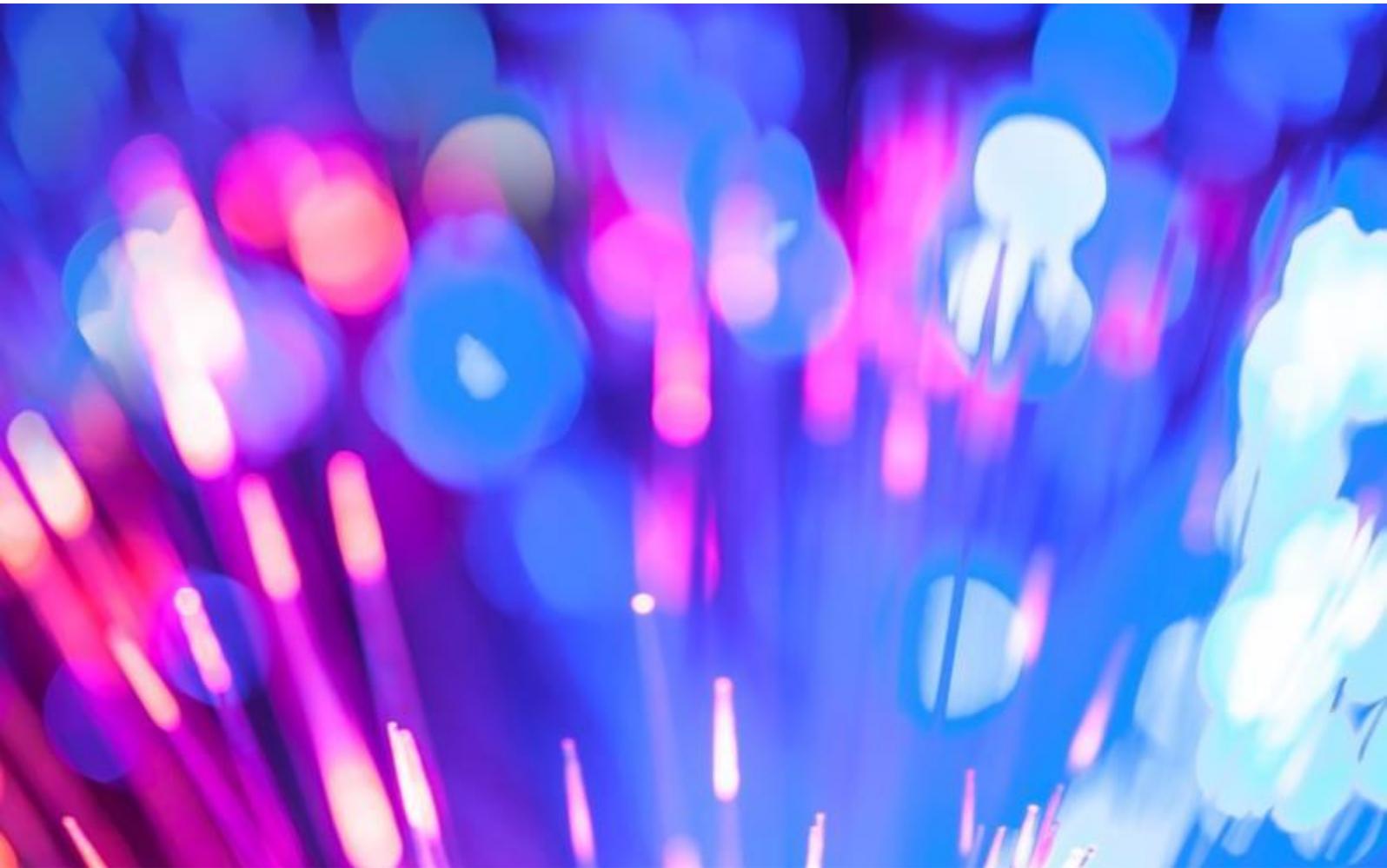# HSCN Roadshows 2016
Delegate pack

Published September 2016

Information and technology
for better health and care

Contents

Introduction

Current N3 arrangements end on 31 March 2017. The Health and Social Care Network (HSCN) and will provide the replacement network.

NHS Digital will help you migrate to HSCN connectivity services at the earliest opportunity.

The HSCN Regional Roadshows will provide the guidance and advice you need to start planning your migration from N3 to HSCN.

The roadshows will cover the following key themes:

1. The migration customer journey and support

- The steps and decisions organisations will need to take in to migrate to HSCN and the support we will provide

- A series of half hour sessions will take place throughout the afternoon. **Please register for one of these using our online portal at www.hscnroadshows.co.uk**

2. Procuring HSCN connectivity services

- We will explain the options available to source HSCN. We will also give you information to help you decide which option is the best for you.

