



Research Consortium in Speckled Computing

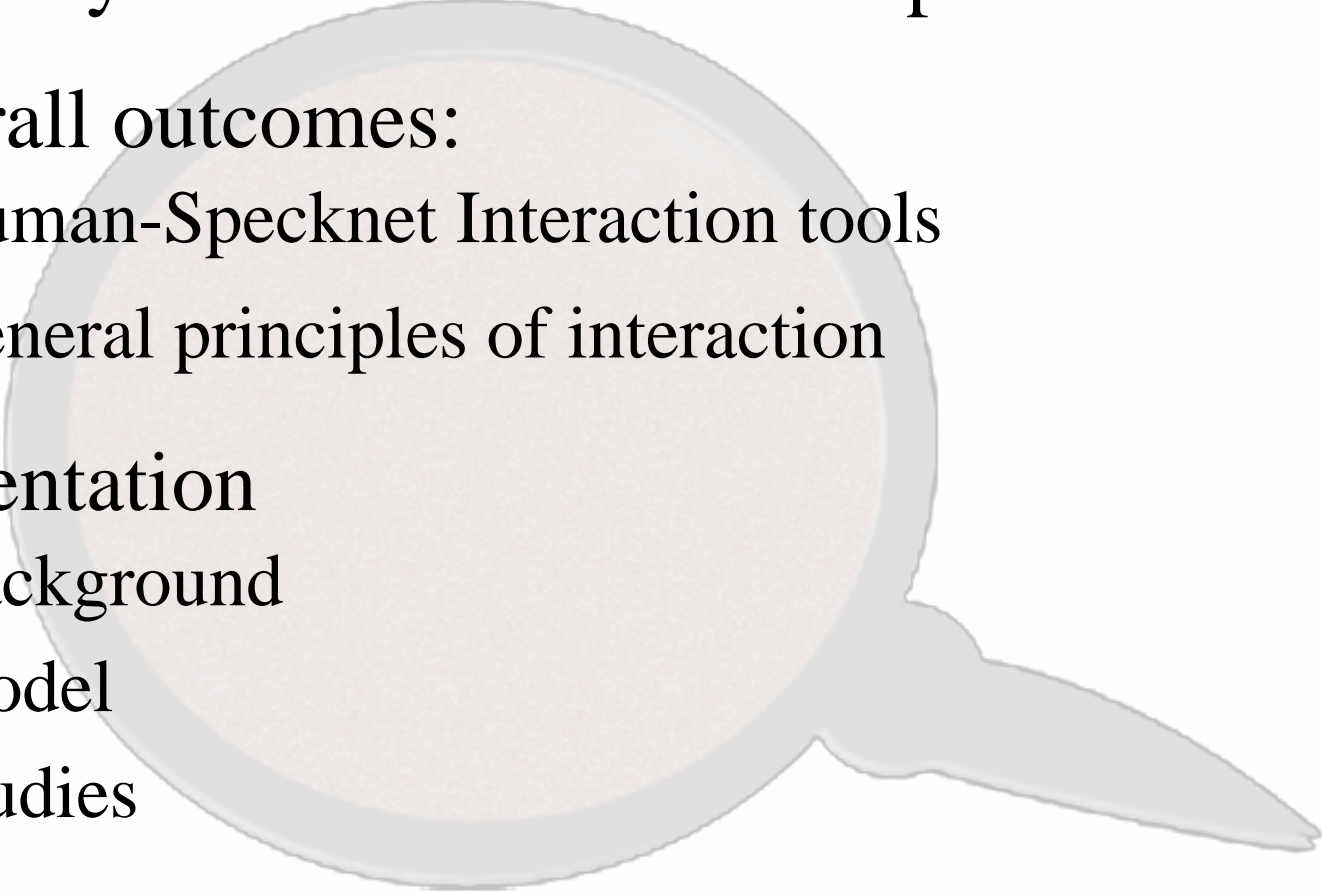
Speckled Computing: a New Challenge for HCI

