**Performance and Resources Scrutiny Programme 2017/18**

**Report to: the Office of the Police, Fire and Crime Commissioner for Essex**

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| **Title of Report:** | **Update on Digital Forensic Gateway** |
| **Chief Officer** | **ACC Nick Downing** |
| **Date Paper was Written** | **3rd July 2018** |
| **Version Number** | **1.0** |
| **Report from:**  | **Essex Police** |
| **Date of Meeting:** | **26th July 2018** |
| **Author on behalf of Chief Officer:** | **Wendy Palmer – Head of Forensic Services** |
| **Date of Approval:** | **13th July 2018** |

1. **Purpose of Report**

Update on the Digital Forensics Gateway Solution

1. **Recommendations**

Report is for the Board to note

1. **Executive Summary**

The 2015 Digital Forensics Unit business case was predicated on a technical solution, termed the ‘DFU Gateway’ to allow remote analysis of Essex cases by the Analysts based in Kent. Whilst it was known that implementation would be delayed, the length of delay was not anticipated, and as a result, the negative impact on analysis of Essex cases.

An interim solution termed ‘Gateway Lite’ was established in 2017, which is an improvement to the physical transportation of exhibits from Essex to Kent; however it is limited in capacity which means that the analysis of Kent cases are routinely prioritised over Essex cases.

IT are currently working with DFU to improve this position.

1. **Introduction/Background**

Prior to collaboration, Kent Police and Essex Police operated separate Digital Forensics Units. The 2015 DFU Business Case proposed growth and a shift in the balance of analytical resources to the Kent DFU location at Maidstone HQ, leaving satellite functionality at the Essex DFU location at Chelmsford HQ.

The rationale was as follows:

* Meet growing demand over 2 forces without the need to recruit significant staff numbers each year for the foreseeable future
* Improved timeliness bringing offenders to justice and reduction in harm, particularly in respect of child sexual exploitation/paedophilia, which accounts for 90% of the data processed
* Increased resilience leading to improved case turnaround times and reduction in risk
* Workload balancing between forces enabled – currently impossible without physical transportation of exhibits and travelling time of investigators to view data
* Knowledge sharing improved
* Development and sharing of innovations
* Increased capacity for research and development to keep pace with rapidly advancing technology
* Management resilience and efficiency improved as less time spent travelling to and working from the satellite hub

The proposal relied on the delivery of a technical ‘gateway’ to enable the Kent-based analysts to access the data from seized devices on the digital storage at Chelmsford without the need to transport exhibits from Essex to Kent. It was accepted the Gateway may take time to put in place, so it was agreed that standard SLA cases (lowest risk) could be transported using the existing forensics submissions post run, whilst for urgent cases it was accepted that officers may be required to transport hard drives to Kent for analysis.

The new structure commenced on 6/10/15.

In June 2017 IT advised that development of the DFU Gateway had slipped into the 18/19 programme of works, which was the second slip (from 17/18)

In March 2017, IT created a VPN to facilitate remote analysis of Essex cases from Kent. This has been termed ‘Gateway Lite’. Whilst an improvement on the original interim solution of the postal run between Essex and Kent, it is only the full Gateway solution that will enable DFU to operate as efficiently as intended.

Gateway Lite means DFU have a limited number of ‘sessions’ that can be used for Kent analysts to work on data stored on the Essex DFU servers.  The user interface itself has a lag and analysts are continually negotiating with their colleagues to secure time on the remote connection to complete Essex casework.  The equipment used is recycled equipment from within DFU, and is therefore not up to the current performance specification.

The Gateway Lite solution is a route over the network that allows DFU workstations in Kent to remote DFU workstations in Essex. As part of the DFU business case, the number of workstations in Essex were reduced. To keep up with demand, up to 4 investigators in Kent may need to remote a single machine in Essex at any one time. The machines in Essex are not designed to cope with this level of demand. They are an exact copy of those in Kent and are effectively being tasked with 4 times the work load. The Gateway Lite solution is not designed to support remote analysis work, which requires software tools to be run on the machine that is being remoted. The machines cannot cope with more than one connection at a time.

