

# MIE Solutions—Manufacturing ERP with Time-saving and Efficiency in Mind

## MIE Trak Pro ERP

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# MIE Solutions—Manufacturing ERP with Time-saving and Efficiency in Mind

MIE Solutions' MIE Trak Pro software package is designed to meet the needs of discrete manufacturing organizations. The system is designed to optimize the business operations for custom, quick-turn, and mixed-mode manufacturers. The solution was originally targeted for metal fabrication shops and has grown to support other manufacturing industries including plastics, electronics, medical devices, and aerospace. The complete business solution provides support for the full business process lifecycle, from quotes and estimates, to shop floor scheduling, to accounting.

MIE (Manufacturing Information Exchange) Solutions is headquartered in Garden Grove, California, with offices across the United States and market presence in Australia, Canada, Mexico, New Zealand, South Africa, and the United Kingdom. The solution is targeted toward small and mid-size manufacturers with revenues from \$5 million to \$250 million (USD).

The MIE Trak Pro ERP solution has a long history dating back to the 1980s. David Ferguson, founder and president of MIE Solutions, developed his first estimating software for his father, who owned and operated a metal fabrication shop. In the mid-80s, David's father would come home and spend hours each night developing estimates for the next day's jobs. David developed an estimating tool, "Quote It," which would become a leading sheet metal estimating package, followed up with the FabriTRAK Production Control Package which was licensed to Amada over the years. In 2007, Ferguson took back control of all FabriTRAK licensing agreements and added additional capabilities, and MIE Trak Pro was born. Together with Don Clutter, Ferguson founded MIE Solutions.

MIE Solutions has an extensive training and implementation plan that includes classroom training, online training, and on-site training. The company has a strong support system that manages its clients from the moment they say yes to MIE Trak Pro, so they are guided throughout the entire process.

# MIE Trak Pro—Responsive Software for Agile Organizations

## Fit and Finish

MIE Trak Pro is built to minimize keystrokes and make it easier to get work done. The system is built for larger screens and takes full advantage of all the real estate available on screen. The sales order screen (figure 1) is an example of the screen design seen throughout the system. The main screens have a search box on the left-hand side to quickly find the object the user is looking for. The chosen object details are then displayed on the right of the screen. The design of the system builds on this philosophy further by also showing other important details on the same screen. In this case, at the bottom of the screen, a user sees the inventory details of the product line item highlighted in the order.

The user can easily jump to all the other important activity surrounding the sales order on the same screen, from order history, to sales contacts, to quality control, using the tabs on the sales order screen. The goal of the design is to save the user from having to navigate to other screens to complete system tasks.