- We will explain how we will support you through the procurement process and gather your feedback.

- We will be running two procurement workshops during the afternoon session. **Please register for one of these using our online portal at www.hscnroadshows.co.uk**

3. The HSCN Connection Agreement

- The HSCN Connection Agreement will improve accessibility. It will also replace the current Information Governance Statement of Compliance (IGSoC).

- We will present our plans during the morning session. Our IG and security representatives will also be available to talk to throughout the day.

4. Connectivity funding

- New arrangements for funding connectivity

- A series of half hour sessions will take place throughout the afternoon. **Please register for one of these using our online portal at www.hscnroadshows.co.uk**

5. General solution design, operating model and technical information

- Our Solution Design Team will be on hand throughout the day to provide advice and answer questions.

This delegate pack provides introductory information on all these things and we would encourage you to read it prior to attending the roadshows.

Agenda

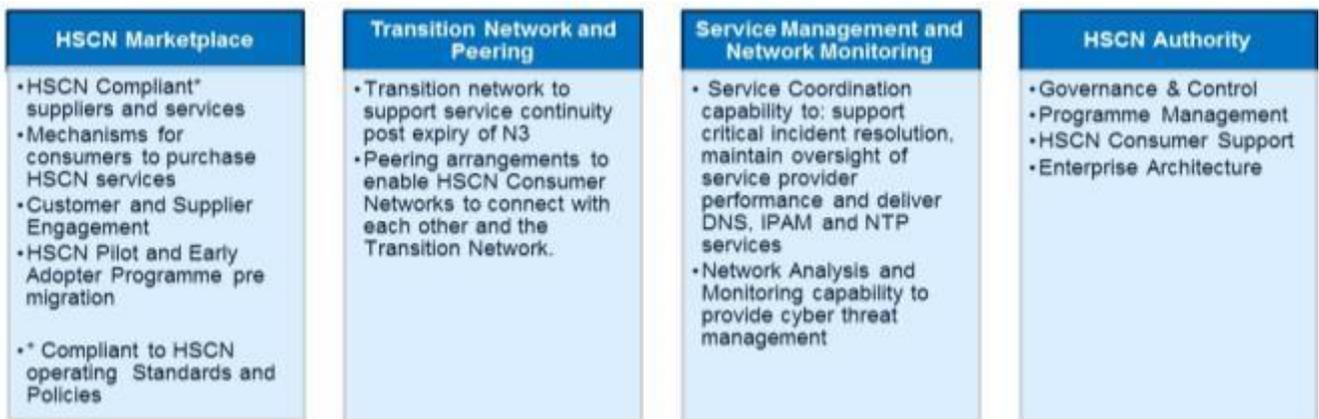| Time				
09.30am	**Registration and coffee**			
10.00am	**Welcome and introduction to the day**			
10.15am	**HSCN overview:** An outline of the HSCN initiative and solution			
10.40am	**HSCN as an enabler:** A view from NHS England			
10.55am	**Delivering HSCN compliant services:** A view from the supplier market (followed by a break for tea and coffee)			
11.25am	**Introduction to the HSCN Connection Agreement**			
11.45am	**Questions and answers:** A chance to ask your questions about the HSCN approach			
12.00 noon	Break for lunch			
	Migration planning advice centre session Advice and guidance on preparing to migrate to HSCN. Six half hour sessions.	**Technical and Data Security Advice Centre (drop-in)** Experts on hand to discuss technical, IG and security matters relating to HSCN.	**Procurement workshops** Advice and guidance on the procurement options available and the best fit for you.	**Connectivity funding arrangements surgery** Six half hour sessions.
12.45pm	**Session #1**	**12.45pm to 4.00pm**	**Procurement workshop #1**	**Surgery #1**
1.15pm	**Session #2**			**Surgery #2**
1.45pm	**Session #3**			**Surgery #3**
2.15pm	Break for tea			
2.30pm	**Session #4**	**Session continues to 4.00pm**	**Procurement workshop #2**	**Surgery #4**
3.00pm	**Session #5**			**Surgery #5**
3.30pm	**Session #6**			**Surgery #6**
4.00pm	**Round up and close**			

The migration customer journey and support

Delivering HSCN central capabilities and preparing for migration.

Migration of NHS connections can only begin when:

- HSCN central capabilities (technical and operational) are in place

- HSCN compliant connectivity services are available to buy and deploy

The diagrams below show the key capabilities we will put in place to set up HSCN. It also shows the existing N3 services and customers that will migrate to HSCN.

