Blueprint and Design Specification

for the

Solvay Plant Maintenance Notification e-Learning System

8/31/2000

RWD-R-3972.DC

Prepared for

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Blueprint and Design Specification

for the

Solvay Plant Maintenance Notification e-Learning System

Draft C

8/31/2000

RWD-R-3972.DC

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Section 1
Introduction

1.1 Purpose 1-1
1.2 Scope 1-1
1.3 Reference Documentation 1-1
1.4 Organization of the Design Specification 1-2

Section 2
Project Objectives & Audience Description

2.1 Overview 2-1
2.2 Project Objectives 2-1
2.3 End User Audience Description 2-2
2.4 Concept of Operation 2-2

Section 3
e-Learning Technical Description

3.1 Overview 3-1
3.2 System Hardware Requirements 3-1
3.3 Content Delivery Requirements 3-3
3.4 e-Learning System Architecture 3-4
3.5 End User Navigation Structure 3-5
3.6 System Deployment Strategy 3-6

Section 4
Page Descriptions

4.1 Overview 4-1
4.2 Main Page 4-2
4.3 Concepts Page 4-4
4.4 Demonstration Page 4-6

4.5 Simulation Page 4-8

4.6 Summary Page 4-10

Section 5

Solvay Course Structure & Outline

5.1 Plant Maintenance Notification Course Structure 5-1

5.2 Plant Maintenance Notification Course Outline 5-3

Section 1

Introduction

1.1 Purpose

Solvay Information Technologies, Inc. (Solvay) has initiated a project to build a Solvay Plant Maintenance Notification e-Learning System to provide online training materials to SAP R/3 Plant Maintenance Notification users through an Internet delivery strategy. Solvay has contracted the services of RWD Technologies™ (RWD) to design, develop, and implement this e-Learning solution using standard HTML and TCP/IP (i.e., standard internet protocol) as the delivery mechanisms.

This document, the Blueprint and Design Specification, provides requirements for the components and the logic associated with this system. The Design Specification includes details on system architecture, the e-Learning site design and graphical user interface, and other requirements. The Design Specification provides a blueprint that developers will follow during the development phase and will serve as a foundation for developing the test plan. This Design Specification also serves as the basis for evaluating changes or enhancements that may be considered in the future.

The intended audience for this document is Solvay employees who have provided input to the design of the system, the employees of RWD who have designed and will develop and test the system, and the review teams.

1.2 Scope

This document provides the baseline for the development phase of the tool, known as the Solvay Plant Maintenance Notification e-Learning System (Plant Maintenance Notification e-Learning System). It defines and explains design details for system architecture and screen and view layouts for the Plant Maintenance Notification e-Learning System deployment. This document incorporates the detailed discussions between the team members from Solvay and RWD. The design prototype is a result from these discussions.

1.3 Reference Documentation

Primary references used for the design of the Plant Maintenance Notification e-Learning System includes:

- Notifications and List Editing Delta Document
- Plant Maintenance Introduction and Notifications

- Identified Subject Matter Experts

1.4 Organization of the Design Specification

This document is organized in the following primary sections and appendices:

Section 1 - Introduction

Defines the scope and purpose of the Design Specification.

Section 2 – Project Objectives & Audience Description

States the project objective, describes the targeted end user audience of the Plant Maintenance Notification e-Learning System, and presents a concept of application.

Section 3 – e-Learning Technical Description

Presents overall system architecture envisioned to support a full implementation of the Plant Maintenance Notification e-Learning System. This section addresses the various hardware and software requirements that support the Plant Maintenance Notification e-Learning System. This section also provides a table of all files and their types used in the system, a description of the file directory architecture, and a graphical representation of the system navigation structure.

Section 4 – Page Descriptions

Presents an overview of each page to be accessed through the Plant Maintenance Notification e-Learning System. These graphic representations include a table of all the elements specific to that page with a text description of the element and any interactive function as appropriate.

Section 5 – Solvay Course Structure & Outline

Presents an overview of the Plant Maintenance Notification course structure and the course outline.

Section 2

Project Objectives and Audience Description

2.1 Overview

The Plant Maintenance Notification e-Learning System provides a central navigation point for a learning and reference for SAP R/3 Plant Maintenance Notification users. SAP R/3 Plant Maintenance Notification users will have access to instructional materials to guide them through the learning of the system. These learning materials will include Global Knowledge On-Demand simulations of the target system, as well as interactive simulations where SAP R/3 Plant Maintenance Notification users can practice. All content to be developed will be in an HTML or other format compatible for online viewing. The Plant Maintenance Notification e-Learning System will leverage existing On-Demand files. Should these On-Demand files be incompatible with the solution design, or contain inappropriate content, RWD will work with Solvay to find a reasonable solution that will fit the scope and schedule as outlined in the Project Plan.

2.2 Project Objectives

The business goal of the Plant Maintenance Notification e-Learning System project is to provide learning and reference content that is timely, accurate, and cost effective. The system will be deployed to offer self-paced (asynchronous) training for SAP R/3 Plant Maintenance Notification users.

To best serve the business interests at Solvay, this Plant Maintenance Notification e-Learning System should at a minimum include the following design considerations:

- Provide an organized central repository of documentation that is electronically accessible across the Solvay LAN and WAN
- Provide easy search and retrieval of desired materials
- Provide a maintenance process (i.e., not automated) to support revision control that ensures only the latest version of materials is accessible
- Provide easy user access to conceptual learning content and instructions, system task simulations and interactive system task simulations, work instructions, and learning evaluation tools to motivate SAP R/3 Plant Maintenance Notification users to actively use the Plant Maintenance Notification e-Learning System

Note: the final design of the system may not include all of the features noted in the bullets above. These are noted to provide a full list of the design considerations and instructional tools available that together provides the strongest possible solution.

