SUN SEEBEYOND

# eVIEW™ STUDIO REFERENCE GUIDE

**Release 5.1.2**

Sun microsystems

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Chapter 1

# Introduction

This guide explains the operational processes and database structure for applications created by the Sun SeeBeyond eView™ Studio, referred to as eView Studio throughout this guide. It also provides a reference of the dynamic API. This chapter provides an overview of this guide and the conventions used throughout, as well as a list of supporting documents and information about using this guide.

**What's in This Chapter**



## 1.1 About eView Studio

### Overview

The Sun SeeBeyond eView™ Studio (eView Studio) provides a flexible framework to allow you to create matching and indexing applications called enterprise-wide master indexes (or just *master indexes*). It is an application building tool to help you design, configure, and create a master index that will uniquely identify and cross-reference the business objects stored in your system databases. Business objects can be any type of entity for which you store information, such as customers, patients, vendors, businesses, inventory, and so on. In eView Studio, you define the data structure of the business objects to be stored and cross-referenced. In addition, you define the logic that determines how data is updated, standardized, weighted, and matched in the master index database.

The structure and logic you define is located in a group of XML configuration files that you create using the eView Wizard. These files are created within the context of an eGate Project, and can be further customized using the XML editor provided in the Enterprise Designer.

### Features

eView Studio provides features and functions to allow you to create and configure an enterprise-wide master index for any type of data. The primary function of eView Studio is to automate the creation of a highly configurable master index application. eView Studio provides a wizard to guide you through the initial setup steps, and various editors so you can further customize the configuration of the master index. eView Studio automatically generates the components you need to implement a master index.

eView Studio provides the following features:

- **Rapid Development** - eView Studio allows for rapid and intuitive development of a master index using a wizard to create the master index configuration and using XML documents to configure the attributes of the index. Templates are provided for quick development of person and company object structures.
- **Automated Component Generation** - eView Studio automatically creates the configuration files that define the primary attributes of the master index, including the configuration of the Enterprise Data Manager (EDM). eView Studio also generates scripts that create the appropriate database schemas and an Object Type Definition (OTD) based on the object definition you create and configure.
- **Configurable Survivor Calculator** - eView Studio provides predefined strategies for determining which field values to populate in the single best record (SBR). You can define different survivor rules for each field, and you can create a custom survivor strategy to implement in the master index.
- **Flexible Architecture** - eView Studio provides a flexible platform that allows you to create a master index for any business object. You can customize the object structure so the master index can match and store any type of data, allowing you to design an application that specifically meets your data processing needs.
- **Configurable Matching Algorithm** - eView Studio provides standard support for the Sun SeeBeyond Match Engine (SBME). In addition, you can plug in a custom matching algorithm to the master index.
- **Custom Java API** - eView Studio generates a Java API that is customized to the object structure you define. You can call the methods in this API in the Collaborations that define the transformation rules for data processed by the master index.
- **Standard Reports** - eView Studio provides a set of standard reports with each master index that can be run from a command line or from the EDM. The reports help you monitor the state of the data stored in the master index and help you identify configuration changes that might be required.

## 1.2 What's New in This Release

This release provides general maintenance fixes for eView Studio. For complete information about the changes included in this release, see the *Sun SeeBeyond eView Studio Release Notes*.

# 1.3 About This Document

This guide provides comprehensive information about the database structure, the Java API, and message processing for the master indexes created by eView Studio. As a component of the Java Composite Application Platform Suite (CAPS), eView Studio helps you integrate information from disparate systems throughout your organization. This guide describes how messages are processed through the master index, provides a reference for the dynamic Java API, and describes the database structure. The master index is highly customizable, so your implementation might differ from some of the descriptions contained in this guide. This guide is intended to be used with the *Sun SeeBeyond eView Studio Configuration Guide* and the *Sun SeeBeyond eView Studio User's Guide*, which provide information about the basic components and features of eView Studio.

## 1.3.1 What's in This Document

This guide is divided into the chapters and appendix that cover the topics shown below.

- **Chapter 1 "Introduction"** gives a general preview of this document—its purpose, scope, and organization—and provides sources of additional information.
- **Chapter 2 "Understanding Operational Processes"** gives an overview of how inbound and outbound messages are processed, and includes information about how certain configuration attributes affect processing.
- **Chapter 3 "The Database Structure"** describes the database structure and how the structure is defined based on the object structure definition. It also provides a sample database diagram.
- **Chapter 4 "Working with the Java API"** gives implementation information about the eView Studio Java API, and provides a reference of the dynamic methods created for the method OTD and eInsight integration.
- **Appendix A "Inbound Message Processing with Custom Logic"** describes where the execute match functions check for custom logic and how that logic affects match processing.

## 1.3.2 Scope

This guide provides information about message processing in an eView Studio master index system and about the eView Studio Java API. The API is designed to help you transform data and transfer the information into and out of the master index database using eGate Collaborations, Services, and eWays. This guide also provides an overview of the data processing flow, based on the sample Project, and describes the database structure.

This guide provides information about the Java API Library, but does not serve as a complete reference (a complete reference is provided in the Javadocs for eView Studio). This guide compliments the *Sun SeeBeyond eView Studio User's Guide*, the *Sun SeeBeyond eView Studio Configuration Guide*, and the eView Studio Javadocs. Once you understand

the default processing, you can configure eView Studio for your custom data and processing requirements.

This guide does not explain how to install eView Studio, or how to implement an eView Studio Project. For a list of publications that contain this information, see **"Related Documents" on page 12**.

### 1.3.3 Intended Audience

Any user who works with the connectivity components or uses the Java API should read this guide. A thorough knowledge of eView Studio is not needed to understand this guide. It is presumed that the reader of this guide is familiar with the eGate environment and GUIs, eGate Projects, Oracle database administration, and the Java programming language. The reader should also be familiar with the data formats used by the systems linked to the master index, the operating system(s) on which eGate and the master index database run, and current business processes and information system (IS) setup.

### 1.3.4 Text Conventions

The following conventions are observed throughout this document.

**Table 1** Text Conventions

| Text Convention | Used For | Examples |
|---|---|---|
| **Bold** | Names of buttons, files, icons, parameters, variables, methods, menus, and objects | ▪ Click **OK**.<br>▪ On the **File** menu, click **Exit**.<br>▪ Select the **eGate.sar** file. |
| `Monospaced` | Command line arguments, code samples; variables are shown in ***bold italic*** | `java -jar` ***filename*** `.jar` |
| **Blue bold** | Hypertext links within document | See **Text Conventions** on page 12 |
| Blue underlined | Hypertext links for Web addresses (URLs) or email addresses | http://www.sun.com |

### 1.3.5 Screenshots

Depending on what products you have installed, and how they are configured, the screenshots in this document may differ from what you see on your system.

### 1.3.6 Related Documents

Sun has developed a suite of user's guides and related publications that are distributed in an electronic library. The following documents might provide information useful in creating your customized index. In addition, complete documentation of the eView Studio Java API is provided in Javadoc format.

- *Sun SeeBeyond eView Studio User's Guide*
- *Sun SeeBeyond eView Studio Configuration Guide*
- *Implementing the Sun SeeBeyond Match Engine with eView Studio*
- *Sun SeeBeyond eGate Integrator User's Guide*
- *Sun SeeBeyond eGate Integrator System Administration Guide*

## 1.4 Sun Microsystems, Inc. Web Site

The Sun Microsystems web site is your best source for up-to-the-minute product news and technical support information. The site's URL is:

http://www.sun.com

## 1.5 Documentation Feedback

We appreciate your feedback. Please send any comments or suggestions regarding this document to:

CAPS_docsfeedback@sun.com

Chapter 2

# Understanding Operational Processes

Master indexes created by eView Studio use a custom Java API library and the eGate Integrator to transform and route data into and out of the master index database. In order to customize the way the Java methods transform the data, it is helpful to understand the logic of the primary processing functions and how messages are typically processed through the master index system.

This chapter describes and illustrates the processing flow of messages to and from the master index, providing background information to help design and create custom processing rules for your implementation.

**What's in This Chapter**

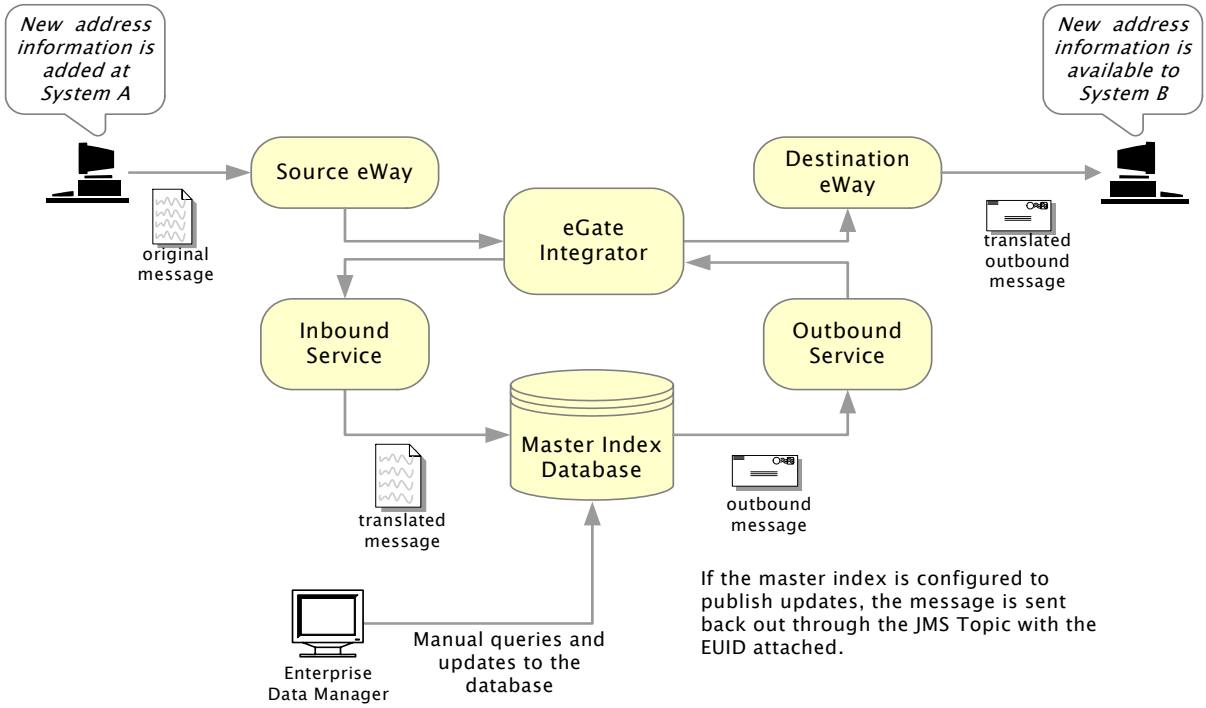


## 2.1 Learning About Message Processing

This section of the chapter provides a summary of how inbound and outbound messages can be processed in an eView Studio master index environment. A master index cross-references records stored in various computer systems of an organization and identifies records that might represent or do represent the same object. The master index uses the eGate Integrator, along with the connectivity components available through eGate, to connect to and share data with these external systems.

**Figure 1 on page 15** illustrates the flow of information through a master index that includes a JMS Topic to which updates to the index are published.

**Figure 1** Master Index Processing Flow




## 2.2 Inbound Message Processing

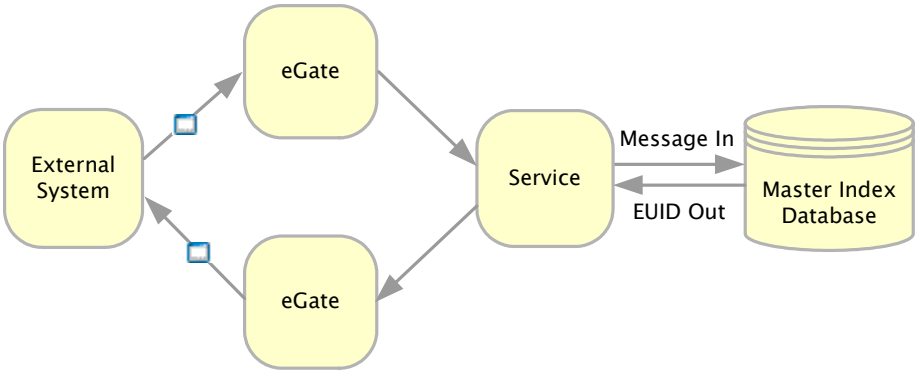
An inbound message refers to the transmission of data from external systems to the eGate Integrator and then to the master index database. These messages may be sent into the database via a number of Services. Inbound messages can be stored in journal files and tracked in the eGate log files. The steps below describe how inbound messages are processed.

1. Messages are created in an external system, and the enveloped message is transmitted to eGate via that system's eWay.
2. eGate identifies the message and the appropriate Service to which the message should be sent. The message is then routed to the appropriate Service for processing.
3. The message is modified into the appropriate format for the master index database, and validations are performed against the data elements of the message to ensure accurate delivery. The message is validated using the Java code in the Service's Collaboration and other information stored in the eView Studio configuration files.
4. If the message was successfully transmitted to the database, the appropriate changes to the database are processed.
5. After the master index processes the message, an enterprise-wide universal identifier (EUID) is returned (for either a new or updated record). That EUID can be sent back out through a different Service to the external system. Alternatively, the

entire updated message can be published using the outbound OTD (see **"Outbound Message Processing" on page 17**).

Figure 2 below illustrates the flow of a message inbound to an eView Studio application.

**Figure 2** Inbound Message Processing Data Flow




## 2.2.1 About Inbound Messages

The format of inbound messages is defined by the inbound OTD, located in the client Project for each external system. The inbound messages can either conform to the required format for the master index, or they can be mapped to the correct format in the Collaboration. The required format depends on how the object structure of the master index is defined (in the Object Definition file of the eView Studio Project).

In addition to the objects and fields defined in the Object Definition file, you can include standard eView Studio fields. For example, you must include the system and local ID fields, and you can also include transaction information, such as the date and time of the transaction, the transaction type, user ID, and so on. If you want to use transaction information from the source systems, be sure to include the fields in the OTD. Transaction fields include the following:

- MessageId
- EventTypeCode
- UserId
- AssigningSystem
- Source
- Department
- TerminalId
- DateOfEvent
- TimeOfEvent

If you do not send these fields into the master index, default values are used (for example, the user ID defaults to "eGate" and the date and time fields default to the date

and time the transaction is processed by the master index). The inbound OTD in the eView Studio sample Project includes the system and local ID fields, but not transactional information. The inbound OTD also includes the standard Java methods **marshal**, **unmarshal**, **marshalToString**, **unmarshalFromString**, **marshalToBytes**, **unmarshalFromBytes**, and **reset**. For information about the default OTD for eIndex SPV, see the *Sun SeeBeyond eIndex Single Patient View User's Guide*.

## 2.3 Outbound Message Processing

An outbound message refers to the transmission of data from the master index database to any external system. Messages can be transmitted from the master index in two ways. The first way is by transmitting the output of **executeMatch** (an EUID). This is described earlier in **"Inbound Message Processing" on page 15**, and is only used for messages received from external systems.

The second way is by publishing updates from the master index to a JMS Topic, which allows you to publish complete, updated single best records (SBRs) to any system subscribing to that topic. When updates are made to the database from either external systems or the Enterprise Data Manager, the master index generates outbound messages in the format of the outbound OTD.

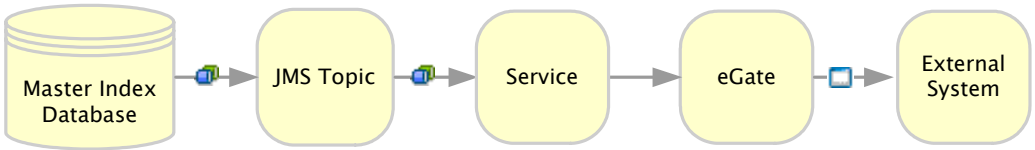
This section describes how the second type of outbound message is processed. A JMS Topic must be defined in the Connectivity Maps for the eView Studio server Project and the appropriate client Projects for this type of processing to occur.

1. When a message is received from an external system or data is entered through the EDM, the master index processes the information and generates an XML message, which is sent to the JMS Topic that is configured to publish messages from the master index.
2. Messages published by the JMS Topic are processed through a Service whose Collaboration uses the master index outbound OTD. This Service modifies the message into the appropriate format.
3. eGate identifies the message and the external systems to which it should be sent, and then routes the message for processing via an external system eWay.

***Note:*** *Outbound messages are stored and tracked in the eGate journal and log files.*

Figure 3 below illustrates the flow of data for a message outbound from the master index.

**Figure 3** Outbound Message Processing Data Flow



## 2.3.1 About Outbound Messages

When you customize the object definition and generate the eView Studio application, an outbound OTD is created, the structure of which is based on the object definition. This OTD is used to publish changes in the master index database to external systems via a JMS Topic. The output of the **executeMatch** process described earlier is an EUID of the new or updated record. You can use this EUID to obtain additional information and configure a Collaboration and Service to output the data, or you can process all updates in the master index through a JMS Topic using the outbound OTD.

### Outbound OTD Structure

The outbound OTD is named after the application name of the master index (for example, OUTCompany or OUTPerson). This OTD contains eight primary nodes: Event, ID, SBR, and the standard Java methods **marshal**, **unmarshal**, **marshalToString**, **unmarshalFromString**, **marshalToBytes**, **unmarshalFromBytes**, and **reset**. The "Event" field is populated with the type of transaction that created the outbound message, and the "ID" field is populated with the unique identification code of that transaction. The SBR node is the portion of the OTD created from the Object Definition file. In the sample, the outbound OTD publishes messages in XML format. Table 2 describes the components of the SBR portion of the outbound OTD.

**Table 2** Outbound OTD SBR Nodes

| Node | Description |
|---|---|
| EUID | The EUID of the record that was inserted or modified. |
| Status | The status of the record. |
| CreateFunction | The date the record was first created. |
| CreateUser | The logon ID of the user who created the record. |
| UpdateSystem | The processing code of the external system from which the updates to an existing record originated. |
| ChildType | The name of the parent object. |
| CreateSystem | The processing code of the external system from which the record originated. |
| UpdateDateTime | The date and time the record was last updated. |
| CreateDateTime | The date and time the record was created. |
| UpdateFunction | The type of function that caused the record to be modified. |
| RevisionNumber | The revision number of the record. |
| UpdateUser | The logon ID of the user who last updated the record. |

**Table 2** Outbound OTD SBR Nodes

| Node | Description |
|---|---|
| SystemObject | The object's local identifier in a specified system. This field has three sub-fields:<br>♦ **LID**: The local ID assigned to the person in the system of origin.<br>♦ **System**: The processing code of the system of origin.<br>♦ **Status**: The status of the local ID in the enterprise record. |
| <Object_Name> | The fields in this node are defined by the object structure (as defined in the Object Definition file). It is named by the parent object and contains all fields and child objects defined in the structure. This section varies depending on the customizations made to the object structure. |

## Outbound Message Trigger Events

When outbound messaging is enabled, the following transactions automatically generate an outbound message that is sent to the JMS Topic (if a JMS Topic has been incorporated into the eView Studio Project).

- Activating a system record
- Activating an enterprise record
- Adding a system record
- Creating an enterprise record
- Deactivating a system record
- Deactivating an enterprise record
- Merging an enterprise record
- Merging a system record
- Transferring a system record
- Unmerging an enterprise record
- Unmerging a system record
- Updating an enterprise record
- Updating a system record

## Sample Outbound Message

The following text is a sample outbound message for eView Studio based on a master person index. Your outbound messages will appear differently depending on how you configure the client Project connectivity components.

```
<?xml version="1.0" encoding="UTF-8"?>
<OutMsg Event="UPD" ID="00000000000000044005">
```

```
<SBR EUID="1000008001"  Status="active" CreateFunction="Add"
ChildType="Person" CreateSystem="System" UpdateFunction="Update"
RevisionNumber="5" CreateUser="eview" UpdateSystem="System"
UpdateDateTime="12/16/2003 17:40:44" CreateDateTime="12/16/2003
17:36:58" UpdateUser="eview">
<SystemObject SystemCode="CBMC" LID="434900094" Status="active">
</SystemObject>
<Person PersonId="00000000000000017000" PersonCatCode="PT"
LastName="WRAND" FirstName="ELIZABETH" MiddleName="SU" Suffix=""
Title="PHD" DOB="12/12/1972 00:00:00" Death="" Gender="F" MStatus="M"
SSN="555665555" Race="B" Ethnic="23" Religion="AG" Language="ENGL"
SpouseName="MARCUS" MotherName="TONIA" MotherMN="FLEMING"
FatherName="JOSHUA" Maiden="TERI" PobCity="KINGSTON" PobState=""
PobCountry="JAMAICA" VIPFlag="N" VetStatus="N"
FnamePhoneticCode="E421" LnamePhoneticCode="RAN"
MnamePhoneticCode="S250" MotherMNPhoneticCode="FLANANG"
MaidenPhoneticCode="TAR" SpousePhoneticCode="M622"
MotherPhoneticCode="T500" FatherPhoneticCode="J200"
DriversLicense="CT111333111" DriversLicenseSt="CT" Dod=""
DeathCertificate="" Nationality="USA" Citizenship="USA" PensionNo=""
PensionExpDate="" RepatriationNo="" DistrictOfResidence="" LgaCode=""
MilitaryBranch="NONE" MilitaryRank="NONE" MilitaryStatus="NONE"
StdLastName="WRAND" StdMiddleName="SUSAN">
<Phone PhoneId="00000000000000011001" PhoneType="CC"
Phone="9895558768" PhoneExt="">
</Phone>
<Phone PhoneId="00000000000000011000" PhoneType="CH"
Phone="9895554687" PhoneExt="">
</Phone>
<Address AddressId="00000000000000011001" AddressType="H"
AddressLine1="1220 BLOSSOM STREET" AddressLine2="UNIT 12"
AddressLine3="" AddressLine4="" City="SHEFFIELD" StateCode="CT"
PostalCode="09877" PostalCodeExt="" County="CAPEBURR"
CountryCode="UNST" HouseNumber="1220" StreetDir=""
StreetName="BLOSSOM" StreetNamePhoneticCode="BLASAN" StreetType="St">
</Address>
</Person>
</SBR>
</OutMsg>
```

## 2.4 Inbound Message Processing Logic

When records are transmitted to the master index, one of the “execute match” methods is usually called and a series of processes are performed to ensure that accurate and current data is maintained in the database. The execute match methods include **executeMatch**, **executeMatchUpdate**, **executeMatchDupRecalc**, and **executeMatchUpdateDupRecalc**. The EDM uses **executeMatchGui**. For more information about how these methods differ, refer to the Javadocs provided with eView Studio.

In the sample Project configuration, these processes are defined in the Collaboration using the functions defined in the customized method OTD. The steps performed by that standard **executeMatch** method are outlined below, and the diagrams on the following pages illustrate the message processing flow. The processing steps performed in your environment might vary from this depending on how you customize the Collaboration and Connectivity Map.

The steps outlined below refer to the following parameters and element in the eView Studio Threshold file (these are described in the *Sun SeeBeyond eView Studio Configuration Guide*).

- OneExactMatch parameter
- SameSystemMatch parameter
- MatchThreshold parameter
- DuplicateThreshold parameter
- **update-mode** element

***Important:*** *There are several decision points in the match process that can be defined by custom logic using custom plug-ins (for more information, see "Customizing Match Processing Logic" in the Sun SeeBeyond eView Studio User's Guide). The decision points are not listed in the below steps, which instead define the default processing logic.* **Appendix A "Inbound Message Processing with Custom Logic"** *provides the same steps as below with the decision points included.*

1. When a message is received by the master index, a search is performed for any existing records with the same local ID and system as those contained in the message. This search only includes records with a status of **A**, meaning only active records are included. If a matching record is found, an existing EUID is returned.
2. If an existing record is found with the same system and local ID as the incoming message, it is assumed that the two records represent the same object. Using the EUID of the existing record, the master index performs an update of the record's information in the database.
   - If the update does not make any changes to the object's information, no further processing is required and the existing EUID is returned.
   - If there are changes to the object's information, the updated record is inserted into database, and the changes are recorded in the sbyn_transaction table.
   - If there are changes to key fields (that is, fields used for matching or for the blocking query) and the update mode is set to pessimistic, potential duplicates are re-evaluated for the updated record.
3. If no records are found that match the record's system and local identifier, a second search is performed using the blocking query. A search is performed on each of the defined query blocks to retrieve a candidate pool of potential matches.

   Each record returned from the search is weighted using the fields defined for matching in the inbound message.
4. After the search is performed, the number of resulting records is calculated.
   - If a record or records are returned from the search with a matching probability weight above the match threshold, the master index performs exact match processing (see Step 5).
   - If no matching records are found, the inbound message is treated as a new record. A new EUID is generated and a new record is inserted into the database.