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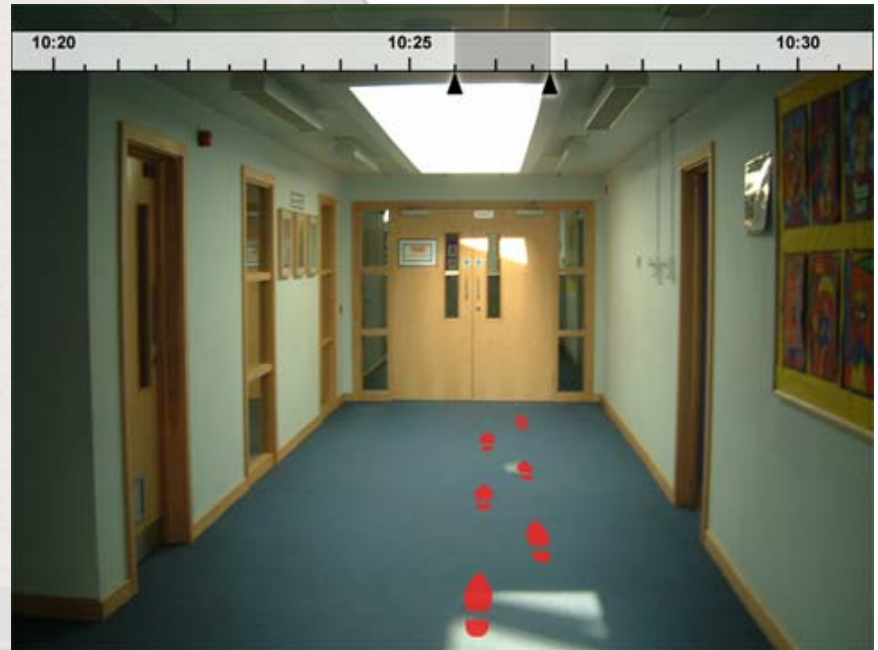
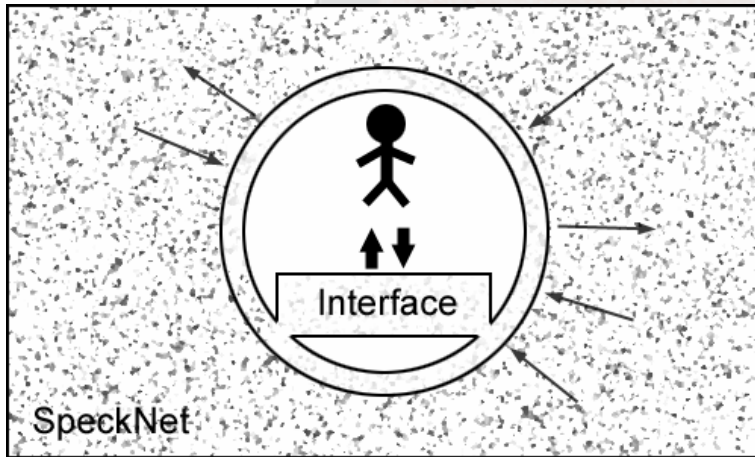
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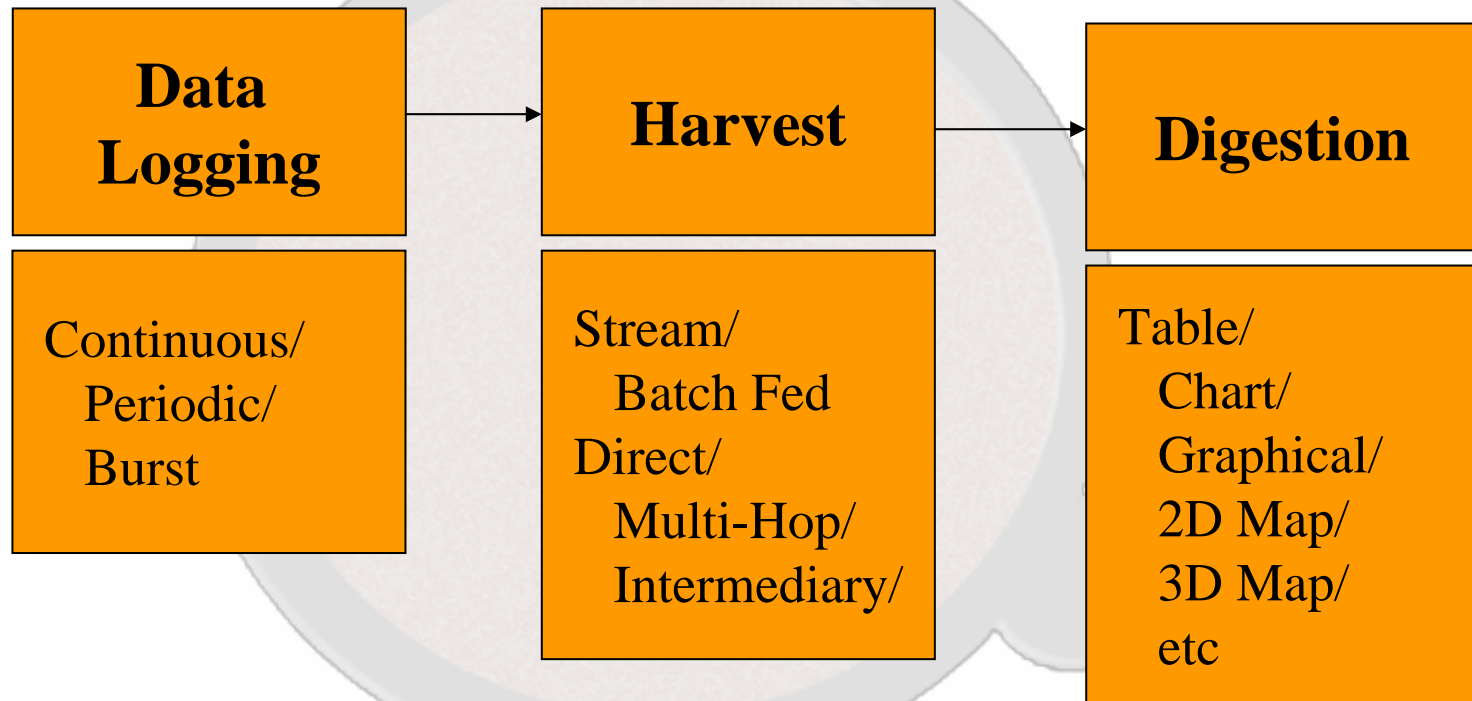
- End of year 1 so time to set scope of the PhD
 - Overall outcomes:
 - Human-Specknet Interaction tools
