MxD 15-14-09	Category: Recurring Manufacturing
Title:	Bottom-Up Plug-and-Play Hardware/Software Toolkit for Monitoring, Diagnostics and Self-Correction
Completion Date:	2018-12-31
Project Team:	National Center for Manufacturing Sciences (NCMS), ACE Clearwater Enterprises, Georgia Tech, MakerSweet Inc.
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Problem:
Welding processes are difficult to monitor and costly to automate, especially in short-run or widely varying production. SMMs in particular can benefit from increased real-time insight into quality and productivity while larger manufacturers may benefit during technology transition.

Objective:
Demonstrate a real-time hardware/software toolkit and analytics platform that will support machine and process monitoring diagnostics and a self-correction module. The module will be compatible with both existing and supplied welding sensors and will be used in conjunction with both instrumented and non-instrumented welding equipment to deliver synchronous data on active welding operations.
The design of the module is an affordable and capable substitute for complex and costly legacy ERP systems and allows for very small deployments and scales up quickly and easily. The pilot application will provide better, faster, and less costly solutions than those currently offered to digital manufacturing enterprises and enhance SMM competitiveness.