

Essential New Features in Enterprise Architect 9



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Abstract

Enterprise Architect Version 9.0 contains massive upgrades and extensions. Essential topics covered by the new versions are:

- Restructured and enhanced Learning Center and Help File / Reference Manual
- Gantt Chart added to present and modify project plan, tasks and resources
- Project Calendar added for project overall planning
- Simple, internal Mailing System added
- XMI roundtrip enhanced, detecting package cross references in previous XMI
- SysML 1.2, BPMN 2.0, SOMF 2.1
- Improved User Interface Diagram, Import and Export of .RC files
- Gap Analysis Matrix added
- New Elements for Risk, Task and Image
- Package Browser/Element List can now offer Tagged Values and Diagram Filters can be applied to
- Diagramming enhanced by a “hand drawn” mode
- Diagram Filters for Connectors added
- Added pdf-Saving Option for Diagrams
- User Interface has been redesigned
- Traceability Windows has been enhanced to show more relations
- New and updated Windows
- HTML Generation now possible from Model and Master Documents
- New Document Template Designer
- A Relationship Matrix can now be included to RTF-Report
- Package Exclusion is now available for HTML Generation also
- Direct pdf Generation available
- New scriptable Interface to Report Generation added
- Automation Interface: New Functions, new Properties, new Broadcast Events
- Scripting: Session.Input added
- Execution Analysis: Extended Logging, Testpoints
- Code Engineering: Generics/Templates for C#, C++, Java and VB.NET; C# 4.0, VB.Net 10, PHP 5.3 Compatibility
- Automation Interface: New IDocumentGenerator provides tight Integration into RTF documentation.
- VCS-Improvements: Possibility to Check-Out prior versions.
- Security: CanEditTag improves Workflow
- User Interface: Ctrl-Tab toggles Diagrams historically
- The internal Source Code Editor has been enhanced
- Improvements for Data Modeling: SQLite added, several improvements for SQL, Oracle
- Searches can be filtered by text entered into search boxes in column heads

Details – by Topic

Learning Center - a new way of understanding and using Enterprise

Architect

- Numerous source code examples which can be linked to the example model
- Hundreds of walk-throughs and getting started guides to help you maximize your Enterprise Architect experience

Restructured Help file and Example model

- Help file has been considerably restructured
- Help file is more focused on in place reference material
- Example model has been restructured and is being expanded with more examples
- The Learning Center guides, the Help file and the Example model together provide a detailed and unique learning platform

Team and Project Development

- Gantt chart - manage task allocations, current and future work
 - Available from View/Task Allocations main menu
 - Visual representation of people allocated to tasks
 - Standard Gantt chart format
 - Add and manage tasks from the Task Allocations view
 - Task Notes and History linked to standard Notes window for read only display of current item
 - Send message to Task owner via Model mail facility
 - Linked to Project Management/Resource Allocation docked window for easy data entry and modification
- Project Calendar - manage time, resources, events and schedules
 - Available from View/Project Calendar main menu
 - Detailed support for managing project events, tasking, milestones etc. over time
 - Calendar support on a per model basis
 - Track and schedule major project events and milestones
 - Track and manage resources (people) available
 - Track and view resource allocations (tasking) for individual developers/modelers
 - Track and view project level tasks
- Personal Information Window - manage personal workflow and responsibilities within a Project
 - Model Mail allows sending and receiving mail style notifications within a model
 - Embed links to Team Review items, Diagrams and other information within Mail messages
 - Send to multiple team members and mail groups
 - New Mail notifications enabled on opening a Project
 - Task Allocations tab allows viewing and editing all currently allocated work for the current user
 - Project Tasks tab allows viewing all Project level tasks owned by the current user
 - Workflow tab provides access to any Workflow searches related to the current user
 - Working sets tab allows storage and instant retrieval of sets of Diagrams and other model views
 - Configure sets based on different work allocations

- Instantly load multiple diagrams to quickly get back up to speed in a particular model domain
- Manage sets
- Sent items tab allows viewing of Model mail sent

Version control and XMI round tripping

- Version Control support now includes checkout of a prior revision.
 - Allows editing and checking in or previous versions.
- Version Control support now allows checking in a model branch while keeping the packages checked out.
- XMI export updated to round trip cross package relationships to elements not in the current model.
 - Detect references to other packages contained in previous XMI.
 - Allows updates to shared models when not everyone has access to all referenced packages.

Modeling support

- SysML 1.2 support
- BPMN 2.0
 - Choreography, Collaboration and Conversation diagrams introduced
- BPEL 2 - generation upgraded to support BPMN 2.0 processes
- SOMF 2.1 modeling notation
 - Conceptual, Cloud Computing and Reference Architecture diagrams introduced
- User Interface/win32
 - Improved look and feel for user interface diagrams
 - User interface diagrams use Windows calls to display dialogs and controls
 - Scripts for import and export of dialogs from .RC files
- Gap Analysis matrix
- Risk, Task, Image objects
 - Risk element introduced to assist in modeling of risk management
 - Task element introduced to assist in modeling of resource allocation
 - Image element introduced to make it easier to drop bitmap and metafile images onto diagrams
- Whiteboard technology
 - A selection of shapes and lines to allow creation of free-form drawings on whiteboard and hand-drawn diagrams
- Package Browser/Element List can now display tagged values
- Package Browser/Element List uses diagram filters
- Structured scenarios allow listing of objects used under uses field.
- Shape scripts extended with method to render part of a connector shape script in fixed size.
- Ports have isConjugated custom property added, as required by UML 2.3
- Added pop-up menu for specifying the subtype for BPMN elements on creation
 - This option can be set in a user profile by setting _subtypeProperty on the meta-class.
- Added Diagram profile option 'UMLPatternSilent' for applying a pattern without showing the 'Add Pattern' dialog
- Activity Partition in a profile can default to horizontal or vertical by setting the IsVertical property on the meta-class

- Default line style for connectors can be set using the `_lineStyle` property on the meta-class
- New quick keys for automatically applying or creating a profile item when dragging onto an existing element
 - Hold Control to apply the stereotype or Shift to create a new element with that stereotype.

