INTEGRATED SOLID-STATE MOTION SENSOR
FOR SOLID STATE LIGHTING (SSL)

R&D PROJECT

INDUSTRY PARTNERS:

> Texas Tech University
> yearONE, LLC
> Carillon LifeCare Center
> Brookdale Assisted Senior Living Center

PROJECT TERM:

> Ongoing

INDUSTRY PROBLEM:

> Critical need to increase energy efficiency and safety
> Overcome technical and design barriers to issues that limit performance
> Passive infrared (PIR) and ultrasonic motion sensors require a direct line of sight between the sensor and occupants, and are insensitive to low levels of vibration or airflow
> All current lighting control solutions have limited performance in detecting stationary subjects, which poses challenges when users are sitting or sleeping
> None of the existing lighting technologies can monitor subtle life signs, such as respiration and heartbeat

SOLUTION:

> A novel, integrated, smart-radar-sensor that can be used for the following:
  > Non-contact vital sign detection
  > Gesture analysis and control
  > Structural health monitoring
  > Motion-based security monitoring
> It impacts indoor energy efficiency by accurately locating users and identifying their life activities without any body-worn tag
> It will easily penetrate into various markets because of the following features:
  > Completely solid-state compatible
  > Low-cost integration
  > High detection sensitivity
  > Large dynamic range

*Information referenced from yearonellc.com*