

Agile Engineering Collaboration Platform

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Agile Engineering Collaboration Client

Release 1.1 SP4 for Agile 9

Part No. E10832-01

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A	11/08/2005	All	New release of manual for Agile EC 1.1.
B	11/29/2005	4-30 and 4-37	Table titles added.
C	10/11/2006	2-16 and 2-17	Table with attributes to be added for CAD integration to Agile PLM updated.
D	04/12/2007	All	CAD Connector information deleted and updated for SP2.
E	08/01/2007	All	Client configuration section updated.

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E	07/12/2007	All	Client configuration section updated.

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CHAPTER 1

Introduction to Engineering Collaboration

This chapter introduces you to Agile's CAD Integration product, called Engineering Collaboration. It contains the following topics:

- ❑ *Functional Overview*
 - ❑ *Characteristics and Capabilities*
 - ❑ *Engineering Collaboration Process*
-

Functional Overview

Agile Engineering Collaboration (EC) is an application that provides data and process integration between CAD applications and Agile PLM 9. It allows CAD designers and engineers to capture and control the data representing a primary source of the product record. The application consists of a core Engineering Collaboration Client (known as the “EC Client”), and individual Engineering Collaboration Connectors to the specific CAD systems (such as Pro/ENGINEER, SolidWorks, etc.). The EC Client provides a window into the Agile environment that is geared towards CAD designers and engineers. It supports searching and viewing of Agile data, and provides the user interface for all Connector operations such as saving and loading CAD data. The main features of the EC Connectors are:

- ❑ **Save** – Saves native CAD data from the current session into Agile
- ❑ **Load** – Loads native CAD data from Agile into the current CAD session
- ❑ **Manage Change** – Allows users to control checkout reservation and revisioning
- ❑ **Update Properties** – Updates property (attribute) values between the CAD files and Agile
- ❑ **Create Viewables** – Creates neutral format files, such as PDF, to be used for viewing, plotting, or manufacturing
- ❑ **BOM Publication** – Automatically creates and updates the Part BOM based on the CAD design structure, with Agile change control

CAD datasets created by the EC Connectors can be viewed using Agile Enterprise Visualization (EV) allowing anyone with access to Agile PLM to be able to view, markup, and collaborate in real time on the 3D CAD designs across the web, without needing a seat of the CAD tool.

Agile Engineering Collaboration requires Agile Product Collaboration (PC) as a base module, which provides the underlying document management, part management, and change management required to manage CAD designs.

This chapter and Chapter 3, Using the Engineering Collaboration Client, are directed to end-users.

Chapter 2, Administration, is directed to administrators and implementers.

Other Agile PLM Documentation

This guide is intended to be sufficient to use Engineering Collaboration, provided Agile 9 is installed at your company. If you need to install Agile 9, please contact your Agile representative or use appropriate installation documentation.

- ❑ Documentation for Agile PLM installation and upgrade:
 - *Agile 9.x.x ReadMe, for Windows or Solaris*
 - *Pre-Installation Worksheet*
 - *Database Installation and Upgrade Guide for Agile*
 - *Installation Guide for Windows or Installation Guide for Solaris*

The following manuals provide information about Agile PLM that is not found in this guide.

- ❑ Documentation for Agile PLM administration:
 - *Administrator Guide* — complete reference to the Administrator component of Java Client
- ❑ Documentation for Agile PLM end-users:
 - *Client Handbook* — this is a compendium of information about cross-platform features in Agile PLM, as well as utility applications such as Import, Export, and FileLoad. The following are documented:
 - User interfaces of Java Client and Web Client
 - Agile PLM concepts and terms
 - Agile business objects, particularly file folders for attachments
 - Searches to find data in Agile
 - *Product Collaboration User Guide* — this manual is central to implementing the change control process in Agile, with information about items (parts and documents) and changes, such as ECOs.

Characteristics and Capabilities

These are some characteristics of Agile Engineering Collaboration:

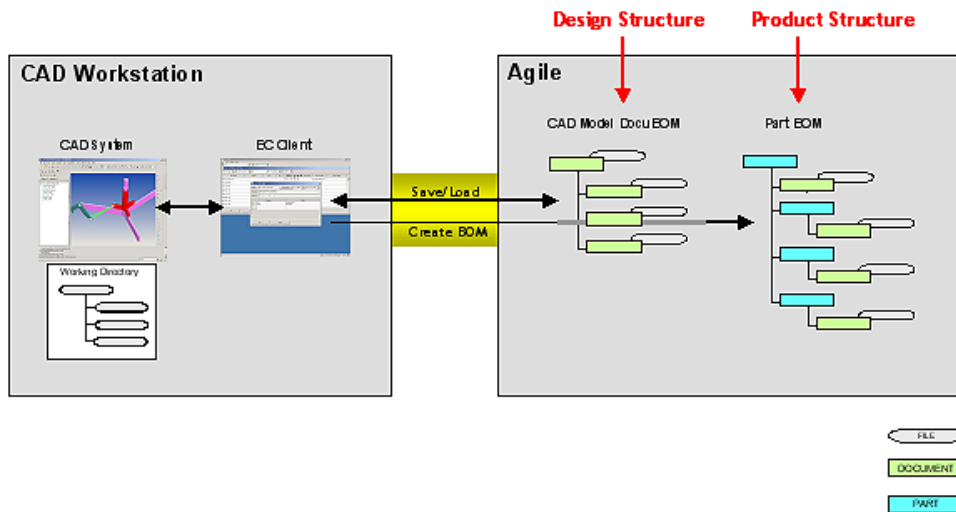
- ❑ Multi-platform, Java Client
- ❑ Centralized configuration via XML
- ❑ Dynamically loaded extensions support customization of the CAD Connectors' business logic
- ❑ Common search and view functionality is simplified for CAD designers and engineers
- ❑ Manages both work-in-progress (WIP) and released CAD design data
- ❑ Supports concurrent engineering, enabling multiple designers to work within a common assembly
- ❑ Data access controlled by checkout reservation and/or timestamp
- ❑ Automated BOM creation process
- ❑ Bi-directional metadata exchange
- ❑ Support for special CAD capabilities such as Pro/ENGINEER family tables, CATIA CGR files, and SolidWorks configurations

Support for Mechanical CAD Tools

For a complete and most up-to-date list of all officially supported Agile PLM versions for each EC release, and the supported CAD systems and versions for each EC CAD Connector, see the document “EC System and Version Support” on the Agile Documentation Web site.

Engineering Collaboration Process

Figure 1-1: The main use cases supported by Agile Engineering Collaboration



Save and Load CAD files

CAD designs are created within the CAD system environment, with files in a working directory (which may be local or network attached). The designer saves into Agile, which creates a Design Structure that mimics the structure of the CAD assembly. The native CAD files are attached to this Design Structure, which is used as the basis for loading and re-saving the CAD designs. Since Agile is a centralized repository, all CAD designers in the enterprise have access to these files, subject to the control of Agile roles and privileges. Individual designers can set checkout reservation in Agile when they load files into their CAD session, enabling concurrent engineering within CAD assemblies. Additional files such as viewables (PDF, HPGL, etc.) can be attached to the Design Structure.

Create BOM

When a design or design change has been completed, the designer may use the Create Item/BOM command to create or update the Agile Part BOM, representing the true Product Structure. This function is used when there is a high correlation between the Design Structure and Product Structure, to avoid tedious manual entry of the Part BOM. This works in the context of an Agile change object, resulting in automated BOM redlining. The BOM can also be manually updated, for example to add bulk items such as paint or glue. Further automated updates from CAD will not remove the manually added items.

