TERSUS
MetaVerse Painter

Mobile Mapping System

Tersus MetaVerse Painter

Tersus MetaVerse Painter (MVP for short) is a mobile mapping system that can rapidly capture rich geospatial data while mounted on mobile platforms. As a cost-effective and high-precision mobile mapping application, it utilizes the high-performance GNSS-aided inertial navigation system (INS) and Tersus's patented GNSS receiver and supports RTK/PPK processing. MVP can be used with commercially available LiDARs in the market, such as Hesai, LIVOX, Velodyne, Quanergy, Ouster and RIEGL.

MVP is a complete mobile mapping solution provided by Tersus, including LiDAR, industrial-grade camera, mounting brackets, vibration isolator and other optional equipment, as well as LiDAR Calibration, Bore-sighting, data-logging software and Tersus Engine-supported automatic Post-Processing (PPK) and Point Cloud Processing software.

With vast high-precision 3D spatial data, high-density point cloud data and high-resolution image data, MVP can be widely used for terrain mapping, mine and water conservancy surveying and maintenance, agricultural and forestry surveying, power line inspection, and disaster emergency response, as well as smart city, BIM modelling, urban streetscape, transportation infrastructure surveying, etc.

Features

- Advanced GNSS RTK system and built-in IMU supported
- Multi-source data automatic alignment & fusion
- 5mm (PPK), 10mm (RTK) position accuracy
- 3-5cm point cloud accuracy
- Lightweight (1.17kg without camera)

- Low power consumption
- Multiple payloads, Drone, Vehicle supported
- RGB camera / Thermal camera / DJI Skyport and more optional accessories (direct connection interface reserved)
- Powerful one-click processing software

Supported Drones

Compatible with popular drone models

DJI M300/350   DJI M210   DJI M600

## Light in weight, contributes to longer running hours

MVP is designed compactly, weight only 1.17kg (without camera). The smaller size and lighter weight enable a lower consumption of the drones, leading to a longer working time.

Ready to use, free of additional operations

MVP provides an out-of-box experience and can be used immediately once mounted to the payload. All the calibration and bore-sighting procedures have been completed before shipping.

Integrated design, applicable to multi-platforms

MVP comes with a DJI Skyport interface and perfectly matches various drones. Allows applications for vehicles and other payloads.
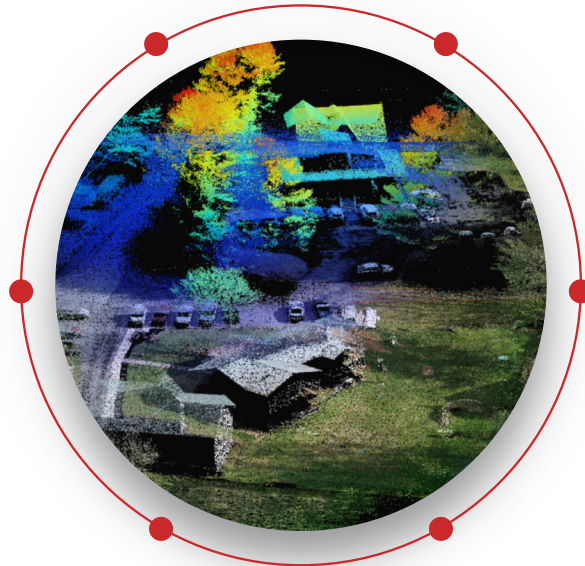
Wide field of view, broad coverage of working area

AGL up to 100m, with 360°horizontal and 31°vertical FOV, MVP is suitable for scanning large scenes.
(Based on Hesai Pandar XT-32)

Precise point cloud, benefited from multi-source data analysis

Data collected from multiple sensors (GNSS+INS+LiDAR+CAMERA) can be consolidated as one .data file. Tersus's patented PPK/RTK algorithm ensures a high-accurate coordinate data output.
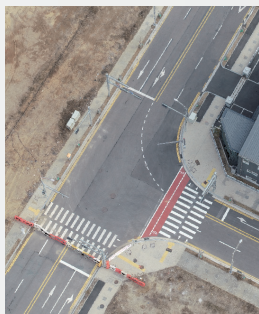
Streamlined workflow, auto-generation of high-density point clouds

Import the data file into the post-processing software, and a high-dense point cloud with an accuracy of 3-5cm can be generated immediately with a simple click.
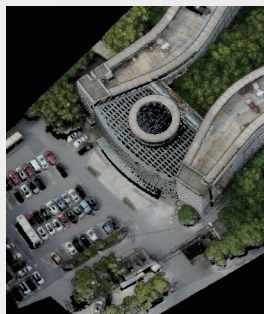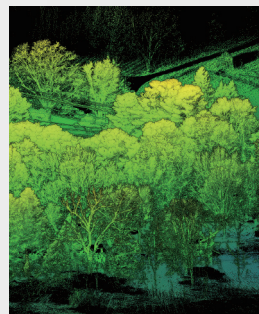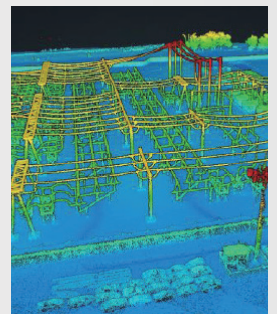
Application Scenario
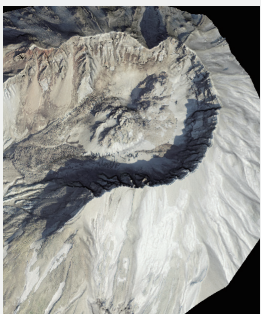
Terrain Surveying

