NHS HE N3 update

London

9th November 2006

N3 – The Story So Far

N3

NHS

N3 managed on behalf of
the NHS by

BT

N3 – Background

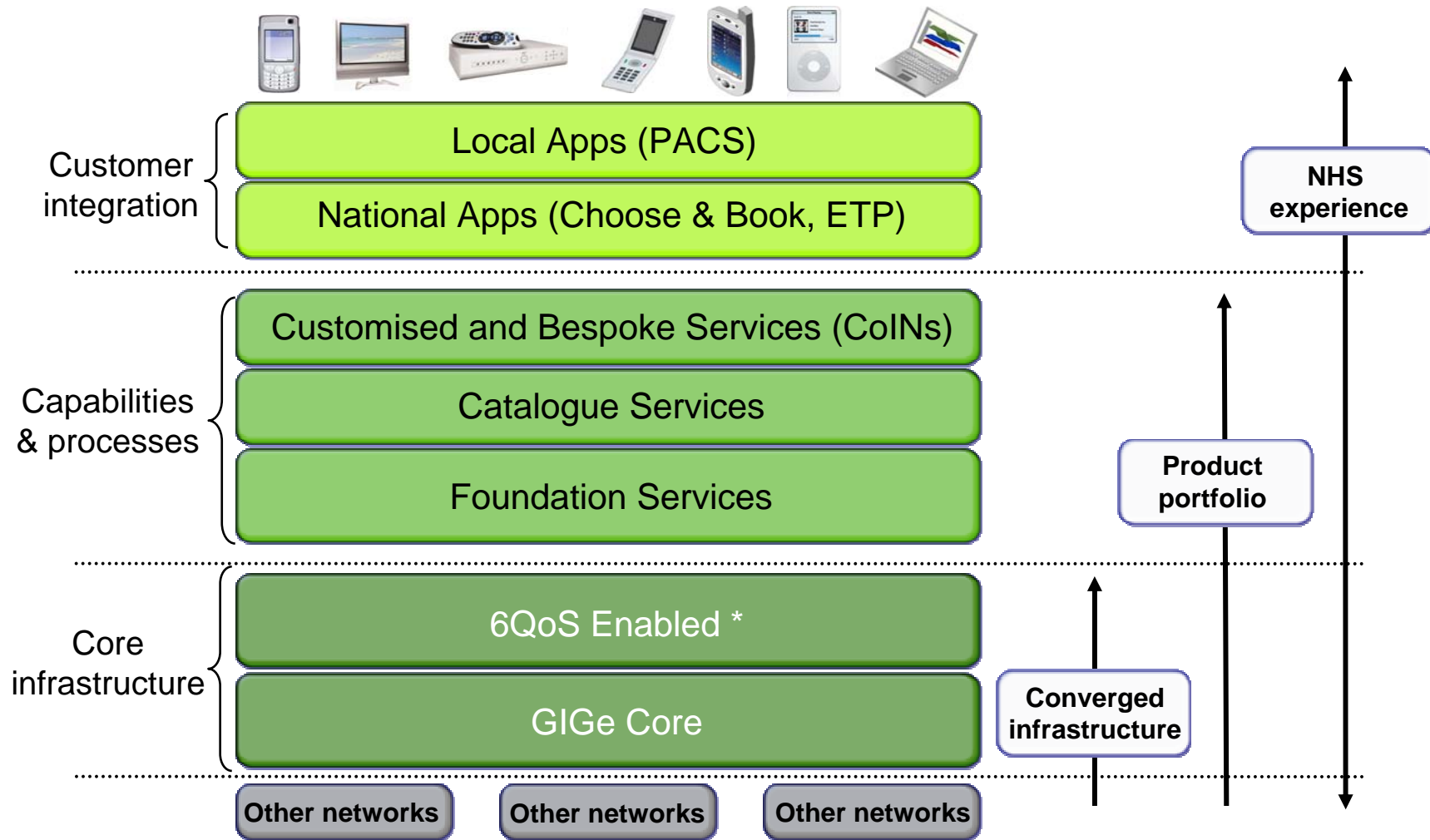**N3 Goals** (the New NHS National broadband network)

Broadband network linking 18,000 sites in England,
up to 3,000 in Scotland and 10,000 non-NHS
Enabling key NHS applications
One of the largest VPN networks in Europe
Expected savings *c*£900m over seven years
Serving one of the World's largest employers – 1.1m

N3 Service Provider

BT fulfilling a network aggregator role
2.5years into 7year contract
58 PoPs and 12,780miles of Fibre to date
500 People employed within BT
24x7x365 Support
6,000 Calls to the N3 Helpdesk per month

N3 – More than just a network

Customer integration
- Local Apps (PACS)
- National Apps (Choose & Book, ETP)

Capabilities & processes
- Customised and Bespoke Services (CoINs)
- Catalogue Services
- Foundation Services

Core infrastructure
- 6QoS Enabled *
- GIGe Core

Other networks   Other networks   Other networks

NHS experience

Product portfolio

Converged infrastructure

Innovation and Delivery Platform

* Planned

Consistent strategy amid Changing Dynamics

Purposeful execution

Deliver the network
- \> 17,404 connections to date
- Supplier Agnostic
- Best value delivery
- Structural cost reduction

