

PEP-SBF AWARDS 2023

PRO-ENTERPRISE CATALYST (PEC) AWARD - PROJECTS

Name of Initiative

SoundEye Fall
Detection System

Suggestor

Dr Tan Yeow Kee, SoundEye



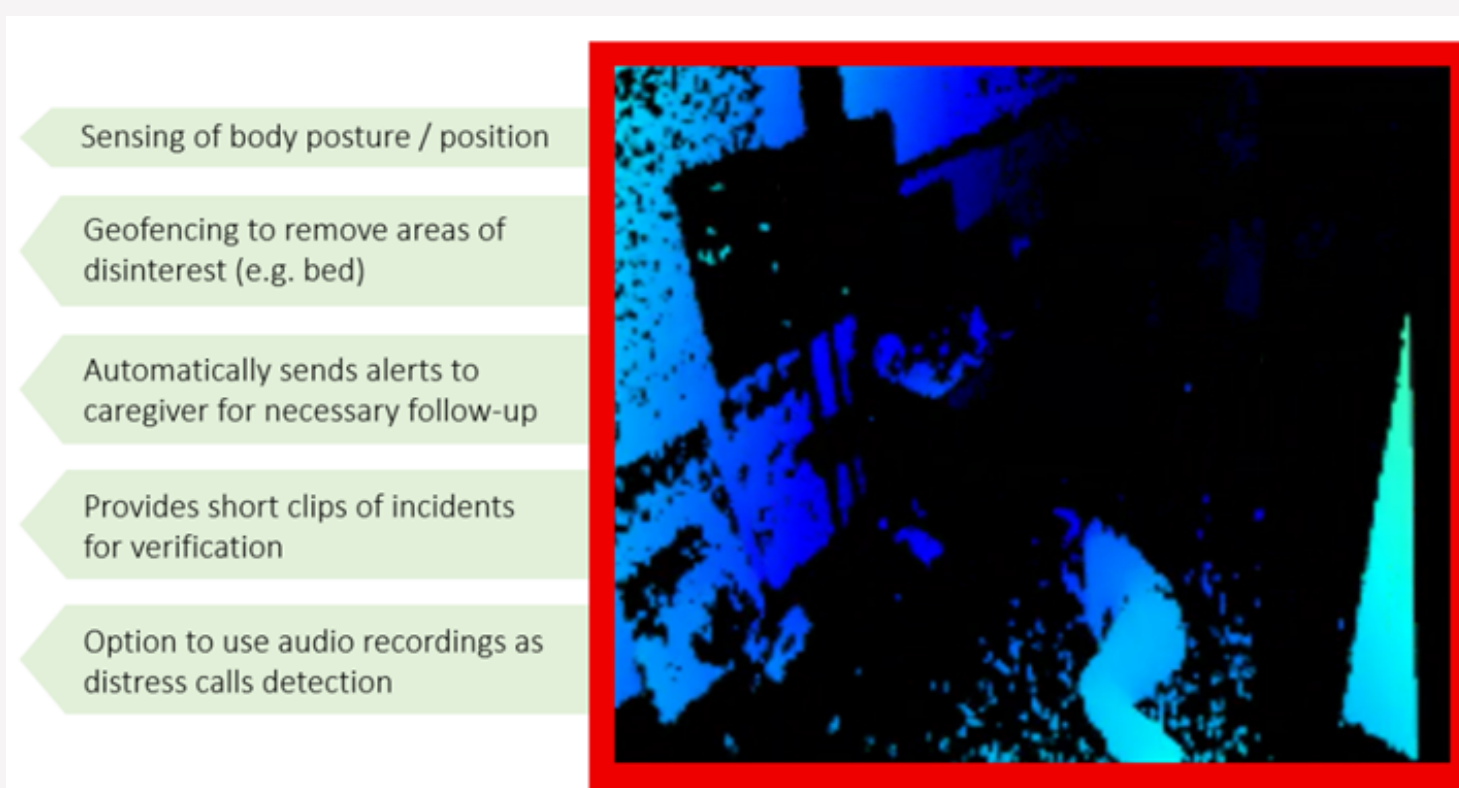
Supporting Agency

Housing and Development Board



Summary of Initiative

As Singapore's population ages, there is potential to leverage on technology, such as fall detectors, to enhance the safety of seniors living alone. SoundEye-LASSO is a fall detector that uses LiDAR and sound recognition technology to detect falls. In the event of a fall by the user, an alert will be automatically sent to the next-of-kin or Active Ageing Centres. A recording of the "depth image" will be generated together with the alert, allowing responders to quickly verify if it was an actual fall, and sieve out false alarms.



HDB conducted a trial with SoundEye at Queenstown over a period of two months to test the solution in a real-life environment. In the study, HDB analysed residents' activity patterns, identified areas in the home with risk of fall for seniors, and gathered feedback from residents on the sensitivity of the detection system.

This was put to practice when a resident had fallen in his home, and the fall was detected by the AI (artificial intelligence) algorithm of the SoundEye Fall Detection System. As a result, the family of the resident received the alert almost instantly and managed to deliver prompt medical attention and care for the resident.

Moving forward, HDB will continue to work with SoundEye Pte Ltd to explore scaling up and implementing these smart solutions in HDB flats, to benefit more residents.

What challenges did you/your team encounter, how did you/your team overcome them?

Depth imaging was initially meant for autonomous navigation in autonomous vehicles and robotics. The use of depth imaging technology for fall detection in aged care was unheard of in 2020. The challenge both SoundEye and HDB faced was in finding a suitable target group to test the fall detector in a lived-in environment, and being able to validate and collect real-world data.

In early 2021, SoundEye collaborated with nursing homes and hospitals, and worked closely with HDB, occupational therapists and social workers to provide the trial system to seniors which were prone to falls, provided technical support, and conducted regular check-ins to gather feedback on the system. For the trial to be successful, close collaboration with the community and agencies was critical in pushing out innovative solutions for aged care and healthcare.

What is one takeaway that you would like to share about working with businesses/the government?

SoundEye: One word, dedication. A*STAR and A*StartCentral are dedicated to generating innovation and supporting deep tech startups. Meanwhile the MTI Pro-Enterprise Panel (MTI-PEP) is like an eagle scouting for good technology in the community. From the first meeting until the discussion on the 2nd phase, HDB worked closely with SoundEye to deepen the smart capabilities and accuracy of SoundEye's fall detection device, LASSO. We observed that this is not just a collaboration on trialling new technology. It's heartening to see MTI-PEP, HDB, A*STAR, and A*Start Central collaborating with social enterprises and deep tech startups such as SoundEye to improve the quality of life for our society.

HDB: One key takeaway would be the importance of collaboration and communication. In HDB's experience, successful trials require close collaboration between the government agency and the business partner. We actively involve them in the trial design process. This ensures that the trial can meet its objectives and challenges are addressed in a timely manner. Being open to feedback and willing to adapt the approach are also important. It is important for government agencies to be flexible and responsive to feedback from both the business partner and the end-users.