

Spectrum-Scan™ LIDAR: Next-generation technology for the future of Autonomous Vehicles

24 January 2022

Agenda

What is LIDAR?

LIDAR vs. Other Technology

Types of LIDAR Systems

Baraja Spectrum-Scan™

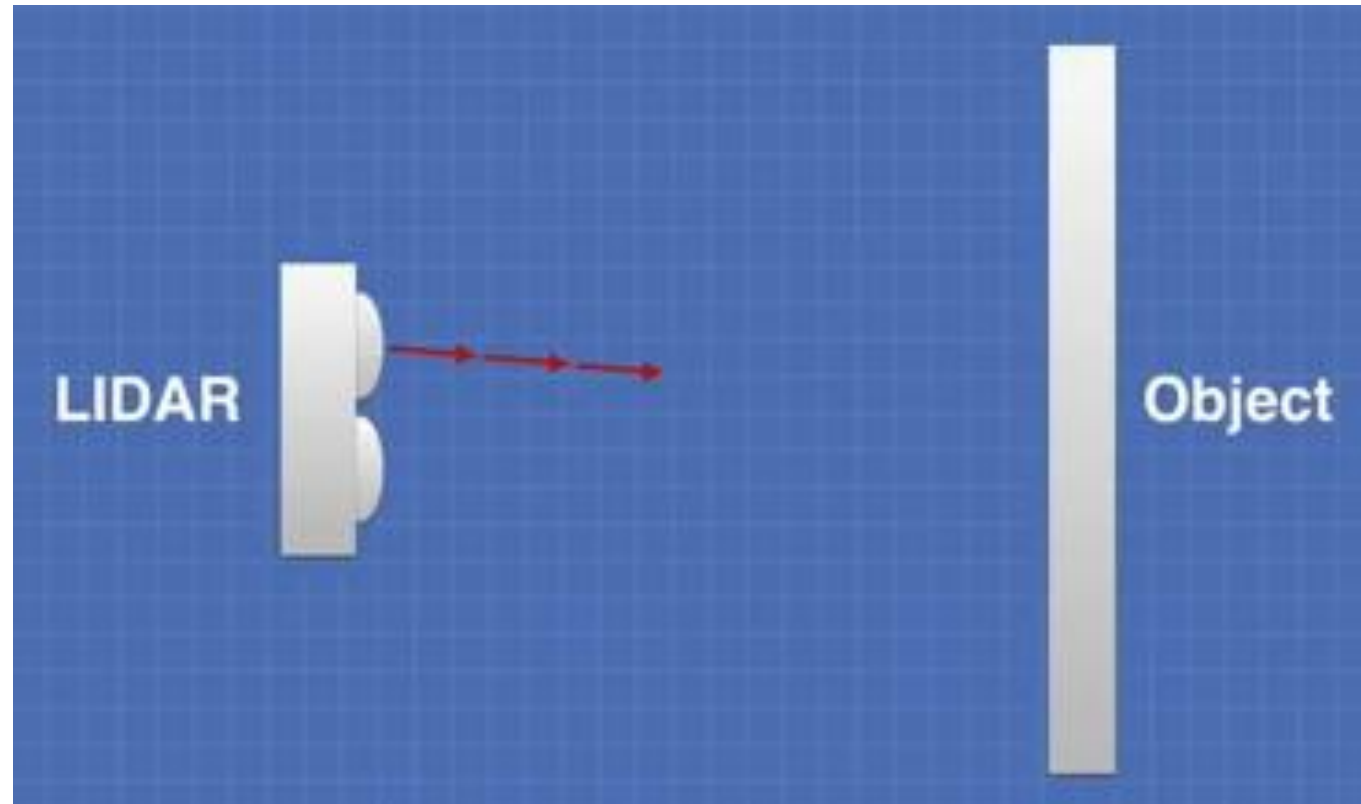
What is LIDAR?

