as part of service definition.

The hosting, delivery & security of these core ANPR services are designed and audited to meet and exceed the security and availability standards as defined in ISO27001. Bedroq are externally audited against these standards annually by BSI. Bedroq also support ISO9001 Quality standards.

3.3 Business continuity statement/plan

All elements of the service delivery and especially Business Continuity and Disaster Recovery elements are designed, implemented and delivered to ISO27001 standards and externally audited.

Testing of the ANPR systems and services are undertaken and audited to ISO9001 standards and include Factory Acceptance Testing (FAT) which is undertaken on all elements of the ANPR system at the completion of the design and build phases. Site Acceptance Testing (SAT) is undertaken when the system has been transferred into the production environment and is the final quality gateway that must be successfully completed prior to service go live. Both FAT & SAT can be client witnessed if required.

Bedroq quality standards encompass all elements & departments within the company.

3.4 Privacy by Design

We collect limited personal data about our customers, suppliers and contractors. This may include their name, email address, work address and contact telephone number, along with a description of the service they have purchased or opted-in to receiving. It may also include bank account information where we are paying for a service. We will only collect relevant information where it is necessary for our legitimate interests to provide effective services to our customers, or where it is necessary for us to enter into a contract or for the performance of a contract with the individual or company they work for.

We do not share personal data with other organisations except where they are a trusted partner acting on our behalf/supporting us in delivering our service to you, and they have demonstrated that they meet the requirements of applicable data protection laws. We have appropriate agreements in place with our data processors to ensure personal data is protected and handled correctly.

Bedroq is registered with the Information Commissioner's Office in compliance with the UK Data Protection Act, under registration number 11859968. Details about Bedroq's registration are available at www.ico.org.uk.



4 Using the service

4.1 Ordering and Invoicing

To discuss your requirements in more detail and place an order please send an email to gcloud@bedroq.co.uk or call 01535 279748. We will then provide you with any assistance you may require to complete an order form.

4.2 Availability of Trial Service

There is no trial available for this overall service. Trialling of component technology may be appropriate during the early stages of contract delivery.

4.3 On-Boarding, Off-Boarding, Service Migration, Scope etc.

Bedroq has extensive demonstrable experience of on-boarding ANPR services that are either “new build” or alternatively are currently live and must therefore be seamlessly transitioned. We have successfully achieved these smooth transitions whilst mitigating risk and minimising disruption to the existing services & clients.

We will achieve our on-boarding strategy by initiating a client specific onboarding project, which is relevant in size and scale to the services that our client wishes to onboard, and which adhere to the following proven principles and methodology:

- Mobilise Project Team.
- Data Gathering (Due Diligence).
- Establish Technology Links.
- Set Interim Structured Processes.
- Go live Interim Service.
- Early Life Support.
- On-boarding complete.

Workshops are often utilised to gather, reflect and gain customer stakeholder confidence in the requirements gathering as well as system appropriate service deliver & management including future vision and strategy.

Depending upon the scale and type of ANPR service provided, an offboarding project and associated process may be required. This will enable the services to be transitioned professionally and seamlessly to an alternate service provider.

4.4 Training

Appropriate training shall be provided depending upon the ANPR service requested by our client. Bedroq can undertake project and client specific training using a range of online, demo and digital material.



Bedroq provide specialist training packages for each of our services, deliverable as:

- In person training (on customer's site or at our training facility in West Yorkshire)
- Detailed "how to" guides
- Presentational videos
- Learning management content

These training packages are backed by our team's expertise with 19 years of experience delivering courses and training material to public and private sector organisations including police forces and high security energy sector customers.

4.5 Implementation Plan

A detailed implementation plan can be provided to the buyer on request, the implementation plan will vary depending upon the size, scale and complexity of the ANPR service requested.

4.6 Service Management

All elements of the Bedroq ANPR design delivery and ongoing maintenance & support are underpinned and audited by appropriate quality and security processes and procedures including ITIL, ISO 27001, ISO 9001, ISO 14001 & ISO 45001. The policies and procedures define how the service is delivered and governs the people, process and information technology that will be utilised to achieve the operational requirements required by our clients.

