

XVS 3D Scanner

New generation
photogrammetry



XVS

New generation photogrammetry

The system uses a technology based on the integration of high-resolution images, inertial systems and a complex algorithm: capturing a scenario with XVS, 3D model will be generated through photogrammetric techniques. Walking and capturing the scene in motion, a real-time interface will guide you in the data collection, suggesting the speed of your movement and if necessary returning to an area to have enough image overlapping.

Thanks to Visual SLAM system (Simultaneous localization and mapping), your trajectory is displayed in real-time on a tablet. The Inertial Measurement Unit (IMU) sensor helps the algorithm to generate a continuous image block. The best result will be obtained automatically.

Back in the office, the procedure to generate the 3D model is fully automatic, through a desktop PC. Data coming from XVS can be integrated with video from UAV drone or any camera for a complete reconstruction of the area.



ACCURATE

Smart algorithm makes it possible to choose the best images and increase the accuracy of the derived model. If the capture is very close to the element (around 1m) and closing where you started-loop closure-the accuracy is 2-3mm.



HD TEXTURES

Based on advanced high-resolution images, it allows reconstructing the texture of the scanned material with great clarity and realism.



SCALED AND LEVELLED RESULTS

Through the automatic detection of targets and the use of inertial systems, scaled and levelled results can be obtained.



EASY TO USE

Because of its practicality and ease of use, it can be used by multiple people within a company or institution, without the need for prior knowledge of 3D scanners.

The field application will guide in through the data collection.



VERSATILE

A variety of urban scenarios can be documented using XVS scanner, as infrastructures, accident reconstructions, gas/water connection works, building faces and others.

The geometric accuracy and colour realism in the results, make it a companion also for archaeological, architectural and geological work.





VISUAL SLAM TECHNOLOGY

Visual simultaneous localization and mapping technology determines the position and orientation of a camera in relation to its surroundings, while mapping the environment around it. Through subsequent images, points are tracked to triangulate their 3D position; this information is simultaneously used to approximate the camera pose. The advantage, compared to standard photogrammetry, is that at the end of the survey you leave the site with the certainty that the frames have the correct overlap for building the point cloud.

BUNDLED SOFTWARE



XVSapp

The provided software has a simple interface and helps the user by indicating how to behave in critical steps and alarming in case the object is not captured correctly. Camera parameters are fully customizable, adapting them to the surrounding environment.

Suggested tablet is Microsoft® Surface PRO, not included in the bundle.



XVScloud

Data collected in the field can be sent to a server for advanced data processing. This service will return point cloud or mesh formats, which you can use in Cube-3d or any third-party software.



3D SOFTWARE



Cube-3d is a Photogrammetric software for mapping and aerial image computing.

It transforms image or video data into highly accurate digital maps and 3D models with extreme precision.

Cube-3d supports importing data from scanners or traditional surveys, all in one software, and enjoy the many functions available. Most appreciated are the automatic classification, orthophoto, cross-section and profile lines, volume calculations, CAD and more.

XVS TECHNICAL FEATURES

PERFORMANCE

Min Range	0,4 m
Max Range	40 m
Trajectory Accuracy (in postprocessing)	4 mm ¹
Relative Accuracy @1m	3 mm ¹
Relative Accuracy @20m	2 cm ¹

IMAGING

vSLAM camera - Resolution	640 x 480 px
vSLAM camera - FOV	65°
vSLAM camera - Frame rate	25 fps
RGB camera - Resolution	2448 x 2048 px
RGB camera - FOV	89°
RGB camera - Frame rate	10 fps
RGB camera - Shutter sensor	Global

SYSTEM

IMU	3x3x3 - Gyroscope, magnetometer and accelerometer
Communication & power	USB-C 3.0

PHYSICAL SPECIFICATION

Weight	740 g
Total Case Weight	5 kg
Size (Length x Diameter)	151 mm x 120 mm
Operating temperature	0°C to +40°C (32°F to 104°F)

1. Environment dependent. Indoor environment must be well illuminated and have non homogeneous walls. Reflective surfaces should be avoided.

ACCESSORY

TELESCOPIC POLE

The telescopic pole allows the XVS to be mounted for scanning difficult-to-access areas or building facades.



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