View CAD Files

One reason for managing the native CAD files within Agile is that the Agile viewer can be used to view and markup the files. This works across the web, and without having the native CAD system. Advanced functionality such as digital mockup, 3D comparison, interference checking, and real-time collaboration make this an important tool to support the overall design process.

CHAPTER 2

Administration

This chapter presents the installation procedures for the CAD integration product. It contains the following topics:

- ❑ *Installation*
 - ❑ *EC Client Configuration*
 - ❑ *Core Agile Configuration*
 - ❑ *EC Client Customization*
-

Installation

The EC Client is installed automatically as part of the MCAD Connector installation. See the documentation “CAD Connectors for Agile Engineering Collaboration” for installation instructions.

EC Client Configuration

Configuration File – CAXClient.xml

Regardless of which CAD Connector you are using, the EC Client is used as the main user interface. The EC Client is configured by editing an XML file called CAXClient.xml. This file is located in one of the following locations:

Pro/E	AgileEC\acp\jar\Agile9
SolidWorks	AgileEC\CaxIntegrationacw\Server
Unigraphics	AgileEC\acu11\jar\Agile9
CATIA V5	AgileEC\acc\jar\Agile9
CATIA V4	/acc-rt/jar
Solid Edge	AgileEC\ace\Server

In each case, this file is configured in exactly the same way. In fact, if you use more than one CAD Connector at your site, you can use the same configuration of CAXClient.xml for each.

This file is used for two main types of configuration – for controlling the behavior of the EC Client, and also for defining the data model used for storing your CAD data in Agile.

EC Client Parameters

clientConfig Parameters

The parameters in this section are indicated by the tag <clientConfig>. Configure these parameters as desired to match system and process requirements at your site.

Table 2-1: clientConfig section

Name	Value	Remarks
userName	cax	default user (filled in login form)
serverURL	http://localhost:8888/Agile	used server connect string
dateFormat	yyyy-MM-dd HH:mm:ss z	default date format
enableFields	ON OFF	If ON, will automatically turn on the necessary attributes configured for the sub-classes defined in CAXClient.xml (does not name the attributes however).
editMode	ON OFF	Allows editing within forms
ping	ON OFF	Helps to keep the client session alive under certain conditions
ObjectCache	ON OFF	ADVANCED OPTION – Contact Agile Solution Delivery for assistance
SessionXMLCache	ON OFF	ADVANCED OPTION – Contact Agile Solution Delivery for assistance
CopySourceAttachmentsForward	ON OFF	If ON, all non-SOURCE attachments will automatically be removed when creating a new pending revision using the EC Client. Useful for removing viewable and baseline attachments.
SingleFieldUpdate	ON OFF	If ON, updates objects one attribute at a time, rather than all at once. Required only to bypass an update problem on AIX JRE platform.
drsListenPort	5112	Dresden (drs) protocol listen port (do not change)
creationMode	INT BAT	Default mode (possible is INT or BAT) for creation of new objects in Save Command (interactive or batch-mode)
creationModePart	INT BAT	Default mode (possible is INT or BAT) for creation of new parts in create Item BOM command (interactive or batch-mode)
revisionSequence (also revisionSequenceECO, etc.)	Examples: ,A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q, R,S,T,U,V,W,X,Y,Z, ,1,2,3,4,5,6,7,8,9,10,11,12,	Default Sequence of Revision letters. Keep a comma at the beginning and the end! Of the sequence. You can create multiple entries of this line, by appending the name of an Agile Change sub-class on the end. That will assign the given revision sequence to that sub-class only.
revisionSequenceEditor	ON OFF	If ON, allows selecting a revision from the pre-defined revisionSequence list in Manage Change. If OFF, revision must be manually entered.

Table 2-1: clientConfig section

Name	Value	Remarks
EcoDefaultWorkflow	Examples: “Default Change Orders” “{class} Default Workflow”	The name of the workflow to be automatically assigned when creating a Change object. If the name contains the string “{class}”, the name of the Change sub-class is inserted. This allows assigning a unique workflow per Change sub-class.
EcoIgnoreRuleForLatest	ON OFF	If ON, allows a non-latest revision to be selected for creation of a pending revision, in the Manage Change command (although a warning icon will be displayed). This supports design branching. If OFF, attempting to create a pending revision from a non-latest revision will not work (a stop sign will be displayed).
NumberingMode	Allowable values: NONE PROE UG CATIA SOLIDWORKS SOLIDEDGE	If set to a value other than NONE, when creating a new CAD model using the Agile > New command, the appropriate CAD extension for the given CAD system will be appended to the autonumber from Agile, to create the Document number. The value of NumberingDelim is also inserted (see next entry). For example, if this is set to SOLIDWORKS, and the next available autonumber in the New dialog is P12345, the Document number will be P12345.SLDPRPT (instead of P12345).
NumberingDelim	Examples: “.” (period) “-“ (dash)	The value is inserted between the autonumber value and the value of the NumberingMode parameter (see above).
NumberingCreateParts	ON OFF	If ON, a Part object is automatically created during the New command, and linked to the created Document. The Part number will match the selected autonumber. In the example above, the Part will be P12345 and the Document will be P12345.SLDPRPT.
InitialECOClass	Allowable values: NONE A name of a Change sub-class	If set to something other than NONE, when Documents are first created in the EC Client (using New or Save), they will be automatically placed on a Change object, using this sub-class.
InitialRev	Examples: “1” “A” “-“ (dash)	If InitialECOClass is not NONE, this will be the value of the initial pending revision created for Documents during New or Save.
InitialPartECOClass	Allowable values: NONE A name of a Change sub-class	If set to something other than NONE, when Parts are first created in the EC Client (using New, Save, or Create Item/BOM), they will be automatically placed on a Change object, using this sub-class.
InitialPartRev	Examples: “1” “A” “-“ (dash)	If InitialPartECOClass is not NONE, this will be the value of the initial pending revision created for Parts during New, Save, or Create Item/BOM.

Table 2-1: clientConfig section

Name	Value	Remarks
AutoCreateECO	ON OFF	If ON, automatically creates Change objects and assigns revision values based on values coming from CAD. Used for dataload operations.
AddPartToECO	ON OFF	If ON, and if Parts are automatically generated using the NumberingCreateParts option, then the Parts will automatically be assigned as affected items on the same Change as the Documents, in the Manage Change command.
assignDrawingToPart	ON OFF	If ON, will link the 2D drawing Document as well as the 3D model Document into the Part BOM, during the Create Item/BOM command. Is only valid if disableDocumentPartLink is OFF.
disableDocumentPartLink	ON OFF	If ON, the Create Item/BOM command will not link the Documents into the Part BOM, but will instead set attributes on each object, referencing each other (for 9.2.1) or Relationship links (for 9.2.2).
checkLocalStamp	0 1	ADVANCED OPTION – Contact Agile Solution Delivery for assistance
overWrite	ASK ON OFF	Sets the default value of the Assignment selector found at the top of the Save dialog ASK = Confirm ON = Assign and Overwrite OFF = Don't Assign or Overwrite
autoSaveBatch	0 1	If 1, saves in batch more with no client interaction. Used for dataload operations.
mapAttributesToFileFolder	ON OFF	If ON, will set attributes on the File Folder object attached to the Document, that are equal to the attributes set on the Document. This requires configuration of the File Folder section of the CAXClient.xml file. This is used to better control access at the File Folder level.
getFilesSelective	0 1	If 1, an additional checkbox column is enabled in the Load dialog that allows users to select which files to load. CAUTION: This capability is only supported by some CAD systems.
baselineColumn	0 1	If 0, the Create Baseline checkbox column in the Save dialog is removed, preventing users from creating Baselines.
DefaultUnit	Metric Inches	Sets the default units for the New dialog
LoadOptionsLatest	Allowable values (one or more): LATEST_PENDING RELEASED ASSAVED	Sets the valid options for structure resolution during the Load command, for when a pending revision is selected. The user will receive a popup dialog prompting them to select an option.
LoadOptionsNonLatest	Allowable values (one or more): LATEST_PENDING RELEASED ASSAVED	Sets the valid options for structure resolution during the Load command, for when a released revision is selected. The user will receive a popup dialog prompting them to select an option.

