

Using Virtual Radiography

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Safer medical practice: Models, manikins and Polo mints



“See one, do one, teach one...
...this is no longer appropriate
for the 21st century”

Sir Liam Donaldson (2009)

Why Virtual?

- Students can fail
 - No one gets hurt
- Images are saved
 - Can be summative or formative assessment
- Student can use system when they want
- Cost effective when linked to F2F

The Virtual Radiography™ Concept

Experiential learning is very powerful

Simulated experience is the next best thing

Effective learning is outcome driven

The Virtual Reality Dream



Wright, D.L., Rolland, J.P., & Kancherla, A.R. (1995)
Using virtual reality to teach radiographic positioning
Radiologic Technology, 66(4), 233-240.

The Common View of Simulation



Affordable?

Achievable?

Accessible?

The Virtual Radiography™ Concept

Screen Based Simulation

- Achievable
- Accessible
- Affordable

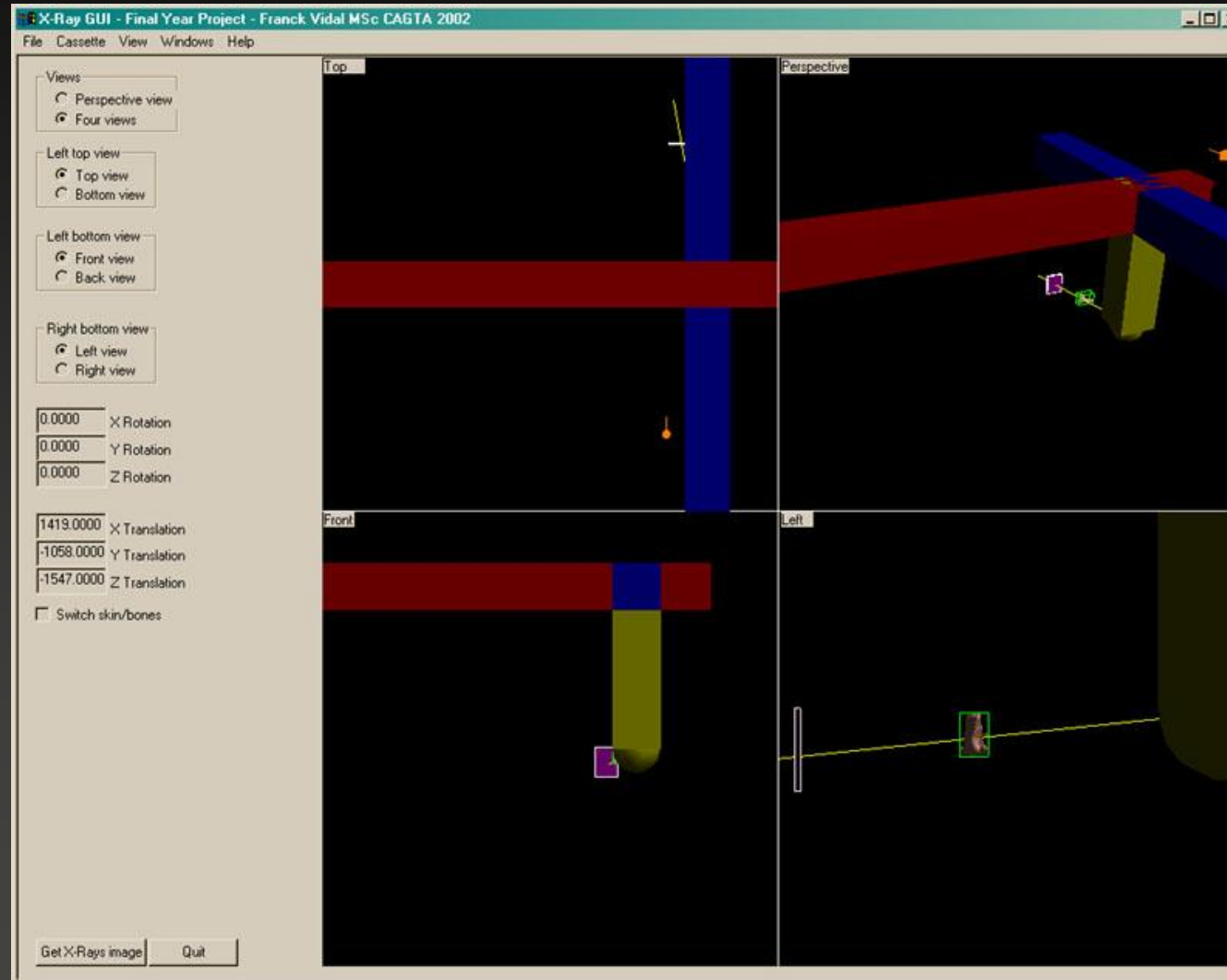
Virtual Radiography™ History □

2001 - initiation of the project

2002 - first proof of concept



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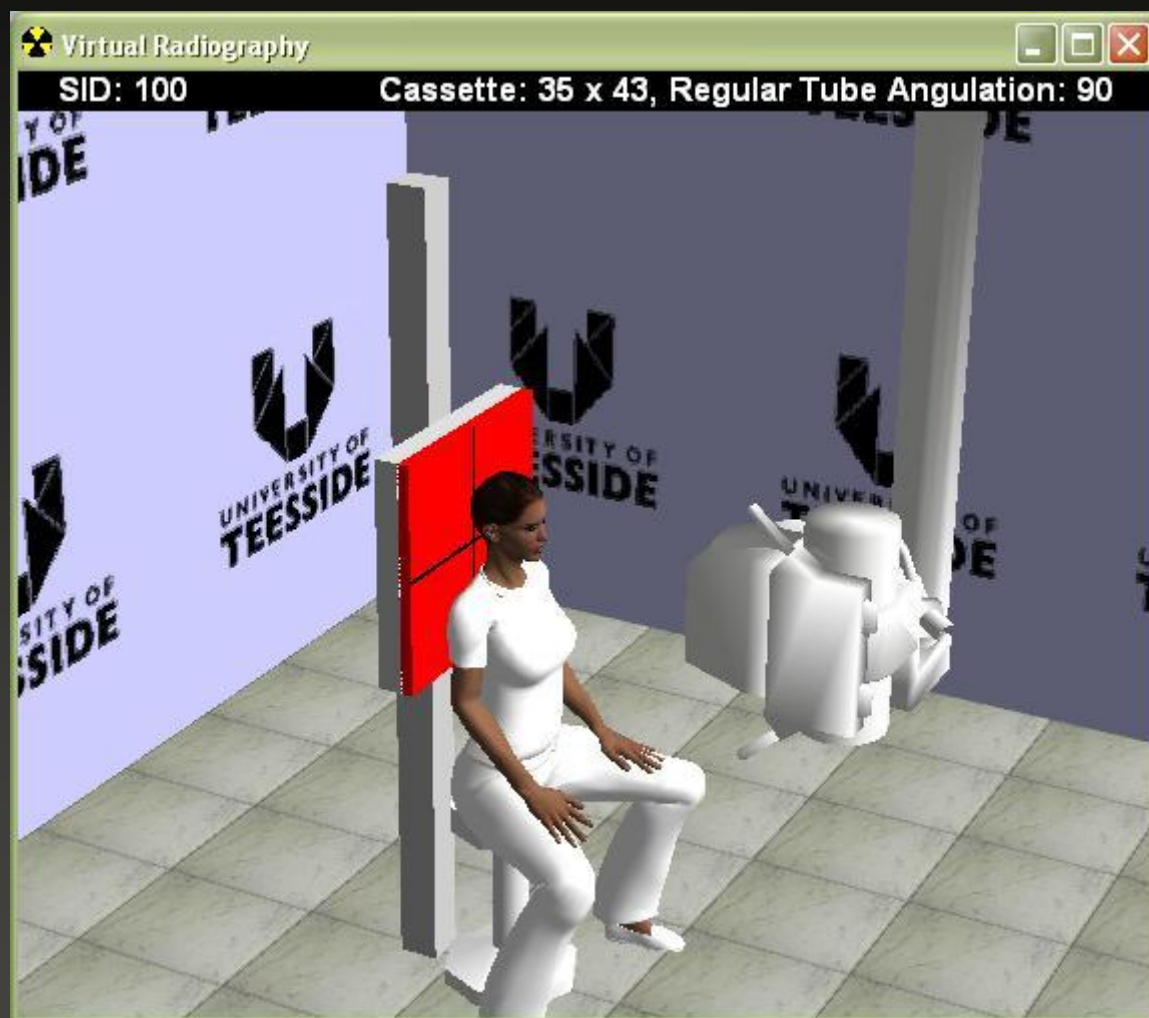
2001 - initiation of the project

