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This sample chapter begins with discussing how to logically structure individual document info records into a hierarchy. Next, it covers how to create recipients and other elements needed to distribute documents. It also walks through a number of reports available in DMS. Finally, the chapter covers two ways in which originals in a document info record can be converted into a neutral format, like a PDF.



“Structuring, Distribution, Conversion, and Reporting”



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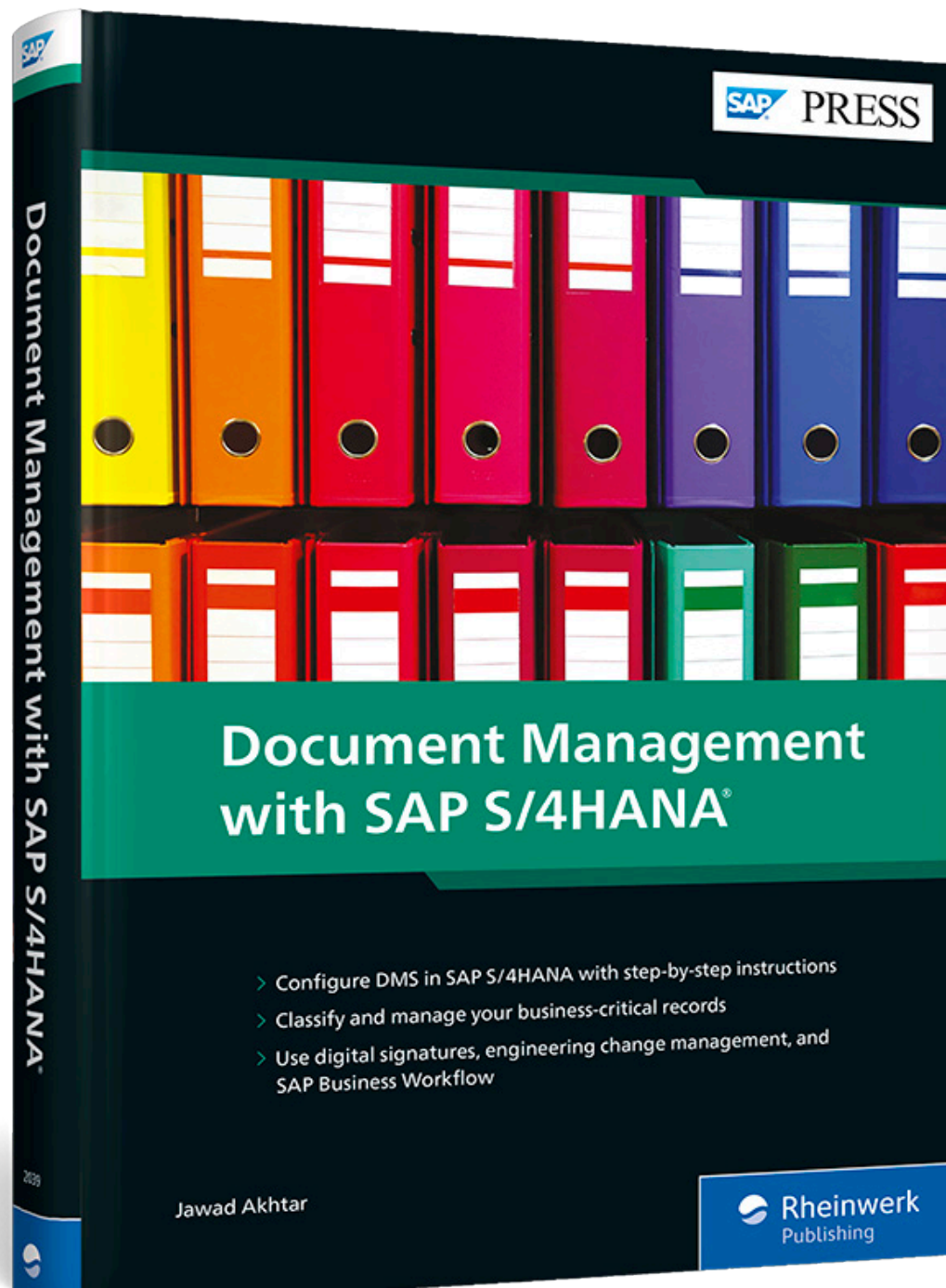
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Chapter 5

Structuring, Distribution, Conversion, and Reporting

Document info records can be structured into logical grouping and can also be arranged and organized into hierarchies. They can also be distributed as well as converted into neutral formats for long-term retention. Several tools are available in Document Management System (DMS) to search document info records that are part of structures or hierarchies.

The previous chapter focused on creating a document info record and many of the features and functionalities that it offers. But companies have a massive tome of documents and digital assets that need to be structured in a logical and organized way so that it's easier and faster to find them. Similarly, a large number of document info records are often interlinked in a form of predecessor-successor relationships, and these superior-subordinate links need to be logically defined in Document Management Systems (DMS). Additionally, DMS offers the tools to quickly and efficiently search document info records, especially if they are part of document hierarchies and structures. The structures here aren't confined to document structures only but also materials' bill of materials (BOM), equipment BOM, functional location BOM, and work breakdown structure (WBS) BOM. Moreover, documents are shared internally and externally in a company and even distributed, which DMS can attend to. Finally, different file formats need to be converted into neutral formats for long-term retention for record-keeping purposes.

This chapter begins with discussing how to logically structure individual document info records into a hierarchy, in which there are some superior and some subordinate document info records, but they are grouped together into hierarchies. It's similar to the way a business user creates folders and subfolders and then places files (in this case, document info records) in Microsoft File Explorer. Then, the chapter covers how to create document info record structures, which is alternatively known as a document BOM. A document BOM is no different from a material BOM or even an equipment BOM that consists of individual document info records and associated quantities of them. Document-based structures can be depicted by a document hierarchy or a document structure. Document structures are used if documents are to be used more than once. As already mentioned, document structures can be processed like a regular BOM, so

the functions available for a BOM are also available for a document structure, which we'll show later in this chapter.

Next, the chapter covers how to create recipients, which is a form of master data, that can then be used during the document info record distribution process. Search tools available to quickly find document info records are covered next, such as the product structure browser, classification, and document where-used list. Lastly, the chapter covers two different ways in which the originals in a document info record can be converted into neutral format, such as in a PDF.

Let's first begin with creating a document info record hierarchy in DMS.