Table 2-1: clientConfig section

Name	Value	Remarks
LoadSimplified	0 1 NONE	Enables the “Simplified Reps” checkbox in the Load dialog, which is only valid for Pro/ENGINEER. If set to 0, the checkbox is enabled and not checked. If set to 1, the checkbox is enabled and checked. If set to NONE, the checkbox is disabled.
ViewablesDrawing	Example: TIF,PDF,CGM,JPG,HPGL,PS,DXF, DWG,EDRW,CALS	The list of allowable viewable filetypes for Drawings, that will be displayed in the Save Preferences dialog. Note that further configuration may be necessary to have the desired filetype be generated.
ViewablesModel	Example: JT,CGR,WRL,STL,X_T,X_B,STEP, IGES,EPRT,EASM,ED,EDP,EDZ, 3DXML,SAT,VDA	The list of allowable viewable filetypes for Models (parts and assemblies), that will be displayed in the Save Preferences dialog. Note that further configuration may be necessary to have the desired filetype be generated.
AutoSubmitXYZ (Where XYZ is the name of a Change sub-class)	Examples: Released Submitted	Gives the target workflow status for the given Change sub-class, for use with the “Submit Changes” option in the Save dialog. The workflow must be configured with a valid path using “default next status” to the target workflow status.
Viewer	Allowable values: ON (not supported) OFF LOCAL	Controls the viewing function from the EC Client. If set to OFF, the view button is disabled. If set to LOCAL, the view button is enabled and supports launching file attachments using client-side MIME type applications. The ON setting is intended to support the Vueserver but is not currently enabled.

fileOperation Parameters

The parameters in the section are indicated by the tag <fileOperation>. They control the behavior of the Save and Load operations. Configure them to match the process requirements at your site.

Table 2-2: fileOperation section

Name Parameter	Value	Remarks
get		Parameters relating to the “Load” command
autoCheckout		"0" no automatic checkout (reserve) "1" automatic reserve
URLcopy	0	Obsolete
put		Parameters relating to the “Save” command
saveOption		"1" enable save if object isn't checked out by another user "2" enable save if object isn't checked out by another user and the object has not been changed in PLM (not out-of-date) "3" enable save only if object is checked out by current user and the object has not been changed in PLM (not out-of-date) "4" enable save only if object is checked out by current user
timeStampField	6151	Obsolete

Table 2-2: fileOperation section

Name Parameter	Value	Remarks
viewable	VIEWABLE	The value that is used to identify source (native) CAD files, in the Attachment Type attribute of the Attachments tab on the Document.
source	SOURCE	The value that is used to identify viewable files, in the Attachment Type attribute of the Attachments tab on the Document.
baseline	BASELINE	The value that is used to identify baselines, in the Attachment Type attribute of the Attachments tab on the Document.
viewables	,CGM,TIF,TIFF,JPG,JPEG,GIF,PDF,JT,X_T,CGR,	A comma-separated list of file extensions that will be flagged as viewable file types. Make sure there is a comma at the beginning and end of the list.
keepCheckout	0 1	Default preselection of checkboxes for objects in save dialog. "1" means the file is still checked out after the Save command is completed.
checkInDefault	0 1	Default preselection of checkboxes for objects in save dialog, "1" means the filefolder is checked in after file transport to make changes visible to other users.

Agile Data Model Parameters

The CAXClient.xml file defines the types of objects that are used by Agile to store your CAD data, and also which attributes from those objects are accessed. The object definitions are within the <objectProperties> section, and consist of <subclass> definitions which define tabs and attributes. There are three main <subclass> sections: File Folder, Document, and Item. File Folder is obsolete, so you can ignore that section. The Document subclass is for defining the object class that will contain the CAD files (the "Design Structure"), for which the subclass "CAD Model" is commonly used. The Item subclass is for defining the object class for the Part BOM (the "Product Structure").

Subclass definitions appear as follows:

```
<subclass name="DOCUMENT" type="2" id="24147">
```

where type is the Agile object type, and id is the Agile sub-class ID. By setting the id equal to a specific Agile Document sub-class (such as CAD Model), you can control which Document sub-class appears in the EC Client by default.

Note One difficulty of this setting is that the sub-class ID cannot be determined directly through the Agile administrator client. However, when you run the EC Client it will output a list of all object sub-class IDs in the CaxClient.log file.

Tab definitions appear as follows:

```
<table name="TITLE_BLOCK" id="0">
```

Within each tab, attribute definitions appear as follows:

```
<attribute name="DESCRIPTION" id="1002" set="1" get="1" mandatory="1"/>
```

which has the following parameters:

id = the Agile base ID of the attribute

set = 0 or 1 where 1 means to include this attribute in UI for creating or setting object properties

get = 0 or 1 where 1 means to return this attribute to the CAD Connector

mandatory = 0 or 1 where 1 means that the user cannot continue until a value is entered.

Note The setting of “mandatory” is independent of the Agile server definition of “required” fields. For best results, mark those fields that are required by the Agile server, also as mandatory for the EC Client. Both mandatory and required fields are indicated by bold text in the EC Client user interface.

The Agile data model for EC is defined by determining which attributes to set within the CAXClient.xml file, and then configuring these attributes in Agile.

The following table lists the attributes that are contained within the CAXClient.xml file. Those attributes that have a value shown in the “Attribute Name” column should be configured in the Agile system, using the Base ID listed.

You must configure the Document object class and the Part object class. For the Document class you can use either the "Documents" class in Agile, or create a sub-class such as "CAD Model". If you use "Documents" then your CAD-specific attributes will be defined on Page Two, and if you use "CAD Model" your CAD-specific attributes will be defined on Page Three. Table 2-1 shows both cases; **you need to pick one or the other (NOT BOTH!)**, and then make sure the Base ID settings in the CAXClient.xml file match. The Part and File Folder configurations shown in Table 2-6 should be followed in all cases.

Note The standard CAXClient.xml file that is shipped with the EC Client has the Document object class configured to use Page Three, and the Part object class configured to use Page Two. This is the recommended approach.

Note The administrator must ensure that the tabs named below are set to “Visible.” This is done in the specific class (Java Client > Admin > Classes > <specific class> > User-Interface Tabs > <specific tab, double-click> > set Visible property to Yes).