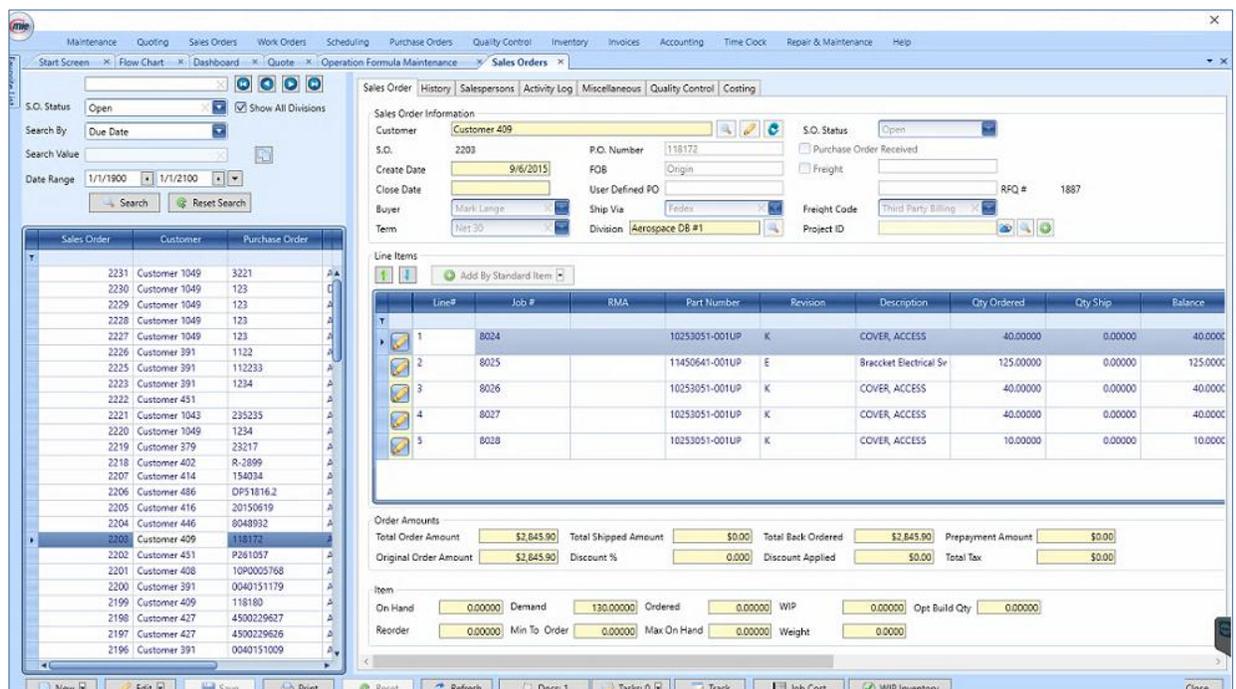


Figure 1. Sales Order Screen

Other user interface features include a menu at the top of the screen that behaves like the ribbon bars in Microsoft Office products. When a particular menu is selected, such as Quality Control, all the Quality Control operations available to the user are shown in the ribbon bar. The screen regions on the left, right, top, and bottom can be expanded or collapsed, according to the user's preferences. The system keeps track of the functions executed with a trail of breadcrumbs across the top, allowing the user to move between recent operations.

MIE Trak Pro also has sophisticated Excel-like active data grids for working with the information in the system. An example of the grid of a list of open orders is shown below in figure 2. The grid allows a user to hide and move columns, sort ascending or descending, and filter by values in the column. The user can also activate the group by panel and drag a column heading into or out of the group by panel, which instantly groups the data in the grid by that column or columns. In the sales orders example, it's easy to group by due date or customer to quickly identify what orders to work on. Within the grids, a user can also use colors to highlight display information and make it more visually meaningful. For example, late sales orders could be set to be shown in red while orders of high value can be shown in yellow.

