a product of I.S.M. International Systemap Corp.

‖ PurVIEW ▶

3D mapping *geodatabase*-direct

scanned film imagery

Anaglyph mode support

Leica ADS-40(52)

Vexcel UCD
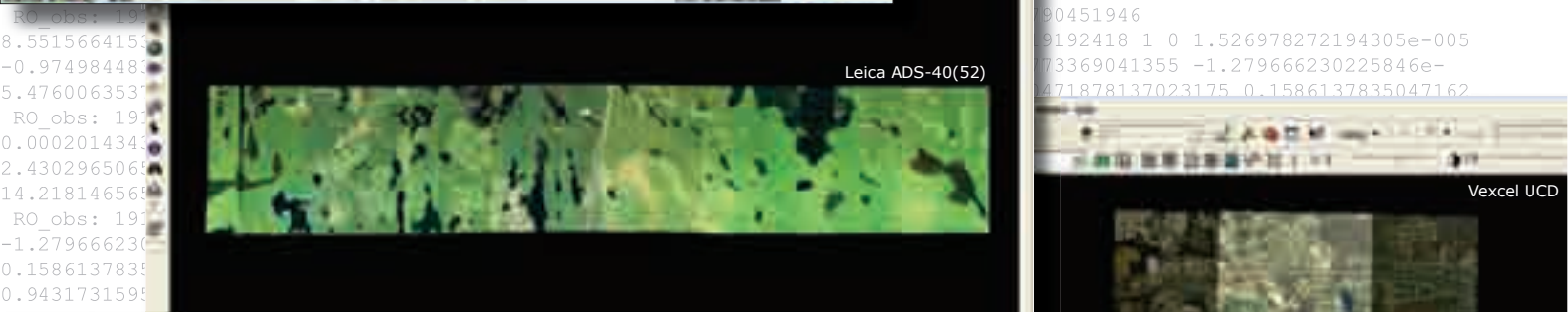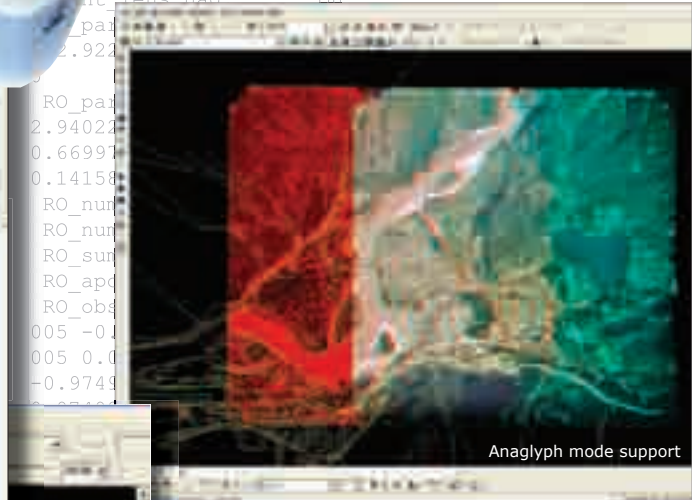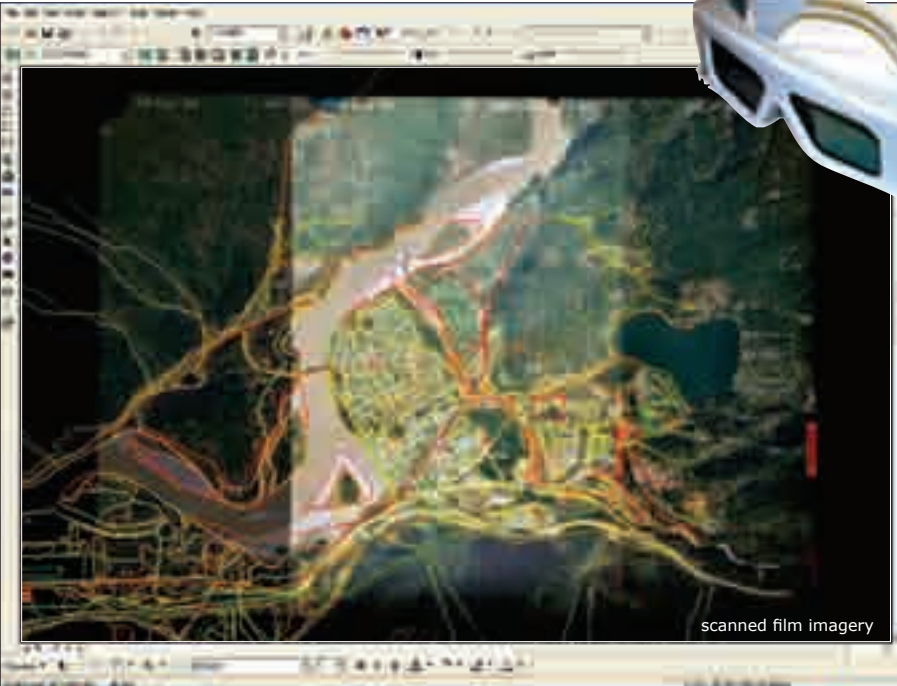
Z(I DMC

