

Vycaria

Virtual Cath Lab Business Case

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1.0 Introduction

The purpose of this document is to outline the business case for the Virtual Cath Lab product set. The intended audience for this document are commissioners, radiology & cath lab managers and general managers.

2.0 Virtual Cath Lab- High level overview

The VCL is a PC based computer simulation of a fluoroscopy suite with 2 main components: a) simulation of x-ray (fluoroscopy) equipment, and b) simulation of the clinical radiology procedure (currently in development). The VCL is based on 3D games technology and utilises an interactive real time '3D rendering' engine which will run on any Windows PC.

Simulation of the fluoroscopy equipment (using a PC with a mouse or laptop trackpad / optional game joysticks to simulate equipment movement) within the game engine is entirely consistent with the way the equipment operates in the real world, so provides a completely 'safe' (to both staff and the patient) radiation free training environment and involves no 'special' hardware to connect to the PC.

In practise, users will run the software either in hospital or at home to achieve learning outcomes (improvement in hand / eye co-ordination and / or increased knowledge of 3D anatomy). Users can be assessed by a mentor, however a feedback mechanism with user certification against customisable pre-defined outcome criteria has been identified as a product requirement for a future release.

The VCL will run on any PC / laptop, enabling users the flexibility to train at a time and location of their convenience. The software is deployed as a single, small (about 2 or 3Mb) executable file & requires no additional software infrastructure to be deployed on users PCs other than that found in 'standard' Windows PCs.

3.0 Business Case- fitness for purpose checklist:

- ***Is the business need clearly stated?***

There is an ongoing requirement for the NHS to facilitate high quality patient care and increased productivity (e.g. 18 Week Wait, Payment by Results, PCT Quality based Commissioning initiatives) whilst simultaneously optimizing and protecting resources (e.g. staff via the EWTD).

The Department of Health has identified NHS-led healthcare innovation (and procedure simulation in particular) as a key component to address the above requirement.

http://www.dh.gov.uk/en/Aboutus/MinistersandDepartmentLeaders/ChiefMedicalOfficer/CMOPublications/CMOAnnualReports/DH_28

(In particular this section of the report: “Safer medical practice: Machines, manikins and Polo mints”).

- ***Have the benefits been clearly identified & are they consistent with the organisations strategy?***

Radiology procedure simulation has been shown to reduce patient & staff radiation dose by up to 48% (see link below) and is therefore justifiably good practise from a clinical safety perspective alone. Additionally, simulation should decrease clinical procedure times and correspondingly improve clinical procedure outcomes & efficiency.

Cash releasing benefits can be formally mapped to staffing (less mentoring of trainees & decreased ramp up time), increased procedure throughput (influencing Payment by Results), PCT quality-based commissioning, 18 Week Wait initiative and will address training challenges resulting from the EWTD legislation.

The VCL will ‘fit in’ at any stage of NHS healthcare delivery (medical / radiography school, independent sector, postgraduate education & Acute NHS Trust) and will additionally (via home-based learning) allow learning outcomes to be achieved

outside the healthcare environment's clinical staffing and IM&T infrastructure, thereby enabling reduction of possible maintenance costs to the Trust.

- ***Is it clear what will define a successful outcome?***
 - Clinical Safety: substantial reduction (up to 48%) of radiation dose to patients and staff.

http://www.cardiovascularbusiness.com/index.php?option=com_articles&view=article&id=14053

- Conformance with Ionising Radiation (Medical Exposure) Regulations 2000 (IRMER) training recommendations (Section 2).
- Decreased ramp-up time for trainees and less mentoring of trainees by trained staff- cash releasing benefit.
- Increased productivity (via increased knowledge of spatial awareness leading to more efficient radiographic technique) of trained staff, leading to increased patient throughput.

- ***Is it clear what the preferred option is?***

The “established” option (training using real equipment and patients with a staff mentor) remained unchallenged until the recent advent of computer based simulation technology. However corporate application of much of this technology still suffers from the drawbacks of the established option (dedicated and costly custom training environments, staff needing to be released to attend training at a remote location, etc).

The VCL is a viable alternative to the high-end manikin based dedicated simulation products on the market today and is capable of delivering most of the benefits of these high end products in an efficient, affordable, accessible and cost-effective manner.

- ***Is it clear why this is the preferred option?***
 - Vycaria's due diligence had indicated that the VCL is the only UK-based fluoroscopy simulator on the market today.
 - The VCL does not require custom hardware / software / training environment.

- The VCL does not put a maintenance burden on Trust's IM&T department / Catheterisation Laboratory infrastructure or staffing.
- The VCL is very favourably priced & there are a variety of licensing options.
- The ongoing VCL product roadmap has been heavily influenced by and can quickly respond to the specialised requirements of the UK cardiology community and has previously incorporated input from specialist user groups (e.g. Cardiac Radiographers Advisory Group).