



Product Release Notes v4.0.5.0

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Document Control

1.1 Author

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1.2 Document Summary

This document provides a description of the changes in this release and information about how these changes may impact on an Exor installation.

1.3 Document History

Document History			
Revision	Date	By	Description
1	12-Sep-2008	Exor Development	First Edition

1.4 Reference documents

None

1.5 Distribution

Exor Customers, Partners and Staff

1.6 Quality Assurance

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2 Introduction

This document highlights the key changes to the Exor Core Highways database following the V4.0.5.0 release and lists Customer bugs fixed in the following Product Areas

- Core
- Network Manager / Asset Manager
- Enquiry Manager
- Maintenance Manager
- Contractor Interface Manager (CIM)
- Schemes Manager
- Structures Manager
- Public Rights of Way
- Spatial Manager
- UKPMS

Note that this document does not include Release Notes for the following Products

- Street Gazetteer Manager
- Streetworks Manager
- TMA Noticing Manager

Chapter 3 is specifically targeted at spatial systems users and system administrators of the exor systems. Changes in the core database functionality have the potential to have wide impact across all exor applications and it is important that these changes are understood. However, many of the functions of **Exor Core Highways** are extremely technical in nature and this document is aimed at those with some degree of technical knowledge and not at end users.

It is not intended to be a full system description but a guide to indicate what changes have been made, why they have been made and the potential failings if this upgrade is not applied.

After reading through this document, should you have any need for training or consultancy then please contact your **exor** account manager. If these changes are considered important for your current release and this is incompatible with 4.0.4 (for example 4.0.2.2) then please contact **exor support**.

This release is intended to be used in conjunction with Spatial Manager 4.0.x.6100.

3 New Functionality

This Chapter describes the main areas of functionality that have been changed in this release.

- Server API changes
- Data repair scripts
- Divergence of Admin Unit security on assets and road groups
- Changes to Oracle Spatial geometry types
- Support for ESRI ArcGIS 9.2
- Changes to support control points in network edits
- Convergence of different releases
- Spatial layer creation with history
- Other changes

The primary purpose of this release has been to make corrections to the core and spatial server systems in the areas of date-tracking datum spatial layers and in the support of subordinate users.

A list of the logs that are known to be cleared by these changes is given in the **Log No Summary** chapter.

3.1 Server API Changes

The server code responsible for generating spatial data has been re-organised with some publicly available procedures and functions being rendered obsolete. These functions were present in earlier releases for various reasons such as to avoid performance problems due to Oracle 9i variables being passed by value and not by reference. Also, server code to transform the geometry types to those that are compliant with Oracle 8/Esri 8.3 have been removed. Typically, these functions are used in other Exor server code so these changes should cause no impact on client systems. A full list of server code that is no longer available is contained in the appendix.

3.2 Data Repair Scripts

Previous releases of **Exor Core Highways** failed to maintain the date-tracked relationship between network elements and their off-line attributes held in the NM_NW_AD_LINK_ALL table. There were occurrences of live NM_NW_AD_LINK_ALL on elements that had been closed. The software has been corrected and the upgrade will make the corrections to the data. In almost all cases, the data inside the NM_NW_AD_LINK_ALL table would be accessed through a join to related date-tracked tables so there would be little or no impact caused by this data being out of step. The correction is likely execute quite swiftly and is unlikely to be noticed during the upgrade process.

3.3 Divergence of Admin Unit Security on Assets and Road Groups

Previous releases of **exor Core Highways** operated a complex security regime based on the location of assets and road groups over an area. The system expected that the admin unit regime of the asset and the road group was either separated by virtue of the two data sets being configured in different admin unit hierarchies or that the data was entirely consistent. In some customers data, the admin units of different road groups and some asset types were configured to be in the same hierarchy yet the data itself had inconsistencies that prevented operation on the data. The end result was a failure to perform network edits. Release 4.0.5.0 of **exor Core Highways** allows users to configure their asset types and road group types inside the same admin unit hierarchy but exclude the road group data from the security policies. This is done by setting the new product option **USEGRPSEC** to 'N' and from that point on the road group members will not be included in tests for breaches in security.