2.3 End User Audience Description

This system is designed to support two types of users: the primary audience is new SAP R/3 Plant Maintenance Notification users and the secondary audience is the content management/maintenance team. The primary audience will access the Solvay Plant Maintenance Notification e-Learning System using a web browser to directly navigate to the appropriate learning portal web page. All of these users will be able to access the system through the Solvay Intranet. In addition, Solvay intends to place the larger files onto local servers to improve access speed for all users of the Plant Maintenance Notification e-Learning System.

Individuals managing the Plant Maintenance Notification e-Learning System and maintaining the content will access the content materials through standard Microsoft Windows® file management software. Details surrounding the architecture of the system follow in Section 3.

2.4 Concept of Operation

The Plant Maintenance Notification e-Learning System's main purpose is to provide a central navigation point to access self-paced learning and reference materials for users of the Solvay SAP R/3 4.6b. This learning system is available online through an Internet browser interface. Due to the unique nature of the Solvay network infrastructure, the solution will consist of two key components: the web information pages and the On-Demand files.

The web information pages in the Plant Maintenance Notification e-Learning System will be deployed on standard HTTP 1.0 or compatible server. The majority of the files in the system will be standard HTML files. These files will initially be created by RWD. Once these files are completed, Solvay staff will edit them to ensure content validation. For online viewing purposes, these files will be authored directly in HTML using standard off-the-shelf authoring software or converted to HTML as necessary.

The On-Demand files are currently stored on a Print File Server at the Solvay Houston office. The correct files will be exported to work with the web information pages and then stored onto the HTTP 1.0 or compatible server. These files will contain the demonstration, practice environment, and reference pages to be accessed through the e-Learning web site.

End users of the Plant Maintenance Notification e-Learning System will browse for the appropriate information on a web page located on a web server in the Houston office. Should the user wish to see a demonstration of the task (or an interactive simulation, or reference work instructions), the user will access the On-Demand files from the web site on the Houston web server. However, due to the type of connections between Solvay offices, access to some of the On-Demand files may be slow. While RWD has designed the majority of the site to be "bandwidth friendly," RWD can only make recommendations to Solvay on ways to address the network issues that may arise due to network limitations and large file sizes.

Section 3

e-Learning Technical Description

3.1 Overview

Section 3 of the Design Specification presents the software and hardware architecture of the Plant Maintenance Notification e-Learning System designed for Solvay. It describes the individual software components that make up the system. The description of the system hardware architecture includes the client workstations, the server, and the network.

The Plant Maintenance Notification e-Learning System technical architecture is designed to address the following guidelines:

- Deliver accurate and timely information
- Provide ease of use
- Facilitate document management
- Be accessible through the Solvay Intranet

Implementation of the proposed architecture lays the foundation for further application development and future enhancements to the Plant Maintenance Notification e-Learning System.

3.2 System Hardware Requirements

This section describes the Plant Maintenance Notification e-Learning System's architecture. Figure 3-1 illustrates the system architecture.

The architecture provides access to the Solvay Plant Maintenance Notification e-Learning System for users who have continuous connection to their Intranet. Users will use a web browser to view the content within the Plant Maintenance Notification e-Learning System. Solvay will designate specific individuals who will manage the system to maintain content accuracy and designed functionality. Solvay Network Administrators will be responsible for the security of the system and for overseeing the implementation of the system onto the network servers.

Table 3-1 lists the hardware and software specifications for the various components of the Plant Maintenance Notification e-Learning System architecture. All the components shall be acquired by Solvay to support the system and are fully specified in this table.

The hardware and software represent a typical configuration for an Intel Pentium-based PC. The actual machine configurations may vary from those specified in the table below.

However, the machines specified will be used as a test platform for integration and acceptance testing.

Table 3-1. Plant Maintenance Notification e-Learning System Architecture

#	Component/ Audience	Software Configuration	Hardware Configuration
1	Network and Web Server	▪ Windows NT 4.0 SP3 or higher server	▪ Tape or other removable backup capability ▪ 128 MB RAM (minimum) ▪ 1GB available disk space for Plant Maintenance Notification e-Learning System ▪ Active connection to Solvay LAN
2	End Users	▪ Windows '95/Windows NT Workstation 4.0 SP3 ▪ IE 4.0 or better ▪ Netscape Navigator 4.0 or better ▪ Email Software	▪ Pentium Class PC ▪ 16 MB of RAM ▪ 500MB hard drive ▪ SVGA monitor
3	Maintainers	▪ Windows '95/Windows NT Workstation 4.0 SP3 ▪ IE 4.0 or better ▪ Netscape Navigator 4.0 or better ▪ Email Software ▪ HTML Editing Software – recommend Macromedia Dreamweaver & CourseBuilder 3.0 or later	▪ Pentium Class PC ▪ 96 MB of RAM ▪ 1GB hard drive ▪ SVGA monitor

3.3 Content Delivery Requirements

This section provides technical details on the Plant Maintenance Notification e-Learning System and describes the tools used to create the system and the content. Table 3-2 lists the file types contained within the system, the application that originates the file types, and a brief description of how the file type is used in the system.

Table 3-2. Plant Maintenance Notification e-Learning System Architecture

#	File Type	Originating Application	Description
1	HTML	Standard off-the-shelf HTML editing program, such as Macromedia Dreamweaver.	These are all the primary web files that deliver the instructional content and the Review Page.
2	CAB, JAR, LST, XML	PTS On-Demand	These are all the simulation files used in the Demonstration and Simulation learning areas.
3	GIF	Standard line graphic file format	Used for illustrative purposes in the HTML pages.
4	JPEG	Standard image graphic file format	Used for illustrative purposes in the HTML pages.
5	JSCRIPT	Standard file format for interactive web page elements	Used to provide interactive features to the HTML pages.