Helping the NHS to thrive in a changing world

One of Europe's largest VPNs based on Gigabit core

- Non-core Services
- Bespoke Services
- Customised Services
- Security Services

Open innovation

…evolving

N3 - Programme roadmap

N3

	Benefiting from Convergence	Extending the Organisation	Connectivity
NHS Requirement	Promote inter-organisational working, enhancing local innovation and joined up services across organisational boundaries	Enabling health care staff to work from multiple locations using a range of access methods and devices	Focus on cost management. Greater opportunities for economies of scale and scope with merger of PCTs. Primary Care Practices targeted to develop more local services and solutions providing better value for money

N3SP Solution	**QoS enabled network** – 6 Layer QoS, Voice enabled Core **Local VOIP deployments -** **Secure access** – to NHS applications via fixed and mobile devices.	**Remote VPN** – enabling home working, access to patient records on the move. **Extended VPN –** Increase functionality to the VPN range **N3 Gateways** to mobile suppliers and voice VPN – offering least cost routing. **Wireless Connectivity** – wireless access to N3 services	**Inter-organisation VOIP Trunking -** enabling cost savings. **Business DSL** – Cost effective N3 connectivity **Access to Hosted VOIP Services** – Maximising the IP Voice Opportunity

←—— **N3 Convergence Consultancy –** Optimising the Convergence Opportunity ——→

←—— **Customised Services –** delivering COINS, Local VOIP and ETP solutions ——→

←—— **Demonstrations/Prototypes of N3SP services in Healthcare environment** ——→

N3 – Enabling the NHS NPfIT

N3

Electronic Transmission
of Prescriptions
6,554,406 prescription

NHS Care
Records Service
. **287,713** NHS users registered

NHS Mail
210,589 registered
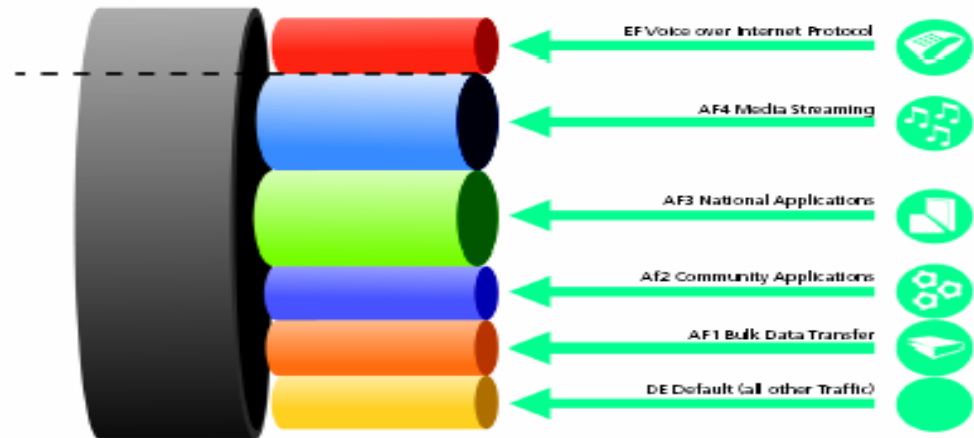
Choose
& Book
1,539,845 bookings

Picture Archiving
& Comms Systems
. **81,017,423** images stored

The Benefits of QoS

'A Bus Lane for Network Traffic'

Quality of Service (QoS) is an Industry recognised solution, which enables key data traffic to be prioritised supporting Converged networking

EF Voice over Internet Protocol

AF4 Media Streaming

AF3 National Applications

Af2 Community Applications

AF1 Bulk Data Transfer

DE Default (all other Traffic)

- The capability for your network to handle the increasing data and application demands.
- Better traffic management giving predictable behaviour.
- Better use of your available bandwidth.
- Support for converged services as they evolve

N3 Vision

N3

- ✓ URL filtering, virus/adware protection
- ✓ Intersite VPNs
- ✓ Remote VPN
- ✓ QoS enabled N3 connections
- ✓ Intersite VPNs

Business Change

Flexible Working

Secure Connectivity

- Hosted IP telephony
- Central Mobile gateways
- Intersite VoIP
- Video conferencing bridge
- Collaboration tools
- Hosting and storage