3.4 Changes to Oracle Spatial Geometry Types

Previous releases of Exor systems maintained Oracle spatial data in a format that was compliant with Oracle 8i but did not fully specify the geometry type of the spatial data. Since Oracle 9i, different geometry types have been used to differentiate between a true three dimensional geometry and one whose third dimension is the measured length. Neither the Oracle Spatial LRS APIs nor the ESRI ArcGIS system differentiate between these two geometry types so this has been safe mode of operation. However, third-party systems such as those that provide topology validation and repair and externally available loaders would all be within their rights to use the correct geometry types. The change is only visible when the native Oracle Spatial geometry is inspected. In 8i the LRS geometry type of 3002 was exactly the same as a three dimensional polyline – the 3 representing the dimension and the 2 representing a polyline. Since 9i, the geometry type representing an LRS feature is 3302, where the second 3 is used to indicate that the third dimension is used to hold the measure.

The upgrade of Exor core to 4.0.5 will not modify the data. A separate upgrade script is provided and should be executed before the system is made available to users. The upgrade will convert all relevant spatial data represented in the NM_THEMES_ALL metadata to be compliant with Oracle 9i and beyond. Please see the upgrade documentation for more details.

The maintenance of data within the system at 4.0.5 and beyond will be consistent with the new geometry types. The changes should be invisible to the average user.

3.5 Support for Esri ArcGIS 9.2

Earlier release of Exor systems were certified to operate with ESRI ArcGIS and ArcSDE version 9.1. The Exor Core Highways version 4.0.5.0 is certified to operate on both 9.1 and 9.2. The same version of the SM client code is valid for each version of ESRI systems. Please note that the ARCSde system at 9.2 can also be referred to as ArcGIS Server Basic Edition.

3.6 Changes to support control points in network edits

Early releases of Spatial Manager led to minor differences in the measured distance of datum elements in the elements table and on the shape. These differences led to linear referencing and dynamic segmentation failures. These failures were prevented by the server code always ensuring that the lengths of new element shapes were always exactly the same as that held on the element record. This led to the lack of support for control points (a point of discontinuity of first derivative of measured distance). This manifested itself in the inability to maintain the correct spatial position for assets and nodes after network operations on elements that were spatially represented by shapes with non-linear increments in measured distance. Several ECDM log numbers relate to this.

3.7 Convergence of different releases

Previous releases of Exor Core Highways had been extended to support specific customer requirements and this led to several versions of the system being maintained and tested. Release 4.0.5.0 is a core system that will support all existing exor applications and customer requirements and hence allows a convenient upgrade path for all clients.

3.8 Spatial layer creation with history

An interim patch release (v4.0.2.1) was made available to existing customers of **exor Core Highways** who had remained on Oracle 9i. This patch was slightly in advance of V4.0.4.6 in that the code that assembled dynamically segmented spatial data had been extended to include historical data. In earlier releases and in the 4040 stream, dropping and recreating a dynamically segmented spatial layer would result in the loss of history. V4.0.5.0 includes the same changes as in v4.0.2.1 so a full history of spatial data is created.

3.9 Other changes

Removal of support for QuadTree indexes

In earlier releases such as 4.0.2.1, the system could be configured to use QuadTree indexes on spatial data. This was made available to circumvent an Oracle bug which resulted in deadlocks during

operations on spatial data. This ceases to be a problem on Oracle 10gR2 platforms and so the option of using QuadTree indexes is no longer supported. All spatial indexes are expected to be Rtrees.

Admin group structure protection

It has been noticed on one customer site that some admin unit hierarchies have been corrupted by having a self-intersecting binary tree. There is some confidence that this data corruption has not occurred as a result of a failure in the application code. However, as a means of adding further protection, a function-based index has been added to the admin unit hierarchy table (NM_ADMIN_GROUPINGS) to ensure that all admin units in a tree structure have one and only one parent. It is unlikely but if the attempt to create the index in the upgrade script results in failure then please contact support.

4 Log No. Summary

This chapter summarises all Software Bugs and Changes that have been made in this release. These changes are derived from the following sources,

- Customer raised issues

Please note that this is not a full list of the issues that may be cleared as a result of this release.

