Monitoring the Stratasys - Fortus 400mc Fused Deposition Printer while Manufacturing Custom Ankle-Foot Orthotics

Robert S. Chisena
University of Michigan

Applications using the MTConnect Standard should be developed for high-volume, customized additive manufacturing (AM) processes. Currently, AM lacks the speed, strength, and reliability of common, high-volume manufacturing processes such as injection molding. However, when a large volume of parts need to be customized, such as in the manufacturing of orthotics and prosthetics (O&P), AM becomes a more economical and elegant alternative. The University of Michigan, Stratasys, and Altair have partnered to bring high-volume AM to the field of O&P for the first time. This major advancement is an excellent opportunity for applications built with the MTConnect Standard. To help ensure the success of this new manufacturing process, these applications should be focused on the following objectives: (1) predicting machine issues during or before printing, (2) minimizing design and manufacturing time, and (3) reforming the lifecycle of the design and manufacturing process. In the field of O&P, these developments will provide patients with higher quality devices and will help clinicians and O&P centers increase throughput.