3.4 e-Learning System Architecture

The Plant Maintenance Notification e-Learning System will have straightforward file directory architecture. The files that support each targeted audience will be contained in subdirectories under that audience. Within that subdirectory will be directories designated for each learning module, which support task performance. These subdirectories will have directories for images (or graphics) files, JavaScript files, and any other supporting files. Figure 3-1 illustrates this directory architecture.

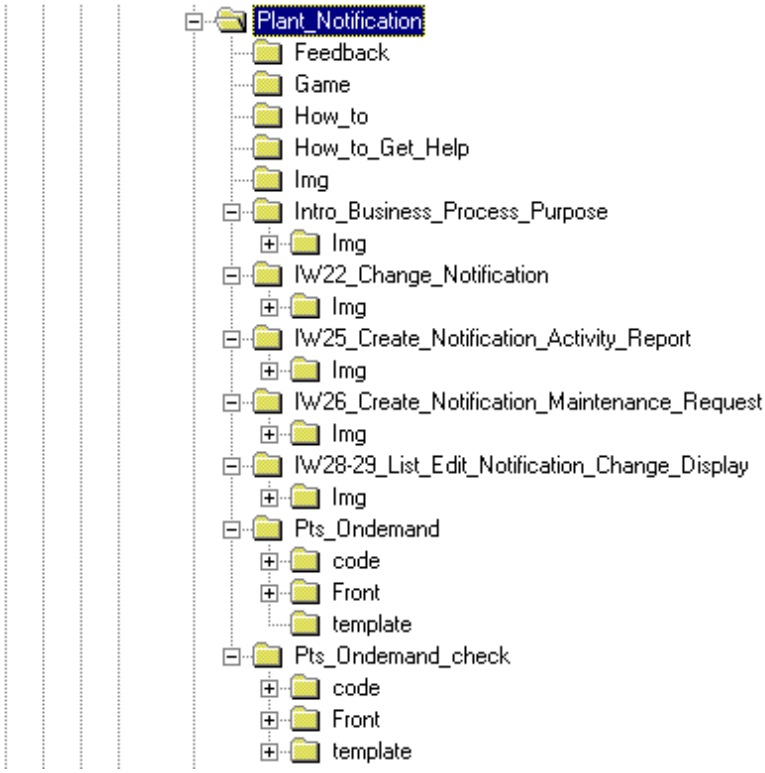

Figure 3-1. Plant Maintenance Notification e-Learning System Audience Access Model

3.5 End User Navigation Structure

The Plant Maintenance Notification e-Learning System will have a simple navigation structure. First, there is one main (or home) page. From this main page, users will select from a list of supported learning modules and jump straight into a Concept Page where conceptual information regarding the module is presented. The main page also has a link to the Review (Required for Credit) where, once users have gone through the modules, they are ready to answer some difficult questions. Successful completion of the Review will generate an e-mail to send details of the user to a Solvay coordinator. From the Demonstration Page, users see instructions for continuing with the module. Figure 3-2 provides the high-level navigation details of the Plant Maintenance Notification e-Learning System.

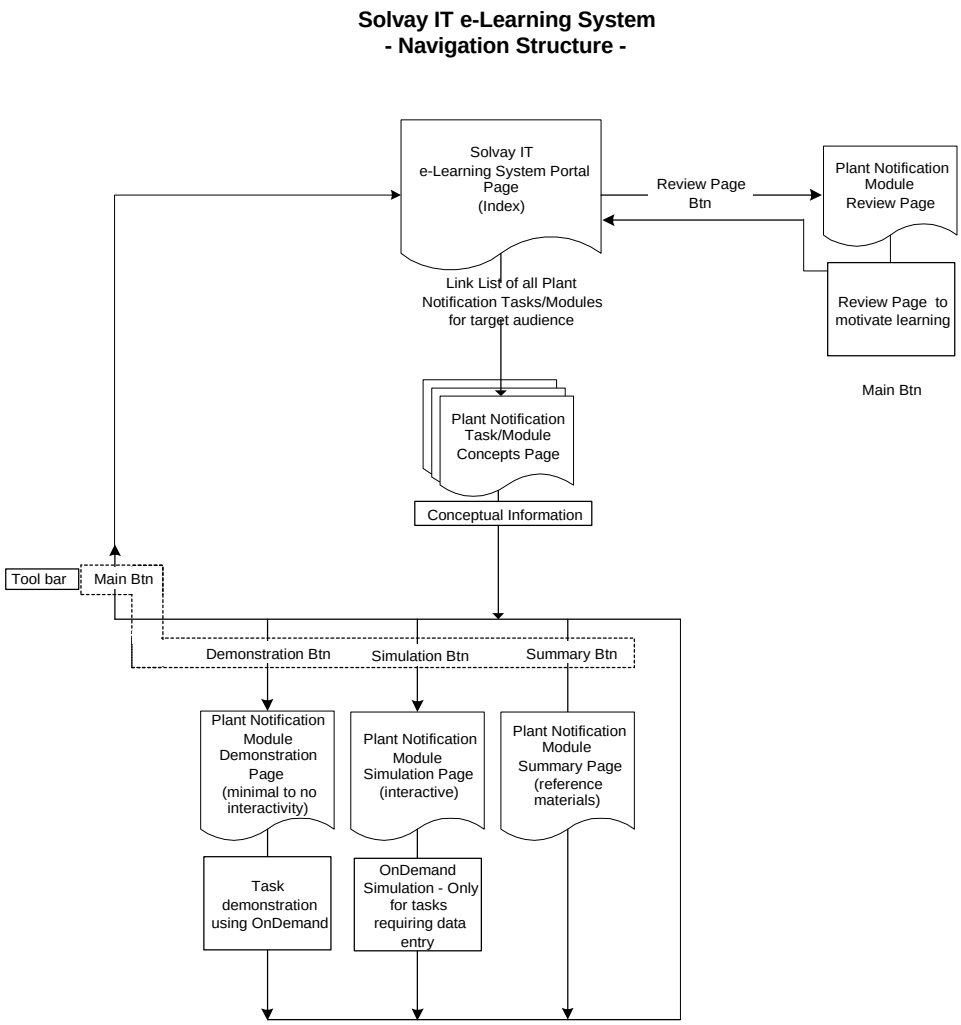

Figure 3-2. High-Level Navigation Structure

3.6 System Deployment Strategy

The RWD team will work to coordinate with Solvay to implement the final solution. RWD will assist Solvay in the design of the deployment strategy and implementation schedule.

