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Press Release

The easiest way to use LiDAR for ITS applications

OUTSIGHT INTRODUCES THE FIRST LIDAR PRE-PROCESSING SOFTWARE ENGINE for ITS APPLICATIONS

The company wil perform live demonstrations of the solution at ITS World Congress

Hall B7, Booth 342

- LiDAR technology is a strong emerging trend in the Computer Vision landscape: over $3 billion USD have been invested in the Hardware aspect of LiDAR technology since 2019 and only the top five American LiDAR Hardware Manufacturers are expected to grow from less than $150 million USD sales in total in 2020 to over $4 billion USD in 2024.

- ITS and Smart Infrastructure applications are considered as main drivers of market growth. However, effectively using LiDAR data in real-time for these applications is a complex, expensive and long endeavor even for the best 3D expert engineers. Assessing and selecting the right hardware among the profusion of dozens of manufacturers without any standard makes it even more challenging and threatens to slow down market adoption.

- In that context, software for LiDAR in Smart Infrastructure and ITS applications is expected to account for at least 40% of the value and over 55% of gross profit in the LiDAR space: integrators and ITS solution providers that are not 3D experts require a processing solution that solves the complexity of using LiDAR data regardless of the hardware supplier.

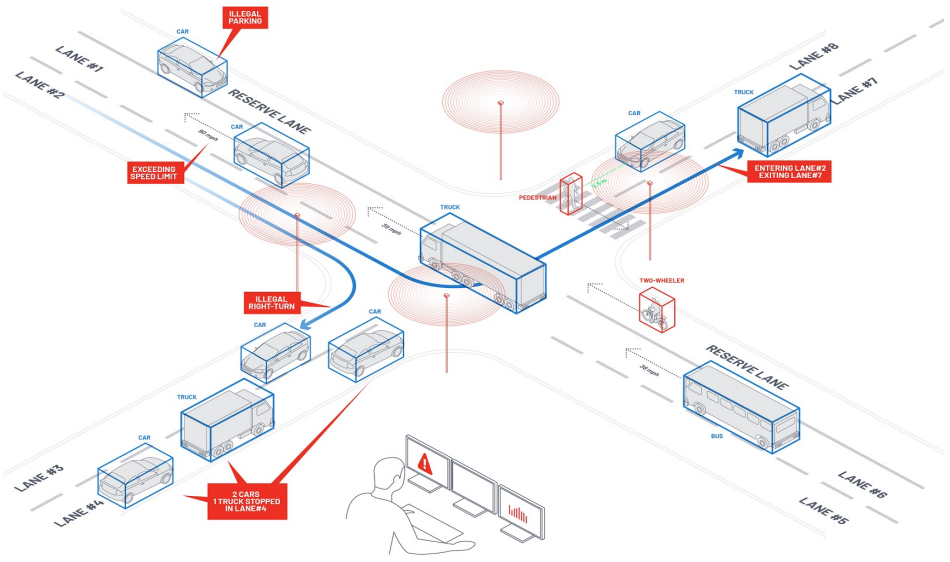
Outsight, the pioneer of 3D Spatial Intelligence solutions, announced today an ITS specific version of its award-winning flagship product: the Augmented LiDAR Box (ALB).

It's the first real-time LiDAR Software Engine that allows ITS and Smart Infrastructure application developers and integrators to seamlessly use LiDAR data from any hardware supplier. Created as a turnkey solution, the ALB enables leveraging 3D Spatial Intelligence's unique value while avoiding the complexity of processing 3D data in real-time.

Being a LiDAR-agnostic solution, it saves the customer the hassle of assessing and choosing the most appropriate LiDAR for each use case. LiDAR can now be easily used in Vehicle counting, Pedestrian monitoring and many other use cases.

This first-of-its-kind product follows thorough early customers' validation processes across several different geographies (USA, Europe, Asia) and user profiles (Market-leading corporates, Start-ups and Universities) as well as strategic partnership agreements and collaborations with the most prominent LiDAR suppliers in the USA and Asia, including Velodyne, Ouster, Hesai, and Robosense.

In order to improve road safety for people who walk, bycicle and drive, Integrators of Solutions are increasingly interested in leveraging the unique value of real-time 3D Spatial Intelligence that LiDAR technology creates, but don't want to deal with the complexity of processing RAW LiDAR data.