Central capabilities

HSCN Marketplace	Transition Network and Peering	Service Management and Network Monitoring	HSCN Authority
• HSCN Compliant* suppliers and services • Mechanisms for consumers to purchase HSCN services • Customer and Supplier Engagement • HSCN Pilot and Early Adopter Programme pre migration • * Compliant to HSCN operating Standards and Policies	• Transition network to support service continuity post expiry of N3 • Peering arrangements to enable HSCN Consumer Networks to connect with each other and the Transition Network.	• Service Coordination capability to: support critical incident resolution, maintain oversight of service provider performance and deliver DNS, IPAM and NTP services • Network Analysis and Monitoring capability to provide cyber threat management	• Governance & Control • Programme Management • HSCN Consumer Support • Enterprise Architecture

Current services and customers

N3 Core connected services			NHS Legacy Access Connectivity			
National Apps Data Centres	3rd Party Data Centres	Gateways	GP's	CoINs (72)	HSCIC	Dentists
Enhanced Internet Gateway	Remote Access	Aggregators	NHS Trusts	Prisons	NHS BSA	Ambulance Trusts
			Social Care	Academia	Opticians	Overlay Services

The customer journey

Here are the key steps you will need to go through to migrate to HSCN connectivity with success.
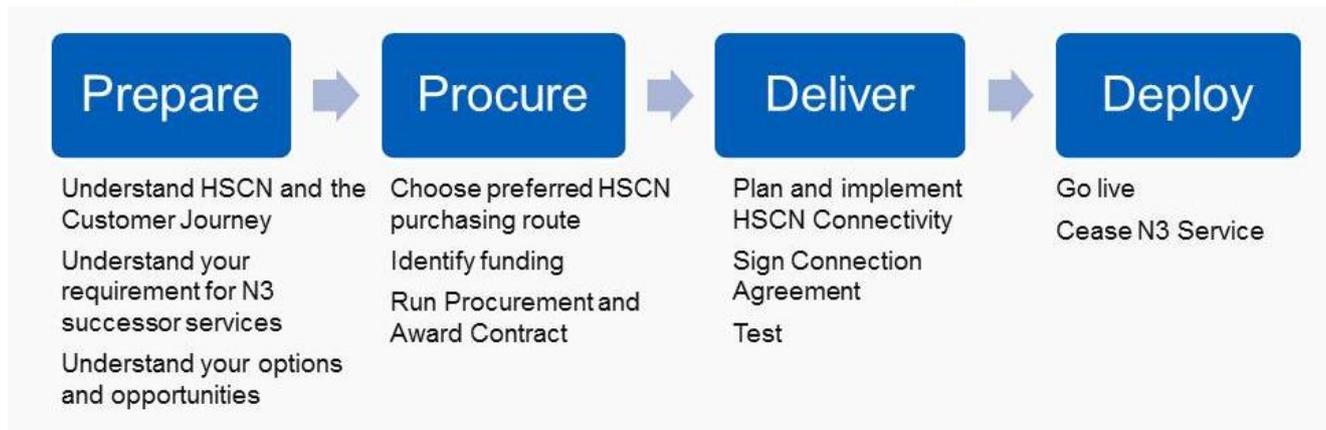
Migration planning and how we will support you

To help you plan and deliver your migration to HSCN, we will set up an online knowledge centre to provide guidance and support. A team of dedicated Regional Migration Managers will also be deployed to assist you.

Prepare

To help N3 customers establish migration plans we will engage directly with all NHS, National Application and Private sector (3rd party) organisations to understand their needs.Talks will take place between September 2016 and January 2017.

Procure

We will help you decide on your preferred approach to getting HSCN connectivity. If you want to:

- Source your own HSCN connectivity we will help you define and identify appropriate services and sign post you to the HSCN market place.

- Join one of our centrally managed procurements we will work with you to design and run aggregated procurements to drive economies of scale.

- Obtain HSCN connectivity via an existing network service or regional network partnership. We will help you understand how to do that effectively.

Deliver and deploy

We will be running some HSCN pilot projects to:

- verify and refine the HSCN migration process

- refine our practical guidance

- identify issues that need to be addressed before live migrations commence

Our Regional Migration Managers and online guidance materials will then support you to migrate to HSCN services.

What we need from you

We need to:

- **Confirm your nominated point of contact** for us to engage with on HSCN related matters. If not done already, please confirm a nominated point of contact to hscnenquiries@nhs.net

- **Understand what HSCN services you need** to buy to replace your existing N3 services. You can speak to us about this at the regional roadshows and also via your Regional Migration Manager.

