

## VMX-250: Now Completed by Calibrated Camera

Latest R&D efforts resulted in the optional combination of a calibrated camera system (VMX-250-CS6) with the *RIEGL* Mobile Laser Scanning System. Providing 3D point clouds and high-resolution images in a seamless workflow in acquisition and processing, the system now shortens schedules, reduces costs and opens new areas of application.

### VMX-250-CS6 camera system



Up to 6 industrial cameras with global electronic shutter are supported. Thanks to smooth integration into the well proven architecture, the characteristic features - transportability and easy setup of the complete system - are still a matter of course.

A flexible and modular design allows mounting and tilting of the cameras according to the needs in different applications, e.g. gathering details of a road surface via the 5 megapixel cameras, capturing 360° color information for colorizing point clouds or recording precisely-time stamped movies at FullHD resolution with the 2 megapixel cameras. Furthermore, external camera devices are supported, such as SLR cameras, IR cameras, and other products. Cameras can be added or exchanged easily.

Gerald Zach, *RIEGL* Product Manager Mobile Laser Scanning, explains how the VMX-250-CS6 is bundled with the corresponding *RIEGL* software, "Camera parameters, like time or distance based trigger, exposure mode and time, are set in *RIEGL*'s acquisition software RIACQUIRE for each camera individually. Monitoring images give an impression of the scene on site. Calculating the mounting calibration is quickly accomplished in the included processing software RIPROCESS by clicking points in the images and identifying the corresponding ones in the 3D point cloud."

### Ready for Action

Last November, the new camera system was put on first duty in an outstanding pilot project: IUAV, Università di Venezia, Lab System, CIRCE Photogrammetry Lab ( <http://www.iuav.it/homepage/> ) and the team Francesco Guerra, Paolo Vernier and Andra Adami organized the first overall collection of the historically unique architectonic heritage along Canal Grande, Venice. In cooperation with *RIEGL*'s Italian distributor, Microgeo Srl. ( [www.microgeo.it](http://www.microgeo.it) ), and EKG Baukultur ( [www.ekg-baukultur.com](http://www.ekg-baukultur.com) ) the project was carried out November 10th, 2010. The VMX-250 was to scan the facades of the palaces on both sides of the canal, and to take pictures at the same time. In a following evaluation of photogrammetric and laser scan data of single objects, colored point clouds, 2D CAD maps as well as a 3D evaluation based upon monoplotted procedure were to be elaborated.



For further information please contact:

Nikolaus Studnicka, Business Development Manager, International Sales  
phone: +43 664 83 68 681

*RIEGL* Laser Measurement Systems GmbH  
3580 Horn, Riedenburgstraße 48  
phone: +42 2982 4211, fax: +43 29282 4210 e-mail: [office@riegl.com](mailto:office@riegl.com)  
[www.riegl.com](http://www.riegl.com)



Weeks before, preparation work for this unique scanning demonstration had to be fulfilled. The RIEGL VMX-team had gathered lots of location information in order to perfectly prepare the scanning days: Canale Grande with approx. 4 km length, and 40 - 70 m wide water ways, heavy traffic. The facades in question with a maximum height of 20m are visible without hindering objects in front. Free view up in the sky allows a good connection to a maximum of satellites, best conditions for calculating the trajectory of the measuring boat.

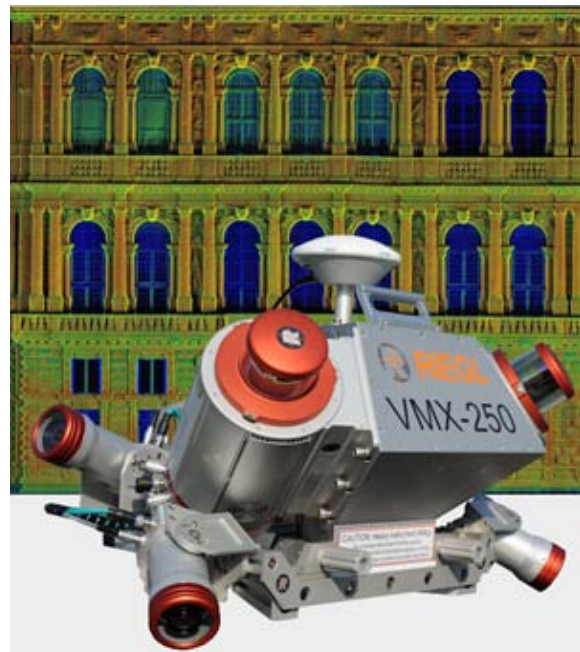
The VMX-250 was equipped with two cameras (5 Megapixel) and these were accordingly aligned. In Venice, our partner Microgeo had rented a boat complete with crew and even a crane. The scaffold construction, 3 meter tall, was mounted on deck in order to allow the scanning system installed on top an optimal perspective on the facades. Ready, go.

Heavy rains, high water, fog - yet, against all obvious obstacles and all good Venetian advice, data acquisition started on schedule. Immediately the measuring boat caught lots of attention, Italian newswoman Silvia Zanardi and her team stepped by and the very next day information about the project was published in the local newspaper "La Nuova Venezia".

The huge amount of data captured throughout the acquisition session was stored on the removable storage hard disks integrated in the VMX-250 Control Unit. Back home in Austria, the real - well, at least the really hard - part of job started: data analysis.

### More Photogrammetric Results

Have a look at the picture beside to get a first impression of the amazing point clouds. For more details, we kindly ask you for some patience: The results are going to be initially presented at **SPAR 2011 conference (March 21st – 24th, 2011, Houston, Texas)** in a presentation entitled, "**RIEGL VMX-250 with modular camera system – combined scan and image data acquisition in mobile laser scanning**". Afterwards the presentation will, of course, also be available as mobile scanning project in the project section on [www.riegl.com](http://www.riegl.com).



### Interested in latest RIEGL News?

Get registered for the RIEGL Newsletter via <http://www.riegl.com/media-events/newsletter/> and we will keep you up to date!