2002 - first proof of concept

2003 - first prototype

2006 – Limited Company, first product sold

2006 - first product



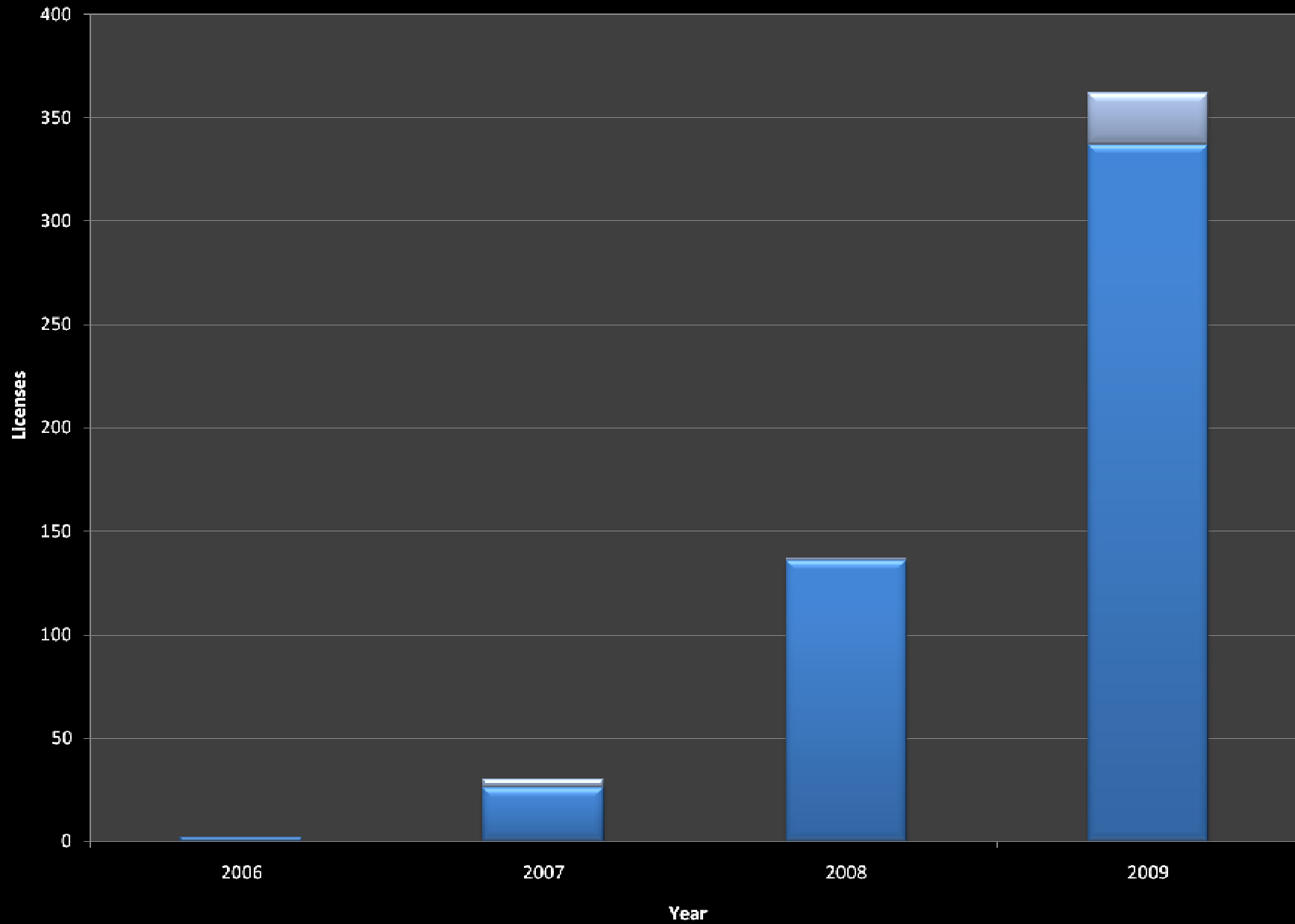
Virtual Radiography™ in 2010

3 products

50 institutions worldwide

700 licenses sold

Virtual Radiography™ Sales Growth



ProjectionVR Case study - Teesside

40 students per year

No energized x-ray room

Controlled trial ongoing

Kingston /St George's

- Trial ongoing
- Early results
 - Good students acceptance
 - Students better prepared for F2F session
- Too early to assess impact on clinical performance



9 Hours Y
6 Hours Y
3 Hours Y

Clinical Skills (H 2.05) & Virtual Radiography (1.13) Please note: Swapping between Alpha and Beta groups is **not possible**

Date Thursdays	H 2.05 times am			H 2.05 times pm	VR Sessions (H1.13) 9.00 – 12.00
	8/10/09	9 – 10am Intro Session 1	10 – 11am Intro session 2	11 – 12noon Intro session 3	2.30 – 6pm Upper & Lower Limb 1
15/10/09				2.30 – 6pm Upper & Lower Limb 2	9.00 – 12.00 (Beta: 4,5,6) Radiographic Techniques