We already have a good understanding of the N3 services and products you currently consume. This covers connectivity services through to 'overlay' products such as video conferencing. We will be checking this information with you during our upcoming engagement work.

- **Understand how you want to buy HSCN services**, and when

    o Do you want to do it yourself via the open market or an existing procurement framework? (e.g. Crown Commercial Service Network Services Framework – RM1045)

    o Would you prefer we sourced HSCN connectivity on your behalf via one of our aggregated procurements?

    o Do you think you could get good value HSCN connectivity using an existing contract or by joining an existing regional network partnership?

Please note, we will be running dedicated procurement workshops at the regional roadshows. These will help you understand your options and identify a preferred approach.

HSCN procurement

To exit N3 services and migrate to HSCN, you need to start the procurement of new HSCN network services. For example, access circuits and overlays.

HSCN offers an opportunity to rethink how network connectivity is provided and used to support more integrated and flexible health and social care services in your area.

We encourage you to consider working with other organisations - those that you do day-to-day business with - on setting up shared networks.

By migrating to HSCN and adopting standardised, newer, faster and cheaper connectivity solutions, there is real potential to make cost savings.

Unlike N3, you can get HSCN connectivity via a number of sourcing options.

These are:

Collaborative Self-Serve

Arguably the best option is for organisations to design and manage the procurement of an HSCN compliant Wide Area Network (WAN) in collaboration with the organisations they interact with most frequently in order to deliver health and social care services

Who is this suitable for?

Customers who have:

- Plans to work with health and social care organisations on shared and integrated services initiatives.

- A good understanding of their own network requirements and those of their regional partners.

- Established relationships capable of supporting a regional shared network procurement.

What is the level of central support?

High – 'do it with you'. We will encourage and market the benefits of collaborative network procurements and, working in conjunction with the Crown Commercial Service (CCS), will help customers to deliver them.

What are the benefits?

- Collaborative Self-Serve gives you the opportunity to work with other health and social care organisations to develop a holistic network connectivity strategy that will enable improved collaboration and integration of health and social care services regionally and nationally.

- By collaborating and combining your procurements you can obtain better value for money and drive optimal solutions.

Aggregated Procurement

To support timely migration to HSCN connectivity, NHS Digital will be managing a series of aggregated procurements on behalf of NHS organisations that do not wish to, or are unable to manage their own network procurement at this time.

Who is this suitable for?

Customers who:

- Do not wish to manage the procurement of N3 replacement services themselves at this point.

What is the level of central support?

High – 'do it for you'. NHS Digital and CCS will run the procurement process on your behalf.

What are the benefits?

- NHS Digital takes a leading role in managing the end-to-end sourcing process on your behalf. We will need your support to define appropriate technical and business requirements to make sure that the right services are procured to meet your needs.

- By aggregating your requirements with those of other organisations we will maximise value for money and drive optimal solutions.

Individual Self-Serve

We recognise that some of you might wish to acquire network services that do not involve other local organisations. This is fine and will not constrain your ability to access and share data with other health and social care organisations connected to HSCN. This is what we call individual self-serve.

Who is this suitable for?

Customers who:

- Have no immediate plans to collaborate with other health and care organisations on a shared network initiative or do not have established relationships capable of supporting regional shared network procurement.

- Have a good understanding of their own network requirements.

- Have the ability to run their own procurement activity or to obtain HSCN connectivity via an existing contract.

What is the level of central support?

Low to medium – 'provide the tools for you to do it'. NHS Digital and CCS, will set up the tools and processes for customers to use. But there will be little day-to-day central involvement other than help with migration capacity planning and progress reporting.

What are the benefits?

- Individual Self Service provides you the freedom to procure services independently, however we will want to work with you to prioritise migrations and control utilisation of the available migration capacity.

Customer Compliance and Security

HSCN security controls and compliance arrangements support the availability of the network as a business resource.

HSCN will underpin information sharing between health and social care, carrying everything from encrypted confidential medical data, through email to web-browsing.

To allow health and social care organisations to access the HSCN network, we will introduce an HSCN Connection Agreement. This will replace the current N3 Information Governance Statement of Compliance (IGSoC) and separates the arrangements for getting a connection to the network from those relating to data access or use of services.

HSCN will be a cost effective, reliable carrier of information. The network does not provide security to prevent loss, tampering or inappropriate usage of the data it carries or the systems or services available through it. The responsibility for securing data, systems and services lies with the sender and receiver of data, or system or service owner.

NHS Digital will provide guidance on data security good practice

NHS Digital will also provide internet content filtering and monitor the network to help reduce malware incidents and improve the overall availability of the HSCN.

