



Bentley I/RAS B

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Bentley I/RAS B Major Functions

- - Edit
- - Modify location
- - Cleanup
- - Raster Attachments to design file
- - Vectorization

Hybrid Drawings

- Hybrid drawings are a combination of both raster and vector images
- Most commonly used with archived drawings

Bentley I/RAS B v. Bentley Descartes

- Both seamless integration with MicroStation
- Bentley I/RAS B supports binary raster data
- Bentley Descartes supports greyscale and color data as well as binary raster data

What's new in Bentley I/RAS B

8.1

- New file formats supported
- New Square Tool
- Reference Attachments Updated

File Formats

- Native

- RLE
- CIT
- TG4

- Supported

- CALS
- LRD
- GeoTIFF
- RLC
- HMR
- TIFF
- iTIFF

Square Tool

- Squares your drawing with two points
- Edit > Modify > Square
 - Select orientation
 - Define two points
 - Save

Update Reference Attachments

- Synchronizes the XY location information of the raster reference (type 90) attachment with the layer's raster header information
 - Update only (File - References - Update)
 - Update and Save (File - Save)

File Functions

- Open
- Attach
- Save
- Layer Info

Opening Images

- Opening Files – (File – Open) literally places the image on-screen for display.

Attaching Images

- Attaching Files – (File – Reference – Attach) places the image, with a Type 90 element, into the design file for automatic display each time the design file is opened.
- Attachment will be recognized by Raster Manager when I/RAS B is not loaded.

Saving Images

- Saving Files – (File – Save – Active Layer) saves all edits, cleanup and modifications to a raster image.

Saving vs. Attaching

- It is VERY important to save files after edits and modifications, as raster data is not “intelligent” like vector data.
- If a save is not completed before closing a file and/or exiting I/RAS B, all modifications will be undone.
- Attaching does not save the raster modifications.

Layer Info

- Shows information for all loaded layers
- Shows information pertinent to each individual layer
- Use to make layers ACTIVE
- Use to change layer color or layer number

Design and Modify Commands

- Design functions lets you draw various shapes, lines and text as raster pixels.
- Modify functions let you modify raster data.

Warping

- Edit – Modify – Warp
- Warping is a two-dimensional geometric transformation in which source data is fitted into a more accurate destination area.

Types of Warping

- Linear Warping:
 - Helmert (2)
 - Affine - 1st Order (3)
 - Projective (first 3 of 4 points)
- Non-Linear:
 - Affine - 2nd thru 5th order
 - Projective (4)

(You can also rotate, extract or use interactive placement if a true warp is not needed)

Which Warp method should I use?

Helmert – 2 points

- *You need to scale and rotate your drawing.*
- *You need "edge matching" capability.*
- *You do not need to change the shape (rubber-sheet) your drawing.*

Affine (1st order) - 3 points

- *Only 3 point pairs will be exact*
- *Speed is most important factor*
- *You need straight lines preserved*

Affine (2nd - 5th order)

- *You do not need straight lines preserved.*
- *You are not under time constraints.*
- *You have numerous point pair combinations.*

Projective

- *You need 4 exact point pairs.*
- *You are not under time constraints.*
- *You are warping a bi-level file to a continuous tone file*

I/RAS B Engineer Tools

- Formerly known as I/RAS Engineer
 - Line conversion
 - QTR (text conversion)
 - Digitizing aides
- Now included with Bentley I/RAS B.
- No changes were made to the product functionality.

I/RAS B Engineer Tools

- Converting Circles, Lines and Arrowheads
- Getting Familiar w/QTR (Queued Text Replacement)

What is QTR?

- Locates pixel groupings that potentially represent text
- Presents the groupings in a queued environment for you to overlay with vector text elements

I/RAS B Engineer Tools

- Setting Up Symbology Sets
- Converting Linestrings
- Setting Up Cell Libraries
- Working with Macros

I/RAS B Engineer Tools

- More on QTR
- Using ITR (Interactive Text Replacement)