Table 2-3: Attributes to be added for CAD integration with Agile PLM

Subclass	Tab	Symbolic name (in CAXClient.xml)	Attribute name (in Agile)	Default Attribute	Base ID	Comment
Documents	Page Two	CAX_CRE_SYSTEM	CAD System	PAGE_TWO.TEXT11	1301	
		CAX_FIL_NAME	CAD Filename	PAGE_TWO.TEXT12	1302	
		CAX_FIL_OLD_NAME	CAD Old Filename	PAGE_TWO.TEXT13	1303	Optional
		CAX_TIMESTAMP	CAD Timestamp	PAGE_TWO.TEXT14	1304	
		CAX_TYPE	CAD Type	PAGE_TWO.TEXT15	1305	
		CAX_SUBTYPE	CAD Subtype	PAGE_TWO.TEXT16	1306	
		CAX_FAM	CAD Family	PAGE_TWO.TEXT17	1307	Optional
		CAX_VAR	CAD Variant	PAGE_TWO.TEXT18	1308	
		CAX_DWG_NAME	CAD Drawing Name	PAGE_TWO.TEXT19	1309	Optional
		CAX_FRAME_ID	CAD Frame ID	PAGE_TWO.TEXT20	1310	
		CAX_NAM_FMT	CAD Name Format	PAGE_TWO.TEXT21	1311	
		CAX_PROJECT	CAD Project Name	PAGE_TWO.TEXT22	1312	Optional
		CAX_PART	Part Number	PAGE_TWO.TEXT23	1313	
		CAX_FIL_PATH	CAD File Path	PAGE_TWO.MULTITEXT01	1331	Optional
		CAX_FIL_OLD_PATH	CAD Old File Path	PAGE_TWO.MULTITEXT02	1332	Optional
		CAX_MODEL_TYPE	CAD Model Type	PAGE_TWO.TEXT01	2007	
		CAX_MODEL_REF	CAD Model Reference	PAGE_TWO.TEXT02	2008	
		CAX_LINK_TYPE	CAD Link Type	PAGE_TWO.TEXT03	2009	
		CAX_LINK_REF	CAD Link Reference	PAGE_TWO.TEXT04	2010	
	BOM	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1341	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1342	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2175	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2176	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2177	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2178	
	Where Used Also configure these on the "Pending Change Where Used" tab!	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1413	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1414	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2216	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2217	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2218	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2219	
	Relationships	N/A	Part Link	RELATIONSHIP.TEXT01	5846	Only if using Relationship links for Create Item/BOM
	Attachments	(none)	Attachment Type	ATTACHMENT_MAP.ATTACH MENTTYPE	4681	Add these list values: SOURCE VIEWABLE BASELINE

Table 2-3 Attributes to be added for CAD integration with Agile PLM

Subclass	Tab	Symbolic name (in CAXClient.xml)	Attribute name (in Agile)	Default Attribute	Base ID	Comment
CAD Model	PageThree	CAX_CRE_SYSTEM	CAD System	PAGE_THREE.TEXT11	1585	
		CAX_FIL_NAME	CAD Filename	PAGE_THREE.TEXT12	1586	
		CAX_FIL_OLD_NAME	CAD Old Filename	PAGE_THREE.TEXT13	1587	Optional
		CAX_TIMESTAMP	CAD Timestamp	PAGE_THREE.TEXT14	1588	
		CAX_TYPE	CAD Type	PAGE_THREE.TEXT15	1589	
		CAX_SUBTYPE	CAD Subtype	PAGE_THREE.TEXT16	1590	
		CAX_FAM	CAD Family	PAGE_THREE.TEXT17	1591	Optional
		CAX_VAR	CAD Variant	PAGE_THREE.TEXT18	1592	
		CAX_DWG_NAME	CAD Drawing Name	PAGE_THREE.TEXT19	1593	Optional
		CAX_FRAME_ID	CAD Frame ID	PAGE_THREE.TEXT20	1594	
		CAX_NAM_FMT	CAD Name Format	PAGE_THREE.TEXT21	1595	
		CAX_PROJECT	CAD Project Name	PAGE_THREE.TEXT22	1596	Optional
		CAX_PART	CAD Part Number	PAGE_THREE.TEXT23	1597	
		CAX_FIL_PATH	CAD File Path	PAGE_TWO.MULTITEXT31	1570	Optional
		CAX_FIL_OLD_PATH	CAD Old File Path	PAGE_TWO.MULTITEXT32	1571	Optional
		CAX_MODEL_TYPE	CAD Model Type	PAGE_THREE.TEXT01	1575	
		CAX_MODEL_REF	CAD Model Reference	PAGE_THREE.TEXT02	1576	
		CAX_LINK_TYPE	CAD Link Type	PAGE_THREE.TEXT03	1577	
		CAX_LINK_REF	CAD Link Reference	PAGE_THREE.TEXT04	1578	
	BOM	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1341	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1342	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2175	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2176	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2177	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2178	
	Where Used Also configure these on the "Pending Change Where Used" tab!	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1413	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1414	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2216	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2217	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2218	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2219	
	Relationships	N/A	Part Link	RELATIONSHIP.TEXT01	5846	Only if using Relationship links for Create Item/BOM
	Attachments	(none)	Attachment Type	ATTACHMENT_MAP.ATTACHMENTTYPE	4681	Add these list values: SOURCE VIEWABLE BASELINE

Subclass	Tab	Symbolic name (in CAXClient.xml)	Attribute name (in Agile)	Default Attribute	Base ID	Comment
Parts	Page Two	CAX_CRE_SYSTEM		PAGE_TWO.TEXT11	1301	Not required
		CAX_FIL_NAME		PAGE_TWO.TEXT12	1302	Not required
		CAX_FIL_OLD_NAME		PAGE_TWO.TEXT13	1303	Not required
		CAX_TIMESTAMP		PAGE_TWO.TEXT14	1304	Not required
		CAX_TYPE		PAGE_TWO.TEXT15	1305	Not required
		CAX_SUBTYPE		PAGE_TWO.TEXT16	1306	Not required
		CAX_FAM		PAGE_TWO.TEXT17	1307	Not required
		CAX_VAR		PAGE_TWO.TEXT18	1308	Not required
		CAX_DWG_NAME		PAGE_TWO.TEXT19	1309	Not required
		CAX_FRAME_ID		PAGE_TWO.TEXT20	1310	Not required
		CAX_NAM_FMT		PAGE_TWO.TEXT21	1311	Not required
		CAX_PROJECT		PAGE_TWO.TEXT22	1312	Not required
		CAX_LOCAL		PAGE_TWO.TEXT23	1313	Not required
		CAX_FIL_PATH		N/A	1331	Not required
		CAX_FIL_OLD_PATH		N/A	1332	Not required
		CAX_DOC	CAD Model	PAGE_TWO.TEXT01	2007	
		CAX_DOC_CONFIG	CAD Model Configuration	PAGE_TWO.TEXT02	2008	
		CAX03		PAGE_TWO.TEXT03	2009	Not required
		CAX04		PAGE_TWO.TEXT04	2010	Not required
	BOM	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1341	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1342	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2175	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2176	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2177	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2178	
	WhereUsed Also configure these on the "Pending Change Where Used" tab!	CAX_FILENAME	CAD Filename	BOM.MULTITEXT30	1413	
		CAX_TRANSFORM	CAD Revision	BOM.MULTITEXT31	1414	
		CAX_IDENT	CAD Ident	BOM.TEXT01	2216	
		CAX_COMPONENT	CAD Component	BOM.TEXT02	2217	
		CAX_REFERENCE	CAD Reference	BOM.TEXT03	2218	
		CAX_CONFIG	CAD Config	BOM.TEXT04	2219	

EC Client Log File

Each time a EC Client session is started, a log file called CaxClient.log will be created within the user's working directory (for SolidWorks the file is called CAXJavaStart.log instead). This file can be used to see what is happening during the client session.

