

Output Based Specification (OBS)

Web Based Telecare

For

Out-of-Hours Stroke and Thrombolysis

Cardiac and Stroke Networks in Lancashire & Cumbria

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Document Control

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1. BACKGROUND and INTRODUCTION

1.1 BACKGROUND

Thrombolysis in acute stroke care is delivered in a small number of sites out of the eight hospitals in Cumbria and Lancashire on a 9-5, Monday to Friday basis.

The delivery of thrombolysis in stroke in the District General Hospital setting has been shown to be safe and effective. All Trusts within the Stroke Network are exploring the possibility of establishing a thrombolysis service, but no sites have more than three stroke physicians and will be unable to deliver a sustainable rota for 24 hour thrombolysis independently without a significant expansion of consultant numbers.

Where thrombolysis is not available after 5pm CT scans are not currently carried out within an hour unless patients are suspected to have had a haemorrhagic stroke (e.g. the patient is on anticoagulant therapy). All patients who are suspected to have had a stroke will have a CT scan carried out, normally within the first 24 to 72 hours after admission.

In Cumbria and Lancashire a virtual network of stroke physicians will be created, enabling any patient presenting with symptoms of acute stroke to be assessed by an expert providing safe decision making and prescribing, thus supporting local stroke teams to give the best care to the patients.

1.2 BACKGROUND – REMIT

The concept for the Telehealth Service in Cumbria & Lancashire is to implement a web based Telehealth Network to provide an out-of-hours service by 1st November 2010. It is envisaged that this will involve providing 8 distributed trust sites with mobile Telecarts, and stroke consultants (mainly home based) with the necessary Information Technology (IT) to support increased access to thrombolysis for the local clinical teams and eligible patients on a 24/7 basis.

The telehealth service will consist of three parts:

- Provide the necessary technology that will enable an audio/visual link between stroke consultants (working remotely mainly from home) and the Telestroke Carts located at 8 trust sites enabling remotely located stroke consultants to support live clinical consultations.
- Provide access to a Remote Access Service (RAS)¹ to enable stroke consultants working remotely to access, via the appropriate PACS web server (via WebView), at the trust(s) involved in the clinical consultation to enable them to view images and have access to other clinical information (ie PACS - CT brain images, lab results, stroke scoring application, email).
- Provide access to digital storage to all approved staff to view, via controlled access to audio and visual sessions to allow for clinical audits, assessments, research, and training sessions to be carried out as part of ongoing QA.

¹ Each of the trust has access to its own RAS service, there is an option to implement the strategic N3 RAS, or alternatively to define an option within the end-to-end service (note that the NWSIS have done background work in this area and have identified product types that would fit the requirement).

1.3 THE STROKE NETWORK – HOW IT WILL WORK

What is Telestroke? The concept involves a combination of teleradiology and remote presence consultation essentially through videoconferencing and image transfer, in the emergency setting.

There are advanced fibre optic based Community of Interest Networks (COINs) throughout Cumbria and Lancashire, and North Mersey, each with their own RAS services and with large capacity connections to N3. One or all could each support the use of a strategic Video Conferencing Bridge or similar technology. Access to Southport & Ormskirk may be via N3, or via inter COIN connectivity.

When requested, the on-duty stroke physician will out-of-normal working hours and remotely from home carry out a live audio/video consultation (with the patient, and the local medical teams). This consultation will be set with the trust based mobile telecart (this is a bespoke piece of equipment that has a standards based video conferencing capability). During the consultation they will need to receive clinical images through PC or laptop or mobile data via RAS (ie have access to CT brain scans) and clinical audits, assessments, research, and training sessions to be carried out as part of ongoing QA.

The remote user equipment will be standards based (ie VC devices, Laptops, RAS, mobile data, and other devices as required) that must be able to carry out a web based audio/video clinical consultation and enable access to PACS (CT brain scans) and to other local applications.

The access to PACS (CT brain images) will have to be arranged by the Stroke Network with each of the trusts' PACs Administrator (ie request a User ID and Password to each of the PACS web servers of the trusts they need to access).

The key requirement is to provide an integrated end-to-end solution that provides; quality, ease of use, and that is risk averse, and meets all regulatory and clinical requirements.

1.4 FORMAT FOR RESPONSES TO THIS SPECIFICATION

This document has been created to inform potential suppliers of the requirement for a system and to form the basis of the evaluation of potential solutions. Suppliers are asked to respond to all points within the document retaining the numbering system adopted here.

