PURDUE INNOVATES | Office of Technology Commercialization

Crowd Management System

Smart crowd management system uses multi-sensor data to guide evacuations and optimize pedestrian flow at events.

Researchers at Purdue University have developed a new crowd management system (CMS) for monitoring pedestrian traffic and high-density outdoor public events such as concerts, sporting events, and theme parks. Typically, these settings lack signs or any form of notice to help guide crowds in the event of an emergency. The goal of the crowed management system developed by Purdue researchers is to accurately detect the number of people in an area to help evacuate them quickly if needed. The CMS features sensors that capture video, cellphone emissions signals, geospatial positioning, pressure from footsteps, environmental factors such as the weather, and direct pedestrian interaction to actively account for crowd behavior and enable signage to redirect foot and road traffic accordingly. There are two styles of CMS available, either as an inflatable with rapid deployment for outdoor settings or a fixed telescoping mast adaptable for posts and traffic lights. In addition, these devices can be charged with solar light.

Advantages:

-Accurate Sensing

-Improved Crowd Management

-Adaptable to High-Density Outdoor Events

Potential Applications:

-Crowd Management

-Signage

-Warning System

TRL: 2

Intellectual Property:

Technology ID

2021-DIET-69183

Category

Buildings, Infrastructure, & Construction/Smart Building Systems & Automation
Robotics & Automation/Perception & Sensing
Materials Science & Nanotechnology/Materials Testing & Characterization Tools

Authors

Travis L Cline
James Dietz
Braiden Frantz
Krassimir Tzvetanov

Further information

Aaron Taggart
adtaggart@prf.org

View online

Provisional-Patent, 2020-10-22, United States

Utility Patent, 2021-10-22, United States

Keywords: Active Monitoring, Civil Engineering, Mechanical Engineering, Monitoring, Public Safety, Sensors, Traffic Control Systems