



Enforcer[®] Version 5

Feature Summary

Product Description

Enforcer is a specialised “Feature Driven” MDL application that enables MicroStation users to Draw, Check, Correct, Convert and View design features within a project or corporate drafting standard. There are five main areas of functionality in Enforcer:

1. Feature oriented menuing system driven by user-defined control files, that incorporate smart features for increased productivity when constructing a design file.
2. Feature Viewing and Plotting.
3. Design File Analysis against a corporate standard, plus the ability to correct design elements graphically if they don't meet the corporate standard.
4. Design File Correction/Conversion. The ability to convert the element symbology of a design file to another nominated symbology standard, plus the ability to selectively extract (and optionally change the symbology of) elements in a design file.
5. Control File Creation and Maintenance. Control files that contain the feature definitions and determine how the design file analysis is performed, can be created and maintained using a sophisticated GUI editor.

Developed by Australian Data Systems as an MDL application, Enforcer comfortably co-exists with and complements Bentley Systems' suite of application software.

Enforcer is employed by a large range of users – Local and State Government Authorities, Mining and Exploration companies, Cartographers, Geographers, Utilities and Educational Institutions.

Enforcer is certified for MicroStation 95, SE J and V8, and PowerDraft.

Enforcer or EnforcerDraft?


Enforcer is the top-of-the-range product that has the complete set of functions, including:

- Automatic generation of control files from existing design files.
- GUI editor to create and maintain control files.
- File conversion.
- Batch (bulk processing) options.
- The functions contained in **EnforcerDraft**.

Enforcer is suitable for system administrators and supervisors.

EnforcerDraft includes the drawing, checking and correction functions required by the drafting professional, including:






- Menu-driven feature placement.
- Smart drafting tools.
- On-screen feature identification.
- Quick error checking and correction.
- Correction from error list.
- File correction from one design standard to another.
- View/plot filter.
- Detailed file analysis and reporting.

This document describes the functions available in Enforcer and EnforcerDraft. This symbol means that a particular feature is not supported in EnforcerDraft: 

Features

Enforcer's functionality is accessed via the main tool frame:



- Smart View
- Quick Check
- Smart Drafting Tools
- Wild Card & Range Conversion 
- Feature Correction List Builder
- On-Screen Feature Identification
- Graphical Correction of Symbology
- Selective Feature Extraction/Conversion 
- Design File Feature Symbology Analysis
- Control File Driven Symbology Standard
- Feature Driven Menu System for Drafting
- Design File Feature Symbology Conversion 
- Log File Feature Symbology Analysis Report
- Automatic Generation of Control Files 
- GUI Control File Editor 

Control File

The Enforcer control file is the engine room of the application. A control file serves as a register or active database of all features/elements to be drawn in a design file. It contains a unique identification name for each feature, symbology settings, scale settings for text and cells, plus a plain English description of that feature.

A set of control files has an associated ASCII command file that determines the non-standard element placement commands. These "override" commands can be MDL applications, Basic macros, key-ins or User Commands.

Ranges and Wild Cards are available for most columns in the control file. Exceptions are element type and font. Special user-defined Element Groups and Font Groups are used instead.

Feature Driven Drafting Menu

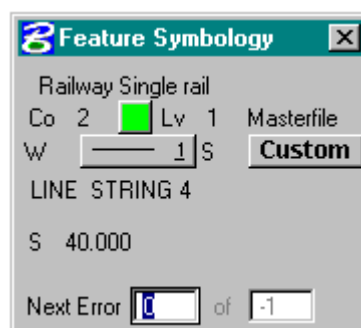
Enforcer provides a user friendly and intuitive drafting environment in the form of the Enforcer Feature Menu Bar. It consists of Feature Driven menu options which activate the correct symbology and command for placement of an element when the relevant option is selected. The Enforcer drafting menu is generated from a set of control files and a command file that contain the corporate or project drafting standards. Selecting options from the menu ensures that drawing in the design file is conducted in accordance with an approved standard. Enforcer allows submenus to be torn off from the main menu bar for a drafting session.



On-screen Feature Identification

The Enforcer Reveal function allows a user to snap to a design file feature and receive a plain English description of that feature, eg “Index Contour” or “Process Line”, plus details of its symbology (level, colour, weight, element type, text settings, etc).

If the selected element does not match a feature definition in the control file, the symbology settings are displayed with a “feature description” of NOT IN CONTROL FILE. Enforcer’s Smart Tools can then be used to correct the symbology of the incorrect feature.



Smart Tools

Enforcer provides a set of Smart Tools to change or activate feature symbology interactively. This can be achieved using a combination of the Reveal, Fix, Match, Activate, Change, Quick Check and Next Error functions:



To set symbology automatically via the graphical identification of a feature, a combination of Match and Activate is used. Activate will invoke feature symbology and the same key-in, MDL, macro or user command that was used originally to place that feature. These commands are embedded in the control file that generated the Enforcer feature menu. This method works for features in the active design file as well as those in reference files.