 - General principles of interaction
 - Presentation
 - Background
 - Model
 - Studies
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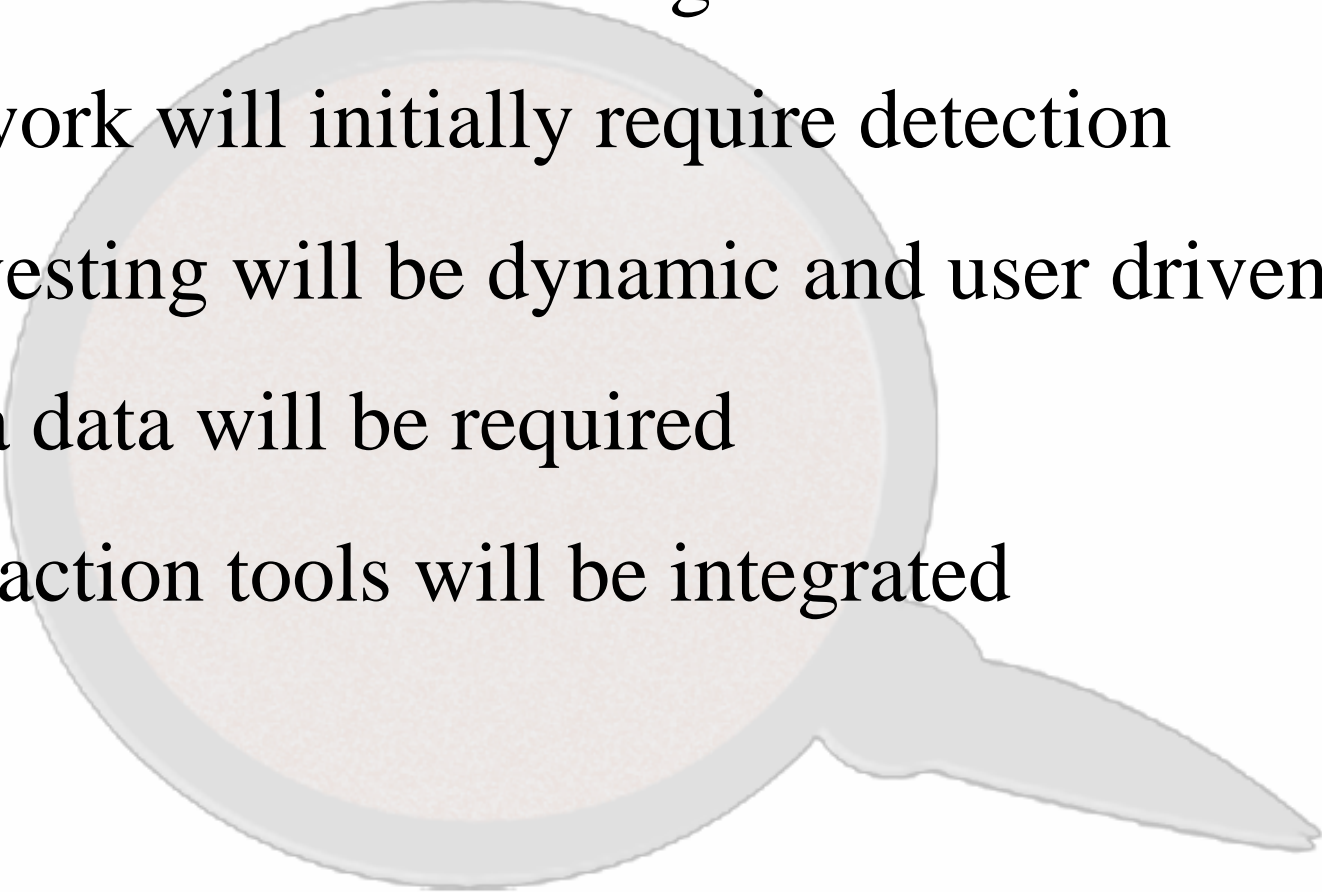
- What's the challenge for HCI?
- Invisible data?
- Traditionally analysed remotely, but want to move interaction into the environment.
- No fixed point of access.
- Uncertainty.