Mandatory requirements are identified by use of the word **MUST**.

Desirable requirements are identified by use of the word **SHOULD**.

Suppliers **MUST** indicate any mandatory requirements which they are not able to meet, failure to do so would indicate that the proposed product complies with all mandatory requirements.

2 TECHNICAL REQUIREMENTS

2.1 CONFERENCING

Suppliers are invited to describe how they would provide end-to-end services to manage the audio/visual conferencing of both trust network and remote users that may be broadband based, or mobile data, and able to include services, such as: PACS, RAS, mobile data, OCS, audio conferencing.

- 2.1.1 The service **MUST** provide SLAs, Service Guarantees, and 24/7 Helpdesk Facilities
- 2.1.2 The service **MUST** provide a contact and callout procedure for on-call staff
- 2.1.3 The service **MUST** be standards based and able to support all endpoints of varying vendors and provide seamless integration with the infrastructure
- 2.1.4 The service **MUST** be resilient and scalable to support future growth
- 2.1.5 The system **MUST** be able to support DRAC/ ILO or equivalent
- 2.1.6 The system **MUST** operate to the standard H.239 content sharing protocol and the legacy people + content protocol
- 2.1.7 The system **MUST** provide interfaces with mobile data, or alternatively a timeline for that service to be provided (ie 4th quarter of 2010)

2.2 CLIENT - CLINICAL TELECARD

- 2.2.1 The telecard **MUST** be able to be integrated into current TCP-IP networks and use CAT5e cabling or WLAN
- 2.2.2 The telecard **MUST** have the ability to provide # or @ on the remote control to enable H.323 annex 0 dialling
- 2.2.3 The telecard **MUST** have ability to pickup, transmit and replay audio up to and including G.722.1 annex C at 14KHz
- 2.2.4 The telecard **MUST** have the ability to integrate with analogue/IPT telephone systems for conference telephones
- 2.2.5 The telecard **MUST** have the ability to deliver content to the codec using the IP network, both wired and wireless
- 2.2.6 The telecard **MUST** have the ability to produce 22khz SIREN 22 stereo audio from a single microphone or telephone pick up
- 2.2.7 The telecard **MUST** support up to 2 x screens
- 2.2.8 The telecard **MUST** be optimised for clinical use, mobile, and able to be developed for other clinical uses
- 2.2.9 The telecard **MUST** meet all Health and Safety, clinical, and regulatory requirements

2.3 HOME BASED and/or REMOTE USER

To satisfy the end-to-end operational requirements suppliers are invited to provide the following options

- 2.3.1 **MUST** provide options for remote use via a dedicated VC monitor device, or alternatively directly from the NHS or supplier provided laptop
- 2.3.2 **MUST** be able to interface via the provided Conference Video Bridge or other similar technology at maximum possible bandwidth (ie utilising software such as VXP or Movi etc)
- 2.3.3 **MUST** be able to integrated and managed as part of the strategic service
- 2.3.4 **MUST** be encrypted voice and video
- 2.3.5 **MUST** interface with standards based videoconferencing facilities
- 2.3.6 **MUST** support IP voice, addition of devices such HD video monitor
- 2.3.7 **MUST** support a mobile data capability

2.4 SECURE DIGITAL RECORDING

This section describes the requirements of secure digital storage to support audit, assessment, research, and training sessions

- 2.4.1 **MUST** be able to store, archive and retrieve audio, video and textual information
- 2.4.2 **MUST** provide full audit trail and reporting capability
- 2.4.3 **MUST** be resilient
- 2.4.4 **MUST** support multiple simultaneous access
- 2.4.5 **MUST** allow secure and controlled access
- 2.4.6 **MUST** be capable of allowing management to segment storage and ground levels of access

2.5 HARDWARE (PERIPHERALS)

This section describes options that suppliers may offer as part of the overall end-to-end service.

- 2.5.1 **MUST** include details of any peripherals required for the running of the system, (e.g. VC HD monitors for home based users, speakers, and extra cabling).
- 2.5.2 **SHOULD** provide options for mobile data to support the service
- 2.5.3 **SHOULD** provide options for the provision of Laptops that are compatible with clinical PACS imaging standard

Please identify all non-standard products proposed which are commercially available off the shelf that have been bespokeed to facilitate the use of your system.

