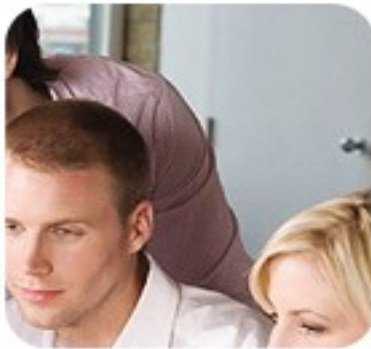


# iKnowBase®

## Concepts Guide



# iKnowBase®

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# 1. Overview

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## 1.1. iKnowBase and Enterprise Portals

The ultimate goal of enterprise portals is to provide a context-based, structured, and organized framework to integrate information, people, and processes within an organization. iKnowBase represents the next step in the evolution of technologies that are used in the development and implementation of enterprise portals.

Enterprise portals store a large amount of content, such as documents, images, and video clippings. Each piece of content is different in terms of the structure, content, size, and language. iKnowBase helps you in organizing, storing, and retrieving content with minimal effort and time by providing a context-sensitive and metadata-driven portal framework.

## 1.2. iKnowBase Domains

The iKnowBase framework consists of various *domains*, which help you develop and manage an enterprise portal. Table 1 lists various domains and their descriptions.

**Table 1: iKnowBase domains**

Domain	Description
Content	Enables you to create, edit, manage, and publish your organization's content. It helps you store, control, index, maintain versions, and publish any type of content, such as file-based, URL-based, or text-based content. This content might also represent objects, such as organizations, people, and tasks.
Process	Enables you to model, automate, track, and visualize business processes. iKnowBase helps you to generate tasks and activities for the users based on your organizations business processes, while supporting those processes with content and information.
Context	Enables you to define how processes relate to pieces of content and information, and how different pieces of content relate to one another. By using the context model, developers can create rich portal environments where users have access to the relevant content and support information without having to ask for them, based only on the context of the business process or pieces of content that the user is currently dealing with. For example, when executing an activity in a business process, all relevant documents and support information regarding that activity can be automatically displayed to the user as friendly links, based on the defined context for that activity. The Context domain is primarily a meta-modeling domain.

Domain	Description
Interaction	Enables you to define how users interact (that is, create, manage, view) with the content stored in the portal and perform activities in line with your organizations processes.
Presentation	Enables you to create a user-friendly, intuitive interface for your enterprise portals.
Security	Enables you to define users, groups, and manage their permissions.
Integration	Enables you to connect and interact with third-party tools and external data using APIs, connectors, adapters, synchronization mechanisms, and crawlers.

Figure 1 illustrates various iKnowBase domains.

**Figure 1: iKnowBase domains**





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## 1.3. iKnowBase Concepts

Each iKnowBase domain implements a number of **concepts**. This document provides information about these concepts that are grouped in the various categories. Table 2 lists various categories and their descriptions.

**Table 2: iKnowBase concept categories**

Concept Category	Description
Foundation	Concepts that deal with the definition of the core meta-model on which all the other concepts are based.
Basic Interaction	Concepts that deal with creating components and interfaces that enable users to store and view content in the iKnowBase database.
Basic Context Flow	Concepts that enable you to define the core business context of an iKnowBase portal by modeling how elements of the portal interact with one another, defining which parameters will be used to determine which dialogs will be enabled, and defining which pieces of content will be retrieved.
Presentation	Concepts used to define pages and templates that are required to display the content to the end user.
Navigation	Concepts that enable you to define methods by which users can navigate through an iKnowBase enterprise portal.
Advanced Content Retrieval	Concepts that define advanced search options and concepts that enable you to interact with data sources external to iKnowBase.
Advanced Interaction	Concepts that deal with advanced user interaction techniques, such as wizards, events, and newsletters.
Security	Concepts that enable you to administer data resources by creating users and user groups and by assigning rights to them.

---

## 1.4. Reference Problem



This document uses a reference problem, a theoretical example that illustrates how a business problem can be solved by using iKnowBase. Throughout this document, we are using the business problem of **ACME Vehicle Distribution Inc.** as our reference problem. ACME Vehicle Distribution Inc. is an imaginary company that is in the business of distributing cars, trucks, and buses into selected markets.

We will use this example to understand how iKnowBase can help ACME automate its business by bringing together its users, data resources, and processes. As we introduce a concept in this document, you will often be able to relate that concept with the ACME example. This will help you understand how the concept is used in real implementation.

### 1.4.1. ACME's Organization Structure

Like every other company, the backbone of ACME is its employees. These employees are organized into the following divisions:

- Sales. This division is further divided according to geographies. For example, Sales Norway and Sales Denmark.
- Administration
- Technical

### 1.4.2. ACME Product Lines

ACME has the following product lines:

- Cars. This product line is further divided into the following lines:
  - Person Cars
  - Utility Cars
- Trucks. This product line is further divided into the following lines:
  - Heavy Duty Trucks
  - Light Duty Trucks
- Buses

### 1.4.3. ACME Information Types

Table 3 lists various types of content that ACME deals with.

**Table 3: ACME content types**

Content Type	Description
--------------	-------------

Technical Fact Sheets	Documentation that describes the technical features of a vehicle.
Sales Contracts	Legal documentation of product sales.
Complaint Documents	Documentation used to follow up on a customer complaint.
Person Cards	Documentation that contain information about ACME employees.

## 2. Foundation Concepts

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In the iKnowBase framework, there are five foundation concepts that define the core meta-model from which all other concepts are derived. Table 4 lists these foundation concepts.