- Proposed interface

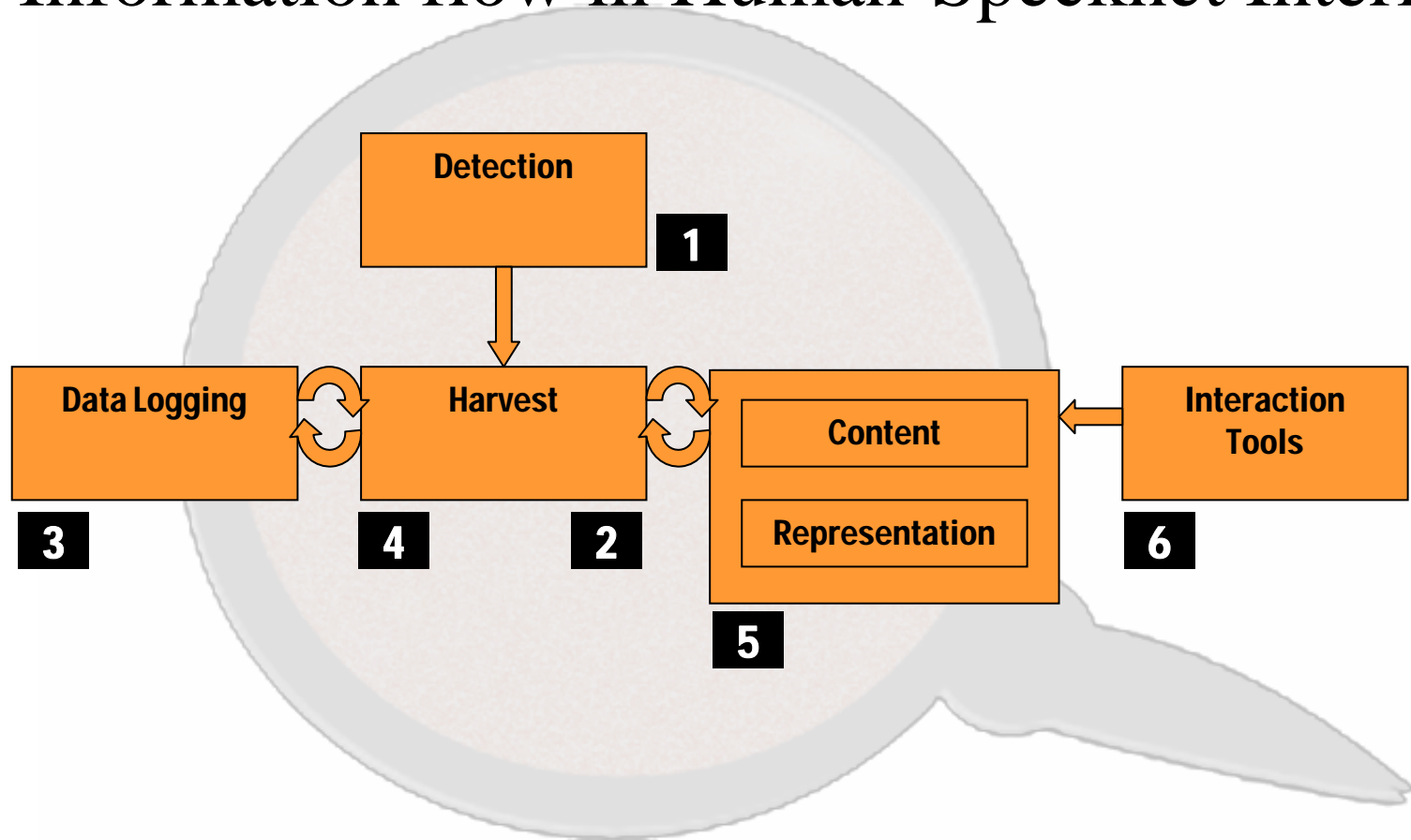


- Data flow in a wireless sensor network

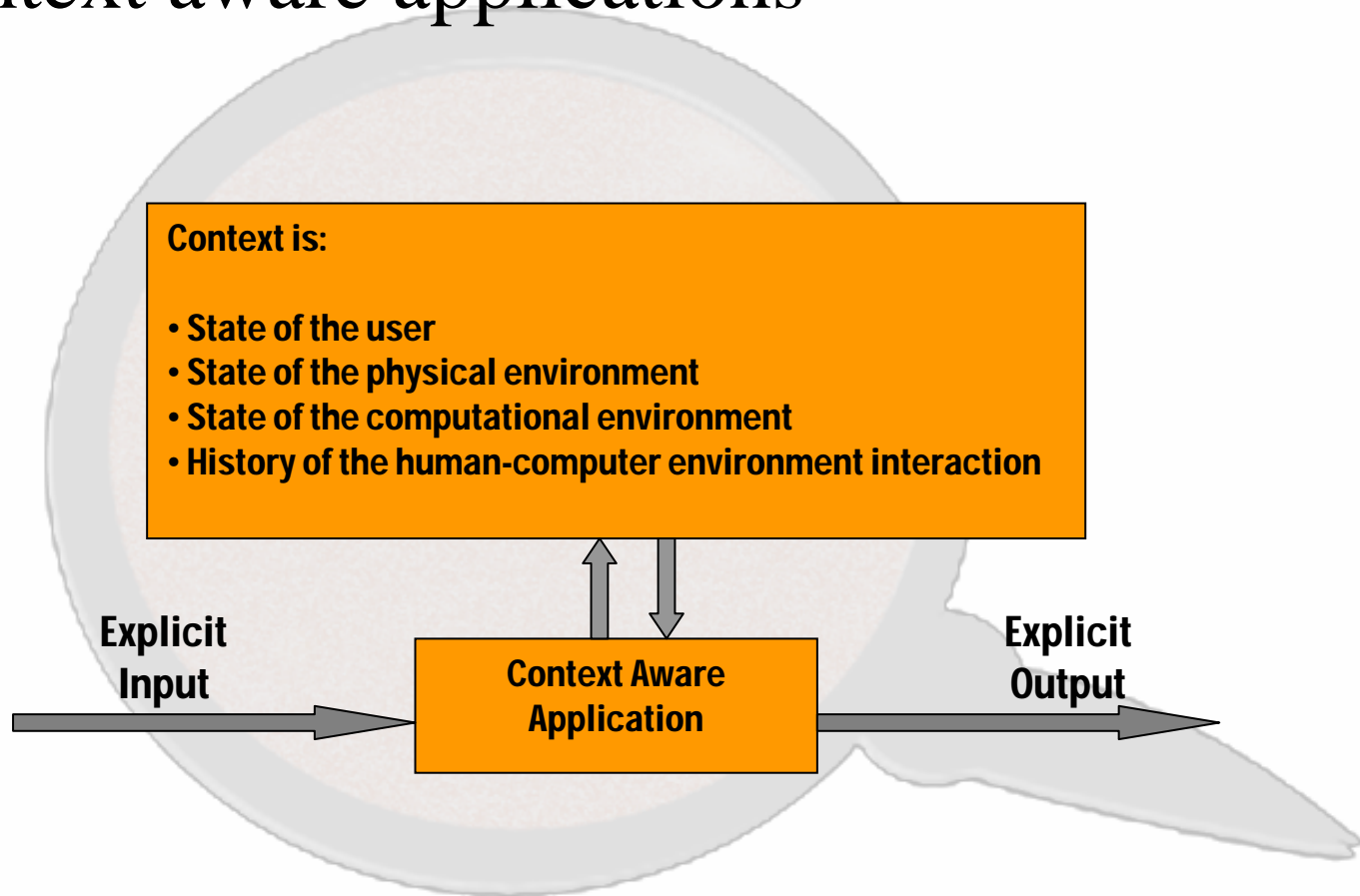


- Differences from existing WSNs
 - Network will initially require detection
 - Harvesting will be dynamic and user driven
 - Meta data will be required
 - Interaction tools will be integrated
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- Information flow in Human-Specknet Interface

