Essex Police, Fire and Crime Commissioner Fire and Rescue Authority

Decision Report

Please ensure all sections below are completed

Report reference number: 011-22
Government security classification: Not protectively marked
Title of report: Digital & Data Programme - Network Project – SD-WAN
Area of county / stakeholders affected: All service staff
Report by: Ed Thomas, Project Manager, Innovation and Change Team **Date of report:** 14/4/22 **Enquiries to:** ed.thomas@essex-fire.gov.uk

1.   **Purpose of the report**

To gain agreement from the PFCC to award, to the winning supplier Virgin Media Business (VMB), a contract for the delivery of a new service-wide Software-Defined Wide Area Network (SD-WAN) overlay and firewall functionality with co-managed services. This is part of the ECFRS Digital & Data Programme Network project, and award of the contract follows a procurement exercise run using the Crown Commercial Services (CCS) "Network Services 2" framework.

NB: This is a new tender process, which is a re-procurement of the "Lot 1b" that was abandoned in last tender exercise in December 2021. It is not referred to as Lot 1b in this instance as there are no other Lots in this re-tender.

2. Recommendations

The Commissioner is asked to:

i. Approve the contract for delivery of the proposed SD-WAN network services to the highest scoring supplier following a tendering and evaluation process conducted within the CCS Network Services 2 framework, which is shown below.

Item	Description	Winning Supplier
Lot 1	SD-WAN Overlay Network and Co-Managed Service (including firewall functionality)	Virgin Media Business (VMB)

The total contract value for this proposal is **£908k**, which comprises of:

- Revenue costs of **£622k** over the initial 5 year contract period, relating to service management, support and maintenance costs.
- One-off Capital costs of **£286k**, relating to network equipment purchase and installation.

- The Revenue costs will be funded from the BAU budget. This is as a result of a reduction in BAU costs from the current WAN and firewall services that will cease as a result of implementation of this contract.

- The Capital costs will be funded from the Capital receipts reserve. Decision sheet 009-21 (Appendix A) approved £1.1m of Capital funding from the capital receipts reserve as part of the Digital & Data Strategy.

ii. Sign and seal the contract, subject to successful completion of the standstill period.

iii. Delegate authority for the Chief Financial Officer to sign off the Purchase Order in Dream for the Revenue and Capital costs following the contract sign off.

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3. Benefits of the proposal

- This proposal enables the delivery of the Digital & Data (D&D) Programme Network project, which is a key foundation underpinning the overall D&D Strategy. The D&D Strategy was approved by the PFCC via Decision Report 009-21 in March 2021 (Appendix A).

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- This proposal will deliver a new SD-WAN overlay layer at all sites, including firewall functionality and a co-managed service.

- The overlay layer will consist of new SD-WAN "Edge Devices" being installed at every site, providing advanced traffic management and security features.

- The SD-WAN devices will operate across the new transport layer (also being supplied by VMB) for this project. See PFCC Decision Report 073-21 from December 2021 (Appendix E) for confirmation of the transport layer provider appointment.

- The SD-WAN overlay delivered by this proposal will be tuned to take full advantage of the faster and more scalable new transport layer, improving the reliability and speed of network connectivity at every ECFRS site.

- This proposal will allow us to move towards decommissioning the current MPLS WAN, which has been provided by suppliers DUCL (Daisy Updata Communications Limited) under the current NGN (Next Generation Network) contract since April 2013. The NGN agreement terminates on 31st December 2022, and negotiation of an extension to this contract would incur increased costs.

- This proposal will support the successful delivery of the new Control System (the Control System will benefit from improved WAN services being in place when it goes live).

- Existing performance issues suffered by staff with cloud-hosted services (e.g., Office 365) will be improved through the introduction of direct internet links at every site, removing Kelvedon Park as an internet "bottleneck".

- This proposal supports future strategic projects and initiatives that increasingly rely upon cloud-hosted services (e.g., Data Insights & App Modernisation projects) by providing a direct internet link from every site.

- Replacement of aging network equipment and infrastructure components will reduce the risk of network failure and outages being suffered.

4.   Background and proposal

This project was initiated following PFCC approval of Decision Paper 009-21 (Digital and Data Strategy) in March 2021, ███ ███████████████████████████████.

The Network project is part of, and governed by, the Digital and Data Programme.

