Additive manufacturing or 3D printing is the process of making a three-dimensional solid object, of virtually any shape, from a digital model. The system utilizes an ordinary overhead projector to project black and white images onto a film of UV-curable photopolymer in order to selectively cure/harden the polymer.

The focal point of system control is the use of National Instrument’s LabVIEW software. An intuitive user interface allows users to control all aspects of the system, including motor control, image slicing and projection.

Z-Axis Stepper Motor
Non-Indexing Rotary Encoder
Anti-Backlash Lead Screw Assembly
Obstacle: Lack of build surface adhesion
Solution: Sandblasted aluminum surface
Obstacle: Excess bath surface adhesion
 Solution: Teflon coated bath surface

User Interface
3d Mumble
Integrated test builds have yielded the following parts

Acknowledgements: Dr. Denis Cormier, John Kaemmerlen, John Wellin, National Instruments, FreesSteel.co.uk, MSD Teams P11552 and P12552