The Connection Agreement

The HSCN Connection Agreement is not designed to check for compliance with any data security requirements (e.g. IGT). Instead, the Connection Agreement sets out a collaborative way of working in which:

- Customers acknowledge responsibility for securing data.

- Ownership and responsibility for the use of the HSCN connection sits at a senior level within the organisation.

- Customers give enough information to allow us to understand which organisations are using each connection.

- Customers provide contact details so we can work with organisations if we detect or suspect a cyber incident across that connection.

Arrangements for completing the Connection Agreement

Organisations will need to complete a Connection Agreement before they can connect to the HSCN. This can either be done directly or through a partner organisation.

- Your Caldicott Guardian or senior executive within your organisation must authorise the Connection Agreement.

- Contact details and details of partner organisations that share an HSCN Connection must be up to date at all times

- The Connection Agreement will be available to complete online.

Data and cyber security

We will track traffic that flows into and across the HSCN by examining the source, destination, port and protocol of the traffic. We will not check the content as it traverses the network. (However, please see the section below on 'Internet Gateway').

The purpose of this approach is to:

- Identify abnormal or potentially malicious traffic, based on the source and destination. For example, traffic headed for a known site of malware.

- Manage any incident through incident management arrangements operated by NHS Digital's CareCERT. And working with the organisations concerned.

This is a new approach that aligns with the way the National Cyber Security Centre is aiming to provide consumer network security and is supported by Cabinet Office.

Internet Gateway

HSCN will include anti-malware and content filtering at the points where traffic leaves the HSCN for the internet. This will provide security against malware and other malicious content.

Improving cyber security

The UK's National Cyber Security Centre and NHS Digital's CareCERT will work together to give quality information to HSCN customers. This will include guidance on securing your data assets, systems and services in a way that is cost effective and proportionate.

Connectivity funding

The current central funding arrangements relating to NHS N3 access connectivity are intrinsically linked to the current N3 contract with BT and so will need to be replaced before the N3 agreement ends.

New funding arrangements need to support the adoption of Health and Social Care Network services that will be available from a choice of suppliers and through a variety of procurement routes.

The intention is to devolve central funding for connectivity to NHS organisations themselves. Doing this will:

- Support a fair and competitive marketplace

- Empower organisations to choose their HSCN supplier and their preferred procurement route

- Encourage collaboration between health and social care organisations by allowing NHS and non-NHS organisation to work together on shared network initiatives without having to forgo financial subsidy

The following information describes the intended approach with regards to ongoing funding for connectivity. We will confirm precise arrangements as soon as possible once they have been agreed.

GP funding

Funding for GP connectivity will become part of GPIT. NHS England is progressing updates to the GPIT Operating and Assurance Models to reflect this and consultation will take place to support these changes.

Utilising the GPIT Operating Model brings network funding and commissioning into alignment with the wider ICT arrangements for GP Practices and will help support improved collaboration and integration between organisations within CCGs.

The GPIT Operating Model will include a financial uplift to cover GP connectivity costs.

The GPIT Operating Model will state that CCGs are responsible for commissioning and procuring HSCN connectivity services on behalf of its practices from April 2017. We recommend early engagement with CCGs to discuss network requirements.

CCG funding

CCG connectivity funding will be supported by a financial uplift of the CCG allocation through NHS England. This will allow CCGs to commission and buy HSCN services for themselves and their primary care organisations within a single procurement should they wish to do so.

CCGs will be expected to initiate procurement of HSCN services during 2017/18 and migration to HSCN services thereafter. We recommend early engagement with GPs to outline network requirements and procurement approaches.

CCGs will be able to join aggregated procurements managed by NHS Digital on behalf of the NHS should they wish.

Trust funding

An online application system will be set up to support trust funding arrangements. We plan to have the application system open from January 2017. HSCN Regional Migration Managers and existing N3 Service Implementation Managers will support you through this process.

Example application forms will be available at the funding breakout sessions during the HSCN Regional Roadshows.

There are three types of application that will trigger funding at specific stages:

Application 1

Application for legacy N3 connectivity funding on the basis of a plan to procure HSCN connectivity within a defined period.

This will allow us to release funds to cover some or all of the cost of legacy N3 connectivity for a defined period of time. This will make sure business continuity is retained.

- You should submit this application by April 2017.

- You will need to state how and when you intend to contract for HSCN connectivity services.

- If you don't have your own plans to get HSCN connectivity, you can join a centrally managed aggregated procurement. This is the default position.

Application 2

Application for ongoing legacy N3 and new HSCN connectivity funding on the basis of an HSCN contract award and an estimated service migration date.