5.1 Document Structuring

In the following sections, we'll discuss document hierarchy and document structure. A *document hierarchy* consists of individual document info records that are connected together in a logical and structured order. In fact, even folders and subfolders of special document type FOL can be created in a document hierarchy as document info records.

A *document structure*, on the other hand, is a document BOM consisting of individual document info records. Because a BOM requires mentioning quantity, each document info record in a document structure has a quantity of 1.

5.1.1 Document Hierarchy

A document hierarchy provides a way to structure and streamline access to different document info records based on predefined business needs. A document hierarchy follows the principle of superior and subordinate documents. A superior document can also be a document folder that contains all the relevant subordinate documents. Here, a document basically refers to a document info record in SAP S/4HANA.

All document info records within DMS can be structured and organized to provide uniform indexing and search functions to meet a company's business and reporting needs. A document hierarchy is similar to creating folders and subfolders in the local hard drive of a computer to better manage various documents and other information for instant retrieval. Here are some examples of document hierarchy usage:

- Equipment or functional locations and their respective drawings, specifications, sections, or checklists
- Vendor or customer details bifurcated based on geographical locations
- Material master divided based on various categories (e.g., pastes, food solutions, or pasta in the Fast-Moving Consumer Goods [FMCG] industry) and then respective document info records attached to them

In a document info record, look for the **Superior Document** section (see Figure 5.1). Assign superior document info record **100070** of document **Type LC1** to **document** info record **100071**, which is now a subordinate document, and save. Then, in the change (Transaction CVO2N) or display document info record (Transaction CVO3N), the **Hierarchy** indicator will turn green to denote that the current document info record is part of a document hierarchy.

Figure 5.1 Superior Document in a Document Info Record

Double-click the green **Hierarchy** indicator in Figure 5.1, and the system navigates to a detailed document hierarchy screen (Figure 5.2). On this screen, the document hierarchy is displayed in both text and graphical versions.

Figure 5.2 shows an example of a document hierarchy of a pump, which is basically the document info record **Pump** with document type **FOL** located at the top level of the document hierarchy. This document info record **Pump** is a superior document and is assigned to a subordinate document info record **100068** with descriptions shown as **Flange_Drawing** (a flange is part of a pump setup). Notice more document info records with descriptions such as **Mechanical_Drawing**, **Electrical_Drawing_1**, which are individual document info records shown as **100066** and **100050**, respectively. The **Level** column denotes where a document info record belongs in a document hierarchy.

In Figure 5.2, choose **Hierarchy graphic** from the menu bar.

Level	Typ	Document	DPT	Ver	Description	Status
0	FOL	PUMP	000	00	Pump	
.1	LC1	100068	000	00	Flange_Drawing	AR Archived
.2	LC1	100066	000	00	Mechanical_Drawing	AR Archived
.3	DRW	100050	000	00	Electrical_Drawing_1	WR Work Request
.3	DRW	100067	000	00	Rotor_Drawing	AR Archived
.3	LC1	100070	000	00	Pump_Vibration_Reduction	IW In Work
.4	LC1	100071	000	00	Pump_Corrosion_Prevention	IW In Work

Figure 5.2 Document Hierarchy

The screen shown in Figure 5.3 appears representing the document hierarchy. Clicking on any document info record within the document hierarchy will lead to the display screen of the document info record (Transaction CVO3N).

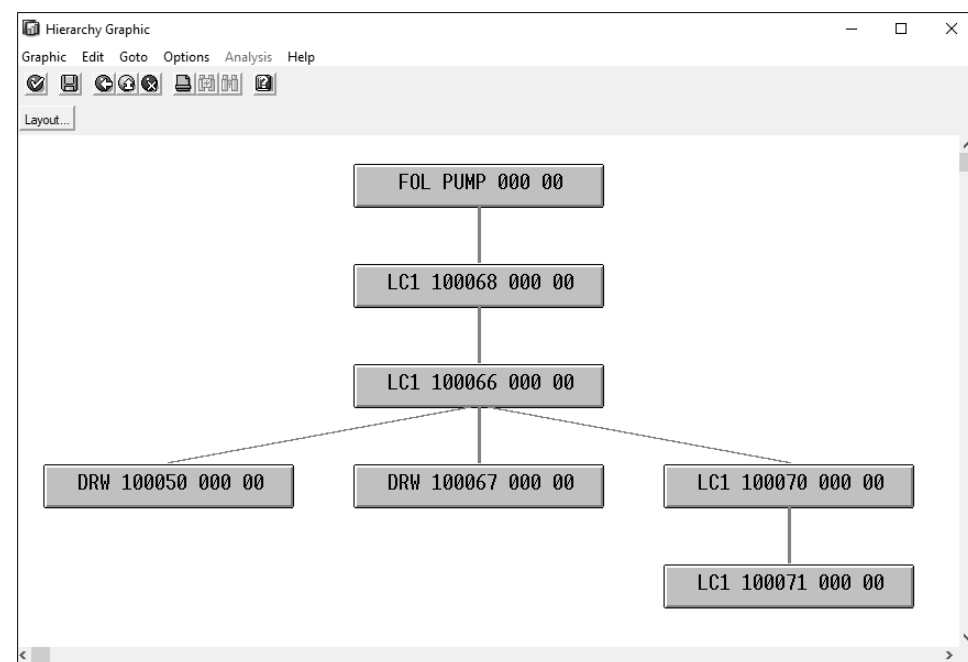


Figure 5.3 Document Hierarchy: Graphical Representation

If the same superior document is assigned to multiple document info records, then all these multiple documents are basically the subordinate documents and are at the same level vis-à-vis the superior document. In Figure 5.3, the superior document 100066 was assigned to three subordinate documents: 100050, 100067, and 100070. These individual documents can be of different document types, such as FOL, DRW, or LC1.

Tips and Tricks

During the DMS implementation project, first create all the document info records individually. Then, to create a document hierarchy, it's recommended to use a Microsoft Excel file to structure documents before creating them in DMS via the superior document assignment functionality. The example shown in Table 5.1 can either be used as a template for document hierarchy creation or modified to meet specific business needs.