4.1 Customer Raised Issues

Support Call No	Product	Issue
706037	Enquiry Manager	Defects buttons available after save
712080	Enquiry Manager	Single PEM record report
711151	Enquiry Manager	DOC0110 - Class Code Length and DOC0150 Manual Action creation
715197	Enquiry Manager	Failure to Save updates to PEM records
711861	Enquiry Manager	Search on street name in "Get From Map"
713140	Enquiry Manager	Back Tab in Form DOC0110
713268	Enquiry Manager	PEM form now validates class field
714069	Enquiry Manager	Date Validation on Doc0150
714790	Enquiry Manager	Cancellation of id creation within pem screen
703805	Enquiry Manager	GIS data objects now populated correctly
705896	Enquiry Manager	PEM Creation issues resolved
709267	Enquiry Manager	Defect Enquiry Type default
713291	Enquiry Manager	DOC0160 LOV issues resolved
712912	Enquiry Manager	UI Status default corrected
715314	Enquiry Manager	Now able to back date PEM records
710186	Enquiry Manager	PEM form no longer crashes with inappropriate User Options
711799	Enquiry Manager	Resolved problem with damage tab within PEM
714774	Enquiry Manager	Resolved error on validation of correspondence delivery dates
714432	Enquiry Manager	Validation of PEM sequence numbers on cancellation
712143	Enquiry Manager	Reports for single PEM records
713054	Enquiry Manager	Target date validation in DOC0150
715396	Enquiry Manager	PEM admin unit details retained on saving
713464	Enquiry Manager	PEM update status from MAI corrected
712978	Enquiry Manager	Admin Unit field defaults when raising PEM from locator

716119	Maintenance Manager	Resolves multiple defects on different budgets raised on a W.O. by Locator becoming erroneously Instructed.
713487	Maintenance Manager	List of Contract Rates report - Item description lengthened
714272	Maintenance Manager	Inspection By Group - now picks up default initiation type
713045	Maintenance Manager	Resolved incorrect details on report from defect form
711256	Maintenance Manager	Tab sequence revised in Locator create defects
711864	Maintenance Manager	Cancel work orders restricted by admin unit
712736	Maintenance Manager	Work orders via Locator restricted view by admin unit
713161	Maintenance Manager	Late repairs reports revised
713476	Maintenance Manager	Resolved adding Multiple Defects to public initiated inspections
714045	Maintenance Manager	Attaching defects to work orders
707188	Maintenance Manager	Invoice Files: Population of Completed field even if payment is interim
713387	Maintenance Manager	Work Order Extract file revised
710947	Maintenance Manager	Priority field retained when adding defects to Inspections
712116	Maintenance Manager	Inspections Module - revised error in treatment description logic
713590	Maintenance Manager	Sorting order of items in Works Order template
712325	Maintenance Manager	Resolved defect not attaching to Work Order
715115	Maintenance Manager	Date Validation on query Inspections
713734	Maintenance Manager	Resolved Inventory Matrix Report Freeze
713033	Maintenance Manager	Resolved Gazetteer button issues
714369	Maintenance Manager	Resolved manual creation of inspection and resultant partial instruction of defect
709389	Maintenance Manager	Resolved WO completed without authorisation
712203	Maintenance Manager	Works Order Extract correction of file naming protocol in Forms 10g
713437	Maintenance Manager	Correction of Repair description on MAI3919 report
714697	Maintenance Manager	Revised column width on Admin Unit Performance Report
715508	Maintenance Manager	Correction of Inventory Load issues - raised internally by Exor

714056	Maintenance Manager	Resolved View Defects form error ORA-6502
706587	Maintenance Manager	Resolved payment runs against contracts
704064	Maintenance Manager	Resolved Inventory Report freezing
706780	Maintenance Manager	WO Auditing - date formatting
712684	Network Manager	Resolved Start Date validation error in Split Element module
709626	Network Manager	DDL Upgrade Script
712600	Network Manager	Resolved commit of relocate existing asset using Asset Maintenance Form
713937	Network Manager	Resolved error "NM3GET Package signature changed" in Asset Maintenance
710271	Network Manager	Now retain delete enquiry type on Doc0110
700115	Network Manager	Core Upgrade script issues
698816	Network Manager	Removal of dependency on PEM when NM3 is installed
701930	Network Manager	Multiple amendments to NM0510.fmt - Resolved crash due to navigation back from first field, changed tool bar field placement and enabled keyboard and mouse use.
713569	Network Manager	Resolved Assets on a Route - Loss of Connection to Server (110) on exit
714122	Network Manager	Resolved Split Element Start date validation
710193	Network Manager	Mile post referencing now accepting point items
713369	Network Manager	Accessing Report Styles form no longer crashes NET
713811	Network Manager	Resolved Asset Items forms query crash when Type LOV is invoked after form queried
696564	Network Manager	Internally raised changes to doc0120
712606	Network Manager	Resolved admin field lock when change admin units for road part
697323	Network Manager	External Assets
699590	Network Manager	resolved v3103 - merge query GIS unavailability
711637	Network Manager	Resolved Locator searches in upper case only
714848	Network Manager	End dating elements end dates NETW assets
702658	Network Manager	rescaling routes
711430	Network Manager	solves changing user password in user form