- Customised VPNs
- Roving VPNs
- Single sign-on
- Mobile worker

- N3 Business DSL
- Wireless LAN
- GPRS 3G/4G
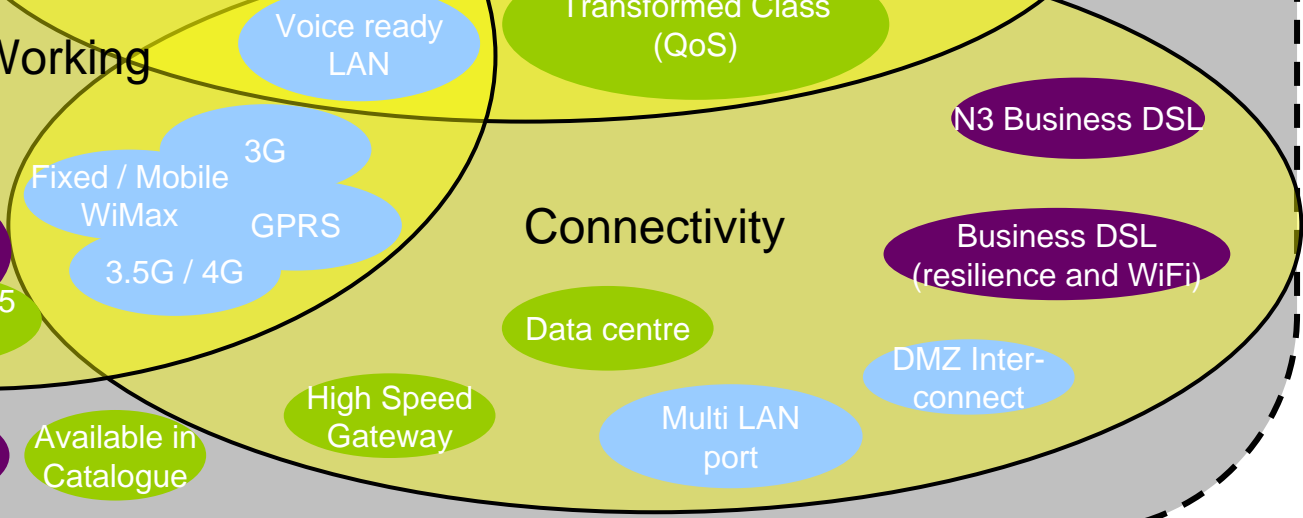- Network performance analysis
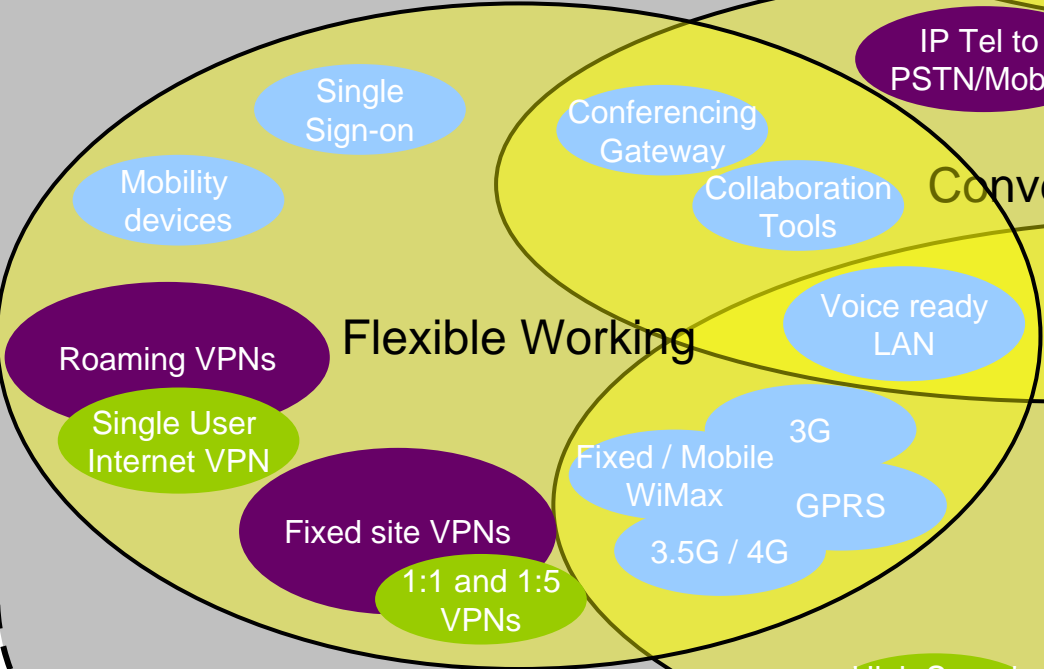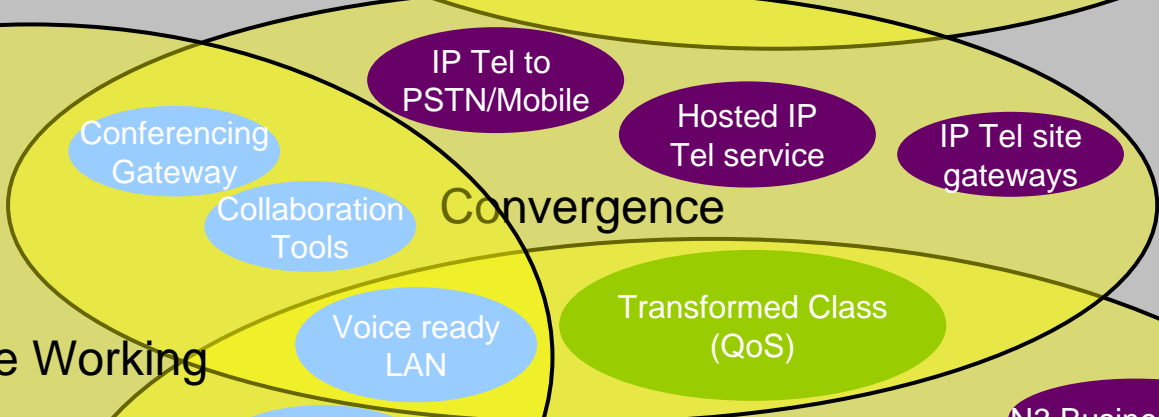
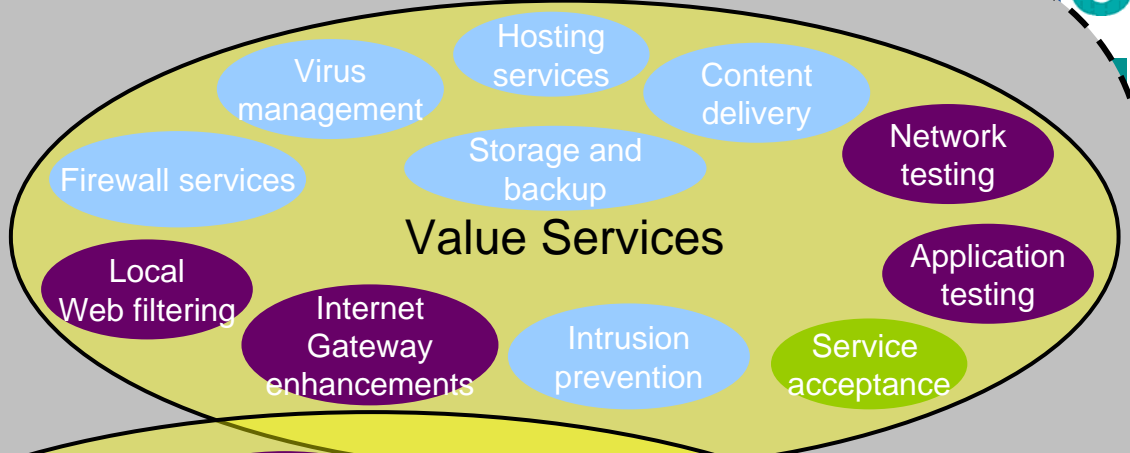# Portfolio Development

