Exhibitors' Showcase Sessions (ES)

EXHIBITORS' SHOWCASE - Session I

Session ES-01
August 04, 1992, 12:00-13:30
Session Reporter: Sky Chamard (USA)
*Chairman: **Dr. Klaus Szangolies** (Germany)*

Claudy Cruette (France) - **Le Stereo Restituteur Numerique TRASTER T10**

Key points were: (1) TRASTER T10 is an all digital restitutor that preserves all of the traditions of photogrammetry; and (2) TRASTER T10 has a full team of professionals committed to the digital techniques of tomorrow.

The TRASTER T10 operates under control of two computers. The real time functions are handled by PSOS which operates in 100 MIPS and 7.7 Mflops. The workstation operates in UNIX. The use of the two computer system is planned to allow for easy expansion of new technology.

Matthew Heric (USA), Kevin D. Potter - **Integrations of Structured Query Language with Geographic Information System Processing: GeoServer™**

Key points were: (1) GeoServer™ allows the programmer to work within a resident environment and invoke the individual GIS functions; and (2) GeoServer™ implements advanced query processing capabilities and the specific strengths of GeoSQL database accessing and geographic data processing techniques.

Hiroyuki Hasegawa (Japan), M. Sadasue, J. A. Rogers, A. L. Johnson, J. F. Yates - **GPS — Photogrammetric — CG Plane Table Mapping and CAD Globe**

Key points were: (1) Pasco and Dat/EM International have been cooperating on mapping software since 1990. Improvements are being made by both organizations to fully integrate survey and photogrammetric techniques; (2) MAPCAD has 5 subsystems for different procedures which are: MAPCAD 10 - Total Station Surveying; MAPCAD 20 - Map Digitization; MAPCAD 30 - Stereoplotter Compilation; MAPCAD 40 - Automatic Graphic Output; MAPCAD 50 - Compatible File Output; and (3) long range plans include more modules which will ease the surveying or photogrammetrc tasks. Many new modules should appear soon.

E. Muciaccia (Italy) - **Orthomap: A Softcopy System for Orthoimages Production and Monocompilation**

Key points were: (1) Galileo Siscam has tested their ORTHOMAP software for producing orthoimages. ORTHOMAP is a photogrammetric digital image based system designed to produce ortho-rectified images using completely digital techniques and for performing thematic cartography without a stereoplotter; and (2) Software was tested on a large mainframe and on a 8048C PC. The system can and does work on a PC.

EXHIBITORS' SHOWCASE - Session II

Session ES-02
August 05, 1992, 12:00-13:30
Session Reporter: Sky Chamard (USA)
*Chairman: **Dr. Karsten Jacobsen** (Germany)*

Knut Amdal (Norway) - **Single Camera System for Close Range Industrial Photogrammetry**

Key points were: (1) An on line photogrammetric system which uses one high resolution CCD camera in combination with a calibrated light pen; (2) provides reliable measurements, especially in hard to reach places; and (3) applications are where full 3D measurements are not required.

Claudia Fuchs (Germany), S. Ruwiedel - **Digitization and Rectification of Transparencies with the Analytical Plotter P3**

The author presented the concept of digitization and rectification of transparencies with an extended analytical plotter. Rectification is possible in four modes, in the image coordinate system, in the epipolar plane, in a freely definable tilted plane in object space or, into an orthophoto based on a digital terrain model. The presentation discussed the various steps involved in the processes with enough detail to keep the audience alert.

Gerrit C. Huurneman (Netherlands) - **A Low Cost Scanner for Small Format Transparent Material** (Presented by K. Jacobsen)

Key points were: (1) It is possible to create a high resolution scanner (5000 dpi) using off the shelf components; (2) the heart of the scanner is the computer and the other main component is the CCD video camera which must meet strict standards such as the LHD produced by Philips; and (3) a mechanical and an electric/ electronics system is also required for the low cost scanner.

EXHIBITORS' SHOWCASE - Session III

Session ES-03
August 06, 1992, 12:00-13:30
*Chairman: **Dr. Horst Beyer** (Switzerland)*

L. Hinsken (Switzerland), L. Cogan, R. Kozowski - **A New MS-DOS Integrated Software Package for Triangulation and Data Collection for Close Range Applications**

Key points were: (1) On-line connection of a bundle

adjustment program to an analytical stereoplotter; (2) software on analytical stereoplotter suitable for close-range applications; and (3) integration of graphics for easier handling.

MAAS-CR represents a new software package suitable among other tasks for close range applications. It works under the MS-DOS operating system in connection with the SD-2000 and DSR lines of analytical stereoplotters. Its features include graphical feedback to simplify its use. Numerous modules make it adaptable to a wide range of tasks.

Jürgen Peipe (Germany), G. Suilmann, W. Wester-Ebbinghaus - **Development of a 4 x 5" Reseau Camera for High Precision Industrial Photogrammetry**

Key points were: (1) 4 x 5" reseau camera, (2) designed for retro-reflective targets, and (3) accuracy of 1 micrometer and better.

