UniStrong

XVS

STONEX

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Product specialist

Main Features

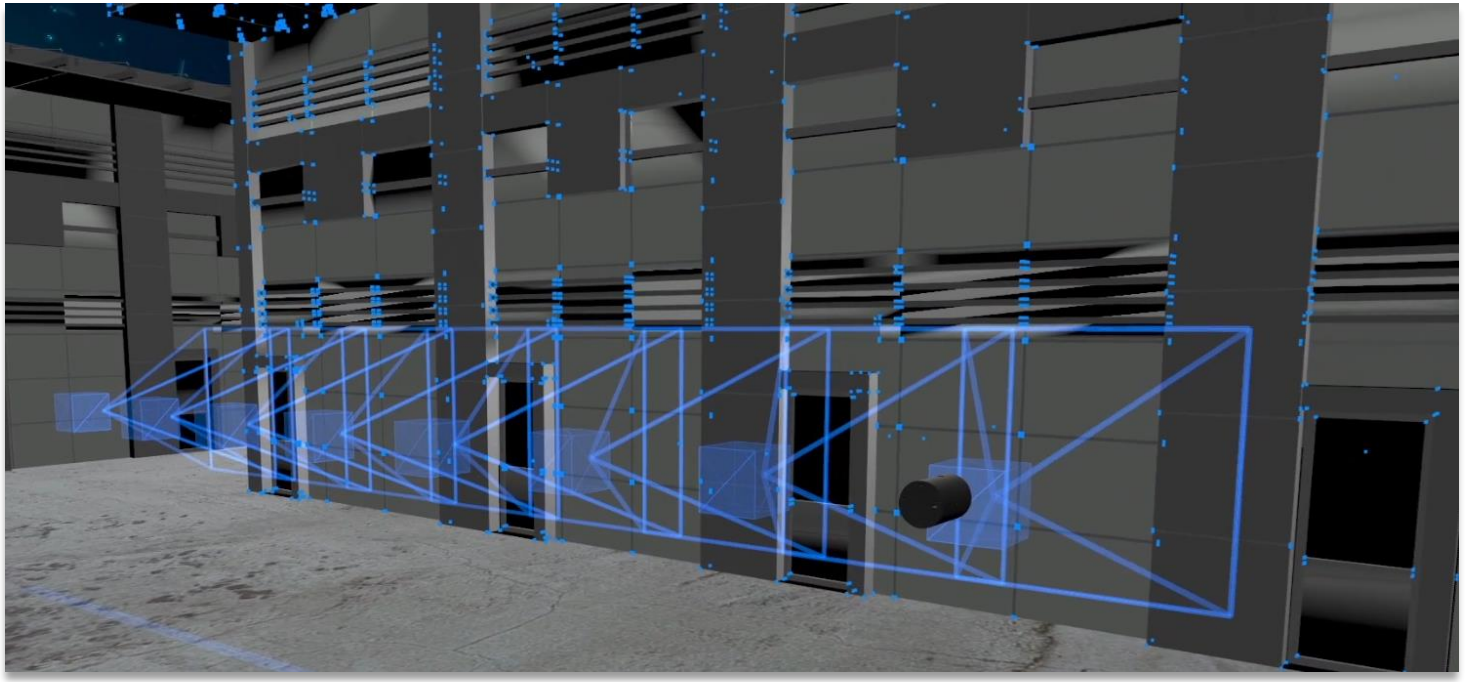
XVS – Visual SLAM

The system integrates high-resolution images, inertial systems and a complex algorithm.

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 you lose track, to turn back.

3D model is generated automatically through **photogrammetric techniques**.

XVS VISUAL SLAM



XVS – Main features

The system guides you in the data collection. You can't go wrong!

No need of photogrammetry / scanning knowledge.

Levelling system generates horizontal 3D models

Scaled data generated thanks to stereotargets.