Document Number	Document Type	Document Version	Document Part	Superior Document	Superior Document Type	Superior Document Version	Superior Document Part
100066	LC1	00	000	100065	FOL	00	000
100067	LC1	00	000	100065	FOL	00	000
100068	LC1	00	000	100065	FOL	00	000
100069	DRW	00	000	100068	LC1	00	000
100070	DRW	00	000	100068	LC1	00	000

Table 5.1 Template for Creating a Document Hierarchy

While using this table, it's also recommended to add one more column that details the current or the legacy number that the company is already using in managing its documents. This way, it will be easier to map the current (legacy) document numbers with the document info records that SAP creates for ensuring better tracking and monitoring.

5.1.2 Document Structure

A document structure is more commonly used when interfacing a CAD system that has an assembly structure, such as CATIA to DMS. The entire assembly structure can be maintained via a document structure.

To manually create a document structure, either use Transaction CV11 or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Bills of Material • Bill of Material • Document Structure • Create**. Figure 5.4 shows the initial screen to create a document structure for the selected document info record, which, in this example, is **Document 100048** of **Document Type LC1**. If the document info record only has one part and a single version, there's no need to enter them in the **Document part** and **Doc. Version** fields, respectively. Press **[Enter]** or choose **Continue** (not shown but located at the bottom-right side of the screen), and add the document info records in the table, as shown in Figure 5.5.

Check entri... More

*Document: 100048

* Document Type: LC1

Document part: 000

Doc. version: 00

Validity

Change Number:

Valid From: 07.05.2020

Revision level:

Figure 5.4 Document Structure: Initial Screen

Figure 5.5 shows that it's very similar to building a regular BOM based on a material master.

Note

Transaction CV12 can be used to change a document structure, and Transaction CV13 is for the display of a document structure.

Item	ICt	Document	Ty.	DPT	Vs	Component description	Quantity	UoM	Valid From	Valid to
0010	D	100047	LC1	000	00	DMS in S/4 (Manage Documents app)	1	PC	29.04.2020	31.12.9999
0020	D	100046	LC1	000	00	Imports: Letter of Credit-Bank of Tokyo	1	PC	29.04.2020	31.12.9999
0030	D	100070	LC1	000	00	Pump_Vibration_Reduction	1	PC	06.05.2020	31.12.9999
0040	D	100068	LC1	000	00	Flange_Drawing	1	PC	06.05.2020	31.12.9999
0050	D	100070	LC1	000	00	Pump_Vibration_Reduction	1	PC	07.05.2020	31.12.9999
0060										

Figure 5.5 Document Structure

Then, in the change document info record (Transaction CVO2N) or display document info record (Transaction CVO3N) of document info record 100048, the **Document Structure** indicator will turn green to denote that the current document info record is part of a document structure (Figure 5.6).

Display Document: Basic Data Letter of Credit (LC1)

Document: 100048 Part: 000 Version: 00

Deletion Flag Document Structure (Exists) CAD Indicator Hierarchy

Figure 5.6 Document Structure in a Document Info Record

This concludes the discussion on document info record structure and hierarchy. The next section covers document info record distribution.

5.2 Document Distribution

The document distribution functionality in DMS can be used to distribute document info records either manually or automatically and through workflow. A document info record can be distributed either to internal employees or to external companies for information purposes or to process it further. Distributing document info records first requires creating recipients and a recipients list, discussed next.

In the following sections, we'll discuss how to create recipients and recipient lists. Because these are master data, they'll eventually be used during the transactions, such as for document distribution. We'll also discuss the entire document info record distribution process and how to check logs of document info record distribution to see if the distribution was successful or otherwise. Finally, we'll also show how the distributed document info records are available in SAP inbox as well as the SAP Fiori My Inbox app.

5.2.1 Recipients

Following are five types of recipients that can be created as a part of master data to enable document distribution:

- External companies
- External contact person
- SAPoffice distribution lists
- SAP user
- Office user

To maintain recipients, follow the menu path **Logistics • Central Functions • Document Management System • Environment • Document Distribution • Recipient**. A submenu appears that offers options to maintain a master record for different types of recipients in the SAP system. For example, Transaction SU01 is used by an SAP NetWeaver expert to create a user in the SAP system. Here is the list of transactions to maintain different type of recipients:

- Transaction SOAD: External Companies
- Transaction SOCP: External Contact Person
- Transaction SO15: SAPoffice Distribution Lists
- Transaction SU01: User Maintenance
- Transaction SO12: Office User

As the process of creating recipients for document distribution is generally the same, we'll show how to do it for external companies (Transaction SOAD). Because recipient creation is a master data creation process, it's recommended to engage an SAP Net-Weaver expert to manage the same.

Access Transaction SOAD, and maintain the recipient details, including the email address, as shown in Figure 5.7.

External address administration: Company addresses

Street/House number: Ocean Drive 1605

Postal Code/City: 06541 Boston

*Country: US USA Region: MA Massachusetts

Time zone: CST

PO Box Address

P.O. Box: []

PO Box Postal Code: []

Company Postal Code: []

Communication

Language: EN English

Telephone: [] Extension: []

Mobile Phone: [] Extension: []

Fax: [] Extension: []

E-Mail: jawad.akhtar@live.com

* Standard Method: INT E-Mail

Comments: []

Figure 5.7 Recipient Details

Access Transaction SO15 to create public or private distribution lists by adding individual recipients created in the previous steps (see Figure 5.8).

Similarly, access Transaction SO12 to maintain relevant settings for individual users in the various tabs (see Figure 5.9). The settings are relevant for Business Workplace (Transaction SBWP) and triggers the workflow process too.

Find distribution lists

Ty.: X Shared distribution li... Find

Name: []

Title: []

Entry in DL: []

Name: Title	Co...	Dept.	Tel.no.
Private distribution lists			
DMS:DMS			
Jawad Akhtar	A...		-
▶ jawad.akhtar06@gmail.com			-
▶ jawad.akhtar@live.com	A...		-
▶ jawad.akhtar@live.com			-
White Meagan	A...		-
Shared distribution lists			
DMS:DMS			
Jawad Akhtar	A...		-
▶ jawad.akhtar06@gmail.com			-
▶ jawad.akhtar@live.com			-

Figure 5.8 Distribution List

Private office settings for Akhtar Jawad

Documents Send/print Substit. Automatic forwarding Automatic reply Admin. info.

