Goals: Support Direct Interaction with the Real World

Project Overview


- Combine to produce new devices and applications: software compass, marker, flashlight
- Develop rapid model capture capability using computer vision and legacy CAD data
- Develop pervasive localization/orientation capability indoors, without using GPS
- Develop rapid model capture capability using computer vision and legacy CAD data

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MIT9094-20: High-Resolution Mapping and Modeling of Multi-Floor Architectural Interiors
Progress Through June 2002

- Egomotion recovery from omni-video
- Initial API for location-aware networking
- Position, orientation, range, projector prototype "software flashlight"
- Merging of MIT basemap, topographic map, and 800+ floorplans with LODs
- Multi-floor over multiple floors and stairwells
- Geometry, spaces, resources

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Demonstrate deployment in large room, multiple surfaces

Continue to develop “software flashlight” application

• Accuracy, precision, channel efficiency, power usage

Continue to improve Cricket device performance

• Full campus processing, indoor/outdoor space classification

Continue integration of legacy CAD data

• Multiple floors and stairwells; repeated visits to several areas

Accurate local maps, connected by uncertain transformations

“Atlas” creation from omni-directional video

Research Plan for the Next Six Months

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