A reseau camera for industrial applications was developed. The Rollei R-METRICA features a 4 x 5" image format, a reseau plate, a vacuum system, and a ring flash. It is designed for high accuracy applications requiring accuracies of 1 part in 100,000.

T. Luhmann (Switzerland), R. Godding - **Calibration and Accuracy Assessment of a Multi-Sensor Online-Photogrammetric System**

Key points were: (1) Programmable optical measurement tool employing photogrammetric techniques, (2) need of various calibration steps, and (3) successful accuracy verification.

The programmable optical measurement tool was designed for inspection purposes in industry. It employs three Rollei-RSC cameras with intricate illumination techniques. The object is viewed from different positions with a rotation table. Results of an accuracy test indicate that relative accuracies of 1:20,000 to 40,000 can be achieved via spatial intersection and bundle adjustment respectively.

Masatoshi Ishii (Japan), H. Otani - **Application for Close-Range Photogrammetry Using a Camera System Attached on Transit and Stereo Image System (TOPCON PS-1000/PI-1000)**

Key points were: (1) Stereo imaging system, (2) ease of use via several enhancements, and (3) combination of camera and theodolite.

The industrial measurement system and a stereo image system were presented. They use a camera in connection with a theodolite. The stereo image system includes an image scanner for image formats of up to 240 x 240 mm and a stereo image workstation.

Martin Knobloch and T. Rosenthal (Germany) - **MIROS - a New Software for Rollei RS1 Digital Monocomparator**

Key points were: (1) Digital monocomparator, (2) automatic measurement of several signal types, and (3) automatic identification of target numbers.

The new software presented for the Rollei RS1 includes a number of interesting features. Improvements include techniques for better separation of the reseau crosses from the imagery, measurement of ellipses, and identification of targets with encoded numbers.

EXHIBITORS' SHOWCASE - Session IV

Session ES-04
August 07, 1992, 12:00-13:30
Chairman: ***Dr. H. S. Mehta*** *(India)*

Jeremy C. Wilson (Canada) - **Ynot: An Innovative Tool for Remote Sensing Science**

Key points were: (1) Ability to store a worksheet, (2) documentation kept with experiment, and (3) image and graphic views.

A prototype was prepared in C under Sun View in 1989. The version 2.O is released in August 1992. The production release of Ynot is expected to be available via anonymous full time processor in October 1992.

John P. Whitley (USA), P. F. Grosso, P. Morgan - **Film Recorders for the Receipt, Processing and Archiving Remote Sensing Data**

Key points were: (1) Consistent exposure quality so density is consistent; (2) requires no processing; and (3) high recorder rate.

No proprietary hardware or software is used from ground receiving to archival storage. Recording rate is up to 50 million pixels/sec. Records an Landsat image in less than one second. High resolution - 1μm SPOT; 8 to 12 bit image.

Patrick F. Grosso (USA), J. P. Whitley, J. E. Turek - **Recent Advances in Electron Beam Image Recording for Remote Sensing Data Processing and Analysis**

The EBIPS-3000 can handle any data set size in any format. It can record continuous or half tone images as well as graphics. It can optically enlarge from 1:2,000,000 to 1:100,000 scale. You can generate microfiche for archival using a 24x reduction. Image processing workstation (#605) merge different data sets in resolution and color. System allows for future growth in image processing.

EXHIBITORS' SHOWCASE - Session V

Session ES-05
August 10, 1992, 12:00-13:30
Session Reporter: Sky Chamard
Chairman: ***Dr. Roop C. Malhotra*** *(USA)*

Jaap Klaver (Switzerland), A. S. Walker - **Entry Level Digital Photogrammetry: Latest Developments of the DVP**

Key points were: (1) DVP developed in 1989 by professors in forestry at Laval University in Canada (marketed by Geomatics, Quebec); (2) in 1991 Leica assumed marketing and refinement of the DVP system; and (3) a relatively low cost user friendly system with continuing software enhancements.

The DVP in 1989 was a low cost system that allowed for mapping from rasterized aerial photographs by relatively untrained personnel. Leica development personnel have enhanced the original software with: DVP-Photo, DVP-SPOT, DVP-KORK, DVP-Tri, DVP-ORTHO. These programs allow users of the DVP to perform most of the functions now performed on higher cost analytical systems.

W. Lorch (Germany) - **Aerial Photography Systems from Carl Zeiss**

Key points were: (1) Zeiss now has two aerial camera systems, the LMK 2000 and the RMK-TOP; (2) the LMK 2000 is available with a choice of four focal lens (310mm, 200mm, 150mm and 90mm) and features FMC and a gyro stabilized mount; and (3) both Zeiss cameras are modular in design and have high quality components.

Excellent cameras are only part of the total activities required for most successful photographic mission completion. Zeiss now has a series of software packages that can be combined with camera systems to complete a total system. T-Plan can be used for most effective flight planning. Navigation PC utilizes the data from T-Plan and with GPS can assist the aerial photographer to accomplish the mission with accuracy. Flight reports are generated utilizing AutoCad software. Final flight map reports can be displayed.