Diagramming

- Hand drawn mode
 - A new way of showing diagrams in a more "relaxed" notational style
 - Emulates the types of drawing usually done on whiteboards and on paper
 - Less "architectural" and more conceptual in nature
 - Easy to turn on and off on a per diagram basis
 - Helps to convey an "unfinished" and "experimental" look and feel when doing ad hoc and "what if" style modeling
- Whiteboard mode using combination of Hand Drawn mode and custom shape technology
- Line Crossings - Support for showing small line jumps when two lines cross
- Hide Connector Stereotypes
- Diagram Filters for connectors - Support for suppressing and modifying appearance of connectors using Diagram Filters
- Option to use fully qualified element names in diagrams
- Visual Changing of z-order
 - Ability to change Z-Order using a convenient pop-up dialog
 - Diagram displays Z-Order number for each current element
 - Move elements up and down in the Z-Order list
 - Essential for working with Win32 style User Interface technology as the Z-Order links to Tab order
- Rectangular notation for actions
- Orthogonal line style for connectors
 - Support for easy to manipulate orthogonal lines
 - All line segments constrained to vertical or horizontal
 - Auto insertion and removal of way points as required during manipulation
 - Use standard square or optional rounded corners
 - Use from shape scripts and technologies - for example the BPMN Technology
 - Also support for dual line orthogonal as used in BPMN technology
- Save diagrams directly to a PDF document.
- Connector rendering improvements
 - Tree style connectors will show all shape scripts and labels on the non-shared segment.
 - Auto-routed connectors in a straight line will render shape scripts correctly.
 - Connector labels will no longer draw the color of hidden swimlanes.

User Interface

- Updated properties dialogs for Elements, connectors, attributes and operations.
 - Significant restructuring of major properties windows
 - Uses an easy to navigate tree style format
 - Improved general layout and usage of individual property sheets
 - Tagged values now divided into separate pages for different named technologies

- Properties implemented in Profiles as tagged values now appear on separate page
 - Technologies such as BPMN now have their own "properties" page based on the tagged values for an element
 - Significant improvements to the handling of Operations and Operation parameters
- Updated properties window for Analyzer scripts
 - Streamlined handling of different target languages
 - Added ability to configure scripts as single process execution or batch processes
 - Added Simulation support
- Ability to hide the Start Page (click x button top right of main area) - drop menu to re-show as desired
- Ability to Re-Order open diagram tabs as desired
- Ability to close open diagrams (tabs) using the middle mouse button (if available)
- Major restructuring of the main menu to better reflect functional areas
 - Addition of Analyzer main menu section for Execution Analysis tools
 - Some items moved to Tools menu
 - New items in View menu
- Menu shortcuts (egCtrl + N) now visually aligned within menu area
- Relationship Matrix supports the use of a Model Search to populate either axis
- New Traceability and Model Navigation Tools
 - Find Conveyed Information for an Information Flow in the Project Browser.
 - Find Association Class for an Association in the Project Browser.
 - Find Triggers for a Transition in Project Browser.
 - Find Operation usage on Sequence Diagrams and Activity diagrams
 - Find Signal usage on Sequence Diagrams
- New Visual Styles and improvements to pre-existing styles
- XMI export/import divided into two new dialogs:
 - Round trip (XMI import/export) dialog to handle full round trip export/import
 - Model Publisher dialog to allow export for specific tools and tool suites and other uses
 - Both now available under the Project main menu
- New and/or major updated windows
 - Execution Analyzer window
 - Simulation window
 - Test point window
 - Learning center
 - Gap Analysis matrix window
 - Document template designer window
 - Calendar
 - Task allocations (Gantt chart)
 - Personal Information (model mail etc.) window
- New and/or updated toolbars - Workspace toolbar shortened
- Diagram Toolbar moved from a floating position to appear automatically inside a Diagram
- Patterns have been added to many toolboxes to give a quick start for using that model type
- Auto Name Counter support added for the following diagram types: Package, Object, Composite, Timing and Interaction