All elements of the ANPR system will be monitored by a suite of Bedroq tooling that includes security and systems monitoring tools. Bedroq Cloud Monitoring System (CMS) will be implemented to support the ANPR systems.

The following provide an illustration of the CMS elements that are monitored and provide automated alerting of thresholds are exceed:

- Logical & Physical Topology Mapping.
- Device Failure Notification.
- Hardware Monitoring.
- Bandwidth Monitoring.
- Availability Reporting.
- CPU Monitoring.
- Memory Monitoring.
- Disk Space Monitoring.
- Threshold monitoring (temperatures etc).



CMS monitors and collates statistics 24 x 7 x 365 and alerts “automatically” on events or predefined threshold settings.

CMS tracks the availability and capacity associated with all ANPR hardware and application-based systems and services. Virtual system capacity can be enhanced without any user impact.

The CMS system allows us to be very proactive in the management of alerts. As an example, we have saved failure of critical equipment, by automatically alerting/notifying on high temperature alarms, allowing remedial air-conditioning measures, before equipment damage occurs.

Data being monitored and recorded by CMS will be available to analyse and identify recurring issues or opportunities for continual service improvement.

4.7 Service Desk

Bedroq operate 24 x 7 x 365 service desk support on a global basis. Due to the classification of the ANPR data (Official Sensitive - OS) the ANPR system shall be supported by the Bedroq Red Service Desk Team. This team (and the supporting systems) are UK based and only personnel that have appropriate NPPV3 vetting and SC clearance are able to access these ANPR systems and data.

All Service Desk functions including client access to log and review service tickets utilise the ConnectWise service management suite. It is our culture to resolve issues as quickly as possible and to investigate, identify and correct any underlying root causes before they become service affecting. Any such actions being undertaken by the Service team will be presented at monthly reviews.

Your dedicated Bedroq Account Manager & Service Manager are your gateways into the Bedroq services available and provide your points of contacts for all enquiries.

4.8 Service Constraints

Depending upon the operational requirements of our clients, the ANPR services that Bedroq provide are modular scalable and flexible in terms of their capability, there may however be some constraints in the definition and delivery of the ANPR service. These will be discussed, defined and agreed as part of the service definition, but may include elements such as:

- Duration of contract length.
- Existing equipment or service contract terms.
- Length of service.
- Client budgets.
- Standards (e.g. NASPLE).
- Interfaces (e.g. NAS & NADC).

4.9 Service Levels



Bedroq works collaboratively with our clients to define service level agreements that are fit for purpose and meet client requirements, as part of the service level agreement Bedroq will agree the key parameters of the SLA, these will include elements such as:

- Performance.
- Availability.
- Support hours.
- Severity definitions.

Bedroq are able to discuss and agree appropriate service levels and reach agreement prior to an order being placed (which would then be documented in the Order Form as agreed between both parties).

4.10 Outage and Maintenance Management

The Disaster Recovery (DR) & Business Continuity (BC) of the ANPR service will be defined and agreed using security and quality best practises of ISO 27001 & ISO 9001, an agreed systems architecture will be implemented where core ANPR systems are delivered resiliently across multiple secure datacentre locations. The customer specific architecture will be agreed prior to an order being placed (which would then be documented in the Order Form as agreed between both parties).

All elements of the ANPR system will be monitored by a suite of Bedroq tooling that includes security and systems monitoring tools. Bedroq Cloud Monitoring System (CMS) will be implemented to support the ANPR systems from front end AMPR camera and network devices, vehicle mounted covert and overt equipment as well as the core hosted BOF environment.

Bedroq recommends a Development Test Spares Environment (DTSE) is implemented as part of the managed ANPR system. This environment enables application and operating systems updates and planned or urgent security updates to be tested in an offline environment that matches the production ANPR environment.

4.11 Financial Recompense Model for not Meeting Service Levels

Service credits can be defined and agreed as part of the Service Level Agreement and definition.