This will allow continuation of funding for legacy N3 connectivity to ensure business continuity is maintained between contract award and migration to HSCN.

- You should submit this application after selecting your HSCN supplier and connectivity package.

- You will need to evidence your commitment to a contract for HSCN connectivity. You must also confirm the cost of your HSCN connectivity and provide an update on migration plans.

Application 3

Application for HSCN connectivity funding on the basis of completed migration to HSCN and termination of N3 connectivity service.

This will allow us to continue to fund connectivity for organisations that migrate to HSCN in a timely fashion.

- You should submit your application after your migration to HSCN is complete and N3 connectivity is terminated.

If you are planning to get HSCN connectivity before or by April 2017, applications 1 and 2 can be completed at the same time.

General solution design, operating model and technical information

HSCN solution overview

HSCN will create a 'network of networks' established through adherence to common and open standards.

Provided by many suppliers, HSCN will act like a single network. It will allow health and social care providers to deliver, share and consume services from anywhere on HSCN and with anyone else on HSCN - regardless of their location or network supplier.

HSCN adopts the 'network peering architectural principle.' This supports regional and national collaboration with access to existing national applications and the NHS Spine.
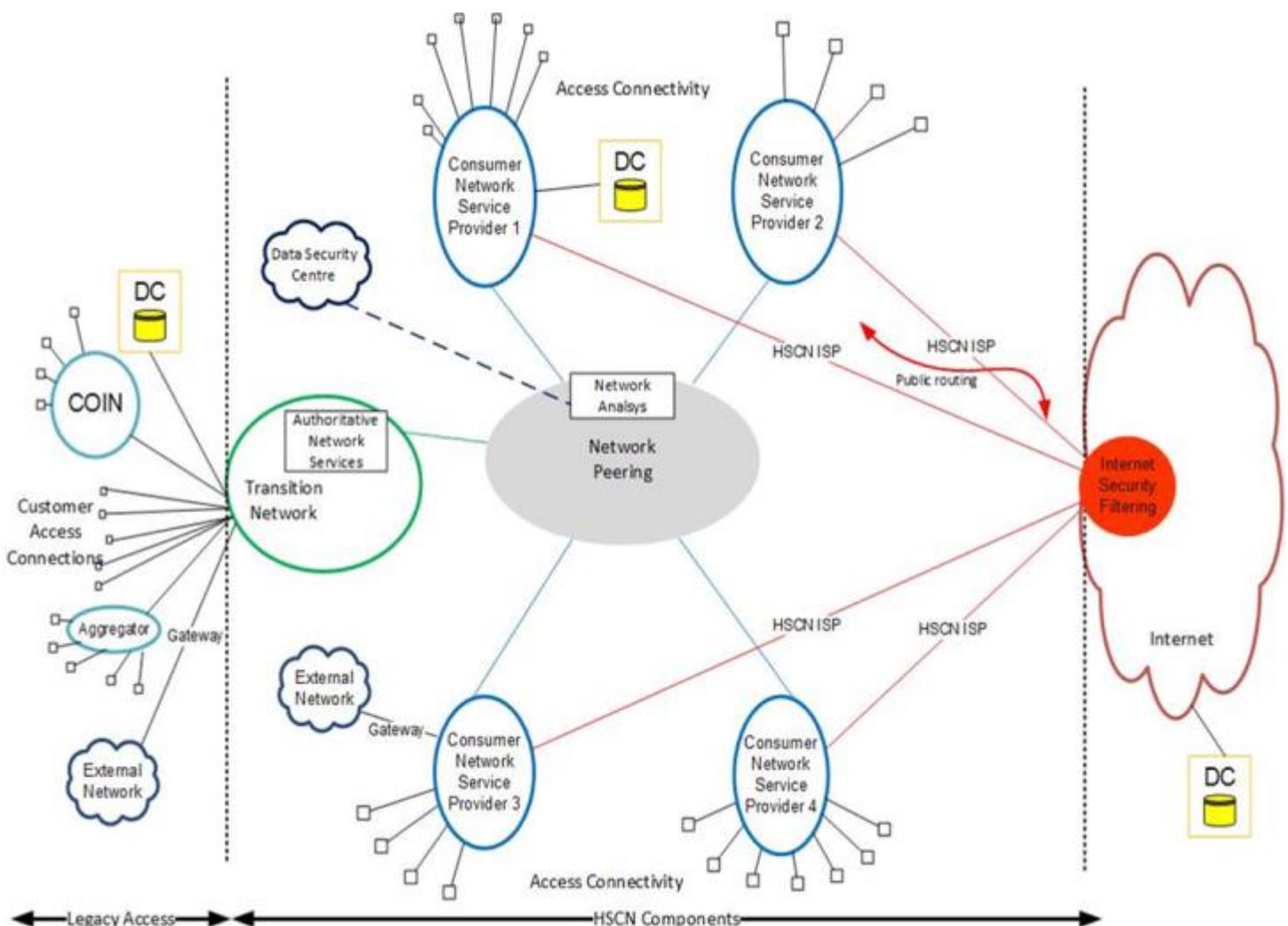
Network security