LIDAR: Laser eyes for autonomous vehicles

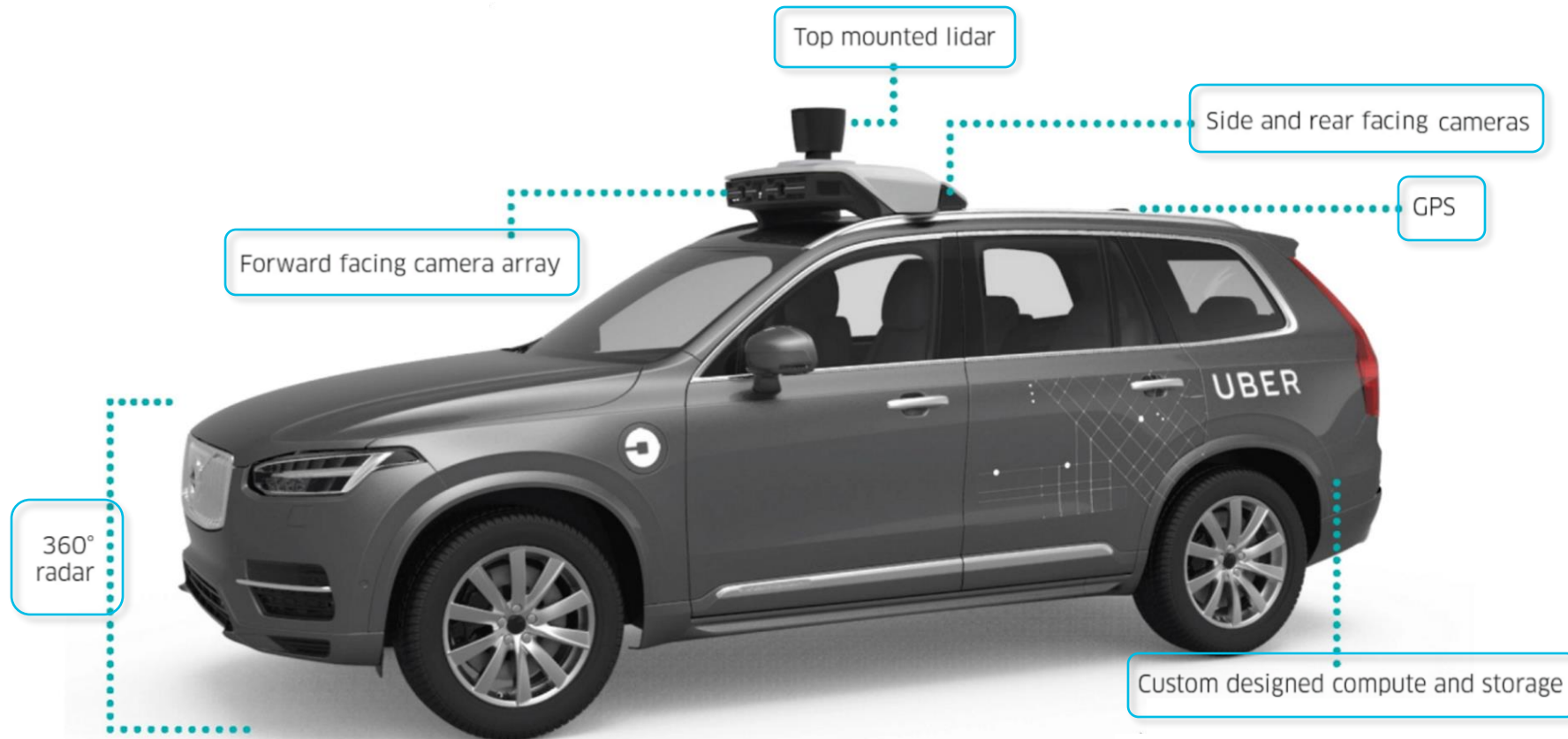




Light, Detection And Ranging: LIDAR



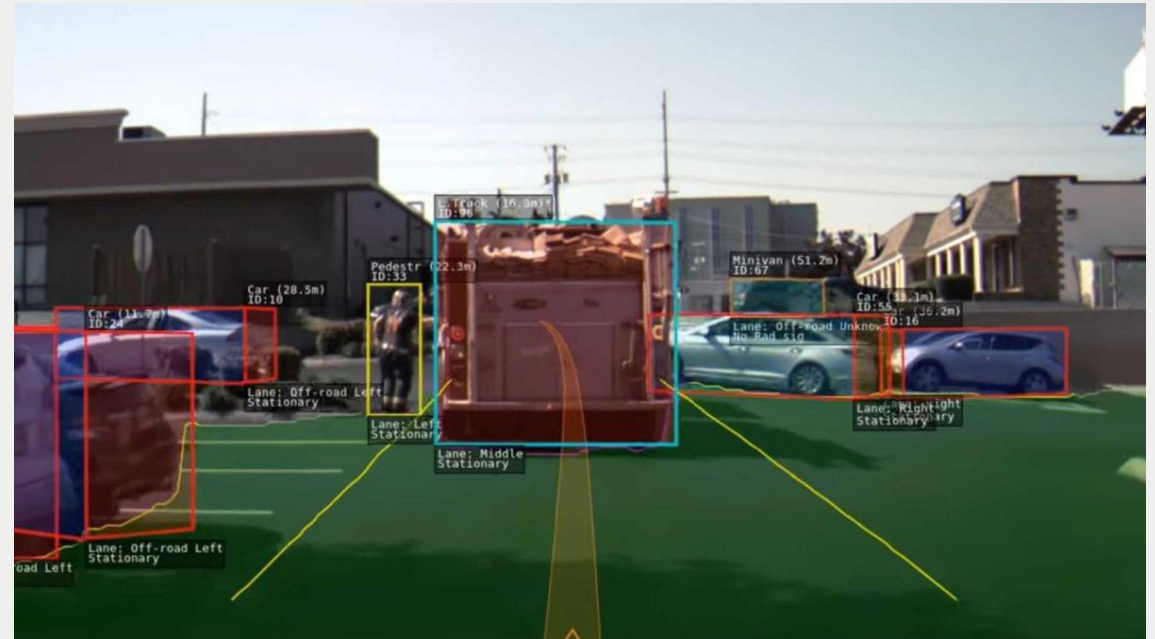
The entire sensor suite



LIDAR vs. Other Technology

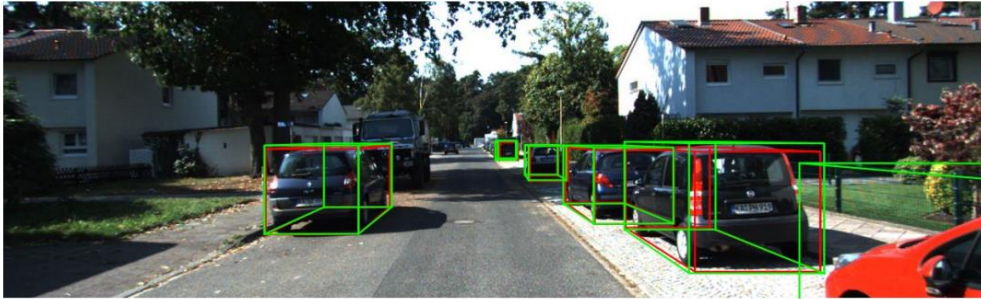
LIDAR vs Cameras

- Produces true colour, high resolution images
- Ability to see long ranges
- Enhanced by computer vision and object recognition
- Poor performance in rain and other extreme weather or lighting conditions
- No true distance measurement



"For example, the error of stereo-based 3D depth estimation grows **quadratically** with the depth of an object, whereas for Time-of-Flight (ToF) approaches, such as LiDAR, this relationship is **approximately linear**"