So, with Enforcer's feature menu, there are two easy ways to set symbology before proceeding to draft. On-screen modification of an element's symbology can be achieved by executing the following sequence of functions.

Modification of the first element: Reveal -> Match or Select Menu option -> Fix.

Modification of subsequent similar elements: Reveal -> Change.

This results in the modification of the symbology of the Revealed element to that of the feature identified in the Match or Select Menu Option function. The Revealed element can be an incorrect "NOT IN CONTROL FILE" feature, or it can be a valid feature that was placed in error.

Design File Feature Analysis



Enforcer can analyse an entire design file, including reference files, against a nominated control file to identify whether all features have been drawn in keeping with a corporate or project standard. The Analyse function provides a full report of a design file. This report is an ASCII text file that can be viewed from within Enforcer. There is no restriction on the size of the design file that can be analysed.

The Analyse function checks much more than symbology settings such as level, colour, weight, etc. It incorporates options to check working units, global origin, required reference file attachments, colour table, cell library and more. These options provide a quantifiable method to quality assure design file data supplied by contractors, project management staff, or the drafting department in your organisation.

This function has an equivalent batch process that enables the operator to analyse many design files against the same standards during a single operation.

Design File Feature Correction



Enforcer provides three methods of changing the symbology of elements in a design file.

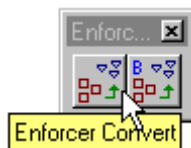
1. Enforcer Smart Tools (described above)
2. Feature Correction from List
3. Feature Correction from File

The Feature Correction from List function gives the operator the ability to build and maintain a list of incorrect features/element. Items can be added to the list by selecting features from the menu or using the Reveal tool to identify them graphically.

The Feature Correction from File function uses two control files (From and To) to modify features from one standard to another.

During these Correction functions the changes are applied to the elements in the active design file. Correct from List and Correct from File have equivalent batch functions where the same set of corrections can be applied to many design files during a single operation. The results of a correction are recorded in a log file.

Feature Conversion

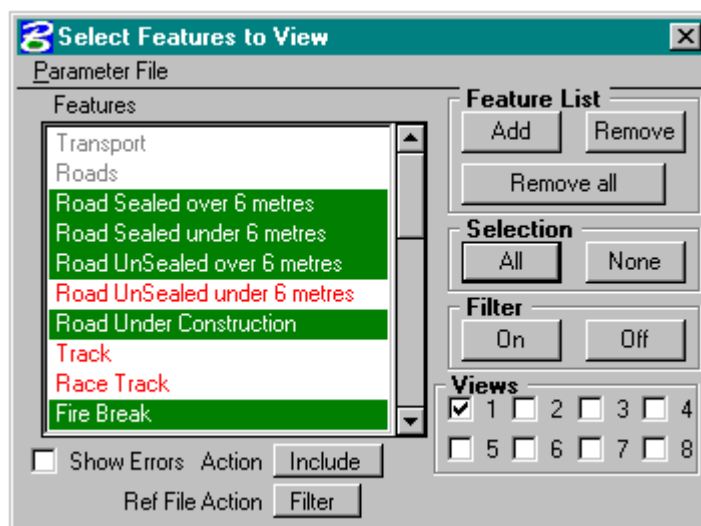


This function is used mainly to translate (convert) features from one design standard to another. It requires the use of two control files, one containing the standards to convert from and another to define the standards to convert to. During the conversion process the elements are copied to a new design file. They remain unchanged in the From design file. It is not essential that the feature symbology change during the conversion process, consequently this function is useful for selectively extracting features from one design file and copying a subset into another file, with or without changing the symbology along the way. This provides an efficient method of exchanging data between organisations with different drafting standards.

The Conversion function has an equivalent batch function that allows the processing of many design files during a single operation. The results of a conversion are recorded in a log file.

Feature/Error Viewing and Plotting

Having reached the stage where you are confident that your design file data is correct to a standard, you can use Enforcer's Feature Viewing facility to build a list of features to display. This means that you no longer have to worry about how or on which level or in which reference file a feature is drawn... Enforcer takes care of that. Even if two features are drawn on the same level and you wish to view and plot only one of them, the View Filter lets you select the one you want and the view in which to display it.



Automatic Generation of Control Files

This function provides a useful base from which to start building control files. All you need is a typical design file that conforms to your corporate or project standard. Enforcer will read and interpret the symbology of the elements encountered in the design file and construct a generic control file. All you have to do is cut and paste the feature definitions into the menu/submenu structure you require and to allocate feature descriptions that are meaningful to your organisation.

GUI Control File Editor

Instead of using a text editor to create and maintain control files, Enforcer has its own intelligent user-friendly editor. Apart from in-built validation and error checking, this editor has advanced fuzzy logic that makes it intuitive and easy to use.



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