Natural Engineer

Release Notes

Version 8.4.1

October 2017

ADABAS & NATURAL

Manual Order Number: NEE84-008ALL

This document applies to Natural Engineer version 8.4 and to all subsequent releases.

Specifications contained herein are subject to change, and these changes will be reported in subsequent revisions or editions.

Readers' comments are welcomed. Comments may be addressed to the Documentation Department at the address on the back cover. Internet users may send comments to the following e-mail address:

document@gensystems.com

Acknowledgements

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ABOUT THIS MANUAL

Purpose of this manual

This manual contains the Release Notes for Natural Engineer version 8.4.1.

The information provides an overview of the new features, changes and enhancements, as well as any migration, support and product documentation issues.

In addition to the new features and enhancements, this Natural Engineer version includes all error corrections, changes and enhancements provided with previous Natural Engineer versions.

Target Audience

The target audience for this manual is intended to be any User of Natural Engineer version 8.4.1 as well as Systems Administrators responsible for installing and configuring the product.

Typographical Conventions used in this manual

The following conventions are used throughout this manual:

UPPERCASE TIMES	Commands, statements, names of programs and utilities referred to in text paragraphs appear in normal (Times) uppercase.
UPPERCASE BOLD COURIER	In illustrations or examples of commands, items in uppercase bold courier must be typed in as they appear.
< >	Items in angled brackets are placeholders for user-supplied information. For example, if asked to enter <file number>, you must type the number of the required file.
Underlined	Underlined parts of text are hyperlinks to other parts within the online source manual. This manual was written in MS-Word 97 using the "hyperlink" feature.

The following symbols are used for instructions:

⇒	Marks the beginning of an instruction set.
□	Indicates that the instruction set consists of a single step.
1.	Indicates the first of a number of steps.

How this manual is organized

This manual is organized to reflect the new features/enhancements, changes/modifications and documentation updates available with the release of Natural Engineer version 8.4.1.

This manual should be read carefully before installing and using the product.

Chapter	Contents
1	Provides general information for this release, including migration from previous versions, maintenance support, main features of upcoming releases and customer change/enhancement requests.
2	Provides an overview of the new features, changes and enhancements for this release along with any product highlights.
3	Provides a list of the documentation available for this release along with manual order numbers.

Terminology

This section offers some of the terms that are specific to the Natural Engineer product.

Note: Familiarity is assumed with the general terminology of Natural, Adabas, Microsoft and Mainframe operating systems.

Analysis

The Analysis process of Natural Engineer searches application data within the Natural Engineer Repository, according to specified Search Criteria and generates reports on the search results.

Application

An Application is a library or group of related libraries, which define a complete Application. In Natural Engineer, the Application can have a one-to-one relationship with a single library of the same name, or a library of a different name, as well as related steplibs. The Application refers to all the source code from these libraries, which Natural Engineer loads into the Repository.

Browser

An Internet Browser such as Microsoft Internet Explorer or Netscape.

Category

Categories in Natural Engineer specify whether and how a Modification is applied to the Natural code. Valid categories are: Automatic change, Manual change, Reject the default Modification, No change to the data item, and the data item is in Generated Code.

A category is further broken down according to type of change (for example: Keyword, Literal, Data Item, Database Access, Definition).

Cobol

Abbreviation of Common Business Orientated Language. A programming language.

Cobol Link

A Cobol Link is the link between the individual Cobol modules and the executable Cobol program referenced in the JCL object.

Consistency

An option in the Analysis process that causes Natural Engineer to trace an Impact through the code, using left and right argument resolution to identify further code impacted by the code found.

Database Access Definition

A collective term used to identify DDMs, SQL Tables or Predict User Views.

Data Item

A collective term used for any data fields within a programming object. These can be user-defined variables, DDM fields or System Variables. It is inter-changeable with the term ‘variable’.

Environment

The Environment process is the means by which Natural Engineer generates a structured view of the application code in the Natural Engineer Repository. This provides application analysis reports and inventory information on the application and is used as the basis for Impact Analysis.

Exception

An Exception is an Item identified as impacted that does not require a Modification. Where there are a few similar Exception Items, they can be treated as Exceptions, and rejected in the Modification review process. Where there are many similar (therefore not Exceptions), consideration should be given to changing the Search Criteria so they are not identified as impacted in the first place.

Generated Code

This is code which has been generated by a Natural code generator, such as Construct, and which is not normally modified directly in the Natural editor.

Impact

An Impact is an instance of a Natural code Item; e.g., data item or statement (a “hit” scored by the Analysis process) that matches the defined Search Criteria used in the Analysis process.

Iteration

An Iteration is one examination cycle of a field identified according to the specified Search Criteria. For example, one Iteration is reading the field right to left. Multiple Iterations are performed when the option of ‘Consistency’ or Multi Search is requested for Analysis, and Natural Engineer performs as many Iterations as necessary to exhaust all possibilities of expressing and tracing the field, and can be limited by a setting in the NATENG.INI file.

JCL

Job Control Language.

JCL object

A JCL object is a collection of Job Control statements in the order which they are to be executed in a mainframe batch environment. Commonly referred to as JCL.

