

# Device mounted on goggles is driving safety improvements

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Heads Up founder Brendon Dever shows off the smart safety goggles his company created. They feature a device that can alert factory workers to industrial threats like noise. Credit: Douglas Levere

A Buffalo startup company is bringing a piece of wearable technology to

the industrial workplace to increase worker safety.

Heads Up has created a device that fits on a worker's safety glasses and monitors for safety threats, like noise, and notifies the wearer – and a safety manager at a central location – if such threats are present.

The device also links wirelessly to a cellphone and helps with communication in very loud environments, sending warnings or notifying the wearer of incoming calls. A light in the wearer's peripheral vision illuminates and changes color depending on the threat or message.

The simple, light-weight device currently monitors for unsafe noise levels, and is being expanded to measure heat, humidity, altitude and worker-down status. In development is a sensor for silica dust.

"We've built a platform that we are able to rapidly adapt, depending on the customer's needs," said Brendon Dever, CEO of the firm, which has received support from the University at Buffalo. If a company has a specific threat to monitor, Heads Up can configure its device for that.

For instance, a customer asked for a way to make sure its workers were safe when working alone. Dever said they designed the man-down function that alerts a safety manager when someone stops moving for an extended period.

## **But why check for altitude?**

"So you can be located on a high rise construction site. If you are working on the 30th floor and need to be found, we can cross reference your GPS signal and the altitude to find what floor you are on," Dever said.

The system also performs analysis, so that as more data is gathered from

the devices, the system "will be able to predict the conditions that exist prior to an accident happening," Dever said.

UB has been instrumental in getting the company going. After being hatched at the Buffalo Startup Weekend in 2013, the company has received three UB CAT grants (Center for Advanced Biomedical and Bioengineering Technology) totaling \$60,000, and was among the first companies admitted to the START UP-NY program, which helps reduce a new company's state taxes.

"This company would not exist if not for the programming at the university," Dever said.

Albert H. Titus, PhD, chair of the Department of Biomedical Engineering in UB's School of Engineering and Applied Sciences, advised the people at Heads Up about the device. "They had a pretty clear vision and just wanted to make sure their approaches made sense," he said.



Heads Up has created a device that fits on a worker's safety glasses and monitors for safety threats, like noise, and notifies the wearer – and a safety manager at a central location – if such threats are present. Credit: University at Buffalo

"Their platform that can easily adapt to monitor other environmental conditions—that's really going to be key in terms of making it more interesting and it has some flexibility built in," Titus said. "That will make it very attractive."

Thus far, the company has clients in five industries – mining, construction, road construction, utilities and manufacturing. Dever said many companies inquire about the service, but those that have a core value of keeping their employees safe are the ones most likely to adopt the service.

## Happy customer

Using the device, which is made at the Buffalo company SoPark, costs \$20 a month per employee, and Dever expects to scale that price for companies with many employees.

The device is being sold by DiVal Safety Equipment, which has 65 representatives across the nation.

The value of the Heads Up device has proven itself quickly at Solvaira Specialties (formerly International Fiber Corporation) in North Tonawanda. Plant manager Raymond Domin said the noise can rise to levels that exceed the limits of even double ear protection.

"The green light on the device gets brighter and brighter," he said.

"When it gets to 100 decibels, you have to leave that area."

And the [device](#) helps in contacting mechanics in the factory.

"We have six devices in use right now, and we're going to be expanding that," he said. "When someone needs a mechanic, they send them a message, and the light goes off that tells the mechanic to read their text," Domin said. "It has improved the response time of the mechanics and it prevents people on the production lines from exposing themselves to trips or falls by going off and looking for a mechanic."

Dever said the company is in negotiations with existing companies about using their technologies for detecting hazardous gasses. "Noxious gas is a very highly regulated, specialized environment," he said.

## Workers Comp deals

As safety laws evolve, Dever sees his company's impact growing. For example, eight states now have regulations that reduce a company's worker compensation costs if they adopt safety procedures that exceed existing guidelines. In addition, the fact that small and large companies have adopted the service shows to Dever that the business is scalable.

"It's an international market. The growth is essentially limitless. The core belief of the people in this company is that we want to be the first industrial internet product development [company](#) to sell a million units," he said.

Provided by University at Buffalo

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