Wilfried Bahnmüller (Germany) - **Aviphot B & W Films Sensitization and MTF**

Key points were: (1) Main film is the Aviphot Pan 200; and (2) film sensitivity of 750 nanometersis more stable than sensitivities at higher nanometers.

Higher than 750 raises the film base fog, thereby reducing visible objects on the photography. Agfa has taken great care to assure that their film provides the highest quality imagery.

Arthur Rohrbach (Switzerland), P. Staehel - **Wild RC Aerial Camera System, New Powerful Interface Module for Data Acquisition and GPS-Supported Flight Navigation (GIM)**

Key points were: (1) The Wild RC30 aerial camera is mechanically the same as the Wild RC20; (2) The array System Control Tool (ASCOT) converts the RC20 to the RC30; and (3) ASCOT is a flight planning, navigational control and post flight analysis tool.

The ASCOT allows for flight planning, laying out flight lines and photograph spotting for any project area. This information is converted to navigational control system to aid, via computer terminal, the aerial photographer to accomplish the mission. After mission completion, analysis can be made of the results.

ASCOT can and does reside on PC's. GPS is needed to allow for navigational control. The system is able to handle multiple GPS manufacturers equipment. It also provides the kinematic GPS position location as a heading on each aerial photograph frame.

EXHIBITORS' SHOWCASE - Session VI

Session ES-06
August 12, 1992, 12:00-13:30
Session Reporter: Sky Chamard
Chairman: ***Dr. Thomas Luhmann*** *(Switzerland)*

Alf Pettersen (Norway) - **Metrology Norway System - An On-Line Industrial Photogrammetry System**

Key Points: (1) This industry oriented photogrammetry system is based on high resolution CCD cameras measuring coordinates of laser spots or light emitting diodes; and (2) twin or other multiple CCD cameras are used with a light pen of a T-shaped configuration with three LED's of known position.

The actual application of the Metrology Norway System has taken place at Saab Aircraft. The system is possible for high accuracy in the real world. The free form capabilities of the system make it highly versatile and suitable for taking measurements in places not accessible to conventional photogrammetric processes.

T. Kindas (Germany) - **The UMK1000 - A New Camera System for Analog and Digital Photogrammetry**

Key points were: (1) The UMK camera system has been a proven system for many years in normal close-range photogrammetric applications; and (2) the system has available four focal length lens. (65, 100, 200 and 300mm)

Recently the basic UMK camera has been made digital and utilizes the same lens as previously. The digital arrangement of the camera consists of 4 CCD's mounted in the camera and form a 512x512 pixel array. Appropriate software has been developed to accompany the camera system.

Günter Pomaska (Germany) - **Software Development for Close Range Applications Under Consideration of Present Standards**

This presentation was more oriented to a history of PC technology with the goal being to show that Rollei Fototechnic has taken full advantage of PC technology in developing their software package which supports their system.

K. Sinnreich (Germany) - **Optical Three-D Measurement Systems for Quality Control in Industry**

Key point was CCD Cameras have allowed us to make measurements in real time where previously film development and then digitizing the images made quality control more difficult. Aicon Industrial Photogrammetry and Image Processing have used their systems for tube

measurement, robotic motion checking and corner fitting measurements for aircraft.

Günter Suilmann (Germany) - Rolleiflex 6008 Metric - A New Camera for Industrial Photogrammetry

The Rollei System has been recently modified into a fully implemented metric camera for use in close range photogrammetry. The major changes are:

. Reliable flattening of the image surface.
. Rigorous formulation of the camera model.
. Simultaneous determination of the image space parameters. (1990 Wester-Ebbinghaus)
. Flash system adjusted around the lens for use with retroreflecting point signals.
. Reseau pre-illumination.
. Camera rotation ring.

EXHIBITORS' SHOWCASE - Session VII

Session ES-07
August 13, 1992, 12:00-13:30
Session Reporter: Sky Chamard
*Chairman: **Dr. Karl-Heinz Marek** (Germany)*

Werner Mayr (Germany) - **Carl Zeiss' Digital System for Orthophoto and DEM Generation**

Key points were: (1) PHOCUS combined with the P1 and P3 analytical stereoplotter present a powerful mapping system from Zeiss; (2) superimposition with video map of digital line data leads to the possibility of interactive mapping; and (3) the goal is a complete mapping and interactive geographic information system in the near future.

Philipp Willkomm (Germany) - **Computer-Assisted Cartographic Generalization and Its Practical Application with PHOCUS**

Key points were: (1) The increasing volume of digital space related data makes it increasingly important that computer assisted cartography be continuously developed and improved; and (2) the description of CHANGE is a combination of software capable to perform relatively simple cartographic functions with some degree of automation.

B. Kaiser (Germany), J. Hauslade, B. P. Wrobel, J. R. Tsay - **Application of FAST Vision for Digital Terrain Model Generation**

Key points were: (1) FAST Vision is a facet stereo vision system that is regarded as a basic tool for a workstation of digital photogrammetry; (2) testing has been done on pictures at a scale of 1:12,000 in Northern Germany; and (3) testing is still in progress but FAST is a promising system.