Library

A single library of source code, which exists in the Natural system file.

Modification

A Modification is a change suggested or made to an object or data item resulting in the required compliance of that object or data item. Modifications in Natural Engineer are classified according to Category and Type.

Refactoring

Improving a computer program by reorganizing its internal structure without altering its external behavior.

Soft Link

A Soft Link is where a link between two objects has been defined using an alphanumeric variable rather than a literal constant.

TLM

Text Logic Members are used to contain the code required to support inclusion of common code into the application. An example of this is the code to include into an application before updating a database.

Type

The Type of Modification available, for example: Data Item, Keyword and Literal.

Variable

A collective term used for any data fields within a programming object. These can be user-defined variables, DDM fields or System Variables. It is inter-changeable with the term ‘data item’.

Related Literature

The complete set of Natural Engineer manuals consists of:

1 **Natural Engineer Concepts and Facilities (NEE84-006ALL)**

The Concepts and Facilities manual describes the many application systems problems and solutions offered by Natural Engineer, providing some guidelines and usage that can be applied to Natural applications.

2 **Natural Engineer Release Notes (NEE84-008ALL)**

The Release Notes describe all the information relating to the new features, upgrades to existing functions and documentation updates that have been applied to Natural Engineer.

3 **Natural Engineer Installation Guide for Windows (NEE84-010WIN)**
Natural Engineer Installation Guide for Mainframes(NEE84-010MFR)
Natural Engineer Installation Guide for Unix (NEE84-010UNX)

The Installation Guide provides information on how to install Natural Engineer on PC, Unix and mainframe platforms.

4 **Natural Engineer Administration Guide (NEE84-040WIN)**
Natural Engineer Administration Guide (NEE84-040MFR)

The Administration Guide provides information on all the various control settings available to control the usage of the different functions within Natural Engineer.

5 **Natural Engineer Application Management (NEE84-020WIN)**
Natural Engineer Application Management (NEE84-020MFR)

The Application Management manual describes all the functions required to add Natural applications into the Repository.

6 **Natural Engineer Application Documentation (NEE84-022WIN)**
Natural Engineer Application Documentation (NEE84-022MFR)

The Application Documentation manual describes all the available functions to document a Natural application within the Repository. These functions will help enhance / supplement any existing systems documentation such as BSD / CSD / Specifications etc.

7 **Natural Engineer Application Analysis and Modification (NEE84-023WIN)**
Natural Engineer Application Analysis and Modification (NEE84-023MFR)

The Application Analysis and Modification manual describes all the available functions to carry out analysis of Natural applications; including basic keyword searches. The modification process is described and detailed to show how it can be applied to modify single selected objects within a Natural application, or the entire Natural application in one single execution.

8 **Natural Engineer Application Restructuring (NEE84-024WIN)**
Natural Engineer Application Restructuring (NEE84-024MFR)

The Application Restructuring manual describes the analysis and modification functionality required to carryout some of the more sophisticated functions such as Object Builder.

9 **Natural Engineer Utilities (NEE84-080WIN)**
Natural Engineer Utilities (NEE84-080MFR)

The Utilities manual describes all the available utilities found within Natural Engineer and, when and how they should be used.

10 **Natural Engineer Reporting (NEE84-025ALL)**

The Reporting manual describes each of the reports available in detail, providing report layouts, how to trigger the report and when the report data becomes available. The various report-producing mediums within Natural Engineer are also described.

11 **Natural Engineer Batch Processing [Mainframes] (NEE84-026MFR)**

The Batch Processing manual describes the various batch jobs (JCL) and their functionality.

12 **Natural Engineer Messages and Codes (NEE84-060ALL)**

The Messages and Codes manual describes the various messages and codes produced by Natural Engineer.

13 **Natural Engineer Web Interface Installation and Configuration Guide(NEA84-010ALL)**

The Web Interface Installation and Configuration Guide provides information on how to install and configure the Natural Engineer Web Interface.

14 **Natural Engineer Advanced Services (NEE84-017WIN)**

The Advanced Services manual describes various advanced options such as the Refactoring of Natural application source code with Natural Engineer, conversion of applications for Natural for Ajax and Business Rule processing.

1

GENERAL INFORMATION

Chapter Overview

This chapter covers the general information for Natural Engineer version 8.4.1.

The following topics are covered:

- Migrating to Version 8.4.1
- Information For Upcoming Releases
- Natural Version for Open Systems
- SAG Installer
- Removed Features

Due to last-minute documentation updates, it may be possible that the Natural Engineer documentation that you can download with the Software AG Installer or that the online help that you can invoke directly from the product does not yet contain the latest information. The most up-to-date Natural Engineer documentation can always be found on the Software AG documentation website at ***http://documentation.softwareag.com/*** (Empower login required).

The most recent hotfixes and other useful information may also be found in Empower.