N3

- The current N3 catalogue development priorities
  - VPN services
  - Catalogue Transform (QoS)
  - IP Telephony services
  - Business DSL
  - Security (url filtering)

- N3 Customised services
  - Customised managed COIN
  - Thin wrap network services
  - Wires only customised network
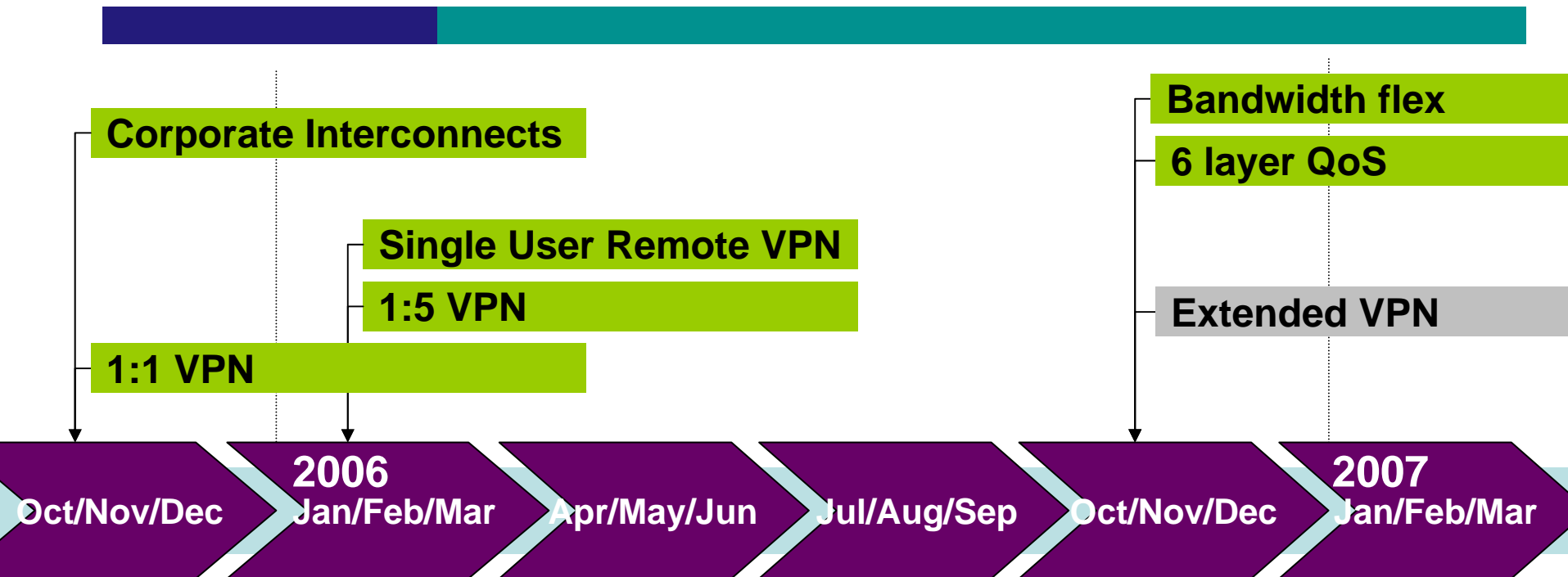 - Customised added value

