An Application of Pervasive Computing
Agenda

• Problem
• Solution
• Architecture
• Enhancements
• Team Organization
Problem

• The need for a context aware, content delivery system architecture.

• Pervasive computing prototype application built on such an architecture.
Pervasive Computing

• All devices networked together
• Computer part of environment
• Enhances daily life
• Context aware
Context Awareness

• Example
• Computers anticipate our needs
• Adapt without explicit input
• Fundamentally change interaction
• Have intelligence everywhere
Problem

- The need for a context aware, content delivery system architecture.
- Pervasive computing prototype application built on such an architecture.
Solution

- A module based, pervasive architecture
  - Web Services
  - Interfaces
Solution (continued)

• HawkTour prototype application
  – Gives tours without a live guide
  – Employs Tablet PC
  – Interacts with devices like HDTV’s
  – Uses context to customize information
Context in HawkTour

• Who you are
• Where you are
• What is nearby
Hardware Service

- See map
- Watch video
- View image
Hardware Service

- See map
- Watch video
- View image
Application Architecture
Application Enhancements

- User Interface
- Service Deployment
- Mapping Subsystem
- Hardware Interface
- Database Design
User Interface

• Institute of Design recommendations

• Multiple View Implementation
  – Survey, Mapping, Content, Browser

• Application Customization
  – Survey → Database → Customized Content
Service Deployment

• Ekahau positioning engine
• Improved accuracy of tracking
• New content server
Mapping Subsystem

• Polygon hotspots
• Hotspot highlighting
• Mini-Map overview
Hardware Interface

• Digital media receiver
• Signal strength monitor
• Automatic audio selection
• Improved interface panel
• Dynamic window sizing
Database Design

- Database analysis
- Redesign
- Move to more robust server
- Redeployment
- Application integration
Testing

- Test cases
- Approach
- Final test report
Organization

• Project Management
  – Build deadlines
• V-Model Process
  – Testing done in parallel with development
• Team Organization
  – Sub-groups used to tackle problems
## Team

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<tr>
<th>Mapping</th>
<th>Database</th>
<th>UI</th>
<th>Hardware</th>
<th>Testing</th>
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<tr>
<td>Robert</td>
<td>Satish</td>
<td>Tyler</td>
<td>Santhosh</td>
<td>Rohit</td>
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**Leadership**
- Dr. Sun
- Tyler
- Santhosh

**Technology Sponsor**
- [Ekahau](http://ekahau.com)
Questions?

www.hawktour.net