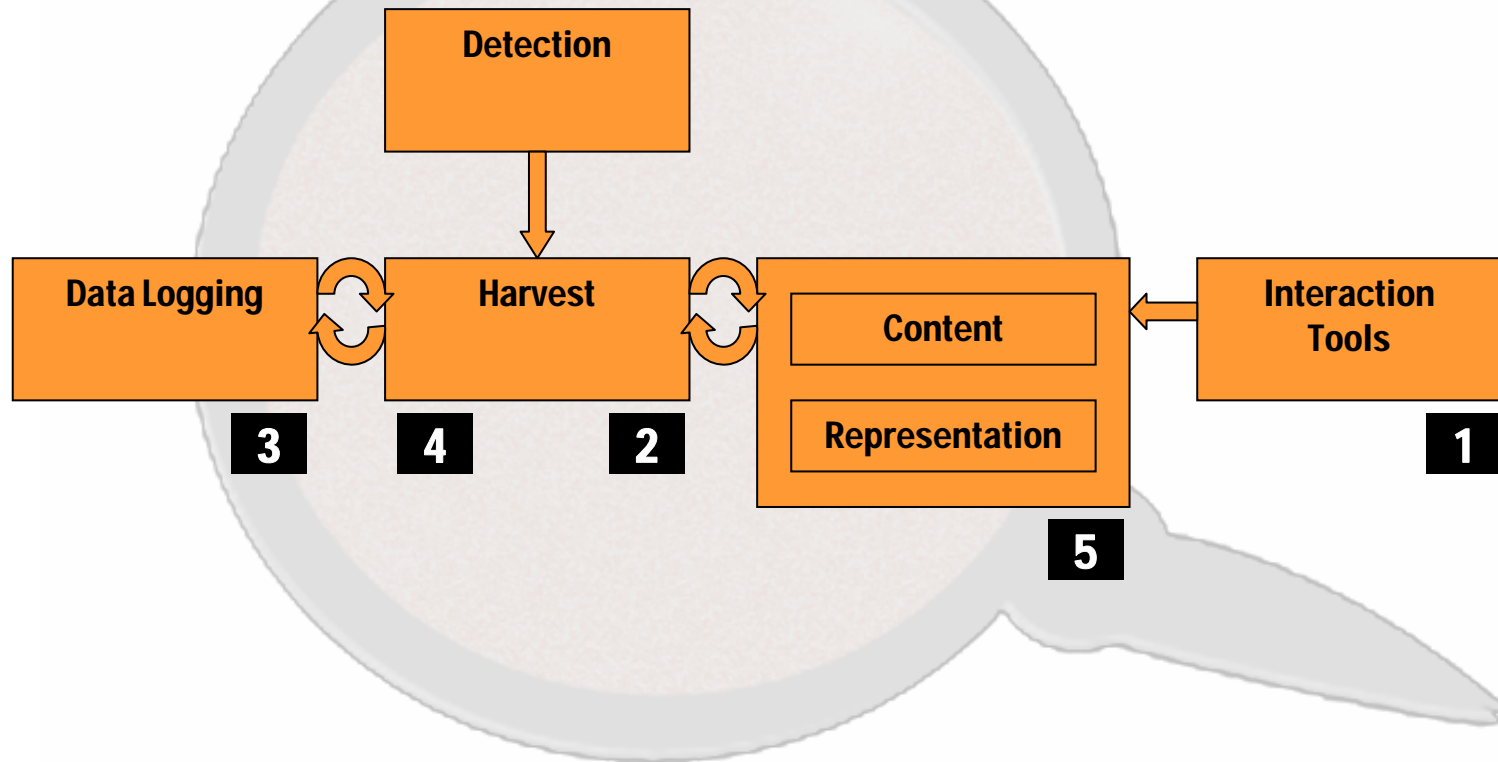


- Context aware applications