Network cyber security will be provided via a layered security approach. This will consist of:

- **Network Analytics Service (NAS).** This will ingest network telemetry data in near real time. It will perform proactive and reactive analysis on the data to identify any malicious activity taking place over HSCN.

- **Advanced Network Monitoring (ANM) service**. All internet bound traffic directs towards this service. Outbound and inbound HTTP internet traffic is subject to inline filtering. This includes:

  - URL blocking, Internet Watch Foundation lists and HSCN provided site blocking

  - Inline anti-virus and anti-spyware. Signature based anti-malware scanning and full inbound/outbound file inspection

  - Advanced Persistent Threat protection—standard behavioural analysis. Protect against zero-day threats and vulnerabilities in suspicious files.

  - Advanced Threats Protection. PageRisk™ and real-time feeds stop phishing, botnets, XSS and Anonymisers.

  - Extensive reporting mechanism

Domain Name System (DNS) protection controls are provided. These include URL blacklist implementation and DNS sinkhole.

Firewall protection controls are also provided. These include IP Blacklist implementation and NHS Digital provided blocked addresses.

Customer Connectivity Patterns

HSCN suppliers will offer many connectivity patterns to meet your consumer needs. These will be based on your emerging requirements. Outlined below are just a few of the potential options.

This diagram provides examples of connectivity types your supplier is likely to offer based upon your availability requirements

IP Addressing Principles

The overarching IP addressing principle for HSCN is to use globally routable RIPE addresses. This provides you with a future roadmap towards more flexible routing and seamless migration.

Where needed, HSCN will be capable of routing both the 10.x.x.x Class A RFC 1918 address range and the 172.x.x.x Class A RFC 1918 address range

Current NHS IP Addressing Policy

The current policy is jointly developed with N3SP and uses all of Private Class A 10.0.0.0–10.255.255.255 within the core of the network. Portions of the Private Class A address space are made available for organisations to deploy within the LAN environment.

In addition to the Private Class A address space a portion of the Private Class B 172.17.0.0-172.31.255.255 is routed across the N3 network for GP connections.

HSCN IP Addressing Policy

HSCN will allocate, wherever possible, globally routable RIPE addresses. However we appreciate that there may be cases where an organisation will have the need to keep their N3 RFC1918 IP addresses.

For example - for an embedded application or messaging end point registration. In this case HSCN will accommodate the retention of RFC1918 addresses and develop a strategy to move to RIPE addresses.

Existing N3 customers and RIPE addresses

Existing N3 customers moving to HSCN with no technical reason to keep their existing RFC1918 addresses will be allocated new RIPE addresses.

New customers

New customers who have never connected to the N3 will have RIPE addresses allocated. The organisation's local IP address architecture will be hidden behind their delegated HSCN IP addresses. This is via Network Address Translation (NAT)

Organisations who have their own RIPE Addresses

There may be NHS organisations that have their own existing RIPE addresses and wish to use these over HSCN. This should not be prevented; however the NHS Digital IPAM Team will need to be aware of this. The IP addresses being routed over HSCN will need to be communicated to the NHS Digital IPAM Team so they can maintain accurate information in their IPAM database.

Existing N3 Customers and RFC 1918 over HSCN

Any existing N3 customers who have a technical need to keep their existing N3 RFC1918 IP addresses can migrate to HSCN using N3 RFC1918 IP addresses.

HSCN DNS / NTP Service

The Transition Network Service Provider will continue to operate the authoritative Domain Name Service for nhs.uk. This service will be accessible via the HSCN Peering Service and its access will be transparent to the end user.

The Transition Network Service Provider will continue to provide a Network Time Protocol reference source for HSCN users to synchronise the clocks in servers and PCs.

These services will be re-procured and transferred to a new service. Any changes to existing protocol will be broadcast with plenty of notice when available

Quality of Service (QOS) Principles

Quality of Service (QoS) is a data network solution that prioritises network traffic. This makes sure key traffic has precedence over less important traffic during times of congestion.

N3 today operates a 6 Layer QoS scheme. The diagram below shows the set-up. The grey pipe is the overall bandwidth available for a given section of the network.

