

**Nottinghamshire Police and Crime Commissioner**  
**Notice of Decision**



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<b>For Decision or Information</b>	Decision
<b>Date received*:</b>	25 <sup>th</sup> February 2015
<b>Ref*:</b>	2015.010

\*to be inserted by Office of PCC

**TITLE: Migration of EMRN Services onto PSN Bearers**

**EXECUTIVE SUMMARY:**

An opportunity has arisen across the East Midlands Region within the PSN project to consolidate high cost network infrastructure currently provided at a revenue cost of c£400,000 per annum across the region. The proposal is to consolidate the East Midlands Regional Network (EMRN) onto the new PSN infrastructure and make a saving of c£200,000 per annum. The proposal has been developed in conjunction with the Heads of IT and supported by all 5 force command teams.

There will be an initial capital outlay for each force, however, once the EMRN is collapsed onto the PSN bearers the revenue savings will be realised.

Capital expenditure per force:-

Nottinghamshire	£34,231
Leicestershire	£32,530
Northamptonshire	£32,530
Lincolnshire	£34,231
Derbyshire	£34,231

Constraints of this project will be the significant work being implemented across the region for a single instance of NicheRMS and the dependency of the initial work to migrate services from PNN to PSN. The second phase will be to move the EMRN services onto the PSN network.

A project will be initiated within Prince2 methodology under the leadership of ACC Torr that will ensure this project is managed and controlled to ensure the revenue savings are realised as quickly as possible

**INFORMATION IN SUPPORT OF DECISION: (e.g report or business case)**

Paper – Migration of EMRN Services onto PSN Bearers



Migration of EMRN  
 Services onto PSN Be

<b>Is any of the supporting information classified as non public or</b>	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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**Nottinghamshire Police and Crime Commissioner**  
**Notice of Decision**

<b>confidential information**?</b>				
If yes, please state under which category number from the guidance**				

**DECISION:**

- Approve the capital spend for implementation of PSN Bearers.
- Implement a project, under the leadership of ACC Torr within the IT Transformation Programme, to migrate services off the EMRN onto the PSN to achieve revenue savings across the region.

**OFFICER APPROVAL**

I have been consulted about the proposal and confirm that the appropriate advice has been taken into account in the preparation of this report. I am satisfied that this is an appropriate request to be submitted to the Police and Crime Commissioner.

Signature:  
Chief Executive



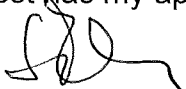
Date: 4/3/15

**DECLARATION:**

I confirm that I do not have any disclosable pecuniary interests in this decision and I take the decision in compliance with the Code of Conduct for the Nottinghamshire Office of the Police and Crime Commissioner. Any interests are indicated below:

The above request has my approval.

Signature:



Date:

6/2/15

**Nottinghamshire Police and Crime Commissioner**

\*\* See guidance on non public information

# Migration of EMRN Services onto PSN Bearers

## 1.0 Purpose

The purpose of this paper is to provide the necessary information for East Midlands Police Senior Business Leads and Regional Heads of IT to make an informed decision towards the potential of consolidating East Midlands Regional Network (EMRN) network services onto Public Sector Network (PSN) network bearers; a direct replacement for Criminal Justice Xtranet (CJX) network. For ease of comparison this paper will provide a cost analysis of current physical network provision pertaining to just EMRN, PSN and CJX network infrastructure in East Midlands' forces, rather than taking additional PSN costs into consideration (email scanning, managed firewalls services and force specific installation costs) or not yet live EMRN services (Lincs).

## 2.0 Executive Summary

An opportunity has arisen within the PSN project to consolidate high cost network infrastructure currently provided at a revenue cost of circa £400k to EM forces. The following report details the costs applicable to each force if a decision is made to either:

- Keep EMRN and PSN services as separate entities (options 4.1 & 4.2)
- Progress with an EMRN/PSN consolidation strategy (options 4.3 & 4.4)

There are two viable procurement frameworks from which EM forces can procure; one, let by the Home Office permits a direct award to Vodafone, the other, due to be let by Notts County Council (NCC) at the end of February 2015, awards to Virgin Media Business (VMB).

