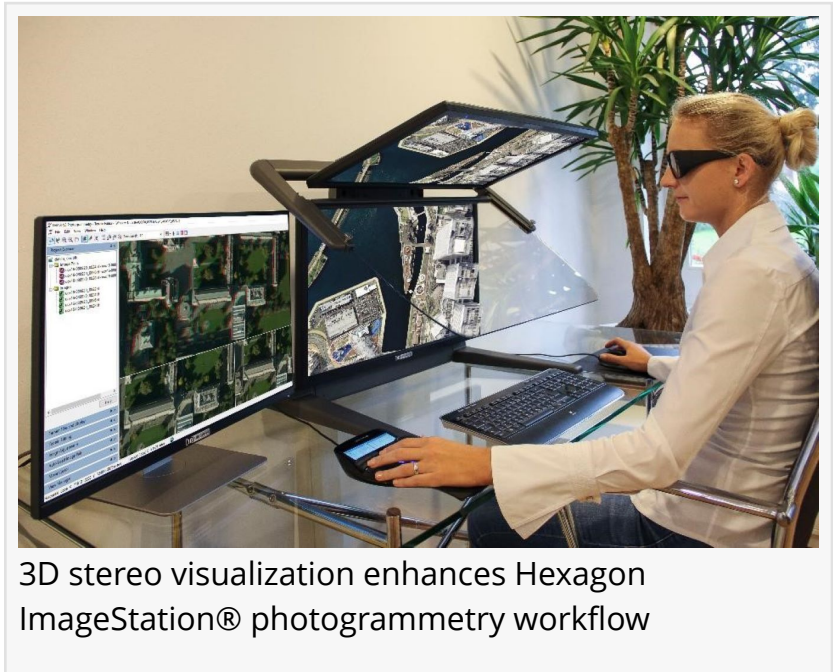


3D Stereo visualization with 3D PluraView improves Hexagon ImageStation® photogrammetry workflow

Leading photogrammetry software certified for the 3D PluraView stereoscopic monitor

MIESBACH, BAYERN, DEUTSCHLAND, August 4, 2022 /EINPresswire.com/ -- With the flexible and mature photogrammetry environment ImageStation® from the Swedish metrology and geospatial software company HEXAGON, particularly large amounts of aerial images, UAS and satellite data can be efficiently processed, managed and utilized for geodata acquisition. A core task, which is solved most efficiently with the ImageStation® photogrammetry environment, is the precise, interactive capture of 3D objects, the entire infrastructure, such as buildings, roads and bridges, but also natural terrain features.



3D stereo visualization enhances Hexagon ImageStation® photogrammetry workflow

In Germany, the topographical surveying and updating / tracking of the entire infrastructure is the responsibility of the surveying offices in each of the 16 German states or 'Laender'. The ImageStation® was specially developed for professional photogrammetry and cartography users and provides a comprehensive set of data acquisition tools. In order to be able to move intuitively and measure precisely in this stereoscopic, three-dimensional reality, an important interface element was integrated into this high-tech software right from the beginning: the [3D stereo mouse cursor](#). The stereoscopic mouse cursor implementation is a prerequisite for working with precise 3D data controllers and enables perfect interaction with the plug & play compatible and powerful [3D PluraView monitor systems](#) from Schneider Digital. The passive [3D monitors](#) from Schneider Digital with beam-splitter technology impress by pixel-precise visualization of up to 4K (UHD) per stereo channel, fast image frame rate, high color depth, high brightness and contrast values.

With its certification, Schneider Digital confirms that the powerful ImageStation® software suite is

fully compatible with this professional hardware and thus meets all the requirements of international workplace standards: Two compatible cutting-edge technologies that merge into a complete solution and an ideal combination for professional photogrammetry users.

The collection and updating of topographical geoinformation datasets is a complex task from a scientific, technical and organizational point of view. The comprehensive photogrammetry solutions from the Swedish metrology and geospatial software company HEXAGON support users worldwide in the acquisition, management and evaluation of multi-temporal, static and dynamic geospatial data. In order to convert particularly large amounts of raw data into easy-to-use and actionable information, HEXAGON has further developed the software application ImageStation®. More than 40 years of photogrammetric 'know-how' have gone into this modern application, starting with analytical stereoplotters and culminating in a complete software suite for digital photogrammetry, including a perfect stereoscopic 3D cursor implementation.