5 If records were found within the high match probability range, exact match processing is performed as follows:

- If only one record is returned from this search with a matching probability that is equal to or greater than the match threshold, additional checking is performed to verify whether the records originated from the same system (see Step 6).
- If more than one record is returned with a matching probability that is equal to or greater than the match threshold and exact matching is set to *false*, then the record with the highest matching probability is checked against the incoming message to see if they originated from the same system (see Step 6).
- If more than one record is returned with a matching probability that is equal to or greater than the match threshold and exact matching is *true*, a new EUID is generated and a new record is inserted into the database.
- If no record is returned from the database search, or if none of the matching records have a weight in the exact match range, a new EUID is generated and a new record is inserted into the database.

***Note:*** *Exact matching is determined by the OneExactMatch parameter, and the match threshold is defined by the MatchThreshold parameter. For more information about these parameters, see the Sun SeeBeyond eView Studio Configuration Guide.*

6 When records are checked for same system entries, the master index tries to retrieve an existing local ID using the system of the new record and the EUID of the record that has the highest match weight.

- If a local ID is found and same system matching is set to *true*, a new record is inserted, and the two records are considered to be potential duplicates. These records are marked as same system potential duplicates.
- If a local ID is found and same system matching is set to *false*, it is assumed that the two records represent the same object. Using the EUID of the existing record, the master index performs an update, following the process described in Step 2 earlier.
- If no local ID is found, it is assumed that the two records represent the same object and an assumed match occurs. Using the EUID of the existing record, the master index performs an update, following the process described in Step 2 earlier.

7 If a new record is inserted, all records that were returned from the blocking query are weighed against the new record using the matching algorithm. If a record is updated and the update mode is pessimistic, the same occurs for the updated record. If the matching probability weight of a record is greater than or equal to the potential duplicate threshold, the record is flagged as a potential duplicate (for more information about thresholds, see the *Sun SeeBeyond eView Studio Configuration Guide*).

The flow charts on the following pages provide a visual representation of the processes performed in the default configuration. Figures 4 and 5 represent the primary flow of information. Figure 6 expands on update procedures illustrated in Figures 4 and 5.

**Figure 4** Inbound Message Processing in the Sample Project

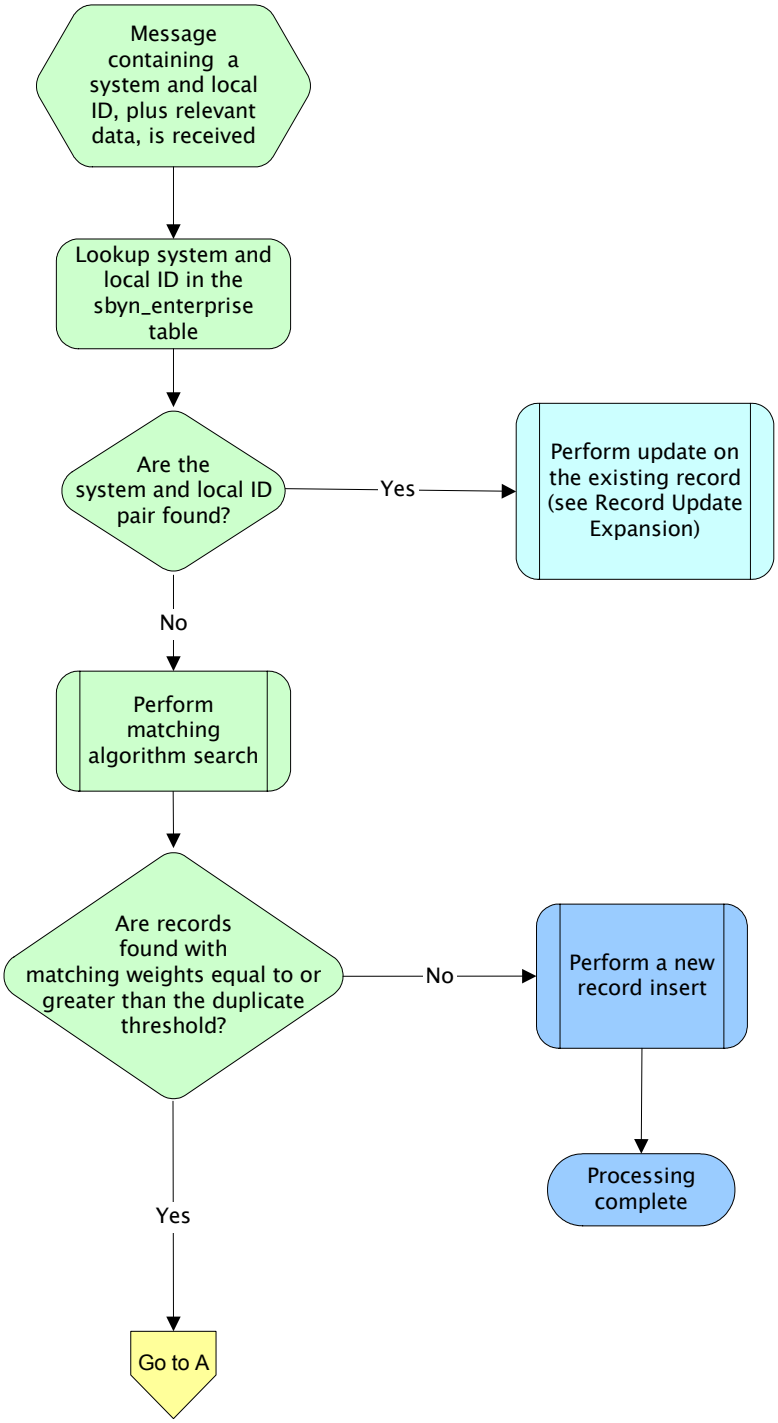


**Figure 5** Inbound Message Processing (cont'd)

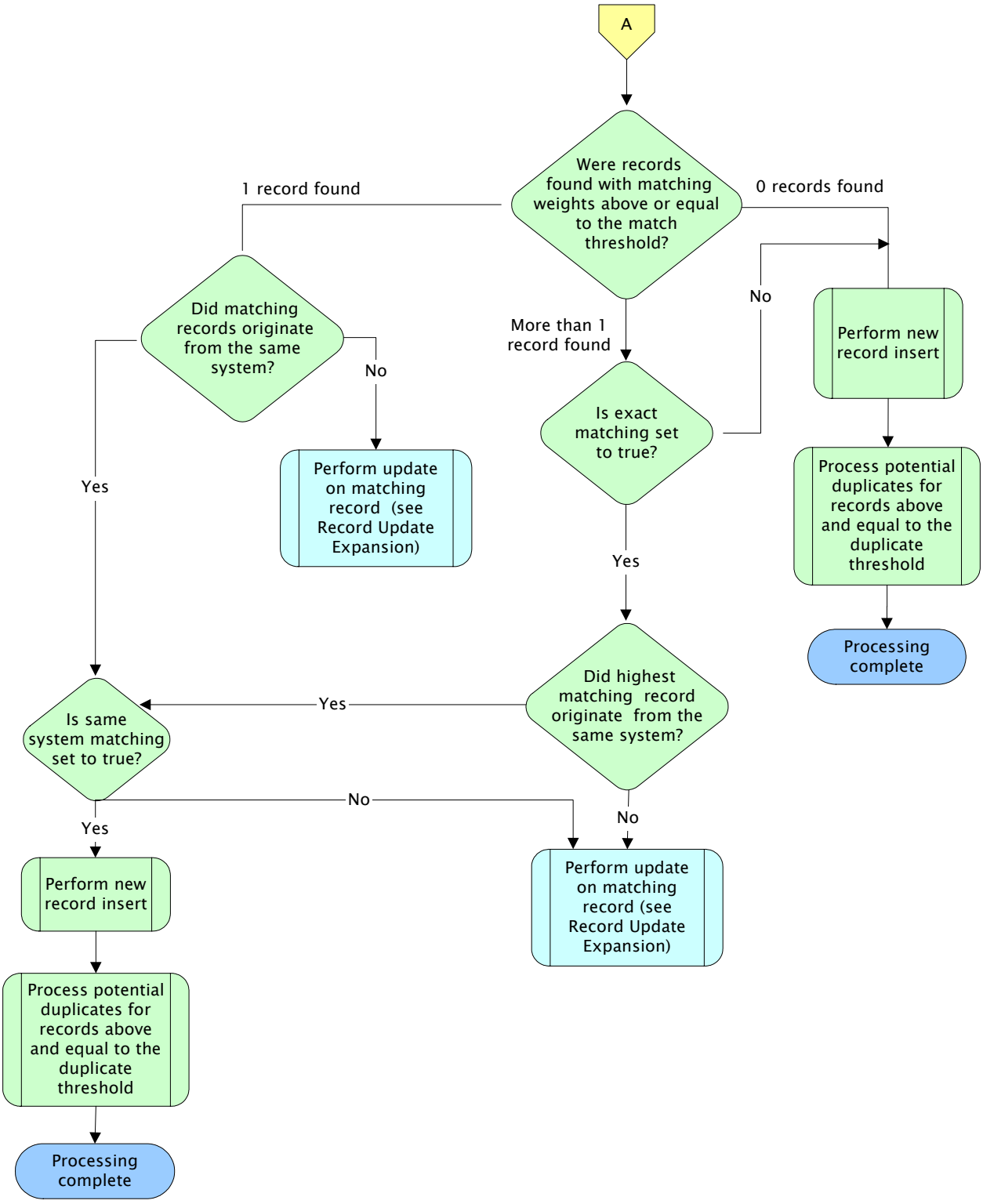
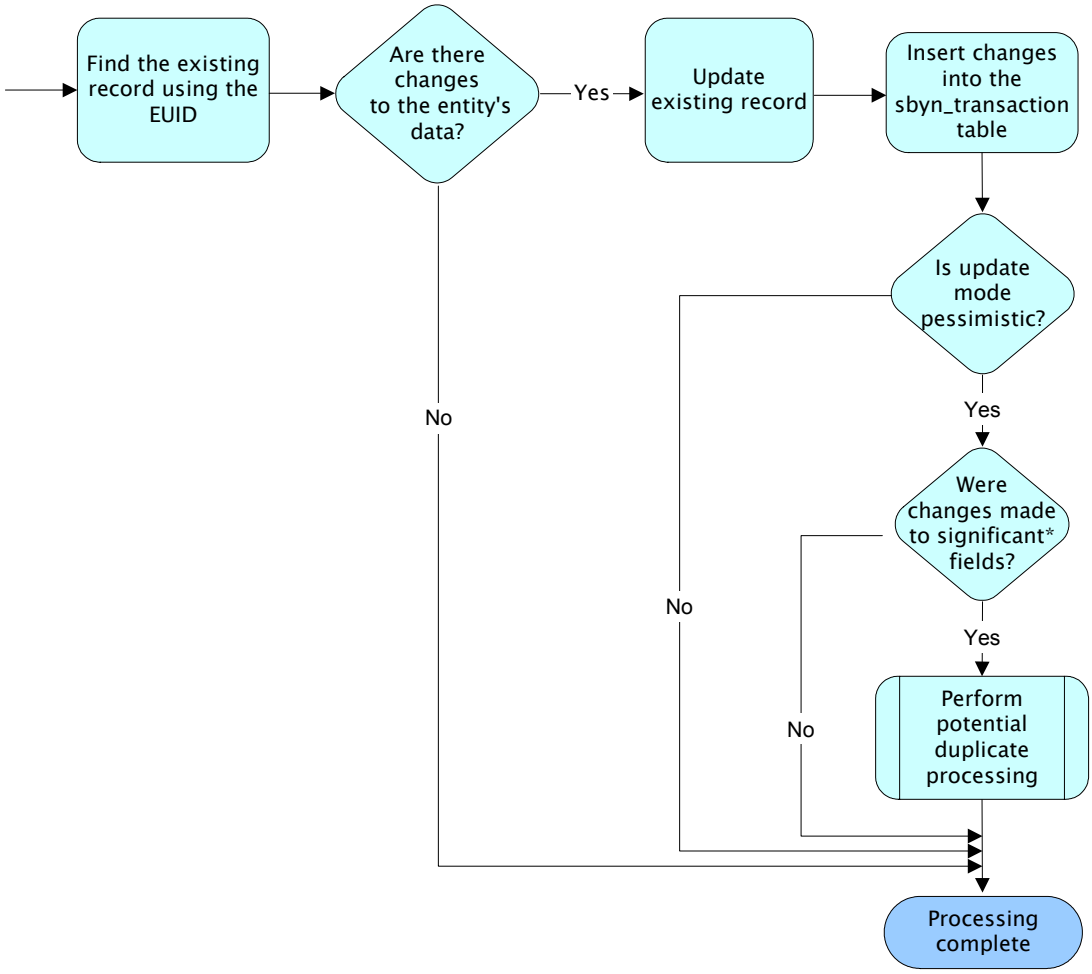


**Figure 6** Record Update Expansion




* Significant fields for potential duplicate processing include those defined for matching and those included in the blocking query used for matching

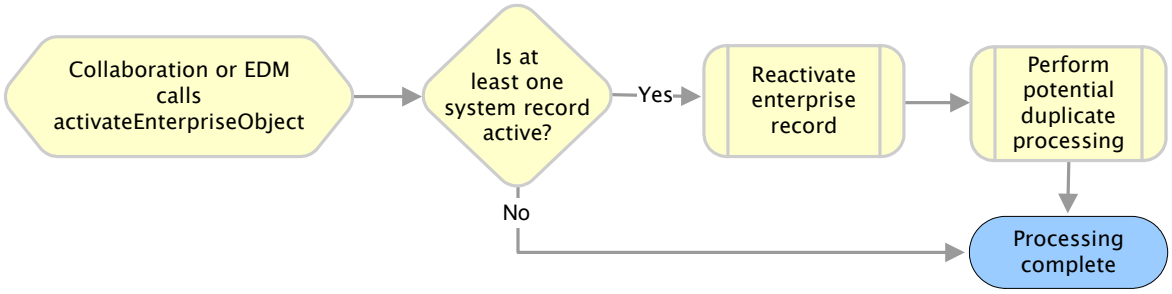
# 2.5 Primary Function Processing Logic

The primary functions of eView Studio can be performed from the Enterprise Data Manager or can be called from the Collaborations in the eView Studio Project. Whether potential duplicates are evaluated after a call to any of these functions is dependent on the update mode settings. Potential duplicates are only processed against the single best record (SBR) and not the system records. These functions are all located in the Master Controller class, and are fully described in the eView Studio Javadocs provided with eView Studio. In the following diagrams, significant fields for potential duplicate processing include fields defined for matching and fields included in the blocking query used for matching. In all of the methods described below, an entry is made in the transaction history table (sbyn_transaction).

## 2.5.1 activateEnterpriseObject

This method reactivates an enterprise record. The EDM calls this method when you select an EUID and then click **Activate EUID=<EUID_number>**, (where <EUID_number> is the EUID of the enterprise record to reactivate). Since all potential duplicates were deleted when the EUID was originally deactivated, potential duplicates are always recalculated, regardless of the update mode. Figure 7 illustrates the processing steps.

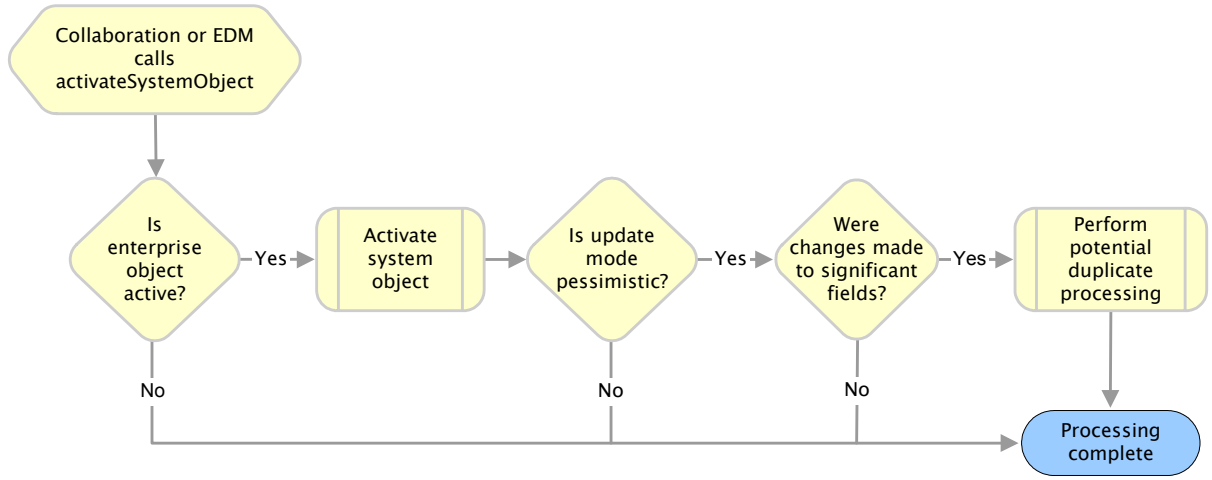
**Figure 7** activateEnterpriseObject Processing




## 2.5.2 activateSystemObject

This method reactivates a system record. The EDM calls this method when you select a system from the enterprise record tree and then click **Activate <system-ID>** (where *system* is the system code and *ID* is the local ID number for the system record to reactivate). If the update mode is set to "pessimistic", the application checks whether any key fields were updated in the SBR. If key fields were updated, potential duplicates are recalculated for the enterprise record. Figure 8 illustrates the processing steps.

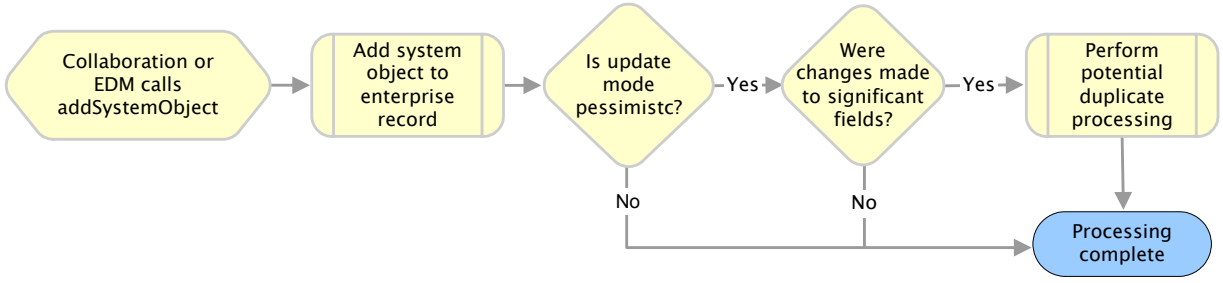
**Figure 8** activateSystemObject Processing




## 2.5.3 addSystemObject

This method adds a system record to an enterprise record. The EDM calls this method when you add a system record to an existing enterprise record. If the update mode is set to "pessimistic", the application checks whether any key fields were updated in the SBR. If key fields were updated and the update mode is set to pessimistic, potential duplicates are recalculated for the enterprise record. Figure 9 illustrates the processing steps.

**Figure 9** addSystemObject Processing




## 2.5.4 createEnterpriseObject

There are two **createEnterpriseObject** methods, both of which add a new enterprise record to the database and bypass any potential duplicate processing. One method takes only one system record as a parameter and the other takes an array of system records. These methods cannot be called from the EDM and are designed for use in Collaborations.

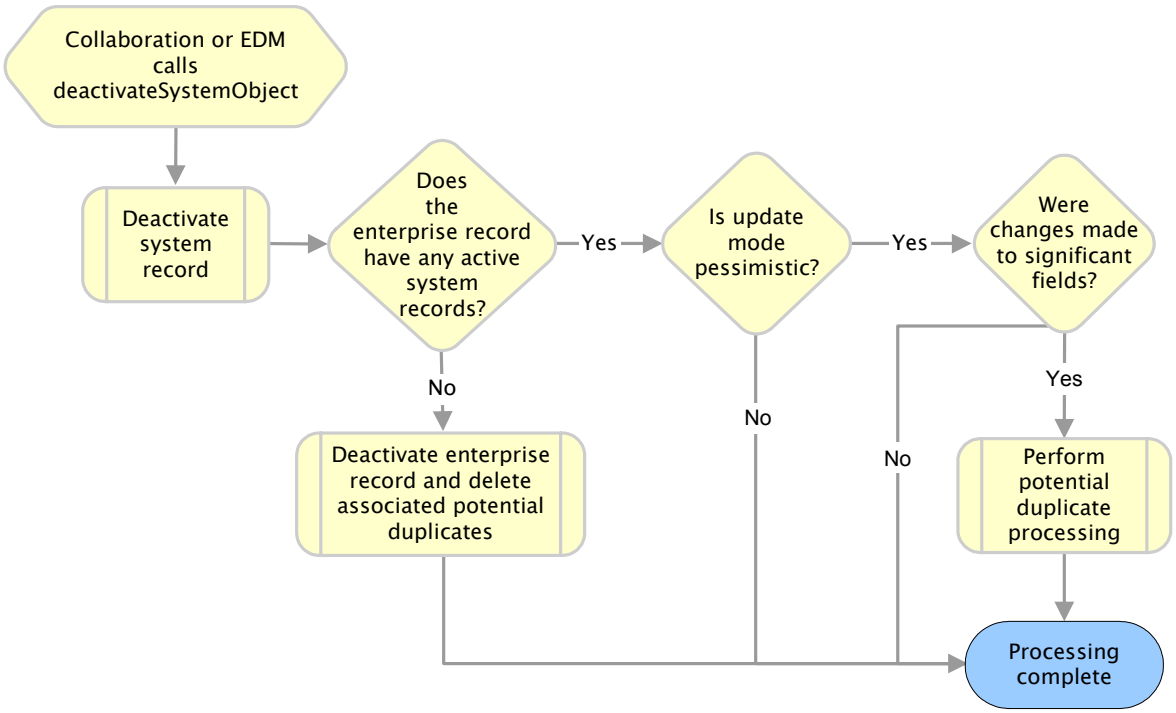
## 2.5.5 deactivateEnterpriseObject

This method deactivates an enterprise record specified by its EUID. The EDM calls this method when you select an enterprise record and then click **Deactivate EUID=<EUID_number>** (where <EUID_number> is the EUID of the enterprise record to deactivate). When an enterprise record is deactivated, all potential duplicate listings for that record are deleted.

## 2.5.6 deactivateSystemObject

This method deactivates a system record in an enterprise record. The EDM calls this method when you select a system from the enterprise record tree and then click **Deactivate <system-ID>** (where *system* is the system code and *ID* is the local ID number for the system record to deactivate). If the enterprise record containing this system record has no active system records remaining, the enterprise record is deactivated and all potential duplicate listings are deleted. (Note that if the system record is reactivated, then the enterprise record is recreated.) If the enterprise record has active system records after the transaction and the update mode is set to "pessimistic", the application checks whether any key fields were updated in the SBR. If key fields were updated, potential duplicates are recalculated for the enterprise record. Figure 10 illustrates the processing steps.

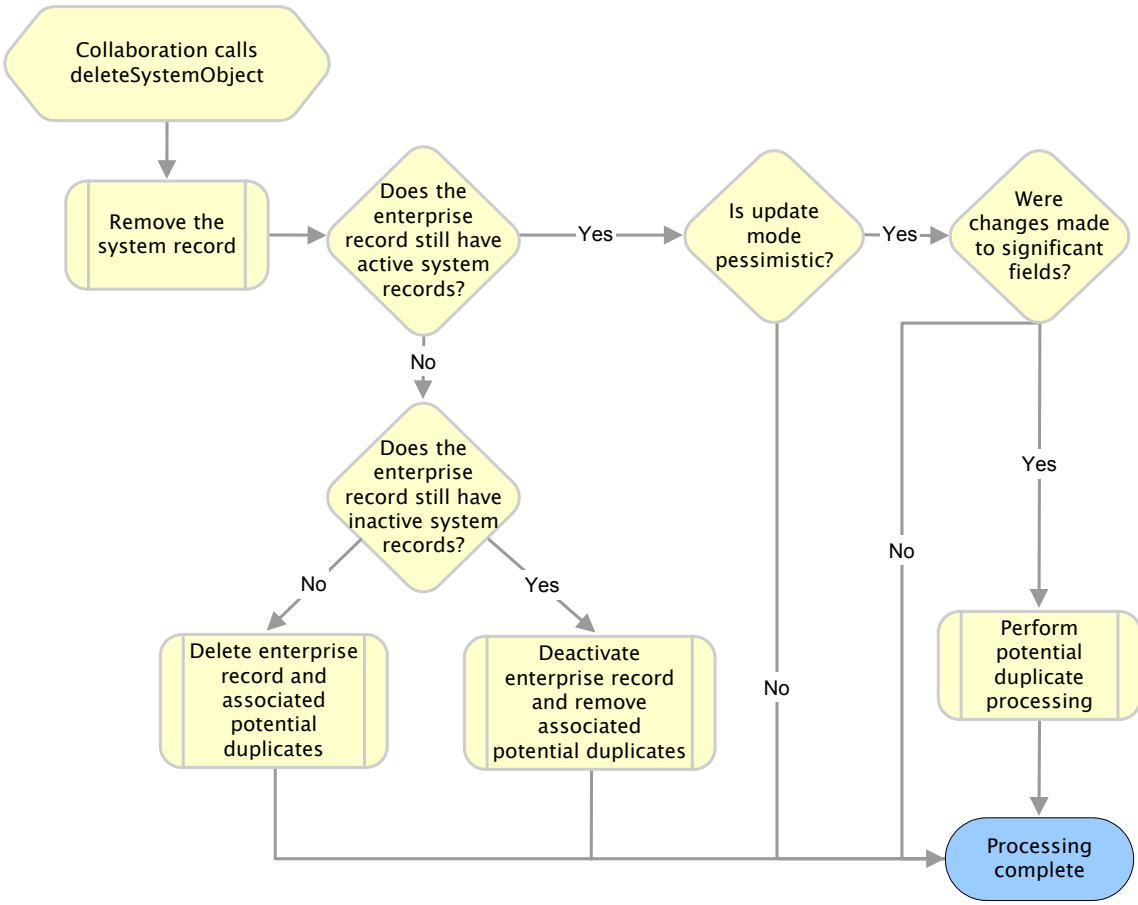
**Figure 10** deactivateSystemObject Processing



## 2.5.7 deleteSystemObject

Unlike **deactivateSystemObject**, this method permanently removes a system record from an enterprise record. This method cannot be called from the EDM. If the enterprise record containing the deleted system record has no active system records remaining (but does have deactivated system records), the enterprise record is deactivated. If the enterprise record has no remaining system records after the system object is deleted, the enterprise record is also deleted. In both cases, any potential duplicate listings for that enterprise record are removed. If the enterprise record has active system records after the transaction and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR. If key fields were updated, potential duplicates are recalculated for the enterprise record. Figure 11 illustrates the processing steps.

