Integrating Studierstube and DWARF

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Component-based approaches

Studierstube
- C++ classes on top of Open Inventor (OIV)
- Object-oriented scene graph
  - Geometric information
  - Active interaction objects
- Distribution of applications
  - Shared scene graph through DIV

OpenTracker
- Library operates on tracking data
- Breaks up transformations defined by XML
Component-based approaches

DWARF

- Basic unit is distributed service
  - needs, abilities
- Services bundled with hardware in units

Strong modular design

- Easily extended by adding new components

Adapters

- OpenTracker <-> DWARF
- Open Inventor <-> DWARF
OpenTracker network as DWARF service

OpenTracker extensible by modules
- interface devices
- algorithms
- other frameworks

DWARF module
- Implements nodes
  - DwarfSink
  - DwarfSource
- Complete DWARF service

Joseph Newman

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DWARF connecting different OpenTracker networks

Smaller networks for dynamic scenarios
DWARF service embedded in an OIV scene graph

OIV supports nodes in a scene graph
- Contain *Fields* of predefined types

*DwarfService* node is single DWARF service
- *Fields* configure service parameters
- Contains lists of subnodes
  - needs, *DwarfNeed*
  - abilities, *DwarfAbility*

Studierstube can express DWARF service within scene graph
Conclusion

Wider choice of tools leads to more elegant solutions

Reduce overheads

- device drivers, filter objects realised only once

Existing local static setups

- Defined by OpenTracker
- Dynamically combined using DWARF
  - Large-scale Ubiquitous Computing Environments

Encourage interoperability with other AR frameworks
Thankyou