**Table 4: Foundation concepts**

Concept	Description
Information Types	Enable you to identify and categorize content.
Information Objects	Enable you to store content. An information object is an instance of an information type.
Attribute Types	Enable you to define metadata.
Attributes	Enable you to store metadata for an information object. An attribute is an instance of an attribute type.
Dimensions	Enable you to categorize, group, label, and filter content. Dimensions enable you to store hierarchical data. You can use dimensions along with attributes to tag information objects.

---

## 2.1. Information Types

With information types, you can define various types of content that you want to store in the iKnowBase portal. You can create your own information type or use information types that are available by default.

Information Type is a very important concept because it is used for various purposes in the meta-model of iKnowBase. Information Types enable meta-modelers to set various rules, such as locking content associated with the information type, enabling users to check in or check out content, setting the type of version control that must be applied for each document, and rules that must be applied when a master document or a subdocument is updated in iKnowBase. When meta-modelers create information types, they can also enable logging, which means that iKnowBase maintains a log of the information objects created, read, modified, and deleted.

You can also associate information types with other concepts to manage content stored in iKnowBase. Details about these associations are provided in various sections throughout this document.

The information type concept belongs to the [Context](#) domain of iKnowBase.



## ACME Example

As an organization, ACME deals with various types of content, such as technical fact sheets, sales contract documents, claim rejection documents, compensation agreement documents, complaint documents, and information about ACME employees. You can create an information type for each type of ACME content that you want to store in the iKnowBase portal.

Table 5 lists information types that you can create for various types of content that ACME deals with.

**Table 5: Examples of information types that you can create in iKnowBase**

Information Type (iKnowBase)	Information Type Description
Acme: TECHNICAL FACT SHEET	Stores ACME documentation that describes the technical features of a vehicle.
Acme: SALES CONTRACT	Stores ACME legal documentation of product sales.
Acme: CLAIM REJECTION	Stores documents used when customer complaints are rejected.
Acme: COMPENSATION AGREEMENT	Stores documents used when customer complaints are accepted.
Acme: PERSON CARD	Stores documents that contain information about ACME employees.

---

## 2.2. Information Objects

An information object enables you to store a piece of content. It is an instance of an information type. You can create multiple information objects for every information type. An information object is file-based, URL-based, or text-based. You can associate information objects with metadata in the form of attributes, which contain information about the information object. You can create and edit information objects using forms. For more information on forms, see [Forms](#).

Information objects are associated with attributes, which enable you to search for information objects with minimal time and effort.

You can associate an information object with a dimension, by using attributes, to define a particular business context in which the information object must be sorted, filtered, or categorized. For more information on dimensions, see [Dimensions](#).

You can associate information objects with events. Events can be triggered whenever you perform a specific action on an information object. For more information on events, see [Events](#).

The information object concept belongs to the [Content](#) domain of iKnowBase.



### ACME Example

Table 6 lists some information objects that you can create for various information types that you created in the [Information Types example](#).

**Table 6: ACME information types and information objects that you can create for these information types**

ACME Information Type	Information Object
Acme: TECHNICAL FACT SHEET	Toyota Corolla Fact Sheet
Acme: SALES CONTRACT	Sales Case #126-8
Acme: CLAIM REJECTION	Claim #452
Acme: COMPENSATION AGREEMENT	Claim #654

---

## 2.3. Attribute Types

Attribute types enable you to define the metadata that can be associated with the content. You can create your own attribute types or use attribute types that are available by default.

You can associate various attribute types with an information type. This information is used when defining and using forms for the information type. For more information, see [Forms](#).

You must associate every attribute type with a data type that defines the type of metadata that the attribute type can store. Table 7 lists various data types for attribute types in iKnowBase.

**Table 7: Data types for attribute types**

Data Type	Description
Text	Stores text.
Date	Stores point-in-time values (date and time).
Number	Stores fixed and floating-point numbers.
Value List	Stores values from predefined value lists.
Picture	Stores references to information objects containing images.
Link	Stores references to related information objects.
External	Stores references to data in a source that is external to iKnowBase.
CLOB	Stores character set data.
Dimension	Stores references to dimensions.

The attribute type concept belongs to the [Context](#) domain of iKnowBase.





## ACME Example

Table 8 lists some of the attribute types that you can create for the **Acme: TECHNICAL FACT SHEET** information type, which you created in the [previous example](#). Table 8 also lists the data types for these attribute types.

**Table 8: Examples of attribute types that you can create for the Acme: TECHNICAL FACT SHEET information type**

Attribute Type	Attribute Data Type	Description
Acme Vehicle Make	Dimension	Stores the information about the manufacturer of a vehicle. You can create a dimension named <b>Vehicle Make</b> , and then create subdimensions to categorize manufacturers of different vehicles, such as Toyota, GM, and Nissan. For more information on Dimensions, see <a href="#">Dimensions</a> .
Acme Vehicle Model	Dimension	Stores the information about the model of a vehicle. You can create a dimension named <b>Vehicle Model</b> for models of different vehicles, and then create subdimensions to categorize the models according to vehicles, such as Toyota Corolla Altis and Honda Civic. For more information on Dimensions, see <a href="#">Dimensions</a> .
Acme Vehicle Tire Size	Numeric	Stores the information about the size of the tires of a vehicle, in inches.
Acme Vehicle Available Colors	Value list	Stores various color options that are available for a vehicle. You can assign a value for each available color by using a value list. You can create a value list that has the following values: black, white, and gray.
Acme Vehicle Class	Value list	Stores the information about the class of a vehicle. You can assign a value for each vehicle class by using a value list. You can create a value list that has the following values: sedan, semi sedan, and luxury.
Acme Warranty on Vehicle	Numeric	Stores the number of years for which a vehicle is under warranty period.
Acme Vehicle	Text	Stores the insurance details of a vehicle.