Core Agile Configuration

Agile Roles and Privileges

Agile roles and privileges is too extensive an area of Agile to be covered in detail here; for more information, see the Administrator Guide. However, some aspects are critical to proper operation of the EC Client.

Create a role or roles for those CAD users who will create objects in Agile through the Engineering Collaboration Client. They should have privileges to modify objects from any Document subclass(es) that you have created – for example, a subclass called CAD Model – to be used to store CAD data. Other users should not have Modify privileges to these subclasses.

Privileges required to access and change Document objects include:

- ☐ Modify object in a preliminary state
- ☐ Modify redlined BOM
- ☐ Check in object in a preliminary state
- ☐ Check out object in a preliminary state

Checkin and Checkout should be specifically excluded when the object has left the preliminary state, otherwise it will be possible to modify data that is in Released status through the EC Client, as well as Java Client or Web Client.

EC Client Customizing

1 General

The CAD Connector is called by MCAD systems. The MCAD system delivers and receives data to and from Agile using IAglParameter objects. There are three different ways to modify this dataflow :

- ☐ Add your own ActionHandler to CAD Connector
- ☐ Extend your own Connector from CAD Connector
- ☐ Extend your own Connector from CAD Connector and add your own ActionHandler to CAD Connector (combination of both steps above).

2 How to add your own ActionHandler

- a. Create your own JAVA class, which extends CAXAction and implements ICAXAction. Please see example of com.Agile.cax.custom.CustomAction in CustomConnector.jar. ICAXAction implements methods which are called within the workflow of save and load processes. Here you can modify the behavior using predefined entries.
- b. Create your own JAVA-jar-File, which contains your class. Compile and link against the CAXConnector.jar, CAXClient.jar, CaxAglDataTypes.jar and AgileAPI.jar.
- c. Make sure your jar-file and all needed sub-jars are contained in your java class path when the CAXClient is started. You can check cax_client.bat for that.
- d. Register your ActionListener for CAXConnector in CAXClient.xml. If your class is

com.Agile.cax.custom.CustomAction, the line looks like this:

```
<drsExtension logicalName="com.Agile.cax.CAXConnector"
className="com.Agile.cax.CAXConnector"
actionHandler="com.Agile.cax.custom.CustomAction" >
```

Note Keep in mind: You can only add this ActionListener to the mentioned line. All other drsExtension tags are ignored!

- e. After restart of CAXClient you see your registered handler in stdout.

3 How to extend CAXConnector

- a. Create your own JAVA class, which extends CAXConnector. Please see the example of `com.Agile.cax.custom.CustomConnector` in `CustomConnector.jar`. This CAXConnector implements all methods which are called directly by MCAD. Here you can modify the behavior by changing the dataflow or making a complete replacement of single methods (overloading).
- b. Please follow 2.2 and 2.3 for creating and using your jar file in CAXClient.
- c. Register your connector in CAXClient.xml by creating your own `drsExtension` tag (see `CustomConnector` for example). Assumed you implemented your own Connector in class `com.Agile.cax.custom.CustomConnector` than the lines look like this:

```
<drsExtension logicalName="com.Agile.cax.custom.CustomConnector"
  className="com.Agile.cax.custom.CustomConnector" ></drsExtension>
```

- d. Register your connector and the changed methods in CAXClient.xml. Each method called by MCAD has a name, which is mapped to a JAVA class in XML: `<classMapping methodName="symbolicName" className="containingClass">`

If you implemented your own method “searchObject” in your connector `com.Agile.cax.custom.CustomConnector`, the XML entry has to be modified like this:

```
<classMapping methodName="searchObject" className="
com.Agile.cax.custom.CustomConnector">
```

The available `methodName`’s are predefined and called by CAD.

4 How to extend CAXConnector and ActionHandler combined

In order to extend your own Connector and use an ActionHandler just combine the steps 2 and 3 above.

ActionHandlers only work for a CAXConnector and can only be registered there. A “CustomConnector” may not have its own ActionHandler, but you can register this ActionHandler at the CAXConnector. Always first try to use own ActionHandlers instead of own Connectors, because making your own Connector is much more complex than making your own ActionHandler.

CHAPTER 3

Using Engineering Collaboration Client

This chapter presents the steps for using your installed CAD integration product. It is intended for the end-user of Agile Engineering Collaboration Client and CAD Connectors. Attachments and searches are fully documented in Product Collaboration Client Handbook. This chapter contains the following topics:

- ❑ *Starting Engineering Collaboration Client*
- ❑ *Starting the Client and connecting to Agile*
- ❑ *Disconnecting from Agile and closing the Engineering Collaboration Client*
- ❑ *Using the Engineering Collaboration Client*

Agile Engineering Collaboration Platform provides integration between CAD systems and the Agile PLM software, to allow you to manage your CAD data and processes. It consists of a core Engineering Collaboration Client and individual Engineering Collaboration Connectors to the specific CAD systems (such as Pro/ENGINEER, SolidWorks, etc.). Since most of the operation of the EC Client is common between all the supported CAD systems, this User Guide is written to cover the user operations in a common way. Where differences between CAD systems do exist, they are clearly identified in the documentation.

Starting Engineering Collaboration

EC is operated from within your CAD system environment. Your administrator will provide you with a startup command or icon that will start your CAD system with the EC functions enabled.

Note In order to use EC you must be a registered Agile user!

Starting the Client and connecting to Agile

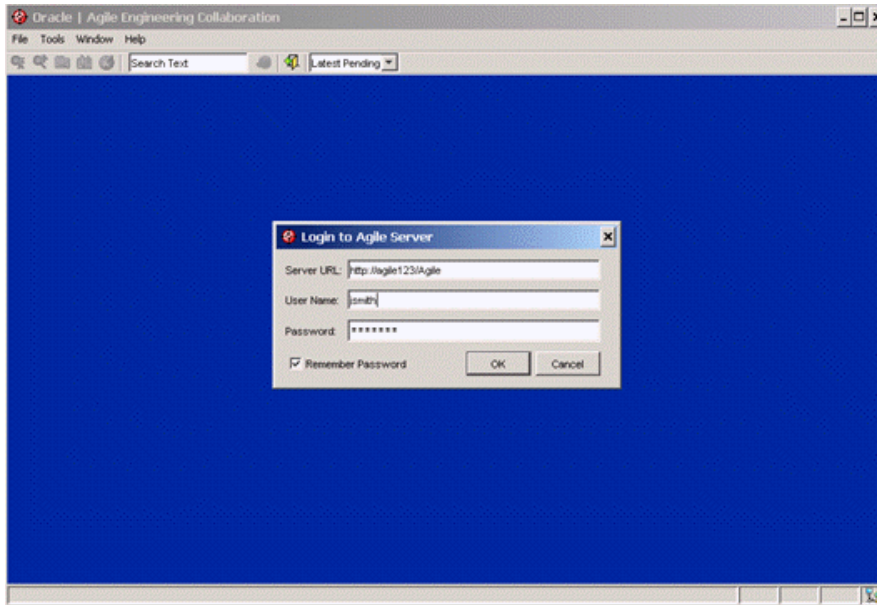
When the user first starts the CAD system, the Agile menu is available but a connection to Agile has not yet been established. The first task is to start the EC Client, which is done using the Start Client command, unless your administrator has configured your system to start the client automatically. Once the client has been started, you will then need to log in to Agile. There are different ways to do this, depending on your preference:

Table 3-1: Connecting methods

Connect Method	Approach
Login from EC Client	From the EC Client window, pick the Login icon or the File > Login... command.
Login using Agile > Connect	From within CAD, pick the Agile > Connect command
Login using any Agile menu command	From within CAD, pick any Agile menu command that will force a login (such as Save , Load , etc.)