2.6 SOFTWARE

- 2.6.1 The software **MUST** enable remote management
- 2.6.2 The application **SHOULD** be provided as a web enabled product
- 2.6.3 Suppliers **MUST** indicate their preferred software tools. Any additional software required to be purchased in order to run the application, e.g. terminal emulation, client licences etc, **MUST** be specified
- 2.6.4 The product **MUST** be compatible with MS Windows updates and MS patches as used by the NHS Trusts

2.7 NETWORK

Networking issues are of key importance to this implementation, particularly in the light of the requirement for the end-to-end requirement, and for remote working (RAS) either from home or via mobile data.

The supplier **MUST** ensure that the following conditions are met:

- that end-to-end network performance is acceptable to allow effective running of the system, i.e. response times are adequate for all system processes
- that **no adverse impact is experienced on other systems** already running over the trusts' or other networks
- The system **MUST** adhere to QOS policies (LHC COINs, N3, remote users - RAS), which must be managed, coordinated, and implemented by the supplier
- The system **MUST** be able to communicate with and across other trusts' infrastructure and over existing COIN and or N3 connections. Using SIN numbers, and H323 annex 0
- The system **MUST** be able to interface with remote users (ie broadband/mobile data users)
- The solution **MUST** be scalable to support future growth

Although not forming part of this procurement, (networking equipment if required will be sourced separately), suppliers **MUST** include a detailed description of their networking recommendations/requirements, including RAS for this specific service.

Indications of Network traffic generated by the use of the system **MUST** be provided.

MUST provide network management and monitoring on a 24/7 basis

2.8 INTERFACES WITH OTHER SYSTEMS

- 2.8.1 The system **MUST** be compliant to open standards codecs enabling the system to talk to other sites at maximum supported feeds and speeds
- 2.8.2 The system **MUST** interface with PACS (CT brain images) and other devices, such as: visualiser, digital microscope, digital camera and other similar devices that may be used in the network
- 2.8.3 The system **MUST** be able to accept remote users (ie working from home using broadband and or mobile data connectivity) utilising remote access at maximum supported feeds and speeds
- 2.8.4 The system **MUST** provide backup feeds to a digital data storage facility to allow conferences to be audited, and for clinical training purposes

2.9 INFORMATION SECURITY AND SYSTEM PROTECTION

- 2.9.1 The system **MUST** operate to minimum of AES encryption standards
- 2.9.2 Suppliers **MUST** provide a system which allows the Trust to adhere to the Data Protection Act and the current Information Governance (IG) requirements within the NHS
- 2.9.3 Suppliers **MUST** for the proposed solution explain the approach to management of information security risks and prevention and resistance to security threats for the proposed hardware infrastructure and application
- 2.9.4 Suppliers **MUST** provide comprehensive information on the approach to management of upgrades including security patches and the testing regime adopted
- 2.9.5 Suppliers **MUST** provide details of the application security that will allow the system administrator to configure access (permit or deny) user groups or individuals to data/information within the system
- 2.9.6 Suppliers **MUST** provide details of how they would provide the capability to digitally store sessions, to audit system use, and provide access for an authorised those records.

2.10 FUNCTIONAL REQUIREMENTS

General Operation: To support the Telehealth Requirements for Stroke and Thrombolysis within Cumbria & Lancashire and North Mersey.

- 2.10.1 The system **MUST** be capable of supporting the Telestroke requirements
- 2.10.2 The system **MUST** include facilities that enable the Telecart to be used for local as well as for network and “supra” network video conferencing
- 2.10.3 The system **MUST** be flexible and capable of development in response to local or national requirements
- 2.10.4 The system **MUST** be capable of integrating with other equipment currently being used (ie local PC based systems, inter cart, MDT video conference rooms etc)
- 2.10.5 The system **MUST** be capable of supporting multiple input and output devices
- 2.10.6 The system **MUST** be capable of securely backing up audio and video sessions and allow user access to stored files/sessions

2.11 SECURITY

- 2.11.1 The management system **MUST** provide for a secure system, details of how this is to be done must be supplied.
- 2.11.2 The system **MUST** be able to prevent access from unidentifiable sources
- 2.11.3 The system **MUST** be compliant with NHS IG and security requirements

2.12 CORE FUNCTIONALITY

2.12.1 The system **MUST** comprise the following core features:

- Control Device(s)
- Audio/Visual Equipment
- Camera and Monitors/Projectors
- Codec
- Multi Conference System (including remotely located VC monitors and laptops)

The features detailed above **MUST** connect to the media used in the Stroke Network, such as:

- PACs images (using either PACS workstations, PCs, Laptops, remote user laptops).