Alternatevely possibility to use GCP

Best images are chosen, increasing the accuracy of the derived model

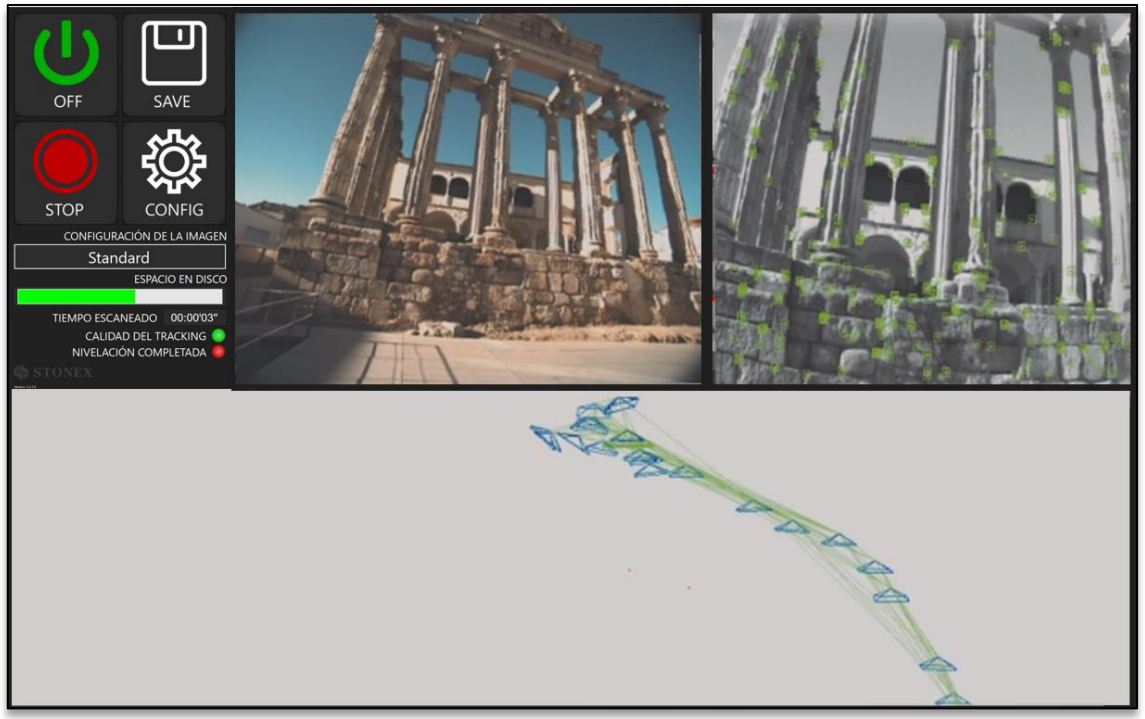
XVS – Bundled software

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 7+*, not included in the bundle.



* Minimum requirements:
Core i5 | 128 GB | RAM 8GB
Type-C USB port

XVS – Software

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.

Dropbox

pCloud

How does it work?

Customer loads XVS data on his Dropbox or pCloud folder, enabling access to XVS@stonex.it email.

In XVS*cloud* he simply defines that path and which output formats needs.

An email will notify when the calculated model is available in the drive folder.