begin model 1924
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  right_photo: 1925
  atmospheric_flag: off
  earth_curve_flag: off
  left_lens_flag: on
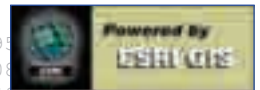 right_lens_flag: on
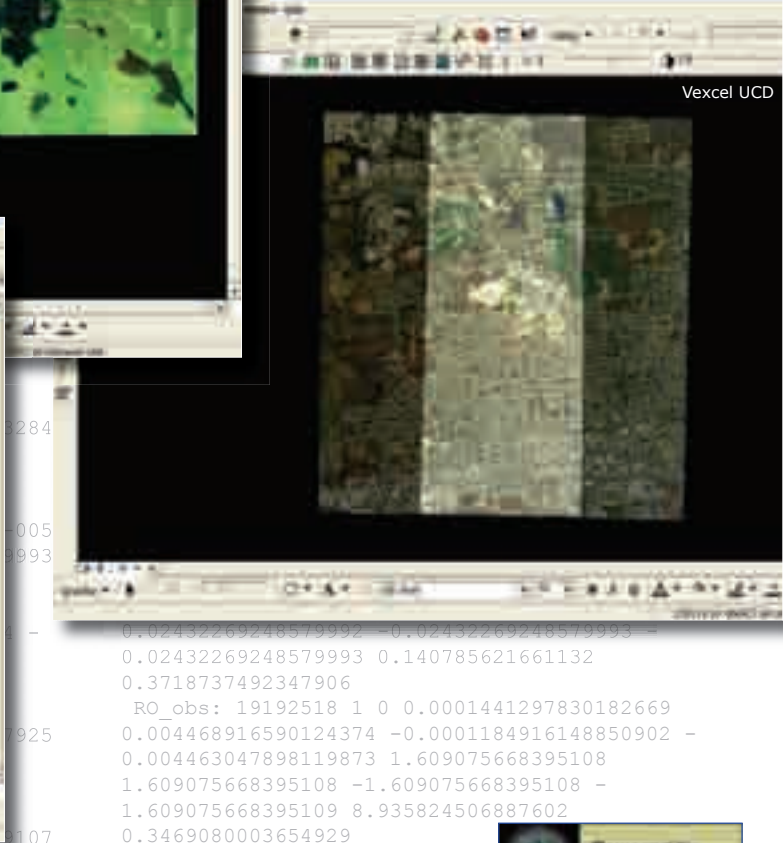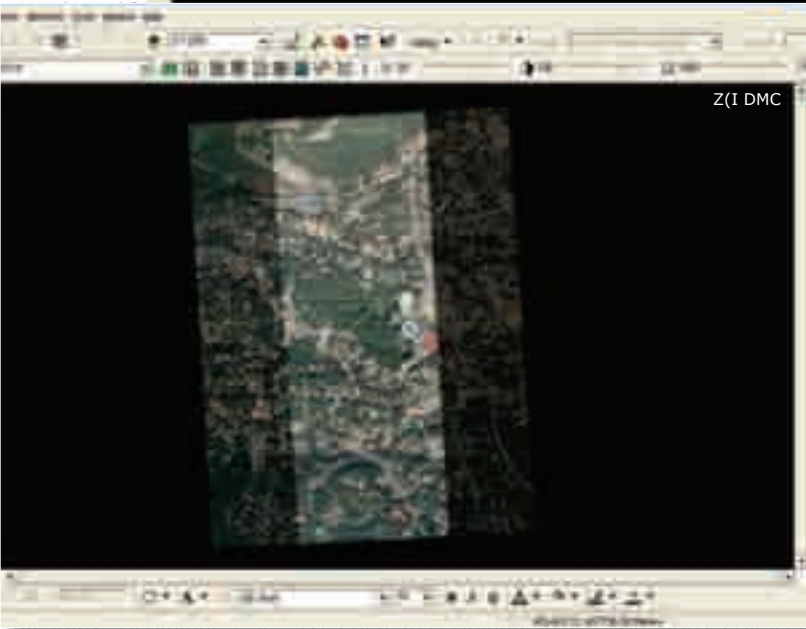
...review legacy data models; QA new mapping delivery; update, upgrade or retrofit long-term GIS investments...
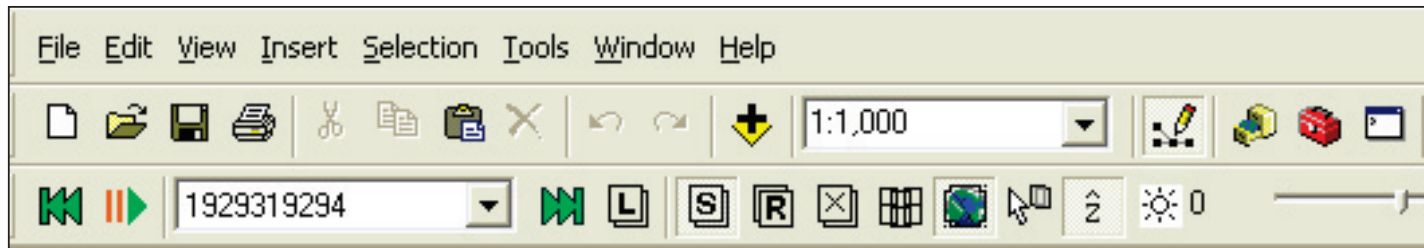
Standard system features:

- Displays thumb-nail image composites for entire photo block

- User-selectable zoom-in stereo-viewing on-demand

- Enhanced image display brightness, contrast and gamma

- Virtual-Z™ and Dynamic-3D™ support

- Built-in scanned/digital frame-camera sensor model

- Additional sensor model available: Leica ADS-40(52)

- Supports RPC-embedded space-borne imagery

PurVIEW is a deceptively simple ArcMap extension.

Upon connecting source data, one mouse-click precisely invokes geo-referenced stereoscopic image models for accurate geodatabase-direct editing or feature digitizing.

PurVIEW supports all raster image formats used in ArcGIS, plus other *tiled-and-pyramid* image formats popular in photogrammetric mapping industry—no external *imaging engine* or cumbersome interface is required.

With digitized features stereo-superimposed in real-time on the original mapping image models or new imaging, geodatabase Quality Assurance is immediate and unambiguous.

Interpolating Arc-TIN Datasets, or other supported TIN or raster DEM, PurVIEW *Virtual-Z™* extracts Z-values for arbitrary X/Y cursor positions—enabling a real-time terrain-tracking cursor for 3D surface feature digitizing using only a standard mouse...and with manual override for object height measurement via the scroll wheel.

PurVIEW *Dynamic-3D™* displays legacy 2D data models in 3D ...necessary for accurate stereo editing. The converted or new data can be saved as a 3D geodatabase upgrade or reverted into 2D file.

PurVIEW is available in three licensing levels:

PurVIEW-*Explorer* for ArcView

PurVIEW-*Standard* for ArcView or ArcEditor

PurVIEW-*MX* for ArcEditor

Traditional photogrammetric mapping protocols essentially ensure:

Correct photogrammetric restitution – standard parameters now replaceable by in-camera IMU geo-referencing digital output, and directly usable in PurVIEW.

Accurate topographic modeling – data reusable from orthophoto archives, but now surpassed by new RADAR- or LiDAR-direct DEM data acquisition.

Standardized base- and thematic map feature digitizing – bypassing CAD and geoprocessing, now performed geodatabase-direct by end-users as needed.

Before the digital era, photogrammetric mapping was challenging and reserved for specialists. Orthophoto was long desirable, but unaffordable.

In the new post-digital era:
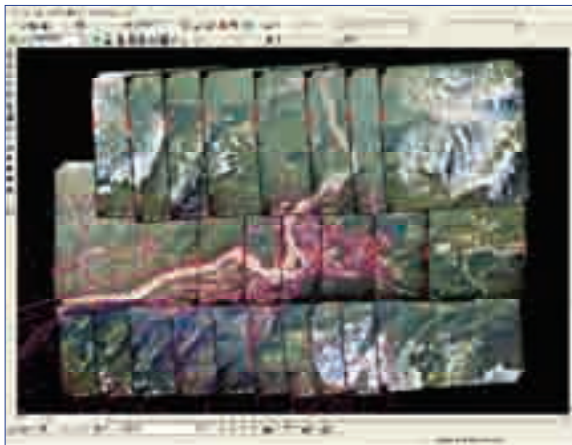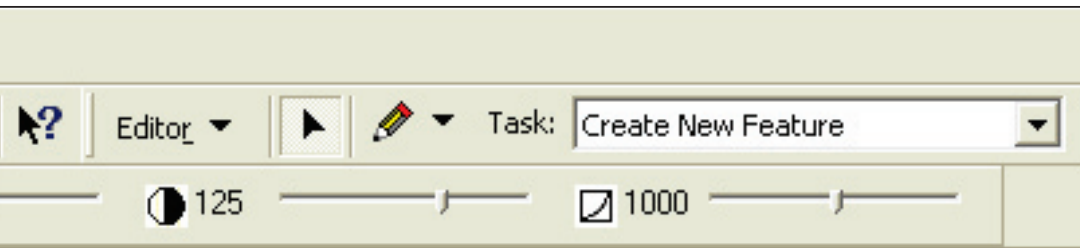
Available off-the-shelf geo-referenced imagery and DEM become not only *staple* ingredients for PurVIEW, but also the source data enabling ArcGIS *Image Server* on-the-fly orthophoto processing. PurVIEW and Image Server together envelope standard mapping services once outsourced, empowering a level of self-sufficiency unseen in ArcGIS.

— one basic dataset, two fundamental applications —

New Hardware (or use red/cyan anaglyph mode with any video card and all monitor types)
- *OpenGL* **Video Card** – VESA standard stereo-ready type.
- **Standard CRT monitor** (min. 1,600 x 1,200 @ 80Hz); with active **LCD shutter Eyewear/emitter** (e.g. NuVision 60GX set)

or **new-generation LCD stereo monitors/passive eyewear**.

PurVIEW-*Explorer* for ArcView
Review geodatabase contents over stereoscopic imagery

Good GIS needs valid data. Field verification is impractical. Orthophoto is usable only if the data model is flat-earth 2D. For 3D data models, geo-referenced stereoscopic image models are needed.

Explorer converts ArcMap into stereo-ArcMap where overlaid features conveniently reveal errors, omissions and natural changes—a powerful capability at one time unavailable even in advanced photogrammetry.