Default setting when creating a document

*Change options after sending: Modifiable by Author

Default document classes

<input type="checkbox"/>	File ...	PC document
<input type="checkbox"/>	BMP	GRAPHICS-TIF
<input type="checkbox"/>	DOC	MS Word Document
<input type="checkbox"/>	PPT	MS PowerPoint Presentation
<input type="checkbox"/>	TIF	GRAPHICS-TIF
<input type="checkbox"/>	XLS	MS Excel Worksheet

Use Standard

Other settings for documents

Confirmation prompt when deleting

Start PC application in R/3 window

Resubmission on workdays only

Factory calendar: 99 International

Empty Trash Automatically

Figure 5.9 Office Setting of an SAP User

5.2.2 Recipient List

In a recipient list, recipients are allocated to one or more document info records. If there's a need to send the documents to more than one recipient, these recipients can be grouped together in a recipient list. When the document distribution process starts, the system determines these recipients automatically from this allocation.

The recipients can also be determined automatically from the existing recipient list. A recipient list determines *who* receives the document info record through document distribution and *how* this document info record is received.

To create a recipient list, use Transaction CV11, or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Document Distribution • Recipient List • Create**.

Figure 5.10 shows the initial screen to create a recipient list. In the **Recipient list** field, enter “DMS50” or any other identification that makes it easier to understand who the recipients in the list are. Choose **Continue**.

Figure 5.10 Recipient List: Initial Screen

In the **Create Recipient List** screen that appears as shown in Figure 5.11, enter a short description, and select the **Standard** checkbox to confirm that this recipient list is the standard list and can be used repeatedly. Enter the document info record, which is “100070” in this example, and its associated document type “LC1”. More than one document info record can be added to a recipient list. Finally, enter details of individual recipients and recipient types, such as “RML” (for internal distribution) and “INT” (for external distribution). Ensure that a standard communication method for each recipient type is already maintained in the recipient master data (refer to the **Standard Method** field in Figure 5.7 again for maintaining relevant details).

Tips and Tricks

One standard recipient list for each document info record can be maintained. This list applies to all document parts and versions of a document. Document info records are

identified in the recipient list by the document number and document type, irrespective of document parts and versions. This means that there's no need to make an entry for these two document key fields.

Further, if there's a need to define another list as the standard recipient list for a document info record, the original list can be withdrawn as the standard.

Figure 5.11 Recipient List

5.2.3 Distribution

There are different methods of distribution for document info records. In an automatic distribution process, the status of a document type in which the relevant workflow details is maintained eventually controls how the document info record gets distributed through the workflow. But to show the entire document info distribution in more detail and for comprehension purposes, let's evaluate the steps involved with manual distribution.

Access Transaction CVO3N (Display Document Info Record), as shown in Figure 5.12, for the document info record **100080** and document type **LC1**. As already mentioned, the recipient list can either be manually created each time a document info record needs to be distributed, or an existing distribution list (a template) can be used for such purposes. Navigate the menu path **More • Environment • Document Distribution • Recipient List • Create**. The next two screens that appear are the same as shown in Figure 5.10 and Figure 5.11 that we just discussed in the previous section. Because the **Recipient List DMS50** in Figure 5.10 was already created and available as master data now, in this step,

simply use the same recipient list as a template to create a recipient list for document info record 100080.

After the recipient list of a document info record is created, it's now ready to be distributed.

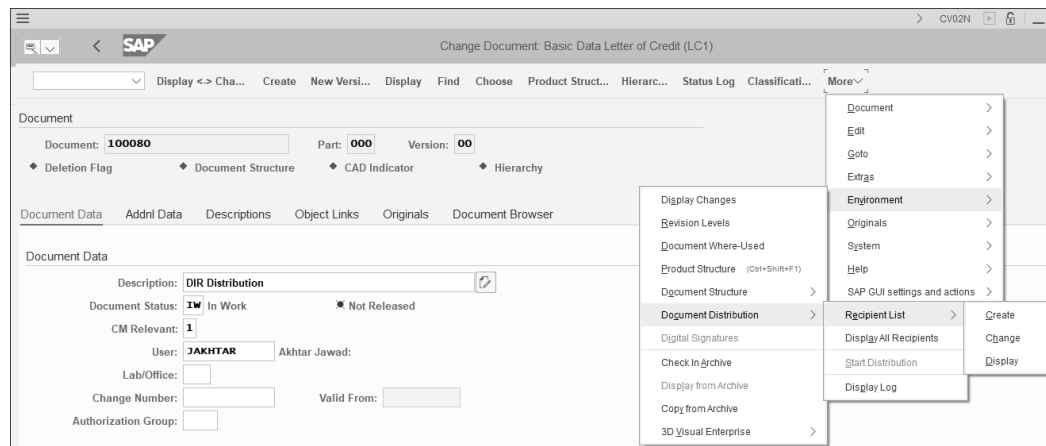


Figure 5.12 Document Info Record Distribution

A document info record can be distributed in multiple ways. One way is to use Transaction CVO3N (Display Document Info Record) for document info record 100080 and document type LC1. Navigate the menu path **More • Environment • Document Distribution • Start Distribution**, and it will lead to the **Start Distribution** screen, which we'll cover shortly.

Another way is use Transaction CVO4N (Search Document), and on the initial screen, enter the selection parameters such as the document info record 100080 and document type LC1 and choose **Execute** (see Figure 5.13).

In Figure 5.13, first select one or more document info records, and then choose **More • Extras • Start Distribution**.

In the **Start Distribution** screen shown in Figure 5.14, you'll see the same distribution options that were previously available when creating recipient list DMS50 in Figure 5.11. The actual recipient list is 13 and was created by copying the recipient list DMS50, and can be seen in the **Rec. list** column. Here, more document info records and more recipients can be added for distribution. Entries can also be deleted. Select the document info record 100080 and its associated recipients in Figure 5.14, and choose **Execute**. A message appears at the bottom of the screen to inform you that the distribution order has been created, and a distribution log is available for evaluation, which is discussed in the next section.