Each supplier has a contrasting method of pricing; Vodafone with higher revenue costs, VMB with higher capital costs.

The only realistic opportunity to consolidate the EMRN onto PSN infrastructure and make a saving of circa £200k regionally would come through the procurement of PSN services from VMB (option 4.4) but this comes with significant project risk.

- The very latest point at which forces can comfortably procure from the NCC framework would be mid-March 2015 which, given the recent restructure of the Notts/Northants procurement team (EMSCU) and the very short timescales between the framework being opened and the last possible procurement date, would need very tight management at a senior business level.
- Justice Video System (JVS) would not be available unless forces determined that negotiations should be entered with Vodafone to either continue the service as is or re-provide the service on dedicated Vodafone network infrastructure.

Choosing Vodafone (option 4.3) would make forces liable for early termination charges (ETC) to cancel existing VMB EMRN services - currently 100% of the rental costs for the remaining contract term (£100k p.a.).

#### Cost/Risk Summary

Option	Option Summary	5 Force Capital Cost (000's)	5 Force Rev'ue Cost (000's)	5 Force Saving (000's)	Risk	Risk Comment
4.1	Buy Voda PSN, keep EMRN separate.	25	362	31	Low	Retains network complexity.
4.2	Buy VMB PSN, keep EMRN separate.	47	298	95	High	EMSCU resourcing, EMSCU time, JVS risk impact, retains network complexity.
4.3	Buy Voda PSN, consolidate EMRN onto it.	73 (+300 ETC)	398	-5	High	Estimated early termination charge (ETC) of 300k (3 years rental).
4.4	Buy VMB PSN, consolidate EMRN onto it.	168	195	197	High	EMSCU resourcing, EMSCU time, JVS risk impact

From a technical standpoint the delivery of option 4.4 is infinitely viable.

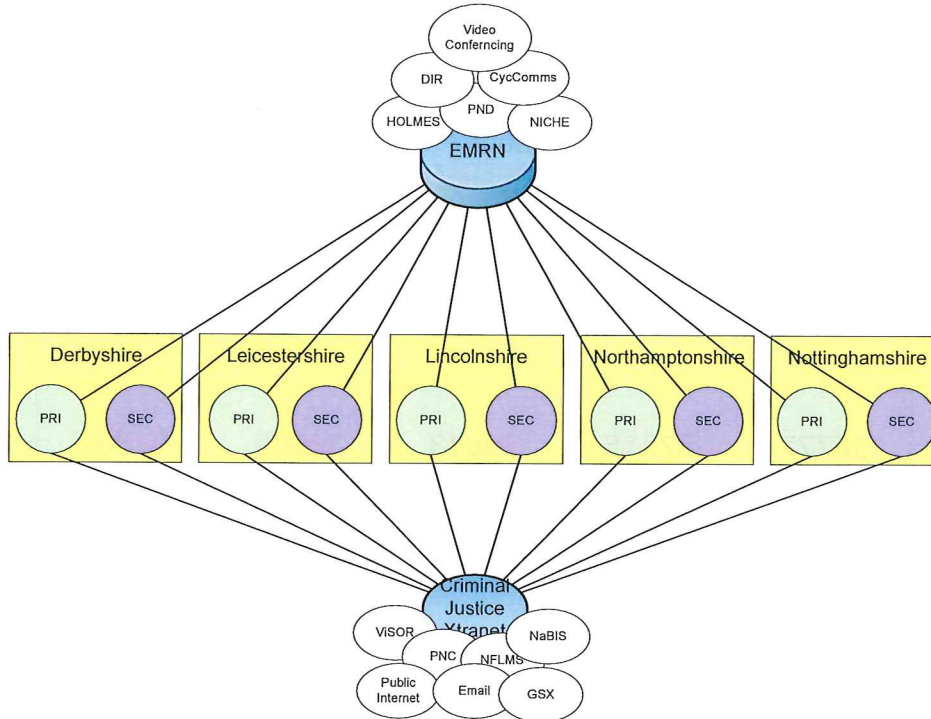
On each bearer VMB would be able to create multiple separate networks (called VRFs) that would run over the same network pipe; each VRF would have a maximum specified bandwidth allocation. VMB would use the same VRF template on each EM force bearer to ensure interconnectivity.