Migrating to Version 8.4.1

Note: Depending on the version of Natural Engineer used as a starting point, all subsequent migration steps must be followed. For example: If the starting point is Version 8.2.2, Version 8.2.2.1, Version 8.2.2.2, Version 8.2.3, Version 8.2.3.1, Version 8.2.3.2, Version 8.3.1, Version 8.3.2, Version 8.3.3, Version 8.3.3.1 and Version 8.3.4 must be addressed. If you are upgrading from a version earlier than version 8.2.2 then please refer to the relevant NEExxx Release Notes documentation.

From Version 8.2.2 Base Release

If you are upgrading from Natural Engineer version 8.2.2 to Natural Engineer version 8.2.2.1 you will need to perform the following tasks:

[i] Release the following Superdescriptor:

SQ= AA(1,8), AZ(1,1), AK(1,32), RC(1,1), AB(1,8)

[ii] Conversion is Complete

From Version 8.2.2.1 Release

If you are upgrading from Natural Engineer version 8.2.2.1 to Natural Engineer version 8.2.2.2.

[i] New field

01,NQ,65,A,NU

[ii] New Superdescriptor

ST= AA(1,8), AB(1,8), NQ(1,65)

[iii] Fields now made Null Suppressed

01, AD, 8, U, NU
01, AE, 8, U, NU
01, AV, 7, U, NU

There are two methods available to convert the repository file to the new format.

1. To keep the existing Repository File

[i] Add the following field using the DBA Workbench:

01,NQ,65,A,NU

[ii] Unload & Decompress your existing Repository file.

[iii] Compress the decompressed file using the new FDT definitions NEE-REPOSITORY-V823.FDT from the ADA directory of Natural Engineer.

[iv] Create a new Repository file using the new FDT definitions NEE-REPOSITORY-V823.FDT from the ADA directory of Natural Engineer.

[v] Load the compressed file into the newly added file.

[vi] If you wish to use the new Fields Used functions of Object Viewer and Field Viewer then you will need to re-extract and load the relevant applications within Natural Engineer.

[vii] Conversion is complete.

2. To use a new Repository File

[i] Unload any User data from the existing Natural Engineer repository that you may wish to keep e.g., User Profiles, Soft Link, User Documentation.

[ii] Set up a new Repository file using the new FDT definitions NEE-REPOSITORY-V823.FDT from the ADA directory of Natural Engineer.

[iii] Extract and Load all applications that you wish to use with Natural Engineer.

[iv] Reload the User data previously unloaded in [i]

[v] Conversion is complete.

Users of the Natural Engineer Web Interface (NEA) will need to upgrade to Microsoft® Silverlight® 5 for this release. The browser should automatically prompt to upgrade when running this version of NEA.

From Version 8.2.2.2 Release

If you are upgrading from Natural Engineer version 8.2.2.2 to Natural Engineer version 8.2.3 and have JCL loaded then the following object needs to be run to ensure that the repository has the most comprehensive information available.

[i] To apply the necessary conversions run the following object in the SYSNEE library

NEEJXCNV

Note: This program is completely re-executable and should be executed in a Natural session invoked using the Natural Parameter file: NATENG:

[ii] Conversion is complete.

From Version 8.2.3 Base Release

If you are upgrading from Natural Engineer version 8.2.3 to Natural Engineer version 8.2.3.1 then the following object needs to be needs to be run to ensure that the extract criteria records are converted to the new format.

[i] To apply the necessary conversions run the following object in the SYSNEE library

NEEEXCNV

Note: This program is completely re-executable and should be executed in a Natural session invoked using the Natural Parameter file: NATENG:

[ii] Conversion is complete.

If you wish to utilize the Database Key Usage diagrams then the applications will need to be re-extracted and loaded in order for the relevant information to be available.

If User Exit NEEUEX5 is not present in the SYSNEE library then please rename the supplied NEEUEX5X object to be NEEUEX5 so that new applications may be created.

From Version 8.2.3.1

If you are upgrading from Natural Engineer version 8.2.3.1 to Natural Engineer version 8.2.3.2 and have COBOL Links defined then the following object needs to be needs to be run to ensure that the extract criteria records are converted to the new format.

[i] To apply the necessary conversions run the following object in the SYSNEE library

NEECLCNV

Note: This program is completely re-executable and should be executed in a Natural session invoked using the Natural Parameter file: NATENG:

[ii] Conversion is complete.

If User Exit NEEUEX6 is not present in the SYSNEE library then please rename the supplied NEEUEX6X object to be NEEUEX6 prior to running Natural Engineer v8.2.3.2.

From Version 8.2.3.2

If you are upgrading from Natural Engineer version 8.2.3.2 to Natural Engineer version 8.3.1 you will need to perform the following tasks:

[i] Invert the following Superdescriptors:

```
SU= AA(1,8), NL(1,1), AN(1,32)
SV= AA(1,8), NL(1,1), OL(1,1), AS(1,1), AN(1,32)
SW= AA(1,8), NL(1,1), OL(1,1), AN(1,32)
```

If you have soft links within your applications then the following object needs to be needs to be run to ensure that the soft link records are converted to the new format.

[i] To apply the necessary conversions run the following object in the SYSNEE library

NEESLCNV

Note: This program is completely re-executable and should be executed in a Natural session invoked using the Natural Parameter file: NATENG:

[ii] Conversion is complete.