After using one of these login methods, an Agile login screen will appear as shown in User Login to Agile. The user logs in to Agile, just as if they were logging in to a regular Agile client, and then the connector’s connection to Agile will be established. After this point, the connector can communicate with Agile as needed until the user exits from CAD, or executes the Disconnect command.

Figure 3-1: User Login to Agile



The **Server URL** field in the Login dialog is set by your system administrator, you would normally not need to change this. Just enter the desired user name and password to log in. Checking the **Remember Password** box will save your login parameters for future use.

Disconnecting from Agile and closing the Engineering Collaboration Client

You may disconnect (i.e. Logout) from the EC Client without closing the client window or the CAD system. There are two ways to do this:

Table 3-2: Disconnecting methods from the EC Client

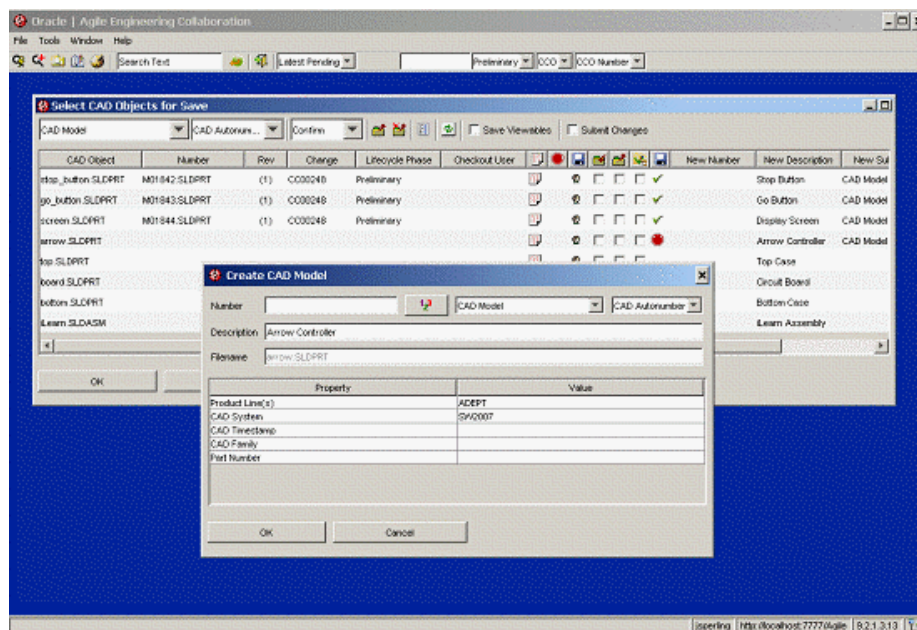
Disconnect Method	Approach
Logout from EC Client	From the EC Client window, pick the Logout icon or the File > Logout... command. (Note that the Login and Logout icons and commands just switch with each other, depending on what state you’re in)
Logout using Agile > Disconnect	From within CAD, pick the Agile > Disconnect command

Once you are disconnected, you are no longer using an Agile PC license. You may continue to work with your CAD model locally, without being connected to Agile. You may re-connect to Agile at a later time, and it is OK to just leave the EC Client window active, without being connected. To close the EC Client window, use the **File > Exit** command (from the EC Client window, not from CAD!), or just click the “X” icon in the corner of the window. It is always best to disconnect from Agile before closing the client window.

Using the Engineering Collaboration Client

User operations that require interaction with Agile are performed using the EC Client, a separate window that runs in combination with the CAD system. Much of the use of the EC Client is controlled by the commands that you run from the Agile menu in your CAD system. For example, picking the **Save** command will bring the EC Client to the front, and bring up the save dialogs shown in EC Client - Save command example.

Figure 3-2: EC Client - Save command example



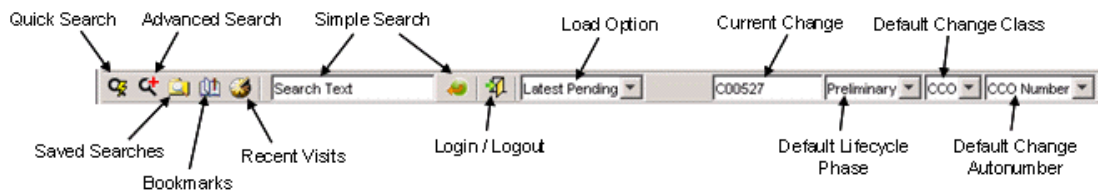
For details about the EC Client commands that are executed from the CAD system Agile menu, such as Save, Load, Manage Change, and Create Item/BOM, please see the document “CAD Connectors for Agile Engineering Collaboration”. The rest of this chapter will describe the basic client aspects of the EC Client.

The EC Client is designed for Agile operations commonly done by Engineers and Designers. Some of the breadth of capability from the standard Agile client has been removed in order to make it simple to use. Standard functions that can be performed from the EC Client include searching data in Agile, and viewing forms of objects such as Documents and Parts.

Table 3-3: Menu functions in the EC Client

Menu	Commands
File Logout Recent Visits... Exit	Logout (or Login) – Allows you to connect or disconnect from Agile. Recent Visits... - Shows a window listing Agile objects recently visited (see <i>Recent Visit</i>).
Tools Quick Search... Advanced Search... Saved Searches...	Quick Search... - Provides basic search capability (see <i>Quick Search</i>). Advanced Search... - Provide more advanced search capability (see <i>Advanced Search</i>). Saved Searches... - Displays a list of saved searches (see <i>Saved Search</i>).
Window Cascade Tile Horizontal Tile Vertical Undo Rearrange Close All Dock UnDock	This menu provides standard window-management capability. EC Client windows can be cascaded, tiled, docked and undocked.
Help About Oracle Agile EC...	About Agile EC... - Provides information about the release level of the EC Client

Figure 3-3: EC Client Menus and Toolbars



- ❑ Bookmarks - Displays a list of bookmarked objects
- ❑ Simple Search - The most basic search capability
- ❑ Load Option - Allows the user to set which structure resolution is used during the load process.
- ❑ Change Settings - Allows the user to set the Current Change, Default Lifecycle Phase, Default Change Class, and Default Change Autonumber, which support functionality in the main EC dialogs.