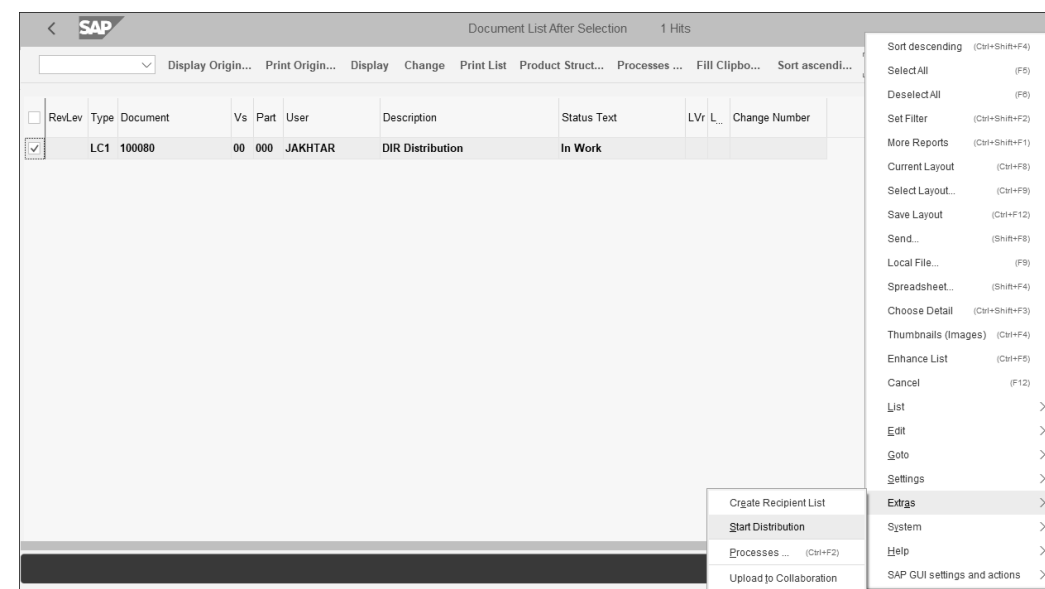


Figure 5.13 Document Info Record Distribution in the Search Function

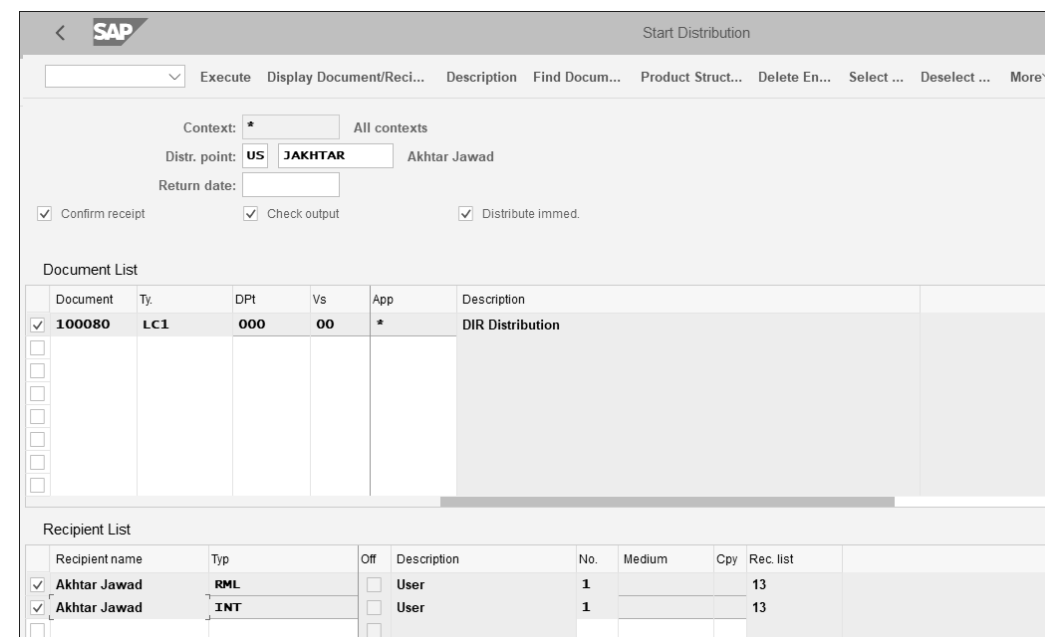


Figure 5.14 Distribution List

Tips and Tricks

The third method of document distribution is to navigate menu path **Logistics • Central Functions • Document Management System • Document Distribution • Distribution • Start • For Document** or use Transaction CVI8.

The fourth method is to navigate menu path **Logistics • Central Functions • Document Management System • Document Distribution • Distribution • Start • For Recipient List** or use Transaction CVI7.

A distribution order is an instruction to the SAP system to distribute document info records to the chosen recipients. It can be composed of one or more initial orders. The system identifies the distribution order by an internal number. Further, the system stores all the data that is required to send the documents through SAP Business Workflow to the recipients in the distribution order.

The system creates an initial order when document distribution starts. A distribution order is then initiated by this initial order. The distribution order can be initiated in the following ways:

- **Manual start**

If the distribution is started manually, and the **Distribute Immediately** indicator is set (see Figure 5.14), the workflow event distribution order initiated is created, and the distribution process starts immediately. If the distribution is started manually, and the **Distribute Immediately** indicator isn't set, the distribution process isn't started. The *Distribution order initiated* event is created later, for example, by a background job, such as program RCDDSSTAR.

- **Event from SAP Business Workflow**

If the distribution is started by an event from SAP Business Workflow, the person responsible must start the distribution order manually from the distribution log. The distribution process is started according to the status of the part orders. Further, this distribution order splits into a 1:1 relationship of a document info record to recipient for the document distribution and is processed further as a part order.

5.2.4 Distribution Log

Like all SAP Business Workflow-based business processes, a log is automatically created so that you can evaluate the statuses of all the various distributions of document info records. To view a distribution log, navigate the menu path **Logistics • Central Functions • Document Management System • Document Distribution • Distribution • Log** or use Transaction CVI9.

Figure 5.15 shows the initial screen of the distribution log in which the entered selection parameters will bring up the desired report in the form of a list. Options to enter large

and varied selection parameters are available here. For this example, enter the parameters shown in Figure 5.15, and choose **Execute**.

Figure 5.15 Distribution Log: Initial Screen

The screen shown in Figure 5.16 is the distribution log in which the document info record 100080 has been successfully distributed to two different recipient types: internal (RML) and external (INT).

Package	Recipient name	Type	Send date	Send time	Crt time	Crtid on	Typ	Distr. point
53	Akhtar Jawad	RML	00:00:00	11:13:10	08.05.2020	US	JAKHTAR	
72	IG 100080	LC1 000 00	Akhtar Jawad					45
52	Akhtar Jawad	INT	00:00:00	11:13:10	08.05.2020			
73	IG 100080	LC1 000 00	Akhtar Jawad					45

Figure 5.16 Distribution Log

Table 5.2 shows the various statuses that are found in the distribution log and the subsequent actions (denoted by an X in the next three columns) that can be taken for each status. For example, when the status is **ER (Error)**, the distribution can be started manually, can be started even with errors in the distribution order, or can be started by making changes in the distribution order. The option to choose the relevant next step is located at the top menu bar in Figure 5.16. Further, and at any time, you can view the distribution log as well as the workflow log by choosing the relevant option from the top menu bar.