5 Provision of the service

5.1 Customer Responsibilities

- Documentation of existing systems including but not limited to specifications, serial numbers, logins, IP address. If this information isn't available, Bedroq can obtain the information as part of an audit, charged for on a day-rate basis.
- Physical access to all locations in order to maintain all parts of the service.
- Bedroq will pay for all required security clearances, but the client will facilitate that process.



5.2 Technical Requirements and Client-Side Requirements

- Network access and logins to all required computer systems and networks.
- Further detailed technical requirements will be included in the technical specifications during the order process.
- Existing equipment belonging to customer that they wish to form part of a new solution must be compatible with the new system. For example an existing ANPR camera must be compatible with customer's choice of BOF.

5.3 Outcomes/Deliverables

The pressure on police forces to do more with less is relentless. ANPR, if deployed correctly, can drive operational efficiencies, providing actionable intelligence to officers when and where they need it. Bedroq focus on three key areas;

- Gathering data – from force-owned cameras and third-party systems like ULEZ enforcement zones and council parking systems, the more data that can be ingested into the ANPR system, the more effective it can be. Bedroq have experience of the technical and regulatory challenges in integrating with many systems.
- Availability – rather than providing ANPR to the few training officers, Bedroq can put this powerful tool in the hands of every approved officer with mobile apps, web tools and secured Internet connectivity.
- Operational efficiencies – the more service components (camera maintenance, comms, BOF) that are transitioned to Bedroq, the more operational control and efficiency Bedroq can drive. Bedroq aim to be invisible – when ANPR services are taken for granted and users expect them to be available 24/7 from anywhere, we have done our job. Organisations can focus their time on their operational goals, not managing technology and the teams that support them.

5.4 After-sales Account Management

All Bedroq customers have a service delivery team of named individuals;

- Account Manager (day-to-day client queries, commercial lead, responsible for the client relationship/communications between the client and Bedroq).
- Customer Tech Lead (first point of contact for technical incident resolution and service requests).
- Service Delivery Manager (on-going service delivery, ensuring customer satisfaction through quality service delivery).

Account Management meetings are scheduled regularly, with a cadence agreed with the client. During the on-boarding phase this is most often weekly, which then moves to monthly when services are commissioned.



Account Management meeting agendas are customised to the client. A typical agenda includes a service review, high level projects update, commercial review (invoicing, purchase orders, spend against budget etc.), new initiatives and time with senior technical architects to discuss opportunities.

Bedroq is ISO9001 certified, a quality management standard that helps organisations ensure they meet customers and other stakeholder needs within statutory and regulatory requirements related to a product or service. All our account management processes are aligned with this standard.

5.5 Termination Process

Full details of the Termination process can be found in the Bedroq MSA (Master Services Agreement).
Definitions;

- **Service Item:** the individual services listed in the Order Form(s) with their associated Quantities and other attributes including but not limited to Minimum Term.
- **Minimum Term:** the minimum term of a Service Item. The initial Minimum Term is set out in the Order Form. If the Minimum Term is not specified in the Order Form it will be deemed to be every 36 months.
- **Item Notice Period:** shall mean the minimum notice required to expire before the end of a Minimum Term or the Term Extension (as applicable), to remove a Service Item. The Item Notice Period is set out in the Order Form. If the Item Notice Period is not specified in the Order Form it will be deemed to be every 3 months.
- **Term Extension:** the increment by which the Minimum Term is automatically extended each time the end of a Minimum Term is reached. The increment is defined in the Order Form. If the Term Extension is not specified in the Order Form it will be deemed to be every 12 months from the end of the Minimum Term.
- **Termination Compensation Fee:** means all remaining Fees due to the end of the Minimum Term or the Extended Term (as applicable) for all remaining Service Items.

In the event that the Client terminates one or more Service Items for convenience, not resulting from Bedroq's breach of the MSA terms, the Client shall pay any and all outstanding invoices, any Termination Compensation Fee (if applicable) and all Third-Party Termination Costs where the case does not meet the criteria of G-Cloud's 30 day no fault termination clause.

