Mi-Percept

Edge-Based Sensor Fusion for Reliable Environment Perception

The perception technology is centered around environment understanding, particularly in localization, mapping, and cognitive aspects like object detection and recognition. It processes multiple sensory inputs, such as camera views, LIDAR, and positioning sensors, on edge devices to determine the relative location of objects within the digital mapped and actual environment.

Technology Overview

The perception technology provides environment perception technology to ensure the ego vehicle can detect, comprehend, and make real-time decisions to navigate autonomously in the real-world environment. This technology utilizes various 3D visual technologies to create a real-time understanding of the environment, assisting in decision support for the vehicle's next course of action. The 3D technologies include a stereoscopic view for depth estimation and 3D LIDAR point cloud information on top of other sensors such as IMU, GPS, Radar and ultrasonic to enhance environment perception and decision support.

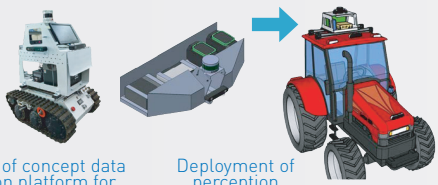
Features

The perception technology provides the following features:

- **Sensor Fusion for Multi-Sensory Inputs**
  A comprehensive sensor fusion platform that seamlessly combines inputs from multiple sensors, mincluding LIDAR, Stereo camera, GNSS, IMU, Radar, and ultrasonics.

- **Data Fusion**
  A data fusion capability for environment mapping and localization, utilizing inputs from both stereoscopic camera views and 3D LIDAR data.

- **Obstacles Detection**
  Enhanced obstacle recognition and comprehensive environment understanding, serving both navigation and mission-specific objectives.



Proof of concept data fusion platform for environment perception

Deployment of perception setup on tractor

Technology Benefits

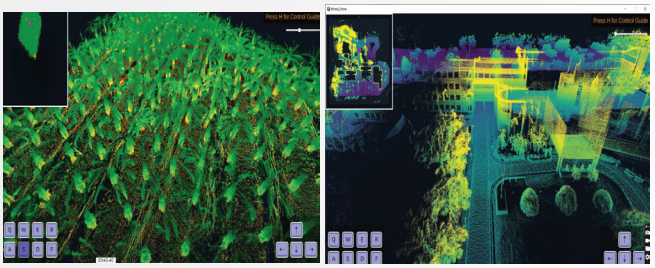
The main impacts of the Environment Perception technology are:

- **Accurate Positioning Indoors and Outdoors**
  The perception technology provides accurate positioning and localization in both indoor and outdoor environment.

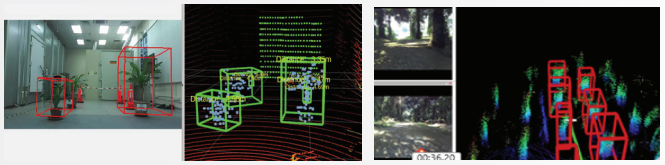
- **Flexible Support of Sensors**
  The sensor fusion platform allows for flexible sensor configurations, accommodating various types of sensors to facilitate customization for diverse purposes.

Applications

Indoor and Outdoor Environment Site Mapping and object detection: Manufacturing Plant, Plantation, Campus, Construction Sites.



3D digital representation of the targeted surrounding environment i.e plantation and campus.



Objects and obstacles detection from 3D Lidar and camera for asset tagging, navigation support and obstacles avoidance.

MIMOS Berhad 199501006785 (336183-H)
Taman Teknologi MRANTI, Bukit Jalil,
57000 Kuala Lumpur, Wilayah Persekutuan
Tel: +603 8995 5000 | Fax: +603 8996 2755
www.mimos.my

mimosmalaysia