Reporting

- Added ability to generate HTML from Model and Master documents.
- Document Template Designer
 - New template designer to facilitate the creation and testing of document (report) templates
 - Available from Settings/Document Template Designer main menu
 - Quick access to all available templates for editing and copying
 - Create new templates
 - Quickly generate and view reports from the current edited template
 - Set document generate options associated with template
 - Speed development and quality of RTF reports
- Added support for including a relationship matrix in documents.
- Element Documentation improved with the following new sections added:
 - Inherited Attributes - Document the attributes of this Element and those from Elements that it Generalizes.
 - Inherited Methods - Document the methods of this Element and those from Elements that it Generalizes.
 - Classifier Instances - Document the Objects that are an Instance of this Element.
- Structured Scenario documentation improved with the following new fields.
 - Join field in Scenario Exception section.
 - Type field in Structured Scenario section.
- Package exclude option now supported for HTML reports (Was previously only supported for RTF reports.)
- Connector documentation in HTML improved with the following section changes.
 - 'Link Item' section renamed to 'Link (association) Item'.
 - New sections 'Link (flow)' and 'Link (flow) Item' added.
 - New sections 'Link (other)' and 'Link (other) Item' added.
 - New fragments supported in all link item sections #DIRECTION#, #ELEMNAME# and #LINKREF#.
- Object documentation in HTML improved with the following new fragments in the 'Body - Object' template.
 - #PRIORITY# - Object Priority.
 - #DIFF# - Object Difficulty.
 - #LANGUAGE# - Code Generation Language.
 - #DIAGRAMS# - Lists all diagrams in which the Element appears.
- Added Default field to the element section to support property elements Initial value
- Resource Documents extended to support specifying any single element to report.
- Generate directly to a PDF document using the same templates.
- New scriptable interface to report generation added.
 - Add individual elements and features to documentation.
 - Use different templates as needed for any part of the documentation.
 - Include linked documents.
 - Include Team Review posts.
 - Include Diagram images.

Automation

- Added support for Third Party Add-In licensing using EA's key system.

- Allows your users a single place to enter keys.
- Add-Ins are called to validate any available keys.
- Enterprise Architect manages the availability of the key.
- Added support for loading Add-Ins from the HKEY_LOCAL_MACHINE section of the registry.
- New interface (IDocumentGenerator) added to support tight integration into RTF documentation.
- New functions added.
 - Project.ProjectTransfer - Transfer of a repository into a new .eap file.
 - Project.GeneratePackageDDL - Generate DDL for package.
 - Project.GenerateElementDDL - Generate DDL for an Element.
 - Repository.SynchProfile - Synchronization of tagged values and constraints of a profile stereotype.
 - Element.CreateAssociationClass - Function to join an Association and a Class into an Association Class.
 - Element.UnlinkFromAssociation - Function to split an Association Class into an Association and a Class.
 - Element.IsAssociationClass - Function determine if a Class is part of an Association Class.
 - Package.VersionControlCheckInEx added to allow control of package cross references
- New Properties added.
 - Element.IsComposite - Read/Write property for handling of composite objects.
 - Element.AssociationClassConnectorID - Read-only property to get connector ID.
 - Repository.ProjectRoles - Allows access to 'Project Roles'.
- Added read-only FName property to each tagged value type to allow retrieving source profile information.
 - Supported Classes are: TaggedValue, AttributeTag, MethodTag, ConnectorTag, RoleTag and ParamTag.
- New broadcast events added to allow control over the Project Glossary.
 - EA_OnPreDeleteGlossaryTerm - Allows an add-in to prevent a glossary term from being deleted.
 - EA_OnPreNewGlossaryTerm - Allows an add-in to prevent a glossary term from being added.
 - EA_OnPostNewGlossaryTerm - Allows an add-in to post process a newly added glossary term.
- Scripting support extended with new Diagram group type.
 - Scripts in this group are shown in the context menu for diagrams.
- Scripting support extended with Session.Input method to allow all scripts a reliable method for getting user input.

Execution Analysis

- Testpoints facility providing programming-by-contract real-time execution analysis
 - Similar testing style to xUnit testing but applied on top of executing code
 - Does not require writing or compiling additional testing code
 - Write, apply and test invariants for evaluation during test runs
 - Configure constraints to test on method entry (pre)
 - Configure constraints to test on method exit (post)

- Configure trace statements and trace log levels to capture run-time information
- Log results on run
- View results in real-time as program executes
- Addition of Test Case, Test Cut, Test Suite and Test diagrams
- Test Cuts define subsets of class methods
- Test Suites and Test Cases aggregate Test Cuts
- Run tests at any level - a Cut, A Case or a Suite
- New Test Points window to configure and view contents of Test Cuts etc
- Automatically record and generate Test Domain diagrams from Recorded execution (same as for Sequence diagrams)
- Use the auto-generated Test Cuts to select and configure Test points within your application
- Examples provided in the Learning Center and in the example model
- Array, Element and Expression inspection in Debugging.
- Conditional Breakpoints and Trace points
- Model Simulator linked in with execution analyzer
 - Simulate Activity diagrams
 - Simulate Interaction diagrams
 - Simulate State Models
- Learning Center Documentation and Software Examples demonstrating:
 - How to configure the Model for Analyzer Scripts for Build,Debug,Test and other tasks.
 - How to debug Java, Microsoft .NET and Native C++ programs using Analyzer Scripts
 - How to record sequence diagrams for the above platforms
 - How to use incorporate State Transitions into a sequence diagram (C++)
 - How to use the Testpoint facility for the above platforms

Code Engineering

- Modeling of Generics/Templates improved for C#, C++, Java and VB.Net.
 - Templated Interfaces now supported.
 - Template Parameter Bindings can now be set on Generalizations, Realizations, Associations and the new Template Binding connector.
 - Template Parameter Bindings set on connectors now displayed on diagrams.
 - Template Parameter Bindings and defaults now linked to types existing in the model by GUID.
 - Reverse Engineering of Associations from Attributes with instantiated template type added.
 - Association created to either collection or argument depending on which is in the model.
 - Additional option added to ensure specific classes are always treated as collections during reverse engineering.
- Updates for reverse engineering and code templates to support latest versions of languages.
 - C# 4.0
 - VB.Net 10
 - PHP 5.3
- Project Browser now allows import of selected files in Package Context menu.
 - No diagram is required