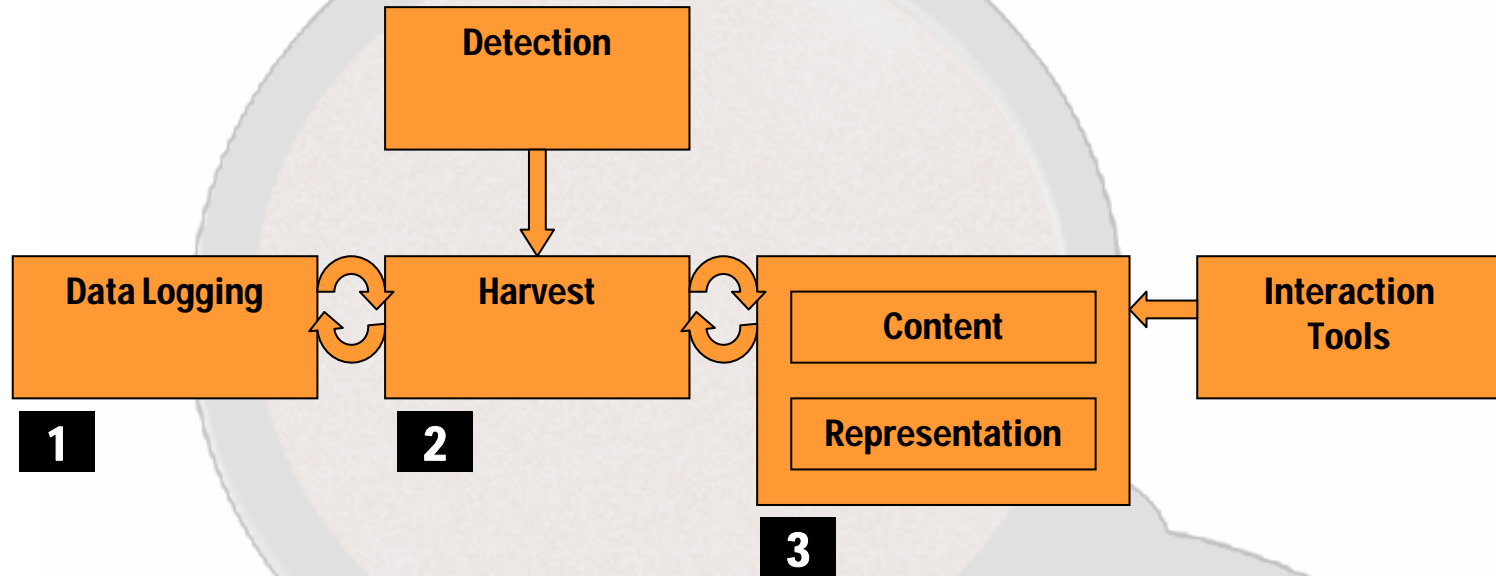


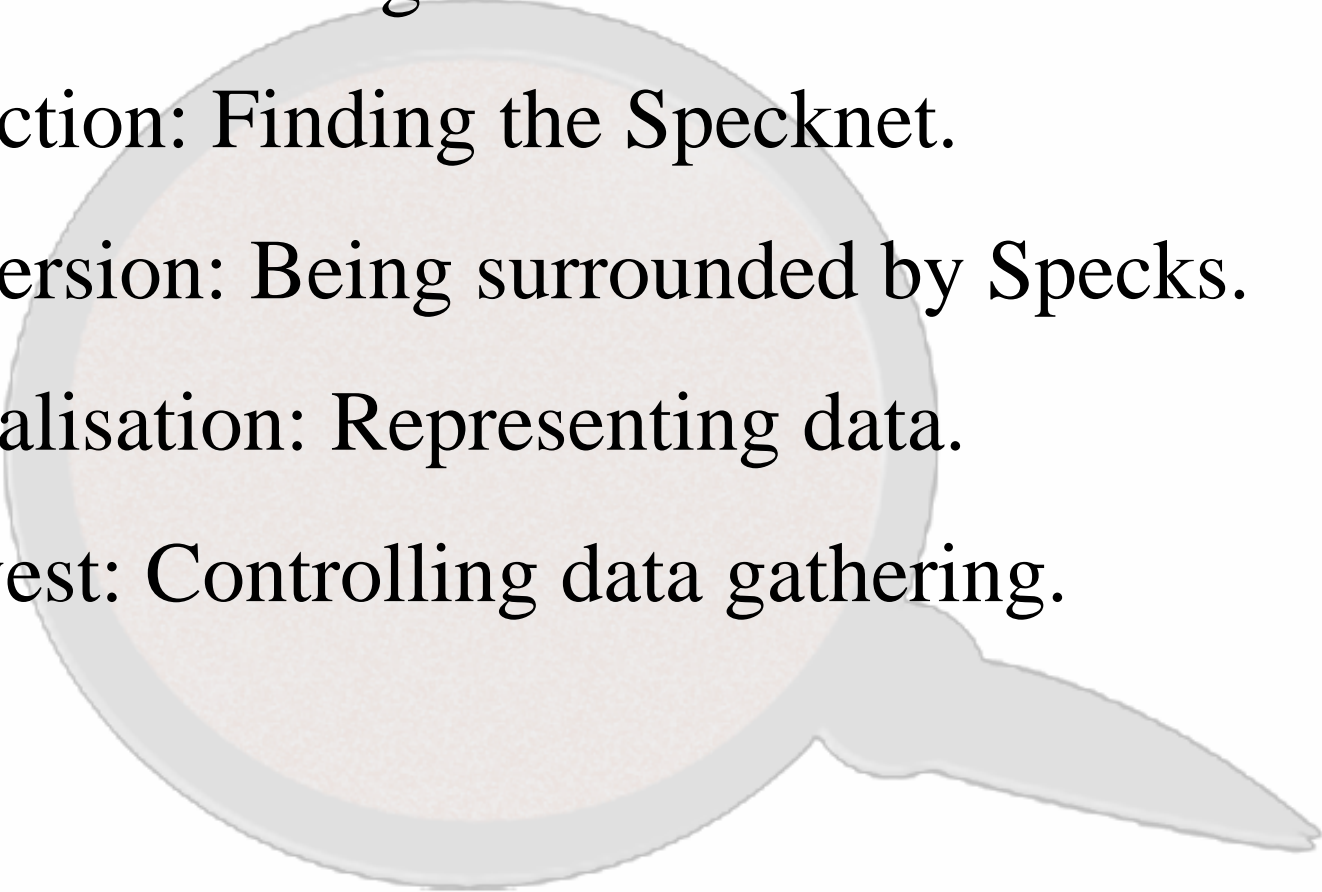
(Lieberman & Selker, 2000)