N3 product families

N3

Customised solutions
- Customised managed COIN
- Thin wrap network services
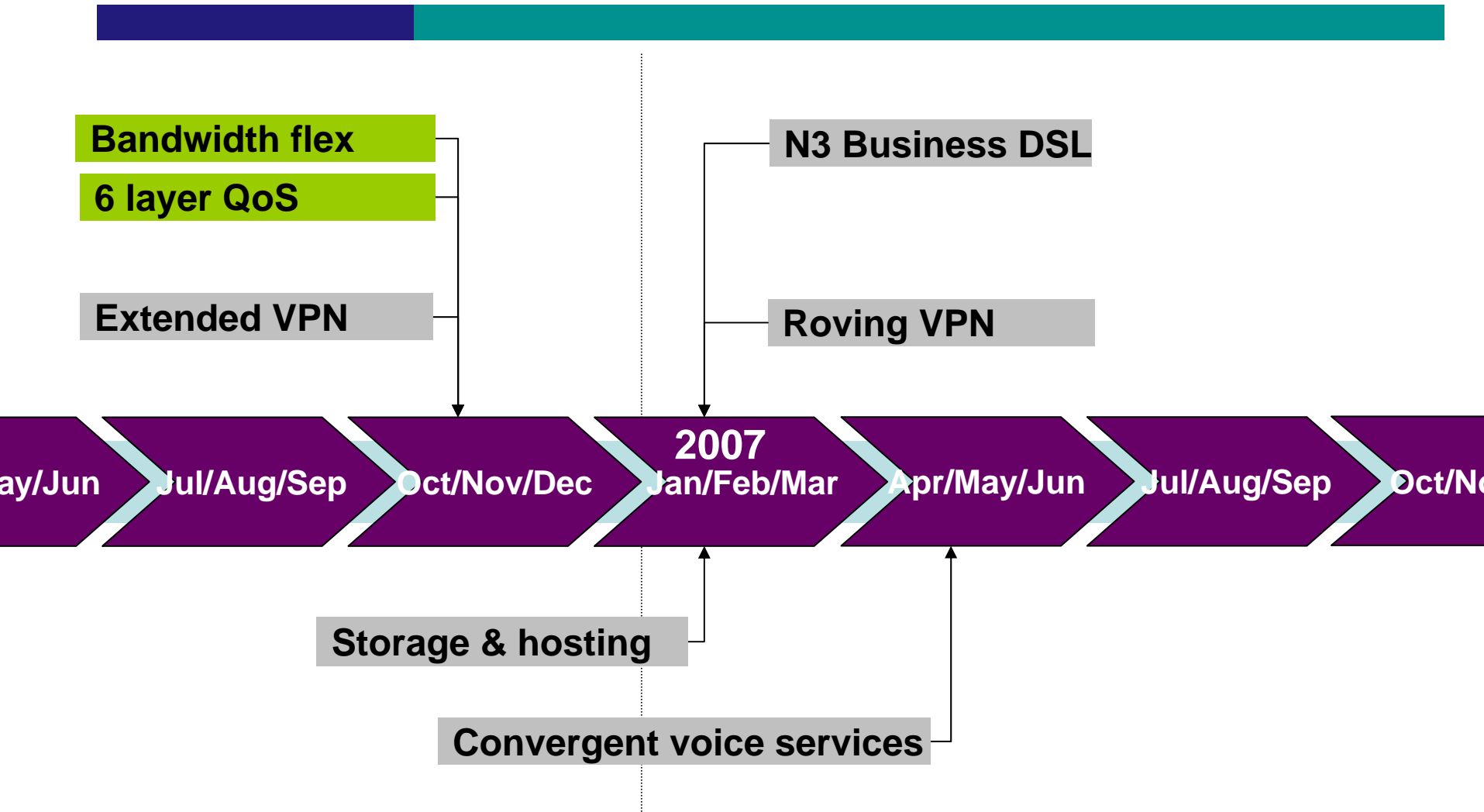- Wires only customised network
- Customised added value

Value Services

- Virus management
- Hosting services
- Content delivery
- Network testing
- Firewall services
- Storage and backup
- Local Web filtering
- Internet Gateway enhancements
- Intrusion prevention
- Application testing
- Service acceptance

Convergence

- IP Tel to PSTN/Mobile
- Hosted IP Tel service
- IP Tel site gateways
- Conferencing Gateway
- Collaboration Tools
- Voice ready LAN
- Transformed Class (QoS)

