Manufacturing Resource Library and MRL Connect for NX

Benefits
- Easily manages tooling components and assemblies
- Includes vendor catalogs along with user components
- Saves time when you are looking for resource data
- Visually identifies tool components through 2D/3D graphics
- Re-uses proven processes and resources
- Reduces inventory and costs
- Easily prepares shop documentation such as tooling setup sheets
- Avoids duplication of tool components
- Provides a full manufacturing environment when used with Part Planner

Summary
The Manufacturing Resource Library (MRL) manages all of your cutting tool components and assemblies. You can import tool components from catalogs or create your own. The system helps you select components using a guided search to create a 3D assembly that can be used for tool path creation and collision validation in NX™ CAM software. Numerical control (NC) programmers browse and select these tools from the library right inside their NX CAM session.

The MRL can also manage a wide range of additional manufacturing resource data, including machine tools and fixtures, robots, welding guns and manufacturing process templates.

Tool library management system
The MRL provides a tool library management system of cutting tool components and assemblies. More than 300 component data classes and 70 assembly data classes are provided so you can store, search and select nearly every imaginable kind of cutting tool.

Import vendors' tooling catalogs
Vendor catalogs can be imported into separate partitions. Then selected tools from those catalogs can be stored along with other customer tools in an area reserved for just the tools currently used in this NC shop. In this way, multiple catalogs are available for online searching when needed, but do not get in the way of day-to-day usage of the shop's commonly available, stocked tooling.

Search engine
Component searches can be performed within a class or subclass or using attributes like length, cutting diameter, weight, vendor and material. Wildcards or ranges can also be used as search criteria.

Alternatively, components can be selected from a classification tree. The built-in 3D graphics display helps ensure that you have the right resource in a way that text records never could.

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Features
- Shared repository for resource data useful in NC programming, CMM and process planning
- Comprehensive user-definable classification structures
- Creates solid tool components based on the tool attributes
- ISO-standard import of components from vendor catalogs
- Solid tool representation includes cutting and noncutting areas
- Integrated 2D/3D viewer
- Parametric search engine
- Guided component assembly automatically suggests compatible tooling components
- Connectivity to other systems through XML import/export
- Fully integrated with NX CAM

Tool assemblies
You can use the MRL to create, edit, classify and search your own resource assemblies. As you assemble components into a complete tool assembly, guided search capabilities can be used to filter the components so that only the compatible ones are shown, avoiding assembly mismatches. Proven tool assemblies can be captured and re-used, resulting in higher levels of productivity, improved process repeatability and quality.

Tool graphical representation
The 3D tool representation may be imported as part of the tool vendor's catalog, or it can be automatically created in the MRL. The 3D tool assemblies represent both cutting and non-cutting regions to be used in tool path creation and collision avoidance.

You can visualize resource assemblies or components with the MRL's built-in viewer using a variety of formats. For 3D data in JT™ format, you can rotate, zoom, measure, cross-section or capture an image in the viewer area.

Fully integrated with NX CAM
NX CAM connects directly to the MRL for tool browsing, searching and selection. Tools are selected for use in NC programming using regular NX CAM tool selection commands. After the cutting and non-cutting tool definitions are used to develop the NC tool path, the solid models of the tools are immediately available for full machine simulation and material removal visualization.

MRL Connect for NX connects NX CAM to the MRL for native NX users who have no additional Teamcenter manufacturing applications. This connection immediately provides the benefits of the MRL to any NX installation, regardless of Teamcenter implementation.