In this example all EM forces would have a PSN VRF from day 1 of installation and would allocate bandwidth appropriately – probably to a maximum of 100Mb because of hardware limitations of the Home Office approved encryption device (AEP).

This, in effect, leaves the remaining 900Mb of bandwidth for forces to allocate to other VRFs, such as an EMRN VRF.

### 3.0 Current Situation

See the diagram below for the current position of network connectivity for EM Forces to core hosted systems.



The current per annum cost of this infrastructure is provided in the table below

	Derbys	Leics	Lincs	Northants	Notts	Regional Total
CJX x2	69930	55236	55236	55236	55236	290874
EMRN x2	26115	22549	8595 (x1)	22486	22549	102294
<b>Total (£)</b>	<b>96045</b>	<b>77785</b>	<b>63831</b>	<b>77722</b>	<b>77785</b>	<b>393168</b>

### 4.0 Options

- Do Nothing – retain full separation of EMRN and PSN services; buy 2x 100Mb Vodafone PSN Services in each force
- Do Nothing - retain full separation of EMRN and PSN services; buy 2x 100Mb VMB PSN Services in each force
- Consolidate EMRN infrastructure onto 2x 1Gb Vodafone PSN bearers in each force
- Consolidate EMRN infrastructure onto 2x 1Gb VMB PSN bearers in each force

#### 4.1 Do Nothing – Retain full separation of EMRN and PSN services; buy Vodafone PSN Services

4.1.1 This option would continue current EMRN infrastructure costs with the addition of installation and rental costs for 2x 100Mb Vodafone PSN bearers to replace the existing CJX services. For consistency worst case bandwidth costs (100Mb) on both bearers in each EM force have been applied.

##### 4.1.2 Option Installation and Rental Costs

Service <sup>1,2</sup>	Derbys	Leics	Lincs	Northants	Notts	Regional Total
Voda PSN 100Mb Bearer Installation x2 (capital)	5000	5000	5000	5000	5000	25000
Voda PSN Bearer Rental x2 (revenue)	36777	37215	38843	36589	37800	187224
Current EMRN Costs (revenue)	26115	22549	8595	22486	22549	102294
Voda GCF Core Charges (revenue)	14400	14400	14400	14400	14400	72000
<b>Tot. Capex/ Tot. Rev'ue</b>	<b>5000/ 77292</b>	<b>5000/ 74164</b>	<b>5000/ 61838</b>	<b>5000/ 73475</b>	<b>5000/ 74749</b>	<b>25000/ 361518</b>
Cost diff against current (Revenue)	-18753	-3621	-1993	-4247	-3036	-31650

1. Full Vodafone cost breakdown per force in Appendix A, all costs subject to survey

2. Costs do not include AEP IL3/4 service delivery (inc. managed firewall), force network delivery costs (hardware or installation) or Voda email scanning costs per force

##### 4.1.3 Risks Associated

- Maintains current level of network complexity
- Maintains current administration requirement for separate network and firewall management processes

#### 4.2 Do Nothing – Retain full separation of EMRN and PSN services; buy VMB PSN Services

4.2.1 This option would continue current EMRN infrastructure costs with the addition of installation and rental costs for 2x 100Mb VMB PSN bearers to replace the existing CJX services. For consistency worst case bandwidth costs (100Mb) on both bearers in each EM force have been applied.