Moreover, for the best professionals in smart infrastructure applications, going through the hassle of assessing, selecting and using the right LiDAR sensor out of dozens of hardware suppliers and more than a hundred available products, without any standard, is also a time-consuming, non-value added and inefficient use of engineering resources.

Turning any LiDAR into a Spatial Intelligence device

The Augmented LiDAR Box is the first LiDAR pre-processor: a real-time software engine that turns any LiDAR into a Spatial Intelligence device. It overcomes the complexity of using RAW 3D data, so any application developer or integrator can efficiently use LiDAR in its own solutions without needing to become a 3D LiDAR expert.

In order to provide a seamless integration experience, the Augmented LiDAR software engine is delivered embedded in a convenient LiDAR-Agnostic Plug & Play Edge computing Device: the Augmented LiDAR Box (ALB).

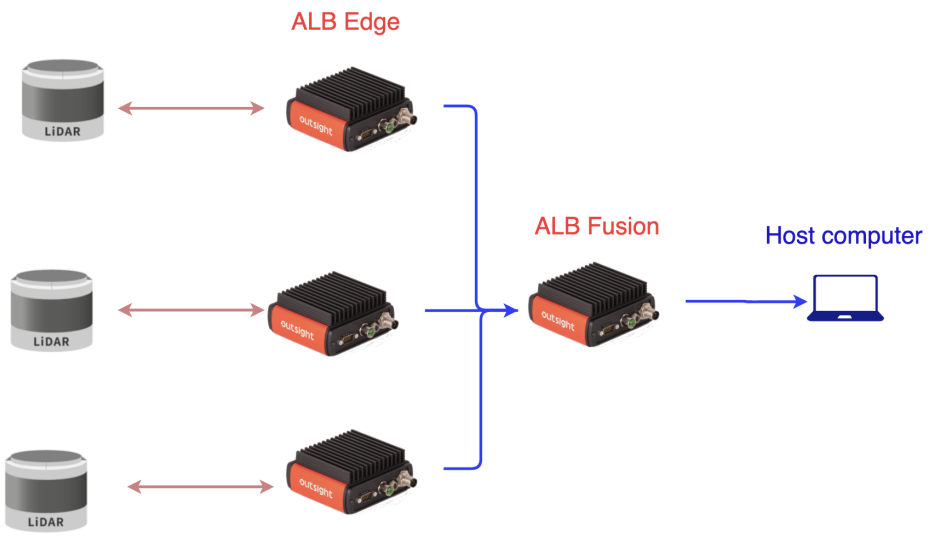
The ALB provides a comprehensive set of fundamental features that are commonly required in Smart Infrastructure applications (e.g., Object ID & Tracking, Segmentation & Classification, among others).

Because it only requires an ARM CPU and its AI doesn't rely on Machine Learning, the solution is power-efficient and doesn't need any Training or Annotation efforts.

LiDAR-agnostic

There is no LiDAR hardware that can fit all applications and contexts: the ALB is an enabling computing layer regardless of the end-user application and LiDAR supplier, so integrators and solution providers are not constrained by the limitations of specific sensors.

This is especially true in ITS applications such as Smart Intersections, where combining different types of LiDAR and other sensors can be done thanks to Outsight pre-processing, where the merged 3D data of each sensor is delivered in an open and standardized data format regardless of the LiDAR type and model:



The launch of ALB for ITS also follows the successful deployment of Outsight's technology at Paris Charles de Gaulle airport of the ADP group, to provide accurate real-time monitoring of people flow while preserving private data.

