UTDesign II Team 1682 - Semiconductor Fab Personnel Tracking

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Project Overview

This abstract outlines the UTD Senior Design project for a tracking system to be implemented at STRIKE Photonics' semiconductor fab. This system will be critical for life safety and process management procedures during equipment failure, gas leaks, or other emergencies. STRIKE Photonics is initially seeking a method that is capable of tracking the location of people in designated zones of the fab, recording their position over time. This method should have the potential for future expansion to wafer tracking and other materials or resources.

To accomplish this, a tracking system was designed using ultra-wideband technology. Data structures will be employed to identify the optimal paths and locations for the fabrication equipment and UWB solutions. The system will record the location of people in real-time, allowing emergency rescue personnel to identify if all zones have been evacuated in the event of an emergency. The UTDesign Studio was used for environment simulation, taking advantage of the existing objects and obstructions present to test and refine the solutions to ensure optimal functionality.

The success of this project will rely heavily on the accuracy and reliability of the tracking system. It is a critical aspect of life safety and process management procedures, making it essential to design and implement a system that meets the specific requirements of STRIKE Photonics. The proposed solution offers a practical and effective approach to track personnel in the semiconductor fab, ensuring optimal safety and process management procedures.