**Figure 11** deleteSystemObject Processing



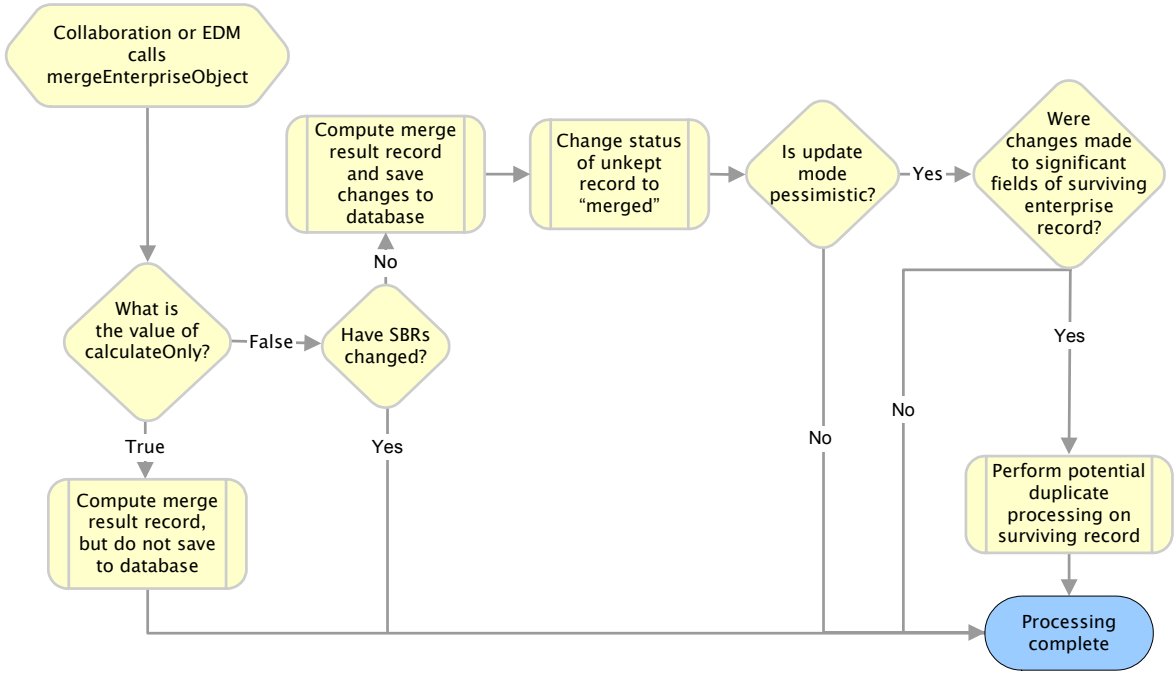

## 2.5.8 mergeEnterpriseObject

There are four **mergeEnterpriseObject** methods that merge two enterprise records (see the Javadocs provided with eView Studio for more information about each). The EDM calls a merge method twice during a merge transaction. When you first click the **EUID**

**Merge** arrow, the method is called with the **calculateOnly** parameter set to "true" in order to display the merge result record for you to view. When you confirm the merge, the EDM calls this method with the **calculateOnly** parameter set to "false" in order to commit the changes to the database and recalculate potential duplicates if needed. The method called by the EDM checks the SBRs of the records involved in the merge against their corresponding SBRs in the database. If the SBRs differ, the merge is not performed since that means the records were changed by someone else during the merge process.

When this method is called with **calculateOnly** set to "false", the application changes the status of the merged enterprise record to "merged" and deletes all potential duplicate listings for the merged enterprise record. If the update mode is set to "pessimistic", the application checks whether any key fields were updated in the SBR of the surviving enterprise record. If key fields were updated, potential duplicates are recalculated for the enterprise record. Figure 12 illustrates the processing steps, and includes the check for SBR differences, which only occurs in two of the merge methods.

**Figure 12** mergeEnterpriseObject Processing




## 2.5.9 mergeSystemObject

There are four methods that merge two system records, either from the same enterprise record or from two different enterprise records (for more information about each method, see the Javadocs provided with eView Studio). The system records must originate from the same external system. The EDM calls this method twice during a system record merge transaction. When you first click the **LID Merge** arrow, the method is called with the **calculateOnly** parameter set to "true" in order to display the merge result record for you to view. When you confirm the merge, the EDM calls this method with the **calculateOnly** parameter set to "false" in order to commit the changes to the database and recalculate potential duplicates if needed. Two of the merge

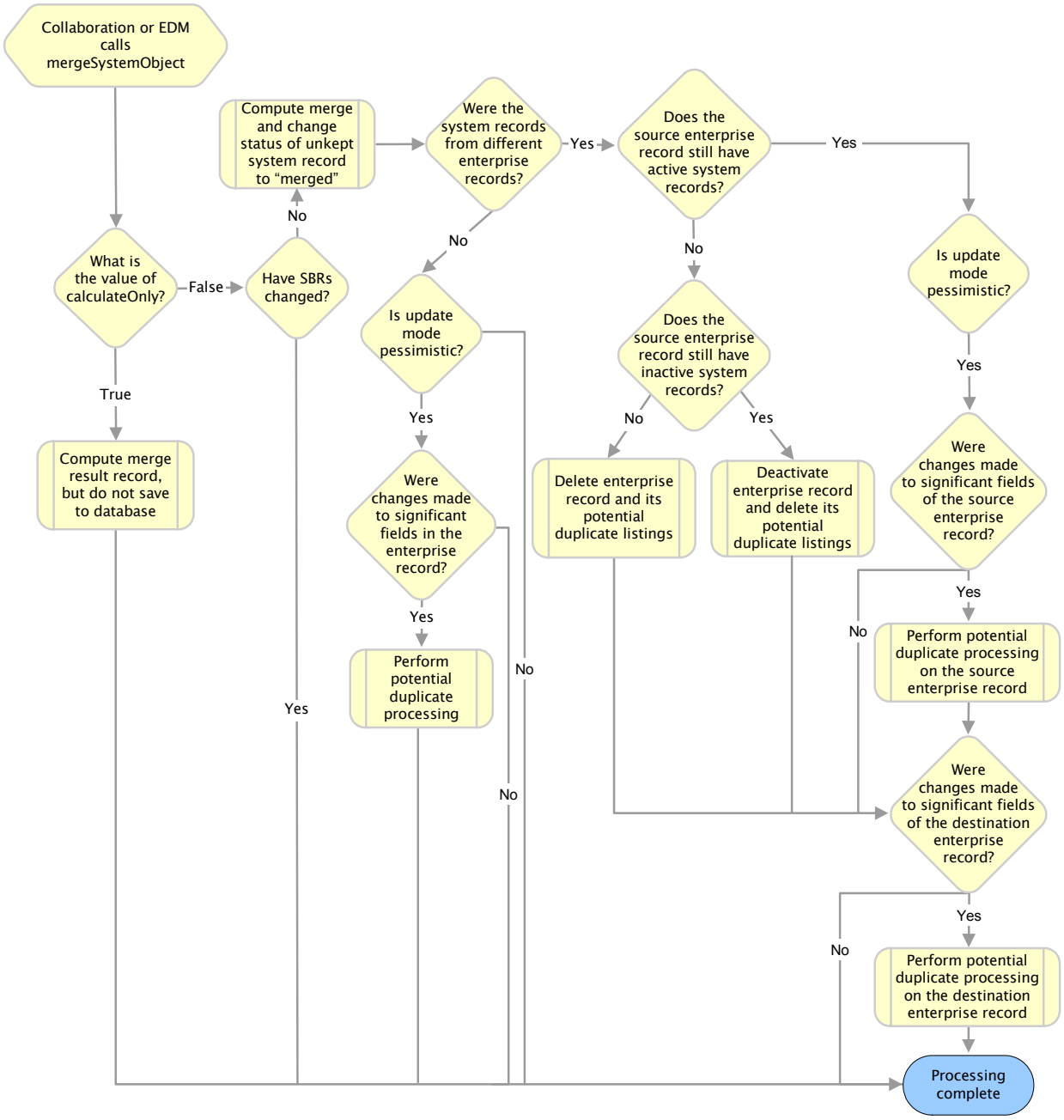
methods compare the SBRs of the records with their corresponding SBRs in the database to ensure that no updates were made to the records before finalizing the merge.

When this method is called with **calculateOnly** set to “false”, the application changes the status of the merged system record to “merged”. If the system records were merged within the same enterprise record and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR. If key fields were updated, potential duplicates are recalculated for the enterprise record.

If the system records originated from two different enterprise records and the enterprise record that contained the unkept the system record no longer has any active system records but does contain inactive system records, that enterprise record is deactivated and all associated potential duplicate listings are deleted. (Note that if the system records are unmerged, the enterprise record is reactivated.) If the enterprise record that contained the unkept system record no longer has any system records, that enterprise record is deleted along with any potential duplicate listings.

If both enterprise records are still active and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR for each enterprise record. If key fields were updated, potential duplicates are recalculated for each enterprise record. **Figure 13 on page 32** illustrates the processing steps, and includes the check for SBR differences, which only occurs in two of the merge methods.

**Figure 13** mergeSystemObject Processing

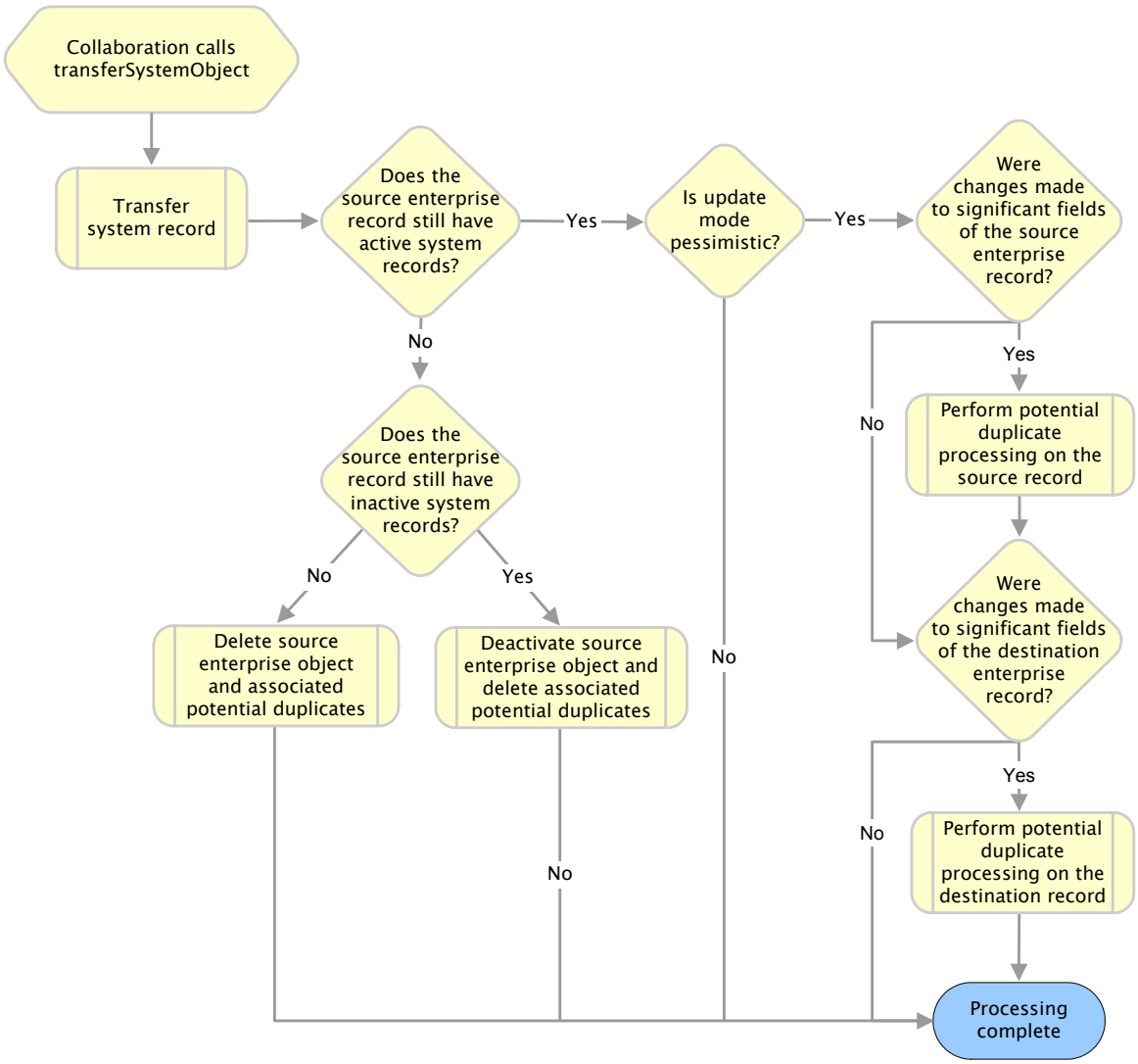



## 2.5.10 transferSystemObject

This transfers a system record from one enterprise record to another. This method is not called from the EDM. If the enterprise record from which the system record was transferred no longer has any active system records (but still contains deactivated system records), that enterprise record is deactivated and any associated potential duplicate listings are removed. If the enterprise record from which the system record was transferred no longer has any system records, that enterprise record is deleted

along with all associated potential duplicate listings. If both enterprise records are still active and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR for each enterprise record. If key fields were updated, potential duplicates are recalculated for each enterprise record. Figure 14 illustrates the processing steps.

**Figure 14** transferSystemObject Processing

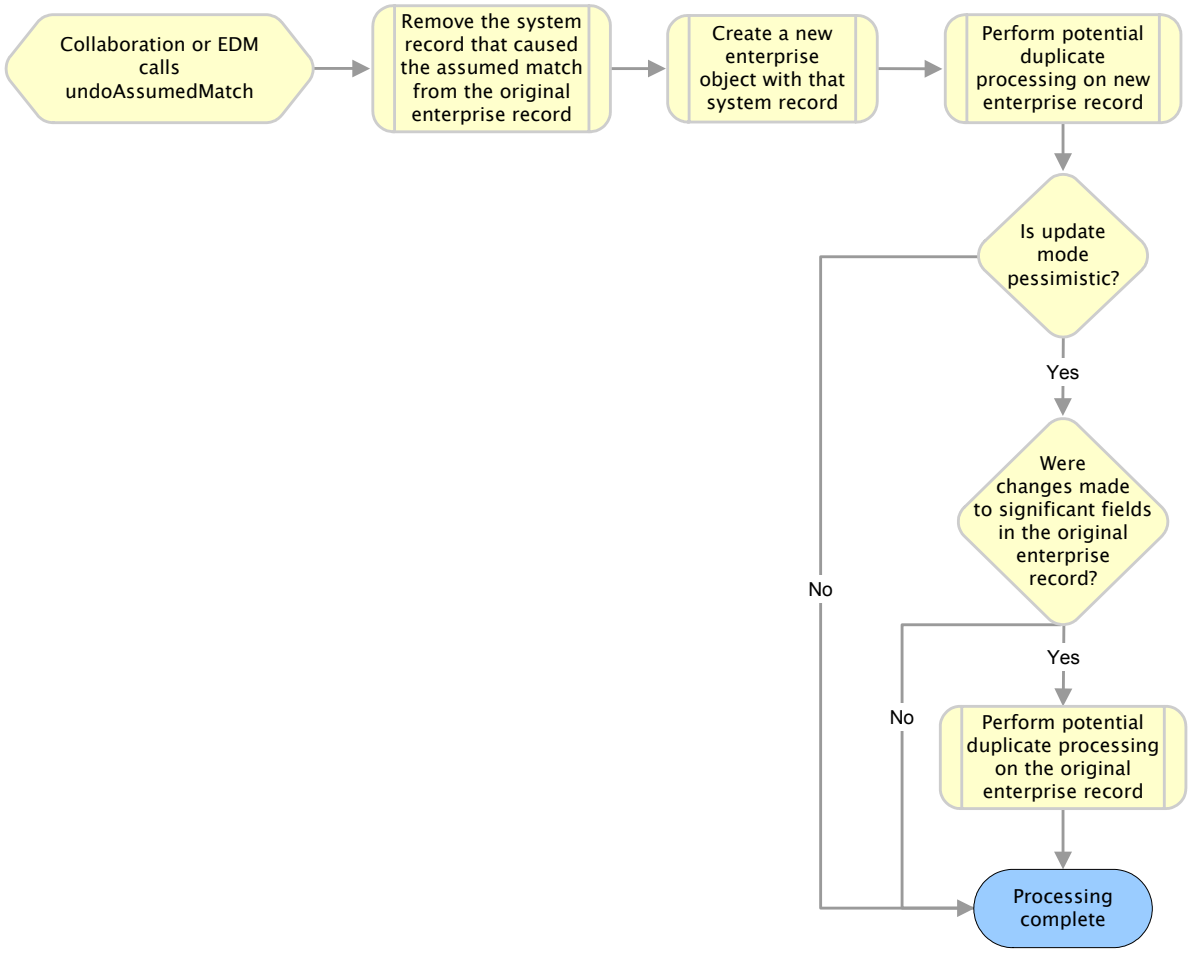



## 2.5.11 undoAssumedMatch

This method reverses an assumed match made by the master index application, using the information from the system record that created the assumed match to create a new enterprise record. The EDM calls this method when you confirm the transaction after selecting **Undo Assumed Match**. Potential duplicates are calculated for the new record regardless of the update mode. If the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR of the original

enterprise record. If key fields were updated, potential duplicates are recalculated for the enterprise record. Figure 15 illustrates the processing steps.

**Figure 15** undoAssumedMatch Processing



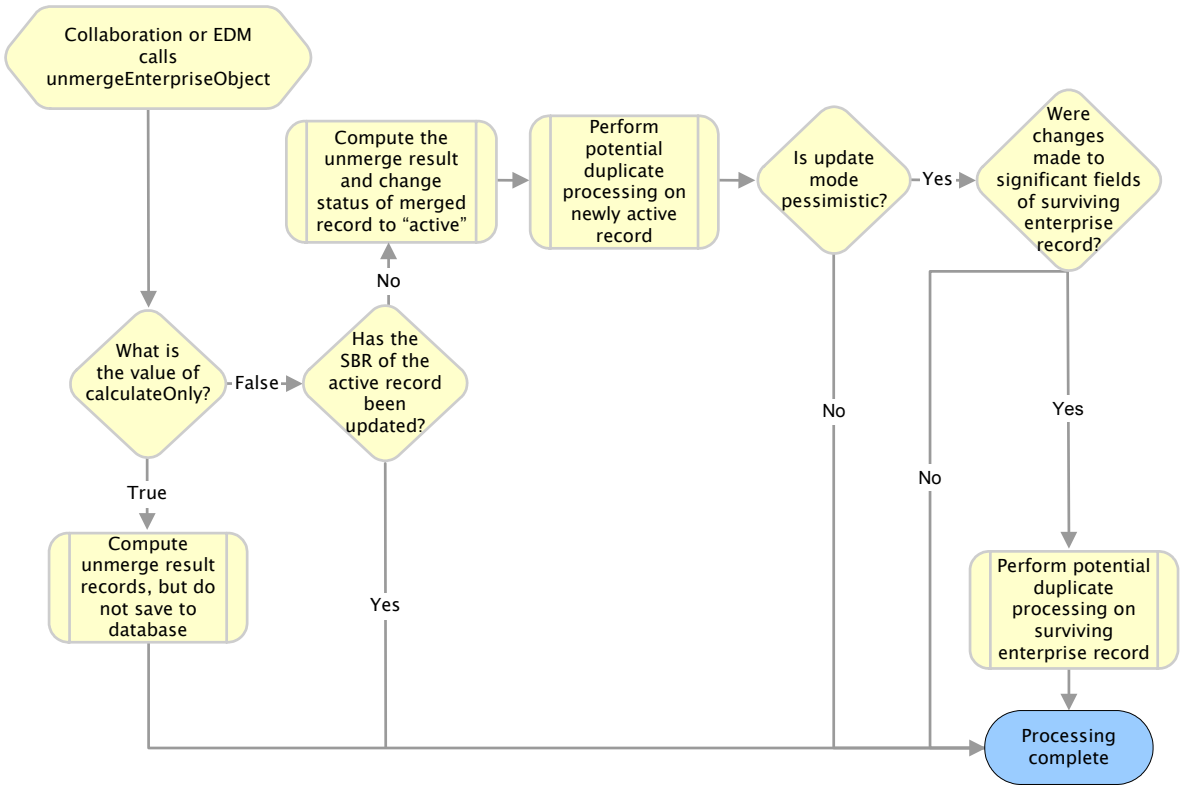

## 2.5.12 unmergeEnterpriseObject

There are two methods that unmerge two enterprise records that were previously merged. One method unmerges the record without checking to make sure the SBR of the active record was not changed by another process before finalizing the merge and one method performs the SBR check (see the Javadocs provided with eView Studio for more information). The EDM calls this method twice during an unmerge transaction. When you first click **Unmerge**, the method is called with the **calculateOnly** parameter set to "true" in order to display the unmerge result records for you to view. When you confirm the unmerge, the EDM calls this method with the **calculateOnly** parameter set to "false" in order to commit the changes to the database and recalculate potential duplicates.

When this method is called with **calculateOnly** set to "false", the application changes the status of the merged enterprise record back to "active" and recalculates potential

duplicate listings for the record. If the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR of the enterprise record that was still active after the merge. If key fields were updated, potential duplicates are recalculated for that enterprise record. Figure 16 illustrates the processing steps and includes the check for SBR updates.