#### 4.2.2 Option Installation and Rental Costs

VMB Service <sup>1,2</sup>	Derbys	Leics	Lincs	Northants	Notts	Regional Total
PSN 100Mb Bearer Installation x2 (capital)	9217	9254	9217	9254	9217	46159
PSN Bearer Rental x2 <sup>3</sup> (revenue)	26263	22406	26263	22406	26263	123601
Current EMRN Costs (revenue)	26115	22549	8595	22486	22549	102294
Voda GCF Core Charges (revenue)	14400	14400	14400	14400	14400	72000
Tot. Capex/ Tot. Rev'ue	<b>9217/ 66778</b>	<b>9254/ 59355</b>	<b>9217/ 49258</b>	<b>9254/ 49292</b>	<b>9217/ 63212</b>	<b>46159/ 287895</b>
Cost diff against current (Revenue)	-29267	-18430	-14573	-18430	-14573	-95273

1. Full VMB cost breakdown per force in Appendix B, all costs subject to survey

2. Costs do not include AEP IL3/4 service delivery (inc. managed firewall), force network delivery costs (hardware or installation) or Voda email scanning costs per force

#### 4.2.3 Risks Associated

- Maintains current level of network complexity
- Maintains current requirement for independent network and firewall management processes
- Provides no option for Justice Video Service (JVS aka Live Links) in which to operate post PSN Migration. JVS is a Vodafone service provided over CJX not currently PSN approved and not likely to be PSN ready by November 2015. Each force would need either need to negotiate with Vodafone to continue with their CJX service post October 2015, against Home Office guidance, or buy in a specific Vodafone service upon which JVS can run.
- The framework to buy direct from Virgin Media Business will only go live on 28<sup>th</sup> February 2015 which may not give enough time for VMB to install the service before forces pre-booked PSN transition dates.
- East Midlands Strategic Commercial Unit (EMSCU) may not have the resource to fulfil the procurement in time following restructure.

### 4.3 Consolidate EMRN infrastructure onto Vodafone PSN bearers.

4.3.1 The costs of providing the infrastructure upon which both PSN and EMRN architectures could be provided by Vodafone in each EM force are listed below. The prices listed are for the installation and support of 2x 1Gb fully functional PSN IL2 bearers provided by Vodafone with 100Mb of bandwidth set aside for PSN data and 900Mb set aside for EMRN services.

#### 4.3.2 Option Installation and Rental Costs

Vodafone Service <sup>1,2</sup>	Derbys	Leics	Lincs	Northants	Notts	Regional Total
PSN Bearer Installation x2 (capital)	12500	12500	12500	12500	12500	62500
Additional VPN Installation x2 (for EMRN) (capital)	2000	2000	2000	2000	2000	10000
PSN Bearer Rental with EMRN VPN <sup>3</sup> (revenue)	64504	64942	66570	64316	65527	325857
Voda GCF Core Charges (revenue)	14400	14400	14400	14400	14400	72000
Tot. Capex/ Tot. Rev'ue	<b>14500/ 78904</b>	<b>14500/ 79342</b>	<b>14500/ 80970</b>	<b>14500/ 78716</b>	<b>14500/ 79927</b>	<b>72500/ 397857</b>
Revenue Cost Differential (on current)	-17141	+1557	+17139	+994	+2142	+4689

1. Full Vodafone cost breakdown per force in Appendix C, all costs subject to survey

2. Costs do not include AEP IL3/4 service delivery (inc. managed firewall), force network delivery costs (hardware or installation) or Voda email scanning costs per force

3. Made up of 2x 100Mb of 1Gb rental charges and 2x 900Mb of 1Gb VPN rental charges

4.3.3 Forces would be contractually liable for early termination costs for existing EMRN services. VMB have confirmed that 100% of rental costs for the remaining contract term on each VMB EMRN service would be applied.

**Per Annum Termination Cost - £102294**

**There are currently 3 years left to run on EMRN services contracts.**

#### 4.3.4 Risks Associated

- Early Termination Charges would come into effect at the point that EMRN contracts are cancelled.
- Introduces a high level of technical complexity to changing network providers from VMB to Vodafone.
- Risk to continuity of EMRN is increased when changing network providers and on EMRN services and projects (Niche).