6 Our experience

6.1 Case Studies

6.1.1 Greater Manchester Police

Greater Manchester Police (GMP) invests in a new secure network and upgraded equipment, centrally managed through a multi-agency control room. This case study provides a snapshot of work done for GMP by Bedroq, prior to Bedroq being awarded the ANPR managed service contract for GMP.

Operation Protector – Conservative Party Conference 2023



This was a complex security and public order operation, requiring a high degree of multi-agency partnership, where technology was key to giving the force the information they needed.

The Conservative Party conference 2023 was held in Manchester and saw thousands of extra people enter the city. Although a political event, its temporary role as the seat of government means the Home Office requires an additional level of security to be maintained throughout, adding complexity to the role of Greater Manchester Police. Operation Protector was launched to oversee the safety and security of large-scale political events like this. Security needs to be 100 per cent functional and resilient from the outset and duration of the event.

Bedroq works with Greater Manchester Police, providing a managed service designed to improve surveillance and communications, to make better use of resources and ultimately enable faster decision making during major incidents, terrorist attacks, protection of government and the general public. Operation Protector is part of this remit, as are all major events in the city including the recent 'Park Life' festival attended by 80,000 people.

Outdated legacy equipment

As part of their preparation for Operation Protector, GMP reviewed their existing technology and recognised that it was in need of upgrade. The legacy surveillance equipment was no longer supported, analogue, and often gave poor quality outputs. Thousands of cameras are already in place across the city of Manchester, but these are owned and run by multiple different agencies. A lack of integration between the CCTV systems meant that information had to be passed between the agencies and the GMP by phone, adding critical time to incident response.

Scoping, design, and testing

From the outset, Bedroq was there to support GMP with all aspects of the planning and implementation of Operation Protector. This began with detailing the technical requirements of the operation, along with understanding the potential source and impact of security breaches. Bedroq engineers conducted a number of detailed site surveys to assess vulnerabilities and map areas of concern according to risk and impact. The solution was then designed and tested against these operational requirements.

Timescale and supply chain challenges

As Operation Protector related to a fixed date event there was no room for manoeuvre in getting the solution implemented in time. Deployment was further complicated by worldwide supply chain issues, which meant that some of the equipment that had originally been built into designs was simply not available. The design and equipment specification was changed at short notice to accommodate this with no loss of functionality or quality of output.

"Various factors beyond our control combined to make this one of the most time-constrained projects I've worked on in years, however with great team effort we succeeded" – Matt Wood, Technical Director

As the managed security service provider to GMP, Bedroq also had to coordinate the activities and requirements of other specialist agencies through collaboration and relationship building. This enabled a new level of coordination that meant shared technology could be centrally managed through the multi-agency Control Room.

Implementation

Infrastructure was built



- The location of the conference was made into an 'island site' with physical security such as barriers complemented by electronic security designed and installed by Bedroq.
- Vulnerable parts of the site were protected by a combination of new fixed and temporary infrastructure installed on existing street lighting, building locations and mobile towers.
- Video motion detection within the CCTV cameras was linked to automated analytics to detect and report when any movement was detected within a restricted area.
- Feeds from multiple CCTV networks owned by other agencies were combined into a single security network, this combined with 40 new high-resolution cameras provided the GMP staff with access to over 250 potential viewpoints.
- Networks were configured with air gaps to prevent the transfer of sensitive data in either direction unless specifically required for the operation.
- All rigging and installation was carried out by our engineers.

Controlled centrally

- Built a multi-agency centrally managed control room in GMP HQ under the jurisdiction of the Chief Constable.
- GMP operators able to remotely access and take control of all camera feeds that they required.
- Clearly documented demarcation of roles and responsibilities between agencies, allowing the operation to run smoothly and any problems to be solved quickly and efficiently.
- Onsite project management.
- Bedroq engineers were onsite 24/7 for the duration of the event.
- Our team coordinated the activities and contributions of other specialist suppliers.