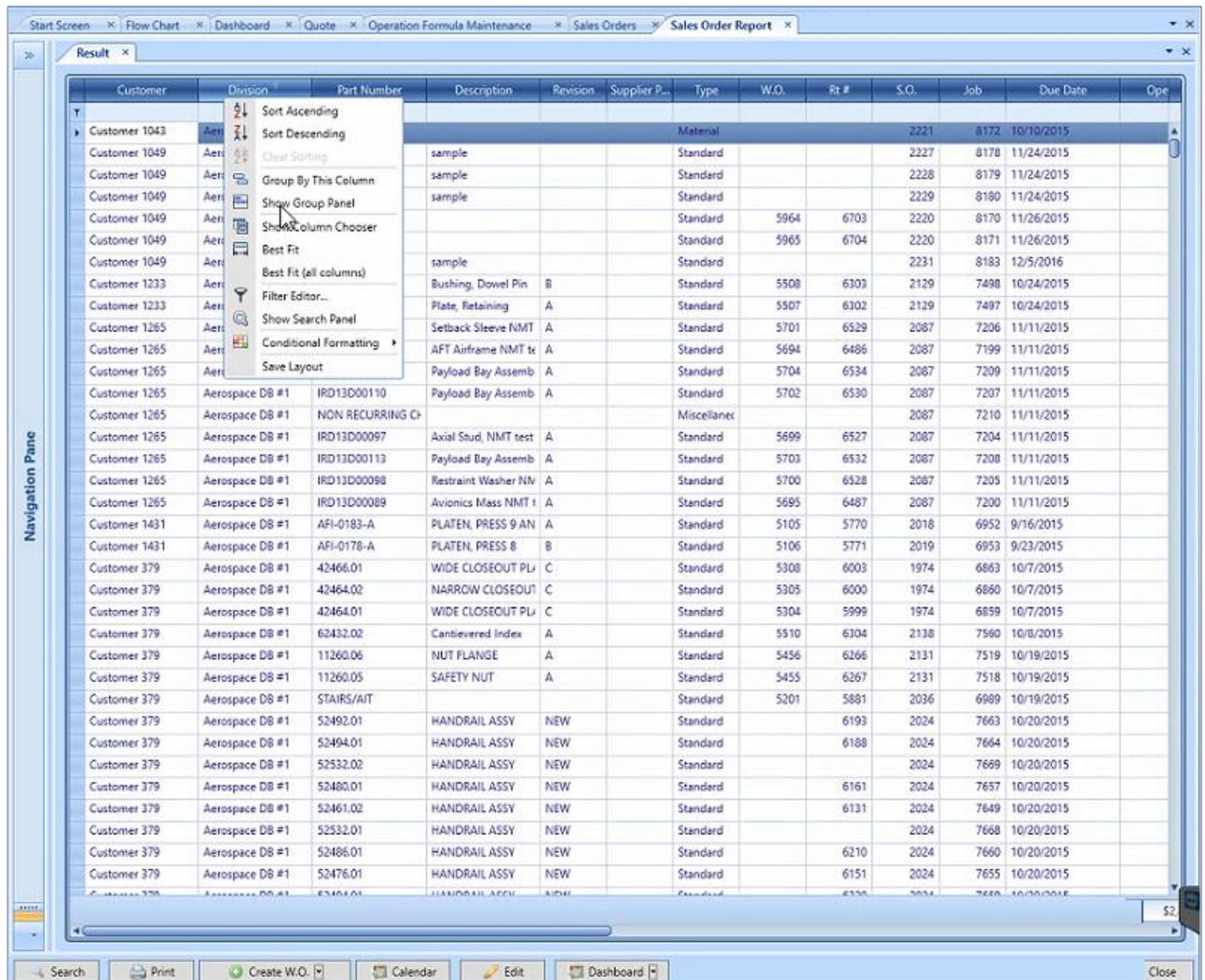


Figure 2. MIE Trak Pro sales order grid

Interactive graphical dashboards can be created with a click of the mouse from these grids. Dashboards can contain combinations of graphical and columnar lists of information in the system. The dashboards are easily customizable and can graph data in multiple formats including pie, bar chart, and others. MIE's

customers are finding these dashboards extremely useful with some departments setting up large screen monitors to track work progress within the department. Figure 3 shows an example of an on time delivery dashboard.

