

# Luxsonic Project: Incremental Deliverable Features

## Completed Incremental Deliverables

### ID1

- Build project successfully using build infrastructure
- Look around 3D environment that contains generic objects, headset calibrated correctly
- Interact with an object in the environment using:
  - Mouse
  - Keyboard
  - Controller (if department has the hardware)
- Load a sample DICOM image and display it
- Crude 3-monitor display prototype

**Results:** All of the above except the sample DICOM image were successfully incorporated into the prototype.

### ID2

- Better, rebuilt displays (using best practices)
- Interact with Copies to
  - Move them in space
  - Close and open monitors
  - Resize monitors
- Integrate Touch controllers into system.

**Results:** Copies can be moved and Touch controllers were integrated successfully, but Copies cannot yet be closed or resized using the Touch controllers. DICOM integration was pushed back to ID3 after discussion with the client.

### ID3

- DICOM image filesystem
- Open and close image files from filesystem
- Dashboard and Tray implemented
- Pull Copies out of the Dashboard
- Program UI
  - Quit
  - Options
- Crude anti-motion-sickness/eyestrain features

**Results:** No motion sickness/eyestrain features were implemented. The filesystem exists in prototype form but has not been incorporated into the project proper. DICOM parsing was tested on a branch but not incorporated into the project proper.

### ID4

- DICOM report display
- Environment options for lighting
- Load images from file browser
- Snap Copies to a “grid” or predefined layout when moving, unless trigger button depressed
- Anti-motion-sickness/eyestrain features
  - Field of View adjustment

**Results:** The file browser was created, the environment was improved and the DICOM library was incorporated into the project. The grid functionality had to be delayed until the next deliverable.

### ID5

The main focus of this deliverable will be to polish the features from other deliverables and to fix bugs unresolved from previous deliverables. The key features we wish to deliver are:

- Improved UI for manipulating copies
- Improved UI for interacting with the software (options, loading files, quitting)
- Improved DICOM report display
- Gestures for interacting with the software
- 3D volume scan viewing
- Reduction of latency within the application to reduce motion sickness/eyestrain

**Results:** Gestures were implemented for resizing copies, DICOM reports were displayed, and some parallelism was incorporated to reduce latency when loading files from disk. Work was done on 3D volume scans but this did not make it into the final build.

## Future Work

Many features did not make it into the software. Among them were

- Report dictation from within VR
- Snap Copies to a “grid” or predefined layout when moving, unless trigger button depressed
- Save/load representation of workspace
- Additional anti-motion-sickness/eyestrain features
  - Field of View adjustment
- 3D Volume scan viewing
- Additional gestures