

# Fourth Shift Engineering solution



➡ The Fourth Shift Engineering solution manages engineering information and product information changes from design through manufacture.

## Overview.

Fourth Shift Engineering supports many of the tasks performed as a new product evolves or as changes are made to existing products. Developed with extensive customer and industry input, this engineering solution lowers the cost of change, manages information flow from design to manufacture, and improves communication between the design, engineering, and manufacturing functions. The Fourth Shift Engineering module enables companies to reduce product time to market and deliver high quality products at the lowest cost.

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## Benefits.

The Fourth Shift Engineering solution allows you to:

- **Integrate production and engineering information, resulting in higher productivity and fewer errors:** Manufacturing, engineering, and user-defined data is presented concurrently for improved communication between departments.
- **Ensure the impacts of changes are validated before implementation, eliminating costly mistakes:** Notices of proposed changes are automatically routed via email to the individuals who need to sign-off on the changes. You can evaluate and minimize the impact that the proposed product changes may have on product cost, inventory, work-in-progress, and open orders.
- **Validate your engineering bills against your product release rules:** The system allows you to define the conditions and rules to constrain product releases as designs evolve from engineering to pre-production and into production.
- **Electronically document and track your business processes:** Workflow management capabilities extend beyond the management of product revisions. The system can display information from external databases for accounting and sales applications as well as for engineering and production. For example, the sales department can use workflow management to facilitate contract review or plant maintenance schedules.

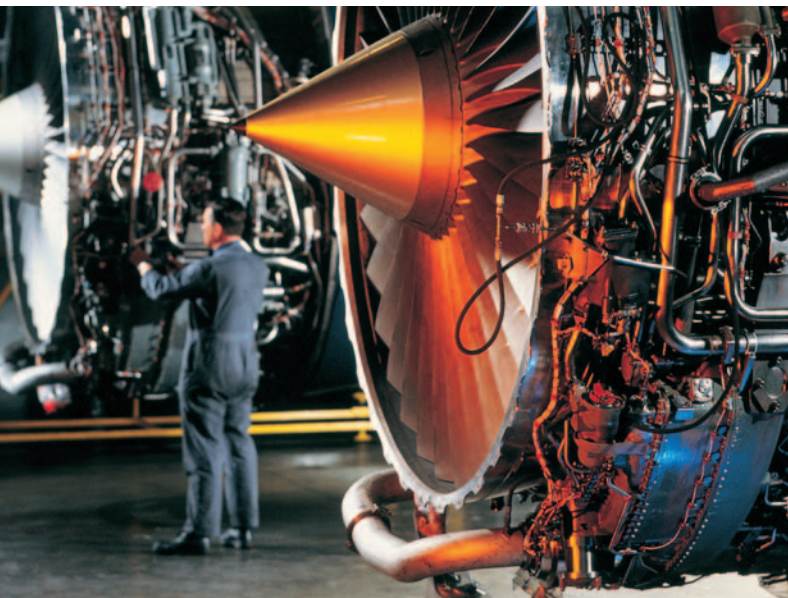
- **Automate bill creation and revision, reducing data entry and saving time:** Create new bills from existing components of others, and make changes to multiple items and components of bills using the mass change feature. Bills can be copied from production to engineering. Data from external files can be easily imported to the engineering module using the import feature.
- **Assess costs and lead times:** Cost rolls and cumulative lead time analysis tools provide for impact simulations prior to production release.
- **Easily use and customize the solution:** Create, enter, and review user-defined engineering data elements and documents alongside production data. Data fields can include documents, drawings, audio, and videos. You can customize views so that you only see what you want to see. All information is accessed through tabs and buttons for intuitive navigation. Customizable report templates are also included.
- **Facilitate ISO 9000 compliance:** Manage changes to your product according to workflows you tailor to reflect your internal processes and procedures. Consistent execution of procedures provides for the improvement of product quality and manufacturing processes. ISO requirements are further supported by the Fourth Shift online documentation and help system, which supports site-specific help.

## Features and functions.

Fourth Shift Engineering has three main components — product definition, workflow management, and product release management.

### Product definition:

- Fourth Shift Engineering provides direct access to the item master and production bill of materials.
- Users can create multi-level bill of materials for both engineering and production environments. Multi-level bills can be viewed and printed complete with component details. Users can create, save, and recall their own views of the bills.
- User-defined engineering information—such as component location, orientation or detailed insertion instructions—can be associated with a specific reference designator for a component within a bill of materials.



- Reference designators can be entered singly or in ranges. Ranges are used to organize multiple reference designator identifiers for a component or sub-assembly.
- Reference designators associated with components of a bill of materials cannot be duplicated within an effectivity date range on that bill.
- If a change needs to be made to an item that is contained in several bills of materials, you only have to enter the change once. Mass change functionality allows you to automatically change a component as well as any information that exists for that component in every bill in which it resides.
- Engineering data, including items, bill of materials, reference designators, and reference designator text, can be imported into the engineering database from files created in CAD, CAE, and other applications.
- You can analyze differences between bills or revisions for both engineering and production using single-level or summarized comparison bills of materials.
- Bills of materials are displayed in a graphical hierarchy format; icons delineate component types.
- To prevent proposed changes from affecting the manufacturing database, engineering data is stored and maintained in an independent engineering database that is isolated from, but tightly connected to, the manufacturing database.
- Integrated finders and query-by-example grids allow multiple find criteria and filtered searches.
- Fourth Shift Engineering is designed to adapt to the unique needs of its users. You can add engineering data fields, including documents, drawings, audio, and videos. You can also tailor and save multiple views of item masters or bills, selecting fields, sorts, and orientation to reflect the needs of the users executing specific jobs. Views can be defined as global (shared) or local (personal).
- The module allows for the concurrent display of engineering, production, and user-defined data. Asterisks are used to differentiate between their sources. Engineering fields have one asterisk and user-defined fields have two. Production fields have no asterisks.
- Report templates can be easily modified using crystal reports professional. All reports are email routable.



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#### **Workflow management:**

- The system routes proposed changes together with impact analysis documents through the sign-off cycle using workflow routings created to match your company's organizational structure and operating procedures.
- Generic routing templates are included that define users, groups, activities, and routing specific documents.
- The system automatically installs a sample workflow that can be used as a reference or starting point when creating new workflow processes.
- You can determine at a glance the status of an ECR or action to be taken. Icons are color-coded to indicate status within the ECR routing and disposition processes.
- Documents of virtually any format can be added to a routing, including Microsoft Word, Microsoft Excel, crystal reports or ASCII text.
- ECRs may be routed to both internal and external users of MAPI-compliant email systems. This function allows users anywhere within your organization, or external to your organization (such as vendors), to participate in the process using familiar tools.
- User-specific comments can be entered anytime during the routing and disposition process.

#### Product release management:

- The Fourth Shift Engineering solution provides the ability to set-up and manage the item release criteria for your system.
- The solution supports three user named phases of product release. Defaults set at delivery are engineering, pre-production, and production. Users have the ability to select an assembly and promote it to the next higher release level. The promotion of both items and bills is subject to user-defined constraints.
- The module includes a sample set of release rules.
- The module includes a sample workflow database.
- Integration to the production database is invisible. Once the module is installed, users can immediately view and manipulate existing production data without performing imports or data entry.

To learn more about how the Fourth Shift Custom Products Manufacturing solution can enhance your business, contact your Fourth Shift representative or visit [www.fourthshift.com](http://www.fourthshift.com)

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