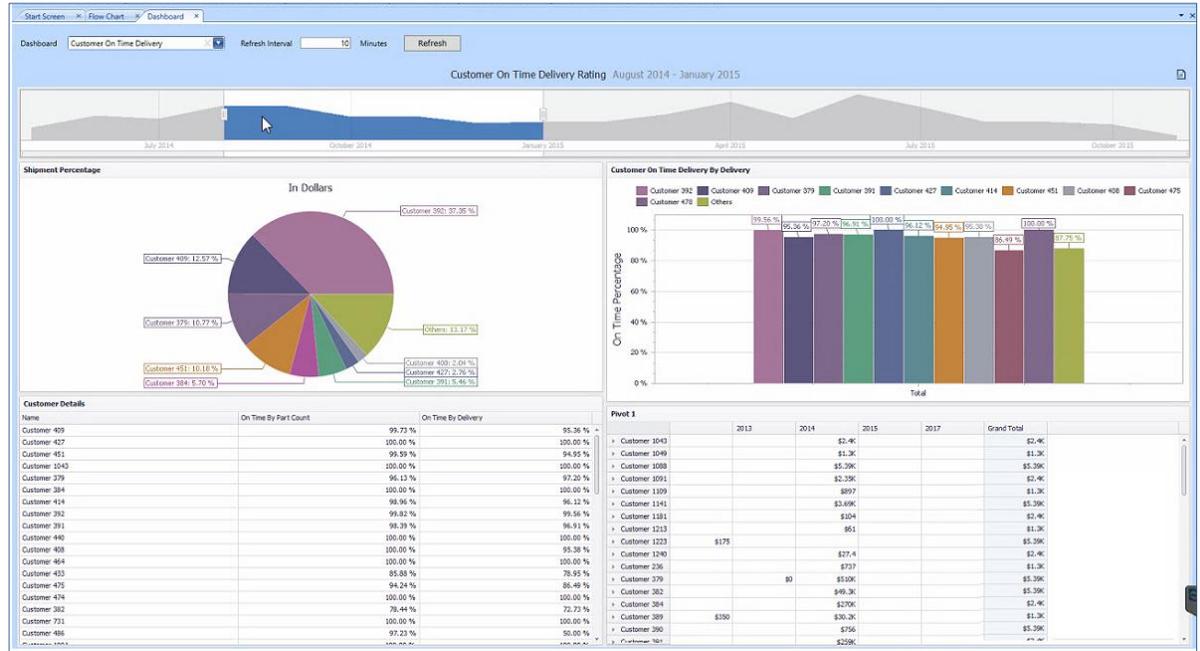
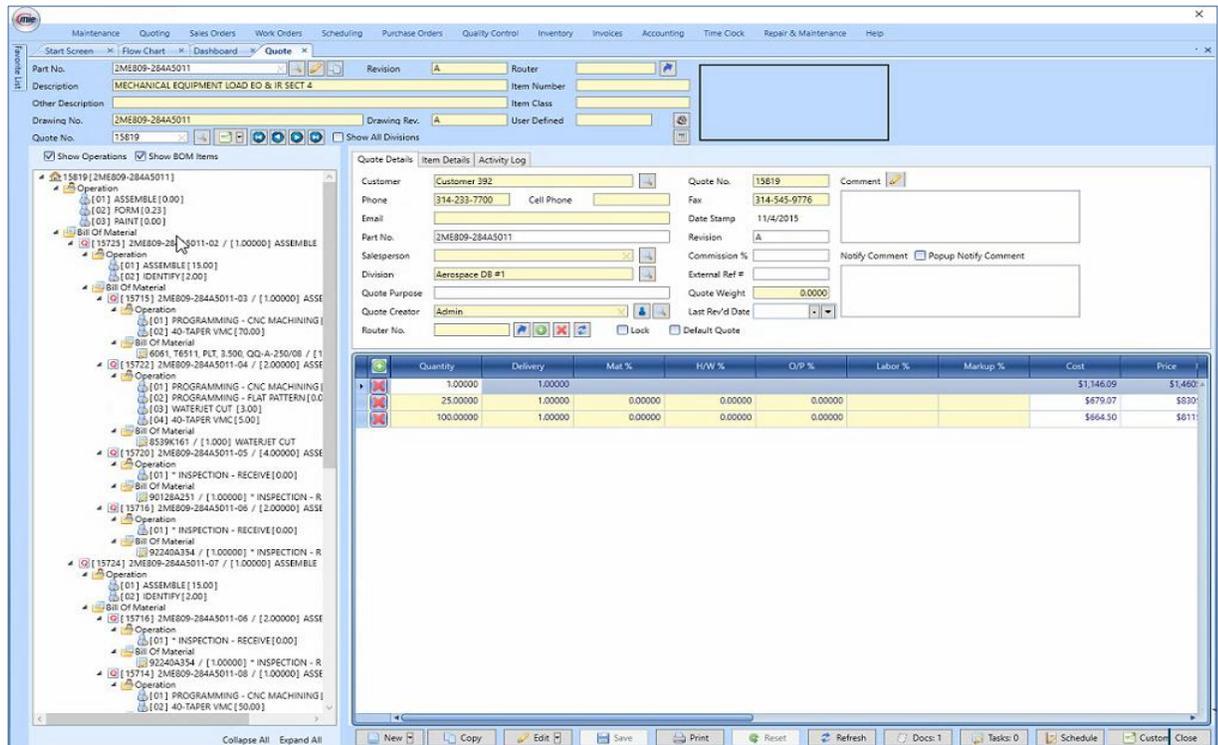