711850	Network Manager	Admin Unit validation against network
714686	Network Manager	Resolved Merge Query Results not displaying correctly
715099	Network Manager	Resolves Exporting defect results from Locator
715080	Network Manager	Document association issues when reclassify sections resolved.
713712	Network Manager	Resolved identify feature tool not working with defects that have been relocated
714510	Network Manager	Resolved info tool picking wrong feature
714646	Network Manager	Resolved merge query results picking up the wrong route
715489	Network Manager	User Roles - Metadata set up
696667	Network Manager	Closed No Longer Using that code
711994	Network Manager	Resolved performance of refresh synonyms
714931	Network Manager	Resolves inability to open GIS Layer Module GIS0020
713485	Network Manager	Resolves route length after recalibration of datum
713958	Network Manager	Resolves number of decimal places error when relocating assets
714257	Network Manager	Resolves Asset Maintenance Location of asset accepting only 2 decimal places
695703	Network Manager	CSV loaders
697238	Network Manager	Resolves validation of hierarchical inventory items
701412	Network Manager	Group of Sections - Closed Customer Use
709602	Network Manager	Circular Route - rescale No M Values - Closed Customer Use
710544	Network Manager	Resolves form not retaining original query after closing Element detail box
714624	Network Manager	Resolves Reference post offset issues
711373	Network Manager	Issues when installing patch
698001	Network Manager	Closed Old Software Version issue
714273	Network Manager	Resolves validation of spaces in role names
713444	Network Manager	Resolves error on TSAN preventing adding of the asset
711824	Network Manager	Resolves associated documentation form popping up blank when accessing via Locator
711649	Network Manager	Resolves Limit on number of attributes in Asset Maint Form

708661	Network Manager	Addresses locator fails to map objects
711597	Network Manager	Resolved Locator not opening correctly
711863	Network Manager	Resolves unable to resolve reference to item RES_CONTROL.LOV_OK
711869	Network Manager	Resolves end dating / unendating records in Asset Maintenance
713454	Network Manager	Resolves network edits node_id problem
713738	Network Manager	Resolves AOR Results - now displays group membership for point assets
715018	Network Manager	Resolves failure to open Hierarchical Assets form
710261	Network Manager	Resolves failure to open merge query form
713375	Network Manager	Customer Information
715234	Network Manager	Resolves modifying MP for asset items not working
712419	Public Rights of Way	Resolves PROW work tray not showing aged PEM records
705828	Spatial Manager	Resolved Network editing issue
714911	Spatial Manager	Resolves partial extent fails with no error message
714671	Spatial Manager	Resolves Layer data history pop-ups in Spatial Manager.
714150	Spatial Manager	Resolves Attributes form showing in only in miles
714123	Spatial Manager	Resolves rescaling of a route showing in metres
714929	Spatial Manager	Resolves failure message when creating a street and adding an ESU
708470	Spatial Manager	Resolves asset modification problems with history removal upon end-dating
712872	Spatial Manager	Resolves Issue with Exor Identify tool on Nodes
713420	Spatial Manager	Resolves ending membership of a member within linear group with an erroneous end-date despite cancellation
714120	Spatial Manager	Resolves Spatial layer inconsistency
714556	Spatial Manager	Resolves ESU Splitting and requirement for mandatory parameters
715081	Spatial Manager	SM Error - Metadata Set-up
707808	Spatial Manager	Merge Elements - Route Malformed- Closed with workaround
714331	Spatial Manager	Resolves editing Hermis sections and saving

