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GeoRef 5.1

Geo-referencing, clipping and transforming of scanned maps

With this software module you can do geo-referencing, i.e. establish the relationship between pixel coordinates on a planar map and real-world coordinates. And not only that, you can also clip out as many sub images you want from one image and geo-reference each part separately. You can choose between different transformation methods, get transformation reports with error statistics, and generate rectified images for the whole or all sub images. The transformations makes a best fit according to user defined known points. The rectified new images can be loaded into any ProCaptura data capture products or an industry standard GIS.

Input:

- Scanned raster file of maps/drawings/foils
- TIFF format in binary, color or grey scale

Functionality:

- Add geo-reference points with known world coordinates
 - Interactively positioning
 - Automatically positioning on grid crosses detected by the system
- Three different types of geo-reference points: corners, known points (as trig points) and grid points
- Automatically generate grid points based on one, two or four base points and a grid size in world coordinates
 - Automatically checks accuracy of the base points before generating grid points
 - Layout of grid points reflects shape of the base points
 - Grid points get world coordinates automatically
 - Automatically adds grid points along clip boundary
- Define clip area automatically or interactively. Clip areas defines sub image to be extracted. Rectangular or free form clip area. May use existing geo-reference points
- Can define multiple geo-reference areas in the same image. Each area has
 - A clip area
 - A set of geo-reference points
- Each geo-reference area can be geo-referenced separately and result in
 - A transformed, rectified, clipped and optionally masked image file (TIFF)
 - A transformation parameter file (TWF)
- Transformations
 - Affine, Helmert, Rubber sheeting, Collocation

- Optionally choose points to be used
- Exact match along map borders of neighboring maps
- Point Inspection Tool (PIT)
 - Errors for each geo-reference point in a table applying an affine transformation
 - Error in pixels and world coordinates
 - Error along x-axis, y-axis and diagonal
 - Automatic highlight points with errors exceeding user defined limits
 - Sorting on columns with errors
 - Shows selected point in PIT table on graphic main window for easy interactive adjustments

- Import transformation file (TWF file)
- Import existing world points (ASCII file)
- Clip and save sub images as legends etc.
- Automatically adds world coordinates when creating new geo-reference points (optionally snap to grid)
- Transformation report
 - Similar error report as in PIT (see above)
 - Administrative info as name of operator, date and time, SW version, transformation method
- Efficient tools to sequentially adjust accurately all georeference points, especially useful for grid points

Output:

- Transformed image files on TIFF format, one for each user defined clip area
- Transformation parameters (ESRI TWF file) to input and or rectified images.
- Transformation report, plain ASCII format

Platform requirements:

- Microsoft Windows XP
- LINUX Red Hat Enterprise 4
- PC workstation, P4 or similar, + 512MRAM, +40Gbyte disc