

# Chico State Capstone Design Program – Project Request Document

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|-------------------------|---|------|-----------------------|------|
| <b>Project Title:</b>   | <b>Material Handler for Additive Manufacturing System</b> |      |                       |      |
| Sponsor:                | Sof-Tek & Plural Additive Manufacturing                   |      |                       |      |
| Suggested team make-up: | Mechanical students:                                      | 75 % | Mechatronic students: | 25 % |

## Background:

The additive manufacturing market in the US is projected by some to exceed \$30 billion USD by 2022. Recent advancements in mechanical print designs and improvement to the software used to manage material flow and head routing have given birth to a new generation of 3D print systems such as the Plural 3ntr A4. These state of the art print systems offer significant improvements in cost and quality over previous generations of 3D print systems. While these innovative designs have dramatically improved the performance of this new generation of additive manufacturing systems, there is much work yet to be done with printer material storage and spool management subsystems to ensure consistent, repeatable and high quality results from the print systems themselves.

## Statement of Work:

The goal of this effort is to integrate a multi-spool management/storage system into a table designed to house a Plural 3ntr-A4 additive manufacturing system. The designers will work with Plurals product market experts and production users at Sof-Tek Integrators, Inc. to determine high value features, requirements and market price points of the material handling subsystem. The designers will then design, implement and evaluate the impact of the system on print quality and repeatability.

## Contact information:

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### **Additional Information:**

- Students working on this project will be required to sign a standard non-disclosure agreement.
- Students may be required to travel to Sof-Tek's facility in Redding, CA

### **Corporate Overview:**

SOF-TEK is a Redding-based contract manufacturing company that partners with businesses to custom design and assemble everything from UL panels and PCBs to cables and wire harnesses for electronic assembly. They provide complete custom solutions for a company's production needs, maximizing a company's production workflow and reducing their overhead cost, time, and inventory. More information is available at [www.sof-tek.com](http://www.sof-tek.com).

Plural Additive Manufacturing:

We founded Plural after working for decades in the design and manufacturing business. In implementing many high-end, complex 3D printing systems and working with an ever growing spectrum of hobby 3D Printers, we found that both concepts suffer significant shortcomings. There has been no solution available for those who are seeking affordable, high quality, industrial-grade printers. Until now.



**SOF-TEK**

**plural**  
ADDITIVE MANUFACTURING