3D Modelling from RGB Images

FOVEX Measure 3D is a combination of a super-fast high-resolution 360Â° panorama camera and innovative software that allows accurate measurement and CAD modelling directly within the images. FOVEX Measure 3D allows significant savings in field and office work, thereby increasing productivity. The technique is to be presented at Intergeo, taking place from 9 to 11 October 2012 in Hanover, Germany.

After measuring an object in two images, its shape can be modelled by connecting points directly in the software. Therefore, the CAD model can be completed within the FOVEX software directly and the model as a whole can be exported as a dxf file for any third party CAD software.

Up until today, 3D professionals working in the field of BIM (building information management) needed to create the CAD model through a time-consuming process using different capture devices and software tools. First, a point cloud is created with a laser scanner. This data is then reduced to a CAD model. To add colour and texture to this data, images are captured with a digital camera and stitched to a panorama which is linked to the CAD model. With the new FOVEX solution, the process to obtain a finished CAD model is faster and more consistent. FOVEX uses just one capture device - the FOVEX panorama camera - and one software. The high-resolution panoramas provide at the same time data for CAD and the visual information within the scene. Combined with advanced methods of camera calibration and new software algorithms the system achieves an accuracy of on average 1mm in 10 metres.

This photogrammetric solution has a clear benefit for all those applications which require a fast and simplified representation of a scene. This is very important for BIM where a complete point cloud representation of space is more of an obstacle than an advantage. But also for forensic applications, for example crime scene documentation, FOVEX delivers fast results and complete documentation of a site.

https://www.gim-international.com/content/news/3d-modelling-from-rgb-images