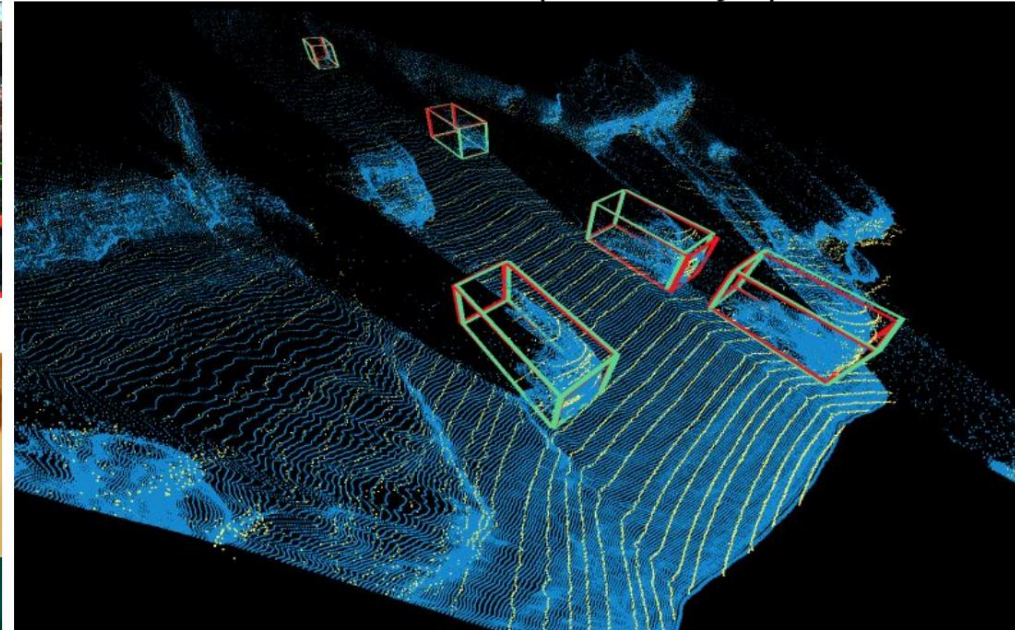
Input

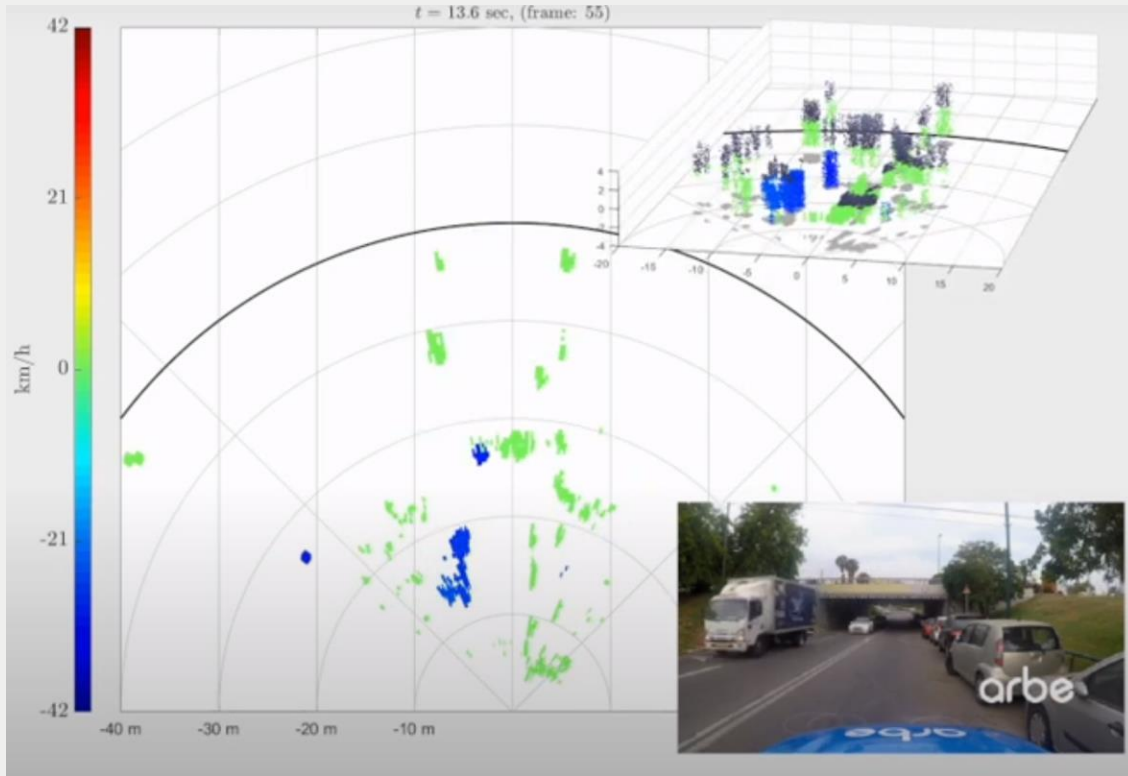


Depth Map



Pseudo-LiDAR (Bird's-eye)





LIDAR vs Radar

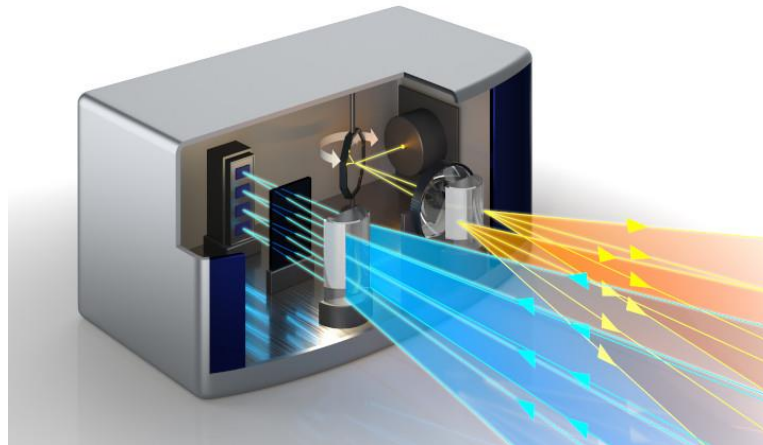
- Good in all weather conditions
- Long range performance
- Poor accuracy & resolution
- Struggles with false signals