**Figure 16** unmergeEnterpriseObject Processing




## 2.5.13 unmergeSystemObject

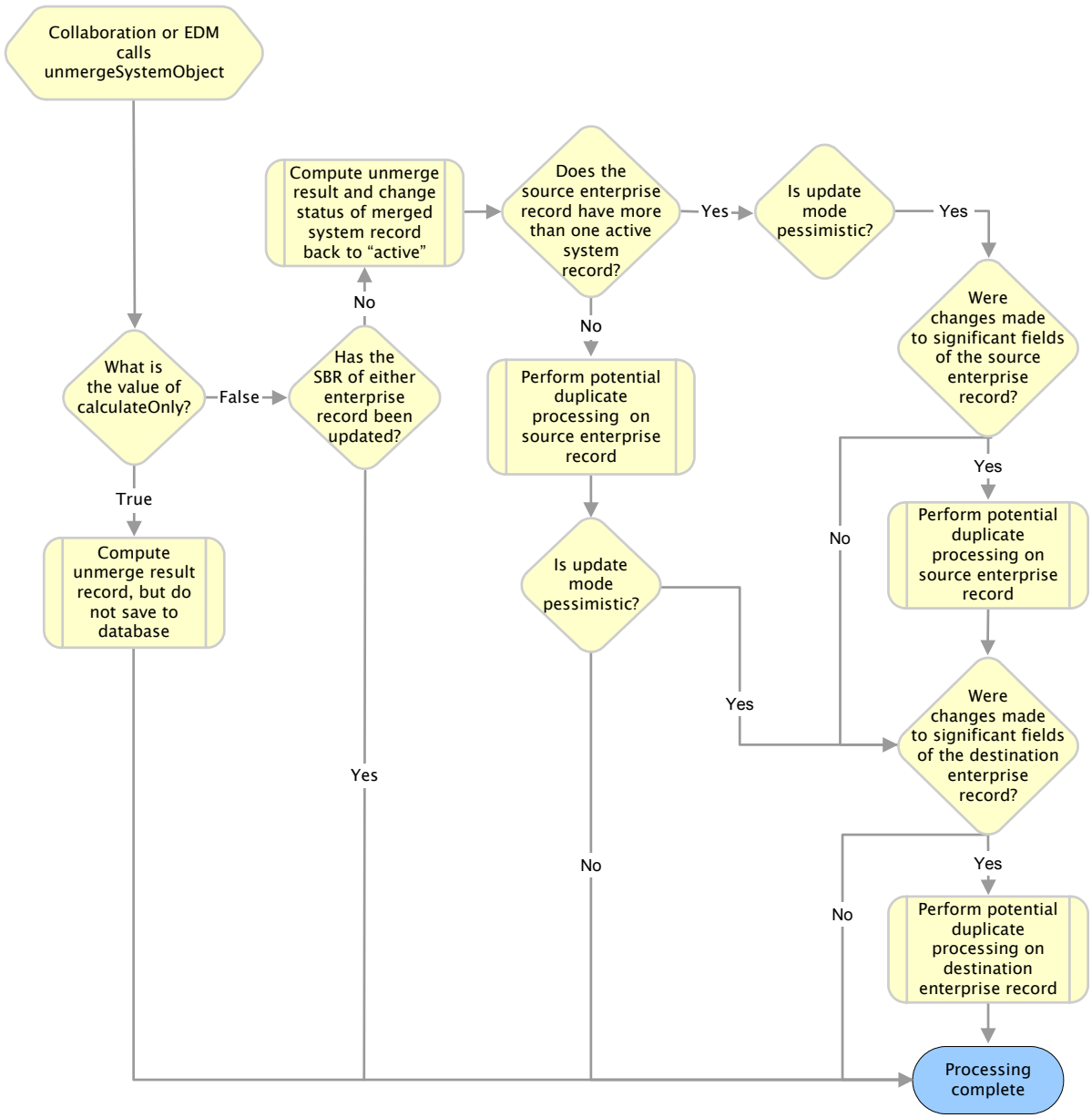
There are two methods that unmerge two system records that had previously been merged. One method unmerges the record without checking to make sure the SBR of the active record was not changed by another process before finalizing the merge and one method performs the SBR check (see the Javadocs provided with eView Studio for more information). The EDM calls this method twice during a system record unmerge transaction. When you first click **Unmerge**, the method is called with the **calculateOnly** parameter set to “true” in order to display the unmerge result record for you to view. When you confirm the unmerge, the EDM calls this method with the **calculateOnly** parameter set to “false” in order to commit the changes to the database and recalculate potential duplicates if needed.

When this method is called with **calculateOnly** set to “false”, the application changes the status of the “merged” system record back to “active”. If the source enterprise record (the record that contained the merge result system record after the merge) has more than one active system record after the unmerge and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in that

record. If key fields were updated, potential duplicates are recalculated for the source enterprise record.

If the source enterprise record has only one active system, potential duplicate processing is performed regardless of the update mode and of whether there were any changes to key fields. If the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR for destination enterprise record. If key fields were updated, potential duplicates are recalculated for each enterprise record. Figure 17 illustrates the processing steps, assuming the system record unmerge involves two enterprise records and including the check for SBR updates.

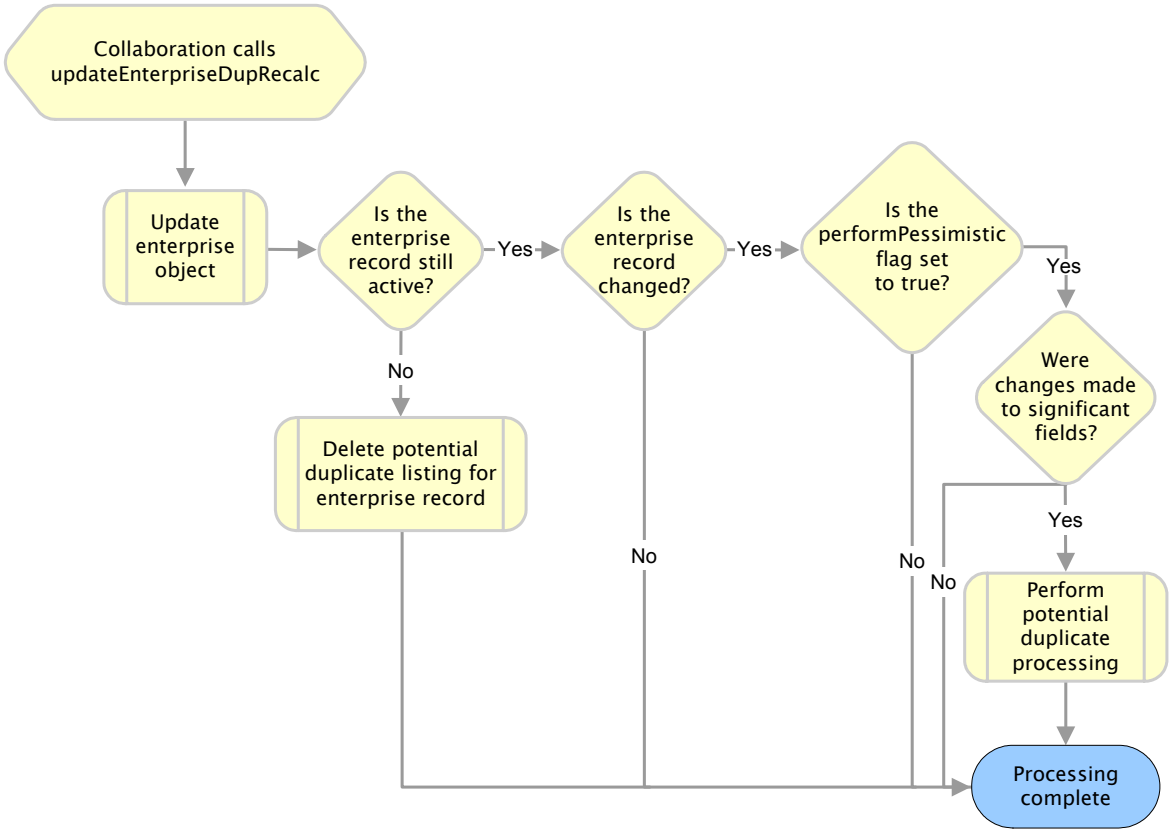
**Figure 17** unmergeSystemObject Processing



## 2.5.14 updateEnterpriseDupRecalc

This method updates the database to reflect new values for an enterprise record. It processes records in the same manner as **updateEnterpriseObject**, but provides an override flag for the update mode that allows you to defer potential duplicate processing. The EDM does not call this method. If the enterprise record is deactivated during the update, potential duplicates are deleted for that record. If the enterprise record was changed during the transaction but is still active and the **performPessimistic** parameter is set to "true", the application checks whether any key fields were updated in the SBR of the enterprise record. If key fields were updated, potential duplicates are recalculated. Figure 18 illustrates the processing steps.

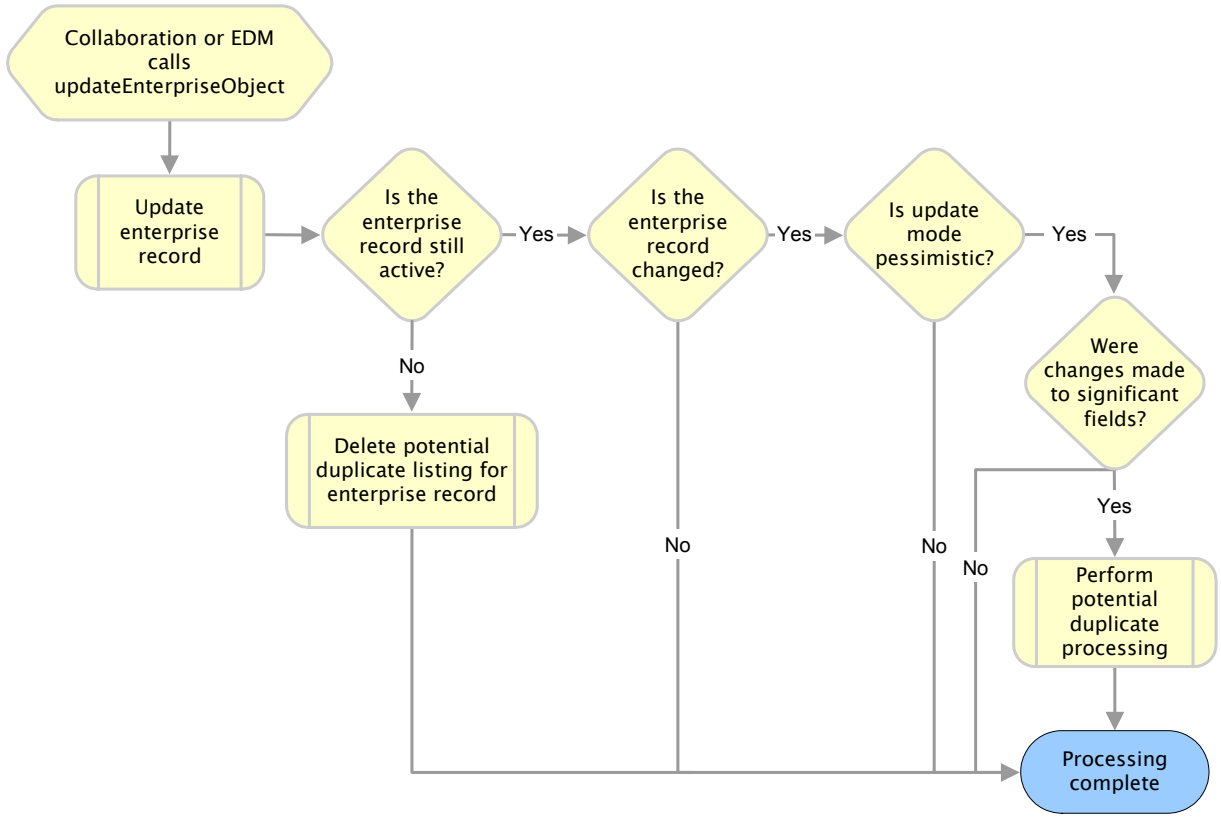
**Figure 18** updateEnterpriseDupRecalc Processing




## 2.5.15 updateEnterpriseObject

This method updates the database to reflect new values for an enterprise record, and is called from the EDM when you commit changes to an existing record. If the enterprise record is deactivated during the update, potential duplicates are deleted for that record. If the enterprise record is still active, was changed during the transaction, and the update mode is set to "pessimistic", the application checks whether any key fields were updated in the SBR of the enterprise record. If key fields were updated, potential duplicates are recalculated. Figure 19 illustrates the processing steps.

**Figure 19** updateEnterpriseObject Processing

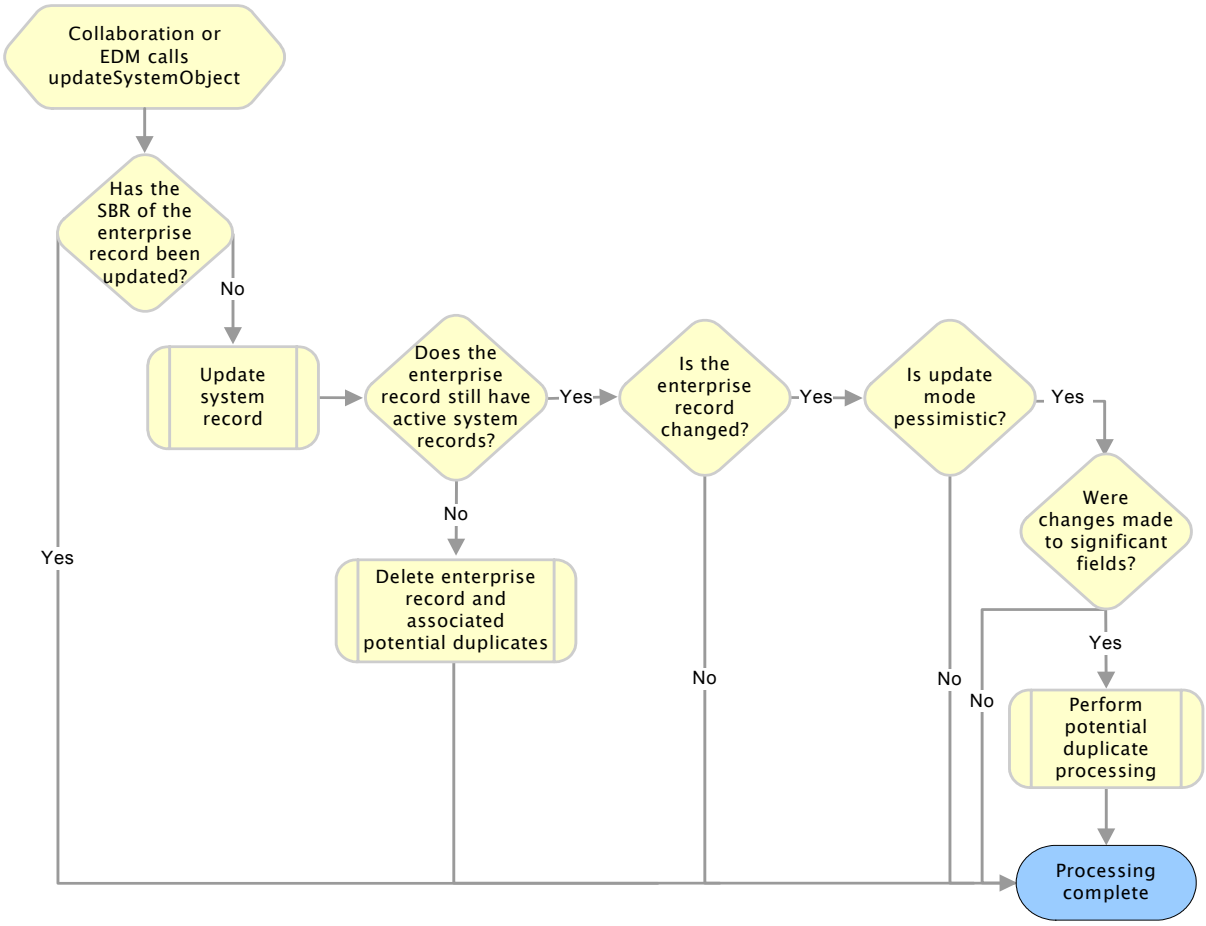



## 2.5.16 updateSystemObject

There are two methods that update the database to reflect new values for a system record. One method updates the record without checking that there were no concurrent changes to the record, and the other method compares the SBR of the associated enterprise object in the transaction with that in the database to be sure there were no concurrent changes (see the Javadocs provided with eView Studio for more information). The EDM calls the method that checks for SBR changes when you commit changes to an existing system record.

If the enterprise record is deactivated during the update, potential duplicates are deleted for that record. If the enterprise record was changed during the transaction and is still active, and the update mode is set to “pessimistic”, the application checks whether any key fields were updated in the SBR of the enterprise record. If key fields were updated, potential duplicates are recalculated. Figure 20 illustrates the processing steps and includes the check for SBR changes though it only occurs with one of the methods.

**Figure 20** updateSystemObject Processing



Chapter 3

# The Database Structure

This chapter provides information about the master index database, including descriptions of each table and a sample entity relationship diagram. All information in this chapter pertains to the default version of the database. Your implementation might vary depending on the customizations made to the Object Definition and to the scripts used to create the master index database.

**What's in This Chapter**



## 3.1 About the Database

### 3.1.1 Overview

The master index database stores information about the entities being indexed, such as people or businesses. The database stores records from local systems in their original form and also stores a record for each object that is considered to be the single best record (SBR).

The structure of the database tables that store object information is dependent on the information specified in the Object Definition file created by the eView Wizard. eView Studio creates a script to create the tables and fields in the database based on the information in the Object Definition file If you update the Object Definition file, regenerating the application updates the database scripts accordingly. This allows you to define the database as you define the object structure.

### 3.1.2 Database Table Overview

While most of the structures created in the database are based on information in the Object Definition file, some of the tables, such as sbyn_seq_table and sbyn_common_detail, are standard for all implementations. The database includes tables that store information about the objects defined for the eView Studio application as well as tables that store common maintenance information, transactional

information, and external system information. The database includes the tables listed in Table 3.

**Table 3** Master Index Database Tables

| Table Name | Description |
|---|---|
| SBYN_<OBJECT_NAME> | Stores information for the parent objects associated with local system records. This database table is named by the parent object name. For example, a table storing company objects is named sbyn_company; a table storing person objects is named sbyn_person. Only one table stores parent object information for system records. |
| SBYN_<OBJECT_NAME>SBR | Stores information for the parent objects associated with single best records. This database table is named by the parent object name followed by "SBR". For example, a table storing company objects is named sbyn_companysbr; a table storing person objects is named sbyn_personsbr. Only one table stores parent object information for SBRs. |
| SBYN_<CHILD_OBJECT> | Stores information for child objects associated with local system records. These database tables are named by their object name. For example, a table storing address objects is named sbyn_address; a table storing comment objects is named sbyn_comment. One database table is created for each child object defined in the object structure. |
| SBYN_<CHILD_OBJECT>SBR | Stores information for child objects associated with a single best record. These database tables are named by their object name followed by "SBR". For example, a table storing address objects is named sbyn_addresssbr; a table storing comment objects is named sbyn_commentsbr. One SBR database table is created for each child object defined in the object structure. |
| SBYN_APPL | Lists the applications with which each item in stc_common_header is associated. Currently the only item in this table is **eView**. |
| SBYN_ASSUMEDMATCH | Stores information about records that were automatically matched by the master index. |
| SBYN_AUDIT | Stores audit information about each time object information is accessed from the EDM. ***Note:*** *If audit logging is enabled, this table can grow very large and might require periodic archiving.* |

**Table 3** Master Index Database Tables

| Table Name | Description |
|---|---|
| SBYN_COMMON_DETAIL | Contains all of the processing codes associated with the items listed in sbyn_common_header. |
| SBYN_COMMON_HEADER | Contains a list of the different types of processing codes used by the master index. These types are also associated with the drop-down lists you can specify for the EDM. |
| SBYN_ENTERPRISE | Stores the local ID and system pairs, along with their associated EUID. |
| SBYN_MERGE | Stores information about all merge and unmerge transactions processed from either external systems or the EDM. |
| SBYN_OVERWRITE | Stores information about fields that are locked for updates in an SBR. |
| SBYN_POTENTIALDUPLICATES | Stores a list of potential duplicate records and flags potential duplicate pairs that have been resolved. |
| SBYN_SEQ_TABLE | Stores the sequential codes that are used in other tables in the database, such as EUIDs, transaction numbers, and so on. |
| SBYN_SYSTEMOBJECT | Stores information about the system objects in the database, including the local ID and system, create date and user, status, and so on. |
| SBYN_SYSTEMS | Stores a list of systems in your organization, along with defining information. |
| SBYN_SYSTEMSBR | Stores transaction information about an SBR, such as the create or update date, status, and so on. |
| SBYN_TRANSACTION | Stores a history of changes to each record stored in the database. |
| SBYN_USER_CODE | Like the sbyn_common_detail table, this table stores processing codes and drop-down list values. This table contains additional validation information that allows you to validate information in a dependent field (for example, to validate cities against the entered postal code). |

## 3.2 Database Table Details

The tables on the following pages describe each column in the default database tables.

### 3.2.1 SBYN_<OBJECT_NAME>

This table stores the parent object in each system record received by the master index. It is linked to the tables that store each child object in the system record by the **<object_name>id** column (where <object_name> is the name of the parent object). This table contains the columns listed below regardless of the design of the object structure, and also contains a column for each field you defined for the parent object in the Object Definition file. Columns to store standardized or phonetic versions of certain fields are automatically added when you specify certain match types in the eView Wizard.

**Table 4** SBYN_<OBJECT_NAME> Table Description

| Column Name | Data Type | Column Description |
|---|---|---|
| SYSTEMCODE | VARCHAR2(20) | The system code for the system record. |
| LID | VARCHAR2(25) | A local identification code assigned by the specified system. |
| <OBJECT_NAME>ID | Varies | A unique ID for the parent object in a system record. This is named according to the parent object. For example, if the parent object is “Company”, the name of this column is “companyid”; if the parent object is “Person”, the name of this column is “personid”. |

### 3.2.2 SBYN_<OBJECT_NAME>SBR

This table stores the parent object of the SBR for each enterprise object in the master index database. It is linked to the tables that store each child object in the SBR by the **<object_name>id** column (where <object_name> is the name of the parent object). This table contains the columns listed below regardless of the design of the object structure, and also contains a column for each field defined for the parent object in the Object Definition file. In addition, columns to store standardized or phonetic versions of certain fields are automatically added when you specify certain match types in the eView Wizard.

**Table 5** SBYN_<OBJECT_NAME>SBR Table Description

| Column Name | Data Type | Column Description |
|---|---|---|
| EUID | VARCHAR2(20) | The enterprise unique identifier assigned by the master index. |
| <OBJECT_NAME>ID | VARCHAR2(20) | A unique ID for the parent object in a system record. This is named according to the parent object. For example, if the parent object is “Company”, the name of this column is “companyid”; if the parent object is “Person”, the name of this column is “personid”. |

### 3.2.3 SBYN_<CHILD_OBJECT>

The sbyn_<child_object> tables (where <child_object> is the name of a child object in the object structure) store information about the child objects associated with a system record in the master index. All tables storing child object information for system records contain the columns listed below. The remaining columns are defined by the fields you specify for each child object in the object structure definition file, including any standardized or phonetic fields.

**Table 6** SBYN_<CHILD_OBJECT> and SBYN_<CHILD_OBJECT>SBR Table Description

| Column Name | Data Type | Column Description |
|---|---|---|
| <OBJECT_NAME>ID | VARCHAR2(20) | The unique ID for the parent object associated with the child object in the system record. |
| <CHILD_OBJECT>ID | VARCHAR2(20) | The unique ID for each record in the table. This column cannot be null. |

### 3.2.4 SBYN_<CHILD_OBJECT>SBR

The sbyn_<child_object> sbr tables (where <child_object> is the name of a child object in the object structure) store information about the child objects associated with an SBR in the master index. All tables storing child object information for SBRs contain the columns listed below. The remaining columns are defined by the fields you specify for each child object in the object structure definition file, including any standardized or phonetic fields.

**Table 7** SBYN_<CHILD_OBJECT> and SBYN_<CHILD_OBJECT>SBR Table Description

| Column Name | Data Type | Column Description |
|---|---|---|
| <OBJECT_NAME>ID | VARCHAR2(20) | The unique ID for the parent object associated with the child object in the SBR. |
| <CHILD_OBJECT>ID | VARCHAR2(20) | The unique ID for each record in the table. This column cannot be null. |

### 3.2.5 SBYN_APPL

This table stores information about the applications used in the master index system. Currently, there is only one entry, “eView”.

**Table 8** SBYN_APPL Table Description

| Column Name | Data Type | Description |
|---|---|---|
| APPL_ID | NUMBER(10) | The unique sequence number code for the listed application. |
| CODE | VARCHAR2(8) | A unique code for the application. |
| DESCR | VARCHAR2(30) | A brief description of the application. |

**Table 8** SBYN_APPL Table Description

| Column Name | Data Type | Description |
|---|---|---|
| READ_ONLY | CHAR(1) | An indicator of whether the current entry can be modified. If the value of this column is “Y”, the entry cannot be modified. |
| CREATE_DATE | DATE | The date the application entry was created. |
| CREATE_USERID | VARCHAR2(20) | The logon ID of the user who created the application entry. |

### 3.2.6 SBYN_ASSUMEDMATCH

This table maintains a record of each assumed match transaction that occurs in the master index, allowing you to review these transactions and, if necessary, reverse an assumed match. This table can grow quite large over time; it is recommended that the table be archived periodically.

**Table 9** SBYN_ASSUMEDMATCH Table Description

| Column Name | Data Type | Description |
|---|---|---|
| ASSUMEDMATCHID | VARCHAR2(20) | The unique ID for the assumed match transaction. |
| EUID | VARCHAR2(20) | The EUID into which the incoming record was merged. |
| SYSTEMCODE | VARCHAR2(20) | The system code for the source system (that is, the system from which the incoming record originated). |
| LID | VARCHAR2(25) | The local ID of the record in the source system. |
| WEIGHT | VARCHAR2(20) | The matching weight between the incoming record and the EUID record into which it was merged. |
| TRANSACTION NUMBER | VARCHAR2(20) | The transaction number associated with the assumed match. |

### 3.2.7 SBYN_AUDIT

This table maintains a log of each instance in which any of the eView Studio tables are accessed in the database through the EDM. This includes each time a record appears on a search results page, a comparison page, the View/Edit page, and so on. This log is

only maintained if the EDM is configured for it. This table can grow very large over time and might require periodic archiving.