- More flexible than importing a source directory.
- Namespaces are imported as Packages.
- Live Code Generation is now available from the context menu of a Package in the Project Browser

Diagrams

- New Diagram options added that allow:
 - Diagrams to look like were hand drawn.
 - All background and fill colors to be omitted.
 - Connector stereotypes to be hidden.
 - Attributes or Operations linked to by a Connector on the diagram to be visible regardless of other visibility options.
 - Full Namespace Paths to be displayed below Elements from other packages.
- Diagram Filters can now be created for connectors.
- New Navigation Features for finding Elements related to selected connector added to context menu.
 - Find Items Conveyed by an Information Flow.
 - Find Triggers of a Transition.
 - Find Class part of an Association Class.
- Inplace-Editor modified to improve positions of attributes and operations when inserting and changing names.
- Inplace-Editor 'Goto Definition...' command modified for operations to determine if a parameter or operation classifier is wanted instead of requiring selection.
- Inplace-Editor support added for Class Parents.
- Inplace-Editor now supports pressing Tab to move between portions of the attribute or operation signature.
- Inplace-Editor now supports auto-complete for attribute and operation classifiers.
- Inplace-Editor improved to handle adding a new name to a Boundary object.
- Classifier path display on child diagrams now updated after a name change when model isn't fully loaded.
- Copy Diagram including all Elements will now copy Linked Features to the new Connectors.
- Label Position for Object Nodes on Process Elements with a large font improved.
- Unsaved line styles will now be preserved when adding or deleting a new Connector using the Inheritance dialog.
- Existing elements added to a diagram, with no source diagram specified, will use the default appearance for that element type.
- Checks for Diagrams modified by other users improved for MySQL repositories.
- Undo of Element deletion from a modified to prevent error on PostgreSQL repositories.
- Tree Style connector rendering improved to prevent overdraw of arrowheads when renders are smoothing lines.
- Hyperlink Elements to sql and ddl files will now open in internal EA editor.
- Link Note to Element Feature displays 'Simple Scenarios' in the same order as the dialog.
- Quicklink from Use Case to Actor no longer creates a directed association.
- Rectangle Notation now available for Action Elements and Actors on Sequence Diagrams.
- Creation of Elements by dropping text onto a Diagram improved.
 - Now supports text and note elements, by setting the Notes field instead of the name.
 - Multi-line text will set the name to the first line, and notes to anything following that.

- Opening properties dialog before reload will now show the correct name.
- Element gradients modified.
 - Target color used improved for most background colors.
 - Gradient direction now defaults to 'Right to Left'.
- Drawing of Boundary Elements improved.
 - Border Width can now be set either in Default Style or using the toolbar provided for Local Style.
 - Space is always left for the name, even if the Boundary doesn't have a name.
 - Alias will now be displayed instead of the name if an alias exists and diagram is set to show alias.
- Actors showing notes that fit within the width of the actor will no longer be clipped when saving or copying images.
- Object Run-State will now be drawn in a compartment as shown in the UML specification.
- Nested Elements showing a qualified name including all parents on the diagram will now be updated when their name changes.
- Printing improved when called after a print preview that was zoomed in as far as it would go.
 - Element icons will now be displayed.
 - Line widths will now look more like on screen.
- Printing of Diagram Legends will now preserve the color and width of line types in legend.
- Note links can be set to draw as bezier curves.
- Quicklink can be dragged from a Note or Constraint to any kind of connector.
- New Text elements are now wider by default.
- Diagram deletion modified to prevent error on Sybase repositories.
- Assembly connectors display text labels.
- Diagrams showing package contents can now show or hide elements using language specific scopes using the option for Package visibility
- Diagram notes linked to element tagged values modified to improve display of RefGUID and RefGUIDList tagged value types
- Boundaries with rounded corners will now be drawn consistently for all rendering modes
- In-place edit on diagrams with a zoom applied will now ensure the editor is visible

Automation Interface and Add-In Support

- New interface (IDocumentGenerator) added to support tight integration into RTF documentation.
- Added support for loading Add-Ins from the HKEY_LOCAL_MACHINE section of the registry.
- Added support for Third Party Add-In licensing using EA's key system.
- New functions added.
 - Project.ProjectTransfer - Transfer of a repository into a new .eap file.
 - Project.GeneratePackageDDL - Generate DDL for package.
 - Project.GenerateElementDDL - Generate DDL for an Element.
- Added helpers to Elements for information that was previously difficult to access.
 - Element.IsComposite - Read/Write property for handling of composite objects.
 - Element.AssociationClassConnectorID - Read-only property to get connector ID.
 - Element.CreateAssociationClass - Function to join an Association and a Class into an Association Class.
 - Element.UnlinkFromAssociation - Function to split an Association Class into an Association and a Class.