Attribute Type	Attribute Data Type	Description
Insurance Details		
Acme Vehicle Fuel	Value list	Stores the information about the type of fuel that is used in a vehicle. You can assign a value for each type of fuel by using a value list. You can create a value list that has the following values: petrol and diesel.
Acme Vehicle Mileage	Text	Stores the information about the mileage of a vehicle.
Acme Vehicle Number of Doors	Numeric	Stores the information about the number of doors of a vehicle.
Acme Vehicle Engine Details	Text	Stores the engine details of a vehicle.
Acme For Product Line	Dimension	Stores the information about the product line to which a vehicle belongs. Here, you can have a dimension named Product Line. You can then have subdimensions that enable you to categorize various vehicles, such as Buses, Cars, and Trucks. You can also have subdimensions for cars, such as Personal Cars and Utility Cars. For more information on Dimensions, see <a href="#">Dimensions</a> .

---

## 2.4. Attributes

An attribute enables you to associate metadata with an information object. An attribute is an instance of an attribute type.

The attribute instance concept belongs to the [Content](#) domain of iKnowBase.



### ACME Example

Table 9 lists some of the attributes that you can create for the Toyota Corolla Fact Sheet.

**Table 9: Examples of the attributes associated with the Toyota Corolla Fact Sheet**

Attribute Type	Attribute
Acme Vehicle Make	Toyota
Acme Vehicle Model	Toyota Corolla
Acme Vehicle Tire Size	15 inches
Acme Vehicle Available Colors	Black, Red, Blue
Acme Vehicle Class	Economy
Acme Warranty on Vehicle	1 year
Acme Vehicle Fuel	Diesel
Acme Vehicle Average	10 km per liter
Acme Vehicle Mileage	11 km per liter
Acme For Product Line	Person Cars

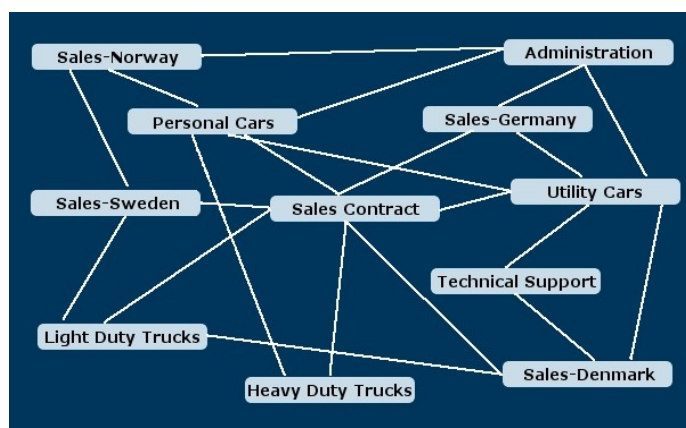
---

## 2.5. Dimensions

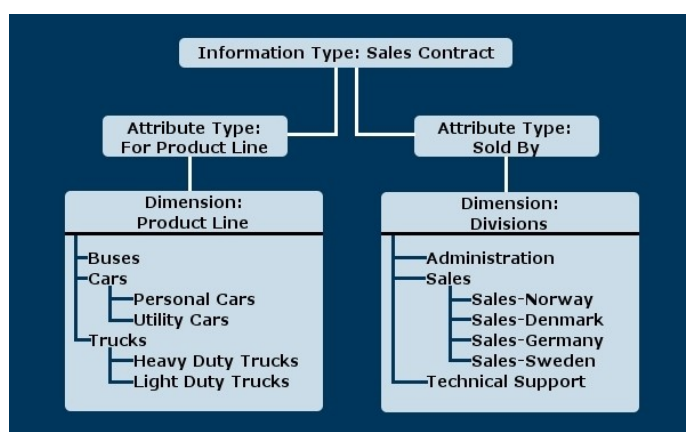
Dimensions enable you to categorize, group, label, and filter content. Dimensions provide structured context information to otherwise unstructured content. You can associate dimensions with information objects by using attributes.

Figure 2 illustrates how content is unstructured without dimensions while [Figure 3](#) illustrates how the same content is categorized, grouped, and labeled by using dimensions. [Figure 3](#) also illustrates how dimensions are associated with information types by using attributes. In the example shown in [Figure 3](#), the user can now filter Sales Contracts according to the product line, such as retrieving all contracts for Trucks, which lists all contracts for heavy duty trucks and light duty trucks, or the user can filter Sales Contracts according to the division that sold the product, such as Sales-Norway.

**Figure 2: Unstructured content without iKnowBase implementation**



**Figure 3: Structured content with iKnowBase implementation by using Dimensions**



### 2.5.1. Dimension Hierarchy

iKnowBase provides default dimensions, such as **Resources** and **Organization**. You can either use default dimensions as is or modify them based on the needs of your

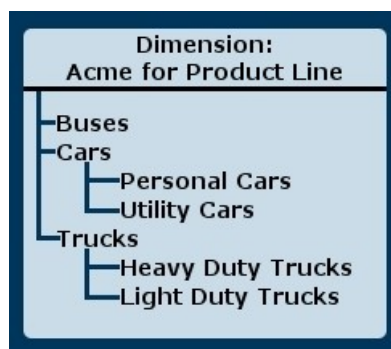
organization. You can also create your own dimensions. When you create a new dimension, iKnowBase enables you to define the level at which you want to add the new dimension. You can add new dimensions anywhere in the existing dimensional structure. You can create a new top-level dimension that does not have any connection with existing dimensions or you can create new dimensions as subnodes of existing dimensions. Creating a dimension at the appropriate level makes content that belong to the dimension easily searchable.