Figure 3. On Time Delivery Dashboard

## Key Product Differentiators

### Advanced Quote Development

MIE Trak Pro delivers advanced quote development and estimating capabilities. Figure 4 depicts a complex product assembly. Notice that operations can be defined for the entire assembly or for individual sub-assemblies. Multiple quotes can be included in the quote for a single assembly.



**Figure 4. Advanced Quoting**

The system also allows the user to define his or her own calculation formulas with simple questions for consistent and accurate quotes. These rules can be simple, such as setting a standardized set up time, or formulas that take into account all the machining and other operations needed to perform the assembly, such as CNC machining run time. From the quote, a user can then quickly create the sales order and all the work orders needed to create the quoted product assembly.

#### **APS Scheduling**

MIE Solutions has developed Advanced Planning and Simulation (APS) Scheduling, which takes into account additional constraints that can affect production. Additional constraints accounted for by MIE Trak Pro include not just machine capacity but also labor attendance, labor skills, tooling, floor-space, assembly sequences, and raw material availability. The scheduling engine supports forward and backward, finite or infinite scheduling along with scheduling down to individual machines in work centers. The engine supports the development and scheduling of product forecasts which can be used to develop what-if manufacturing scenarios.

#### **MIE File Reader Automation**

The MIE File Reader tool is an advanced data conversion tool which can be used to import data files directly into MIE Trak Pro. For example, a user can drop a text file containing a customer purchase order (PO) into the network and MIE File Reader will upload the PO into the system. MIE File Reader is configurable and allows the import and updating of business transactions across the system. It enables users to import many common file formats including PDF, CSV, Excel, or

text. MIE File Reader is a great tool for automating manual data entry processes for organizations that wish to streamline their operations.

### MIE Shop Floor Kiosk

MIE Solutions also provides a tool for shop floor data collection called MIE Kiosk. The Kiosk tool is purpose-built for the needs of manufacturing employees on the shop floor. The Kiosk has large buttons with all the key shop floor operations easily accessible. Upon logging into the Kiosk, a user is presented with all the jobs currently in his or her work queue. Users can also clock in and out from the Kiosk and perform other critical shop floor operations. An example of the MIE Kiosk screen is shown in figure 5.