#### 4.4 Consolidate EMRN infrastructure onto VMB PSN bearers.

4.4.1 The costs of providing the infrastructure upon which both PSN and EMRN architectures could be provided by VMB in each EM force are listed below. The prices listed are for the installation and support of 2x 1Gb fully functional PSN IL2 bearers provided by VMB with 100Mb of bandwidth set aside for PSN data and 900Mb set aside for EMRN services.

#### 4.4.2 Option Installation and Rental Costs

VMB Service <sup>1,2</sup>	Derbys	Leics	Lincs	Northants	Notts	Regional Total
PSN Bearer Installation x2 (capital)	34231	32530	34231	32530	34231	167753
Additional VPN Installation x2 (for EMRN) (capital)	0	0	0	0	0	0
PSN Bearer Rental with EMRN VPN <sup>3</sup> (revenue)	26840	21560	26840	21560	26840	123640
Voda GCF Core Charges (revenue)	14400	14400	14400	14400	14400	72000
Tot. Capex/ Tot. Rev'ue	<b>34231/ 41240</b>	<b>32530/ 35960</b>	<b>34231/ 41240</b>	<b>32530/ 35960</b>	<b>34231/ 41240</b>	<b>167753/ 195640</b>
Revenue Cost Differential (on current)	-54805	-41825	-22591	-41762	-36545	-197528

1. Full VMB cost breakdown per force in Appendix D, all costs subject to survey

2. Costs do not include AEP IL3/4 service delivery (inc. managed firewall), force network delivery costs (hardware or installation) or Voda email scanning costs per force

3. Bandwidth upgrade costs to 1Gb/1Gb in Appendix E.

#### 4.3.4 Risks Associated

- Provides no option for Justice Video Service (JVS aka Live Links) in which to operate post PSN Migration. JVS is a Vodafone service provided over CJX not currently PSN approved and not likely to be PSN ready by November 2015. Each force would need either need to negotiate with Vodafone to continue with their CJX service post October 2015, against Home Office guidance, or buy in a specific Vodafone service upon which JVS can run.
- The framework to buy direct from Virgin Media Business will only go live on 28<sup>th</sup> February 2015 which may not give enough time for VMB to install the service before forces pre-booked PSN transition dates.
- East Midlands Strategic Commercial Unit (EMSCU) may not have the resource to fulfil the procurement in time following restructure.

## 5. Recommendation

Discussions have been held with Heads of IT across the East Midlands forces who agree that the strategic direction would be to reduce the number of networks across the region.

The recommendation is **Option 4 Consolidate EMRN infrastructure onto VMB PSN bearers**. Whilst this option may have an increased up front capital cost the ongoing revenue savings would mitigate this initial outlay.

The risks associated to this option would be mitigated by engaging early with EMSCU to open discussions with Nottinghamshire County Council to negotiate a route to market that would enable the time lines to be met.

The "live link" project which is subject to PIF funding that needs to be spent by 31 March 2015 would continue with its current plan to use Vodafone services with a controlled migration over to VMB at a point that is appropriate to do so.

## 6.0 Appendices

### Appendix A – Vodafone 100Mb cost breakdown – Option 3.1 (quoted from Lee Hobson at VF, email dated 14/02/15)

		PSN Install	PSN Per annum	GCF Core Per annum
Northants	NN4 0JQ	2,500.00	5,642.25	7,200.00
	NN1 3EL	2,500.00	5,788.50	7,200.00
Leics	LE19 2BX	2,500.00	6,159.75	7,200.00
	LE2 7ST	2,500.00	5,897.25	7,200.00
Notts	NG5 8PP	2,500.00	7,326.00	7,200.00
	NG18 2HQ	2,500.00	5,316.00	7,200.00
	Derby	DE5 8PP	2,500.00	5,717.25
	DE1 3AB	2,500.00	5,901.00	7,200.00
Lincs	LN2 2NT	2,500.00	7,288.50	7,200.00
	RM20 3FJ	2,500.00	6,396.00	7,200.00