Each QoS class of traffic has a priority and a contracted bandwidth - a percentage of the overall bandwidth (data rate), shown by the smaller coloured pipes. When the network or parts of it are congested - operating close to or at maximum bandwidth - QoS decides how traffic is handled.

The existing N3 QOS Policy will be adopted across HSCN for the foreseeable future. HSCN will undertake a review of the current QOS Policy in 2017 as part of its annual refresh.
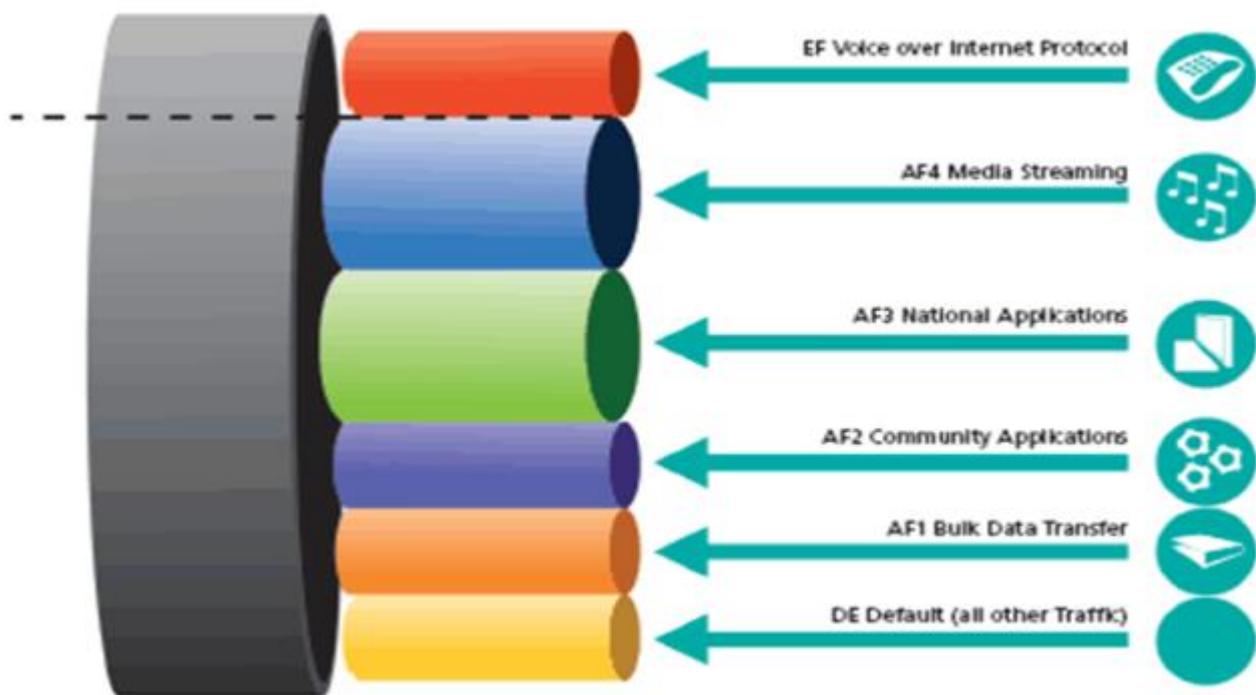
N3SP Overlay Services

Today N3SP offer a number of overlay services including: VPN, Voice, Video, Webex / Meetme, Remote Access, LAN / Wireless / Firewall, Mobile Health Worker etc.

HSCN is working with N3SP to validate all existing IP services with the intention of preserving their integrity and ensuring business continuity,

We encourage HSCN consumers to discuss any additional network services they need with their HSCN Consumer Network Service Provider (CN-SP). The HSCN CN-SP will be willing to accommodate requests for additional or replacement services.

NHS Wi-Fi

In April 2016, NHS Digital set up the NHS Wi-Fi programme. This was in response to recommendations made to Department of Health by Martha Lane Fox and subsequent Government policy relating to the provision of free Wi-Fi within the NHS.

Representatives from the NHS Wi-Fi programme will be available at each of the HSCN roadshows to answer your questions. The NHS Wi-Fi team can also be contacted through their mailbox nhswifi@nhs.net

Over the next three years, the NHS Wi-Fi programme will be supporting local care providers to implement easy to use, standardised free Wi-Fi services for clinicians, healthcare staff and patients.

The programme is currently working closely with NHS providers, commissioners, industry and patients to scope out the requirements and develop an investment case for free Wi-Fi.

A set of standards for Wi-Fi services that all supplier systems will need to meet or converge to are in development. A toolkit to support providers to implement free Wi-Fi will also be produced.

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