Engineering Collaboration Client - Search

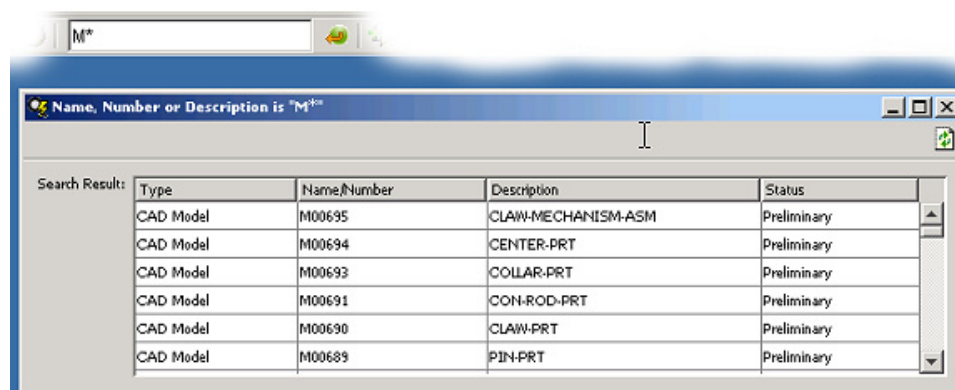
Much of the basic EC Client capability is focused on searching, so that you can find your data in Agile. There are six types of functions geared towards searching, which are Simple Search, Quick Search, Advanced Search, Saved Searches, Bookmarks and Recent Visits. All of these are similar to equivalent capabilities found in the other Agile clients. One main difference is that the EC Client is limited to a sub-set of Agile object types that can be searched. This is configurable by your administrator, but by default consists of Items (including Documents and Parts), File Folders, and Changes. These “EC Objects” are the object types that are used by the CAD Connectors.

A basic overview of the search functions is provided below. However, due to the similarity with standard Agile client capability, please refer to the “Client Handbook” in the User Manuals section of the Agile Documentation Web site for further details (for example, to see the allowable wildcard characters).

Simple Search

To perform a simple search, just type in your search text in the box that initially says “Search Text”, then click the icon to the right, or just hit the Enter key. A results list will appear, which will contain any EC Objects whose Number or Description fields match the search text. See Simple Search for an example.

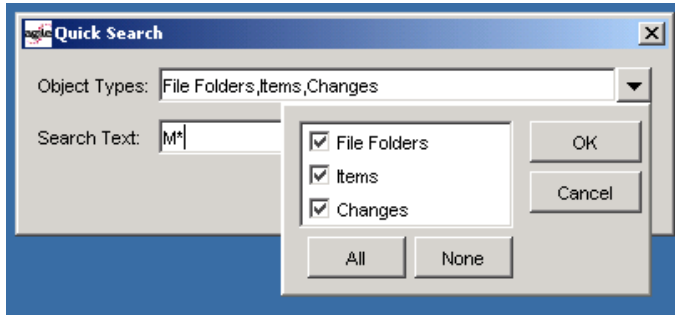
Figure 3-4: Simple Search



Quick Search

The only difference between Simple Search and Quick Search is that Quick Search allows you to control which of the EC Objects will be searched. There is an additional dialog to set the desired object types, shown in Quick Search Dialog. The results list generated by the Quick Search looks the same as for Simple Search.

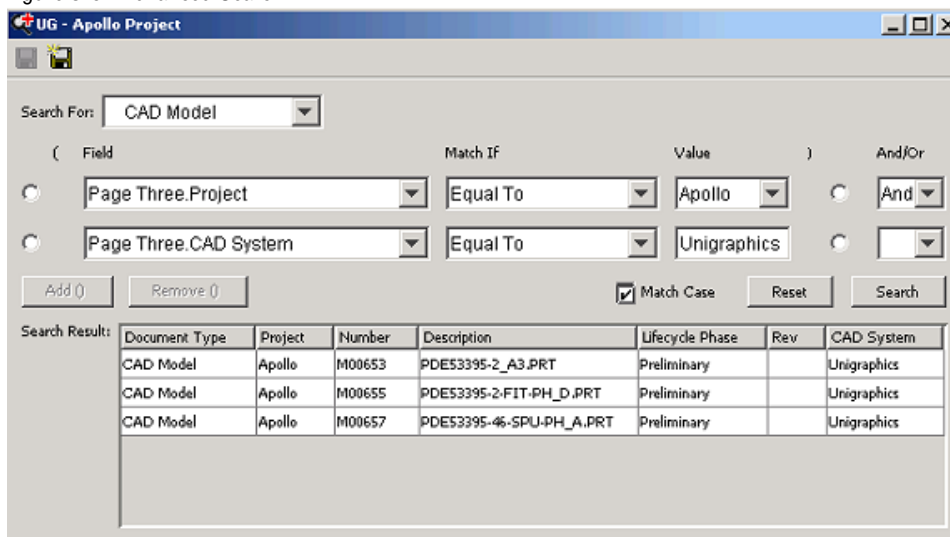
Figure 3-5: Quick Search Dialog



Advanced Search

The Advanced Search dialog allows you to create more detailed searches, which can better narrow in on the desired search results. For example, Advanced Search illustrates a search based on both a Project identifier and the type of CAD system. You can add multiple search criteria, combining them with “And” and “Or” operators. Once you have built an advanced search, you can execute it directly using the Search button, or you can save it using the Save icon at the top. This creates a Saved Search, which is a common way to use the Advanced Search function. See below for more about Saved Searches.

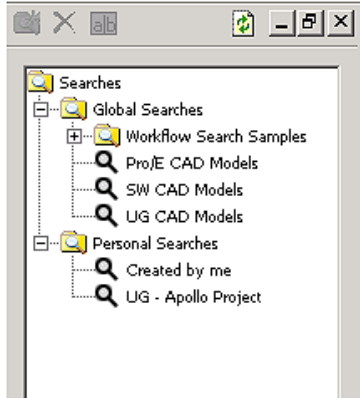
Figure 3-6: Advanced Search



Saved Searches

Saved Searches is an Agile capability which allows you to define useful searches and easily re-execute them. Saved Searches are stored in a tree structure, which is displayed when you pick the **Saved Searches** menu pick or toolbar icon. See Save Searches Display for an example of this display.

Figure 3-7: Saved Searches Display



Saved Searches are created using the Advanced Search capability, and then using the Save command. Note that Saved Searches are structured within folders – at the top level there are Global Searches and Personal Searches. If you have the necessary privileges in Agile, you can create saved searches within Global Searches, so that all users may use them. Otherwise you can create Personal Searches for your own use. When you save a search, you will be prompted to identify the folder to put it in. The Saved Searches display window also allows you to create folders, delete searches or folders, and rename searches or folders.

To use a Saved Search, just double-click on the name and it will bring up the results list.

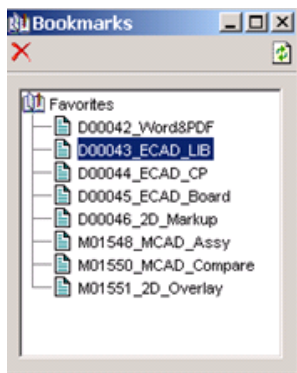
Since the standard Agile Web and Java clients have somewhat more capability in defining Advanced and Saved Searches, you may want to create your searches in a standard client, and then simply access them from the EC Client. One aspect of this is that in a standard Agile client, you can define which attributes should be visible in the results list. While this cannot be defined in the EC Client, the results will **display** correctly in the EC Client. In Advances Search, the “Project” and “CAD System” attributes were specially chosen to display in the results list.

Bookmarks

If you pick the Bookmarks toolbar icon, the Bookmarks window will appear. This window keeps track of your favorite objects, which you bookmark by clicking on the bookmark icons on the object form. To open one of the objects, just double-click on it.

Note In 9.2.2 and later, structured Bookmarks are supported.