It was initiated to address issues with our current network, which is no longer fit-for-purpose for the following reasons:
1. Firewalls are becoming increasingly overstretched by current data flows.
2. Reliability issues with RDS and Wi-Fi are attributable to the firewalls.
3. Network switches at sites cannot support the speeds required for Wi-Fi.
4. Many sites are experiencing poor network performance, impacting staff efficiency.
5. Line capacities at many stations cannot cope with modern app usage (e.g. Teams).
6. Internet-bound traffic from any of our sites must first pass through Kelvedon Park data centres, creating bottlenecks which make Cloud-hosted systems appear more unresponsive and unreliable.
7. The new cloud-hosted Control System will require direct connectivity to each site.

The project is driven by two deadlines:
30th Jun 2022:   ECFRS Firewalls become end of life and unsupported.
31st Dec 2022:   Existing Network services contract terminates.

Additionally, the new Control System intends to go live at the beginning of April 2023, and will rely upon the new network being fully completed and operational before then.

The procurement process for the Network Project was run as a further competition against the Crown Commercial Services (CCS) 'Network Services 2' framework. The framework is split into various Lots and the most appropriate Lot was identified for this procurement as Lot 1, Data Access Services.

An evaluation team independently reviewed and scored each technical quality response from the bidders. A series of consensus meetings were then held for all evaluators to agree a final score for each question. The evaluation process only took into account the responses provided by each bidder for that question, we did not include information available from other sources or what we may already know of a solution or product. Scoring guidelines were provided to ensure every evaluator fairly assessed each answer and that all responses were reviewed consistently.

The contract being sought is for an initial 5-year period, with an option to extend for up to an additional 5 years.

The following table lists the background events leading up to this proposal.

Date	Event
18/03/2021	Decision paper 009-21 (Appendix A) agreed by PFCC to commence the implementation of the Digital & Data Strategy (to include Network Project).
Apr 2021	Network project initiated.
Jul 2021	Network specialists UBDS appointed to assist with requirements gathering and creation of procurement pack documentation.
08/09/2021	CCS Network Services 2 framework agreed as the most appropriate route to market to meet the timescales and ensure maximum visibility to vendors.
07/10/2021	CCS Framework contract terms and conditions and optional schedules finalised following legal review and advice from Capsticks (see section 9).
19/11/2021	Advisory "Network Briefing Paper" (Appendix C) discussed with PFCC representatives to agree method and timetable for PFCC approval process.
10/12/2021	PFCC Decision Report 073-21 (Appendix E) approved to allow Transport Layer (formerly "Lot 1a") supplier appointment and contract signature and the confirmation of the abandonment of the Lot1b procurement for the SD-WAN.
31/01/2022	Following review of ECFRS requirements and supplier questions, a revised Invitation to Tender was published to the CCS Network Services 2 framework for the supply of a new SD-WAN and firewall solution (this proposal).

The table below outlines the current plan and proposed activities and events that will be enabled and initiated by the acceptance of this proposal.

Date	Event
14/04/2022	Provide an updated Decision Sheet to confirm the outcome of the tender process and confirm the winning bidder.
19/04/2022	Target date for decision sheet sign-off.
21/04/2022	10-day standstill period commences.
03/05/2022	Proceed to contract signature.
06/05/2022	Awarded supplier contract begins.
Date	**Event**
20/05/2022	Solution design and supplier implementation plan agreed.
30/06/2022	Data centre firewall functionality replaced at Primary (KP) & DR (Harlow).
31/07/2022	Phase 1 sites SD-WAN service fully operational.
31/10/2022	SD-WAN full migration completed.
31/12/2022	Essex NGN contract expires.

5.   Alternative options considered and rejected

The options considered for our Technical Solution were:

i.   Do nothing

Given the current system requires renewal and this would require at the minimum a renegotiation of the current service contract, the option to do nothing was discounted as it would lead to the failure of our internal systems, reducing the effectiveness of the service and failing to implement the agreed Digital and Data Strategy.

ii.   Maintain "As-Is" solution design
   * Replace current firewalls with like for like modern equivalents
   * Negotiate a new network services contract with current suppliers DUCL to maintain existing circuits and management services.

This option was discounted due to a failure to adequately address the issues previously listed for the current network. The design does nothing to improve current performance issues, is not suitable for the new Control system, and makes no allowance for current cloud-based services, which will only increase as part of the overall strategic direction of the Digital & Data Strategy.

iii.   Seek a collaborative solution with Essex County Council or other partner agencies.