711215	Spatial Manager	Resolves Error on Split datum element
713894	Spatial Manager	Resolves reshaping causing constraint errors
714118	Spatial Manager	Resolves SM not using Role based Security
703697	Spatial Manager	Closed Exor other resolution
712529	Spatial Manager	Resolves Shared Reshape issues
714857	Spatial Manager	Resolves ARcMap opening error and town field grayed out
713372	Spatial Manager	Resolves SM distance label using kilometres instead of metres
712644	Spatial Manager	Resolves error when recalibrating ESUs
706226	Spatial Server	Resolves Split at node using a measure instead of using the node determined by the search radius
699170	Spatial Server	Resolves validation of end dates on network edits
713486	Schemes Manager	Resolves Schemes - Route with no Layer fails
714121	Schemes Manager	Resolves group and route data missing in Schemes Manager
702303	Schemes Manager	Closed Exor other
714989	Schemes Manager	Resolves error loading STP1000 in forms 10
714320	Schemes Manager	Resolves Account Close status change
714186	Schemes Manager	Resolves Copy tool in Road Construction Form causing multiple assets to be created.
715017	Schemes Manager	Resolves data layer display in wrong order
702303	Schemes Manager	Resolves problem displaying route that has a DB of 0 length
711855	Structures Manager	Resolved Variable GLOBAL_INSP_ITEMS_PRESSED does not exist
710566	Structures Manager	Resolves calculation of BCIs incorrect
714888	Structures Manager	Resolves Form error when clicking "running man" within launchpad to access structures attribute form
715186	Structures Manager	Resolves List of Inspectors validation
713026	Structures Manager	Resolves spurious error messages when opening Scheduled Inspections for a Structure
713027	Structures Manager	Resolves spurious error messages when opening Inspection Records for a Structure

712250	Structures Manager	Resolves reporting on end-dated Structures Inventory
715507	UKPMS	No results displayed in run pass report
714678	UKPMS	Unable to run copied passes
709821	UKPMS	Group Type Field length issue
714884	UKPMS	Error on validation on value 2 field in budget head rule line
709828	UKPMS	Default attribute file for TRACS to sys
715501	UKPMS	Detailed Results Screen not wide enough to show all results
713933	UKPMS	Resolves single character section number on loaders
715506	UKPMS	Copy budget doesn't copy attributes on Budget Head Rule Line
713969	UKPMS	UKPMS Reports place holder extended to 30 characters
711763	UKPMS	Internal Log - UKPMS Inventory Types LOV returns multiple rows in error
713968	UKPMS	Copy Pass function mandatory field warning
711224	UKPMS	Cannot update Network Selection when assigned to an Automatic Pass

5 Appendix

This is a list of server procedures and functions that are no longer supported. Where appropriate the replacement code is provided. Several of the functions are used to transform data into a geometry that is compliant with Oracle 8i systems and software designed to work with 8i systems such as Esri ArcSDE 8.3. The 4.0.5.0 release of **Exor Core Highways** is no longer certified for use with these systems and so some functions are redundant. As an example, the function NM3SDO.IGNORE_MEASURE will transform a geometry to an 8i compliant geometry. This procedure is now redundant and if third-party server code makes use of this function, the transformation should be removed. Hence there is no replacement function. Other functions such as NM3SDO.CLIP_GEOM will perform a spatial clipping operation that uses variables that are passed by reference and not by value. Earlier releases of the Oracle API passed geometry variables by value thus creating a performance hit as memory resident geometries were copied and manipulated. More recent Oracle code uses variables that are passed by reference so any use of this procedure should be replaced with the native Oracle server API (SDO_LRS.CLIP_GEOM_SEGMENT).

Package	Procedure	Replacement
NM3SDO	IGNORE_MEASURE	None – remove transformation
NM3SDO	CLIP_GEOM	SDO_LRS.CLIP_GEOM_SEGMENT
NM3SDO	LOCATE_PT	SDO_LRS.LOCATE_PT
NM3SDO	REMOVE_REDUNDANT_PTS	This is a removal of an unsupported form of the overloaded procedure. The procedure still exists but requires the theme layer identifier.
NM3SDO	ADD_MEASURE	None – remove the transformation
NM3SDO	GENERALISE	None