



Forklift Collision Avoidance Safety System

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Introduction:

At Modjoul, we blended our ergonomics technology and data analysis to craft a new wearable capable of detecting forklifts.

Our newest solution revolves around injury prevention by combining the ergonomic wearable with a forklift detection system to protect employees from additional risk of injury in the workplace.

Every year, forklift accidents and MSD (musculoskeletal disease) injuries lead to hundreds of thousands of injuries and fatalities. Beyond the human toll, these incidents cost businesses billions in claims and other expenses. Now Modjoul has a solution to prevent both MSD injuries and injuries resulting from collisions with forklifts.

Enter Modjoul's turnkey solution-'HaloGuard360', designed to prevent warehouse vehicle accidents.

This new groundbreaking forklift safety system is the first-of-its-kind, leveraging bilateral collision avoidance technology to prevent accidents involving forklifts and other industrial vehicles with our injury prevention muscular skeletal disease algorithms.

Modjoul combined the functionality of the SmartBelt ergonomic safety wearable, renowned for reducing musculoskeletal injuries related to bending and lifting, with the ability to detect powered industrial trucks and other high consequence machinery.

The forklift safety system boasts five key features:

1. Vehicle-to-pedestrian bilateral alerts

Both forklift drivers and pedestrians receive audio, haptic, and visual alerts when in proximity to each other. The distances of detection are customizable to the client's needs.

2. Vehicle-to-vehicle bilateral alerts:

Multiple forklifts in proximity trigger audio and visual alerts, with customizable distance settings.

3. Forklift Speed Control:

The system limits forklift speed in potential collision scenarios or high traffic areas, ensuring safety through these riskier areas.

4. Intersection and blind corner warnings:

Workers are alerted when forklifts approach intersections or blind corners, mitigating potential accidents.

5. Crash detection and driver metrics:

The system detects crashes and provides data around hard braking and hard accelerations.

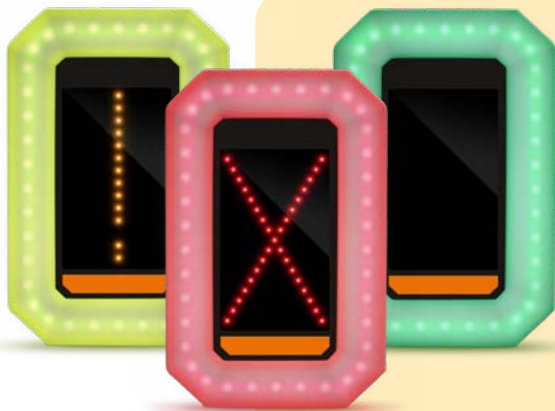


How It Works

Our collision avoidance system employs cutting-edge Ultra-Wideband (UWB) technology. The components of the system are the following:



Forklift Anchor Module: This device, mounted atop forklifts, serves as the system's central hub, communicating with pedestrian wearables and other vehicle anchor modules to precisely calculate proximity up to centimeter level accuracy and alert drivers of impending collisions. The anchor module is also equipped with an accelerometer and a gyroscope to provide crash detection and driving skill metrics of the driver.



Forklift Driver Box: Strategically positioned in sight of forklift drivers, this visual and auditory alert system notifies the driver of nearby vehicles and pedestrians. The customizable box allows one or two halos that warn the driver of pedestrians or other forklifts in proximity to their forklift.

The Driver Box displays a yellow light when pedestrian is in the warning zone of the forklift and displays a red light when pedestrian is in the danger zone of the forklift. The Green light indicates Drive Box is operational.



Pedestrian wearables: Equipped with a UWB sensor, emits a vibration and an auditory signal when vehicles approach too closely, ensuring heightened awareness and safety.

This bilateral notification (both driver and employee) is the differentiation in the marketplace where both are responsible for a safe operating floor. Now the employee and driver are notified for potential collisions with enough time to react thus potentially eliminating a possible death or serious injury.

How It Works (cont.)

It is also easy to track the movement of the forklifts and track the locations of near miss collisions and management of blind intersections. Adding beacons allows for real time location servicing and providing alerts. The beacons add another layer of managing and monitoring intersections and blind corners.



Installing the forklift anchor module on a forklift.



Data Insights

Harness the power of data with Modjoul's **'HaloGuard360'**. The solution captures sensor data from both the forklift anchor module and pedestrian wearables, providing a comprehensive view of your workplace environment.

But fear not, we're not here to play Big Brother! Our safety system prioritizes user privacy. With no biometric sensors, we never collect or associate any biometric data of the end user.

The collected data undergoes meticulous analysis through Modjoul's proprietary machine learning algorithm, unveiling valuable insights for enhancing safety:

- Gain visibility into the total number of vehicle-to-pedestrian and vehicle-to-vehicle interactions, empowering proactive accident prevention strategies.
- Optimize your vehicle fleet utilization with insights into individual and overall active hours, enabling efficient resource allocation.
- Enhance vehicle safety with key metrics measuring hard braking and acceleration events, facilitating targeted driver training and improvement initiatives.
- With the addition of beacons understand where the interactions are occurring so proactive changes can be made.

With Modjoul's data-driven approach, you'll unlock a new level of safety and efficiency in your workplace. The outcome is a workplace where workers and industrial vehicles coexist more safely than ever before.