- Context aware applications in new model

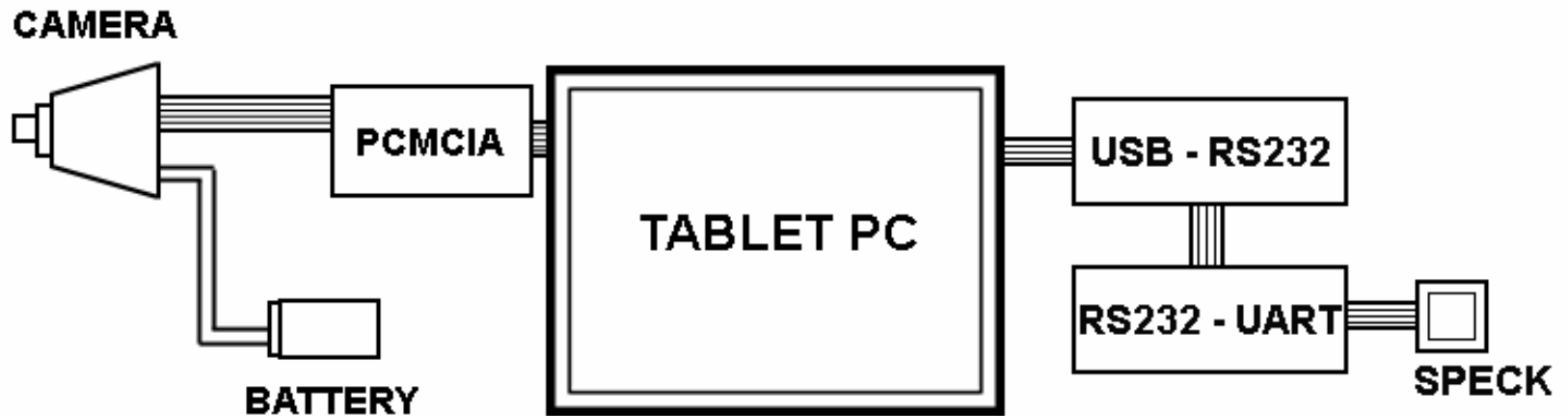


- Context-triggered applications



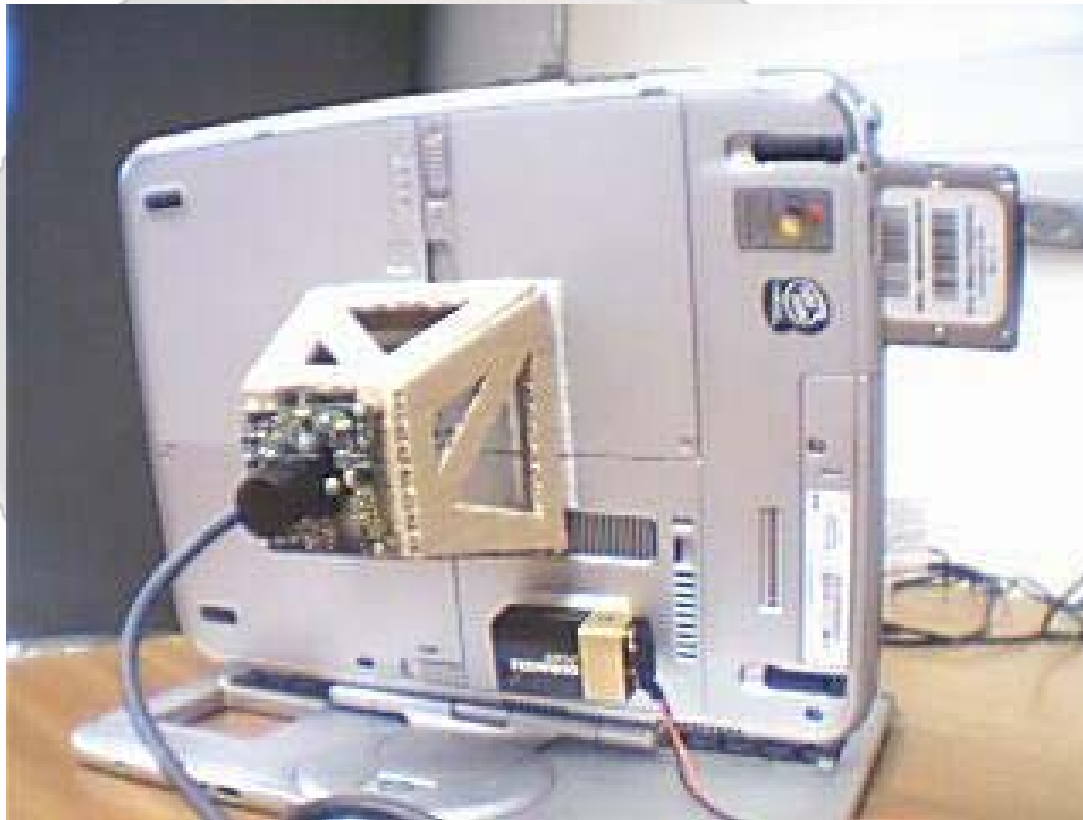
- Focus of investigations
 - Detection: Finding the Specknet.
 - Immersion: Being surrounded by Specks.
 - Visualisation: Representing data.
 - Harvest: Controlling data gathering.
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- Platform: Equipment diagram