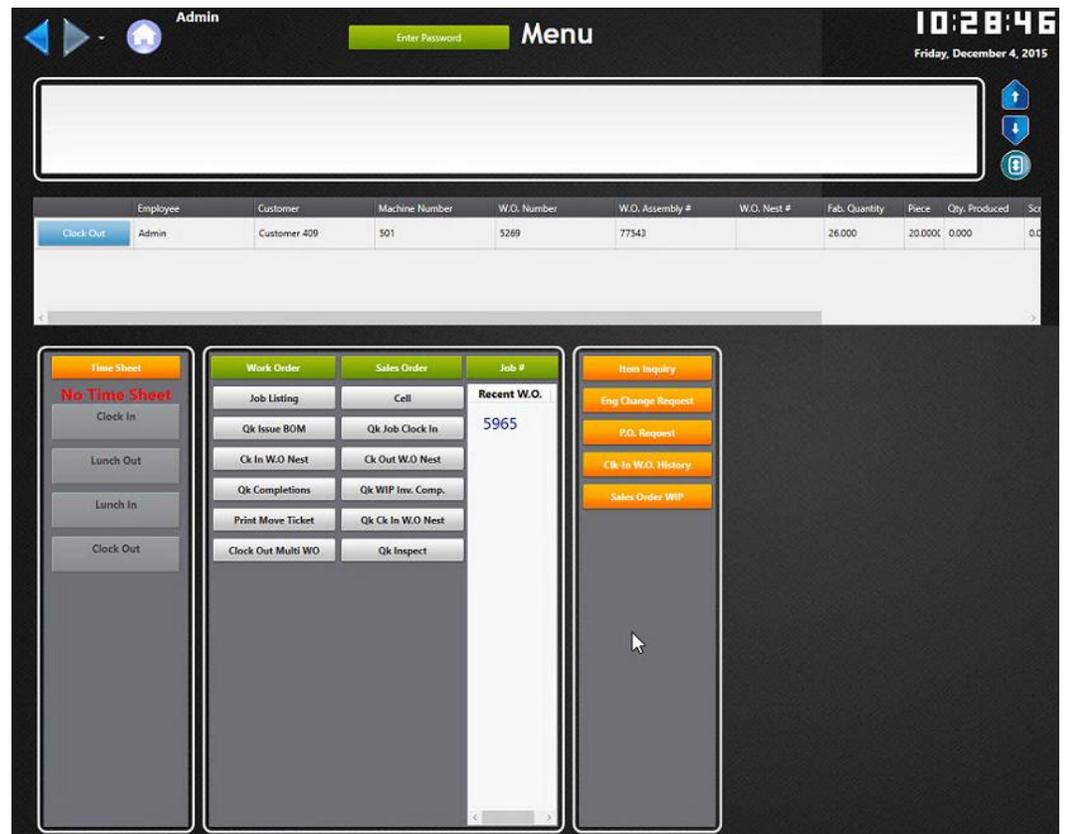


Figure 5. MIE Kiosk screen

### Multi-site Capability

MIE Trak Pro provides comprehensive inter-division and inter-site capabilities within all applications. Many companies operate in multiple locations, have multiple divisions or subsidiaries, or even collaborate with extended supply chains that includes customers, partners, and suppliers. With MIE Trak Pro's latest product enhancement, companies can easily accommodate transactions that span multiple companies and automatically distribute work across two or more companies or divisions, reducing costs and eliminating errors and time. They can also consolidate information from separate companies or divisions, or global locations, to enable them to effectively manage multiple companies and achieve comprehensive financial reporting on multiple business entities.

### **Customizations and Integrations**

MIE Trak Pro can be further customized to adapt to manufacturers' needs. Integrating with accounting packages like Sage and Quickbooks, CRM packages like Workbooks, and CAD/CAM companies like Metamation, MIE Trak Pro users can quickly see all their information in one place. MIE Solutions also provides custom development work, integration services, and consultive services to provide maximum usability and efficient best practices.

MIE Trak Pro has the ability to adjust the screens and hide grid elements, and any other data on the screen through end user customization to make the product more closely match their requirements. Customized end user data points can be added to further customize the product. Furthermore, entire new screens and modules can be created using MIE Trak configurator while keeping the software upgradable.

### **Additional Features**

MIE Trak Pro delivers a number of other sophisticated features for manufacturing shops.

MIE Trak Pro enables organizations to easily link and use computer-aided design (CAD) files within the system. A CAD program's Drawing Exchange Format (DXF) file is linked to an item in the item master and then MIE Trak Pro exposes all the details of the item within the system. The system can also analyze the item and show the item nested on a sheet for cutting. This makes quoting and estimating even more precise.

Quality control operations are tightly integrated within MIE Trak Pro. For example, when a return material authorization (RMA) needs to be managed, a user can enter all the details of the RMA from the original sales order. The quality control handling within MIE Trak Pro supports all the detailed tracking needed for a company to be ISO compliant. All the detailed quality control information is entered across a set of screen tabs on a single screen and allows a user to document the discrepancy, issue credits, enter the root cause analysis (RCA), and manage the corrective-preventive actions associated with the RMA.