Outcome – quality and control

Staff within the control room noticed an immediate improvement in the quality of the feeds they were receiving, along with having the ability to select and manage individual cameras across the network that hadn't been possible previously. This meant that the right resources could be sent quickly to any incidents, increasing response time and avoiding unnecessary over-deployment.

Visual verification of incident reports reduced radio frequency traffic and increased speed of response, giving GMP the support they needed to handle this complex security and public order operation. Bedroq continues to work with GMP, providing the security and IT networking they require to support their ongoing operations. We also provide their ANPR managed service.

'The legacy of Operation Protector is that the technology we've put in will be used to support and police other events in Manchester, giving GMP the information they need to respond to incidents quickly and improving public safety' – Matt Wood, Technical Director.

6.1.2 Cumbria Constabulary



Cumbria Constabulary covers the fourth largest geographic area in England and Wales but (with the exception of the City of London) has the lowest population. Cumbria is predominantly rural and contains the Lake District National Park. The topography of Cumbria means that communities are dispersed throughout the county.

The solution had to allow Cumbria Constabulary and the Office of the Police and Crime Commissioner to build upon their success of creating safe environments with the largest coverage geographically of any CCTV system in the UK.

At the same time the system had to help in reducing anti-social behaviour, crime and disorder as well as providing proactive support for the business community. It also had to be “future proofed” and expandable and integrate into the new Home Office Criminal Justice System project.

When the Police and Crime Commissioner came into Office in November 2012 there was the real prospect of all the CCTV cameras in the major urban areas across the county being switched off and any new system had to cost effective in meeting the challenging requirements.

The Solution

The system utilises the very latest in CCTV camera and IP networked video surveillance and transmission technologies and techniques and is the first such system to be successfully installed in the UK.

The initial project has installed 53 new state of the art low light PTZ cameras, utilising existing and new camera locations across the six towns of Carlisle, Workington, Whitehaven, Barrow, Kendal and Penrith. All cameras are monitored at the Police HQ at Penrith.

Wireless IT technologies have been utilised wherever possible in order to reduce the costs and physical impact associated with older fibre optic techniques.

The system is remotely monitored 24/7 by Tellemachus at its Network Operations Centre to ensure all cameras operate effectively all of the time.

The benefits

Police and Crime Commissioner, Richard Rhodes -

“CCTV will play a vital role in delivering a safe and secure environment for people who live in, work in and visit Cumbria. I am delighted that the CCTV scheme has now been launched”.

“This is an exciting first for Cumbria. This is an excellent example of how collaboration within the county can work well across the public sector led by the Office of the Police and Commissioner and in conjunction with the Constabulary and the six local district councils”.

“In every sense this is an innovative scheme and is the first of its type in the country. CCTV will play a vital role in delivering a safe and secure environment for people who live, work and visit Cumbria. At the same time CCTV will help in reducing anti-social behaviour, crime and disorder as well as providing proactive support for the business community”.

Chief Constable Jerry Graham -

“The new system will provide consistent and improved CCTV coverage across Cumbria. CCTV acts as a deterrent for would-be criminals, helps track offenders, and gather evidence. The number and location of cameras throughout Cumbria was decided following analysis of incidents dealt with by police, consultation



with neighbourhood policing teams and the funding opportunities provided by the Office of the Police and Crime Commissioner, district councils, and Cumbria Constabulary”.

Allerdale Councillor, Philip Tibble

Executive member with the Transformation portfolio said:

“We’re very pleased to have been involved with the partnership which has overseen the rolling out of this new CCTV system. It shall no doubt be an invaluable tool in crime reduction and prevention.”

Leader of Carlisle City Council, Councillor Colin Glover -

“We are pleased to be working in partnership with the Police and Crime Commissioner to support the delivery of modern and effective CCTV coverage. The new scheme will provide important operational policing support and help to create a safe environment for local people and visitors to Carlisle and around Cumbria”.

The way the system had been designed means it can be extended should more funding become available.

The new system also incorporates one of the country’s first “Digital Evidence Stores, which forms the basis of the Home Office Criminal Justice Systems CDIS programme, designed to reduce costs and streamline case management.

6.2 Clients



6.3 Contact Details

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