## ACME Example

You can create the following dimension tree for the attribute type **Acme For Product Line** that you created for the information type **Acme: TECHNICAL FACT SHEET**. This enables you to classify various vehicles according to their categories.

**Figure 4: Example of a dimension tree for the attribute type Acme For Product Line**



You can associate the **Toyota Corolla Fact Sheet** information object with the **Acme Personal Cars** dimension by using the **Acme For Product Line** attribute type.

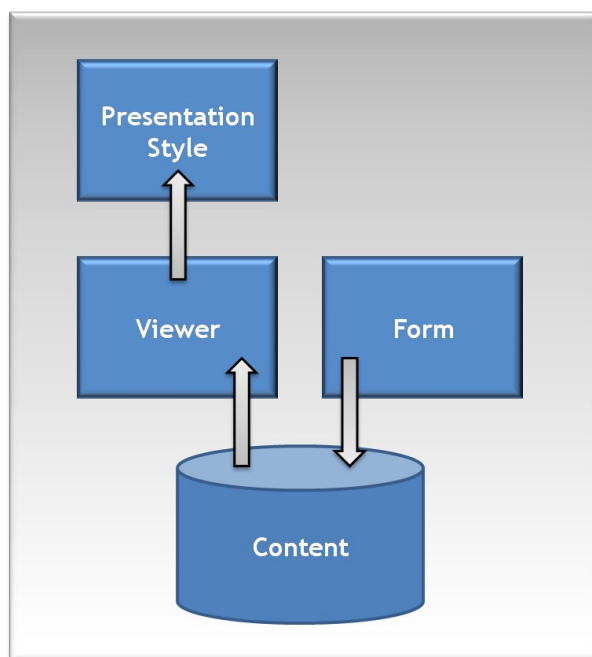
### 3. Basic Interaction

Basic Interaction concepts involve components that define how users interact (that is, create, manage, view) with the content stored in the portal and perform activities in line with your organizations processes. Table 10 lists various iKnowBase interfaces that enable you to store and view content in the iKnowBase portal.

**Table 10: iKnowBase interfaces**

Interface	Description
Forms	Enable you to add content to the iKnowBase portal.
Viewers	Enable you to select and view the type of content that you want to retrieve.
Presentation Styles	Enable you to retrieve specific attributes of the content and view the content in various presentation formats.

**Figure 5: Interaction between iKnowBase interfaces that enable you to store and view content in the iKnowBase portal.**



Forms, viewers, and presentation styles belong to the [Interaction](#) domain of iKnowBase.

---

## 3.1. Forms

Forms enable you to create and modify content in the iKnowBase portal. You can associate multiple forms with one information type. When creating a form, you can specify the information type and specific attributes of that information type that must be associated with the form. You can also specify the format for the form, such as text, file, or URL, and the language for the form, such as English or Norwegian.



### ACME Example

You can create a form named **Acme: TECHNICAL FACT SHEET FORM** for the technical fact sheet. After creating a form, you can add technical fact sheets for vehicles that ACME deals with. A technical fact sheet, as discussed in the example for information types, describes various technical details of a vehicle.

Table 11 lists some of the properties of the **Acme: TECHNICAL FACT SHEET FORM** form, the values assigned for those properties, and their description.



**Table 11: Acme: TECHNICAL FACT SHEET FORM properties, values assigned for those properties, and their description**

Form Properties	Value	Description
Information type	Acme: TECHNICAL FACT SHEET	Select this value to store the information about the technical details of a vehicle.
Format	Text	Select this value to store the content in a text format.
Language	English	Select this value to display all the information in English.
Attribute types	<ul style="list-style-type: none"><li>▪ Acme Vehicle Make</li><li>▪ Acme Vehicle Model</li><li>▪ Acme Vehicle Tire Size</li><li>▪ Acme Vehicle Available Colors</li><li>▪ Acme Vehicle Class</li><li>▪ Acme Warranty on Vehicle</li></ul>	Select these values to associate various technical content with the information type.

Figure 6 illustrates an example of a form in iKnowBase.

**Figure 6: Example of a form**

**Technical Fact Sheet Form**

Acme Vehicle Make	<input type="text"/>	
Acme Vehicle Model	<input type="text"/>	
Acme Vehicle Tire Size	<input type="text"/>	
Acme Vehicle Available Colors	<input type="text"/>	
Acme Vehicle Class	<input type="text"/>	
Acme Warranty on Vehicles	<input type="text"/>	

**Submit** **Cancel**



---

## 3.2. Viewers

A viewer enables you to retrieve and view various types of content that is stored in the portal. When creating and configuring a viewer, you can specify which content you want to retrieve (like the WHERE clause in SQL). For example, you can specify that you want to retrieve all information objects for a given information type. You can also specify the number of information objects that must be retrieved, and from which row number you want to start retrieving the information objects

When you create a viewer, you need to specify how the retrieved content must be presented, which means that you are specifying the presentation style that must be used. If you do not specify a presentation style while creating a viewer, iKnowBase tries to find a presentation style based on the information type and domain. If the information type is not associated with any presentation style, the viewer cannot retrieve any document. For more information on presentation styles, see [Presentation Styles](#).



### ACME Example

ACME can use viewers to select and retrieve various types of content that are stored in the iKnowBase portal. In this example, you can create a viewer named **Acme: Viewer-Technical Fact Sheet List** to retrieve content for the information type named **Acme: TECHNICAL FACT SHEET**. This enables you to view various technical fact sheets that are stored in the portal.

