



Research Consortium in Speckled Computing

# Empirical Assessment of Specks for Healthcare Applications

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Director

Research Consortium in Speckled Computing



# Programme

- Introductions
- Overview
- Project Presentations
- Drinks Reception  
(Posters and Demonstrations)

# Chronology of Events

- **23Apr08**  
Presentation by DKA to the senior management of NHS Lothian at Barony Castle
- **05May08**  
First meeting at Edinburgh Royal Infirmary (ERI)
- **May – Aug 08**  
4 meetings at ERI organised by Nichola MacDuff
- **01Jul08**  
Appointment of Janek Mann

## Chronology of Events (Contd.)

- **Sept.08 onwards**  
Road Show - demonstration of speckled technology to Gordon Drummond, Ian Grant, Janet Hanley, Andrew MacDuff, Brian McKinstry, Sheena Millar, Sai Prasad, Alison Richardson, David Scott
- **11Dec08**  
Annual Speckled Computing Workshop  
Janet Hanley, Alison Richardson, Charles Swainson
- **04Mar09**  
Ethics Committee Meeting  
Janet Hanley, Janek Mann and DK Arvind
- **02 May, 20 May, 30 June09**  
Review Meetings of the Speckled Healthcare Pilot Study

# Projects

- Non-invasive Respiratory Rate Measurements
  - (Remote) Monitoring in COPD
  - Intensive/Critical Care Medicine
  - Sleep Research
- Wireless motion capture
  - Physiotherapy (stroke, orthopaedic patients)
  - Identifying elderly at risk of falls
  - Gait Analysis
  - Smart Prosthetics

## Questions

### **Does Speckled Computing meet existing or emerging healthcare needs?**

For each project:

- How does Speckled Computing compare against existing methods
- What advantages (if any) does it offer over existing methods
- What can you do using Speckled Computing which you could not do otherwise
- Acceptability by patients
- What is the impact on the economics of healthcare

## Pilot Study

- 7 months duration
- 10 patients max. for each study
- Workshop on 2<sup>nd</sup> December, 2009
- Assess the results and choose the ones to take forward for large-scale clinical trials

## Headline Results

- Good concordance of respiratory rate measurements using specks and the canula
- Abnormal patterns of timing clearly shown in the breathing data from sleep research studies
- Specks could detect changes in the prosthetics alignment which was difficult to observe visually

## Collaboration with the Glasgow School of Art

- Healthtrace: Exploring the Design of Speckled Healthcare Services
- 3-week project by 2<sup>nd</sup> Year Product Design Students
  - Tutor: Dan Smith
  - 27 students in 9 groups
  - Exhibition on 2<sup>nd</sup> December
- Gordon Hush –  
“Designing Services, Exploring Speckled Interactions”

## Speckled Computing Team

- Administrative Support – Charmaine Wilson ([ccw@inf.ed.ac.uk](mailto:ccw@inf.ed.ac.uk))
- Speckled Computing Applications Centre – Janek Mann ([janekm@gmail.com](mailto:janekm@gmail.com)), Andrew Bates and Chris Davies
- Speckled Computing Research Group – Mat Barnes, Martin Ling, James Mathews, Paul McEwan, Ryan McNally, Aris Valtazanos, Alex Young

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Thank you

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