22/10/09	8.30-12noon Upper & Lower Limb 3			2.30 – 6pm Chest & Pelvis 1	9.00 – 12.00 (Beta: 4,5,6) Radiographic Science & Patient Practice
29/10/09	8.30-12noon Chest & Pelvis 2			2.30 – 6pm Chest & Pelvis 3	
5/11/09	intro Session 9-10am 4	intro session 10-11am 5	intro session 11-12noon 6	2.30 – 6pm Upper & Lower Limb 4	(Data collection sessions on Mon and Tues)
12/11/09	Clinical Visit (all groups & students)				(Data collection sessions on Mon and Tues)
19/11/09				2.30 – 6pm Upper & Lower Limb 5	9.00 – 12.00 (Alpha: 1,2,3) Introduction to virtual x-ray room
26/11/09	IPL Week				
3/12/09				2.30 – 6pm Upper & Lower Limb 6	9.00 – 12.00 (Alpha: 1,2,3) Radiographic Techniques
10/12/09				3pm – 6.30pm Chest & Pelvis 4	9.00 – 12.00 (Alpha: 1,2,3) Radiographic Science & Patient Practice
17/12/09				2.30 – 6pm	

Standard Clinical Skills Lab Training



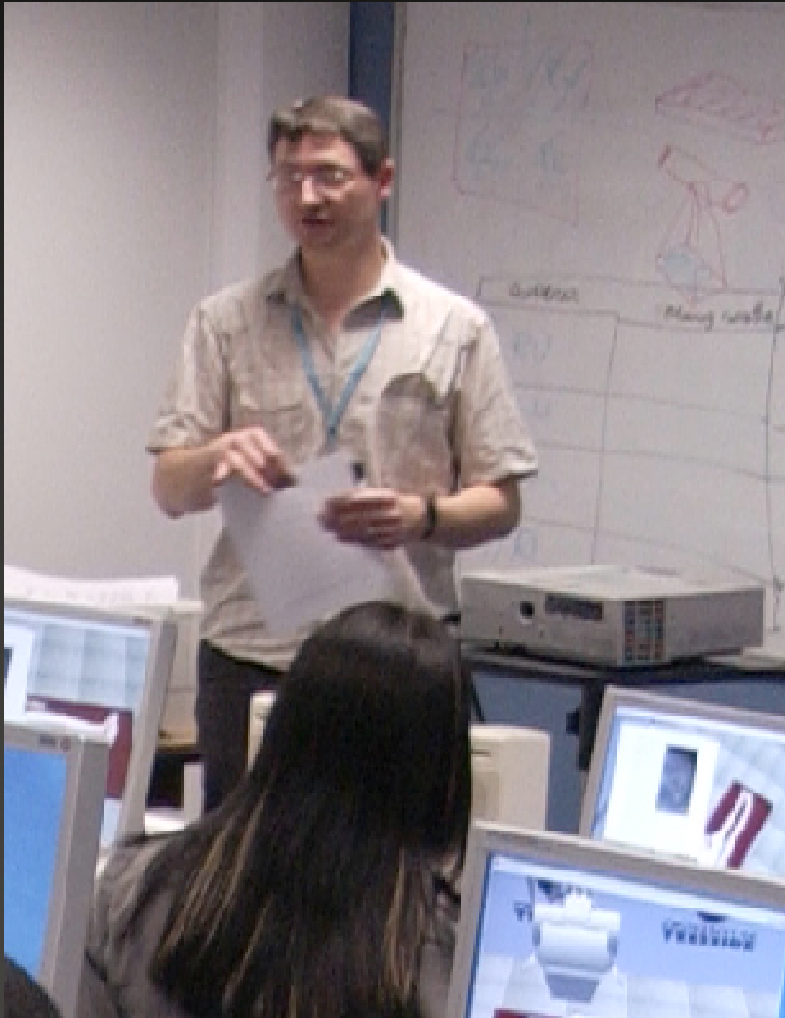
7 hours for first years require
48 hours tutor and room time