## 3.3. Presentation Styles

Presentation styles specify how data is displayed in terms of which attributes are displayed and how those attributes are displayed. For example, you can display content in a tabular format along with the labels for specific attributes. Table 12 lists various types of presentation styles that you can create in iKnowBase.

**Table 12: Types of presentation styles available in iKnowBase**

Presentation Style Type	Description
Free form	Enables you to present content per your requirements.
Tabular form	Displays data in a tabular manner, one row per document.
Template	Enables you to write your own HTML code to format content.

After you create the presentation style, you need to create a viewer, and then specify the presentation style for the viewer. You can create a presentation style once and use the same presentation style for multiple viewers.



### ACME Example

In the [previous example for a viewer](#), you retrieved technical fact sheets. To display various attributes for a technical fact sheet in a tabular format, you must create a presentation style named **Acme: presentation style-Technical Fact Sheet** and select the **Tabular form** presentation style. You can then associate this presentation style with the viewer **Acme: Viewer-Technical Fact Sheet List**. This enables you to view the content stored in the attributes in a tabular format.

**Figure 7: Example of a viewer and a presentation style implementation**

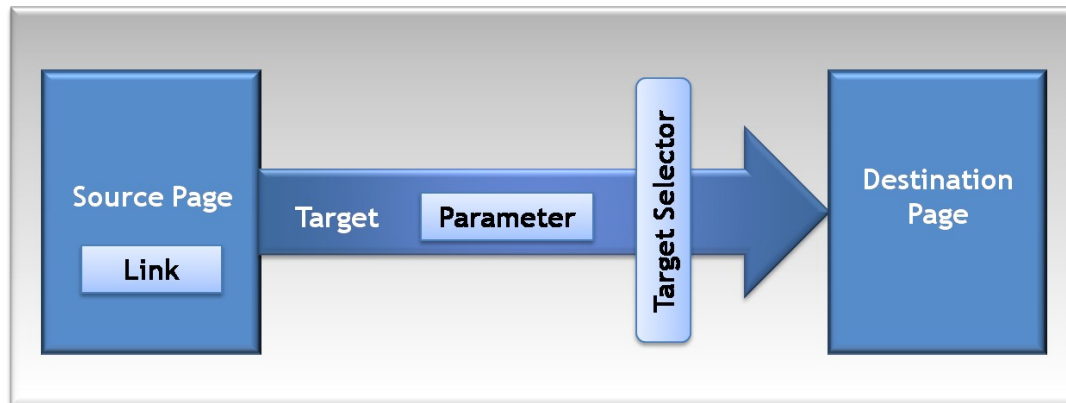
Title	Vehicle Make	Vehicle Model	Vehicle Tire Size	Vehicle Available Colors	Vehicle Class	Warranty on Vehicle
<a href="#">Acme: Technical Fact Sheet for Toyota Corolla Altis</a>	Toyota	Corolla Altis 1.8G	15 inches	Black, White, and Gray	Semi luxury sedan	1 year
<a href="#">Acme: Technical Fact Sheet for Fiat Linea Active 1.4</a>	Fiat	Linea Active 1.4	15 inches	Black, Red, and White	Sedan	2 year
<a href="#">Acme: Technical Fact Sheet for Toyota Camry</a>	Toyota	Camry	15 inches	Beige, Blue, and White	Luxury sedan	3 year
<a href="#">Acme: Technical Fact Sheet for Nissan Micra 1.2 16v Visia</a>	Nissan	Micra 1.2	15 inches	Black, Red, Green, and White	Luxury sedan	2 year

## 4. Basic Context Flow

---

Basic Context Flow deals with concepts that enable you to define the core business context of an iKnowBase portal. You can define the context of a portal by modeling how elements of the portal interact with one another, defining parameters that will be used to determine the dialogs that are enabled, and defining pieces of content that must be retrieved.

**Figure 8: Basic context flow in iKnowBase**



These concepts belong to the [Context](#) domain of iKnowBase.

---

### 4.1. Parameters

iKnowBase enables you to define parameters and associate them with targets, viewers, forms, quicklinks, and search sources in order to specify or filter content that you want to display. For example, you can create a parameter and associate it with an attribute named Employee ID. You can then add this parameter to a target so that the target destination displays only content that is associated with the attribute named Employee ID.

iKnowBase enables you to create two types of parameters, namely iKnowBase parameters and SQL parameters. An iKnowBase parameter enables you to create a parameter that is mapped to an iKnowBase attribute whereas an SQL parameter enables you to create dynamic parameters using an SQL string and a WHERE clause.



## ACME Example

ACME can use parameters to filter the content that must be displayed at the target destination. In this example, you can create an iKnowBase parameter **Acme: Information Object ID parameter**. This parameter can be used to view one specific technical fact sheet.

---

## 4.2. Targets

Web-based applications use URLs to specify what to display and where to display information. With iKnowBase, the task of generating context-based URL is abstracted into easy-to-use targets. A target is a generic concept used to specify destinations for links and the content information that must be displayed in the destination. You can either view content information as is or add parameters that enable you to specify or filter content that you want to display on the destination page.

iKnowBase also enables you to specify the destination type for the target. You can specify the target destination type as a portal page, URL, or iKnowBase page.



## ACME Example

ACME can use targets to display specific information at the appropriate destination. Currently, if you click the information object **Technical Factsheet for Toyota Corolla Altis** on the viewer **Acme: Viewer-Technical Fact Sheet**, an error page appears. This happens because you have not yet specified the target for this information object.

