

Manufacturing

Weekly Report 11/27/17 to 12/3/17

This week I had an interview with Mr. Mueggenborg from Raytheon whom I contacted through an email provided by Dr. Oberle at a previous interview. During this interview, I gained a more in-depth understanding of the manufacturing side of engineering from the perspective of someone who actually interacts on the factory floor with the machine operators. Mr. Mueggenborg explained how on a daily basis he would often have meetings with the design team about certain products while also visiting the factory floor and talking with machine operators. He also explained how in that same work day he may also interact with managers, other engineers, or people with varying educational and language backgrounds. During the interview we also discussed aspects of mechanical engineering such as the expansion of 3D printing as well as CNC machining. Mr. Mueggenborg explained that while CNC machining was not very prominently featured in product manufacture, it was featured in the creation of tools for product manufacture. Such machined tools included soldering irons which could perform multiple processes such as wire bonding and soldering: two very distinct processes. While soldering used heat to attach solder, wire-bonding used cold-welding in order to attach gold wire to a circuit board to bridge connections. This newly-found information would lead me to broaden my research from not only manufacture of parts with CNC machines but also the manufacture of tools. During the interview, we also discussed how 3D printing was especially important for prototyping and testing as it could both create a testable model as well as a physical representation of a product before manufacturing through traditional methods. Mr. Mueggenborg also explained how 3D printing was extremely useful for test fitting a part and for making

several revisions of a part, saving both time and money. He also explained how often a physical representation of a product would help managers win contracts and funding; another cost-saving measure of 3D printing. Following the interview, Mr. Mueggenborg also provided names of several contacts at Raytheon which were more closely related to my field of 3D printing and CNC machining. Moving forward, I will be sure to reach out to these professionals and hope to gain more specific information than I have from my past interviews while also incorporating what I have already learned from these interviews.