As the pre-existing partner for our existing NGN contract, ECC (Essex County Council) were consulted at the beginning of the project discovery phase to establish their planned approach. A continuing partnership option was then discounted as it was concluded that their proposed SDWAN Strategy was not viable for an Emergency Service.

Other opportunities for collaboration or an aggregated procurement were explored via conversations with members of the Essex Digital Connectivity Forum and Crown Commercial Services, but none were moving at the speed required to address our current issues and meet the existing deadlines for delivery.

iv.   Introduce a modern SD-WAN solution overlay (including network functionality) to operate over a new internet-based transport layer.

This was the selected option, as it best achieves the Benefits previously listed, and allows greatest scalability and future proofing for the other projects within the Digital & Data Programme, including new Control systems.

6.   Strategic priorities

The overarching Digital and Data Strategy and its supporting Business Case highlight how the programmes and projects will align to the Fire and Rescue Plan Priorities, IRMP 2020-2024 and the Annual Plan.

The Network project is expressly referenced as an objective in the 2021/22 Annual Plan under "Make Best Use of our Resources": "*Develop year 1 Digital and Data Strategy including migration from Skype to Teams, and Network design and procurement*".

Above all, the investment in, and modernisation of, the SD-WAN will deliver a foundation that will help to support the future priorities that are highlighted and referenced within the Digital & Data Strategy Business Case (Appendix B).

7.   Operational implications

Between July and October 2020, sessions were held with managers across the Authority and the ICT Team to scope initial aspirations and then consult on the draft strategy. Feedback was positive. The resultant version of the Digital and Data Strategy was then shared across these consultative groups and approved by the PFCC in March 2021.

Between April and June 2021, the D&D Project Managers engaged with Business Leads and Staff Rep bodies to describe and refine the proposed scope of each of the constituent projects. The Network project was identified as a crucial step on the journey to improve the reliability and performance of ICT Services for all staff, but particularly for Operational staff, many of whom are impacted by low speeds and unreliable network connections at their stations.

8.   Financial implications

This proposal will allow the appointment of the winning supplier, who will commence the planning and implementation of a new SD-WAN overlay network layer at each of our sites.

The PFCC approved funding for the Network project in the Digital & Data Strategy budget as part of Decision paper 009-21 (Appendix A). The decision approved funding of £1.16m relating to Capital Spend which was to be funded from the capital receipts reserve and £90k of one off Revenue costs to be funded from Earmarked Reserves.

The total contract value for this proposal will be £908k, comprising of revenue costs of £622k over a 5-year period and year one Capital costs of £286k.
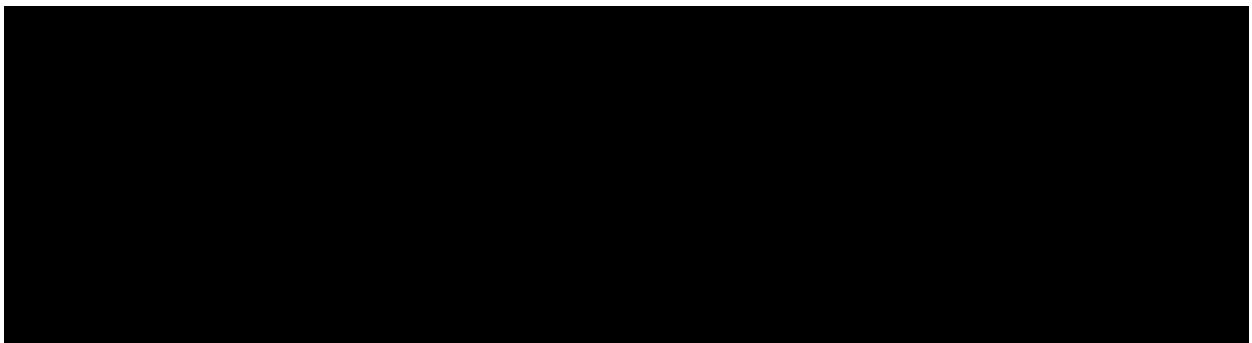
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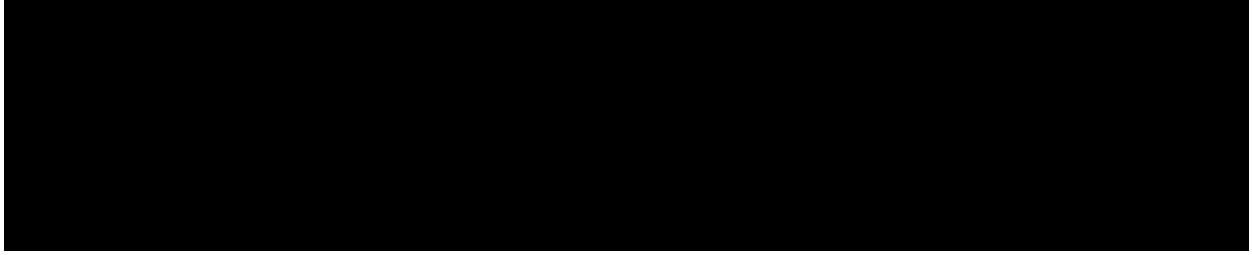
These revenue costs are expected to be funded from the reduction in BAU costs from the current WAN and firewall services that will cease as a result of implementation of this contract.