## **Major New Functionality**

### **Automated WIP Inventory Locations**

The automated WIP inventory locations are a tracking mechanism for Work In Progress inventory. It automatically prompts after the WIP stage is complete to let the next step know where the physical work is. For example, imagine you were producing a book that had to go through three stages prior to finishing: printing the pages, binding the book, and laminating the cover. During printing, the raw inventory—ink, paper, etc.—would have been used from shop inventory. Once the pages are printed they can be put on Shelf “A” in some Building and Rack. But, before the binding operation, the binder needs to know where the printed pages (WIP inventory) is located. The automated WIP inventory tracks where these printed pages are physically located.

The automated WIP Inventory locations let the binder know that the printed pages are in (Station A) and they can start the binding process. As soon as the binder is done binding, MIE Trak Pro will prompt the binder to let the next step or the laminator know where the bound book is. This automatic prompt provides a tracking mechanism for WIP Inventory locations.

### **Whiteboard Drag and Drop in Scheduling**

The whiteboard drag and drop in scheduling helps move the schedule around based on customer demands. Built to mimic the physical movement of work on a whiteboard in the manufacturing facility, it allows the business to efficiently adjust the schedule in real time and have it reflected out on the shop floor instantly.

### **Add Dashboards and Use Dashboards at the Report Query Levels**

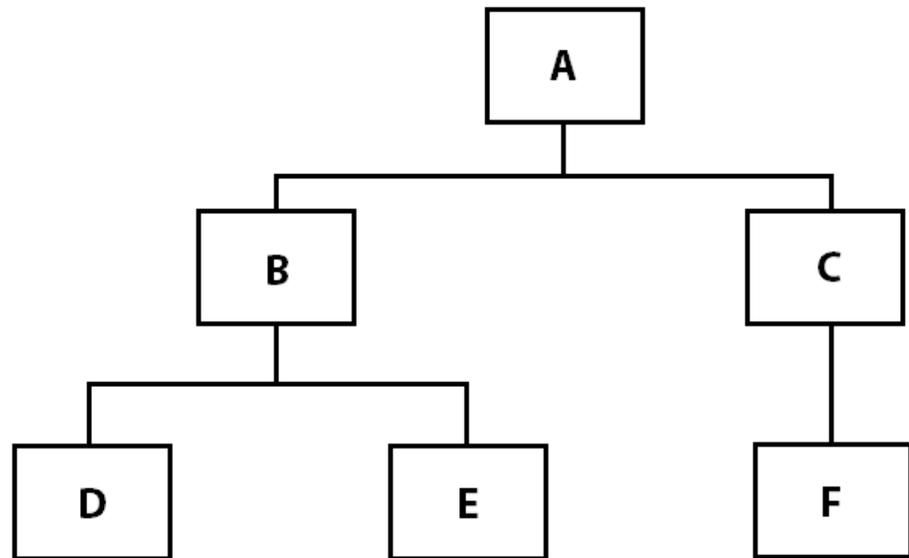
Dashboards allow a user to look at system information quickly and graphically through display charts. For example, a user can look at order backlogs and dollar and volume and with one click, can create a dashboard to see that value. The dashboard function allows a user to create a graphical display of anything they would like to see in charts, graphs, and other displays (referred to on page 5).

### **Team Calendar**

The team calendar allows for individual departments—like sales, purchasing, and production—to see what’s happening in real time and update job status in their department. For example, if a client wants a part produced and purchasing needs to order the raw material and it’s delayed, how would sales and production know what's going on? The team calendar allows departments to communicate and know what's happening to eliminate that issue. This function has been used by companies in meetings, using tablets to update the department calendars.

### Quote Module Displays Sub-pricing in Quotes

Large assembly parts have multiple parts that need to be quoted. There are hundreds of items quoted in a large assembly part. The ability to show sub-pricing in quotes allows you to see what constitutes a sub assembly price, without having to manually look at the individual information or calculate it. In the picture below, you can see that part A is made up of parts B and C; part B is made up of parts D and E; part C is made up of part F. With the new feature, all pricing can be viewed in one place without having to navigate to the individual sub assemblies.