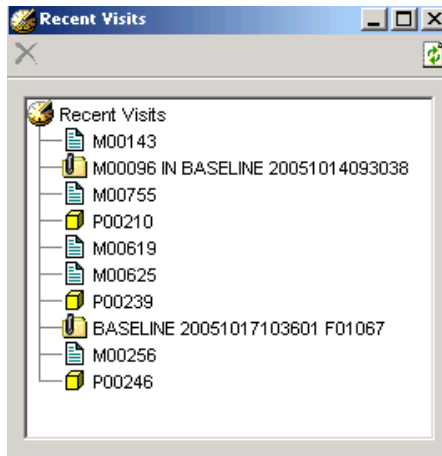
Figure 3-8: Bookmarks



Recent Visits

If you pick the **Recent Visits** menu pick or toolbar icon, the Recent Visits window will appear. This window keeps a running list of the 10 most recently visited object in Agile, with the most recent listed first. This enables you to easily get back to objects that you've worked with before. To open one of the objects, just double-click on it. This list is updated by both the standard Agile clients, and the EC Client. However, in the EC Client only the objects that you Save or Load are added to the list.

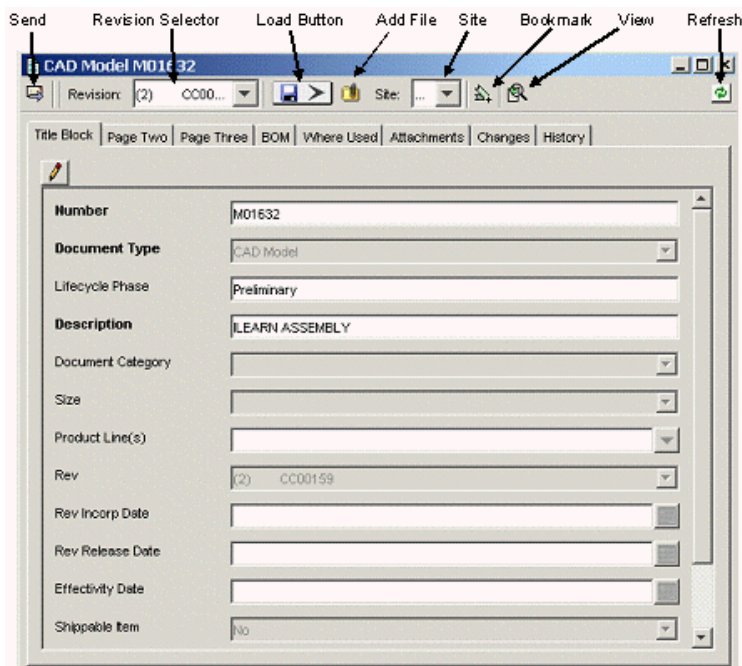
Figure 3-9: Recent Visits



Agile Forms

Beside searches, the other main basic function of the EC Client is to display forms of Agile objects. From any search results list, or from the Recent Visits list, double-clicking on the name of an object will bring up its Form. This is where you can see the detailed information about an object, including its attributes, relationships, and files. Agile Form shows an example of an Agile Form for a CAD Model, which is a special sub-class of a Document used by the CAD Connectors.

Figure 3-10: Agile Form



Every object type has its own unique layout, and may be customized at your site. However, it is useful to understand some of the basic layout of these Agile forms. Standard tabs for an Agile Item (a Document or Part) are these:

Table 3-4: Form Tabs

Tab Name	Purpose
Title Block	Contains primary attributes, such as Number and Description
Page Two	Contains supplemental attributes, typically customized
Page Three	Contains additional attributes for the specific sub-class, such as CAD Model
BOM	Shows the item structure below the current object (looking down the tree) – see BOM Tab.
WhereUsed	Shows all items that the current object belongs to (looking up the tree)
Attachments	Shows attached files – see Attachment Tab.

Figure 3-11: BOM Tab

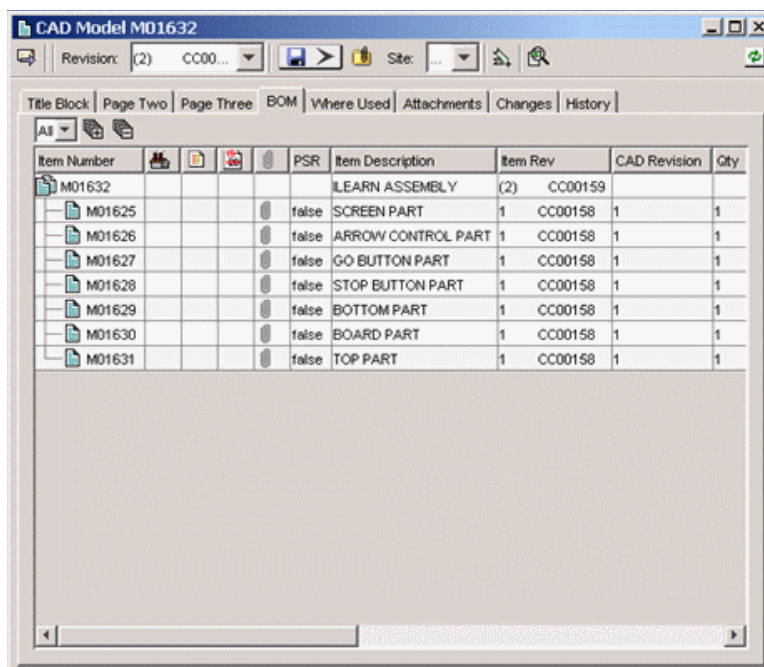


Figure 3-12: Attachments Tab

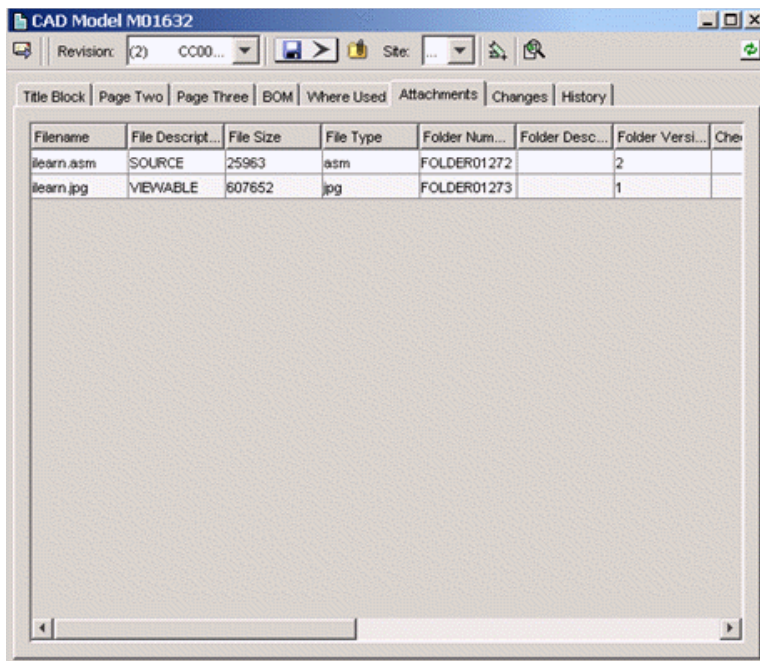


Table 3-5: Additional Functions

Function	Purpose
Send Button	Allows you to send notifications
Revision Selector	Selects which revision of the current object to view, or to load into CAD
Load Button	When the Agile > Load command is active, this will load the current object (and objects in its structure) into CAD
Add File	Allows you to add files to the current object
Site	Allows filtering by Site
Bookmark	Adds the current object into the Bookmark list
Refresh	Refreshes the contents of the form

Tip: The **Agile > Show Agile Form** command will pop up the EC Client with the form of the active object in CAD.