You can create a new target **ACME Target-Technical Fact Sheet**, associate it with the parameter **Acme: Information Object ID parameter**, and set the destination page for this target. The destination page should contain a viewer which presents the technical factsheet given by the parameter. You must associate the target **ACME Target-Technical Fact Sheet** with the viewer **Acme: Viewer-Technical Fact Sheet**. If you click the information object **Technical Factsheet for Toyota Corolla Altis** on the viewer **Acme: Viewer-Technical Fact Sheet**, the content for the information object **Technical Factsheet for Toyota Corolla Altis** appears on the destination page that you specified when you created the target **ACME Target-Technical Fact Sheet**.

---

## 4.3. Target Selectors

Target selectors enable you to display information based on the context. With target selectors, you can assign a specific target destination for all information objects that

belong to a particular information type. Target selectors also enable you to add content display conditions based on attributes. This means that the page that must be used to display the content of an information object may be dependent on the attributes of the information object. For example, you can display all technical fact sheets for heavy weight trucks in one page and all technical fact sheets for personal cars in another page.



### ACME Example

ACME can use target selectors to assign a specific target destination for information objects that belong to a particular information type. In this example, you can create a target selector **Acme: Target Selector: Technical Fact Sheet** and associate it with the target **ACME Target-Technical Fact Sheet** where you want to display the content of an information object that belongs to the **Acme: TECHNICAL FACT SHEET** information type. After you create the **Acme: Target Selector: Technical Fact Sheet** target selector, when you click a link for an information object that belongs to the **Acme: TECHNICAL FACT SHEET** information type, the appropriate content appears on the page given by the target **ACME Target-Technical Fact Sheet**.

---

## 4.4. Form Selectors

Form selectors help you to integrate forms across an enterprise portal keeping in-line with the context of the business processes. You can use form selectors to create links to forms and task wizards.

## 5. Presentation

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Presentation deals with concepts used to define pages and templates that are required to display the content to the end user. iKnowBase enables you to create user-friendly, intuitive interfaces, which involves components that are required to display content on a portal.

iKnowBase provides a presentation engine that accepts input from one or more content providers and generates HTML pages from the input. These HTML pages are 100% compatible with the Web Accessibility Initiative (WAI) requirements, which are related to accessibility for blind or disabled people, from the World Wide Web Consortium (W3C). You can also use other presentation engines, such as the Oracle Portal page engine, any Web service capable of working as a presentation engine, mobile phones, or other portable devices capable of working as a presentation engine.

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### 5.1. Templates

Templates enforce a standard layout across multiple pages and within content regions on a portal. With templates, you can ensure that you have a consistent look and feel across the portal. You can create a template once and use it for multiple pages or layouts. When you modify a template, pages or regions based on that template are automatically updated. You can either use an existing template for a page or a layout, or write your own HTML code.

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### 5.2. Pages

A page can consist of various components, such as HTML portlets and viewers. When creating a page, you can specify the template for the page, path or URL for the page, the ACL reference that sets access permissions for the page, and the components to display, such as forms, menus, and content viewers.

## 6. Navigation

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Navigation introduces concepts that enable you to define methods by which users can navigate through an iKnowBase enterprise portal. Table 13 lists various navigation entities.

**Table 13: Navigation entities**

Entity	Description
Menu	Is a list of links to pages, viewers, or forms.
Menu structures	Is the structure used to arrange menus and submenus in a portlet.
Element	Is an individual menu item.

These concepts belong to the [Interaction](#) domain of iKnowBase.

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### 6.1. Menus

Menus enable you to create a structure of the content stored in an iKnowBase portal. You can create a new menu instance and then build the menu structure by using submenus.

iKnowBase enables you to build customized menus using JavaScript. You can link menu items to a portal page, URL, form selector, or iKnowBase page. You can apply various menu styles to menus, such as rollover effects, and insert images or icons to identify menu items.

In iKnowBase, you can create a menu by adding a menu instance and building its structure using sub-menus, or by importing a menu structure from a dimension tree.

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### 6.2. Dimension Viewers

Dimension viewers enable you to display a dimension structure. You can use this dimension structure for navigation. When you create a dimension viewer, you must specify the dimensions and subdimensions that you want to display and the target for the dimension viewer.

## 7. Advanced Content Retrieval

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To manage unlimited content, you need an effective search and retrieval facility. With iKnowBase, you can use search sources and external search links, which belong to the [Interaction](#) domain of iKnowBase, to effectively search content across internal and external data sources.

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### 7.1. Search Options

iKnowBase enables you to define internal and external search sources. Table 14 lists the options that iKnowBase provides to improve the search and content retrieval functionality of your portal.

**Table 14: Search options**

Option	Description
External Search Link	Enables you to create links to URLs to external search page. This external link can be viewed using a target or a portal page.
Search Sources	Enables you to search and retrieve content. You can also use this viewer to navigate through search results. iKnowBase enables you to create a search source for an internal or external data source. In addition to being a viewer, the search source also contains a search filter that can be used by the end user.



## 8. Advanced Interactions

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Advanced Interaction introduces advanced user interaction techniques, such as wizards, events, and newsletters. Table 15 lists various advanced user interaction techniques that are provided by iKnowBase.

**Table 15: Advanced user interaction techniques**

Advanced User Interaction Technique	Description
Task Wizard	Enables you to divide a task into multiple steps. You can define each step by using an iKnowBase form.
Event	Enables you to associate actions with content. These actions are triggered when the criteria for the event is satisfied.
Newsletter	Using newsletters, you can send content to specific subscribers at periodic intervals. You can specify various formats for each newsletter.