From Version 8.3.1 Base Release

If you are upgrading from Natural Engineer version 8.3.1 to Natural Engineer version 8.3.2 there are no conversion tasks to be performed.

From Version 8.3.2 Base Release

If you are upgrading from Natural Engineer version 8.3.2 to Natural Engineer version 8.3.3 there are no conversion tasks to be performed.

From Version 8.3.3 Base Release

If you are upgrading from Natural Engineer version 8.3.3 to Natural Engineer version 8.3.3.1 there are no conversion tasks to be performed.

From Version 8.3.3.1

If you are upgrading from Natural Engineer version 8.3.3.1 to Natural Engineer version 8.3.4 there are no conversion tasks to be performed.

From Version 8.3.4

If you are upgrading from Natural Engineer version 8.3.4, 8.3.4.1, 8.3.4.2 or 8.3.4.3 to Natural Engineer version 8.4.1 there are no conversion tasks to be performed.

1 **Natural Engineer Version 8.4.1 Release Notes**

Information for Upcoming Releases

This section covers any information on upcoming releases of Natural Engineer.

Natural Version for Open Systems

Natural Engineer 8.4.1 requires at least Natural Version 8.3 for Open Systems as a pre-requisite.

SAG Installer

Natural Engineer for Windows and Unix is now installed using the Software AG Installer. For more information, see the relevant Installation documentation.

Removed Features

The Business Functions Option that was available in previous versions of Natural Engineer has been retired. Similar functionality is available with the new Services option.

2

NEW FEATURES, CHANGES & ENHANCEMENTS

Chapter Overview

This chapter covers the changes, enhancements and new features that are available with Natural Engineer version 8.4.1. The following topics are covered:

New Features

- Steplib Processing from Different FUSERs
- Object Usage
- Support for Natural 8.4 Syntax

Changes and Enhancements

- General Problem and Error Corrections
- CRUD Dialog Export
- Natural Engineer Web Interface

Additional Entries in CINI and NATENG.INI file

New Features

Steplib Processing from Different FUSERs

It is now possible to specify Steplib applications which have the same name but are on different FUSERs.

These would be specified in the Application Properties screen and the extract process will search the specified steplib applications on the FUSERs. The aliases are set in Global Properties.

The following Figure 2-1 shows the Application Properties

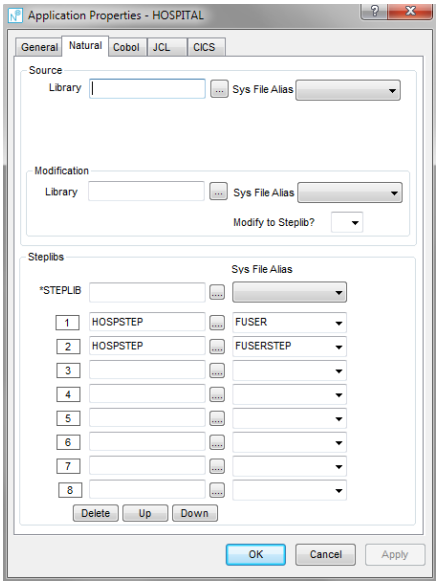


Figure 2-1 Application Properties screen.

If an object has come from a different FUSER then this will be displayed on Natural Engineer dialogs and reports. You can choose whether to display the alias name or the dbid/fnr by changing the FUSER-ALIAS setting in the ENVIRONMENT section of the NATENG.INI initialization file.

This is available on PC only.

Object Usage

The Object Usage diagram shows the objects used within an application and the amount of times they are called. Selecting a particular object will show the statements where the selected object is used.

Detailed information may be exported to a spreadsheet.

The following Figure 2-2 shows the Object Usage screen.

