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Smart Mining Solution





Based on High-performance Image-grade LiDAR

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Based on High-performance Image-grade LiDAR

- The mining operation environment is harsh, and it has long faced issues such as safety production and difficulties in recruitment. Driven by policies and the development of autonomous driving technology, the application of unmanned driving in mines has become an inevitable trend for intelligent mine operation.
- Seyond's smart mining solution is based on high-performance image-grade LiDAR, providing high-precision long-distance detection capabilities and superior dust penetration abilities. It is not affected by the dust and direct sunlight in the mining area. The output of high-quality structured point cloud data facilitates algorithms, helping improve operational efficiency while identifying risks early to ensure operational safety. It empowers unmanned mining trucks to achieve scaled operation.

Competitive Advantages

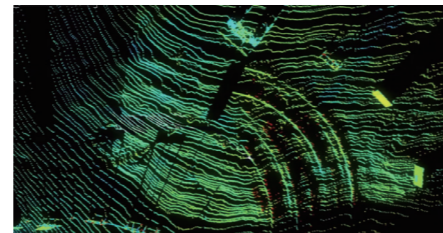
 <p>Unaffected by Light Interference</p>	 <p>Excellent Dust Penetration Ability</p>	<p>7x24</p> <p>All-weather High-precision Detection</p>	 <p>Automotive-grade Reliability</p>	 <p>Fully Industrialized Production Line for Mass Production</p>
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Application Scenarios

Assisted Driving for Unmanned Mining Trucks

1 Ultra-high Resolution

Coal mines are often located in environments filled with flying sand and rolling stones year-round. The mine pit slopes and waste dump slopes formed by open-pit mining are prone to landslides and collapses due to the influence of geological structures, slope rock bodies, and engineering activities. Innovusion's high-performance image-grade LiDAR has extremely high resolution detection capabilities. It can accurately detect obstacles such as curbs, rut lines, and falling rocks, helping the fleet to discover potential dangers earlier and more stably under complex conditions. This provides more ample calculation and execution time for the autonomous driving system, ensuring the safe operation of unmanned mining trucks.



2 Ultra-long Detection Range

Mining trucks requires the perception system to achieve longer-distance detection and discover obstacles such as rocks and falling rocks earlier. This provides timely and accurate decision-making support for planning safe routes for the trucks, avoiding larger economic losses. Innovusion's high-performance image-grade LiDAR has ultra-long detection range, substantially enhancing the perception range of the unmanned fleet.



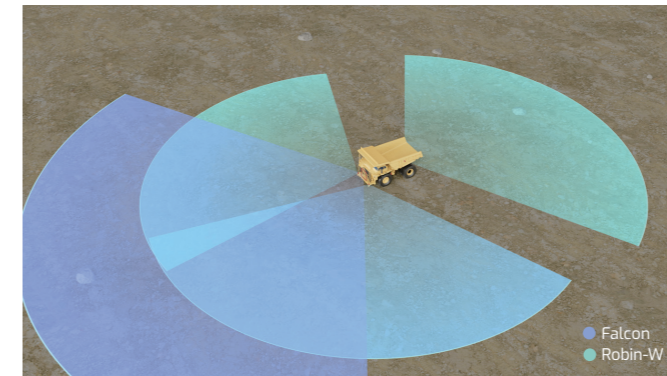
3 Strong Environmental Adaptability

The mining work environment is dusty, foggy, and often experiences rainy, snowy weather, and extremely low temperatures, with rugged roads filled with sand and gravel. Seyond's high-performance image-grade LiDAR can withstand temperatures as low as -40 degrees and can also withstand the long-term severe vibrations in the mining area. It reduces the manual requirements for key production links such as stripping, loading, unloading, and transportation in open-pit mines, achieving efficient collaboration between production links.



Deployment



High-performance Front-view and Wide-FOV LiDAR Solution



Use Case

With automotive-grade high reliability and full industrialization mass production capabilities, Seyond's high-performance image-grade LiDAR maintains a stable and accurate detection state in all weather conditions during the normal "safety officer off-vehicle" continuous operation period in mining areas. It endures the test of extremely cold/hot climates, local dust storms, direct sunlight, and intense vibrations, safeguarding the 7x24H continuous operation of autonomous mining trucks.

Products

 <p>Falcon K</p>	2m~500m(250m@10%) Detection Range	120°×25° Field of View(H×V)	0.05°×0.05° Best Angular Resolution(H×V)
	150 Lines@10FPS Vertical Scan Lines	5~30FPS Frame Rate	31.2W Power Consumption
 <p>Robin W</p>	0.1m~250m(70m@10%) Detection Range	120°×70° Field of View(H×V)	0.1°×0.36° Resolution(H×V)
	192 Lines Vertical Scan Lines	10~20FPS Frame Rate	<9W Power Consumption