Typically, a pre-production area is created where the system is first installed to permit system and user testing prior to general roll out. Once the design of the solution is accepted and development is underway, RWD will draft a Test document that will be used to ensure a quality system will be in place when the system is fully implemented. Within the Test document will be a section devoted to the details of deployment.

Once these check points are met, RWD will provide the necessary assistance to see that the system is deployed onto the production network. Further, should a particular audience require off-line access to the Plant Maintenance Notification e-Learning System, RWD can provide a single master CD-ROM to Solvay that will contain the Plant Maintenance Notification e-Learning System to support their off-line access to the learning system. Solvay will be required to see that the CD-ROM is replicated and delivered to that audience. However, RWD will deliver to Solvay a master CD-ROM containing the complete system for Solvay' archival purposes.

Figure 3-3 (following), illustrates the relationship of the end users of the Plant Maintenance Notification e-Learning System to their different geographic location, and how they will access the components of the Plant Maintenance Notification e-Learning System.

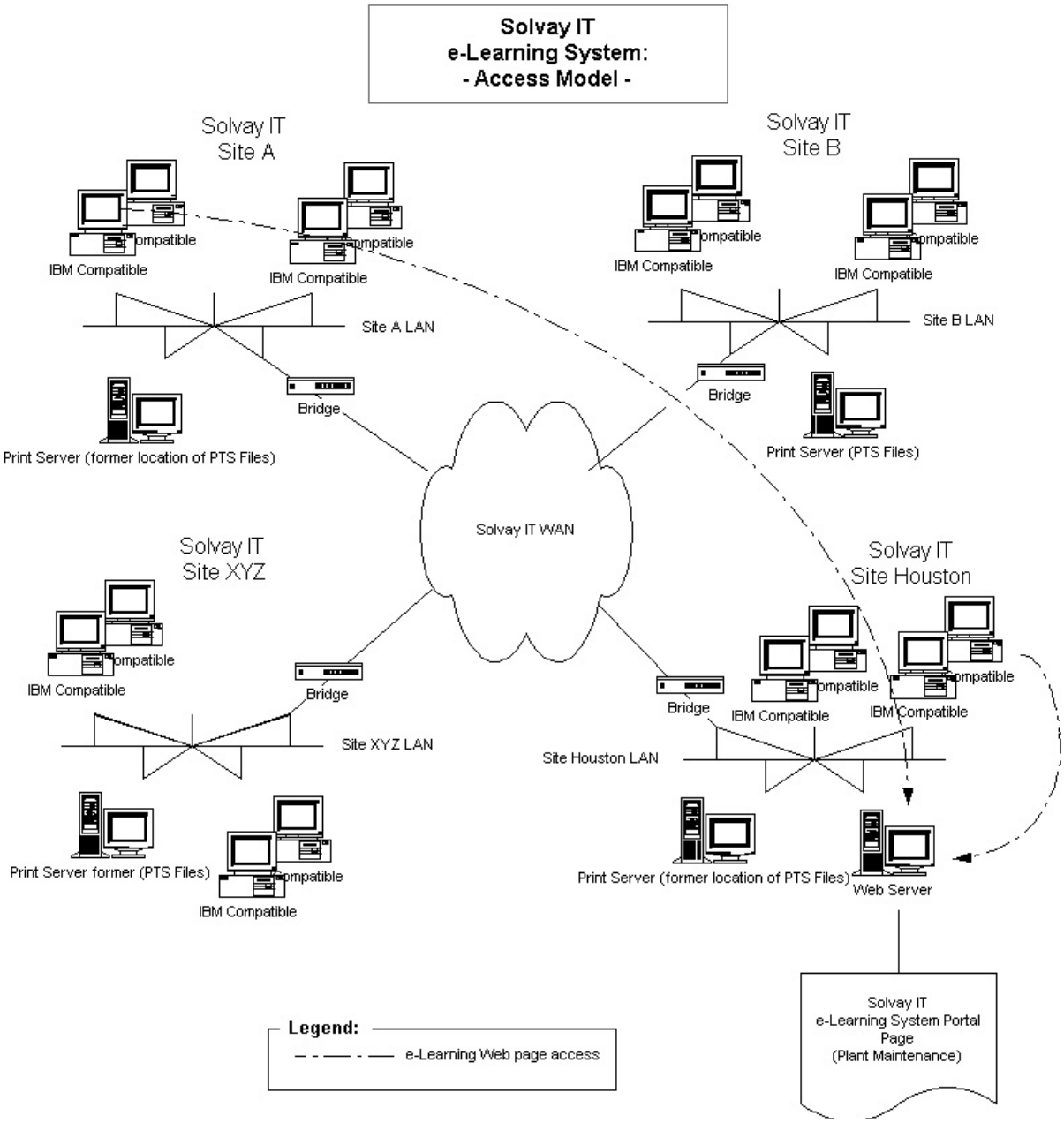

Figure 3-3. Plant Maintenance Notification e-Learning System Audience Access Model

Section 4

Page Descriptions

4.1 Overview

In the following sections, this document provides details to the pages of the Plant Maintenance Notification e-Learning System.