Other Network Project Costs

This SD-WAN proposal constitutes the largest single cost element for the whole Network project. For full transparency and to provide context, the other elements of the project are described below, and the costs for each (or best estimates) are shown.

•   Initiation Costs : Following a Digital Marketplace procurement invitation process, network specialists UBDS were employed in July 2021 to provide consultancy support with the definition of requirements and compilation of the initial procurement pack.

•   Transport Layer Costs : Under PFCC Decision sheet 073-021 (Lot 1a), Virgin Media Business were approved as the providers of the new direct internet access circuits from each site which make up the SD-WAN underlay (Transport Layer).

•   Site Readiness Costs : The preparation of each site to accommodate the new network services will require a variety of works to be performed. Most will require new network cabinets to be installed with power and data. Some will require small property works to be undertaken, either by circuit installers (e.g. laying of new fibre lines into the building) or by third party contractors (e.g. removal of fixtures and fittings).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The expected Capital costs are to be well within the allocated budget approved in the Digital and Data Strategy.

9.   Legal implications

The procurement process was run as a further competition against the Crown Commercial Services (CCS) 'Network Services 2' framework.

Under the framework agreement all contractual terms and conditions have already been set and agreed with each framework supplier during the initial procurement process for them to secure a place on the framework. CCS allow for some amendments to the terms and conditions and the choice of some optional Schedules.

Advice was sought from our external legal advisors Capsticks and the relevant internal stakeholders to make appropriate amendments to the terms and conditions and finalise the optional Schedules prior to running the further competition, the contract report from Capsticks is detailed in Appendix D.

The advice received from Capsticks has resulted in several additions to the Call Off contract including maximum liability being increased to whichever is the greater of £5 million or 150% of

yearly charges, and the inclusion of benchmarking if an extension is required at the end of the 5 year term.

10. Staffing implications

The Network project adopted an approach of supplementing the internal staff resources with targeted external expertise from a Network Specialist company, the costs for which were included within the original Digital & Data Strategy budgets agreed in PFCC Decision Report 009-21 (Appendix A).

The new Network SD-WAN overlay will be installed and supported by the winning supplier to be confirmed following completion of the further competition, and future administration of the solution will be on a co-managed basis with existing in-house ICT staff.

It is not anticipated that any additional new staffing requirements will result from the delivery of this project.

11. Equality and Diversity implications

A People Impact Assessment was carried out early in the project initiation process, and is available if required. It determined that there is expected to be a positive impact on all people who make use of the ECFRS network to access services or data, because of the anticipated improvements in network performance and resilience that the new SD-WAN overlay will bring.

It also confirmed that none of the following protected characteristics as defined within the Equality Act 2010 would alter the level of that positive impact:

Race	n/a	Religion or belief	n/a
Sex	n/a	Gender reassignment	n/a
Age	n/a	Pregnancy & maternity	n/a
Disability	n/a	Marriage and Civil Partnership	n/a
Sexual orientation	n/a		

12. Risks

Potential Risk	Proposed Mitigation
Procurement process is delayed	Delays to the procurement could lead to an impact on the Control System project, so early engagement with the PFCC has been established to ensure that as many questions as possible are answered in advance of this Decision Paper being presented, allowing for the swiftest possible decision.
Existing firewalls cease operating on 30/06/22	The procurement timescales have stipulated the milestones that need to be met to allow existing firewalls to be replaced within the required deadline. If required, a license & support extension option has now been identified for the current firewalls.
Replacement network is not operational before NGN contract expiry on 31/12/22	The potential suppliers have been given a milestone date of 31/10/22 by which time all SD-WAN services must be fully operational. Discussions will be held with current WAN suppliers to establish what additional cost would be incurred from extension of the NGN contract terms if there is no alternative.