- Element.IsAssociationClass - Function determine if a Class is part of an Association Class.
- Added read-only FQName property to each tagged value type to allow retrieving source profile information.
 - Supported Classes are: TaggedValue, AttributeTag, MethodTag, ConnectorTag, RoleTag and ParamTag.
- Added function for synchronization of tagged values and constraints of a profile stereotype(Repository.SynchProfile)
- Package creation updated to ensure that automation object receives the same GUID as is saved to the database.
- Transformation functions extended use ExtraOptions parameter to control generation of child packages (Project.TransformPackage only) and code generation on result.
- New collection added Repository.ProjectRoles Allows access to 'Project Roles'.
- New broadcast events added to allow control over the Project Glossary.
 - EA_OnPreDeleteGlossaryTerm - Allows an add-in to prevent a glossary term from being deleted.
 - EA_OnPreNewGlossaryTerm - Allows an add-in to prevent a glossary term from being added.
 - EA_OnPostNewGlossaryTerm - Allows an add-in to post process a newly added glossary term.
- Repository.GetDiagramByGUID updated to return Diagram object instead of general dispatch object.
- Broadcast EA_OnContextItemDoubleClicked otParameter is set correctly when double clicking Port element labels.
- Element.Attributes and Element.Methods are now sorted by Position then Name.
- Element.Elements.AddNew() improved to handle Load on Demand (Lazy Load).
- Add-Ins menu will no longer duplicate items when opened during menu customization
- Broadcast event EA_OnPostNewElement will now be called before a properties dialog is displayed for all elements

Scripting

- Scripting error messages updated to correct script and line number where scripts are being included within others.
- Workflow Script timeout increased significantly to prevent issues where workflow is not completely loaded.
- Javascript engine updated to correct errors some users were experiencing when ending a Javascript session.
- Scripting window toolbar now allows different types of Script Groups to be created from the New Group button.
- 'Diagram' Script Group introducedDiagram scripts are accessible from the Diagram context menu.
- The Scripting window now sorts Script Groups and Script items alphabetically.

Visual Execution Analyzer

- Simulation support added for UML Activity, Interaction and State Machine models.
- Application Profiler extended with new report showing list of highest cost functions in addition to the call stack view.
- Application Profiler Time format changed to 'HH:MM:SS.ms'.

- Native Debugger improved:
 - Improved handling of changes to PDB files, including when compiling with incremental linking.
 - More accurate behavior for Step In and Step Over commands.
 - Switching between Marker Sets while debugging improved.
- Marker Set storage changed to increase number of markers that can be stored.
- Call Stack Navigation improved when swapping between different levels.
- Call Stack Navigation now allowed after exception during an auto-record session.
- Breakpoint support improved to prevent issues that caused an effective limit of 255 breakpoints during a session.
- Delete All Breakpoints command modified to display confirmation message before deleting.
- Sequence Diagram Generation improved to save the arguments to methods with the calls.
- Exception Handling improved to report the correct type of exception being handled.
- Recording Threshold option removed from Package Scripts Option is available globally from Breakpoints window.
- Canceling a build process now terminates any descendant processes in addition to the process itself.

RTF Reporting

- New automation access into RTF reporting provide greater control than ever before over your generated documentation.
- Element Documentation improved with the following new sections added:
 - Inherited Attributes - Document the attributes of this Element and those from Elements that it Generalizes.
 - Inherited Methods - Document the methods of this Element and those from Elements that it Generalizes.
 - Classifier Instances - Document the Objects that are an Instance of this Element.
- Structured Scenario documentation improved with the following new fields.
 - Join field in Scenario Exception section.
 - Type field in Structured Scenario section.
- Added Default field to the element section to support property elements Initial value
- Resource Documents now support specifying a single element report.
- Table generation improved so that heading rows will be generated when first item in table is filtered out.
- Child Package documentation will now increase heading levels appropriately.
- Generation of Element Diagram sections will now handle multiple child diagrams.
- Heading and List levels for child package documentation will now increase appropriately.
- Model Documents and Master Documents containing a Package Element section will now substitute the section.
- Bulleted and Numbered lists from notes now be generated with the paragraph spacing specified by the template.
- Note generation updated to ensure ampersand generated correctly for all notes.
- Field Replacement during report generation modified to allow for a field being the last text in a document.
- Don't honor the Auto size for table columns when importing from a word document.
- The TOC is updated correctly when importing and saving documents.
- Improved the displaying of images when printing to a PDF printer.

- ValueOf fields will attempt to resolve to a value for Tagged Values that are references.
- Heading lines are no longer double processed if they warp after the the first style is applied.
- Default to Bitmap images when generating RTF documentation under Linux.
- Correct Paragraph styles when "Optimize for Open Office" was unchecked.
- Stopping writing to the database when the generate dialog was closed.
- The TOC is no longer removed when saving a document that has no headings.
- Don't document elements twice when both the "Element" and "Diagram Element" are enabled.
- Correct update the template title after a "Save As"
- Changed Element Tests to be sorted by Test Type then Name when generating RTF Report.
- Attribute constraints, Attribute Tagged Values now sort by Name
- Connector constraints, Connector Tagged Values now sort by Name
- Option to exclude note-less connectors from documentation added to templates and documentation dialog
- Documentation of RefGUID and RefGUIDList tagged value types improved
- Realize field of an element section modified to list all realized elements