The pages of the Plant Maintenance Notification e-Learning System include:

- Main Page
- Concepts Page
- Demonstration Page
- Simulation Page
- Summary Page
- Review Page

4.2 Main Page

The Main Page will contain links to each task related to Plant Notifications. The page will provide links to the overall introduction, how to get help, Review, and Feedback. The e-Learning Main Page will also provide a link to “How to use this e-Learning Course,” which will provide basic navigation and "getting started" information about the Plant Maintenance Notification e-Learning System.

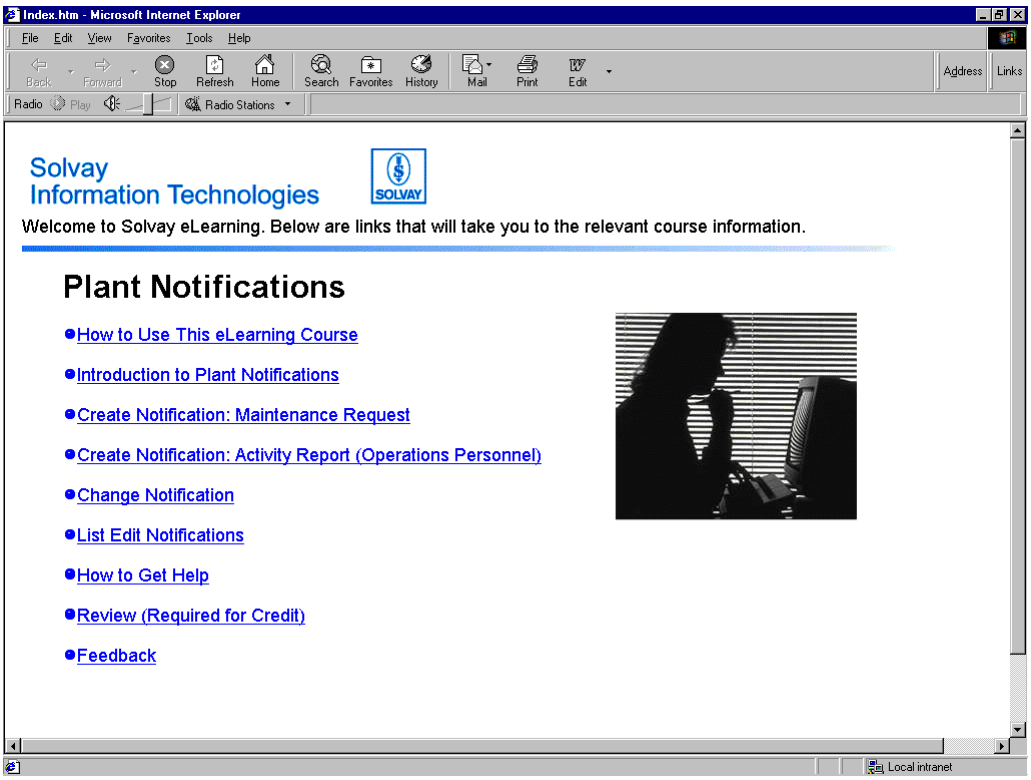

Figure 4-1. Main Page

Table 4-1. Main Page Elements

Element Name	Element Type	Response
Solvay logo	Image	None
“Welcome to Solvay eLearning...”	Text	None
Plant Notifications	Text	None
How to Use This eLearning Course	Hyperlink	Displays in same window the “How to Use This eLearning Course” information
Introduction to Plant Notifications	Hyperlink	Displays in same window the “Introduction to Plant Notifications” information
Create Notification: Maintenance Request	Hyperlink	Displays in same window the “Create Notification: Maintenance Request” task
Create Notification: Activity Report (Operations Personnel)	Hyperlink	Displays in same window the "Create Notification: Activity Report (Operations Personnel)" task
Change Notification	Hyperlink	Displays in same window the "Change Notification" task
List Edit Notifications	Hyperlink	Displays in the same window the "List Edit Notifications" task
How to Get Help	Hyperlink	Displays in same window the "How to Get Help" information
Review (Required for Credit)	Hyperlink	Displays in same window the "Review (Required for Credit)" page. This will send the learner to a pass or fail page.
Feedback	Hyperlink	Displays in same window the "Feedback" information
Woman at computer	Image	None

4.3 Concepts Page

The Concepts Page is a conceptual overview of the module's task. Each task will have conceptual information to accompany the activities. Each Concepts Page will include **Objectives of section, Prerequisite, and Estimated Time to Complete**.

The Concepts Page will also contain the **Main**, **Back**, **Top**, and **Next** buttons.