Note that these images may be held on different systems within the service

- Visualiser images
- Microscope images
- Digital Camera (still and real time)
- Any image that can be displayed from a PACS Workstation/PC/Laptop
- Secure Digital Recorder

2.12.2 The system **MUST** allow expansion to enable additional users to those already stated, which may include devices such as: other VC room installations, Telestroke Carts, or smaller remotely located user desktop/webcam systems such as OCS, or audio

2.12.3 The system **MUST** be available on a 24/7 basis

2.12.4 Suppliers **MUST** provide details of the support systems available to enable the trusts to provide an adequate business continuity and disaster recovery plan/capability. This **MUST** detail the processes for “restarting” systems in the event of failure

2.13 CONNECTIVITY

The system **MUST** have ability to be used as:

- a mobile standalone meeting room/ward with CAT5e and WLAN
- in site-to-site conferences
- in multi-site conferences
- in remote broadband or mobile data situations
- ISDN compatible

2.14 SETTING/STARTING UP A CLINICAL CONSULTATION

- 2.14.1 The system **MUST** support minimum user input to “start up a Clinical Consultation”
- 2.14.2 The system **MUST** provide the capability to support short code directories for easy connection to other sites/multi-site meetings
- 2.14.3 The system **MUST** display all sites connected and identify them on screen
- 2.14.4 The system **MUST** support immediate “redial” in case of disconnection
- 2.14.5 The system **SHOULD** have a web based booking system
- 2.14.6 The system **MUST** have full interoperability with other Manufacturers’ standards based systems, with transcoding for highest supported bandwidth operation

2.15 CLINICAL CONSULTATION MANAGEMENT

- 2.15.1 The system **MUST** enable speedy switching between media being displayed
- 2.15.2 The system **MUST** be able to support the pick up of sound from consultations from anywhere in each ward/room
- 2.15.3 The system **MUST** produce high quality sound, taking into account the acoustic nature of each individual ward/room and the equipment therein
- 2.15.4 The system **MUST** allow individual sites to be able to mute out going sound, or incoming sound
- 2.15.5 The system **MUST** allow individual sites to be able to join or leave the conference at will
- 2.15.6 The system **MUST** allow individual sites to be able choose the images they wish to display to others
- 2.15.7 The system **SHOULD** allow individual sites to be able to communicate without disruption to the flow of the conference (i.e. messaging between sites)
- 2.15.8 The system **MUST** allow the near and remote operation of all camera functions, including pan, tilt and zoom
- 2.15.9 The system **MUST** be able to display the stroke scoring software including the interaction and recording of the scores, followed by the prescribing
- 2.15.10 The system **MUST NOT** allow for unauthorised viewing via third parties to take place
- 2.15.11 The system **MUST** securely store digital audio, image, and text and allow for secure and controlled access by authorised staff

2.16 MOBILE TELE CART – WARD/CLINICAL EQUIPMENT

- 2.16.1 The system **MUST** provide a sound system that takes into consideration the acoustics in each ward/room, together with how information is presented in a clinical consultation
- 2.16.2 The system **MUST** be able to project/display images using a media appropriate to the size of the ward/room and taking into consideration the lighting within the ward/room
- 2.16.3 The system **MUST** be able to connect with the other media in the ward/room and be able to display it and support easy and quick switching between media
- 2.16.4 The system must be mobile and comply with all regulatory requirements including clinical aspects (ie infection control)

2.17 MANAGEMENT AND ADMINISTRATION SUPPORT

- 2.17.1 The systems **MUST** provide remote management and support for the Clinical Consultations
- 2.17.2 The system **MUST** provide system usage data
- 3.8.3 The system **MUST** be able to provide digital backup and retrieval facilities (this is an optional purchase requirement)

2.18 COMMUNICATION WITH OTHER SYSTEMS

- 2.18.1 The equipment **MUST** be interoperable with other standards based systems, such as: ie PACs (CT), MDT VC, RAS, NHS N3 National, IP, ISDN
- 2.18.2 The system **MUST** be able to integrate with traditional telephony and IP telephony systems, and be able to use web based cameras

3 PROJECT MANAGEMENT, TRAINING, IMPLEMENTATION AND PROJECT COSTS

3.1 PROJECT MANAGEMENT

The supplier will be required to provide Project Management Services to support the implementation of the system. An overview of the proposed Project Management Services **MUST** be included in the response.