**Figure 6.** Quote subpricing

### Auto MRP to Auto Work Order Creation

With the Auto MRP feature, you never have to manually create work orders. The MRP runs in the background at defined intervals. The MRP system calculates Work Order proposals by looking at demand, re-order points, MIN/MAX levels, and optimal build quantities. The Auto Work Order Creation feature generates work orders from the MRP-proposed work orders. When a new order is entered into MIE Trak Pro, a few minutes later a Work Order is created without any user intervention.

## MIE Trak Pro Customer Testimonials

“MIE Trak Pro is an extremely powerful and versatile program capable of handling the entire production process, from start to finish. It enables us to manage the large amounts of data generated from our products into usable, understandable, and actionable reports. “

— Ryan Moore, Harcon Precision Metals

“We began migrating from our original ERP/MRP software to MIE Trak Pro in 2012. With over a decade worth of information stored in our old system, we had concerns, customer service and support being the biggest. Not only has MIE Solutions developed a great product that serves our needs, but we have found that Dave Ferguson and his team make personalized customer service the highest priority. We operate far more efficiently than we ever had before.”

— Dusty Oberbeck, Superior Steel Fabrication

“EVS has utilized MIE Solutions’ MIE Trak Pro for 18 years. MIE Solutions is extremely responsive in providing solutions to whatever new business challenges we are faced with.”

— Joe Amico, Vice President, EVS Metal

“Their software is great, but their product support is truly where they separate themselves from the pack.”

— Chad Helland, Advanced Laser Machining, Inc.

## **MIE Trak Pro Summary**

MIE Trak Pro has been developed by industry experts to meet the unique needs of sheet metal fabricators, precision engineering operations, and related manufacturing. The system provides many accounting functions required to run an organization but can also be integrated with popular accounting packages such as Quickbooks or Sage.

The MIE Trak Pro was developed with manufacturing operations in mind. The fit and finish of the user interface is designed to minimize mouse clicks and keystrokes to maximize efficiency. The system was designed to make the maximum use of screen real estate, making it easy to see and find all the required information while performing business operations. The system has a number of advanced user interface features including rich Excel-like data grids for navigating system entities and graphical dashboards to visualize information.

MIE Trak Pro delivers a number of advanced capabilities including complex quoting and estimating, a very thorough scheduling engine, and integrated quality control functionality. Along with these advanced capabilities, basics like shop floor control, work order management, inventory control, and costing are handled in the system.

The developers of MIE Trak Pro show that they know how to meet the business needs of their target markets. From the detailed quoting capabilities to advanced planning and scheduling to shop floor control, MIE Solutions' MIE Trak Pro is built from the ground up to meet the needs of the metal fabrication and other precision engineering operations. The solution is very complete but hides its true complexity with a very robust user interface. Small to mid-sized manufacturers looking to manage their operations more efficiently would be well-served to take a look at MIE Trak Pro and see how it could help meet their unique needs.

## About the Author

Senior ERP Analyst Ted Rohm covers the areas of enterprise resource planning (ERP), enterprise asset management (EAM), configure price quote (CPQ), supply chain management (SCM), and IT service management (ITSM), with a particular expertise in manufacturing. He has over 20 years of experience in large-scale selection, design, development, and implementation projects, primarily in the biotech/pharma industry.



Prior to joining TEC, Rohm worked for a number of companies including Oracle, Syntex, and Genentech (now part of The Roche Group). Rohm worked with Genentech for 13 years, starting as a senior programmer analyst responsible for building custom applications using the Oracle Tool suite in support of sales and marketing and product distribution. He then became senior manager of commercial systems, where he directed the development, deployment, and operations of enterprise-wide applications for the sales and marketing departments. Rohm was the principal systems architect during his last few years at Genentech, focusing mainly on the implementation of SAP ERP and its integration with other systems.

Rohm holds a bachelor's degree in electrical engineering from Columbia University and a bachelor's degree in physics from Allegheny College.

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