Status	Start Manually	Start Erroneous Part Orders	Start Again with Changes
AS Start asynchronously	X		
MA Start manually from the distribution log	X		
ER Error	X	X	X
IG Ignored		X	X
WO Check output	X	X	X
WR Confirm receipt	X	X	X
OK Distribution completed successfully			X

Table 5.2 Statuses in the Status Log and Possible Actions

Tips and Tricks

While distributing several document info records with some originals, sometimes only one original is received even if the receiver can see all related document info records; that is, only one original is attached, and the rest are missing.

To address this issue, follow these steps:

1. Use Transaction FILE.
2. Select DOCUMENT_DISTRIBUTION.
3. Double-click **Syntax Group Definition**.
4. The file length is defined for **WINDOWS NT**. Change the length value to “70”.
5. For **AS/400**, change the length to “40”.

Afterwards, recheck the document distribution again, and all originals will be included in the distribution process.

Let’s now check if the document info record is available in the Business Workplace (SAP inbox) as well as in the SAP Fiori My Inbox app.

5.2.5 SAP Inbox

Access the **Business Workplace** screen shown in Figure 5.17 through Transaction SBWP. A few document info records of document type LC1 are in the SAP inbox, including the document info record **100080**. Clicking on the hyperlink in the lower half of the screen will display this document info record (Transaction CVO3N).

Exe...	Title	Status	Work Item ID	Creation Date	Creation Time	Priority	Attachments
<input checked="" type="checkbox"/>	Document LC1 100080 was changed		387247	08.05.2020	10:47:39	5	
<input checked="" type="checkbox"/>	Document LC1 100071 was changed		387245	07.05.2020	12:19:55	5	
<input checked="" type="checkbox"/>	Document LC1 100071 was changed		387242	07.05.2020	12:14:18	5	
<input checked="" type="checkbox"/>	Document LC1 100070 was changed		387237	07.05.2020	12:13:09	5	
<input checked="" type="checkbox"/>	Document DRW 100067 was changed		387234	07.05.2020	12:11:10	5	

Figure 5.17 SAP Inbox

5.2.6 My Inbox App

Figure 5.18 shows the SAP Fiori My Inbox app, in which not only the document info record **100080** is available, but several workflow functions can be performed as shown at the bottom of the screen.

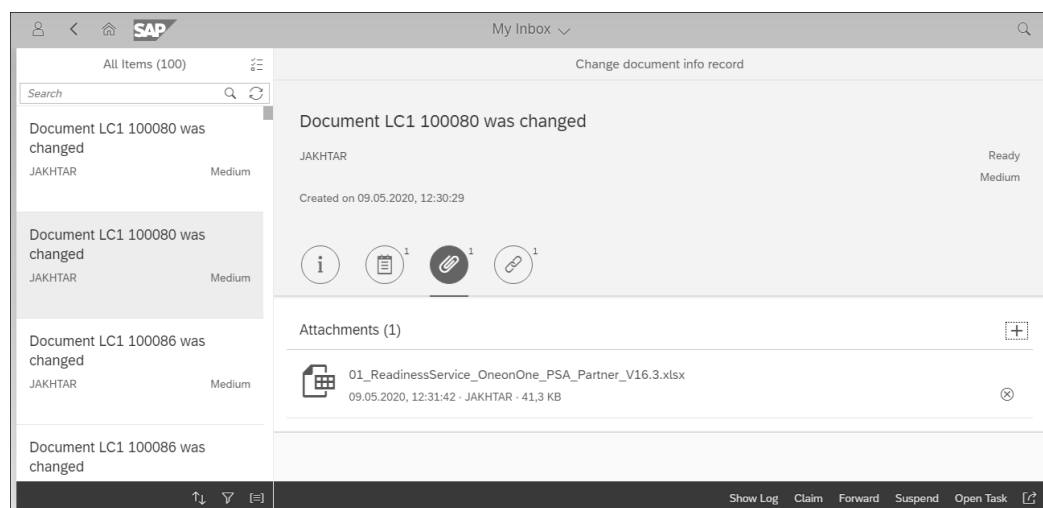


Figure 5.18 My Inbox App

This concludes the discussion on document info record distribution. The next section covers document info record reporting.

5.3 Reporting

In this section, we'll provide guidance on how to use some of the reports available in DMS. We'll cover the product structure browser, which not only can be used for DMS but also for other SAP objects that are in some form of a BOM. After becoming familiar with the features and functions for reporting, including tools and icons, navigating to unexplored areas of reporting will be easier. We'll also discuss how to find SAP objects using the classification function that has previously been discussed in Chapter 3; this time, however, the focus is on using it for searching document info records. We'll also show how to use the where-used functionality to search for document info records in DMS.

5.3.1 Product Structure Browser

The product structure browser offers an option to select from a variety of focus areas to view the required information. For example, selecting a focus of **Document**, the product structure browser will show all information related to a document info record as the top information item and everything else displaying below it.

To access the product structure browser, follow the menu path **Cross-Application Components • Engineering Change Management • Environment • Product Structure** or use Transaction CCO4.

Figure 5.19 shows the initial screen with various focuses that are selectable via correspondingly named tabs, including **Material**, **Document** (document info record), **Change number**, **Char.** (characteristic), **Class**, **Equipment**, **Functional location**, and **Configuration definition**.

Enter the document info record "100070" of **Document Type** "LC1", and choose **Continue** (not shown here).

