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| Project PAM |
| Project PAM  A Reference Design for  Photoresin Additive Manufacturing  for the  Open Source Community  Saluki Engineering Company  Reference Number: S14-75-3DPR |

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# Acknowledgements (PZ)

# Transmittal Letter: CWB

2014-04-18

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Steven Blair, President

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Mr. Blair,

On behalf of the Saluki Engineering Company, I would like to thank you for including us in the bid for a project to design a digital light processing printer. Attached is a design report for a DLP photoresin printer, Project PAM. Along with this report, we have included the computer host software code and build instructions of the prototype.

Talk about Prototype here

Project PAM proposes a reference Photoresin Additive Manufacturing (PAM) system which maximizes accessibility to the hobbyist. It is intended to be flexible by allowing for configurations of hardware available or easily obtainable to the end user. This is achieved through extensive use of currently available or easily fabricated hardware and open-source software. The reference design will be open-source hardware and software to the lowest practical level. Thorough documentation will provide the necessary means for the end user to go from an empty table to a functioning printer.

Please feel free to contact me at (815) 214 9661 or by email, burdickjp@siu.edu, if you have questions about this project.

Sincerely,

Jeffrey P Burdick

Project Manager

Project PAM: Team75-3DPR

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# Executive Summary:

With the increasing demand for a high precision desktop three-dimensional printer, the use of digital light processing (DLP) printing is growing. Currently, this technology is not easily accessible to the hobbyist or open-source community. Existing DLP printers are costly and are not within the budget of the hobbyist.

Project PAM proposes a reference Photoresin Additive Manufacturing (PAM) system which maximizes accessibility to the hobbyist. It is intended to be flexible by allowing for configurations of hardware available or easily obtainable to the end user. This is achieved through extensive use of currently available or easily fabricated hardware and open-source software. The reference design will be open-source hardware and software to the lowest practical level. Thorough documentation will provide the necessary means for the end user to go from an empty table to a functioning printer.

The project will be completed in three phases: build phase, testing phase, and presentation phase. The build phase is expected to be completed by September 26, 2014, allowing for several weeks of testing and tuning before the demonstration during the week of December 1, 2014. The total cost of the project is not expected to exceed $1000.00.

# Introduction:

# Project Description:

## overall Printer Diagram:

# Costs:

# Schedules (PZ)

# Subsystem Descriptions

## Mechanical Motion-JPB

## Chassis-JPB

### Process of Design

### Process of Assembling

### IMPLEMENTATION SCHEDULE

### Equipment Needed

### Health, Safety and Environmental Issues

### Conclusions and Recommendations

## Printer Control Software- DMO

## Hardware-Software Interface- NAL

## Resin Management-CWB

## Opitics-CWB

## Vat-NBT

## Coupler-NBT