### Appendix B – VMB 100Mb cost breakdown – Option 3.2 (quoted from Paula Johnston at VMB, email dated 16/02/15)

Postcode	Access Bandwidth	Circuit Bandwidth		PSN Pricing	
				Install	Rental IL2/NR/5yr
LN22NT	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
RM203FJ	100 Mbps	100 Mbps	Rural	£4,590.00	£7,860.00
DE13AB	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
DE53RS	100 Mbps	100 Mbps	Rural	£4,590.00	£7,860.00
NG182HQ	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
NG58PP	100 Mbps	100 Mbps	Rural	£4,590.00	£7,860.00
LE27ST	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
LE192BX	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
NN13EL	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00
NN40JQ	100 Mbps	100 Mbps	Urban	£4,627.00	£4,003.00

Appendix C – Vodafone 1Gb cost breakdown – Option 3.3  
(quoted from Lee Hobson at VF, email dated 14/02/15)

		PSN Install	PSN Per annum	GCF Core Per annum	Extra VPN Install	Extra VPN Per annum
Northants	NN4 0JQ	6,250.00	26,705.72	7,200.00	1000	5,378.95
	NN1 3EL	6,250.00	26,851.97	7,200.00	1000	5,378.95
Leics	LE19 2BX	6,250.00	27,223.22	7,200.00	1000	5,378.95
	LE2 7ST	6,250.00	26,960.72	7,200.00	1000	5,378.95
Notts	NG5 8PP	6,250.00	28,389.47	7,200.00	1000	5,378.95
	NG18 2HQ	6,250.00	26,379.47	7,200.00	1000	5,378.95
Derby	DE5 8PP	6,250.00	26,780.72	7,200.00	1000	5,378.95
	DE1 3AB	6,250.00	26,964.47	7,200.00	1000	5,378.95
Lincs	LN2 2NT	6,250.00	28,351.97	7,200.00	1000	5,378.95
	RM20 3FJ	6,250.00	27,459.47	7,200.00	1000	5,378.95

Appendix D – VMB 1Gb cost breakdown – Option 3.4  
(quoted from Paula Johnston at VMB, email dated 16/02/15)

Postcode	Access Bandwidth	Circuit Bandwidth		PSN Pricing	
				Install	Rental IL2/NR/5yr
NN40JQ	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
NN13EL	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
LE192BX	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
LE27ST	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
NG58PP	1 Gbps	100 Mbps	Rural	£17,966.00	£7,860.00
NG182HQ	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
DE53RS	1 Gbps	100 Mbps	Rural	£17,966.00	£7,860.00
DE13AB	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00
RM203FJ	1 Gbps	100 Mbps	Rural	£17,966.00	£7,860.00
LN22LT	1 Gbps	100 Mbps	Urban	£16,265.00	£4,003.00

Appendix E – VMB Bandwidth upgrade costs – Option 3.4

(quoted from Paula Johnston at VMB, email dated 16/02/15)

The core costs VMB provided were for 100Mb bandwidth on a 1Gb service. Each bandwidth increase on the table below increases the rental costs until, at 1Gb, all the costs in the table are applied to the service.

Therefore the full 1Gb of bandwidth on a 1Gb urban circuit will cost £10,780 p.a. rental.

	Urban		Rural	
	Install	Rental IL2/NR/5yr	Install	Rental IL2/NR/5yr
100Mb	£16,265.00	£4,003.00	£17,966.00	£7,860.00
200Mb		£1,942.00		£3,365.00
300Mb		£1,254.00		£1,254.00
400Mb		£1,254.00		£1,254.00
500Mb		£1,255.00		£1,255.00
600Mb		£214.00		£214.00
700Mb		£214.00		£214.00
800Mb		£214.00		£214.00
900Mb		£215.00		£215.00
1Gb		£215.00		£215.00