**Table 10** SBYN_AUDIT Table Description

| Column Name | Data Type | Description |
|---|---|---|
| AUDIT_ID | VARCHAR2(20) | The unique identification code for the audit record. This column cannot be null. |
| PRIMARY_OBJECT_TYPE | VARCHAR2(20) | The name of the parent object as defined in the Object Definition file. |
| EUID | VARCHAR2(15) | The EUID whose information was accessed during an EDM transaction. |
| EUID_AUX | VARCHAR2(15) | The second EUID whose information was accessed during an EDM transaction. A second EUID appears when viewing information about merge and unmerge transactions, comparisons, and so on. |
| FUNCTION | VARCHAR2(32) | The type of transaction that caused the audit record to be written. This column cannot be null. |
| DETAIL | VARCHAR2(120) | A brief description of the transaction that caused the audit record to be written. |
| CREATE_DATE | DATE | The date the transaction that created the audit record was performed. This column cannot be null. |
| CREATE_BY | VARCHAR2(20) | The user ID of the person who performed the transaction that caused the audit log. This column cannot be null. |

## 3.2.8 SBYN_COMMON_DETAIL

This table stores the processing codes and description for all of the common maintenance data elements. This is the detail table for sbyn_common_header. Each data element in sbyn_common_detail is associated with a data type in sbyn_common_header by the **common_header_id** column. None of the columns in this table can be null.

**Table 11** SBYN_COMMON_DETAIL Table Description

| Column Name | Data Type | Description |
|---|---|---|
| COMMON_DETAIL_ID | NUMBER(10) | The unique identification code of the common table data element. |

**Table 11** SBYN_COMMON_DETAIL Table Description

| Column Name | Data Type | Description |
|---|---|---|
| COMMON_HEADER_ID | NUMBER(10) | The unique identification code of the common table data type associated with the data element (as stored in the common_header_id column of the sbyn_common_header table). |
| CODE | VARCHAR2(20) | The processing code for the common table data element. |
| DESCR | VARCHAR2(50) | A description of the common table data element. |
| READ_ONLY | CHAR(1) | An indicator of whether the common table data element can be modified. |
| CREATE_DATE | DATE | The date the data element record was created. |
| CREATE_USERID | VARCHAR2(20) | The user ID of the person who created the data element record. |

## 3.2.9 SBYN_COMMON_HEADER

This table stores a description of each type of common maintenance data and is the header table for sbyn_common_detail. Together, these tables store the processing codes and drop-down menu descriptions for each common table data type. For a person index, common table data types might include Religion, Language, Marital Status, and so on. For a business index, common table data types might include Address Type, Phone Type, and so on. None of the columns in this table can be null.

**Table 12** SBYN_COMMON_HEADER Table Description

| Column Name | Data Type | Description |
|---|---|---|
| COMMON_HEADER_ID | VARCHAR2(10) | The unique identification code of the common table data type. |
| APPL_ID | VARCHAR2(10) | The application ID from sbyn_appl that corresponds to the application for which the common table data type is used. |
| CODE | VARCHAR2(8) | A unique processing code for the common table data type. |
| DESCR | VARCHAR2(50) | A description of the common table data type. |
| READ_ONLY | CHAR(1) | An indicator of whether an entry in the table is read-only (if this column is set to “Y”, the entry is read-only). |

**Table 12** SBYN_COMMON_HEADER Table Description

| Column Name | Data Type | Description |
|---|---|---|
| MAX_INPUT_LEN | NUMBER(10) | The maximum number of characters allowed in the code column for the common table data type. |
| TYP_TABLE_CODE | VARCHAR2(3) | This column is not currently used. |
| CREATE_DATE | DATE | The date the common table data type record was created. |
| CREATE_USERID | VARCHAR2(20) | The user ID of the person who created the common table data type record. |

## 3.2.10 SBYN_ENTERPRISE

This table stores a list of all the system and local ID pairs assigned to the enterprise records in the database, along with the associated EUID for each pair. This table is linked to sbyn_systemobject by the **systemcode** and **lid** columns, and is linked to sbyn_systemsbr by the **euid** column. This table maintains links between the SBR and its associated system objects. None of the columns in this table can be null.

**Table 13** SBYN_ENTERPRISE Table Description

| Column Name | Data Type | Description |
|---|---|---|
| SYSTEMCODE | VARCHAR2(20) | The processing code of the system associated with the local ID. |
| LID | VARCHAR2(25) | The local ID associated with the system and EUID. |
| EUID | VARCHAR2(20) | The EUID associated with the local ID and system. |

## 3.2.11 SBYN_MERGE

This table maintains a record of each merge transaction that occurs in the master index, both through the EDM and the eGate Project. It also records any unmerges that occur.

**Table 14** SBYN_MERGE Table Description

| Column Name | Data Type | Description |
|---|---|---|
| MERGE_ID | VARCHAR2(20) | The unique, sequential identification code of merge record. This column cannot be null. |
| KEPT_EUID | VARCHAR2(20) | The EUID of the record that was retained after the merge transaction. This column cannot be null. |
| MERGED_EUID | VARCHAR2(20) | The EUID of the record that was not retained after the merge transaction. |

**Table 14** SBYN_MERGE Table Description

| Column Name | Data Type | Description |
|---|---|---|
| MERGE_TRANSACTIONNUM | VARCHAR2(20) | The transaction number associated with the merge transaction. This column cannot be null. |
| UNMERGE_TRANSACTIONNUM | VARCHAR2(20) | The transaction number associated with the unmerge transaction. |

## 3.2.12 SBYN_OVERWRITE

This table stores information about the fields that are locked for updates in the SBRs. It stores the EUID of the SBR, the ePath to the field, and the current locked value of the field.

**Table 15** SBYN_OVERWRITE Table Description

| Column Name | Data Type | Description |
|---|---|---|
| EUID | VARCHAR2(20) | The EUID of an SBR containing fields for which the overwrite lock is set. |
| PATH | VARCHAR2(200) | The ePath to a field that is locked in an SBR from the EDM. |
| TYPE | VARCHAR2(20) | The data type of a field that is locked in an SBR. |
| INTEGERDATA | NUMBER(38) | The data that is locked for overwrite in an integer field. |
| BOOLEANDATA | NUMBER(38) | The data that is locked for overwrite in a boolean field. |
| STRINGDATA | VARCHAR2(200) | The data that is locked for overwrite in a string field. |
| BYTEDATA | CHAR(2) | The data that is locked for overwrite in a byte field. |
| LONGDATA | LONG | The data that is locked for overwrite in a long integer field. |
| DATEDATA | DATE | The data that is locked for overwrite in a date field. |
| FLOATDATA | NUMBER(38,4) | The data that is locked for overwrite in a floating decimal field. |
| TIMESTAMPDATA | DATE | The data that is locked for overwrite in a timestamp field. |

## 3.2.13 SBYN_POTENTIALDUPLICATES

This table maintains a list of all records that are potential duplicates of one another. It also maintains a record of whether a potential duplicate pair has been resolved or permanently resolved.

**Table 16** SBYN_POTENTIALDUPLICATES Table Description

| Column Name | Data Type | Description |
|---|---|---|
| POTENTIALDUPLICATEID | VARCHAR2(20) | The unique identification number of the potential duplicate transaction. |
| WEIGHT | VARCHAR2(20) | The matching weight of the potential duplicate pair. |
| TYPE | VARCHAR2(15) | This column is reserved for future use. |
| DESCRIPTION | VARCHAR2(120) | A description of what caused the potential duplicate flag. |
| STATUS | VARCHAR2(15) | The status of the potential duplicate pair. The possible values are:<br>▪ **U**—Unresolved<br>▪ **R**—Resolved<br>▪ **A**—Resolved permanently |
| HIGHMATCHFLAG | VARCHAR2(15) | This column is reserved for future use. |
| RESOLVEDUSER | VARCHAR2(30) | The user ID of the person who resolved the potential duplicate status. |
| RESOLVEDDATE | DATE | The date the potential duplicate status was resolved. |
| RESOLVEDCOMMENT | VARCHAR2(120) | Comments regarding the resolution of the duplicate status. This is not currently used. |
| EUID2 | VARCHAR2(20) | The EUID of the second record in the potential duplicate pair. |
| TRANSACTIONNUMBER | VARCHAR2(20) | The transaction number associated with the transaction that produced the potential duplicate flag. |
| EUID1 | VARCHAR2(20) | The EUID of the first record in the potential duplicate pair. |

## 3.2.14 SBYN_SEQ_TABLE

This table controls and maintains a record of the sequential identification numbers used in various tables in the database, ensuring that each number is unique and assigned in order. Several of the ID numbers maintained in this table are determined by the object structure. The numbers are assigned sequentially, but are cached in chunks of 1000 numbers for optimization (so the index does not need to query the sbyn_seq_table table for each transaction). The chunk size for the EUID sequence is configurable. If the

Repository server is reset before all allocated numbers are used, the unused numbers are discarded and never used, and numbering is restarted at the beginning of the next 1000-number chunk.

**Table 17** SBYN_SEQ_TABLE Table Description

| Column Name | Data Type | Description |
|---|---|---|
| SEQ_NAME | VARCHAR2(20) | The name of the object for which the sequential ID is stored. |
| SEQ_COUNT | NUMBER(38) | The current value of the sequence. The next record will be assigned the current value plus one. |

The default sequence numbers are listed in Table 18.

**Table 18** Default Sequence Numbers

| Sequence Name | Description |
|---|---|
| EUID | The sequence number that determines how EUIDs are assigned to new records. The chunk size for the EUID sequence number is configurable in the eView Studio Project Threshold file. |
| POTENTIALDUPLICATE | The sequence number assigned each potential duplicate transaction record in sbyn_potentialduplicates (column name “potentialduplicateid”). |
| TRANSACTIONNUMBER | The sequence number assigned to each transaction in the master index. This number is stored in sbyn_transaction (column name “transactionnumber”). |
| ASSUMEDMATCH | The sequence number assigned to each assumed match transaction record in sbyn_assumedmatch (column name “assumedmatchid”). |
| AUDIT | The sequence number assigned to each audit log record in sbyn_audit (column name “audit_id”). |
| MERGE | The sequence number assigned to each merge transaction in sbyn_merge (column name “merge_id”). |
| SBYN_APPL | The sequence number assigned to each application listed in sbyn_appl (column name “appl_id”) |
| SBYN_COMMON_HEADER | The sequence number assigned to each common table data type listed in sbyn_common_header (column name “common_header_id”). |
| SBYN_COMMON_DETAIL | The sequence number assigned to each common table data element listed in sbyn_common_detail (column name “common_detail_id”). |
| <OBJECT_NAME> | Each parent and child object system record table is assigned a sequential ID. The column names are named after the object (for example, sbyn_address has a sequential column named “addressid”). The parent object ID is included in each child object table. |

**Table 18** Default Sequence Numbers

| Sequence Name | Description |
|---|---|
| <OBJECT_NAME>SBR | Each parent and child object SBR table is assigned a sequential ID. The column names are named after the object (for example, sbyn_addresssbr has a sequential column named “addressid”). The parent object ID is included in each child object SBR table. |

## 3.2.15 SBYN_SYSTEMOBJECT

This table stores information about the system records in the database, including their local ID and source system pairs. It also stores transactional information, such as the create or update date and function.

**Table 19** SBYN_SYSTEMOBJECT Table Description

| Column Name | Data Type | Description |
|---|---|---|
| SYSTEMCODE | VARCHAR2(20) | The processing code of the system associated with the local ID. This column cannot be null. |
| LID | VARCHAR2(25) | The local ID associated with the system and EUID (the associated EUID is found in sbyn_enterprise). This column cannot be null. |
| CHILDTYPE | VARCHAR2(20) | The type of object being processed (currently only the name of the parent object). This column is reserved for future use. |
| CREATEUSER | VARCHAR2(30) | The user ID of the person who created the system record. |
| CREATEFUNCTION | VARCHAR2(20) | The type of transaction that created the system record. |
| CREATEDATE | DATE | The date the system record was created. |
| UPDATEUSER | VARCHAR2(30) | The user ID of the person who last updated the system record. |
| UPDATEFUNCTION | VARCHAR2(20) | The type of transaction that last updated the system record. |
| UPDATEDATE | DATE | The date the system record was last updated. |
| STATUS | VARCHAR2(15) | The status of the system record. The status can be one of these values:<br>▪ active<br>▪ inactive<br>▪ merged |

## 3.2.16 SBYN_SYSTEMS

This table stores information about each system integrated into the master index environment, including the system's processing code and name, a brief description, the format of the local IDs, and whether any of the system information should be masked.

**Table 20** SBYN_SYSTEMS Table Description

| Column Name | Data Type | Description |
|---|---|---|
| SYSTEMCODE | VARCHAR2(20) | The unique processing code of the system. |
| DESCRIPTION | VARCHAR2(120) | A brief description of the system, or the system name. This is the value that appears in the tree view panes of the EDM for each system and local ID pair. |
| STATUS | CHAR(1) | The status of the system in the master index. "A" indicates active and "D" indicates deactivated. |
| ID_LENGTH | NUMBER | The length of the local identifiers assigned by the system. This length does not include any additional characters added by the input mask. |
| FORMAT | VARCHAR2(60) | The required data pattern for the local IDs assigned by the system. For more information about possible values and using Java patterns, see "Patterns" in the class list for **java.util.regex** in the Javadocs provided with the Java™ 2 Platform, Standard Edition (J2SE™ platform). Note that the data pattern is also limited by the input mask described below. All regex patterns are supported if there is no input mask. |
| INPUT_MASK | VARCHAR2(60) | A mask used by the EDM to add punctuation to the local ID. For example, the input mask **DD-DDD-DDD** inserts a hyphen after the second and fifth characters in an 8-digit ID. These character types can be used.<br>▪ **D**—Numeric character<br>▪ **L**—Alphabetic character<br>▪ **A**—Alphanumeric character |

**Table 20** SBYN_SYSTEMS Table Description

| Column Name | Data Type | Description |
|---|---|---|
| VALUE_MASK | VARCHAR2(60) | A mask used to strip any extra characters that were added by the input mask for database storage. The value mask is the same as the input mask, but with an "x" in place of each punctuation mark. Using the input mask described above, the value mask is **DDxDDDxDDD**. This strips the hyphens before storing the ID. |
| CREATE_DATE | DATE | The date the system information was inserted into the database. |
| CREATE_USERID | VARCHAR2(20) | The logon ID of the user who inserted the system information into the database. |
| UPDATE_DATE | DATE | The most recent date the system's information was updated. |
| UPDATE_USERID | VARCHAR2(20) | The logon ID of the user who last updated the system's information. |

## 3.2.17 SBYN_SYSTEMSBR

This table stores transactional information about the system records for the SBR, such as the create or update date and function. The sbyn_systemsbr table is indirectly linked to the sbyn_systemobjects table through sbyn_enterprise.

**Table 21** SBYN_SYSTEMSBR Table Description

| Column Name | Data Type | Description |
|---|---|---|
| EUID | VARCHAR2(20) | The EUID associated with system record (the associated system and local ID are found in sbyn_enterprise). This column cannot be null. |
| CHILDTYPE | VARCHAR2(20) | The type of object being processed (currently only the name of the parent object). This column is reserved for future use. |
| CREATESYSTEM | VARCHAR2(20) | The system in which the system record was created. |
| CREATEUSER | VARCHAR2(30) | The user ID of the person who created the system record. |
| CREATEFUNCTION | VARCHAR2(20) | The type of transaction that created the system record. |

**Table 21** SBYN_SYSTEMSBR Table Description

| Column Name | Data Type | Description |
|---|---|---|
| CREATEDATE | DATE | The date the system object was created. |
| UPDATEUSER | VARCHAR2(30) | The user ID of the person who last updated the system record. |
| UPDATEFUNCTION | VARCHAR2(20) | The type of transaction that last updated the system record. |
| UPDATEDATE | DATE | The date the system object was last updated. |
| STATUS | VARCHAR2(15) | The status of the enterprise record. The status can be one of these values:<br>▪ active<br>▪ inactive<br>▪ merged |
| REVISIONNUMBER | NUMBER(38) | The revision number of the SBR. This is used for version control. |

## 3.2.18 SBYN_TRANSACTION

This table stores a history of changes made to each record in the master index, allowing you to view a transaction history and to undo certain actions, such as merging two object profiles.

**Table 22** SBYN_TRANSACTION Table Description

| Column Name | Data Type | Description |
|---|---|---|
| TRANSACTIONNUMBER | VARCHAR2(20) | The unique number of the transaction. |
| LID1 | VARCHAR2(25) | This column is reserved for future use. |
| LID2 | VARCHAR2(25) | The local ID of the second system record involved in the transaction. |
| EUID1 | VARCHAR2(20) | This column is reserved for future use. |
| EUID2 | VARCHAR2(20) | The EUID of the second object profile involved in the transaction. |
| FUNCTION | VARCHAR2(20) | The type of transaction that occurred, such as update, add, merge, and so on. |
| SYSTEMUSER | VARCHAR2(30) | The logon ID of the user who performed the transaction. |
| TIMESTAMP | TIMESTAMP | The date and time the transaction occurred. |

**Table 22** SBYN_TRANSACTION Table Description

| Column Name | Data Type | Description |
|---|---|---|
| DELTA | BLOB | A list of the changes that occurred to system records as a result of the transaction. |
| SYSTEMCODE | VARCHAR2(20) | The processing code of the source system in which the transaction originated. |
| LID | VARCHAR2(25) | The local ID of the system record involved in the transaction. |
| EUID | VARCHAR2(20) | The EUID of the enterprise record involved in the transaction. |

## 3.2.19 SBYN_USER_CODE

This table is similar to the sbyn_common_header and sbyn_common_detail tables in that it stores processing codes and drop-down list values. This table is used when the value of one field is dependent on the value of another. For example, if you store credit card information, you could list each credit card type and specify a required format for the credit card number field. The data stored in this table includes the processing code, a brief description, and the format of the dependent fields.

**Table 23** SBYN_USER_CODE Table Description

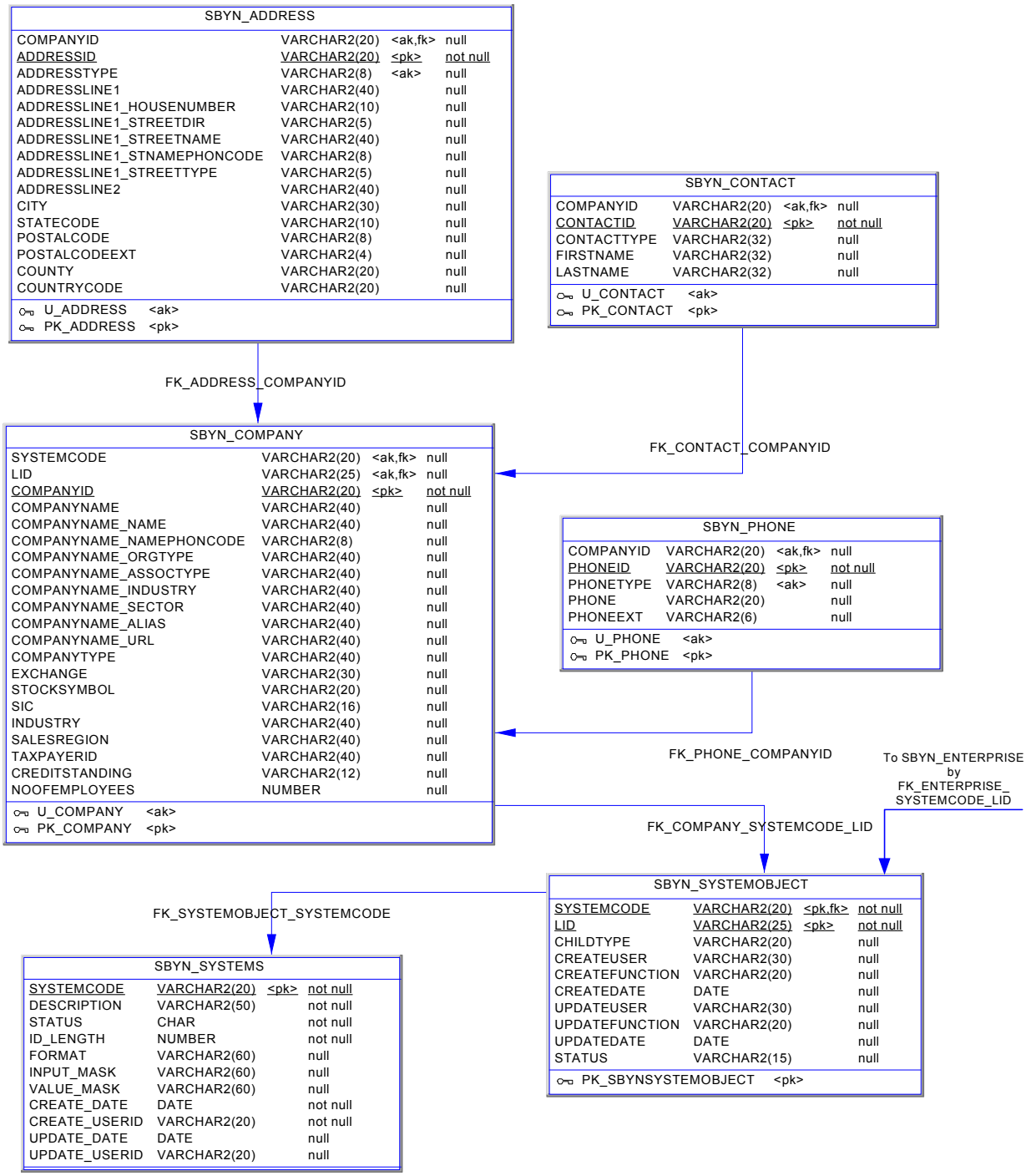
| Column Name | Data Type | Description |
|---|---|---|
| CODE_LIST | VARCHAR2(20) | The code list name of the user code type (using the credit card example above, this might be similar to “CREDCARD”). This column links the values for each list. |
| CODE | VARCHAR2(20) | The processing code of each user code element. |
| DESCRIPTION | VARCHAR2(50) | A brief description or name for the user code. This is the value that appears in the drop-down list. |
| FORMAT | VARCHAR2(60) | The required data pattern for the field that is constrained by the user code. For more information about possible values and using Java patterns, see “Patterns” in the class list for **java.util.regex** in the Javadocs provided with the J2SE platform. Note that the data pattern is also limited by the input mask described below. All regex patterns are supported if there is no input mask. |

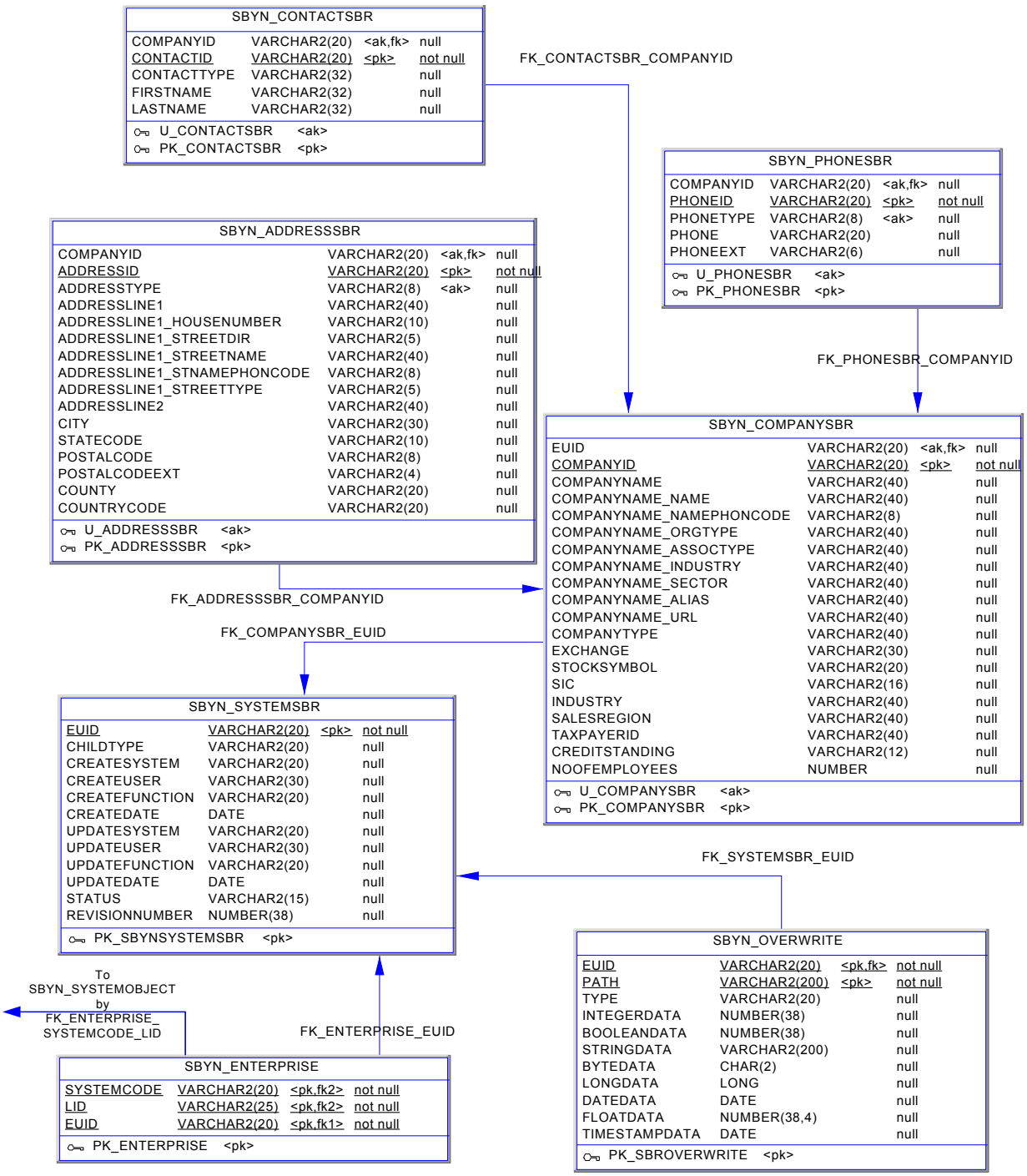
**Table 23** SBYN_USER_CODE Table Description