HTML Reporting

- Added ability to generate HTML from Model and Master documents.
- Package exclude option now supported for HTML reports (Was previously only supported for RTF reports.)
- Connector documentation improved with the following section changes.
 - 'Link Item' section renamed to 'Link (association) Item'.
 - New sections 'Link (flow)' and 'Link (flow) Item' added.
 - New sections 'Link (other)' and 'Link (other) Item' added.
 - New fragments supported in all link item sections#DIRECTION#, #ELEMNAME# and #LINKREF#.
- Object documentation improved with the following new fragments in the 'Body - Object' template.
 - #PRIORITY# - Object Priority.
 - #DIFF# - Object Difficulty.
 - #LANGUAGE# - Code Generation Language.
 - #DIAGRAMS# - Lists all diagrams in which the Element appears.
- Multiple template fragments modified to improve flexibility of generated report.
 - #PARAMS# - No longer includes 'lf' after each Parameter.
 - #SCOPE# - No longer converts string to lowercase in the 'Body – Object', 'Content – Attributes Item' and 'Content – Operations Item' sections.
 - #TYPE# - No longer converts string to lowercase in the 'Body – Object' section.
 - #ALIAS#, #DEFAULT# and #MULTIPLICITY# - No longer format their output.
- Default template changed for the following templates to reflect the changes described above.
 - 'Content - Attribute Item'
 - 'Content – Operations Item Parameters'
 - 'Body – Object'
- Hyperlinks to web URLs in note fields modified to ensure they operate in the generated documentation.
- Scenario Exception Item template now includes Join field.

- Bulleted and Numbered lists will now be spaced to match display in the note editors.
- Improved functionality for links to elements and attributes located on a class diagram.
- Linked documents are now displayed by default in the Element property page
- HTML report modified so that linked documents are displayed as the first tab for an element
- System Glossary/Task/Issue pages only generated if the project contains the relevant items
- Restructured templates for System Glossary/Task/Issue to keep matching items together in the editor

XML Technologies

- XMI 2.1 export updated to ensure valid ids for exported data types.
- XMI 2.1 export will no longer write the attribute 'realizingClassifier' for Realization connectors.
- XMI 2.1 import and export modified to round-trip EntryPoint and ExitPoint references as ConnectionPointReference instead of InstanceSpecification.
- XMI import from RSA/RSM profile files updated to read meta-class name from new location.
- XMI 1.1 updated to improve import of connector stereotypes from other tools.
- XMI 1.1 import updated to set the 'Completed' field in the Issues tab of the Element Maintenance window.
- XMI 1.1 exporter updated to export the filename of the Package being exported to the XMI file
- XML Schema generation updated to allow reference of external XSD files using relative file paths.
- Generate XML Schema dialog updated to allow viewing single generated schema without selecting it.
- XSD import updated to so that extensions can be imported from inside complexContent nodes that also include a comment.
- Added support for generating BPEL 2.0 from BPMN 2.0 model
- Added support for round-tripping Analyzer Scripts, Test Points and Break Points.
- XSD import handling of duplicate imports improved.
- XMI 1.1 handling for 'isActive' property improved.

Security and Version Control

- Added support for checking out an editable prior revision of a version controlled package (Previously, prior revision were retrieved as 'read-only'.)
- Version Control Settings dialog now provides an option to suppress warning about incomplete Version Control configurations.
- Glossary Management now controlled with new security permission.
- Version Control update of parent package, now correctly applies VC settings to child packages that were newly controlled by other users.
- Checking-out prior revision of a package whose package file is already checked-out, now shows an error message that includes the XML filename.
- Model Stereotypes, Tagged Value types and Cardinalities now viewable without edit permissions.
- Workflow support improved.
 - Added support for blocking of all tagged value edits using CanEditTag.
 - Disabled controls will no longer be re-enabled after edit elsewhere in dialog.
- Automatic Exclusive Edit Locking updated to prevent non-diagram views from becoming locked.

- Diagrams which have a current User Lock on them will no longer be checked if the Diagram has been modified by another user.
- New Model from Pattern command will no longer allow importing into a Version Control locked package.
- Improvements made for specific version control providers.
- TFS connection will no longer load entire repository during initialization.

Profiles and Customization

- Basic UML 2 Technology split into Basic and Extended technologies.
- BPMN 2.0 support
- SysML 1.2 support.
- SOMF 2.1 support.
- MDG Technologies deployed as files or from add-ins now load included images.
- MDG Technology Wizard extended to include support for Searches and Workspace Layouts.
- Quicklinker modified to allow links to Diagram References and Diagram Frames.
- Quicklinker extended to support 'undirected from' direction.
- Profile Synchronization from Toolbox improved.
- Shape Scripts on Activity Partition Elements now support the 'partition' property.
 - Returns 'vertical' or 'horizontal' depending on user setting.
- Custom Diagram types improved to allow a name of 'Collaboration'.
- ArchiMate technology updated so that all Elements display a composite decoration.
- BPMN 1.1 Data Object updated to improve default size when dropped from Project Browser.
- ERD technology updated to improve Data Modeling transformation for multi-valued and composite Attributes.

Code Engineering

- C# 4.0 and VB.Net 10 now supported for code generation and reverse engineering.
- C# and VB.Net Automatic properties now supported Modeled as Attributes with the stereotype of 'property'.
- .Net 4.0 binaries reverse engineering capability.
- PHP 5.3 reverse engineering capability.
- Modeling of Generics/Templates improved for C#, C++, Java and VB.Net.
 - Templated Interfaces now supported.
 - Template Parameter Bindings can now be set on Generalizations, Realizations, Associations and the new Template Binding connector.
 - Template Parameter Bindings set on connectors now displayed on diagrams.
 - Template Parameter Bindings and defaults now linked to types existing in the model by GUID.
 - Reverse Engineering of Associations from Attributes with instantiated template type added.
 - Association created to either collection or argument depending on which is in the model.
 - Additional option added to ensure specific classes are always treated as collections during reverse engineering.
- Import of selected files now possible from Project Browser.
- Code Generation and Transform Templates extended to provide access to properties of the Linked Feature of a Connector.