Full Gateway would allow every analyst to have multiple connections using modern high performance equipment with a user interface that does not lag.  It would also provide a more robust fault-tolerant environment that would allow processing resources to be directed to those cases that require more than others.

Due to the issues with Gateway Lite, Kent casework is routinely prioritised over Essex casework as it is simply not possible to remotely access the required number of concurrent Essex cases.

It is highly unlikely that Chief Officers would have approved the DFU business case if the delays to Gateway had been foreseen.

1. **Current Work and Performance**

In response to the issue, IT are working with DFU to provide additional workstations to the Essex DFU office. This will enable one connection per machine, which will be less demanding on the machines in Essex. The network connection and remote access software are also being reviewed. This should make remote working possible for all of the tasks that DFU need to perform. However, it will still be slow and cannot be adopted as a permanent solution.

Case submissions to DFU are scored against a risk of harm matrix; 1 of 3 SLAs are then applied dependent on the score:

* Immediate
* Priority (28 days)
* Standard (75 days)

Standard submissions comprise 80% of the DFU workload. Currently, 3 times more Kent standard cases than Essex standard cases are completed within SLA.

1. **Implications (Issues)**

Digital forensics is now the most commonly needed forensic discipline. Home Office forecasts suggest that the demand for digital forensics will increase by 29% per cent between 2017 and 2020 alone, whilst the demand for traditional forensics will decline by 13%.

Every crime investigation in the United Kingdom is now likely to have some form of digital element. Digital forensics produces a particularly strong form of evidence and one that has a significant impact upon both criminal justice outcomes and their efficiency. Over 90% of people arrested for child sexual exploitation offences, for example, plead guiltyonce the initial digital forensics evidence has been presented to them.

It is essential that DFU is as efficient as possible in order to meet the challenges of demand growth.

**6.1 Links to Police and Crime Plan Priorities**

Forensic analysis of digital devices provides important intelligence and evidence in virtually all criminal investigations today. Therefore the relevant priorities within the plan to which a more efficient and timely service from DFU to Essex are:

Breaking the cycle of domestic abuse

Reverse the trend in serious violence

Tackle gangs and organised crime

Protecting children and vulnerable people

**6.2 Demand**

Not linked to the links to the PA Consulting Demand Analysis Report.

**6.3 Risks/Mitigation**

None

**6.4 Equality and/or Human Rights Implications**

None identified.

**6.5 Health and Safety Implications**

None identified.

1. **Consultation/Engagement**

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1. **Actions for Improvement**

Please see section 5.0

1. **Future Work/Development and Expected Outcome**

The entire DFU IT infrastructure for both forces is due to be reviewed by IT Services and a plan devised for a full replacement. This will include the following:

* The replacement of the DFU archivers
* The replacement of the DFU servers
* Improvement or replacement of surrounding network infrastructure
* The move of the CAID solution onto the same platform as DFU.
* A more effective solution for joint working between the Essex Police and Kent Police based DFU teams.

It is anticipated that planning for this will take place in the year 2019/2020 and be programmed for implementation from the year 2020/2021. However, this will be subject to securing the required funding once known, and high enough prioritisation onto the programme of work to be considered for delivery.

Gaps in technology and support will be identified, and a requirements traceability matrix produced to help ensure all user requirements are delivered. This will include the replacement of systems which are no longer viable, and end-to-end solutions which remove inefficient practices (such as travelling to collect/view media).

Costed options will be established to resolve identified issues to improve the efficiency and effectiveness of DFU and allow for future growth (minimum of 1 year’s additional capacity) and ongoing technical refresh over a minimum of 5 years.

The options will consider using existing infrastructure/solutions and planned new solutions where possible, and highlight options to outsource any elements of high technical complexity to externally hosted solutions/suppliers.

High Level and Low Level Design (using the forces’ template) for the preferred option(s) will be produced.

Any interim development recommended is urgently required to ensure the sustainability of the current infrastructure until it can be replaced.

**10.0 Decisions Required by the Police, Fire and Crime Commissioner**

Update paper, no decisions required.