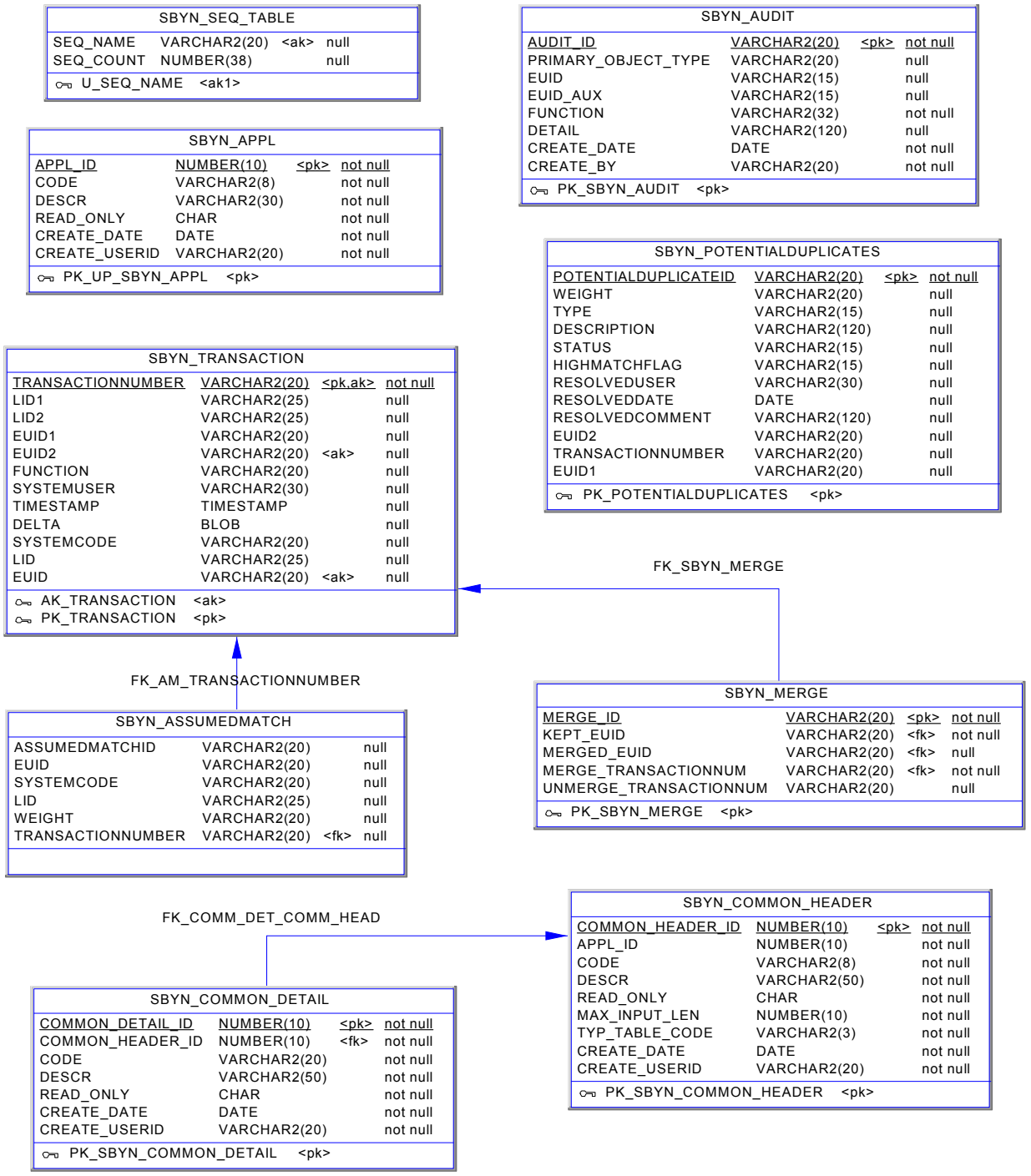
| Column Name | Data Type | Description |
|---|---|---|
| INPUT_MASK | VARCHAR2(60) | A mask used by the EDM to add punctuation to the constrained field. For example, the input mask **DD-DDD-DDD** inserts a hyphen after the second and fifth characters in an 8-digit ID. These character types can be used.<br>▪ **D**—Numeric character<br>▪ **L**—Alphabetic character<br>▪ **A**—Alphanumeric character |
| VALUE_MASK | VARCHAR2(60) | A mask used to strip any extra characters that were added by the input mask for database storage. The value mask is the same as the input mask, but with an "x" in place of each punctuation mark. Using the input mask described above, the value mask is **DDxDDDxDDD**. This strips the hyphens before storing the ID. |

## 3.3 Sample Database Model

The diagrams on the following pages illustrate the table structure and relationships for a sample eView Studio master index database designed for storing information about companies. The diagrams display attributes for each database column, such as the field name, data type, whether the field can be null, and primary keys. They also show directional relationships between tables and the keys by which the tables are related.


SBYN_ADDRESS
COMPANYID VARCHAR2(20) <ak,fk> null
ADDRESSID VARCHAR2(20) <pk> not null
ADDRESSTYPE VARCHAR2(8) <ak> null
ADDRESSLINE1 VARCHAR2(40) null
ADDRESSLINE1_HOUSENUMBER VARCHAR2(10) null
ADDRESSLINE1_STREETDIR VARCHAR2(5) null
ADDRESSLINE1_STREETNAME VARCHAR2(40) null
ADDRESSLINE1_STNAMEPHONCODE VARCHAR2(8) null
ADDRESSLINE1_STREETTYPE VARCHAR2(5) null
ADDRESSLINE2 VARCHAR2(40) null
CITY VARCHAR2(30) null
STATECODE VARCHAR2(10) null
POSTALCODE VARCHAR2(8) null
POSTALCODEEXT VARCHAR2(4) null
COUNTY VARCHAR2(20) null
COUNTRYCODE VARCHAR2(20) null
U_ADDRESS <ak>
PK_ADDRESS <pk>
SBYN_CONTACT
COMPANYID VARCHAR2(20) <ak,fk> null
CONTACTID VARCHAR2(20) <pk> not null
CONTACTTYPE VARCHAR2(32) null
FIRSTNAME VARCHAR2(32) null
LASTNAME VARCHAR2(32) null
U_CONTACT <ak>
PK_CONTACT <pk>
FK_ADDRESS_COMPANYID
FK_CONTACT_COMPANYID
SBYN_COMPANY
SYSTEMCODE VARCHAR2(20) <ak,fk> null
LID VARCHAR2(25) <ak,fk> null
COMPANYID VARCHAR2(20) <pk> not null
COMPANYNAME VARCHAR2(40) null
COMPANYNAME_NAME VARCHAR2(40) null
COMPANYNAME_NAMEPHONCODE VARCHAR2(8) null
COMPANYNAME_ORGTYPE VARCHAR2(40) null
COMPANYNAME_ASSOCTYPE VARCHAR2(40) null
COMPANYNAME_INDUSTRY VARCHAR2(40) null
COMPANYNAME_SECTOR VARCHAR2(40) null
COMPANYNAME_ALIAS VARCHAR2(40) null
COMPANYNAME_URL VARCHAR2(40) null
COMPANYTYPE VARCHAR2(40) null
EXCHANGE VARCHAR2(30) null
STOCKSYMBOL VARCHAR2(20) null
SIC VARCHAR2(16) null
INDUSTRY VARCHAR2(40) null
SALESREGION VARCHAR2(40) null
TAXPAYERID VARCHAR2(40) null
CREDITSTANDING VARCHAR2(12) null
NOOFEMPLOYEES NUMBER null
U_COMPANY <ak>
PK_COMPANY <pk>
SBYN_PHONE
COMPANYID VARCHAR2(20) <ak,fk> null
PHONEID VARCHAR2(20) <pk> not null
PHONETYPE VARCHAR2(8) <ak> null
PHONE VARCHAR2(20) null
PHONEEXT VARCHAR2(6) null
U_PHONE <ak>
PK_PHONE <pk>
FK_PHONE_COMPANYID
To SBYN_ENTERPRISE by FK_ENTERPRISE_SYSTEMCODE_LID
FK_COMPANY_SYSTEMCODE_LID
SBYN_SYSTEMOBJECT
SYSTEMCODE VARCHAR2(20) <pk,fk> not null
LID VARCHAR2(25) <pk> not null
CHILDTYPE VARCHAR2(20) null
CREATEUSER VARCHAR2(30) null
CREATEFUNCTION VARCHAR2(20) null
CREATEDATE DATE null
UPDATEUSER VARCHAR2(30) null
UPDATEFUNCTION VARCHAR2(20) null
UPDATEDATE DATE null
STATUS VARCHAR2(15) null
PK_SBYNSYSTEMOBJECT <pk>
FK_SYSTEMOBJECT_SYSTEMCODE
SBYN_SYSTEMS
SYSTEMCODE VARCHAR2(20) <pk> not null
DESCRIPTION VARCHAR2(50) not null
STATUS CHAR not null
ID_LENGTH NUMBER not null
FORMAT VARCHAR2(60) null
INPUT_MASK VARCHAR2(60) null
VALUE_MASK VARCHAR2(60) null
CREATE_DATE DATE not null
CREATE_USERID VARCHAR2(20) not null
UPDATE_DATE DATE null
UPDATE_USERID VARCHAR2(20) null


SBYN_CONTACTSBR
COMPANYID VARCHAR2(20) <ak,fk> null
CONTACTID VARCHAR2(20) <pk> not null
CONTACTTYPE VARCHAR2(32) null
FIRSTNAME VARCHAR2(32) null
LASTNAME VARCHAR2(32) null
U_CONTACTSBR <ak>
PK_CONTACTSBR <pk>
FK_CONTACTSBR_COMPANYID
SBYN_PHONESBR
COMPANYID VARCHAR2(20) <ak,fk> null
PHONEID VARCHAR2(20) <pk> not null
PHONETYPE VARCHAR2(8) <ak> null
PHONE VARCHAR2(20) null
PHONEEXT VARCHAR2(6) null
U_PHONESBR <ak>
PK_PHONESBR <pk>
FK_PHONESBR_COMPANYID
SBYN_ADDRESSSBR
COMPANYID VARCHAR2(20) <ak,fk> null
ADDRESSID VARCHAR2(20) <pk> not null
ADDRESSTYPE VARCHAR2(8) <ak> null
ADDRESSLINE1 VARCHAR2(40) null
ADDRESSLINE1_HOUSENUMBER VARCHAR2(10) null
ADDRESSLINE1_STREETDIR VARCHAR2(5) null
ADDRESSLINE1_STREETNAME VARCHAR2(40) null
ADDRESSLINE1_STNAMEPHONCODE VARCHAR2(8) null
ADDRESSLINE1_STREETTYPE VARCHAR2(5) null
ADDRESSLINE2 VARCHAR2(40) null
CITY VARCHAR2(30) null
STATECODE VARCHAR2(10) null
POSTALCODE VARCHAR2(8) null
POSTALCODEEXT VARCHAR2(4) null
COUNTY VARCHAR2(20) null
COUNTRYCODE VARCHAR2(20) null
U_ADDRESSSBR <ak>
PK_ADDRESSSBR <pk>
FK_ADDRESSSBR_COMPANYID
SBYN_COMPANYSBR
EUID VARCHAR2(20) <ak,fk> null
COMPANYID VARCHAR2(20) <pk> not null
COMPANYNAME VARCHAR2(40) null
COMPANYNAME_NAME VARCHAR2(40) null
COMPANYNAME_NAMEPHONCODE VARCHAR2(8) null
COMPANYNAME_ORGTYPE VARCHAR2(40) null
COMPANYNAME_ASSOCTYPE VARCHAR2(40) null
COMPANYNAME_INDUSTRY VARCHAR2(40) null
COMPANYNAME_SECTOR VARCHAR2(40) null
COMPANYNAME_ALIAS VARCHAR2(40) null
COMPANYNAME_URL VARCHAR2(40) null
COMPANYTYPE VARCHAR2(40) null
EXCHANGE VARCHAR2(30) null
STOCKSYMBOL VARCHAR2(20) null
SIC VARCHAR2(16) null
INDUSTRY VARCHAR2(40) null
SALESREGION VARCHAR2(40) null
TAXPAYERID VARCHAR2(40) null
CREDITSTANDING VARCHAR2(12) null
NOOFEMPLOYEES NUMBER null
U_COMPANYSBR <ak>
PK_COMPANYSBR <pk>
FK_COMPANYSBR_EUID
SBYN_SYSTEMSBR
EUID VARCHAR2(20) <pk> not null
CHILDTYPE VARCHAR2(20) null
CREATESYSTEM VARCHAR2(20) null
CREATEUSER VARCHAR2(30) null
CREATEFUNCTION VARCHAR2(20) null
CREATEDATE DATE null
UPDATESYSTEM VARCHAR2(20) null
UPDATEUSER VARCHAR2(30) null
UPDATEFUNCTION VARCHAR2(20) null
UPDATEDATE DATE null
STATUS VARCHAR2(15) null
REVISIONNUMBER NUMBER(38) null
PK_SBYNSYSTEMSBR <pk>
FK_SYSTEMSBR_EUID
SBYN_OVERWRITE
EUID VARCHAR2(20) <pk,fk> not null
PATH VARCHAR2(200) <pk> not null
TYPE VARCHAR2(20) null
INTEGERDATA NUMBER(38) null
BOOLEANDATA NUMBER(38) null
STRINGDATA VARCHAR2(200) null
BYTEDATA CHAR(2) null
LONGDATA LONG null
DATEDATA DATE null
FLOATDATA NUMBER(38,4) null
TIMESTAMPDATA DATE null
PK_SBROVERWRITE <pk>
To SBYN_SYSTEMOBJECT by FK_ENTERPRISE_SYSTEMCODE_LID
FK_ENTERPRISE_EUID
SBYN_ENTERPRISE
SYSTEMCODE VARCHAR2(20) <pk,fk2> not null
LID VARCHAR2(25) <pk,fk2> not null
EUID VARCHAR2(20) <pk,fk1> not null
PK_ENTERPRISE <pk>


SBYN_SEQ_TABLE
SEQ_NAME VARCHAR2(20) <ak> null
SEQ_COUNT NUMBER(38) null
U_SEQ_NAME <ak1>
SBYN_AUDIT
AUDIT_ID VARCHAR2(20) <pk> not null
PRIMARY_OBJECT_TYPE VARCHAR2(20) null
EUID VARCHAR2(15) null
EUID_AUX VARCHAR2(15) null
FUNCTION VARCHAR2(32) not null
DETAIL VARCHAR2(120) null
CREATE_DATE DATE not null
CREATE_BY VARCHAR2(20) not null
PK_SBYN_AUDIT <pk>
SBYN_APPL
APPL_ID NUMBER(10) <pk> not null
CODE VARCHAR2(8) not null
DESCR VARCHAR2(30) not null
READ_ONLY CHAR not null
CREATE_DATE DATE not null
CREATE_USERID VARCHAR2(20) not null
PK_UP_SBYN_APPL <pk>
SBYN_POTENTIALDUPLICATES
POTENTIALDUPLICATEID VARCHAR2(20) <pk> not null
WEIGHT VARCHAR2(20) null
TYPE VARCHAR2(15) null
DESCRIPTION VARCHAR2(120) null
STATUS VARCHAR2(15) null
HIGHMATCHFLAG VARCHAR2(15) null
RESOLVEDUSER VARCHAR2(30) null
RESOLVEDDATE DATE null
RESOLVEDCOMMENT VARCHAR2(120) null
EUID2 VARCHAR2(20) null
TRANSACTIONNUMBER VARCHAR2(20) null
EUID1 VARCHAR2(20) null
PK_POTENTIALDUPLICATES <pk>
SBYN_TRANSACTION
TRANSACTIONNUMBER VARCHAR2(20) <pk,ak> not null
LID1 VARCHAR2(25) null
LID2 VARCHAR2(25) null
EUID1 VARCHAR2(20) null
EUID2 VARCHAR2(20) <ak> null
FUNCTION VARCHAR2(20) null
SYSTEMUSER VARCHAR2(30) null
TIMESTAMP TIMESTAMP null
DELTA BLOB null
SYSTEMCODE VARCHAR2(20) null
LID VARCHAR2(25) null
EUID VARCHAR2(20) <ak> null
AK_TRANSACTION <ak>
PK_TRANSACTION <pk>
FK_SBYN_MERGE
FK_AM_TRANSACTIONNUMBER
SBYN_MERGE
MERGE_ID VARCHAR2(20) <pk> not null
KEPT_EUID VARCHAR2(20) <fk> not null
MERGED_EUID VARCHAR2(20) <fk> null
MERGE_TRANSACTIONNUM VARCHAR2(20) <fk> not null
UNMERGE_TRANSACTIONNUM VARCHAR2(20) null
PK_SBYN_MERGE <pk>
SBYN_ASSUMEDMATCH
ASSUMEDMATCHID VARCHAR2(20) null
EUID VARCHAR2(20) null
SYSTEMCODE VARCHAR2(20) null
LID VARCHAR2(25) null
WEIGHT VARCHAR2(20) null
TRANSACTIONNUMBER VARCHAR2(20) <fk> null
FK_COMM_DET_COMM_HEAD
SBYN_COMMON_HEADER
COMMON_HEADER_ID NUMBER(10) <pk> not null
APPL_ID NUMBER(10) not null
CODE VARCHAR2(8) not null
DESCR VARCHAR2(50) not null
READ_ONLY CHAR not null
MAX_INPUT_LEN NUMBER(10) not null
TYP_TABLE_CODE VARCHAR2(3) not null
CREATE_DATE DATE not null
CREATE_USERID VARCHAR2(20) not null
PK_SBYN_COMMON_HEADER <pk>
SBYN_COMMON_DETAIL
COMMON_DETAIL_ID NUMBER(10) <pk> not null
COMMON_HEADER_ID NUMBER(10) <fk> not null
CODE VARCHAR2(20) not null
DESCR VARCHAR2(50) not null
READ_ONLY CHAR not null
CREATE_DATE DATE not null
CREATE_USERID VARCHAR2(20) not null
PK_SBYN_COMMON_DETAIL <pk>

Chapter 4

# Working with the Java API

eView Studio provides several Java classes and methods to use in the Collaborations for an eView Studio Project. The eView Studio API is specifically designed to help you maintain the integrity of the data in the database by providing specific methods for updating, adding, and merging records in the database.

**What's in This Chapter**



## 4.1 Overview

This chapter provides an overview of the Java API for eView Studio, and describes the dynamic classes and methods that are generated based on the object structure of the master index. For detailed information about the static classes and methods, refer to the eView Studio Javadocs, provided as a download through the Enterprise Manager. Unless otherwise noted, all classes and methods described in this chapter are **public**. Methods inherited from classes other than those described in this chapter are listed, but not described.

## 4.2 Java Class Types

eView Studio provides a set of static API classes that can be used with any object structure and any eView Studio master index. eView Studio also generates several dynamic API classes that are specific to the object structure of each master index. The dynamic classes contain similar methods, but the number and names of methods change depending on the object structure. In addition, several methods are generated in an OTD for use in external system Collaborations and another set of methods is generated for use within an eInsight Business Process.

### Static Classes

Static classes provide the methods you need to perform basic data cleansing functions against incoming data, such as performing searches, reviewing potential duplicates, adding and updating records, and merging and unmerging records. The primary class containing these functions is the MasterController class, which includes the **executeMatch** method. Several classes support the MasterController class by defining additional objects and functions. Documentation for the static methods is provided in Javadoc format. The static classes are listed and described in the Javadocs provided with eView Studio.

### Dynamic Object Classes

When you generate an eView Studio Project, several dynamic methods are created that are specific to the object structure defined for the master index. This includes classes that define each object in the object structure and that allow you to work with the data in each object. If the object structure is modified, regenerating the Project updates the dynamic methods for the new structure.

### Dynamic OTD Methods

When you generate an eView Studio Project, a method OTD is created that contains Java methods to help you define how records are processed into the master index database from external systems. Like the dynamic object classes, these methods are based on the object structure. They rely on the dynamic object classes to create the objects in the master index and to define and retrieve field values for those objects. Regenerating the eView Studio application updates the methods to reflect any changes to the object structure.

### Dynamic Business Process Methods

When you generate an eView Studio Project, several methods are listed under the method OTD folder that are designed for use within an eInsight Business Process. These methods are a subset of the eView Studio API that can be used to query a master index database using a web-based interface. As with the dynamic OTD methods, the Business Process methods are also based on the defined object structure. Regenerating a Project updates these methods to reflect any changes to the object structure.

## 4.3 Dynamic Object Classes

Several dynamic classes are generated for each eView Studio Project for use in Collaborations. One class is created for each parent and child object defined in the Object Structure.

## 4.3.1 Parent Object Classes

A Java class is created to represent the parent object defined in the object definition of the master index. The methods in these classes provide the ability to create a parent object and to set or retrieve the field values for that object.

The name of the parent object class is the same as the name of each parent object, with the word "Object" appended. For example, if the parent object in your object structure is "Person", the name of the parent class is "PersonObject". The methods in this class include a constructor method for the parent object, and get and set methods for each field defined for the parent object. Most methods have dynamic names based on the name of the parent object and the fields and child objects defined for that object. In the following methods described for the parent object, <ObjectName> indicates the name of the parent object, <Child> indicates the name of a child object, and <Field> indicates the name of a field defined for the parent object.

### Definition

```
class <ObjectName>Object
```

### Methods



---

## <ObjectName>Object

### Description

**<ObjectName>Object** is the user-defined object name class. You can instantiate this class to create a new instance of the parent object class.

### Syntax

```
new <ObjectName>Object()
```

### Parameters

None.

### Returns

An instance of the parent object.

### Throws

ObjectException

## add<Child>

### Description

**add<Child>** associates a new child object with the parent object. The new child object is of the type specified in the method name. For example, to associate a new address object with a parent object, call "addAddress".

### Syntax

```
void add<Child>(<Child>Object <child>)
```

***Note:*** *The type of object passed as a parameter depends on the child object to associate with the parent object. For example, the syntax for associating an address object is as follows:* `void addAddress(AddressObject address).`

### Parameters

| Name | Type | Description |
|---|---|---|
| <child> | <Child>Object | A child object to associate with the parent object. The name and type of the parameter is specified by the child object name. |

### Returns

None.

### Throws

ObjectException

## addSecondaryObject

### Description

**addSecondaryObject** associates a new child object with the parent object. The object node passed as the parameter defines the child object type.

### Syntax

```
void addSecondaryObject(ObjectNode obj)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| obj | ObjectNode | An ObjectNode representing the child object to associate with the parent object. |

### Returns

None.

### Throws

SystemObjectException

---

## copy

### Description

**copy** copies the structure and field values of the specified object node.

### Syntax

```
ObjectNode copy()
```

### Parameters

None.

### Returns

A copy of the object node.

### Throws

ObjectException

---

## dropSecondaryObject

### Description

**dropSecondaryObject** removes a child object associated with the parent object (in the memory copy of the object). The object node passed in as the parameter defines the child object type. Use this method to remove a child object before it has been committed to the database. This method is similar to ObjectNode.removeChild. Use ObjectNode.deleteChild to remove the child object permanently from the database.

### Syntax

```
void dropSecondaryObject(ObjectNode obj)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| obj | ObjectNode | An ObjectNode representing the child object to drop from the parent object. |

### Returns

None.

### Throws

SystemObjectException

## get<ObjectName>Id

### Description

**get<ObjectName>Id** retrieves the unique identification code (primary key) of the object, as assigned by the master index.

### Syntax

```
String get<ObjectName>Id()
```

### Parameters

None.

### Returns

A string containing the unique ID of the parent object.