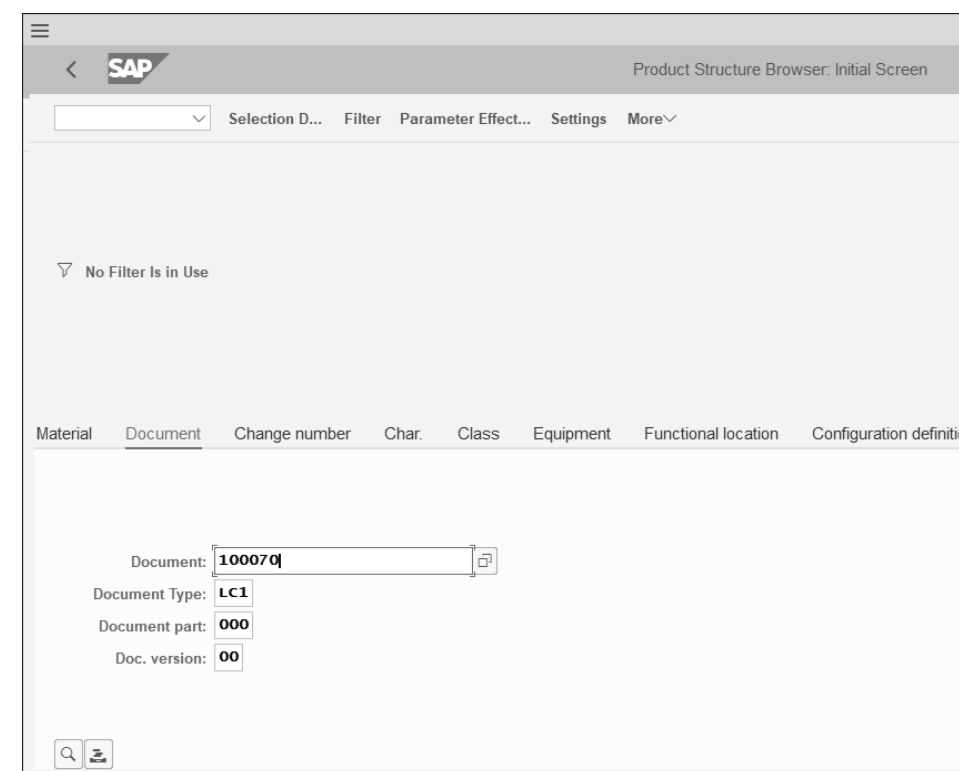


Figure 5.19 Product Structure Browser: Initial Screen

Figure 5.20 shows the option to directly view original files associated with document info records. In some cases, information displayed just isn't limited to showing the relationships among material master, BOM, and document info records but also associated master records.

Recall from Chapter 4 where we discussed how to link a document info record to another SAP object, such as a material master. The product structure browser takes advantage of these objects' links displaying information and ensuring complete and logical links among the various objects. For example, an engineer on the manufacturing floor

needs access to all drawings for a product being built and for which the material master number is known. In Transaction CCO4, simply execute a search by the material master number, and the following information is displayed:

- All documents linked to the material master
- The BOM associated with the material master
- A where-used list to identify in which assemblies this material master is used

Figure 5.20 shows the limited drilldown of document info record **100070** of document type **LC01**. It shows the superior and subordinate document info records as well the classification associated with them. Further, the columns display the associated originals, and clicking an object leads to its detailed display. The right side of Figure 5.20 shows the legends of various SAP objects. Note that only a limited number of columns are displayed here, which can be changed by changing the display layout.

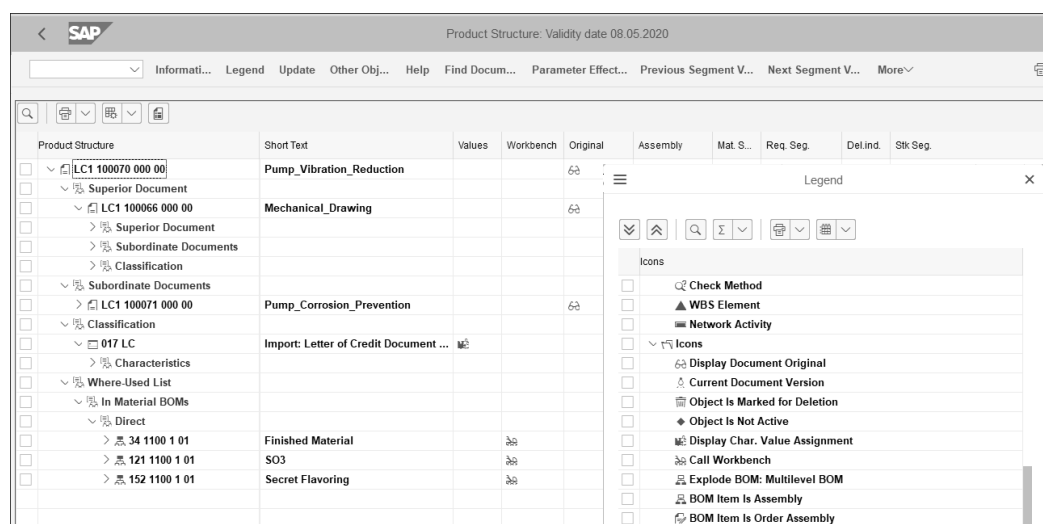


Figure 5.20 Product Structure Browser

Table 5.3 contains the list of SAP objects whose data can be displayed in the product structure browser (if the data is maintained).

SAP Objects		
Document	Document revision	Change number
Change notification	Material	Material revision
Material specification	Equipment	Functional location
Class	Characteristics	Configuration definition
Configuration folder	Baseline	BOM

Table 5.3 SAP Objects in the Product Structure Browser

SAP Objects		
BOM item	Task list	Sequence
Operation	Material inspection characteristic	Distribution order

Table 5.3 SAP Objects in the Product Structure Browser (Cont.)

5.3.2 Finding Objects Using Classification

The standard feature of the classification system is to make the selection of SAP objects easier because objects can be found using values that have been entered for that specific object. We'll begin by showing how to assign a class to an SAP object, such as the document info record. Assigning a class to the document info record will also bring up the characteristics associated with that class. Because the characteristics are how business users maintain SAP object-specific information, we'll show how to search for specific SAP objects using the classification system.

Using Transaction CL3ON as shown in Figure 5.21, the class **LC** and the associated class type **017** (which is for document management) can be used to search for specific DMS documents that fulfill the classification criteria. The center of Figure 5.21 shows that the search criteria "650" was entered. Clicking **Find in initial class** in the top menu bar shows several document info records (**Object**) LC1 that meet the search criteria at the bottom of the screen.