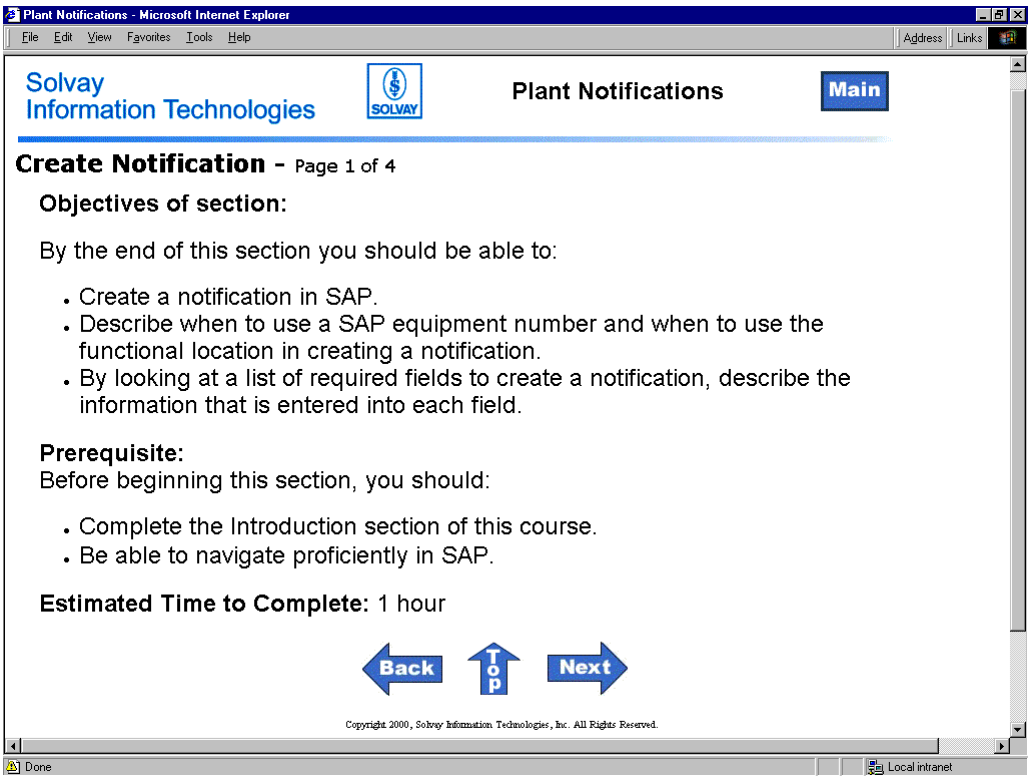

Figure 4-2. Concepts Page

Table 4-3. Concepts Page Elements

Element Name	Element Type	Response
Solvay logo	Text	None
Plant Notifications	Text	None
	Hyperlink Image	Displays in the same window the "Main" page.
	Hyperlink Image	Displays in the same window the previous page.
	Hyperlink Image	Displays in the same window the top of the current page.
	Hyperlink Image	Displays in the same window the next page.

4.4 Demonstration Page

The Demonstration Page is a demonstration of a particular task within the SAP R/3 4.6b. There is a set of brief instructions and a link to the demonstration. The link will open, and in the same window, there will be a link to the On-Demand file. This On-Demand file is a replica of the system the end users at Solvay will use. To the learner, the demonstration will strive to bring the look and feel of the actual system. However, the demonstration will not permit full functionality, as would the actual SAP R/3 4.6b.

The Demonstration Page will also contain the **Main**, **Back**, **Top**, and **Next** buttons.

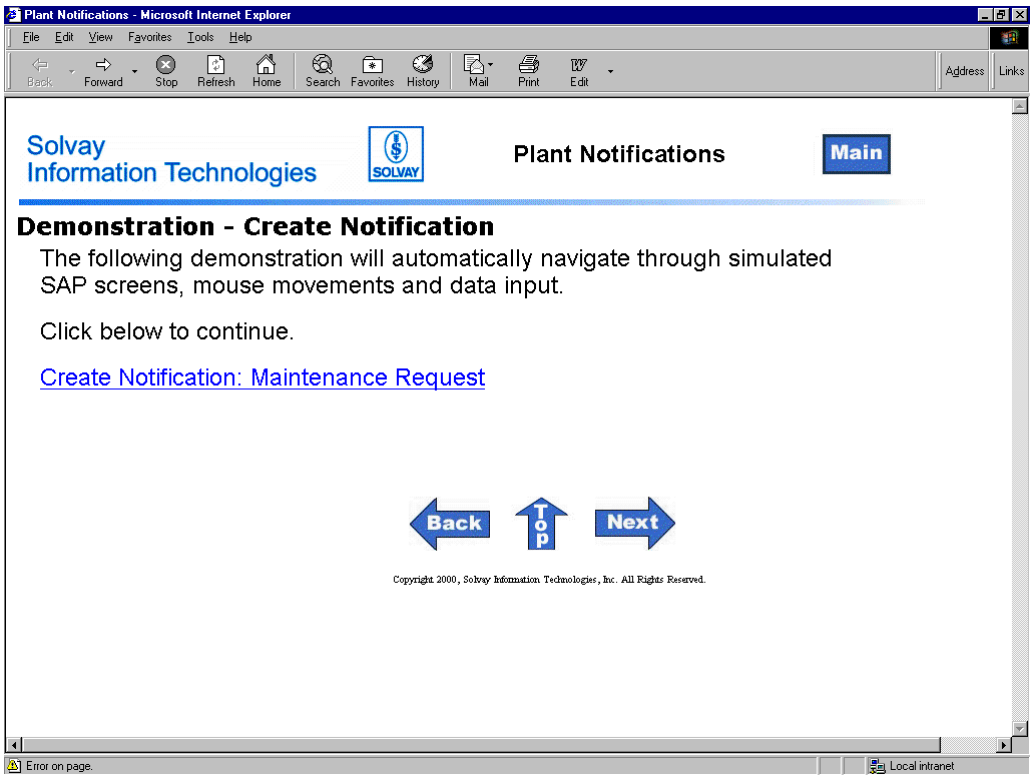

Figure 4-3. Demonstration Page

Table 4-4. Demonstration Page Elements

Element Name	Element Type	Response
Solvay logo	Text	None
Plant Notifications	Text	None
Create Notification: Maintenance Request	Hyperlink	Displays in same window, the “Create Notification: Maintenance Request” PTS On-Demand Demo topic.
Main	Hyperlink Image	Displays in the same window the "Main" page.
Back	Hyperlink Image	Displays in the same window the previous page.
Top	Hyperlink Image	Displays in the same window the top of the current page.
Next	Hyperlink Image	Displays in the same window the next page.

4.5 Simulation Page

The Simulation Page is where the learner will actually practice performing a task within the SAP R/3 4.6b. There is a set of brief instructions and a link to the simulation. The link will open, and in the same window, there will be a link to the On-Demand file. This On-Demand file is a replica of the system the end users at Solvay will use. After starting the practice simulation by clicking on the simulation hyperlink, users will be required to enter specific data into the simulated SAP R/3 4.6b.

