

Smart Surface Projecting



QA & Test Plan

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Status Update

- Project: Projecting Images and Textures on Objects on a Table
- Status Update:
 - Have All Parts
 - Porting Projector Code to Android – DONE
 - Fast Networking – DONE
 - Perspective Tests - current

QA - Power Up

Hard Reset & Initialization

Goal: Ensure correct initialization and correct perspectives of projector(s) in less than 5 seconds

How: User turns on system and initialization is completely automated

Lighting

Goal: Ensures that table can be initialized in all lighting conditions

How: Auto Thresholding adjusts for different lighting conditions



QA

Waiting Time

Goal: Eliminate Busy waiting

How: Multi-threading

Texture Mapping Computation

Goal: Main texture mapping computation is done through the table, actual rendering is done in through the projectors

How: Networking sends texture maps and “triangle” segments from the table to respective projectors for rendering

Detrimental Conditions

Goal: Eliminate conditions such as closing/reopening socket and camera connections

How: Software

General Tests

- Lightening Conditions
- Position projectors at many positions and angles
- Soft Reset Function for accidental “bump” of projectors
- Experiment with different values of the projector (field of view, resolution, position, etc) for highest quality
- Server & Networking

Software Stress Tests

- Putting Unknown Objects on Table -> projects nothing, not the wrong image
- No Item on table & taking an item off the table -> projects nothing, and sits in a waiting state
- Switching items on table -> changes textures accordingly

Expected Graphs

- Projector Position vs. Table Position (mapping)
- Lighting vs. Thresholding
- Object Movement vs. Time

Division of Work

Current To Do List:

- Finalizing Auto Initialization Method (Sam & Martin)
- Reworking Perspectives (Billy & Cody)
- Port Table Code from C++ to Android (Everyone)
- Testing and Data Collection (Everyone)
- Creating “Game” For Final Demo