Flexible Working

- Single Sign-on
- Mobility devices
- Roaming VPNs
- Single User Internet VPN
- Fixed site VPNs
- 1:1 and 1:5 VPNs
- Fixed / Mobile WiMax
- 3G
- GPRS
- 3.5G / 4G

Connectivity

- N3 Business DSL
- Business DSL (resilience and WiFi)
- Data centre
- DMZ Inter-connect
- High Speed Gateway
- Multi LAN port

- Idea
- Catalogue Priority
- Available in Catalogue

N3 portfolio roadmap timeline

N3

Bandwidth flex

6 layer QoS

Corporate Interconnects

Single User Remote VPN

1:5 VPN

Extended VPN

1:1 VPN

Oct/Nov/Dec	2006 Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sep	Oct/Nov/Dec	2007 Jan/Feb/Mar

N3 Customised services: Customised managed COIN, Thin wrap network services, Wires only customised network, Customised added value

N3 portfolio roadmap timeline

N3

Bandwidth flex

6 layer QoS

N3 Business DSL

Extended VPN

Roving VPN

| ay/Jun | Jul/Aug/Sep | Oct/Nov/Dec | 2007 Jan/Feb/Mar | Apr/May/Jun | Jul/Aug/Sep | Oct/N |

Storage & hosting

Convergent voice services

N3 Customised services: Customised managed COIN, Thin wrap network services, Wires only customised network, Customised added value

www.n3.nhs.uk

N3

Products & Services - Microsoft Internet Explorer provided by BT [build60A]

File   Edit   View   Favorites   Tools   Help

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Address http://213.121.210.7/productsandservices/   ⟶Go

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N3

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Time to change to N3

**172 Days
10h 31m 32s**

March 31st 2007 is when NHSnet will close permanently. Order N3 and migrate now or lose your connectivity.

Products & Services

N3SP is committed to offering a broad range of innovative solutions aimed at supporting the NHS with its business requirements. N3SP has developed a series of three broad programmes, which offer best market value and the flexibility required to help the NHS meet its current and future business needs. You can see these below.

We will be updating each programme with more information when it becomes available. Please visit the Publications and Guidance section for information about the N3 products already been launched such as N3 Remote Worker and 1-5 VPN for Multiple Sites.

Flexible Working

Care is moving closer to the community, and it is important that healthcare staff are able to communicate clearly, wherever they are working, e.g. away from the office. N3SP has a range of mobile, flexible working solutions which can help you to meet these needs.

Business Change (Convergence)

As NHS organisations transform around patient and community needs, technology will play an increasingly important role. N3SP is leading the way on convergence, VOIP and customised service solutions, which enable the NHS to make the most of a single NHS network and maximise on cost savings, reflecting a move away from tactical opportunities to strategic services.

Connectivity

N3SP continues to rollout the N3 network via the provision of centrally funded connections, but it also offers a series of 'Top up Services', which you can purchase in order to enhance your N3 capabilities.

🔷 Done   🌐 Internet

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N3 IP telephony services update

NHS Voice Landscape

N3

Situation today:

- **No current national voice strategy**
- **Local procurement and decision making**
- **Changing organisational structures**
- **Mix of fixed and mobile workers requirements**

Addressable NHS voice market size

– **People**	**1.2 Million employees**
– **Large Sites**	**227**
– **Medium Sites**	**914**
– **Small Sites**	**8,000+**
– **Doctors**	**11,000+**