These concepts belong to the [Interaction](#) domain of iKnowBase.

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### 8.1. Events

Events enable you to associate actions with content. When a specific criterion is satisfied for the content, you can trigger an action, such as an insert, update, or delete operation, on any content. You can specify the criteria for an event by using the attributes associated with the content.

You need to define the actions for an event in an event procedure. You can specify this procedure while creating the event. If multiple events are triggered simultaneously, you can specify the order in which each event must be triggered.



#### ACME Example

Whenever a sales contract is updated for a product, the system can send an e-mail to all the stakeholders of the product on behalf of ACME Sales department.

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## 8.2. Task Wizards

You can use the task wizard to define a sequence of steps that must be performed to complete a task. The task wizard controls the navigation between the steps. You can define each step by using an iKnowBase form. Table 16 lists the main components of the task wizard.

**Table 16: Task Wizard components**

Component	Description
Default target page	Defines the default target destination, which is used when there is no target destination specified in the previous page.
Target page when you exit from the wizard	Defines the page that must appear when the last step in the sequence is reached.
Steps of forms	Defines the sequence in which forms must appear.



### ACME Example

In this example, you can create a task wizard **ACME: Publish Article** that you can use to divide the following tasks:

1. Writing the article.
2. Categorizing different sections.
3. Editing the article.
4. Previewing the article.
5. Approving the article.

Every task is associated with a form where you can add the content related to that task. You can use the task wizard to complete these subtasks and set the sequence for the execution of these subtasks.

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## 8.3. Newsletters

Using newsletters, you can send content to specific subscribers at periodic intervals. You can specify various formats for each newsletter. You can send a newsletter to subscribers via e-mail. Subscribers can also subscribe and unsubscribe to newsletters via e-mail.

Table 17 lists various components of a newsletter.

**Table 17: Newsletter components**

Component	Description
Search source	Defines the source of the content that needs to be included in the newsletter.
Target	Defines the pages on which the content must appear.
Public user	Defines the user who can access this newsletter.
Domain	Defines the server name that sends the newsletter to the subscribers.
Mail format	Defines the e-mail address of the sender of the newsletter, the HTML body of the newsletter, and the links to the content.
Scheduling	Defines the start time and the interval at which a newsletter needs to be sent to subscribers.



### ACME Example

ACME can send a weekly newsletter that informs the market about their upcoming products. This newsletter contains relevant content about the product.

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## 8.4. API

iKnowBase provides application programming interfaces that can be used to create, read, update, and delete content from your own custom program. APIs are available from PL/SQL, Java, or Web Services.

## 9. Security

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Organizations store and maintain content through portals. Some of this content might be available for public view, such as newsletters, while some content might be confidential and must have restricted view. Therefore, implementing correct security measures is essential for every portal. Table 18 lists various components that implement security measures for a portal.

**Table 18: Components that implement security measures for a portal**

Component	Description
Authentication	Validates users who log on to iKnowBase. Authentication is handled by the application server in use.
Authorization	Provides access to iKnowBase resources, such as pages, portlets, and content.
Administration	Organizes users, passwords, and access rights.

Security for a portal must be robust enough to ensure that only authenticated users with the appropriate rights can access data. Table 19 lists various security entities provided by iKnowBase.

**Table 19: iKnowBase security entities**

Entity	Description
Users	Entities that can be authenticated against the credentials required to access a portal.
Groups	Collection of users. Groups enable you to assign various types of access rights to multiple users at the same time.
Access Control Lists (ACLs)	Enable you to create a mapping between access rights and users, and access rights and groups. ACLs can be used to control access to content, presentation components, and dimensions.

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### 9.1. Users

Users are entities that can be authenticated against the credentials required to access a portal. Table 20 lists the types of users that you can create in iKnowBase.

**Table 20: Types of users that you can create in iKnowBase**

Type of User	Description
Portal administrator	Creates and manages portals. Creates and manages users.
End user	Uses the portal. An end user can be a guest user or a registered user.

After you create a user, you can assign access rights to a user. For more information on assigning access rights to users, see [Access Control Lists](#).

You can also add a user to a group. When you add a user to a group, all access rights assigned to a group are also assigned to the user. For more information on groups, see [Groups](#).

## 9.2. Groups

A group is a collection of users. Groups enable you to assign various types of access rights to multiple users at the same time, which makes user management easier and less time-consuming. Users in a group have some common characteristics. For example, users that work on the same level in a particular department can belong to one group.

Access rights assigned to a group are also assigned to all users that belong to that group. A user can be member of one or more groups at a time.



### ACME Example

You create a group named **ACME\_Sales\_Managers** and add all managers who belong to the Sales department to this group.

## 9.3. Access Control Lists

ACLs enable you to create a mapping between access rights and users, and access rights and groups. ACLs enable you to assign access rights on content. Table 21 lists access rights that can be granted to users and groups in iKnowBase.

**Table 21: Access rights that can be granted to users and groups**

Access Right	Description
Read	Grants the right to read content.
Modify	Grants the right to read and modify content.
Protected	Grants the right to view a dimension that is protected with the current ACL.

Delete	Grants the right to delete content.
Approver	Grants the right to approve the publication of content.
Creatable	Grants the right to create content.
Categorizable	Grants the right to categorize content with a dimension that is protected with the current ACL.



### ACME Example

You can create an ACL named **ACME\_ACL**. You can then assign the **C** and **M** rights to this ACL. Subsequently, you can assign this ACL to the **ACME\_Sales\_Managers** group. All the users in the **ACME\_Sales\_Managers** group will have rights to create and modify content in iKnowBase. Users can also read content because when you grant an **M** right to an ACL, users automatically inherit the **R** (read) right.