Smooth GIS Workflow

With its photogrammetry solutions, HEXAGON ensures a seamless workflow for the processing of high-resolution image data and geocoded CAD and GIS content from project start to finish. In classic aerial photogrammetry, project blocks are flown in laterally overlapping strips, whereby image overlaps of up to 90% in flight direction are realized and frame rates of 0.5 to 0.7 seconds represent the current state of the art. With the simultaneous recording of oblique aerial images, more than 3-GB of image data can be created for each exposure center. Project blocks with over 50,000 exposure stations, 5cm ground resolution and over 150-TB of initial image volume for urban areas, can now be commonly realized and calculated.

Users of the ImageStation® software suite benefit from the many interactive stereo functions of this powerful photogrammetry application: smooth roaming, dynamic zoom and real-time image enhancement are integrated directly into the GIS or CAD environment. The ability to perform stereo and mono compilation directly in a GIS environment enables direct comparison with and seamless continuation of existing GIS databases, resulting in a significant increase in efficiency. This not only saves valuable time and resources, but also reduces the cost of creating topologically correct 3D data.

3D-Cursor - integrated into software applications

HEXAGON has perfectly implemented a professional, stereoscopic 3D cursor in the ImageStation®. This functionality enables users to intuitively and smoothly navigate for the precise capture 3D objects with their real-world XYZ coordinates. In addition to the management components, the ImageStation® Photogrammetric Manager (ISPM) and Image Formatter (ISIF), the applications with integrated 3D cursor function include the ImageStation® Automatic Triangulation (ISAT), ImageStation® Satellite Triangulation (ISST), ImageStation Feature Collection (ISFC), ImageStation® Stereo Display (ISSD), ImageStation® Stereo for GeoMedia (ISSG), ImageStation® Stereo Viewer GeoMedia (ISSV), ImageStation® DTM Collection (ISDC),

ImageStation® DTM for GeoMedia (ISDG) and ImageStation® Automatic Elevations (ISAE). The calculation programs ImageStation® Automatic Elevations DSM (ISAD) and ImageStation OrthoPro (ISOP) run in batch mode. Interactive again is the computer-assisted editing and quality control with ImageStation® DTMQue (ISDQ) and ImageStation® PixelQue (IS PQ).

Process geospatial data quickly and precisely

The photogrammetric ImageStation® software suite is used worldwide and especially at state surveying offices and by users from industries such as aviation, shipping and national defense. With the ImageStation®, geospatial data can be processed quickly, efficiently and cost-effectively. For example, the ImageStation Stereo Display (ISSD) application supports viewing and editing of stereo images with photogrammetrically accurate 3D-cursor tracking. ISSD accepts aerial or satellite data, images from drone (UAS) projects, as well as from the Leica ADS 3-line cameras. The ImageStation® Suite enables the automatic and dynamic adjustment of image brightness and contrast in the MicroStation and GeoMedia environment. The exclusive ImageStation® ImagePipe technology is responsible for smooth stereo roaming, providing the perfect image representation that is essential for efficient stereo compilation.

Stereoscopic geospatial data acquisition and processing

HEXAGON ImageStation® Stereo for GeoMedia (ISSG) is based on the GeoMedia geospatial information system (GIS) and provides the user with a comprehensive selection of intelligent compilation tools. This powerful software environment allows access to practically any geodatabase and version of geospatial datasets. With this software application, airborne, satellite and UAS data are displayed in an intelligent GIS environment with multiple, freely configurable mono and/or stereo windows. Same as the ImageStation® Stereo Display (ISSD) with MicroStation, ISSG supports viewing and editing of stereo images with photogrammetrically accurate 3D-cursor tracking. ISSG offers many practical tools for the interactive acquisition and updating of geospatial datasets. It enables the interactive updating of 3D-object geometry and attributes, as well as automatic attribution and geometry validation. Geospatial data generated in this way can be stored in an open database format so that third parties have seamless access to them through their respective GIS systems.

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