Overview Background Model Studies Summary

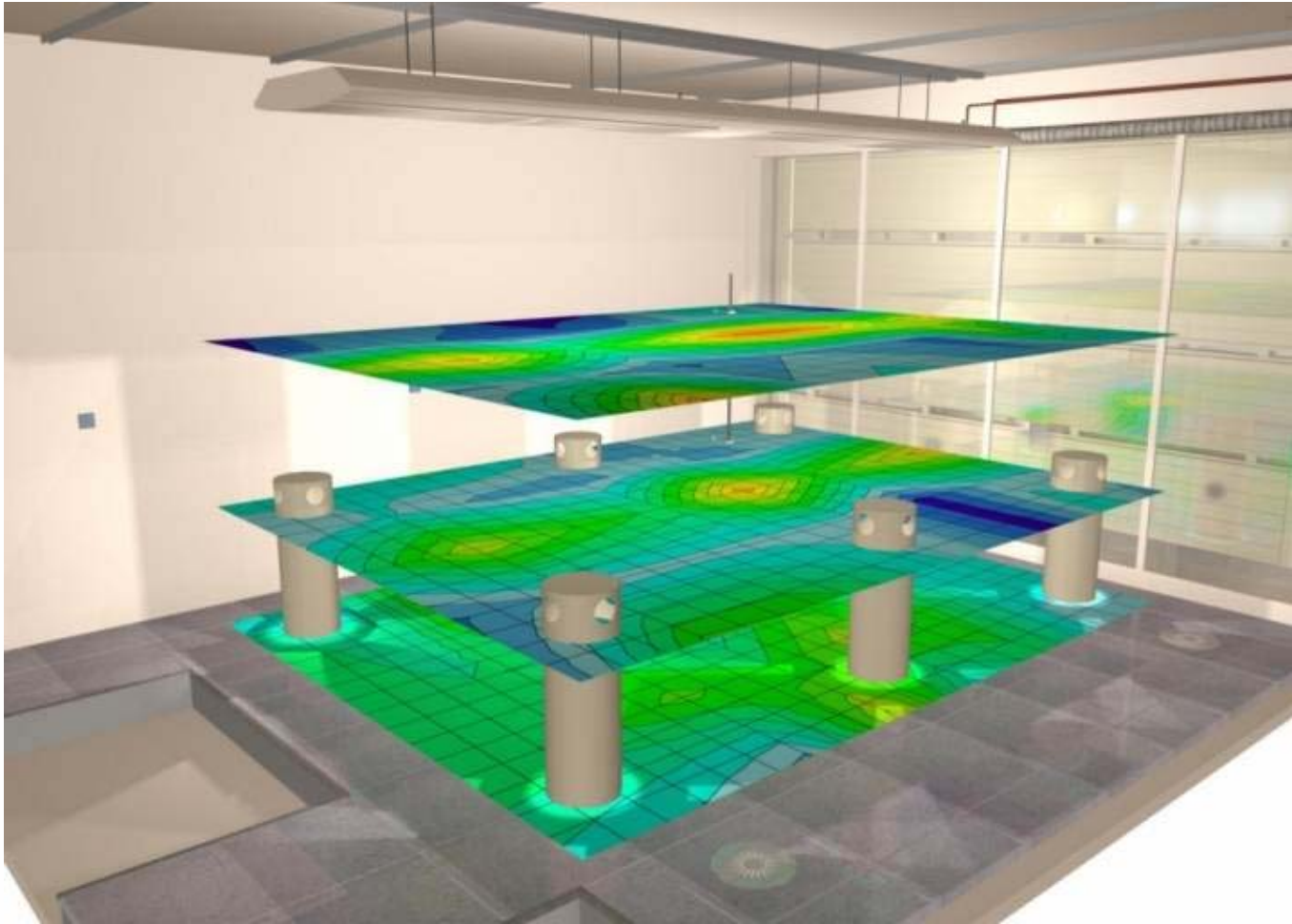
- Platform: Current state



- Study 1: To focus on Immersion
- Potentially surrounded by Specks
- Locating and navigating between
- Participants placed in a room surrounded by Specks and required to move between them gathering data.

- Study 2: To focus on Visualisation
- Develop appropriate visualisation tools
- E.g. non-obtrusive, allow visualisation at different resolutions etc.
- Participants presented with a large dataset and tasked with retrieving specific information.

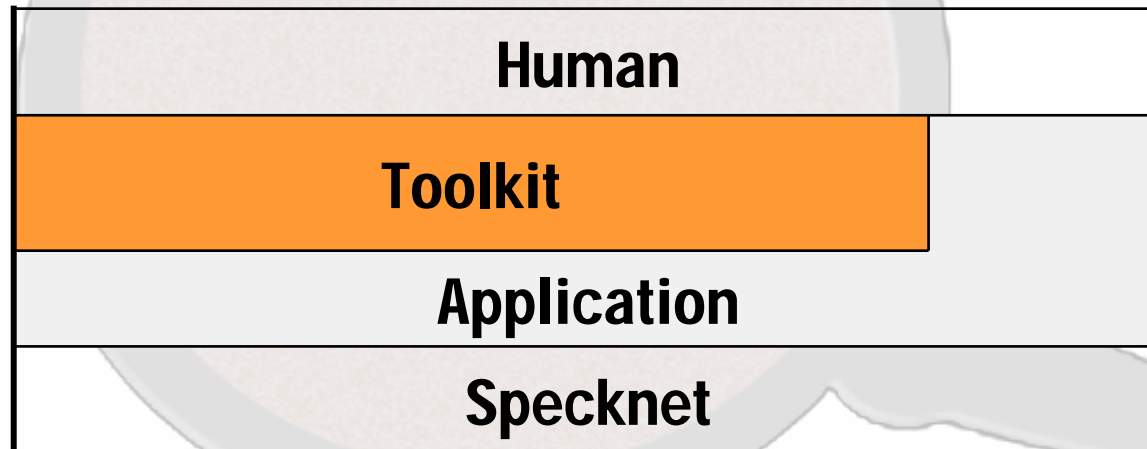
Overview Background Model Studies Summary



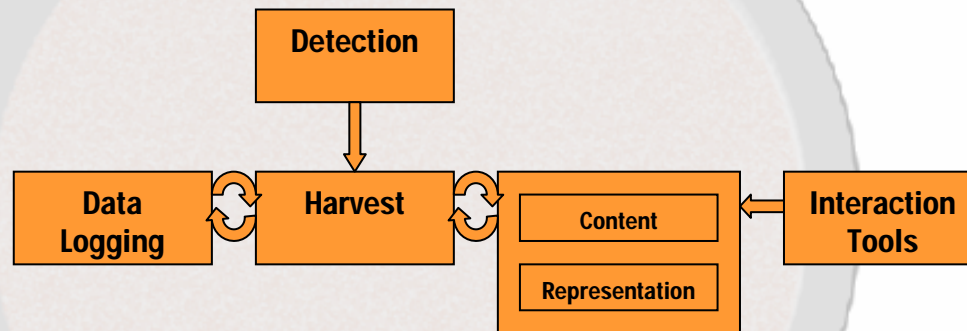
(Frenger Systems, 2005)

- Study 3: To focus on Harvesting
- A requirement of the new system
- Heterogeneous network with unknown possibilities
- Investigate presenting ‘content’, and user control of harvesting
- Similar study to second, but focusing on breadth of information over depth

- Final study in year 3
- Combine year 2 work into a toolkit
- Develop real-world application with real users



- Interface for direct interaction
- Model of Human-Specknet interaction



- Three studies focusing on detection, immersion, visualisation, and harvesting.
- Final year real-world application