



Intelligent Paper to CAD Solutions™

SCANNING AND IMAGE ENHANCEMENT PROVIDE INSTANT ACCESS TO HIGHER QUALITY DRAWINGS

Utilities - electric, telecommunications, gas and water - all use thousands of paper drawings, millions of aperture cards and volumes of CAD data to manage plant, transmission and distribution facilities. This redundant data makes communication difficult and results in missing or inaccurate information that can lead to poor decision making. GTX editing and CAD conversion systems not only link this data into one integrated source, but also link departments, allowing them to modify information quickly.

Of the thousands of paper drawings that exist in the utility industry, an estimated 70 percent are in poor condition. Paper drawings suffer from a common problem, they deteriorate over time. They yellow with age in a flat file and are usually marked-up, stained and torn from handling. According to one major CAD firm's research, ten to 21 percent of the 1.5 billion drawings used daily are lost or misfiled. With a simple scan, paper drawings become electronic images, safe from deterioration, easy to locate and ready to edit, transfer and enhance.

The GTX image enhancement capability significantly improves the quality of images before you commit them to an electronic drawing database. You can remove speckles and smudges or deskew crooked images or lines. If an image is scanned improperly, select a line on the drawing and automatically deskew it to correct its orientation. In just a few minutes, you can create an electronic drawing that is better than the original and requires significantly less storage space.

An Electronic Database Improves Drawing Access

Once a drawing is scanned into an electronic database, it is available for distribution and viewing. A recent study found that a typical utility requires 200 to 400 drawing retrievals per day for maintenance, operation and new construction. Average retrieval time is as long as three to five days. With networked viewing terminals and an electronic drawing database, retrieval time is reduced to seconds, increasing employee productivity and allowing management to make decisions based on accurate and up-to-date information.

Improve Response Time to Regulatory Agencies

Maintaining all plant records in electronic databases will greatly reduce the time and money spent collecting information to file with regulatory agencies. Fines are levied and shut-downs are caused when you can't locate necessary drawing. Scanning and drawing management systems make these records accessible immediately.

Simplify the Engineering Change Order Process

Not every drawing should be converted to CAD. You can easily edit



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the scanned raster image. Unlike traditional paintbrush raster editors, GTX applies CAD-like techniques that combine the ease of a raster editor with the control and speed of CAD.

For example, you can use GTXImage Edit™ or the GTXRaster CAD raster editor to modify piping and instrumentation diagrams for engineering change orders. You can annotate the master drawing with instructions and modifications, then crop it to include only the work area. Then, implement the process sheet to significantly reduce maintenance turnaround time and rework.

Decrease the Cost of Drawing Revisions

An average utility site performs 6,000 to 10,000 drawing revisions per year. CAD revisions are done in a fraction of the time required for manual revisions, but this productivity cannot be realized while drawings exist only on paper or aperture cards. GTX's automatic conversion, which converts manual designs to CAD files, allows users to make revisions in CAD instead of manually. GTX OSR® performs this process as a batch conversion utility. GTXImage CAD™ PLUS operates as a standalone interactive conversion editor. GTXRaster CAD® PLUS operates inside of AutoCAD. Text is converted with either product using the GTX® ICR PLUS™ add-on module.

For example, one site, with 10,000 drawing revisions each year, saves 13 to 15 hours per revision. This equates to a savings of 150,000 hours, a significant cost reduction on the first revision. Second and third revisions are even less expensive since CAD conversion is a one-time process.

A Single Source for Electronic Storage and CAD Conversion

These are only some of the benefits of using GTX conversion and editing software. More important, GTX provides a choice. You can start by scanning paper drawings into an electronic database. Leaving the drawing in raster format is ideal for maps, vendor drawings, specifications and standard details which you can reference often.

Once documents are scanned, another compatible GTX module can be added to automatically convert drawings to CAD, bringing you closer to paperless operations. Whatever your requirements, GTX's GTXImage CAD Series or GTXRaster CAD Series will meet your needs. Every upgrade is compatible with your existing equipment thereby preserving and enhancing your investment in hardware, software and training.

Add Value to Existing Assets: Your Drawings

With GTX's automatic CAD conversion, you not only benefit from reduced revision costs, but you also add value to your drawings. Once a drawing is in CAD format, information can be extracted and used in power plant life extensions, asset tracking and maintenance applications. You can also use the drawing to link information to integrated plant databases to significantly improve efficiency and reduce operating costs.

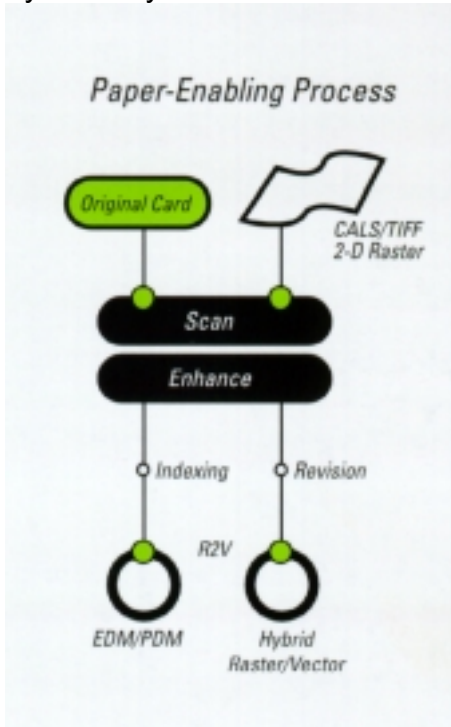
Backed by the Electric Power Research Institute

GTX's development of advanced character and symbol recognition started in the mid-80's when it was



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awarded a contract by the Electric Research & Power Institute (EPRI) to develop methods to automate the population of intelligent databases from paper drawings. GTX's commitment to develop state-of-the-art raster editing and conversion technology continues to provide industry-leading solutions for the utility industry.



Bell Atlantic
Bell Canada
British Telecom
France Telecom
NYNEX
SNET
Southwestern Bell
UK Cable & Wireless

Power Generation/Distribution

Basin Electric
Commonwealth Edison
Czech Electric
Duke Power
Electrabel
GE Power Systems
GPU Nuclear
Houston Light & Power
Hydro Electric Commission
London Electric Board
New England Power Services
New Jersey Natural Gas
New York State Electric and Gas
New Foundland Hydro
Orange Rockland Utilities
Pennsylvania Power & Light
Public Service of Indiana
Public Works of Canada
Rhode Island Gas & Electric
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Tokyo Gas
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A Sample of GTX Utility Customers

Telecom Companies

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