Convergence – Strategy
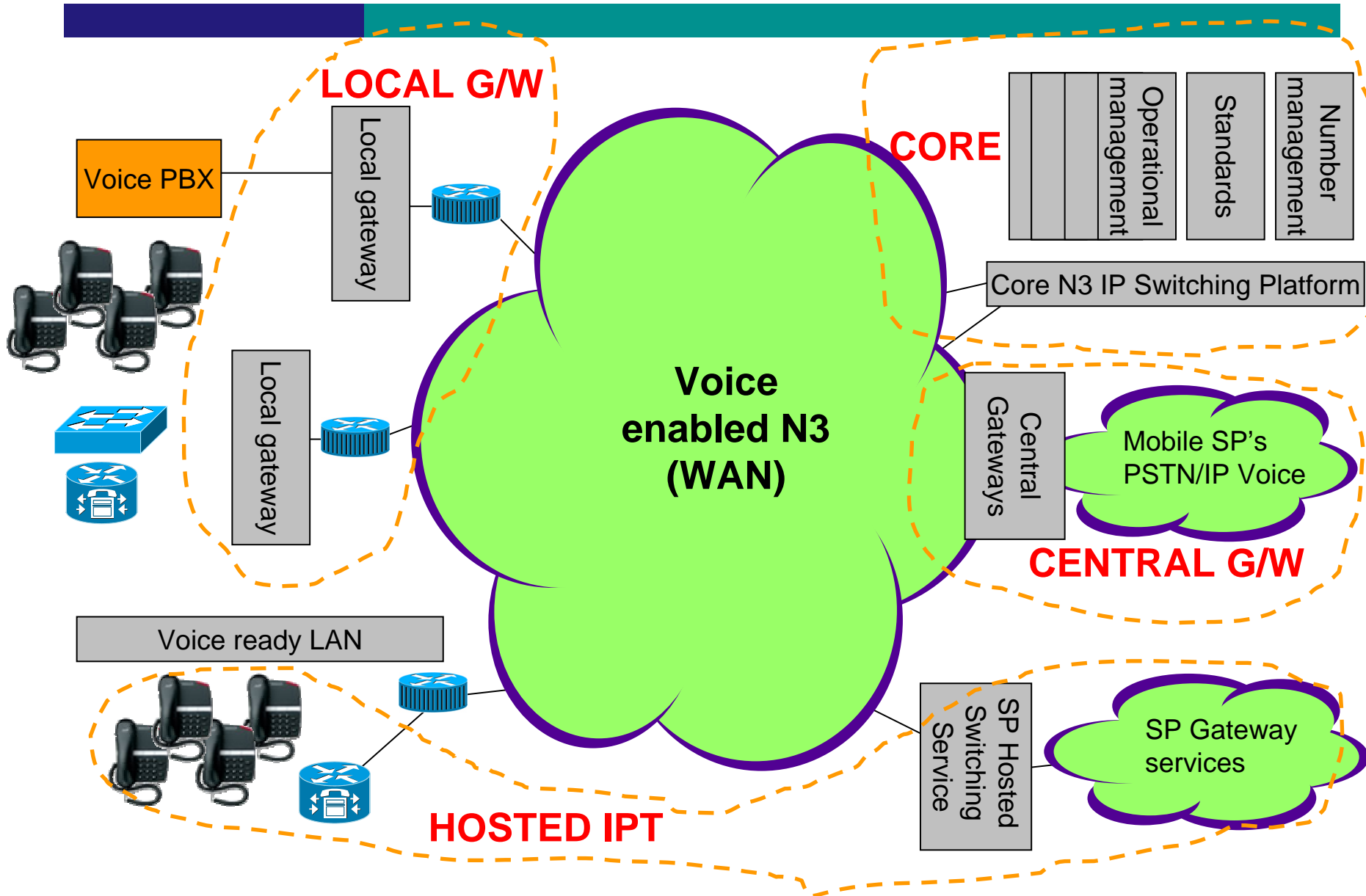
N3

Enablers required for convergent voice:
- N3 6 layer CoS Core – completed Sept 06
- Transform catalogue – completed Oct 06

N3 convergent voice services:
- **Core Services**
  - Core Switching
  - Central gateway services
    - Fixed to Mobile (Phase 1)
- **Edge Services**
  - Local Gateways
  - Hosted IPT

Convergence – Strategy

N3

LOCAL G/W

Voice PBX

Local gateway

Local gateway

Voice ready LAN

HOSTED IPT

Voice enabled N3 (WAN)

CORE

Operational management

Standards

Number management

Core N3 IP Switching Platform

Central Gateways

Mobile SP's PSTN/IP Voice

CENTRAL G/W

SP Hosted Switching Service

SP Gateway services
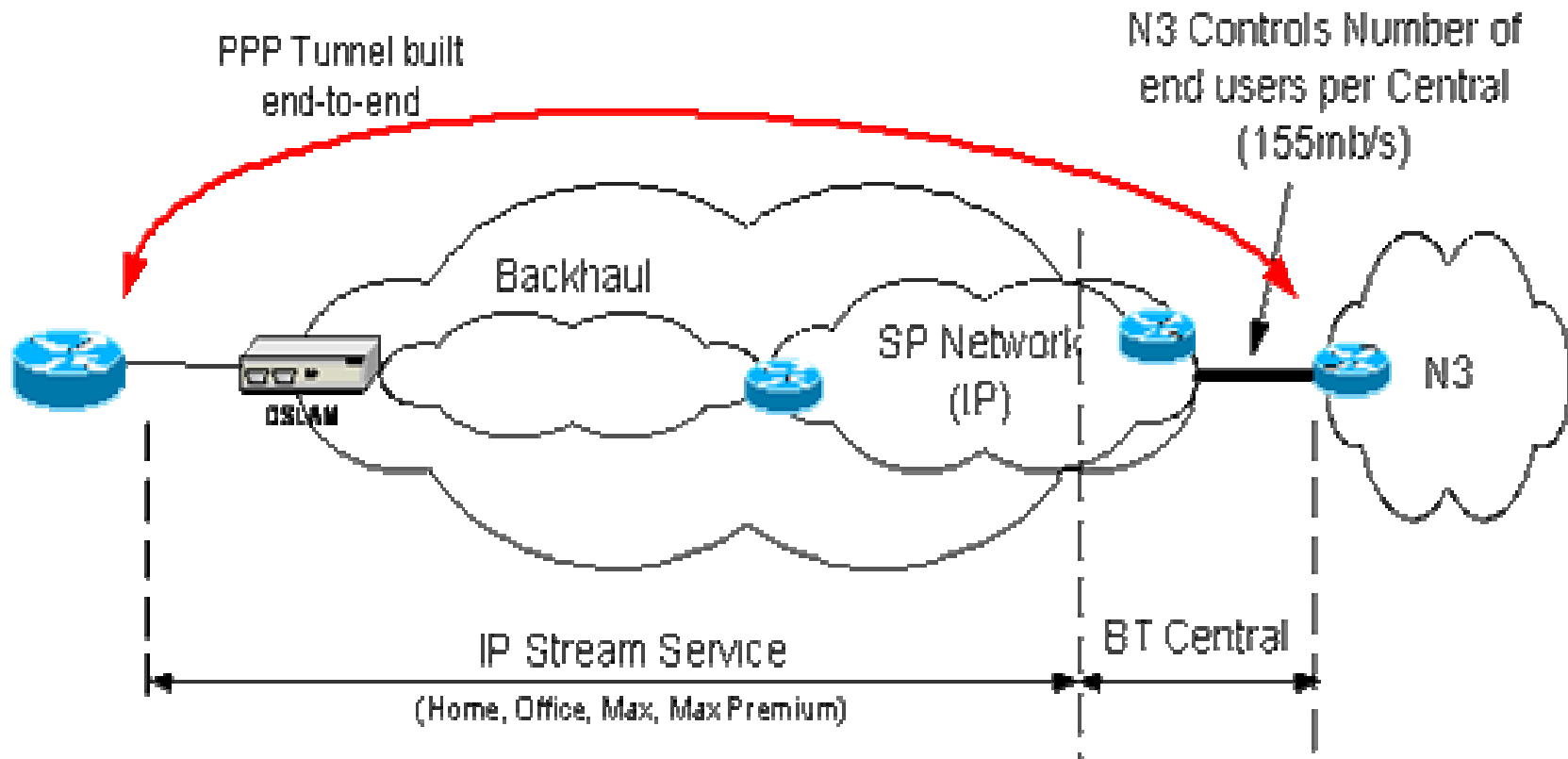
Convergence – Futures vision

