



### Background of Project Sponsor

E3 Displays LLC was founded in 2007 as provider of custom integrated display solutions to both high end markets such as the Military, Medical and Avionics and to the high volume low cost markets such as Industrial (Point of Sales terminals for example), and consumer type of devices that utilize a Liquid Crystal Display (LCD) and typically a touch panel. To provide these solutions, E3 Displays LLC has a 20,000 square feet facility in Phoenix, Arizona with a state-of-the-art clean room where the manufacturing of the high-end market solutions is produced. The low cost, high volume solution is produced by a contract manufacturing partner located in Asia. E3 Displays LLC is known in the industry as having very high technical expertise, outstanding quality, designated trade secret manufacturing technology, along with a culture of customer responsiveness. E3 Displays LLC is ISO 9001:2015 certified and registered.

### Scope of Work

Design and build and test an automated “debonding system” prototype that separates the substrate (touch panel, A/R glass, etc..) optically bonded with E3 Materials supplied LOCA (Liquid Optically Clear Adhesive) to an LCD. This system is to be designed to accommodate optically bonded display systems from 5” diagonal to 17” diagonal.

Currently this process is manual and involves a E3 Displays Operations technician to place a wire or nylon string through the adhesive and “saw the string through the bond material” until separation of the two pieces of hardware is achieved. *Video of the current manual method to be provided.*

“Debonding is a necessary rework process when the bonded display system has encountered a defect, typically optical in the bond area. This allows E3 to save the very high cost LCD and substrate for future use after cleaning the adhesive off after debonding. An automated system will save costs both in labor and material and enhance customer satisfaction for E3.

### Budget

\$5,000\* to cover the cost of:

- Documentation (design, test data, etc.)
- Materials for testing and prototyping
- Construction of prototype

\*Note: Additional funding available as needed. E3 Displays will provide rejected optical bonded display systems for development and test work.

### Deliverables

Literature review, project proposal, final report, engineering analysis, prototype system with resulting data, cost estimate for duplication, bill of materials, detailed procedure for repeatable manufacturing.