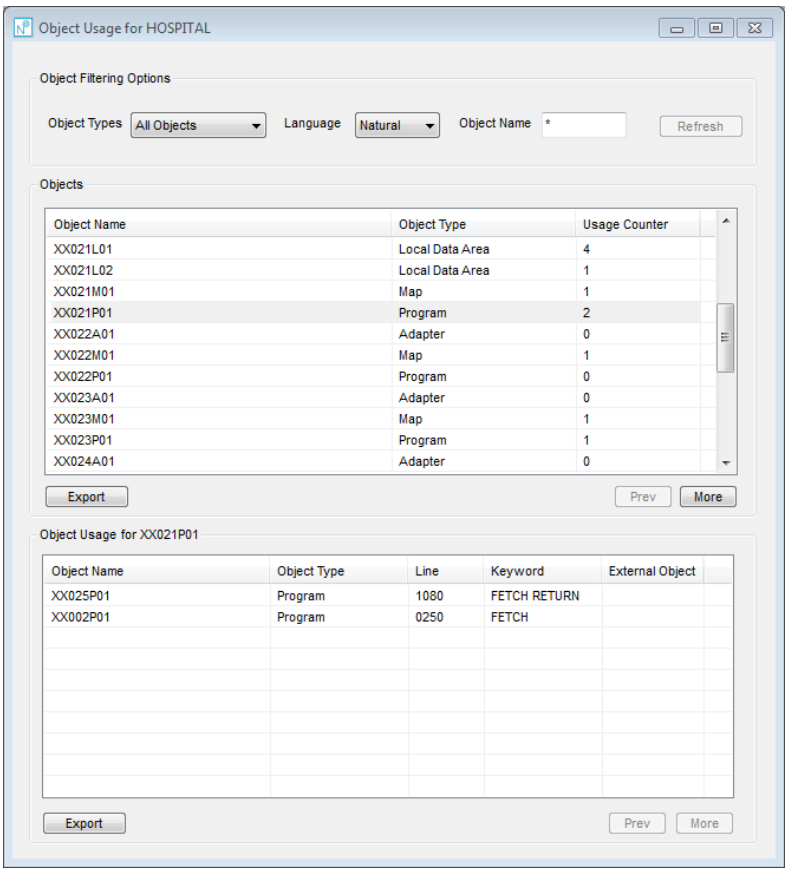


Figure 2-21 Object Usage screen.

This is available on PC only.

Support for Natural 8.4 Syntax

Natural 8.4 new and additional syntax is now supported.

These include;

READLOB statement

UPDATELOB statement

SHARED HOLD and SKIP RECORDS clauses of FIND and READ statements

SUBSTRING clause of MOVE ALL Statement

ADJUST clause of READ WORK FILE Statement

STARTING FROM POSITION option and the REMAINDER POSITION clause of SEPARATE Statement.

Ability to specify system variables in WRITE WORK FILE Statement

Changes & Enhancements

General Problem and Error Corrections

This release contains general problem and error corrections as detailed in the text document 'NaturalEngineer_8-4-1-0_READMEFIX'.

Note: You can find it in the Natural Engineer product documentation at ***http://documentation.softwareag.com/*** *(Empower login required), or when you have chosen to download the documentation during the installation of Natural Engineer - in a central directory named _documentation in your main installation directory.*

CRUD Dialog Export

The CRUD Dialogs now have the ability to export the data to a spreadsheet.

The Dialogs affected are:

- Database Access (CRUD)
- Database Access (CRUD) by Object
- Database Access (CRUD) by field
- Database Field access (CRUD) By Object
- Database Access (Crud) for Job Step
- Database Access (Crud) for Field
- Database Access (CRUD) at Application Level
- Database Field Access (CRUD) by Application

The following Figure 2-3 shows the Database Access (CRUD) screen with the Export button.

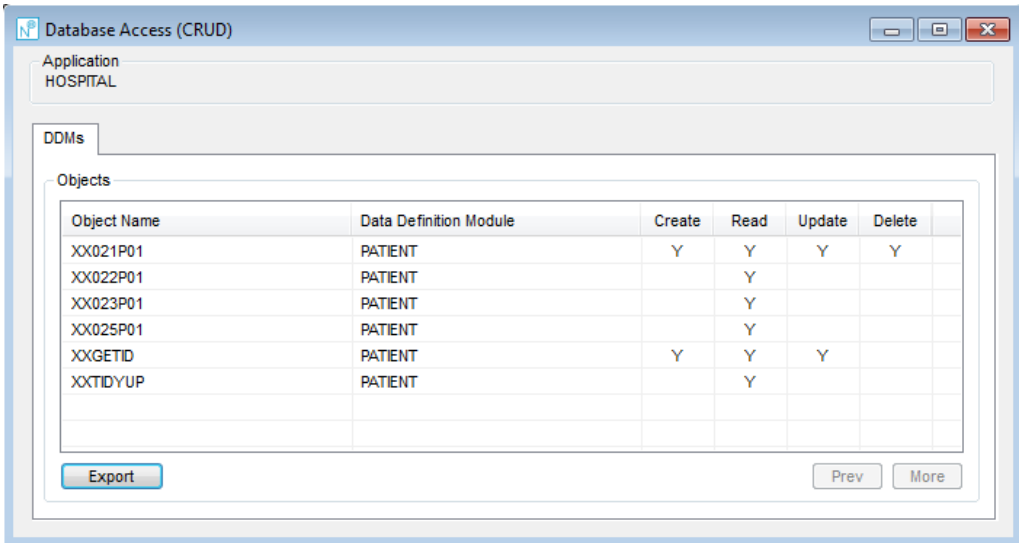


Figure 2-3 Database Access (CRUD) screen with Export button.

This is available on PC only.

Natural Engineer Web Interface

The Natural Engineer Web Interface (NEA) is a graphical interface for reporting data stored in a Natural Engineer repository.

