

VELLUSX · VERSATILE PRECISION

VellusX

ULTRA LOW DRIFT | COLOURISED | MOBILE | ACCURATE

The world's most accurate SLAM mapping system.

A compact, lightweight sensor pack that fuses WildcatSLAM odometry with RTK-GPS. Walk it, drive it, or place it on a robot to capture survey-grade colourised maps over long distances and across GPS-denied environments.

VellusX is the only available SLAM solution to produce globally accurate maps using **PPK GPS**: download base-station RINEX files to retrospectively realign SLAM maps on-device in a seamless workflow — no survey control required to guarantee mobile SLAM accuracy. Travel at driving speeds to capture city-scapes, urban streetscapes, and large outdoor environments in dense, full-colour detail.



4k

360° VIDEO COLOURISATION

RTK/PPK

GPS FUSION

1.8M

POINTS PER SECOND

300m

LIDAR RANGE

CAPABILITIES

Large-scale, globally accurate scans in minutes

RTK and PPK GPS fusion

Combines GPS receivers with WildcatSLAM odometry to keep global accuracy intact when satellites disappear.

360° 4K colourisation

Hardware-synchronised cameras paint every point with true colour — no post-alignment guesswork.

GPS-denied transitions

Walk from rooftop to basement to street without restarting. The map stays coherent the whole way.

Cloud streaming

Captures flow straight to OrbisFuse for processing, sharing, and measurement.

Walk or drive

Mount it on a vehicle, a backpack, or an autonomous platform. The pipeline adapts to the speed.

Lightweight & rugged

Built for long days outdoors. Waterproofed, balanced, and field-serviceable.

Powered by Wildcat SLAM

Built with CSIRO's prize-winning WildcatSLAM odometry engine and vigorously tested across a wide variety of survey applications. An automatic processing pipeline adjusts sensor weights to maintain global accuracy, seamlessly transitioning between GPS-available and GPS-denied spaces to create sharp, accurate 3D maps.

SENSOR SPECIFICATIONS

LIDAR	Rotating Hesai XT32-M2X
RANGE	300 m
LOCAL RESOLUTION	10 mm
POINTS / SECOND	1,800,000 (triple return mode)
FIELD OF VIEW	360°
CAMERAS	4K colour cameras, 360° coverage
GPS	800-channel RTK and PPK receiver
OPERATION	Real-time
FILE TYPE	LAS or PLY
IP RATING	IP64
WEIGHT	3.7 kg
POWER	12–36 V DC

TERMINAL SPECIFICATIONS

SIZE	11.6" Full HD 1080p
INTERFACE	Touch screen
CPU	8-core ARM 64-bit
GRAPHICS	512-core Volta GPU
RAM	32 GB
SSD	2 TB
WIFI	802.11 a/b/g/n
POWER	12–42 V DC



▸ VEHICLE-MOUNTED CAPTURE AT DRIVING SPEEDS



▸ LARGE-SCALE COLOURISED SCAN — CAPTURED IN 40 MINUTES

01

Capture

Power on, start moving. VellusX records LiDAR, IMU, 4K video, and RTK-GPS in lock-step.

02

Process

On-device WildcatSLAM produces a colourised point cloud. No manual targeting or registration.

03

Deliver

Stream the .las or .ply to OrbisFuse, share with stakeholders, measure in the browser.

APPLICATIONS

● Road scanning

● Plant digitization

● Building documentation

● Underground mapping

● Shaft inspection

● AEC

SEAM ENQUIRIES

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ECOSYSTEM

Pair with **OrbisFuse** for cloud processing & sharing,
or **TerrusM** for harsh underground environments.

TECHNOLOGY PARTNER