### Throws

ObjectException

## get<Child>

### Description

**get<Child>** retrieves all child objects associated with the parent object that are of the type specified in the method name. For example, to retrieve all address objects associated with a parent object, call “getAddress”.

### Syntax

```
Collection get<Child>()
```

### Parameters

None.

### Returns

A collection of child objects of the type specified in the method name.

### Throws

None.

## get<Field>

### Description

**get<Field>** retrieves the value of the field specified in the method name. Each getter method is named according to the fields defined for the parent object. For example, if the parent object contains a field named “FirstName”, the getter method for this field is named “getFirstName”.

### Syntax

```
String get<Field>()
```

***Note:*** *The syntax for the getter methods depends of the type of data specified for the field in the object structure. For example, the getter method for a date field would have the following syntax:* `Date get<Field>`.

### Parameters

None.

### Returns

The value of the specified field. The type of data returned depends on the data type defined in the object definition.

### Throws

ObjectException

---

## getChildTags

### Description

**getChildTags** retrieves a list of the names of all child object types defined for the object structure.

### Syntax

```
ArrayList getChildTags()
```

### Parameters

None.

### Returns

An array of child object names.

### Throws

None

---

## getMetaData

### Description

**getMetaData** retrieves the metadata for the parent object.

### Syntax

```
AttributeMetaData getMetaData()
```

### Parameters

None.

### Returns

An AttributeMetaData object containing the parent object's metadata.

### Throws

None.

## getSecondaryObject

### Description

**getSecondaryObject** retrieves all child objects that are associated with the parent object and are of the specified type.

### Syntax

```
Collection getSecondaryObject(String type)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| type | String | The child type of the objects to retrieve. |

### Returns

A collection of child objects of the specified type.

### Throws

SystemObjectException

## isAdded

### Description

**isAdded** retrieves the value of the "add flag" for the parent object. The add flag indicates whether the object will be added.

### Syntax

```
String isAdded()
```

### Parameters

None.

### Returns

A Boolean value indicating whether the add flag is set to true or false.

### Throws

ObjectException

## isRemoved

### Description

**isRemoved** retrieves the value of the "remove flag" for the parent object. The remove flag indicates whether the object will be removed.

### Syntax

```
String isRemoved()
```

### Parameters

None.

### Returns

A Boolean value indicating whether the remove flag is set to true or false.

### Throws

ObjectException

## isUpdated

### Description

**isUpdated** retrieves the value of the "update flag" for the parent object. The updated flag indicates whether the object will be updated.

### Syntax

```
String isUpdated()
```

### Parameters

None.

### Returns

A Boolean value indicating whether the update flag is set to true or false.

### Throws

ObjectException

## set<ObjectName>Id

### Description

**set<ObjectName>Id** sets the value of the **<ObjectName>Id** field in the parent object.

### Syntax

```
void set<ObjectName>Id(Object value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | Object | An object containing the value of the **<ObjectName>Id** field. |

### Returns

None.

### Throws

ObjectException

## set<Field>

### Description

**set<Field>** sets the value of the field specified in the method name. Each setter method is named according to the fields defined for the parent object. For example, if the parent object contains a field named "DateOfBirth", the setter method for this field is named "setDateOfBirth". A setter method is created for each field in the parent object, including any fields containing standardized or phonetic data.

### Syntax

```
void set<Field>(Object value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | Object | An object containing the value of the field specified by the method name. |

### Returns

None.

### Throws

ObjectException

## setAddFlag

### Description

**setAddFlag** sets the "add flag" of the parent object. The add flag indicates whether the object will be added.

### Syntax

```
void setAddFlag(boolean flag)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| flag | Boolean | An indicator of whether the add flag is set to true or false. |

### Returns

None.

### Throws

None.

## setRemoveFlag

### Description

**setRemoveFlag** sets the "remove flag" of the parent object. The remove flag indicates whether the object will be removed.

### Syntax

```
void setRemoveFlag(boolean e)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| e | Boolean | An indicator of whether the remove flag is set to true or false. |

### Returns

None.

### Throws

None.

## setUpdateFlag

### Description

**setUpdateFlag** sets the "update flag" of the parent object. The update flag indicates whether the object will be updated.

### Syntax

```
void setUpdateFlag(boolean flag)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| flag | Boolean | An indicator of whether the update flag is set to true or false. |

### Returns

None.

### Throws

None.

### structCopy

#### Description

**structCopy** copies the structure of the specified object node.

#### Syntax

```
ObjectNode structCopy()
```

#### Parameters

None.

#### Returns

A copy of the structure of the object node.

#### Throws

ObjectException

## 4.3.2 Child Object Classes

One Java class is created for each child object defined in the object definition of the master index. If the object definition contains three child objects, three child object classes are created. The methods in these classes provide the ability to create the child objects and to set or retrieve the field values for those objects.

The name of each child object class is the same as the name of the child object, with the word "Object" appended. For example, if a child object in your object structure is named "Address", the name of the corresponding child class is "AddressObject". The methods in these classes include a constructor method for the child object, and get and set methods for each field defined for the child object. Most methods have dynamic names based on the name of the child object and the fields defined for that object. In the methods listed below, <Child> indicates the name of the child object and <Field> indicates the name of each field defined for that object.

#### Definition

```
class <Child>Object
```

#### Methods

## <Child>Object

### Description

**<Child>Object** is the child object class. This class can be instantiated to create a new instance of a child object class.

### Syntax

```
new <Child>Object()
```

### Parameters

None.

### Returns

An instance of the child object.

### Throws

ObjectException

## copy

### Description

**copy** copies the structure and field values of the specified object node.

### Syntax

```
ObjectNode copy()
```

### Parameters

None.

### Returns

A copy of the object node.

### Throws

ObjectException

## get<Child>Id

### Description

**get<Child>Id** retrieves the unique identification code (primary key) of the object, as assigned by the master index.

### Syntax

```
String get<Child>Id()
```

### Parameters

None.

### Returns

A string containing the unique ID of the child object.

### Throws

ObjectException

## get<Field>

### Description

**get<Field>** retrieves the value of the field specified in the method name. Each getter method is named according to the fields defined for the child object. For example, if the child object contains a field named "TelephoneNumber", the getter method for this field is named "getTelephoneNumber". A getter method is created for each field in the object, including fields that store standardized or phonetic data.

### Syntax

```
String get<Field>()
```

***Note:*** *The syntax for the getter methods depends on the type of data specified for the field in the object structure. For example, the getter method for a date field would have the following syntax:* `Date` *get<Field>.*

### Parameters

None.

### Returns

The value of the specified field. The type of data returned depends on the data type defined in the object definition.

### Throws

ObjectException

## getMetaData

### Description

**getMetaData** retrieves the metadata for the child object.

### Syntax

```
AttributeMetaData getMetaData()
```

### Parameters

None.

### Returns

An AttributeMetaData object containing the child object's metadata.

### Throws

None.

## getParentTag

### Description

**getParentTag** retrieves the name of the parent object of the child object.

### Syntax

```
String getParentTag()
```

### Parameters

None.

### Returns

A string containing the name of the parent object.

### Throws

None.

## set<Child>Id

### Description

**set<Child>Id** sets the value of the **<Child>Id** field in the child object.

### Syntax

```
void set<Child>Id(Object value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | Object | An object containing the value of the **<Child>Id** field. |

### Returns

None.

### Throws

ObjectException

## set<Field>

### Description

**set<Field>** sets the value of the field specified in the method name. Each setter method is named according to the fields defined for the parent object. For example, if the parent

object contains a field named “CompanyName”, the setter method for this field is named “setCompanyName”.

**Syntax**

```
void set<Field>(Object value)
```

**Parameters**

| Name | Type | Description |
|---|---|---|
| value | Object | An object containing the value of the field specified by the method name. |

**Returns**

None.

**Throws**

ObjectException

### structCopy

**Description**

**structCopy** copies the structure of the specified object node.

**Syntax**

```
ObjectNode structCopy()
```

**Parameters**

None.

**Returns**

A copy of the structure of the object node.

**Throws**

ObjectException

## 4.4 Dynamic OTD Methods

A set of Java methods are created in an OTD for use in the master index Collaborations. These methods wrap static Java API methods, allowing them to work with the dynamic object classes. Many OTD methods return objects of the dynamic object type, or they use these objects as parameters. In the following methods described for the OTD methods, <ObjectName> indicates the name of the parent object.

## activateEnterpriseRecord

### Description

**activateEnterpriseRecord** changes the status of a deactivated enterprise object back to active.

### Syntax

```
void activateEnterpriseRecord(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object to activate. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## activateSystemRecord

### Description

**activateSystemRecord** changes the status of a deactivated system object back to active.

### Syntax

```
void activateSystemRecord(String systemCode, String localId)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| systemCode | String | The processing code of the system associated with the system record to be activated. |
| localID | String | The local identifier associated with the system record to be activated. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## addSystemRecord

### Description

**addSystemRecord** adds the system object to the enterprise object associated with the specified EUID.

### Syntax

```
void addSystemRecord(String euid, SystemObjectBean systemObject)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object to which you want to add the system object. |
| systemObject | SystemObjectBean | The Bean for the system object to be added to the enterprise object. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## deactivateEnterpriseRecord

### Description

**deactivateEnterpriseRecord** changes the status of an active enterprise object to inactive.

### Syntax

```
void deactivateEnterpriseRecord(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object to deactivate. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## deactivateSystemRecord

### Description

**deactivateSystemRecord** changes the status of an active system object to inactive.

### Syntax

```
void deactivateSystemRecord(String systemCode, String localId)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| systemCode | String | The system code of the system object to deactivate. |
| localid | String | The local ID of the system object to deactivate. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## executeMatch

**executeMatch** is one of two methods you can call to process an incoming system object based on the configuration defined for the eView Studio Manager Service and associated runtime components (the second method is **"executeMatchUpdate" on page 80**). This process searches for possible matches in the database and contains the logic to add a new record or update existing records in the database. One of the two execute match methods should be used for inserting or updating a record in the database.

The following runtime components configure **executeMatch**.

- The Query Builder defines the blocking queries used for matching.
- The Threshold file specifies which blocking query to use and specifies matching parameters, including duplicate and match thresholds.
- The pass controller and block picker classes specify how the blocking query is executed.

***Important:*** *If* **executeMatch** *determines that an existing system record will be updated by the incoming record, it replaces the entire existing record with the information in the new record. This could result in loss of data; for example, if the incoming record does not include all address information, existing address information could be lost. To avoid this, use the* **executeMatchUpdate** *method instead.*

### Syntax

```
MatchColResult executeMatch(SystemObjectBean systemObject)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| systemObject | SystemObjectBean | The Bean for the system object to be added to or updated in the enterprise object. |

### Returns

A match result object containing the results of the matching process.

### Throws

RemoteException
ProcessingException
UserException

## executeMatchUpdate

Like **"executeMatch" on page 80**, **executeMatchUpdate** processes the system object based on the configuration defined for the eView Studio Manager Service and associated runtime components. It is configured by the same runtime components as

**executeMatch**. One of the two execute match methods should be used for inserting or updating a record in the database.

The primary difference between these two methods is that when **executeMatchUpdate** finds that an incoming record matches an existing record, only the changed data is updated. With **executeMatch**, the entire existing record would be replaced by the incoming record. The **executeMatchUpdate** method differs from **executeMatch** in the following ways:

- If a partial record is received, **executeMatchUpdate** only updates fields whose values are different in the incoming record. Unless the **clearFieldIndicator** field is used, empty or null fields in the incoming record do not update existing values.
- The **clearFieldIndicator** field can be used to null out specific fields.
- Child objects in the existing record are not deleted if they are not present in the incoming record.
- Child objects in the existing record are updated if the same key field value is found in both the incoming and existing records.
- To allow a child object to be removed from the parent object when using **executeMatchUpdate**, a new "delete" method is added to each child object bean .

### Syntax

```
MatchColResult executeMatchUpdate(SystemObjectbean systemObject)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| systemObject | SystemObjectBean | The Bean for the system object to be added to or updated in the enterprise object. |

### Returns

A match result object containing the results of the matching process.

### Throws

RemoteException
ProcessingException
UserException

## findMasterController

**findMasterController** obtains a handle to the MasterController class, providing access to all of the methods of that class. For more information about the available methods in this class, see the Javadoc provided with eView Studio.

### Syntax

```
MasterController findMasterController()
```

### Parameters

None.

### Returns

A handle to the **com.stc.eindex.ejb.master.MasterController** class.

### Throws

None.

## getEnterpriseRecordByEUID

### Description

**getEnterpriseRecordByEUID** returns the enterprise object associated with the specified EUID.

### Syntax

```
Enterprise<ObjectName> getEnterpriseRecordByEUID(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object you want to retrieve. |

### Returns

An enterprise object associated with the specified EUID or null if the enterprise object is not found.

### Throws

RemoteException
ProcessingException
UserException

## getEnterpriseRecordByLID

### Description

**getEnterpriseRecordByLID** returns the enterprise object associated with the specified system code and local ID pair.

### Syntax

```
Enterprise<ObjectName> getEnterpriseRecordByLID(String system, String
localid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| system | String | The system code of a system associated with the enterprise object to find. |
| localid | String | A local ID associated with the specified system. |

### Returns

An enterprise object or null if the enterprise object is not found.

### Throws

RemoteException
ProcessingException
UserException

## getEUID

### Description

**getEUID** returns the EUID of the enterprise object associated with the specified system code and local ID.

### Syntax

```
String getEUID(String system, String localid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| system | String | A known system code for the enterprise object. |
| localid | String | The local ID corresponding with the given system. |

### Returns

A string containing an EUID or null if the EUID is not found.

### Throws

RemoteException
ProcessingException
UserException

## getLIDs

### Description

**getLIDs** retrieves the local ID and system pairs associated with the given EUID.

### Syntax

```
System<ObjectName>PK[] getLIDs(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object whose local ID and system pairs you want to retrieve. |

### Returns

An array of system object keys (System<ObjectName>PK objects) or null if no results are found.

### Throws

RemoteException
ProcessingException
UserException

## getLIDsByStatus

### Description

**getLIDsByStatus** retrieves the local ID and system pairs that are of the specified status and that are associated with the given EUID.

### Syntax

```
System<ObjectName>PK[] getLIDsByStatus(String euid, String status)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object whose local ID and system pairs to retrieve. |
| status | String | The status of the local ID and system pairs to retrieve. |

### Returns

An array of system object keys (System<ObjectName>PK objects) or null if no system object keys are found.

### Throws

RemoteException
ProcessingException
UserException

## getSBR

### Description

**getSBR** retrieves the single best record (SBR) associated with the specified EUID.

### Syntax

```
SBR<ObjectName> getSBR(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object whose SBR you want to retrieve. |

### Returns

An SBR object or null if no SBR associated with the specified EUID is found.

### Throws

RemoteException
ProcessingException
UserException

## getSystemRecord

### Description

**getSystemRecord** retrieves the system object associated with the given system code and local ID pair.

### Syntax

```
System<ObjectName> getSystemRecord(String system, String localid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| system | String | The system code of the system object to retrieve. |
| localid | String | The local ID of the system object to retrieve. |

### Returns

A system object containing the results of the search or null if no system objects are found.

### Throws

RemoteException
ProcessingException
UserException

## getSystemRecordsByEUID

### Description

**getSystemRecordsByEUID** returns the active system objects associated with the specified EUID.

### Syntax

```
System<ObjectName>[] getSystemRecordsByEUID(String euid)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object whose system objects you want to retrieve. |

### Returns

An array of system objects associated with the specified EUID.

### Throws

RemoteException
ProcessingException
UserException

## getSystemRecordsByEUIDStatus

### Description

**getSystemRecordsByEUIDStatus** returns the system objects of the specified status that are associated with the given EUID.

### Syntax

```
System<ObjectName>[] getSystemRecordsByEUIDStatus(String euid, String
status)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| euid | String | The EUID of the enterprise object whose system objects you want to retrieve. |
| status | String | The status of the system objects you want to retrieve. |

### Returns

An array of system objects associated with the specified EUID and status, or null if no system objects are found.

### Throws

RemoteException
ProcessingException
UserException

## lookupLIDs

### Description

**lookupLIDs** first looks up the EUID associated with the specified source system and source local ID. It then retrieves the local ID and system pairs of the specified status that are associated with that EUID and are from the specified destination system. Note that both systems must be of the specified status or an error will occur.

### Syntax

```
System<ObjectName>PK[] lookupLIDs(String sourceSystem, String
sourceLID, String destSystem, String status)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| sourceSystem | String | The system code of the known system and local ID pair. |
| sourceLID | String | The local ID of the known system and local ID pair. |
| destSystem | String | The system from which the local ID and system pairs to retrieve originated. |
| status | String | The status of the local ID and system pairs to retrieve. |

### Returns

An array of system object keys (System<ObjectName>PK objects).

### Throws

RemoteException
ProcessingException
UserException

## mergeEnterpriseRecord

### Description

**mergeEnterpriseRecord** merges two enterprise objects, specified by their EUIDs.

### Syntax

```
Merge<ObjectName>Result mergeEnterpriseRecord(String fromEUID, String
toEUID, boolean calculateOnly)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| fromEUID | String | The EUID of the enterprise object that will not survive the merge. |
| toEUID | String | The EUID of the enterprise object that will survive the merge. |
| calculateOnly | boolean | An indicator of whether to commit changes to the database or to simply compute the merge results. Specify **false** to commit the changes. |

### Returns

A merge result object containing the results of the merge.

### Throws

RemoteException
ProcessingException
UserException

## mergeSystemRecord

### Description

**mergeSystemRecord** merges two system objects, specified by their local IDs, from the specified system. The system objects can belong to a single enterprise object or to two different enterprise objects.

### Syntax

```
Merge<ObjectName>Result mergeSystemRecord(String sourceSystem, String
sourceLID, String destLID, boolean calculateOnly)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| sourceSystem | String | The processing code of the system to which the two system objects belong. |
| sourceLID | String | The local ID of the system object that will not survive the merge. |
| destLID | String | The local ID of the system object that will survive the merge. |
| calculateOnly | boolean | An indicator of whether to commit changes to the database or to simply compute the merge results. Specify **false** to commit the changes. |

### Returns

A merge result object containing the results of the merge.

### Throws

RemoteException
ProcessingException
UserException

## searchBlock

### Description

**searchBlock** performs a blocking query against the database using the blocking query specified in the Threshold file and the criteria contained in the specified object bean.

### Syntax

```
Search<ObjectName>Result searchBlock(<ObjectName>Bean searchCriteria)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| searchCriteria | <ObjectName>Bean | The search criteria for the blocking query. |

### Returns

The results of the search.

### Throws

RemoteException
ProcessingException
UserException

## searchExact

### Description

**searchExact** performs an exact match search using the criteria specified in the object bean. Only records that exactly match the search criteria are returned in the search results object.

### Syntax

```
Search<ObjectName>Result searchExact(<ObjectName>Bean searchCriteria)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| searchCriteria | <ObjectName>Bean | The search criteria for the exact match search. |

### Returns

The results of the search stored in a Search<ObjectName>Result object.

### Throws

RemoteException
ProcessingException
UserException

## searchPhonetic

### Description

**searchPhonetic** performs search using phonetic values for some of the criteria specified in the object bean. This type of search allows for typographical errors and misspellings.

### Syntax

```
Search<ObjectName>Result searchPhonetic(<ObjectName>Bean
searchCriteria)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| searchCriteria | <ObjectName>Bean | The search criteria for the phonetic search. |

### Returns

The results of the search.

### Throws

RemoteException
ProcessingException
UserException

## transferSystemRecord

### Description

**transferSystemRecord** transfers a system record from one enterprise record to another enterprise record.

### Syntax

```
void transferSystemRecord(String toEUID, String systemCode, String
localID)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| toEUID | String | The EUID of the enterprise record to which the system record will be transferred. |
| systemCode | String | The processing code of the system record to transfer. |
| localID | String | The local ID of the system record to transfer. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## updateEnterpriseRecord

### Description

**updateEnterpriseRecord** updates the fields in an existing enterprise object with the values specified in the fields the enterprise object passed in as a parameter. When updating an enterprise object, attempting to change a field that is not updateable will cause an exception. This method does not update the SBR; the survivor calculator updates the SBR once the changes are made to the associated system records.

### Syntax

```
void updateEnterpriseRecord(Enterprise<ObjectName> enterpriseObject)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| enterpriseObject | Enterprise<ObjectName> | The enterprise object containing the values that will update the existing enterprise object. |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

## updateSystemRecord

### Description

**updateSystemRecord** updates the existing system object in the database with the given system object.

### Syntax

```
void updateSystemRecord(System<ObjectName> systemObject)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| systemObject | System<ObjectName> | The system object to be updated to the enterprise object.<br>**Note:** *In the method OTD, "Object" in the parameter name is changed to the name of the parent object. For example, if the parent object is "Person", the name of this parameter will appear as "systemPerson".* |

### Returns

None.

### Throws

RemoteException
ProcessingException
UserException

# 4.5 Dynamic Business Process Methods

A set of Java methods are created in the eView Studio Project for use in eInsight Business Processes. These methods include a subset of the dynamic OTD methods, which are documented above. Many of these methods return objects of the dynamic object type, or they use these objects as parameters. In the descriptions for these methods, <ObjectName> indicates the name of the parent object.

The following methods are available for Business Processes. They are described in the previous section, **"Dynamic OTD Methods"**.



## 4.6 Helper Classes

Helper classes include objects that can be passed as parameters to an OTD method or a Business Process method. They also include the methods that you can access through the system<ObjectName> variable in the eView Studio Collaboration (where <ObjectName> is the name of a parent object. The helper classes include:



### 4.6.1 System<ObjectName>

In order to run **executeMatch** in a Java Collaboration, you must define a variable of the class type System<ObjectName>, where <ObjectName> is the name of a parent object. This class is passed as a parameter to **executeMatch**. The class contains a constructor method and several get and set methods for system fields. It also includes one field that specifies the value of the "clear field character" (for more information, see **"ClearFieldIndicator Field" on page 94**). In the methods described in this section, <ObjectName> indicates the name of the parent object, <Child> indicates the name of a child object, and <Field> indicates the name of a field defined for the parent object.

#### Definition

```
class System<ObjectName>
```

#### Fields

### Methods



### Inherited Methods

The following methods are inherited from java.lang.Object.

- equals
- hashcode
- notify
- notifyAll
- toString
- wait()
- wait(long arg)
- wait(long timeout, int nanos)

## ClearFieldIndicator Field

The **ClearFieldIndicator** field allows you to specify whether to treat a field in the parent object as null when performing an update from an external system. When an update is performed in the master index, empty fields typically do not overwrite the value of an existing field. You can specify to nullify a field that already has an existing value in the master index by entering an indicator in that field. This indicator is specified by the **ClearFieldIndicator** field. By default, the **ClearFieldIndicator** field is set to double-quotes (“”), so if a field is set to double-quotes, that field will be blanked out. If you do not want to use this feature, set the clear field indicator to null.

## System<ObjectName>

### Description

**System<ObjectName>** is the user-defined system class for the parent object. You can instantiate this class to create a new instance of the system class.

### Syntax

```
new System<ObjectName>()
```

### Parameters

None.

### Returns

An instance of the System<ObjectName> class.

### Throws

ObjectException

---

## getClearFieldIndicator

### Description

**getClearFieldIndicator** retrieves the value of the **ClearFieldIndicator** field.

### Syntax

```
Object getClearFieldIndicator()
```

### Parameters

None.

### Returns

An object containing the value of the **ClearFieldIndicator** field.

### Throws

None.

---

## get<Field>

### Description

**get<Field>** retrieves the value of the specified system field. There are getter methods for the following fields: LocalId, SystemCode, Status, CreateDateTime, CreateFunction, and CreateUser.

### Syntax

```
String get<Field>()
```

*or*

```
Date get<Field>()
```

### Parameters

None.

### Returns

The value of the specified field. The type of value returned depends on the field from which the value was retrieved.

### Throws

ObjectException

## get<ObjectName>

### Description

**get<ObjectName>** retrieves the parent object Java Bean for the system record (where <ObjectName> is the name of the parent object).

### Syntax

```
<ObjectName>Bean get<ObjectName>()
```

### Parameters

None.

### Returns

A Java Bean containing the parent object.

### Throws

None.

## setClearFieldIndicator

### Description

**setClearFieldIndicator** sets the value of the clear field character (in the **ClearFieldIndicator** field). By default, this is set to double quotes (“”).

### Syntax

```
void setClearFieldIndicator(String value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | String | The value that should be entered into a field to indicate that any existing values should be replaced with null. |

### Returns

None.

### Throws

None.

## set<Field>

### Description

**set<Field>** sets the value of the specified system field. There are setter methods for the following fields: LocalId, SystemCode, Status, CreateDateTime, CreateFunction, and CreateUser.

### Syntax

```
void set<Field>(value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | varies | The value to set in the specified field. The type of value depends on the field into which the value is being set. |

### Returns

None.

### Throws

ObjectException

---

## set<ObjectName>

### Description

**set<ObjectName>** sets the parent object Java Bean for the system record (where <ObjectName> is the name of the parent object).