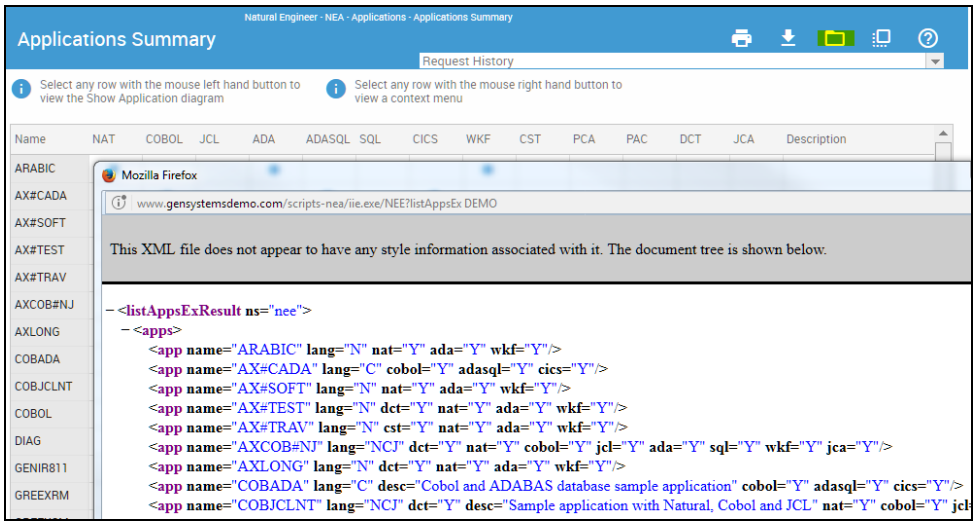
Changes and Enhancements

- Request XML Data
- List Decision Tables
- Rarely/Mostly Used Application Report
- Request Output Limits
- Active Buttons on Welcome Pages
- CICS Objects
- Request History
- Application Settings
- Show Field
- Show DB Access
- Alias Information

Changes & Enhancements

Request XML Data

The XML file contains the data for the request rendering on the page. The menu bar contains a new icon to view the data.



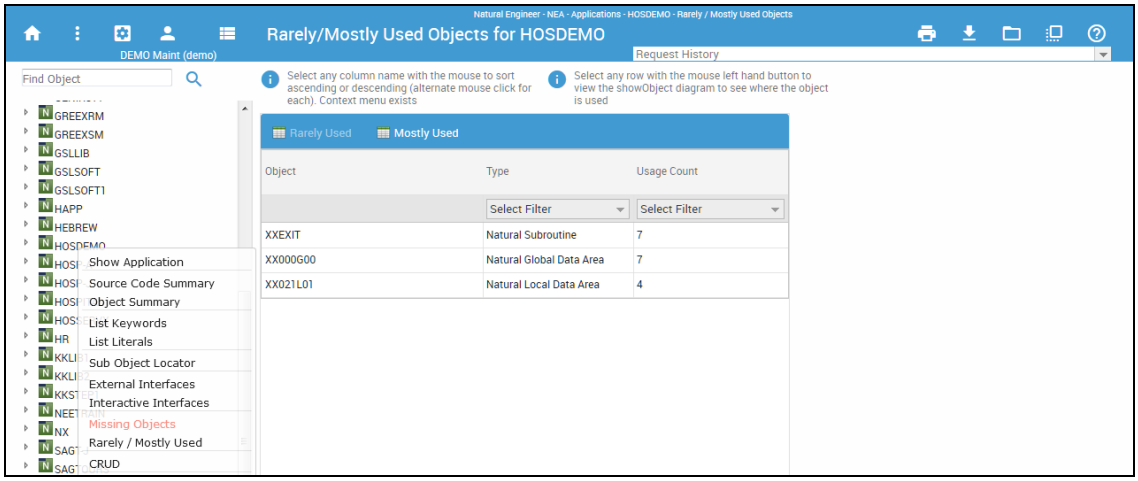
List Decision Tables

Decision Tables can be viewed if Natural Engineer processing has been executed for the Application.

Rarely/Mostly Used Application Report

The Rarely Used Objects' report has been changed to 'Rarely / Mostly Used' for an Application.

A new tab has been added to the grid showing objects that are used the most within an application.



Request Output Limits

To improve the speed of certain requests user specified limits can be placed in the requests section of the NEA initialization file e.g., INIPC-N on the SYSNEEI system library.

REQUESTS-SECTION Group

Group Header / Parameter	Notes
listLiteralslimit =	Default=5000 .
listKeywordsObjLimit=	Default=1000 .
listLiteralsObjLimit=	Default=1000 .

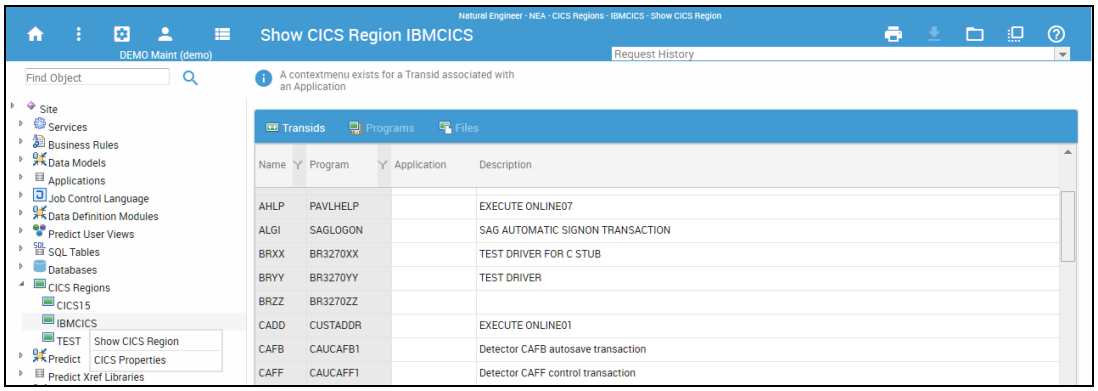
Active Buttons on Welcome Pages

Where applicable the request description text on the main page for a node has been activated as a button so that to view a request the user does not have to use the context menu. The active buttons available are shown in green.