The Simulation Page will also contain the **Main**, **Back**, **Top**, and **Next** buttons.

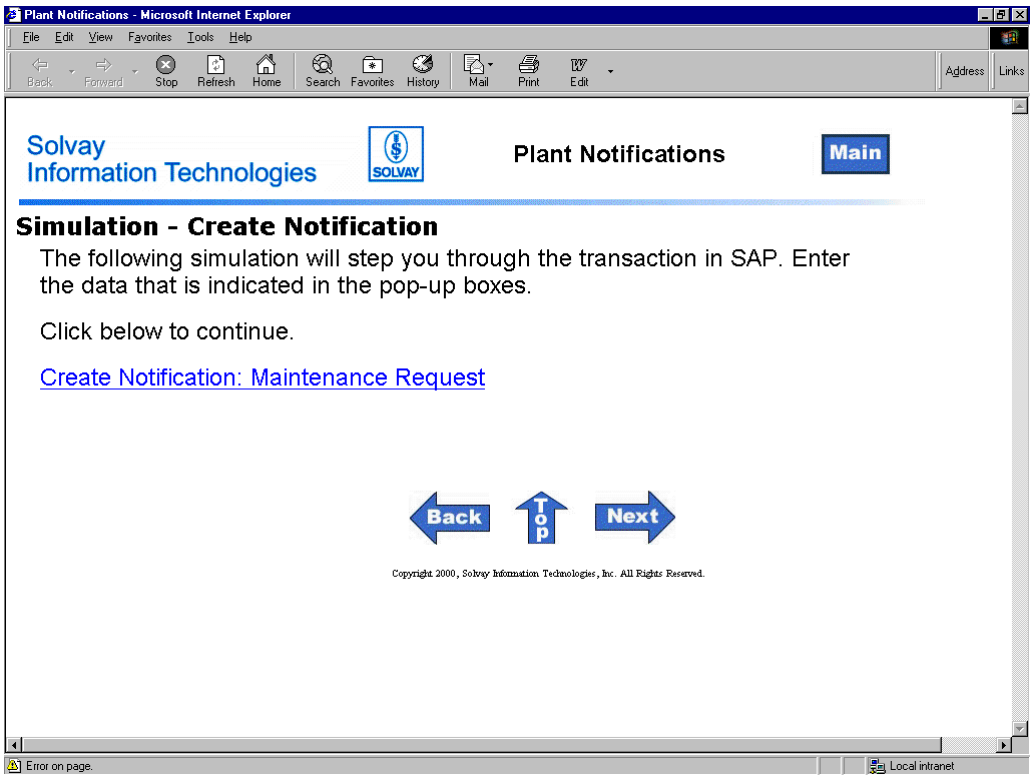

Figure 4-4. Simulation Page

Table 4-5. Simulation Page Elements

Element Name	Element Type	Response
Solvay logo	Text	None
Plant Notifications	Text	None
Create Notification: Maintenance Request	Hyperlink	Displays in same window, the “Create Notification: Maintenance Request” PTS On-Demand Teacher topic.
Main	Hyperlink Image	Displays in the same window the "Main" page.
Back	Hyperlink Image	Displays in the same window the previous page.
Top	Hyperlink Image	Displays in the same window the top of the current page.
Next	Hyperlink Image	Displays in the same window the next page.

4.6 Summary Page

The Summary Page summarizes the task that the user has just learned.

The Summary Page will also contain the **Main**, **Back**, **Top**, and **Next** buttons.

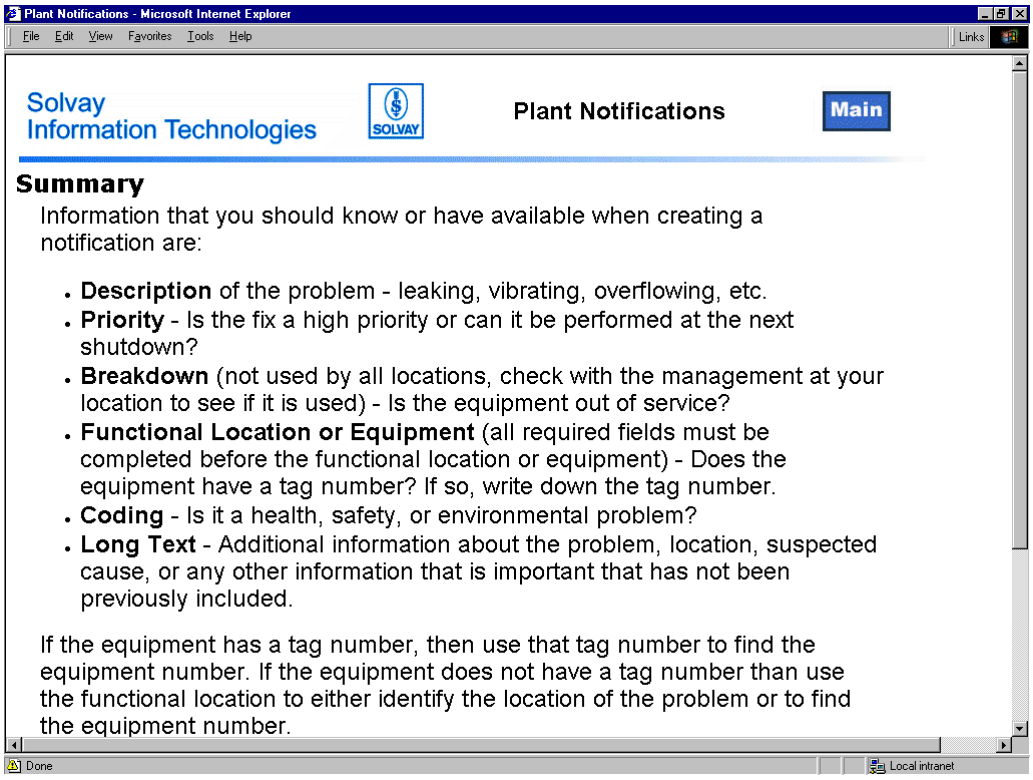

Figure 4-5. Summary Page

Table 4-6. Summary Page Elements

Element Name	Element Type	Response
Solvay logo	Text	None
Plant Notifications	Text	None
Main	Hyperlink Image	Displays in the same window the "Main" page.
Back	Hyperlink Image	Displays in the same window the previous page.
Top	Hyperlink Image	Displays in the same window the top of the current page.
Next	Hyperlink Image	Displays in the same window the next page.