Accessing manufacturing resources
The MRL enables you to share resources with multiple sites, as well as control user access to specific groups, including suppliers. Access to a single source ensures that all groups refer to the same resource. The library can be placed into a cloud instance to provide increased exposure while keeping the data secure.
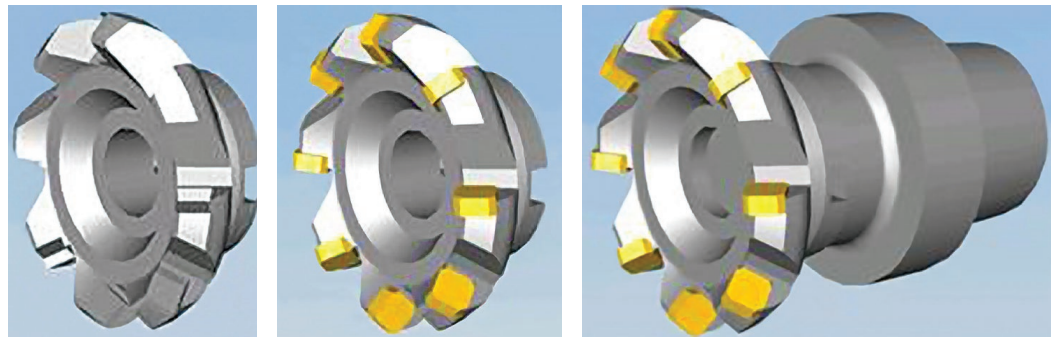
As tool assemblies are developed, the guided assembly ensures that compatible components are selected.
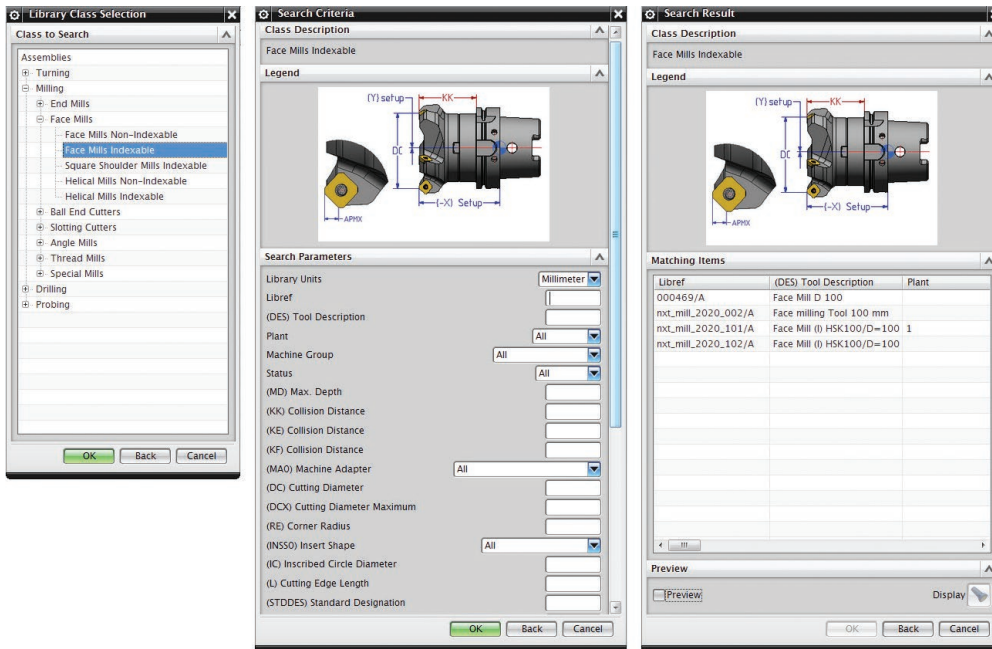
Searching for and utilizing resources directly within NX CAM.

Integrating manufacturing planning applications

If you are using MRL in a fully managed Teamcenter® software environment, you can search for tooling, fixtures, machines and templates in NX CAM as well as in the Teamcenter Part Planner application. You also can associate the resources to process plans and manufacturing operations. Because all of the manufacturing planning data is managed by a common system, you can perform queries on where specific resources are to be used, such as in which NC programs are specific cutting tools used, and which tool assemblies contain a specific tool component?

Connecting tool libraries to shop floor systems

Using the MRL facilitates the creation of accurate tool component lists and enhanced shop floor documentation. You can ensure that manufacturing instructions are kept consistent with production practices by standardizing manufacturing planning resources in the MRL with those on the shop floor.

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