Replacement network is not in place to support the new Control System implementation.	The procurement timescales have stipulated the milestones that need to be met to support the Control Project implementation timelines. Regular dialogue has been established with the Control System Project Manager to ensure that the project objectives and timescales are harmonised.
Disqualified bidders challenge the reason for their disqualification	We have consulted with legal advisors Capsticks, who have confirmed that the Authority is within its rights under the conditions of the tender process to disqualify any bidder for bids which are non-compliant. Notes are recorded throughout the process to support our position in the event that any disqualified bidder raises a challenge.

Whilst all of these risks are present they are being actively managed through mitigation actions, reducing their probability and impact.

13.   Governance Boards

The Network Project has been reporting to the Digital & Data Programme Board monthly, with any interim decisions or conversations being held by the Project Manager with Programme Director, Programme Manager or Programme SRO as appropriate.

This proposal has been developed in partnership with the ECFRS Procurement team and discussed in detail with the above individuals. The importance of the timelines for turnaround of the Decision Report has also been raised with representatives of the PFCC. Discussions have been held to agree the best approach for progressing the proposal within the required timescales and with respect to the purdah period that will be in force during the intended decision-making and contract award periods.

The Digital and Data Strategy was presented at the PFCC's Strategic Board on the 15th of March 2021 prior to the PFCC's agreement decision as set out in Decision Report 009-21. Quarterly updates on the D&D strategy and the progress of its projects are also provided through the Performance and Resource Board, the first of which took place at the end of September 2021.

14.   Background papers

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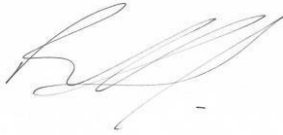
Decision Process (#)

Step 1A - Chief Fire Officer Comments

(The Chief Fire Officer is asked in their capacity as the Head of Paid Service to comment on the proposal.)

………………………I support this recommendation…………………………………

Sign: ……   .   Date:……14/4/22..…………

Step 1B – Consultation with representative bodies

(The Chief Fire Officer is to set out the consultation that has been undertaken with the representative bodies)

The first communications relating to this project were shared with the representative bodies in July 2021 when the Digital & Data Programme of activities were first being initiated. These explained the D&D projects that had been defined and invited questions or engagement from the reps. In October 2021, the most recent communications were shared with the reps, giving a progress report on all of the projects and repeating the previous invitation for them to engage. No feedback relating to the Network project has been received from the representative bodies to date, and due to the nature of this project's activities and planned outcomes, formal consultation with them is not necessary.

Step 2 - Statutory Officer Review

The report will be reviewed by the Essex Police, Fire and Crime Commissioner Fire and Rescue Authority's ("the Commissioner's") Monitoring Officer and Chief Finance Officer prior to review and sign off by the Commissioner or their Deputy.

Monitoring Officer

Sign: ....

Print: Darren Horsman - Deputy MO

Date: 19.4.2022 . . . .

Chief Finance Officer

Sign: ....

Print: ......Neil Cross.........

Date: . . . 14/4/22 . . . .

Step 3 - Publication
Is the report for publication?   YES

If 'NO', please give reasons for non-publication (Where relevant, cite the security classification of the document(s). State 'none' if applicable)

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If the report is not for publication, the Monitoring Officer will decide if and how the public can be informed of the decision.

Step 4 - Redaction
If the report is for publication, is redaction required:

1   Of Decision Sheet   YES

2   Of Appendix YES

 If 'YES', please provide details of required redaction:

All Appendices should be redacted.
The detailed financial breakdown of costs in section 2 should be redacted.
The financial implications in section 8 should be redacted.
The legal implications in section 9 should be redacted.
Any other detailed breakdown of costs should be redacted.

Date redaction carried out: …07/06/2022…………………………

If redaction is required, the Chief Finance Officer or the Monitoring Officer are to sign off that redaction has been completed.

Sign: ………   ………..   Print: …………Neil Cross………………….

Date signed: ……21.09.2022…………………………………

Step 5 - Decision by the Police, Fire and Crime Commissioner or Deputy Police, Fire and Crime Commissioner

I agree the recommendations to this report:

Sign: ……………………………………….............. (PFCC)

Print: Roger Hirst   Date signed: 20 April 2022