N3

- Core voice switching platform underpins N3 vision.

- Allows N3 to develop additional services:
  - Audio / Video conferencing
  - Presence based services
  - Collaboration – email, voice, IM etc
  - Fixed to mobile convergence
  - 21CN compliance and alignment
  - Central Call Recording
  - Voice messaging services
  - Hosted call centre functionality
  - Integrated messaging
  - WIFI
  - Directories
  - Application integration

N3 Business DSL update

N3 Business DSL - Requirements

- ## Objective
  - Low cost direct connection to N3 (from a small site, <20 devices)
  - Flexible contended DSL bandwidth (up to 8 M/bit where available)
  - Non resilient
  - Thin delivery and support services
  - ISP style SLA's

- ## Target Customers
  - Mental Health Trusts
  - Ambulance Trusts
  - Social services, Education and Police

N3 Business DSL - Features

N3

- End site Proposition
    - Single Contended business DSL circuit (no secondary circuit) with N3 provided CPE
    - Business ISP equivalent SLA's – non resilient, availability 97% etc
    - Use best available access speed from suppliers, potential to use future services
    - Use existing PSTN line
    - CPE posted out by N3SP: Router plus integral 4 port LAN port hub
    - Customer self-install, N3SP remote configuration and service enablement
    - Fixed IP addresses
    - IOS firewall (GP v2.0 firewall)
    - DHCP supported by CPE (plug and play on PC)
    - Works as spoke site of an inter site VPN
    - Prioritised voice on upstream (full QoS not available)
- End site Service Wrap
    - Configuration management, central diagnostics etc
    - 24/7 reactive fault repair
    - HSCR performance reports
    - Firewall configuration changes on request
- Futures?
    - Options for resilience and WiFi being considered

N3 Business DSL - Technical Overview

PPP Tunnel built
end-to-end

N3 Controls Number of
end users per Central
(155mb/s)

Backhaul

SP Network
(IP)

N3

DSLAM

IP Stream Service
(Home, Office, Max, Max Premium)

BT Central

N3 Business DSL - progress

- Completed activities
  - Create technical design
  - Create service design, operational design
  - Pricing options
  - Discuss and agree draft CCP with CfH
- Current activities
  - Create final CCP and CCN
- Next steps:
  - Ordering and testing central infrastructure and end site service
  - Prepare for launch
  - Prepare project implementation Launch (earliest launch date is January 2007)

N3 customised services update

N3 customised services - scope

- **Customised managed COIN**
  - N3 Managed Network services, bespoke design
  - Essex, Cornwall, Sussex
- **Thin wrap network services**
  - AN Other supplier managed network, bespoke design
  - Fylde Coast
- **Wires only customised network**
  - N3 bespoke design, no CPE or management
  - North Mersey
- **Customised added value**
  - Security services
  - VPN
  - Consultancy
  - Kent and Medway

N3 customised services - progress

- ## Engaged with 99 customers
  - 8 proposals accepted
    - Cornwall
    - Essex
    - Fylde Coast
    - Lincolnshire (Phase 1)
    - London Ambulance
    - North Mersey
    - Peterborough
  - 32 in design stages
  - 29 being prepared for sign-on
  - 33 no longer required

Thank you