- Code Reverse Engineering updated to prevent Class author being changed because a different person reverse engineered it.
- Sequence Diagram generation of create messages, delete messages and 'assign to' improved.
- Activity Diagram generation for Call Actions, Create Actions and Destroy Actions improved.
- Visual Basic parsing updated to support anonymous modules.
- PHP parsing of alternate syntax for conditional statements improved.
- C++ inner types will now be imported with the appropriate scope.
- Import of C++ and other languages without explicit syntax for parameter direction will no longer overwrite kind in the model during synchronization.
- Code Synchronization when 'Require User Lock To Edit' is enabled will now update elements the user has locked.
- Code Synchronization will no longer override parameter direction for languages without explicit direction syntax.
- Packages linked to Eclipse will no longer show an error for internal classes or enumerations.
- Reverse Engineering of C code modified to prevent constants defined in parenthesis from being imported as functions

User Interface

- Added option to hide the Start Page.
- Added support for re-ordering tabs in main view.
- Added support for using middle-click on main view tab to close it.
- Added ability to retrieve view history using Ctrl+Tab.
- Added button on note windows to open Linked Document for current Element.
- Added Links page to Properties dialog for Maintenance Elements.
- Spell checking improved
 - Spelling options dialog has been added.
 - Now possible to select from installed dictionaries.
 - Glossary terms now automatically added to user custom dictionary to prevent them being shown as spelling error.
- MDG Technologies dialog given updated Visual Style.
- Hyperlinks to files can now be specified using EA's Local Path mechanism.
- RTF Document, RTF Template and Team Review editors have been themed to match EA's visual style.
- Relationships window will no longer set the dropped Element as active after dropping.
- View Title Bar updated to show more information about current view for many non-diagram views.
- Additional Visual Styles provided.
- System Output window modified to allow Ctrl+End or Escape to clear selection and allow automatic scrolling for new items.
- The following dialogs have been modified to support resizing:
 - HTML Template Editor dialog.
 - Create Association Class dialog.
 - MDG Technologies dialog.
 - Information Items Conveyed dialog.
 - MDG Technologies: Advanced dialog.
 - Select Database Objects to Import dialog.
 - Image Manager dialog.

- Visible Toolbox Pages dialog.
- Shape Script Editor.
- Project Statistics dialog.
- Glossary term mouse-over text from Note Editor now includes the category.
- Glossary dialog updated to initially sort by Type followed by Term.
- State Table updated with keyboard shortcuts for manipulating Legends.
 - 'I' - Inserts 'I' (Ignore) to Transition cell without an existing Transition.
 - 'N' - Inserts 'N' (Never Happen) to Transition cell without an existing Transition.
 - 'Delete' - Deletes any existing legend string ('I' or 'N') from the Transition cell.
- Element Browser now support dropping items from the Relationships group onto a diagram to insert the target Element.
- Resources window modified to unload existing resources if loading another project failed.
- Attribute and Operation properties dialogs updated to enable saving after changing the type classifier.
- Change Element Type command updated to include 'Signal' in the list of target types.
- Toolbar icons updated to prevent issues where incorrect icons would be shown for some commands.
- Traceability window modified to refresh after changing options when displaying relationships for a diagram
- Element Browser will now display the Resource and Role for Resource Allocations
- Data modeling properties dialogs will no longer display when the 'Core Extensions' technology is disabled
- History for element picker dialogs now handles re-selecting an item already in the history
- Hyperlinks to searches can now be modified without re-entering the entire search
- Structured Scenario editor improved when using the 'Uses' column as a list of element references
- Structured Scenario editor improved for entering larger step descriptions
- 'Check Spelling' dialog will now remember last position

Source Code Editor

- Context menu restructured to prioritize most important commands.
 - Added command to link current method to a use case to context menu when inside a method.
- Scope Guides can now be turned on or off from the editor configuration dialog.
- Structure Tree updated to group C++ method implementations into class nodes.
- Copy of code from source editor will now preserve syntax highlighting for applications that support pasting from RTF.
- Improvements to display.
 - Syntax highlighting support for lua and css files added.
 - The highlight color for selected text can now be configured.
 - Default monospace font for Windows Vista and Windows 7 changed to 'Consolas'.
 - Line height is no longer affected by modifying the font size of tooltips.
 - Inline comment documentation keywords now highlighted with their own style.
- Editor Toolbar updated.
- New button to include navigation to Syntax Highlighting, Code Editor, Code Engineering and Code Editor Keybinding options.
- New command added to commands menu to Open Containing Folder.

- Code Templates button icon updated.
- Source Files can now be saved without an Enterprise Architect project open.
- Edit Style dialog now displays fonts in the Other Font combo box using their corresponding font face.
- Edit List Property dialog now displays correct title.
- Source code editor intellisense now correctly ignores logical ANDs (&&) when searching back for type declarations.
- Improvements to Find/Replace dialog
 - The Find/Replace dialog will no longer change focus when it is used.
 - Recent search and replace term history can be accessed through the relevant drop down list fields.
 - Regular expressions may now be used.
 - The Find/Replace will no longer be dismissed when navigating between source code editors.
- Source code intellisense now recognizes the super keyword when performing type lookups.