The Company Project Manager will be capable of identifying, explaining and resolving difficulties as they arise and will consult fully with the Cardiac and Stroke Network Project Manager the lead trust, and the relevant Trust personnel at all times in the performance of these tasks.

Regular joint progress meetings will be held.

The Network **SHOULD** be able to access company product user groups.

3.2 TRAINING

3.2.1 Appropriate levels of training **MUST** be provided to all technical, administrative and clinical staff involved in the use and support of the system that includes initial and ongoing training

3.2.2 A detailed training proposal **MUST** be included

3.2.3 The supplier **MUST** provide a trainer who is thoroughly familiar with the system, including the reporting tool.

3.2.4 All initial training **MUST** take place on Trust sites unless otherwise required

3.2.5 Manuals for application users will be provided and also for technical users. These manuals **MUST** be updated with all system upgrades, and be available in electronic and paper format

3.3 IMPLEMENTATION SERVICES

Any other implementation services required to deliver the project **MUST** be detailed in this section

3.4 SUPPORT SERVICES

Details **MUST** be provided of the support services offered with information on guaranteed response and fix times included. Costs for the service **MUST** be specifically identified in Section 4.6 below.

Examples of the required service levels are shown below:

- The managed service via the video bridge **MUST** provide full details of the services offered including the processes and procedures to manage remote users
- There **MUST** be a strong network of certified resellers that have qualified staff who have been trained in the installation and support of the product through a national helpdesk
- There **MUST** be a 24 hour support hotline, on line support guides and engineers that can perform on site 24 hour hardware swap outs.
- The supplier **MUST** respond to problems within a defined period of time with either solution or update. Standard response times to provide resolution of issues should be provided, the suppliers response will be used as a basis for discussions with the Stroke Network, along with standard definitions of fault categories.
- Electronic logs of all calls / activity to the company **MUST** be produced monthly.
- Support and service contracts must be customisable to suit the trusts needs.

3.5 PROJECT PLAN

The supplier **MUST** provide a detailed project plan outlining a “model” implementation of the system. The service would wish to agree a specific plan once the selection process is complete.

3.6 COSTS

Note that costs **MUST** be split between one-off costs and recurring (revenue) costs.

The supplier **MUST** provide an indication of the methodology proposed to do the implementation and commissioning.

A full breakdown of ALL project costs **MUST** be included in the Commercial Questionnaire, in the following main headings:-

The required format is shown in the **Commercial Questionnaire**

SOFTWARE & HARDWARE COSTS

- Software costs **MUST** include bands of concurrent licences where appropriate available with costs in addition to the suppliers recommendation.
- Hardware costs **MUST** include capital costs, technology refresh, and revenue costs for maintenance.

- What technology refresh is included free of charge
- Implementation and ongoing service costs.

3.7 SYSTEM UPGRADES

Regular meetings between Trust and the provider **SHOULD** allow development of the system to the satisfaction of both parties.

- The supplier **MUST** appreciate that changes at a national level may require system upgrades.
- All upgrades **MUST** take place at a mutually agreed time and may depend on workload.
- Suppliers **MUST** provide details of their approach to the costing, development and delivery of system upgrades.

3.8 CONTRACTUAL TERMS AND CONDITIONS

NHS conditions of contract for the supply of IT systems and Change Control (SYSCON) July 2007 will apply to this project. Copies are available on request from the Procurement Department.

3.9 PROJECT ADMINISTRATION

Any queries relating to this document **SHOULD** be addressed to:-

Procurement Issues

TBC

Lead Trust for procurement Purposes

North Cumbria University Hospitals NHS Trust

Xxx

Xxx

Tel

Mob

Overall Project Issues

Network Director (Acting)

Cardiac & Stroke Networks in Lancashire and Cumbria

Tel:

Mob:

Technical Issues

Programme Lead - ICT Infrastructure
Northwest SHA

Tel:

Mob:

3.10 REFERENCE SITES

The supplier **MUST** state their existing user base in the UK for the product that is being offered, and **MUST** provide a list of local users and contacts. The supplier may identify a preferred reference site contact name and details, but **MUST** identify why this site has been selected as the preferred reference site.