Road Construction

Building Management

Forestry Analysis

Power Line Inspection

Technical Specifications

MetaVerse Painter - XT32

System Platform	
Weight	1.17kg (without camera)
	1.70kg (with camera)
Power Supply / Voltage	DC 9 ~ 36 V
Power Consumption	17W (without camera)
	24W (with SONY camera)
Operating Temperature	-10°C ~ +40°C
Storage Temperature	-40°C ~ +85°C
Data Storage	256GB USB, up to 1TB
Scanner Performance (Based on Hesai Pandar XT-32)	
Laser Class	Class 1 Eye Safe
Wavelength	905nm
Operating Principle	TOF
Measurement Range	0.05 to 120m

Field of View (Horizontal)	360°
Horizontal Resolution	0.09° (5Hz)
	0.18° (10Hz)
	0.36° (20Hz)
Field of View (Vertical)	31° (-16° ~ +15°)
Vertical Resolution	1°
Frame Rate	5Hz, 10Hz, 20Hz
Returns supported	Dual Returns
	Single Return (Last, Strongest, First)
Max. Effective Measurement Rate	
	640,000 pts/ sec (single return)
	1,280,000 pts/ sec (dual returns)
LiDAR Accuracy/ Precision	10mm / 5mm
Point Cloud Accuarcy	3-5cm

GNSS / IMU Performance	
Positioning Accuracy (RMS)	0.5cm+1ppm (PPK)
	1cm+1ppm (RTK)
GNSS data rate	Up to 100Hz
IMU data rate	Up to 2000Hz
Roll & Pitch Accuracy	＜0.01° Pitch & Roll
Heading Accuracy	＜0.05° Heading
Optional Accessories	
Camera	RGB Camera(24MP)
DJI Skyport Adapter	
Vibration Isolator	
Antenna Mounts	Aerial Mount for Drone
	Vehicle Mount

MetaVerse Painter - M2X

System Platform	
Weight	0.87kg (without camera)
	1.23kg (with camera)
Power Supply / Voltage	DC 9 ~ 36 V
Power Consumption	17W (without camera)
	24W (with SONY camera)
Operating Temperature	-10°C ~ +40°C
Storage Temperature	-40°C ~ +85°C
Data Storage	256GB USB, up to 1TB
Scanner Performance (Based on Hesai Pandar XT-32M2X)	
Laser Class	Class 1 Eye Safe
Wavelength	905nm
Operating Principle	TOF
Measurement Range	0. 5 to 300 m

Field of View (Horizontal)	360°
Horizontal Resolution	0.09° (5Hz)
	0.18° (10Hz)
	0.36° (20Hz)
Field of View (Vertical)	40.3°(-20.8°~ +19.5°)
Vertical Resolution	1.3°
Frame Rate	5Hz, 10Hz, 20Hz
Returns supported	
	Single Return (Last, Strongest, First)
	Dual Return
	Triple Return
Max. Effective Measurement Rate	
	640,000 pts/ sec (single return)
	1,280,000 pts/ sec (dual return)
	1,920,000 pts/sec (triple return)

LiDAR Accuracy/ Precision	10mm / 5mm
Point Cloud Accuarcy	3-5cm
GNSS / IMU Performance	
Positioning Accuracy (RMS)	0.5cm+1ppm (PPK)
	1cm+1ppm (RTK)
GNSS data rate	Up to 100Hz
IMU data rate	Up to 2000Hz
Roll & Pitch Accuracy	＜0.01° Pitch & Roll
Heading Accuracy	＜0.05° Heading
Optional Accessories	
Camera	RGB Camera (24MP)
DJI Skyport Adapter	
Vibration Isolator	
Antenna Mounts	Aerial Mount for Drone
	Vehicle Mount

Tersus GNSS Inc.

Right to the point.

Tersus GNSS is a leading Global Navigation Satellite System (GNSS) solution provider. Our offerings and services aim to make centimeter-precision positioning affordable for large-scale deployment.
Founded in 2014, we have been pioneers in design and development GNSS RTK products to better cater to the industry' s needs. Our portfolios cover GNSS RTK & PPK OEM boards, David GNSS Receiver, Oscar GNSS Receiver and inertial navigation systems.
Designed for ease of use, our solutions support multi-GNSS and provide flexible interfaces for a variety of applications, such as UAVs, surveying, mapping, precision agriculture, lane-level navigation, construction engineering, and deformation monitoring.

Descriptions, specifications and related materials are subject to change.

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