## 10. Glossary

Table 22 lists various terms used in this document.

**Table 22: Terms and definitions**

Term	Definition
Access Control Lists (ACLs)	Enable you to create a mapping between access rights and users, and access rights and groups. ACLs can be used to control access to content, presentation components, and dimensions.
Administration	Organizes users, passwords, and access rights.
Advanced Content Retrieval concepts	Concepts that define advanced search options and concepts that enable you to interact with data sources external to iKnowBase.
Advanced Interaction concepts	Concepts that deal with advanced user interaction techniques, such as wizards, events, and newsletters.
Approver access right	Grants the right to approve the publication of content.
Attributes	Enable you to store metadata for an information object. An attribute is an instance of an attribute type.
Attribute Types	Enable you to define metadata.
Authentication	Validates users who log on to iKnowBase. Authentication is handled by the application server in use.
Authorization	Provides access to iKnowBase resources, such as pages, portlets, and content.
Basic Context Flow concepts	Concepts that enable you to define the core business context of an iKnowBase portal by modeling how elements of the portal interact with one another, defining which parameters will be used to determine which dialogs will be enabled, and defining which pieces of content will be retrieved.
Basic Interaction concepts	Involves components that define how users interact (that is, create, manage, view) with the content stored in the portal and perform activities in line with your organizations processes.
Categorize access right	Grants the right to tag content with a dimension that is protected with the current ACL.
Content domain	Enables you to create, edit, manage, and publish your organization's content. It helps you store, control, index, maintain versions, and publish content, such as documents, images, and video clippings, about organizations, people, and

Term	Definition
	tasks.
Context domain	Enables you to define how the processes relate to pieces of content and information, and how different pieces of content relate to one another.
Creatable access right	Grants the right to create content.
Delete access right	Grants the right to delete content.
Dimension Viewers	Enable you to create menus based on the dimension trees existing in the iKnowBase portal. Dimension Viewers enable you to import menu structures based on the existing dimension trees in an iKnowBase portal, which reduces the effort of creating separate menu structures.
Dimensions	Enable you to categorize, group, label, and filter content. Dimensions enable you to store hierarchical data. You can use dimensions along with attributes to tag information objects.
Element	An individual menu item.
End user	Uses the portal. An end user can be a guest user or a registered user.
Event	Enables you to associate actions with content. These actions are triggered when the criteria for the event is satisfied.
External Search Link	Enables you to create links to URLs to external search page. This external link can be viewed using a target or a portal page.
Form Selectors	Help you to integrate forms across an enterprise portal keeping in-line with the context of the business processes. You can use form selectors to create links to forms and task wizards.
Forms	Forms enable you to create and modify content in the iKnowBase portal.
Foundation concepts	Concepts that deal with the definition of the core meta-model on which all the other concepts are based.
Groups	Collection of users. Groups enable you to assign various types of access rights to multiple users at the same time.
Information Objects	Enable you to store content. An information object is an instance of an information type.
Information Types	Enable you to identify and categorize content.
Integration domain	Enables you to connect and interact with third-party tools and external data using APIs, connectors, adapters,



Term	Definition
	synchronization mechanisms, and crawlers.
Interaction domain	Contains components that define how users interact (that is, create, manage, view) with the content stored in the portal and perform activities in line with your organizations processes.
Modify access right	Grants the right to read and modify content.
Menu	A list of links to pages, viewers, or forms.
Menu structure	Used to arrange menus and submenus in a portlet.
Navigation concepts	Concepts that enable you to define methods by which users can navigate through an iKnowBase enterprise portal.
Newsletter	Using newsletters, you can send content to specific subscribers at periodic intervals.
Protected access right	Grants the right to view a dimension that is protected with the current ACL.
Pages	Consists of various components, such as HTML portlets and viewers. When creating a page, you can specify the template for the page, path or URL for the page, the ACL reference that sets access permissions for the page, and the components to display, such as forms, menus, and content viewers.
Parameters	iKnowBase enables you to define parameters and associate them with targets, viewers, forms, quicklinks, and search sources in order to specify or filter content that you want to display.
Portal administrator	Creates and manages portals. Creates and manages users.
Presentation concepts	Concepts used to define pages and templates that are required to display the content to the end user.
Presentation domain	Enables you to create a user-friendly, intuitive interface for your enterprise portals.
Presentation Styles	Enable you to retrieve specific attributes of the content and view the content in various presentation formats.
Process domain	Enables you to model, automate, track, and visualize business processes. iKnowBase helps you to generate tasks and activities for the users based on your organizations business processes, while supporting those processes with content and information.
Read access right	Grants the right to read content.
Search Sources	Enables you to search and retrieve content. You can also use

Term	Definition
	this viewer to navigate through search results. iKnowBase enables you to create a search source for an internal or external data source.
Security concepts	Concepts that enable you to administer data resources by creating users and user groups and by assigning rights to them.
Security domain	Enables you to define user roles, user groups, and manage access rights for users.
Targets	A generic concept used to specify destinations for links and the content information that must be displayed in the destination.
Target Selectors	Enable you to display information based on the context.
Task Wizard	Enables you to divide a task into multiple steps. You can define each step by using an iKnowBase form.
Templates	Enforce a standard layout across multiple pages and within content regions on a portal. With templates, you can ensure that you have a consistent look and feel across the portal.
Users	Entities that can be authenticated against the credentials required to access a portal.
Viewers	Enables you to retrieve and view various types of content that is stored in the portal.