Data Modeling

- SQLite added as a supported database for both ODBC import and DDL generation.
- SQL Server import now supports filtering on schema.
- SQL Server import improved to allow import of table comments.
- SQL Server 2000 import of functions improved to include definitions.
- Generation of Oracle Foreign Key Statements improved to ensure correct ordering of delete rules and constraints.
- Generation of Oracle Triggers updated to generate 'SHOW ERRORS' command in the correct location.
- Generation of Oracle Sequences updated to provide option to control if a prefix or suffix is added to the name.
- Generation of Oracle primary key and unique constraints modified to ensure unique names generated when first 30 characters are the same
- Generation of SQL Server Default Constraints improved to generate wrapping characters around column names.
- Generation of SQL Server Default Constraints will no longer generate duplicate constraints when the constraint is the first method in the table.
- Sybase ASA datatypes handling improved.
 - Maximum length for several datatypes updated.
 - Columns using with datatype of int, smallint or tinyint can now use the Auto Number property.
- Synchronization of procedure and function parameters during ODBC Import modified to prevent primary key violation.
- ODBC Import updated to save Association name for Foreign Keys during creation.
- ODBC Import updated to ensure all column details are visible on open diagrams immediately after import.
- ODBC Import from Access 2000 databases will now prompt users to switch to Jet 4 if they are not already using it.
- ODBC Import from MySQL updated to handle indexes that specify the data structure used with a USING constraint.

- ODBC Import from SQL Server updated so that columns added to a table are from the correct schema.
- ODBC Import from Oracle updated to ensure all Check Constraints are imported.
- Oracle DDL Generation of Constraints modified to ensure referential integrity is generated before constraint state.
- Oracle DDL Generation of Triggers modified to ensure show error statement generated to the correct position.
- SQL Server DDL Generation of Default Constraints modified to prevent duplication of the constraint when they were generated first.
- SQL Server DDL Generation of Default Constraints improved to generate surrounding characters around column names if specified.
- Sybase ASE modeling improved to allow for Autonumber property on int, smallint and tinyint.
- DDL Transformation modified to set nullability of foreign key columns based on if either end of the relationship allows a multiplicity of zero.
 - Also allows the nullability to be overridden by the template.
- ERD to Data Modeling Transformation updated to improve handling of reflexive relationships.
- DDL Generation for packages modified to generate indexes before primary keys

Other Changes

- Performance of Generalization Set handling improved for large models.
- Model Views window updated to find the currently selected package for searches within a package.
- Adding composite elements to an element on a diagram updated to ensure diagram added to the correct element.
- Rename of a Signal element changed to update Sequence Messages referencing that Signal.
- Diagram Legends will now draw line colors when saving a diagram as a metafile.
- Shape scripted connectors with multiple segments will now preserve the line style for all segments.
- Exposed Interface selection dialog modified to support multiple interfaces with the same name.
- Japanese Version will now display Toolboxes correctly when using a Non-Japanese version of Windows.
- Package Comparison improved to include Constraint Type when matching Element Constraints.
- PostgreSQL repository undoing deletion of object from a diagram improved.
- SQL Server repository Unicode handling improved for characters outside default Windows code page.
- The code editor configuration dialog now includes the option for displaying scope guides.
- Performance of creating and deleting instances with many embedded elements has been improved.
- Open diagrams when another user re-imports the parent package will now be reloaded
- Baseline compare no longer shows a difference for unchanged diagrams after a save
- Action effects will now be copied when using a template package

Audit View

- View of deleted items can now be sorted by Element type or user who deleted it.
- Added option for opening element properties from audit list context menu.

- List of auditing changes now sorted alphabetically.
- Display of changes to formatted notes improved.

Package Browser and Element List

- List of Elements in a Package renamed to Package Browser Diagram as a list retains name of Element List.
- Filtering of contents using Diagram Filters now supported.
- Added new Filter Bar to both lists.
 - Toggle display using button on toolbar or option in context menu on column headers.
 - Enter text in any of the search boxes to show only rows containing that text in the specified column.
- Display of Tagged Values for both lists added.
 - Add a new column using context menu on header or dropping a tag from Tagged Values window.
 - Remove a column using context menu on header.
- Navigation between packages in Package Browser improved:
 - Alt + Up to navigate to parent package.
 - Alt + Down to navigate to selected package.
 - Button added to toolbar to navigate to parent package.
- Drag and Drop to Project Browser from Package Browser added to allow moving elements between Packages.
- Group Box for Package Browser now disabled instead of hidden when displaying hierarchy mode.
- Both views now use the scroll speed specified in Windows options.

Searches

- Added new Filter Bar to both lists.
 - Toggle display using option in context menu on column headers.
 - Enter text in any of the search boxes to show only rows containing that text in the specified column.
- Search view now uses the scroll speed specified in Windows options.
- Query Builder searches using fields stored as integers in the database improved.
- Search combo box in Model Search window modified to display translated names for built-in Searches.
- Added Resolved By field on Defects to Query Builder.
- Defect Search now also searches on Resolved By field.

Structured Scenarios

- Auto-Complete in structured scenario editor improved when using space to accept selected word.
- Prevented situation where one alternate path could have two distinct joining steps.
- Test case generation modified to update connector lists for current Element.
- Activity and State Diagram generation modified to re-use elements for alternate path instead of recreating them.
- Activity and State Diagram generation modified increase left margin.
- Sequence Diagram generation modified to only include step numbers if 'Show Sequence Numbering' is enabled.

- Linking Step to a Use Case when editing from initial creation updated to ensure link is created on correct step.
- Highlight of glossary terms and referenced elements improved in situations where one is a substring of another.

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