Yearly service

1 year after the XVS purchase, maintenance must be extended

XVS – Software

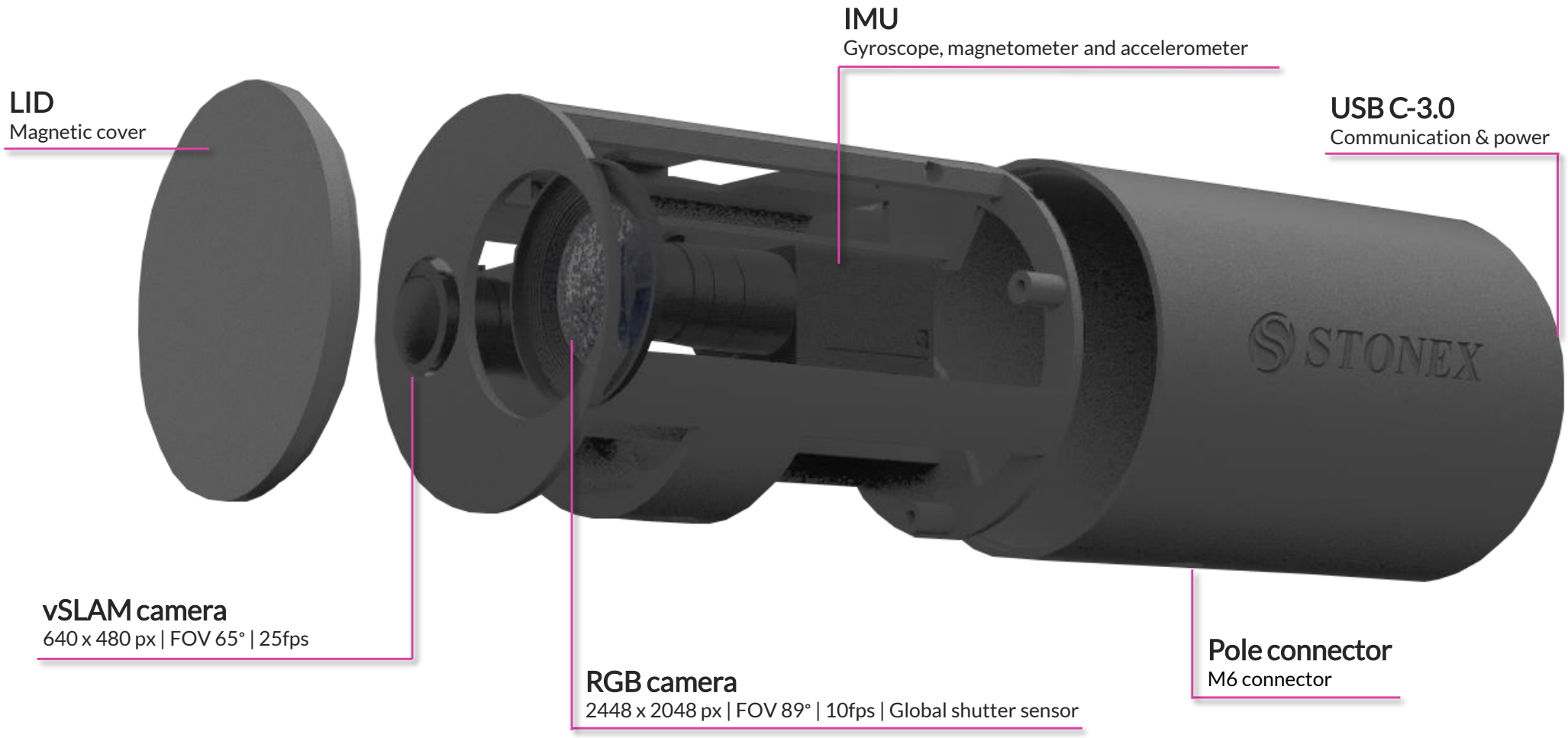
cube·3d Q1 2023

Processing for data coming from XVS will be performed automatically and the survey scaled through GCP or target autodetection.

Build 3D models with extreme precision and enjoy the many functions available.

Data coming from XVS can be integrated with video/photo from UAV drone or any camera for a complete reconstruction of the area.

XVS – Component introduction



XVS – Sensor parameters

XVS	
Range	0.4 - 40 m
Relative Accuracy @1m	3 mm *
Relative Accuracy @20m	2 cm *
Trajectory accuracy (in post processing)	4 mm *
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

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

XVS – Physical specifications

XVS	
IMU	3x3x3 - Gyroscope, magnetometer and accelerometer
Communication & power	USB-C 3.0
Dimension (Length x Diameter)	151 mm x 120mm
Weight	740 g
Total case weight	5 kg
Operating temperature	0° C to +40° C (32° F to 104° F)