CICS Objects

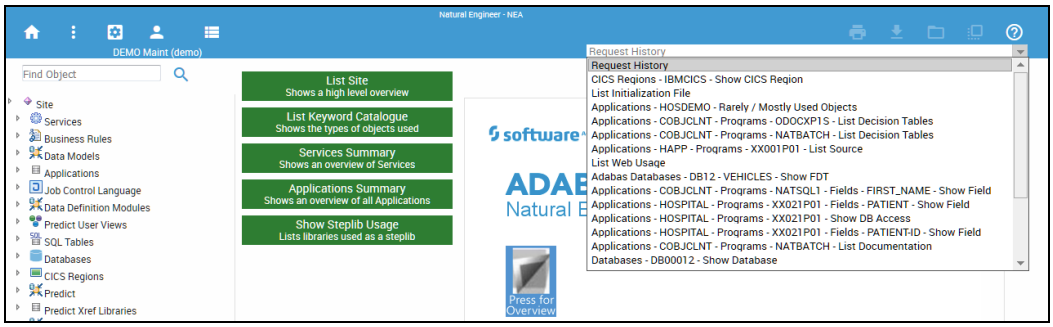
Natural Engineer CICS information is now available to view in NEA under the CICS Systems main node if already loaded into the Natural Engineer Repository.

Requests available include Show CICS System and Show CICS Access.



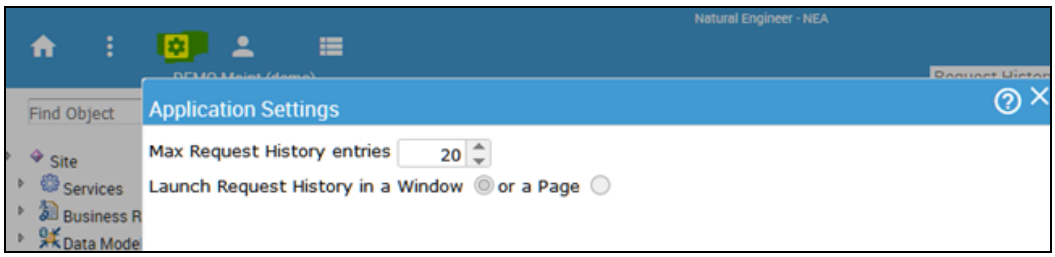
Request History

Previously executed requests are now shown on the header for selection without having to use the tree view. The number held and viewing options are available under Application Settings.



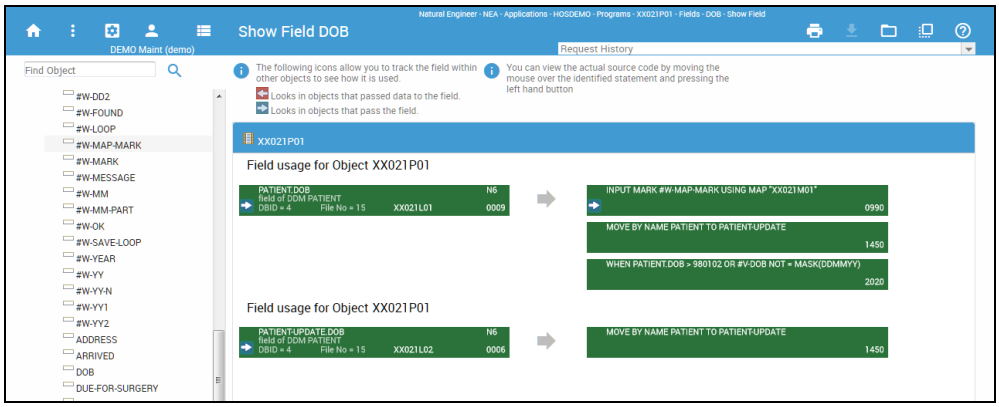
Application Settings

User settings that control how Request History is implemented are available from the banner menu icon.



Show Field

When showing information for a View Field in an object DDM name , DBID and FNR is now shown.