Explorer is also the new indispensable tool for direct stereoscopic *due diligence* inspection of new multi-spectral digital imaging delivery, replacing costly and now unusable contact prints.

PurVIEW-*Standard* for ArcView/Editor
Review, edit & digitize features 3D geodatabase-direct

Data modeling has long evolved into 3D. ArcGIS supports this logical and inevitable upgrade.

If the existing data model is obviously inadequate, then simply re-digitize the imaged features direct, uninhibited by esoteric photogrammetry of old.

Real-time 3D cursor coordinate data-stream enables positional attribute extraction such as slope, azimuth and distance, and dimension measurements including object height.

Edit existing or compile new data—with Virtual-Z™ active, over a geo-referenced image backdrop and under stereo super-imposition—is QA by default.

PurVIEW-*MX* for ArcEditor
Intensive feature compiling 3D geodatabase-direct

Total reworking is sometimes a better way to upgrade legacy data. The task is intensive but uncomplicated point, line and polygon digitizing.

Despite CAD sophistications, point-to-point digitizing is a standard technique in compiling feature objects, with the image interpreter selecting the critical locations for point placement.

With smooth image roaming, enhanced digitizing tools and 3D input devices, PurVIEW-*MX* transforms Arc-desktops into industrial-strength mapping workstations.

Additional software features:
- Individual image model registration
- Smooth image roaming
- 3D input device interface (standard serial protocol)

Applications

From earth sciences to site/facility management, PurVIEW is intrinsically useful in thematic mapping—plotting learned image interpretations onto base maps. However, the work was often impeded by primitive image viewing and polygon plotting devices; and old, substandard or unavailable base maps.

While ArcGIS might be the ideal environment for exploiting thematic data, the work prerequisite —correct transformation of polygon annotations from aerial imagery to map/CAD manuscript…through geoprocessing—is discouraging. PurVIEW now integrates stereoscopic image interpretation with rigorous geodatabase-direct polygon digitizing in one single step…and conveniently supports even base map updating or new plotting, if necessary.
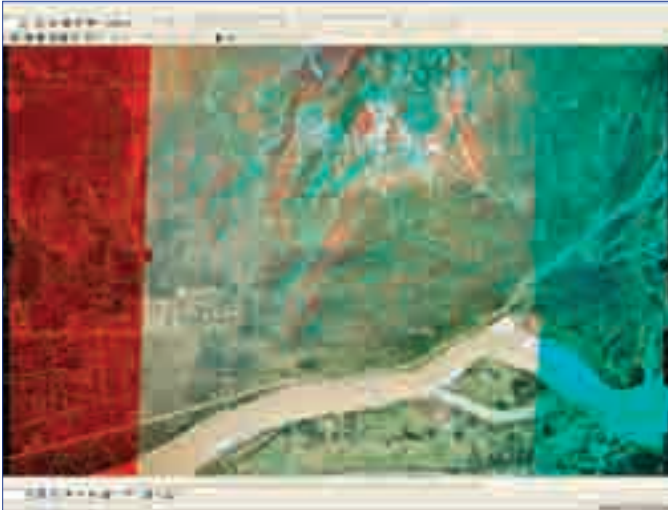
Earth Sciences – Immediately popular is forestry GIS where older inventory mapping superimposed serves as *Training Set* for new image interpretations. Cyclical *re-inventory* is now an updating process rather than wholesale remapping…a substantial cost saving. Standard parameters from tree height to crown closure to site drainage conditions can now be derived or measured, rather than estimated…compelling refinements in long-established methodologies.

Environmental Assessment – A multi-discipline initiatives—now common or mandatory in *corridor* engineering, from pipeline to railroad—also quickly embraces PurVIEW as an expedient geodatabase-direct environment for diverse data model contributions.

Site/facility management – Ranging from defense/intelligence to urban engineering: field deployment layouts, mission logistics and support assessments, object/interpretation digitizing…all conveniently performs under stereoscopic visualization—an environment akin to virtual reality, wholly within ArcGIS.