Volumetric LED display
Project Checklist

Lawrence Wujanto, David Wyatt
11/29/2005

- **512-LED display cube (8 x 8 x 8)**
  - Can displaying arbitrary patterns via passive matrix addressing
  - <u>If time permits:</u> Pulse-width-modulation brightness control of the LEDs, with corresponding brightness changes on SVGA output

- **Orthographic 3d display of the cube on an external monitor**
  - SVGA (800 x 600) resolution
  - Red squares mark positions of LEDs, red lines show cube outline
  - User can highlight individual horizontal or vertical planes of LEDs on-screen using labkit's onboard switches

- **Switches to select different applications**
  - Relevant title will be displayed on the alphanumeric display

- **3D Pong**
  - PS2 mouse controls paddle
  - Puck bounces off all surfaces/paddle
  - Velocity changes on collision with the paddle (depending on where it hits the paddle)

- **Cellular Automata - 2D with history displayed**
  - Generates a pre-programmed initial state by pressing a button
  - Evolves the 2D playing field periodically
  - Previous states progress through the layers of the cube

- **Cellular Automata - 3D**
  - Generates a pre-programmed initial state by pressing a button
  - Evolves the playing field periodically

- **Music Visualiser**
  - Detects thresholds on audio source
  - Generates patterns in the cube using this threshold