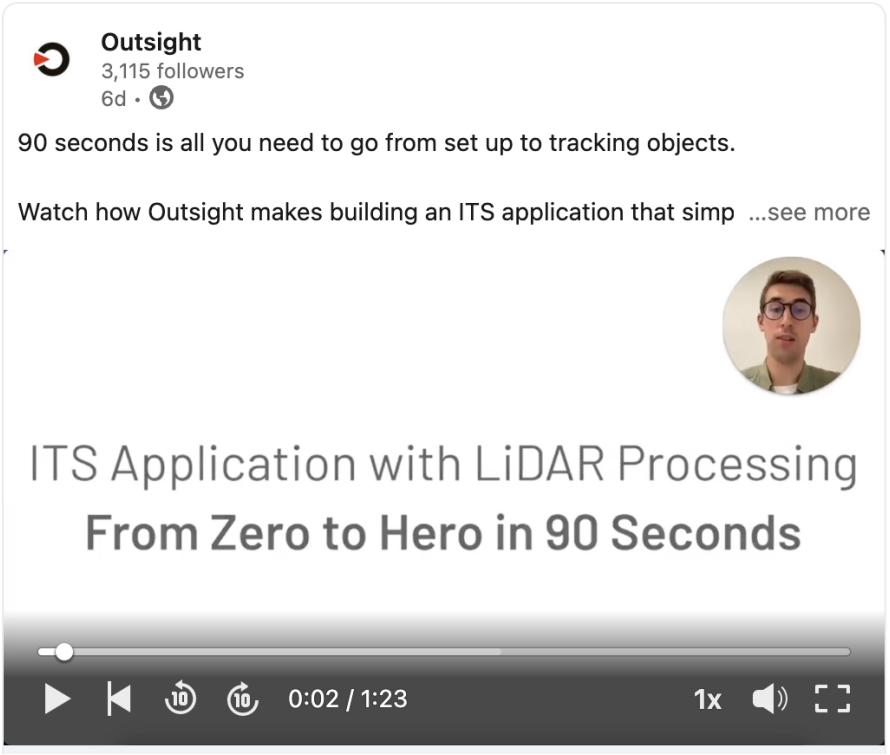
Outsight has grown rapidly by integrating new features into its LiDAR-based processing solutions that enable systems to perceive, understand and interact with their surroundings in real time. With a new generation of hardware and software pre-processing engine, connected to any LiDAR of the market, Outsight offers a unique level of simplicity, efficiency and versatility in Smart Infrastructure applications.

From first Plug in the LiDAR sensors to Tracking objects in only 90 seconds!

It used to take months to use LiDAR in ITS applications such as Smart Traffic monitoring.

Outsight solution has demonstrated a full working solution that only takes 90 seconds from connecting the hardware to get real-time insight such as moving objects.

Look at the video here.



What can integrators can expect from the ALB for ITS

For each LiDAR reading, typically 20 times per second, the ALB provides a set of comprehensive spatio-temporal Features including:

A) Tracking of moving objects:

- Persistent ID per tracked object
- Class: Truck/Bus, Car/Van, Two-wheeler, Pedestrian…
- 3D position (in a X, Y, Z coordinates system)
- 3D bounding box: location, dimension, volume, orientation
- Full velocity vector

B) Zones of interest: user-defined polygons, with their zone name, located on the ground plane, defined in the ALB Web UI interface.

C) Presence of moving objects in zones of interest: list of "Moving object - Zone of interest" pairs. Each pair indicates that the moving object is detected in the zone of interest.

Example of applications in ITS:

As an integrator and based on the ALB features' output, you can easily build ITS specific features:

- Vehicles trajectory monitoring in high-density traffic area
- Illegal Right-turn, U-turn, Left-turn
- Accident detection
- Wrong way
- Max & average speed per vehicle, per lane
- Overspeed & Underspeed limitation
- Reserved lane violation
- Tailgating / Min distance between vehicles
- Illegal parking
- Illegal overtaking
- Yellow box junction
- Traffic jam detection
- Vulnerable road user safety
- Railroad crossing Safety
- Pedestrian crossing count
- Predicted trajectory
- Vehicle counting
- Smart Traffic Lights

The same data can be either delivered in real-time or aggregated over time to get statistical insights (i.e. Distribution of road traffic by vehicle type per week).

In less than a year, Outsight has successfully designed and industrialized this new generation of LiDAR processing solutions for ITS applications, which has been the subject of 73 patent applications.

Outsight's innovation won many awards, including the prestigious Best of CES Innovation Award in Las Vegas, and it's the youngest company ever to have won the Prism Award by the world leaders in photonics.

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About Outsight

Outsight develops real-time 3D LiDAR perception solutions.

Our mission is to make LiDAR-based Spatial Intelligence become Plug & Play, so it can be used by application developers and integrators in any market. Using any LiDAR with our pre-processing capabilities allows Smart Machines and Smart Cities to achieve an unprecedented level of situational awareness.

We believe that accelerating the adoption of LiDAR technology with easy-to-use and scalable pre-processing will highly contribute to creating transformative solutions and products that will make a Smarter and Safer World.

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