Each student is only hands on
a fraction of the time

Someone has to be the
model

No images produced

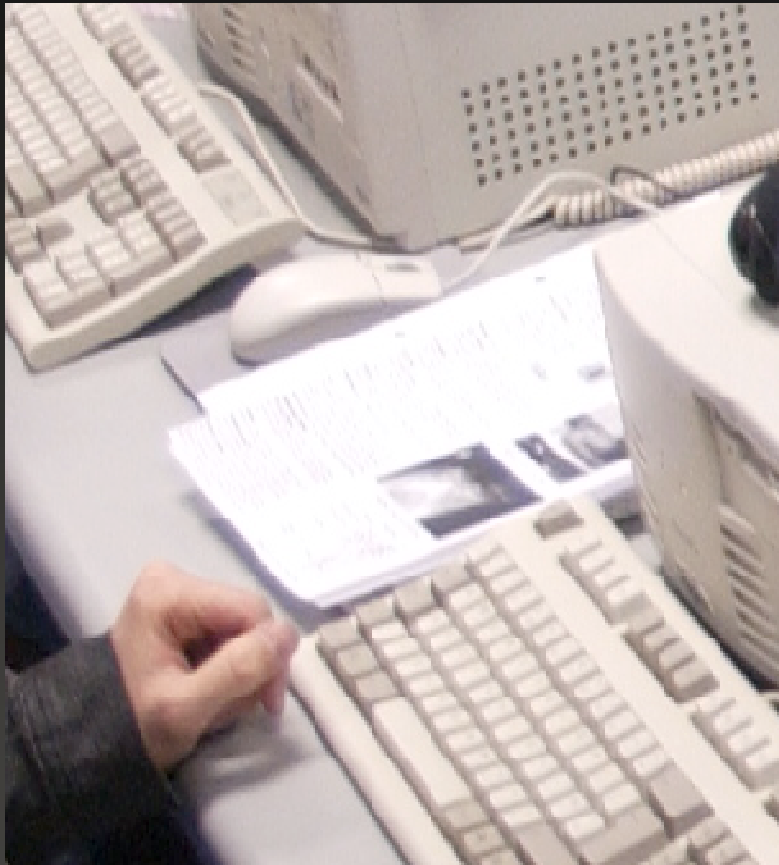
Alternative Virtual Radiography™ Lab



9 hours for first years
requires 18 hours tutor
and room time

Each student is hands
on 100% of the time

Alternative Virtual Radiography™ Lab



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Each student is hands
on 100% of the time

Students work at their
own pace

Experiential learning
from their own images

Summary

- Simulation leverages experiential learning advantage
- They overcome ethical and practical issues
- Students love them*
- Screen based simulation is affordable, accessible and achievable
- Simulations need a curriculum design
- Simulations must be validated*