Section 5

Solvay Course Structure & Outline

5.1 Plant Maintenance Notification Course Structure

Solvay has contracted with RWD to develop an e-Learning course for Plant Maintenance Notification for SAP R/3 4.6b. Within the course are the following main topics:

- Introduction to Plant Notification
- Create Notification
- Create Notification: Activity Report
- Change Notification
- List Edit Notifications

In addition to the above topics, the course will include instruction on:

- How to Use This e-Learning Course
- How to Get Help
- Review (Required for Credit)

To maintain instructional validity, each of the main topics will include clearly stated objectives to prepare the learners for what they will learn, and what they are expected to know at the conclusion of each topic. Each topic will have the following elements:

- Objectives
- Presentation of conceptual material
- Summary of the topic

Additionally, the following elements may be added depending upon the nature of the topic:

- Demonstration of the tasks inherent to the topic (that leverage appropriate On-Demand files)
- Exercise/Practice of the tasks inherent to the topic (that also leverage appropriate On-Demand files)

To maintain instructional integrity, the objectives for each main topic will be similar to the following example (e.g., from IW26 - Create Notification: Maintenance Request):

Objectives of Section

By the end of this section you should be able to:

- Create a notification in SAP.
- Describe when to use a SAP equipment number and when to use the functional location in creating a notification.
- By looking at a list of required fields to create a notification, describe the information that is entered into each field.

Prerequisite

Before beginning this section, you should:

- Complete the Introduction section of this course.
- Be able to navigate proficiently in SAP.

Estimated Time to Complete: 1 hour

5.2 Plant Maintenance Notification Course Outline

Figure 5-1 illustrates the flow and full outline of the Plant Maintenance Notification e-Learning course:

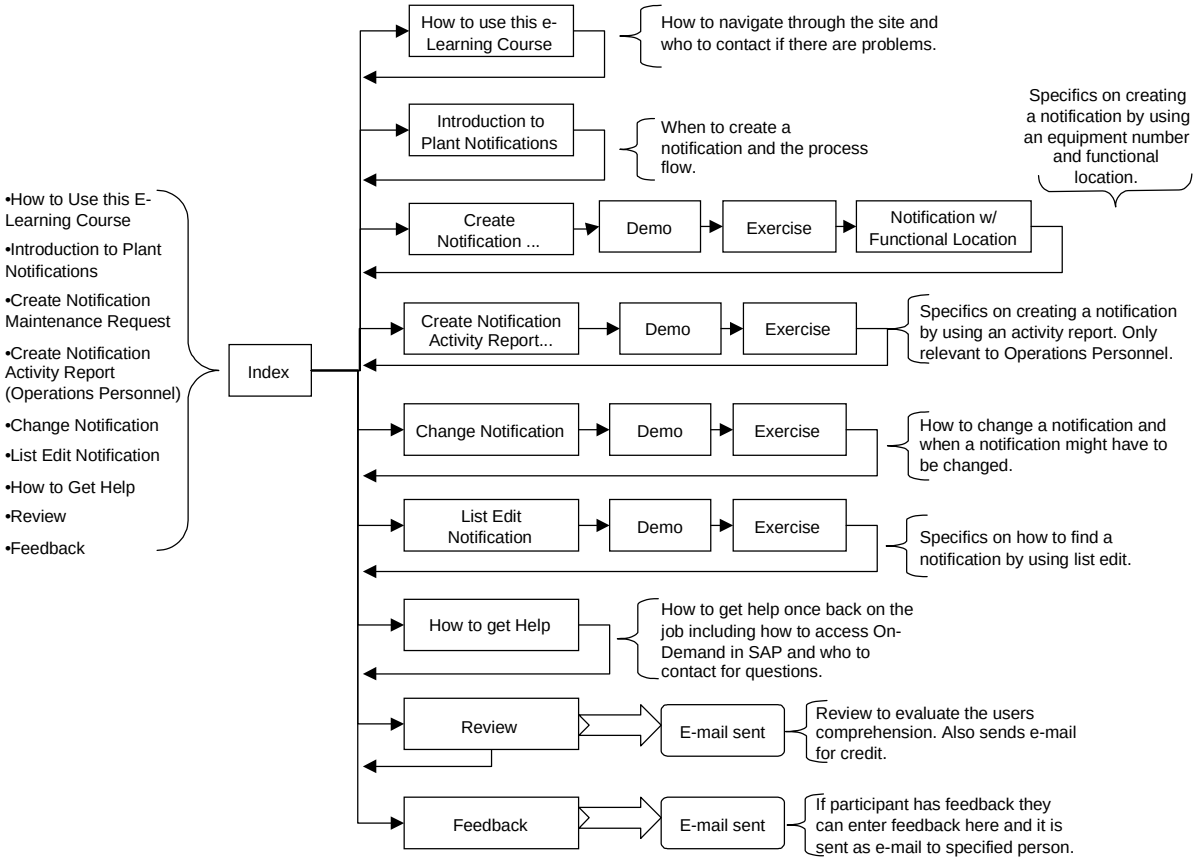

Figure 5-1. Plant Maintenance Notification Course Outline & Flow