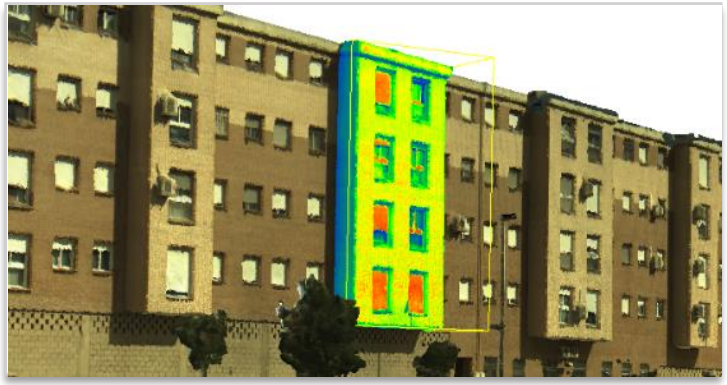
XVS - Applications

ARCHEOLOGY / HERITAGE

FACILITIES

INFRASTRUCTURES

CONSTRUCTION



GEOLOGY

FORENSICS

XVS - Pros & Cons

PROS

- Faithful and accurate reconstruction
- It suggests how to move. Certainty of going home with all the necessary data, with correct overlapping of the images
- Versatile, can work both on small and large areas

CONS

- Homogeneus and reflective surfaces
- Dark environment. Based on photos, so good illuminations is requested
- Avoid scanning trough vegetation

Marketing

XVS - Pictures

XVS - Brochure

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°
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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)

ACCESSORY

TELESCOPIC POLE

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

STONEX AUTHORIZED DEALER

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STONEX

XVS 3D Scanner

New generation photogrammetry

VISUAL SLAM

XVS

New generation photogrammetry

The system uses a technology based on the integration of high-resolution images, inertial systems and a complex algorithm: operating 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.

STONEX

3D SCANNING SOLUTIONS

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, adopting 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

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 - Video


XVS
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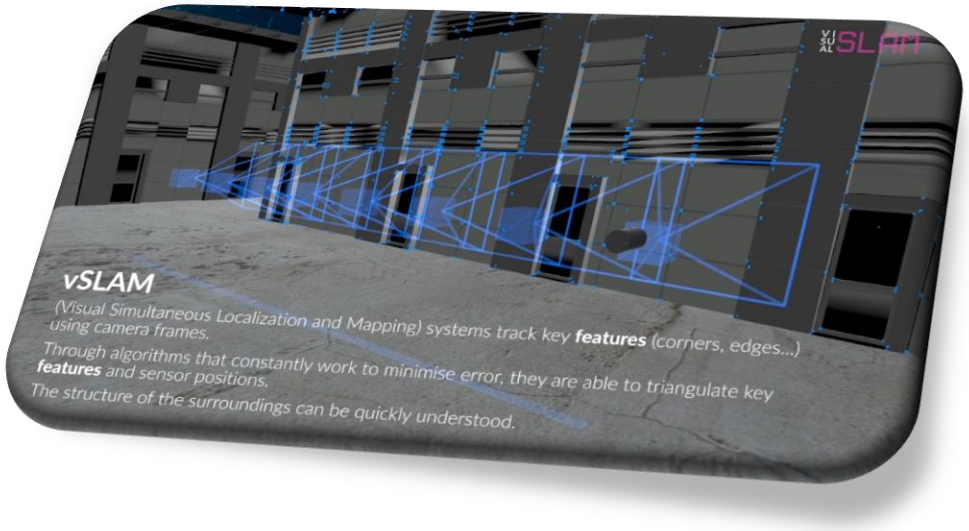
SLAM


FIELD DATA
ACQUISITION


vSLAM
(Visual Simultaneous Localization and Mapping) systems track key features (corners, edges...) using camera frames.
Through algorithms that constantly work to minimise error, they are able to triangulate key features and sensor positions.
The structure of the surroundings can be quickly understood.

Configuration

XVS – Standard Configuration

PRODUCT CODE	DESCRIPTION	Q.TY
B60-200418	**XVS vSLAM scanner**	1
30-350681	Support handle	1
30-350682	XVS Cable USB type-C	1
n\a	XVS*app* Software	-
40-450590	XVS*cloud* Software 1 year service	1
n\a	Rugged case	1
n\a	Cleaning towel	1

XVS – Optional Accessories

PRODUCT CODE	DESCRIPTION	Q.TY
30-350683	**XVS-Telescopic pole**	1
30-350678	Telecopic pole	1
30-350679	XVS Cable USB type-C for telescopic pole	1

STONEX

VISIT OUR WEBSITE
www.stonex.it

REQUIRE INFO
sales@stonex.it

WE ARE HERE
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