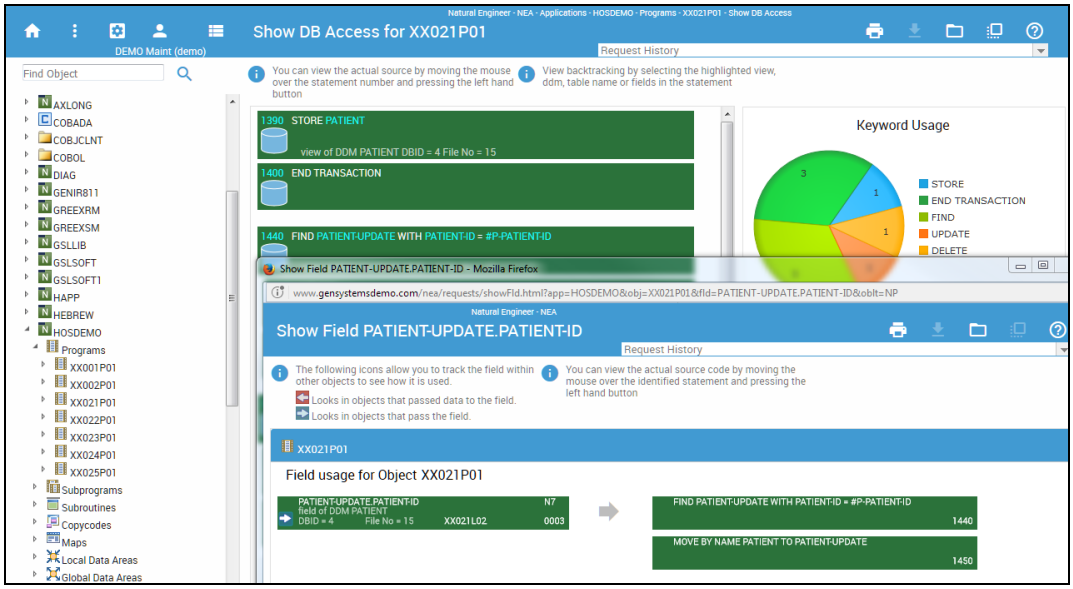


Show DB Access

For the Show DB Access request the DB Access statement components are now activated. These are identified by being highlighted in the report.

If selected, backtracking information using Show Field will be displayed for the view, DDM or field.

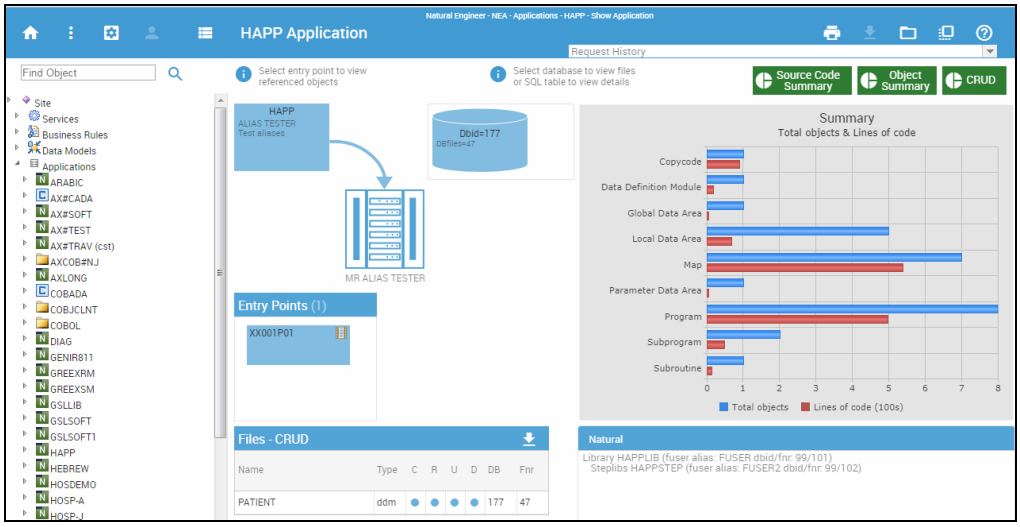
Example shows selecting PATIENT-ID from statement 1440.



Alias Information

Within Natural Engineer it is possible to set up Aliases to identify the location of the Natural source code.

If this facility has been used then NEA will now show this information on the Show Application, Object Summary and Show Object pages.



Initialization Settings

The following changes have been made to the INI and CINI files for Natural Engineer version 8.4.1. Please review the appropriate section of the Natural Engineer User Guide for a detailed explanation about each entry in the INI file. On the PC, the NATENG.INI file may be maintained via the Options➔Administration➔Initialization Settings option from the main menu.

New and Modified Settings

ENVIRONMENT Group

Group Header / Parameter	Notes
[ENVIRONMENT]	
FUSER-ALIAS=	Default=Y Determines whether the alias name as specified in global properties is isplayed on reports (Y) or the dbid/fnr combination (N). Possible Values N,Y.

3

DOCUMENTATION

Chapter Overview

This chapter covers the documentation changes made for Natural Engineer version 8.4.1.

Documentation Updates

The documentation set for Natural Engineer has been updated to reflect the changes and additions provided with Natural Engineer version 8.4.1. All manuals have been reformatted and changed for this release.

New Compiled HTML Help

Natural Engineer now supplies online help for the PC in compiled HTML format. If you encounter an error message when invoking online help for the first time, you probably require an update to your Windows help system. Please check the following Microsoft web page for the appropriate update file:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/htmlhelp/html/hwMicrosoftHTMLHelpDownloads.asp

You can find further information about HTML help:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/htmlhelp/html/vsconHH1Start.asp?frame=true

Note: In order to access HTML Help, the underlying components of Microsoft Internet Explorer 4.x (or later) must be installed.

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