Types of LIDAR Systems

Mechanical



Mirrors



Solid-State



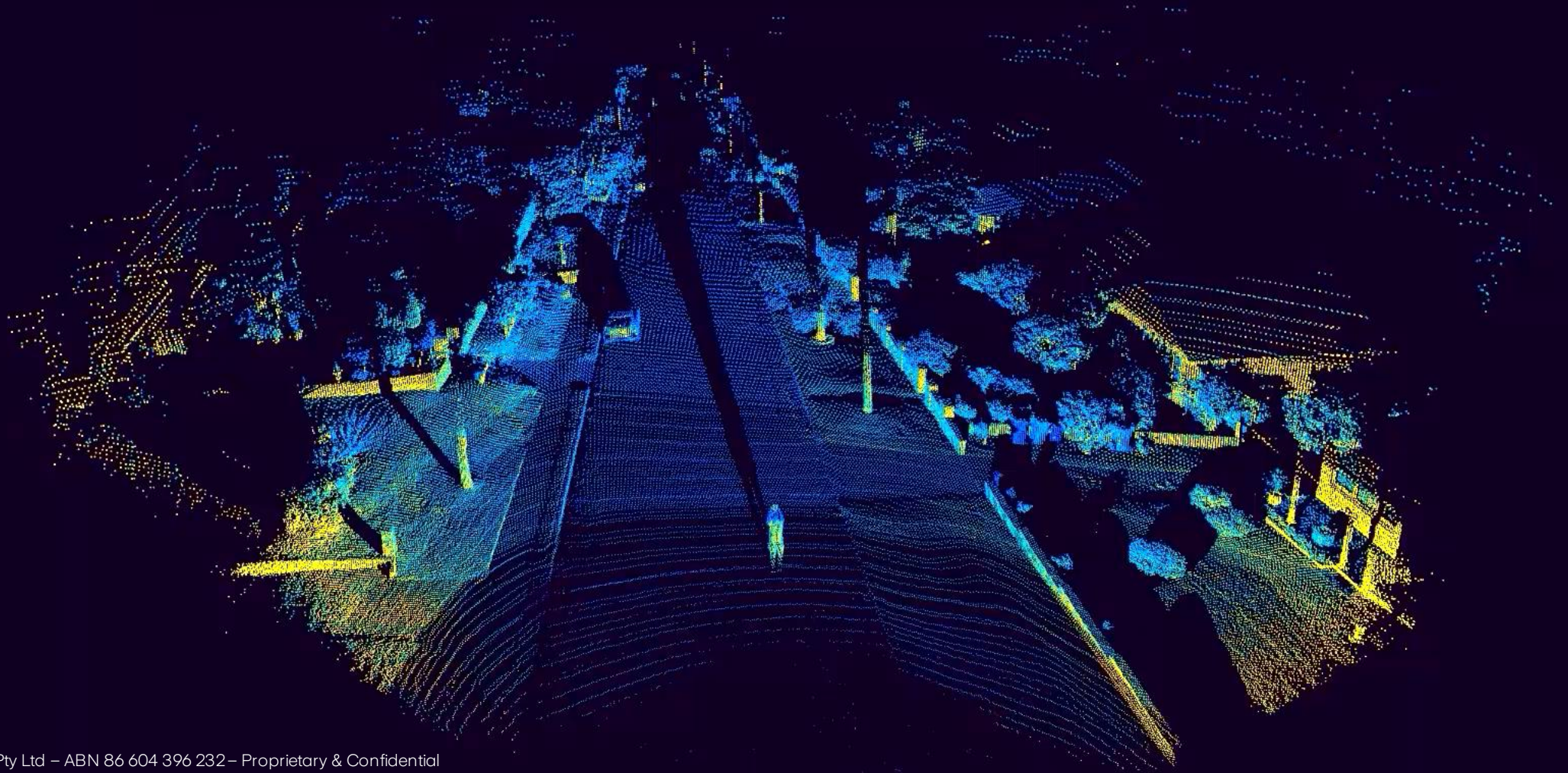
Baraja Spectrum-Scan™



Pointcloud CONTROL



Arbitrary number of beams
Arbitrary beam separation
Nominate and Change Regions of Interest



Thank you!

Yannick Lize
VP Research & Development, Baraja
www.baraja.com