### Syntax

```
void set<ObjectName>(<ObjectName>Bean object)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| object | <ObjectName>Bean | The Java Bean for the parent object. |

### Returns

None.

### Throws

ObjectException

# 4.6.2 Parent Beans

A Java Bean is created to represent each parent object defined in the object definition of the master index. The methods in these classes provide the ability to create a parent object Bean and to set or retrieve the field values for that object Bean.

The name of each parent object Bean class is the same as the name of each parent object, with the word “Bean” appended. For example, if a parent object in your object structure is “Person”, the name of the associated parent Bean class is “PersonBean”. The methods in this class include a constructor method for the parent object Bean, and get and set methods for each field defined for the parent object. Most methods have dynamic names based on the name of the parent object and the fields and child objects defined

for that object. In the methods described in this section, <ObjectName> indicates the name of the parent object, <Child> indicates the name of a child object, and <Field> indicates the name of a field defined for the parent object.

### Definition

```
final class <ObjectName>Bean
```

### Methods



### Inherited Methods

The following methods are inherited from java.lang.Object.

- equals
- hashcode
- notify
- notifyAll
- toString
- wait()
- wait(long arg)
- wait(long timeout, int nanos)

## <ObjectName>Bean

### Description

**<ObjectName>Bean** is the user-defined object Bean class. You can instantiate this class to create a new instance of the parent object Bean class.

### Syntax

```
new <ObjectName>Bean()
```

### Parameters

None.

### Returns

An instance of the parent object Bean.

### Throws

ObjectException

---

## count<Child>

### Description

**count<Child>** returns the total number of child objects contained in a system object. The type of child object is specified by the method name (such as Phone or Address).

### Syntax

```
int count<Child>()
```

### Parameters

None.

### Returns

An integer indicating the number of child objects in a collection.

### Throws

None.

---

## countChildren

### Description

**countChildren** returns a count of the total number of child objects belonging to a system object.

### Syntax

```
int countChildren()
```

### Parameters

None.

### Returns

An integer representing the total number of child objects.

### Throws

None.

---

## countChildren

### Description

**countChildren** returns a count of the total number of child objects of a specific type that belong to a system object.

### Syntax

```
int countChildren(String type)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| type | String | The type of child object to count, such as Phone or Address. |

### Returns

An integer representing the total number of child objects of the specified type.

### Throws

None.

## delete<Child>

### Description

**delete<Child>** removes the specified child object from the system object. The type of child object to remove is specified by the name of the method, and the specific child object to remove is specified by its unique identification code assigned by the master index.

### Syntax

```
void delete<Child>(String <Child>Id)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| <Child>Id | String | The unique identification code of the child object to delete. |

### Returns

None.

### Throws

ObjectException

## get<Child>

### Description

**get<Child>** retrieves an array of child object Beans. Each getter method is named according to the child objects defined for the parent object. For example, if the parent object contains a child object named “Address”, the getter method for this field is named “getAddress”. A getter method is created for each child object in the parent object.

### Syntax

```
<Child>Bean[] get<Child>()
```

### Parameters

None.

### Returns

An array of Java Beans containing the type of child objects specified by the method name.

### Throws

None.

## get<Child>

### Description

**get<Child>** retrieves a child object Bean based on its index in a list of child objects. Each getter method is named according to the child objects defined for the parent object. For example, if the parent object contains a child object named “Address”, the getter method for this field is named “getAddress”. A getter method is created for each child object in the parent object.

### Syntax

```
<Child>Bean get<Child>(int i)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| i | int | The index of the child object to retrieve from a list of child objects. |

### Returns

A Java Bean containing the child object specified by the index value. The method name indicates the type of child object returned.

### Throws

ObjectException

## get<Field>

### Description

**get<Field>** retrieves the value of the field specified in the method name. Each getter method is named according to the fields defined for the parent object. For example, if the parent object contains a field named “FirstName”, the getter method for this field is named “getFirstName”.

### Syntax

```
String get<Field>()
```

***Note:*** *The syntax for the getter methods depends of the type of data specified for the field in the object structure. For example, the getter method for a date field would have the following syntax:* `Date get<Field>`.

### Parameters

None.

### Returns

The value of the specified field. The type of data returned depends on the data type defined in the object definition.

### Throws

ObjectException

---

## get<ObjectName>Id

### Description

**get<ObjectName>Id** retrieves the unique identification code (primary key) of the object, as assigned by the master index.

### Syntax

```
String get<ObjectName>Id()
```

### Parameters

None.

### Returns

A string containing the unique ID of the parent object.

### Throws

ObjectException

---

## set<Child>

### Description

**set<Child>** adds a child object to the system object.

### Syntax

```
void set<Child>(int index, <Child>Bean child)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| index | integer | The index number for the new child object. |
| child | <Child>Bean | The Java Bean containing the child object to add. |

### Returns

None.

### Throws

None.

## set<Child>

### Description

**set<Child>** adds an array of child objects of one type to the system object.

### Syntax

```
void set<Child>(<Child>Bean[] children)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| children | <Child>Bean[] | The array of child objects to add. |

### Returns

None.

### Throws

None.

## set<Field>

### Description

**set<Field>** sets the value of the field specified in the method name. Each setter method is named according to the fields defined for the parent object. For example, if the parent object contains a field named “DateOfBirth”, the setter method for this field is named “setDateOfBirth”. A setter method is created for each field in the parent object, including any fields containing standardized or phonetic data.

### Syntax

```
void set<Field>(value)
```

**Parameters**

| Name | Type | Description |
|---|---|---|
| value | varies | The value of the field specified by the method name. The type of value depends on the field being populated. |

**Returns**

None.

**Throws**

ObjectException

## set<ObjectName>Id

**Description**

**set<ObjectName>Id** sets the value of the **<ObjectName>Id** field in the parent object.

***Note:*** *This ID is set internally by the master index. Do not set this field manually.*

**Syntax**

```
void set<ObjectName>Id(String value)
```

**Parameters**

| Name | Type | Description |
|---|---|---|
| value | String | The value of the **<ObjectName>Id** field. |

**Returns**

None.

**Throws**

ObjectException

# 4.6.3 Child Beans

A Java Bean is created to represent each child object defined in the object definition of the master index. The methods in these classes provide the ability to create a child object Bean and to set or retrieve the field values for that object Bean.

The name of each child object Bean class is the same as the name of each child object, with the word "Bean" appended. For example, if a child object in your object structure is named "Address", the name of the corresponding child class is "AddressBean". The methods in this class include a constructor method for the child object Bean, and get and set methods for each field defined for the child object. Most methods have dynamic

names based on the name of the child object and the fields defined for that object. In the following methods, <Child> indicates the name of a child object and <Field> indicates the name of a field defined for the child object.

### Definition

```
final class <Child>Bean
```

### Methods



### Inherited Methods

The following methods are inherited from java.lang.Object.

- equals
- hashcode
- notify
- notifyAll
- toString
- wait()
- wait(long arg)
- wait(long timeout, int nanos)

## <Child>Bean

### Description

**<Child>Bean** is the user-defined object Bean class. You can instantiate this class to create a new instance of the child object Bean class.

### Syntax

```
new <Child>Bean()
```

### Parameters

None.

### Returns

An instance of the child object Bean.

### Throws

ObjectException

## delete

### Description

**delete** removes the child object from the eView Studio object. This is used with the **executeMatchUpdate** function to update a system object by deleting one of the child objects from the eView Studio object.

### Syntax

```
void delete()
```

### Parameters

None.

### Returns

None.

### Throws

ObjectException

## get<Field>

### Description

**get<Field>** retrieves the value of the field specified in the method name. Each getter method is named according to the fields defined for the child object. For example, if the child object contains a field named "ZipCode", the getter method for this field is named "getZipCode".

### Syntax

```
String get<Field>()
```

***Note:*** *The syntax for the getter methods depends of the type of data specified for the field in the object structure. For example, the getter method for a date field would have the following syntax:* `Date get<Field>`.

### Parameters

None.

### Returns

The value of the specified field. The type of data returned depends on the data type defined in the object definition.

### Throws

ObjectException

## get<Child>Id

### Description

**get<Child>Id** retrieves the unique identification code (primary key) of the object, as assigned by the master index.

### Syntax

```
String get<Child>Id()
```

### Parameters

None.

### Returns

A string containing the unique ID of the child object.

### Throws

ObjectException

## set<Field>

### Description

**set<Field>** sets the value of the field specified in the method name. Each setter method is named according to the fields defined for the child object. For example, if the child object contains a field named "Address", the setter method for this field is named "setAddress". A setter method is created for each field in the child object, including any fields containing standardized or phonetic data.

### Syntax

```
void set<Field>(value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | varies | The value of the field specified by the method name. The type of value depends on the data type of the field being populated. |

### Returns

None.

### Throws

ObjectException

## set<Child>Id

### Description

**set<Child>Id** sets the value of the **<Child>Id** field in the child object.

***Note:*** *This ID is set internally by the master index. Do not set this field manually.*

### Syntax

```
void set<Child>Id(String value)
```

### Parameters

| Name | Type | Description |
|---|---|---|
| value | String | The value of the **<Child>Id** field. |

### Returns

None.

### Throws

ObjectException

## 4.6.4 DestinationEO

This class represents an enterprise object involved in a merge. This is the enterprise object whose EUID was kept in the final merge result record. A DestinationEO object is used when unmerging two enterprise objects.

### Definition

```
class DestinationEO
```

### Methods

- **getEnterprise<ObjectName>** on page 108

## getEnterprise<ObjectName>

### Description

**getEnterprise<ObjectName>** (where <ObjectName> is the name of the parent object) retrieves the surviving enterprise object from a merge transaction in order to allow the records to be unmerged.

### Syntax

```
Enterprise<ObjectName> getEnterprise<ObjectName>()
```

where <ObjectName> is the name of the parent object.

### Parameters

None.

### Returns

The surviving enterprise object from a merge transaction.

### Throws

ObjectException

## 4.6.5 Search<ObjectName>Result

This class represents the results of a search. A **Search<ObjectName>Result** object (where <ObjectName> is the name of the parent object) is returned as a result of a call to **"searchBlock"**, **"searchExact"**, or **"searchPhonetic"**.

### Definition

```
class Search<ObjectName>Result
```

### Methods



---

## getEUID

### Description

**getEUID** retrieves the EUID of a search result record.

### Syntax

```
String getEUID()
```

### Parameters

None.

### Returns

A string containing an EUID.

### Throws

None.

---

## getComparisonScore

### Description

**getComparisonScore** retrieves the weight that indicates how closely a search result record matched the search criteria.

### Syntax

```
Float getComparisonScore()
```

### Parameters

None.

### Returns

A comparison weight.

### Throws

None.

---

## get<ObjectName>

### Description

**get<ObjectName>** retrieves an object bean for a search result record.

### Syntax

```
<ObjectName>Bean get<ObjectName>()
```

where <ObjectName> is the name of the parent object.

### Parameters

None.

### Returns

An object bean.

### Throws

None.

# 4.6.6 SourceEO

This class represents an enterprise object involved in a merge. This is the enterprise object whose EUID was not kept in the final merge result record. A SourceEO object is used when unmerging two enterprise objects.

### Definition

```
class SourceEO
```

### Methods

- **getEnterprise<ObjectName>** on page 111

## getEnterprise<ObjectName>

### Description

**getEnterprise<ObjectName>** (where <ObjectName> is the name of the parent object) retrieves the non-surviving enterprise object from a merge transaction in order to allow the records to be unmerged.

### Syntax

```
Enterprise<ObjectName> getEnterprise<ObjectName>()
```

where <ObjectName> is the name of the parent object.

### Parameters

None.

### Returns

The non-surviving enterprise object from a merge transaction.

### Throws

None.

# 4.6.7 System<ObjectName>PK

This class represents the primary keys in a system object, which include the processing code for the originating system and the local ID of the object in that system. The class is named for the primary object. For example, if the primary object is named “Person”, this class is named “SystemPersonPK”. If the primary object is named “Company”, this class is named “SystemCompanyPK”. The methods in these classes provide the ability to create an instance of the class and to retrieve the system processing code and the local ID.

### Definition

```
class System<ObjectName>PK
```

where <ObjectName> is the name of the parent object.

### Methods



## System<ObjectName>PK

### Description

**System<ObjectName>PK** is the user-defined system primary key object. This object contains a system code and a local ID. Use this constructor method to create a new instance of a system primary key object.

### Syntax

```
new System<ObjectName>PK()
```

where <ObjectName> is the name of the parent object.

### Parameters

None.

### Returns

An instance of the system primary key object.

### Throws

None.

## getLocalId

### Description

**getLocalID** retrieves the local identifier from a system primary key object.

### Syntax

```
String getLocalId()
```

### Parameters

None.

### Returns

A string containing a local identifier.

### Throws

None.

## getSystemCode

### Description

**getSystemCode** retrieves the system's processing code from a system primary key object.

### Syntax

```
String getSystemCode()
```

### Parameters

None.

### Returns

A string containing the processing code for a system.

### Throws

None.

Appendix A

# Inbound Message Processing with Custom Logic

You can customize the way the execute match methods process inbound messages by defining custom plug-ins that include decision-point methods. This appendix describes the standard inbound processing logic as described in **"Inbound Message Processing Logic" on page 20**, but also includes how the decision-point methods alter the process.

**What's in This Chapter**



## A.1 Custom Decision Point Logic

There are several decision points in the match process that can be defined by custom logic using custom plug-ins. The steps below are identical to those outlined in **"Inbound Message Processing Logic" on page 20**, but include descriptions of the decision points, which are listed in italic font. If no custom logic is defined, the decision points default to "false", and processing is identical to that described in **"Inbound Message Processing Logic"**.

For more information about the methods and plug-ins, see "Customizing Match Processing Logic" in the *Sun SeeBeyond eView Studio User's Guide*. For detailed information about the methods, see the Javadocs provided with eView Studio. The methods are contained in the **ExecuteMatchLogics** class in the package **com.stc.eindex.master**.

1. When a message is received by the master index, a search is performed for any existing records with the same local ID and system as those contained in the message. This search only includes records with a status of **A**, meaning only active records are included. If a matching record is found, an existing EUID is returned.
2. If an existing record is found with the same system and local ID as the incoming message, it is assumed that the two records represent the same object. Using the EUID of the existing record, the master index performs an update of the record's information in the database.

   *Custom plug-in decision point: If disallowUpdate is set to true, the update is not allowed and a MatchResult object is returned with a result code of 12.*

- If the update does not make any changes to the object's information, no further processing is required and the existing EUID is returned.
- If there are changes to the object's information, the updated record is inserted into database, and the changes are recorded in the sbyn_transaction table.
- If there are changes to key fields (that is, fields used for matching or for the blocking query) and the update mode is set to pessimistic, potential duplicates are re-evaluated for the updated record.

3 If no records are found that match the record's system and local identifier, a second search is performed using the blocking query. A search is performed on each of the defined query blocks to retrieve a candidate pool of potential matches.

*Custom plug-in decision point: If bypassMatching is set to true, the search steps are bypassed and, if disallowAdd is set to false, a new record is added. If disallowAdd is set to true, the record is not added and a MatchResult object is returned with a result code of 11.*

Each record returned from the search is weighted using the fields defined for matching in the inbound message.

4 After the search is performed, the number of resulting records is calculated.

- If a record or records are returned from the search with a matching probability weight above the match threshold, the master index performs exact match processing (see Step 5).
- If no matching records are found, the inbound message is treated as a new record. A new EUID is generated and a new record is inserted into the database.

5 If records were found within the high match probability range, exact match processing is performed as follows:

- If only one record is returned from this search with a matching probability that is equal to or greater than the match threshold, additional checking is performed to verify whether the records originated from the same system (see Step 6).
- If more than one record is returned with a matching probability that is equal to or greater than the match threshold and exact matching is set to *false*, then the record with the highest matching probability is checked against the incoming message to see if they originated from the same system (see Step 6).
- If more than one record is returned with a matching probability that is equal to or greater than the match threshold and exact matching is *true*, a new EUID is generated and a new record is inserted into the database.

  *Custom plug-in decision point: If disallowAdd is set to true, the new record is not inserted and a MatchResult object is returned with a result code of 11.*

- If no record is returned from the database search, or if none of the matching records have a weight in the exact match range, a new EUID is generated and a new record is inserted into the database.

  *Custom plug-in decision point: If disallowAdd is set to true, the new record is not inserted and a MatchResult object is returned with a result code of 11.*

6 When records are checked for same system entries, the master index tries to retrieve an existing local ID using the system of the new record and the EUID of the record that has the highest match weight.

- If a local ID is found and same system matching is set to *true*, a new record is inserted, and the two records are considered to be potential duplicates. These records are marked as same system potential duplicates.

  *Custom plug-in decision point: If disallowAdd is set to true, the new record is not inserted and a MatchResult object is returned with a result code of 11.*

- If a local ID is found and same system matching is set to *false*, it is assumed that the two records represent the same object. Using the EUID of the existing record, the master index performs an update, following the process described in Step 2 earlier.

  *Custom plug-in decision point: If rejectAssumedMatch is set to true and disallowAdd is set to false, a new record is added; if disallowAdd is set to true, the new record is not inserted and a MatchResult object is returned with a result code of 11. If rejectAssumedMatch and disallowUpdate are set to false, the existing record is updated; if disallowUpdate is set to true, the update is not performed and a MatchResult object is returned with a result code of 13.*

- If no local ID is found, it is assumed that the two records represent the same object and an assumed match occurs. Using the EUID of the existing record, the master index performs an update, following the process described in Step 2 earlier.

  *Custom plug-in decision point: If rejectAssumedMatch is set to true and disallowAdd is set to false, a new record is added; if disallowAdd is set to true, the new record is not inserted and a MatchResult object is returned with a result code of 11. If rejectAssumedMatch and disallowUpdate are set to false, the existing record is updated; if disallowUpdate is set to true, the update is not performed and a MatchResult object is returned with a result code of 13.*

7 If a new record is inserted, all records that were returned from the blocking query are weighed against the new record using the matching algorithm. If a record is updated and the update mode is pessimistic, the same occurs for the updated record. If the matching probability weight of a record is greater than or equal to the potential duplicate threshold, the record is flagged as a potential duplicate (for more information about thresholds, see the *Sun SeeBeyond eView Studio Configuration Guide*).

# Glossary

**alphanumeric search**
A type of search that looks for records that precisely match the specified criteria. This type of search does not allow for misspellings or data entry errors, but does allow the use of wildcard characters.

**assumed match**
When the matching weight between two records is at or above a weight you specify and the records are from two different systems, (depending on the configuration of matching parameters) the objects are considered an assumed match and are automatically combined.

**Blocking Query**
Also known as a blocker query, this is used during matching to search the database for possible matches to a new or updated record. Blocking queries can also be used for searches done from the EDM.This query makes multiple passes against the database using different combinations of criteria, which are defined in the Candidate Select file.

**Candidate Select file**
The eView Studio configuration file that defines the queries you can perform from the Enterprise Data Manager (EDM) and the queries that are performed for matching.

**candidate selection**
The process of performing the blocking query for match processing. See *Blocking Query*.

**candidate selection pool**
The group of possible matching records returned by the blocking query. These records are weighed against the new or updated record to determine the probability of a match.

**checksum**
A value added to the end of an EUID for validation purposes. The checksum for each EUID is derived from a specific mathematical formula.

**code list**
A list of values in the sbyn_common_detail database table that is used to populate values in the drop-down lists of the EDM.

**code list type**
A category of code list values, such as states or country codes. These are defined in the sbyn_common_header database table.

**duplicate threshold**
The matching probability weight at or above which two records are considered to potentially represent the same entity. See also *matching threshold*.

**EDM**
See *Enterprise Data Manager*.

**Enterprise Data Manager**
The web-based interface that allows monitoring and manual control of the master index database. The configuration of the EDM is stored in the Enterprise Data Manager file. Also known as the EDM.

**enterprise object**
A complete object representing a specific entity, including the SBR and all associated system objects.

**ePath**
A definition of the location of a field in an eView Studio object. Also known as the *element path*.

**EUID**
The enterprise-wide unique identification number assigned to each object profile in the master index. This number is used to cross-reference objects and to uniquely identify each object throughout your organization.

**eView Studio Manager Service**
An eView Studio component that provides an interface to all eView Studio components and includes the primary functions of the master index. This component is configured by the Threshold file.

**field IDs**
An identifier for each field that is defined in the standardization engine and referenced from the Match Field file.

**Field Validator**
An eView Studio component that specifies the Java classes containing field validation logic for incoming data. This component is configured by the Field Validation file.

**Field Validation file**
The eView Studio configuration file that specifies any custom Java classes that perform field validations when data is processed.

**LID**
See *local ID*.

**local ID**
A unique identification code assigned to an object in a specific local system. An object profile may have several local IDs in different systems. The combination of a local ID and system constitutes a unique identifier for a system record. The name of the local ID field is configurable on the EDM, and might have been modified for your implementation.

**master index**
A database application that centralizes and cross-references information on specific objects in a business organization.

**Match Field File**
An eView Studio configuration file that defines normalization, parsing, phonetic encoding, and the match string for an instance of eView Studio. The information in this file is dependent on the type of data being standardized and matched.

**match pass**
During matching several queries are performed in turn against the database to retrieve a set of possible matches to an incoming record. Each query execution is called a match pass.

**match string**
The data string that is sent to the match engine for probabilistic weighting. This string is defined by the match system object defined in the Match Field file and must match the string defined in the match engine configuration files.

**match type**
An indicator specified in the **MatchingConfig** section of the Match Field file that tells the match engine which rules in the match configuration file to use for determine matching weights between records.

**matching probability weight**
An indicator of how closely two records match one another. The weight is generated using matching algorithm logic, and is used to determine whether two records represent the same object. See also *duplicate threshold* and *matching threshold*.

**Matching Service**
An eView Studio component that defines the matching process. This component is configured by the Match Field file.

**matching threshold**
The lowest matching probability weight at which two records can be considered a match of one another. See also *duplicate threshold* and *matching probability weight*.

**matching weight *or* match weight**
See *matching probability weight*.

**merge**
To join two object profiles or system records that represent the same entity into one object profile.

**merged profile**
See *non-surviving profile*.

**non-surviving profile**
An object profile that is no longer active because it has been merged into another object profile. Also called a *merged profile*.

**normalization**
A standardization process by which the value of a field is converted to a standard version, such as changing a nickname to a common name.

**object**
A component of an object profile, such as a company object, which contains all of the demographic data about a company, or an address object, which contains information about a specific address type for the company.

**object profile**
A set of information that describes characteristics of one enterprise object. A profile includes identification and other information about an object and contains a single best record and one or more system records.

**parsing**
A component of the standardization process by which a freeform text field is separated into its individual components, such as separating a street address field into house number, street name, and street type fields.

**phonetic encoding**
A standardization process by which the value of a field is converted to its phonetic version.

**phonetic search**
A search that returns phonetic variations of the entered search criteria, allowing room for misspellings and typographic errors.

**potential duplicates**
Two different enterprise objects that have a high probability of representing the same entity. The probability is determined using matching algorithm logic.

**probabilistic weighting**
A process during which two records are compared for similarities and differences, and a matching probability weight is assigned based on the fields in the match string. The higher the weight, the higher the likelihood that two records match.

**probability weight**
See *matching probability weight*.

**Query Builder**
An eView Studio component that defines how queries are processed. The user-configured logic for this component is contained in the Candidate Select file.

**SBR**
See *single best record*.

**single best record**
Also known as the SBR, this is the best representation of an entity's information. The SBR is populated with information from all source systems based on the survivor

strategies defined for each field and child object. It is a part of an entity's enterprise object and is recalculated each time a system record is updated.

**standardization**
The process of parsing, normalizing, or phonetically encoding data in an incoming or updated record. Also see *normalization*, *parsing*, and *phonetic encoding*.

**survivor calculator**
The logic that determines which field values or child objects from the available source systems are used to populate the SBR. This logic is a combination of Java classes and user-configured logic contained in the Best Record file.

**survivorship**
Refers to the logic that determines which field values are used to populate the SBR. The survivor calculator defines survivorship.

**system**
A computer application within an organization where information is entered about objects and that shares information with the master index (such as a registration system). Also known as a source system, local system, or external system.

**system object**
A record received from a local system. The fields contained in system objects are used in combination to populate the SBR. The system objects for one entity are part of that entity's enterprise object.

**tab**
A heading on an application window that, when clicked, displays a different type of information. For example, click the Create System Record tab to display the Create System Record page.

**Threshold file**
An eView Studio configuration file that specifies duplicate and match thresholds, EUID generator parameters, and which blocking query defined in the Candidate Select file to use for matching.

**transaction history**
A stored history of an enterprise object. This history displays changes made to the object's information as well as merges, unmerges, and so on.

**Update Manager**
The component of the master index that contains the Java classes and logic that determines how records are updated and how the SBR is populated. The user-configured logic for this component is contained in the Best Record file.

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