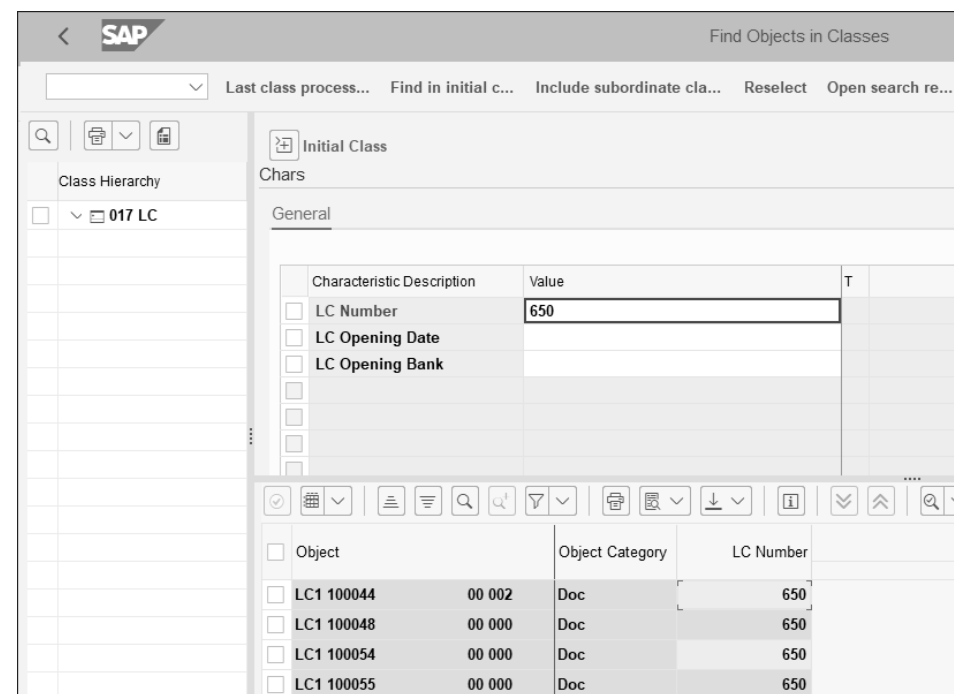


Figure 5.21 Characteristic Search for Pump Capacity

Note

Browse the classification menu in SAP to evaluate which other search and reporting functions can benefit the business processes. For example, use the *where-used* reporting option for characteristics to find all the classes in which a specific characteristic is in use. This option helps when, for example, there's a need to replace an old characteristic with a new one, and you must know the classes in which it's presently in use.

The menu path is **Cross-Applications Component • Classification System • Environment • Reporting**.

5.3.3 Document Where-Used List

The where-used list is a reporting tool to enable you to quickly search where document info record belongs, such as in a product structure (which is basically a document info record's BOM) or in a material's BOM. A document info record can also be part of a material's BOM and can be a reference during the manufacturing process. To access a where-used list, use Transaction CSD5 or follow the menu path **Cross-Applications Component • Logistics • Central Functions • Document Management System • Environment • Reporting • Where-Used List • Document (Single-Level)**.

Figure 5.22 ❶ shows the initial screen of the where-used list. Enter the document info record, which is **100070** of document type **LC1** in this example. Select the **Direct** checkbox so that the report directly navigates to showing the list of document info records in a product structure that contains the document info record **100070**. Additionally, select the **Doc. structure** checkbox to search for document info record **100070** in the product structure only. Choose **Execute**. In the popup that appears ❷, enter "1" in the **Required qty.** (quantity) field, and choose **Execute** again. Because the where-used list can be used in various SAP objects where it has greater relevance, the **Required qty.** field is a mandatory entry.

Figure 5.23 ❶ shows the document info record **100070** in use and as a part of document structure **100048**. You may verify this by quickly referring to Figure 5.5, wherein the document info record **100070** is used in (or is a part of) document structure **100048**.

Tips and Tricks

Another quick way to find out which SAP objects a document info record is a part of is to use Transaction CV03N (Display Document Info Record). Then, navigate to **More • Environment • Document Where-Used**, and it will list all the SAP objects the said document info record is a part of.

Figure 5.22 Where-Used List: Initial Screens

As a second example of using the where-used list, refer to Figure 5.22 ❶ again; this time, however, first deselect the **Doc. structure** checkbox and instead select the **Material BOM** checkbox to search for document info record **100070**. This time, Figure 5.23 ❷ shows that the document info record **100070** is a component of three different materials' BOMs, that is, components **34**, **121**, and **152**.

Figure 5.23 Where-Used List for Document Info Records and Materials

This concludes the discussion on document info record reporting. The next section covers document info record conversion.

5.4 Document Conversion

As mentioned previously, document info records can be converted from their original application file format to a neutral file format, such as TIF or PDF, for long-term retention purposes. To understand the basics of the conversion process, we'll confine ourselves to a DOC to PDF conversion in this section.

5.4.1 Conversion of Original Application File

The conversion functionality in DMS can be used to convert document info records either manually or automatically. There are different methods for converting document info records. In an automatic conversion process of original files, the status of a document type maintained eventually controls how the document info record gets converted through the conversion program in the conversion server. However, to show the entire document info conversion in more detail and for better understanding, let's

evaluate the steps involved through manual conversion. We'll use an example where an original file in the Microsoft Word document (with a .doc file extension) that is checked in to the document info record is converted into the PDF format.

To convert a document info record, use Transaction CONV02 or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Conversion of Original Application Files • Convert Document**.

Enter the details of the document info record to be converted as shown in Figure 5.24. Enter either the **Document status** or **Conversion specification name** (but not both) of a document info record, and choose **Continue** (not shown in the figure). The bottom of the screen displays the relevant message (**Converting 1 original application files for the document**), as shown in Figure 5.24.

Note

Because the conversion process takes a few minutes, it's best to wait for a few minutes before displaying the relevant document info record to see if the conversion process was successful.

Figure 5.24 Document Info Record Conversion: Initial Screen

To display messages generated during the conversion processes, use Transaction CONV01 or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Conversion of Original Application Files • Display Messages**.

Figure 5.25 shows the log of all successful and unsuccessful conversions of not just the document info records but also the product structure and BOM.

Note

Following are the transactions for product structure and BOM conversions:

- Transaction CONVO3: Convert Assembly (BOM)
- Transaction CONVO4: Document Structure (Source) for Individual File

Date/Time/User	Nu...	External ID	Object text	Subobject Text	Transactio...	Program	Mode	Log number
> 09.05.2020 00:00:10 JAKHTAR	5	00000000000000000000000100...	Original file co...			SAPLCON...	Batch pro...	000000000000000000950875
> 09.05.2020 00:05:10 JAKHTAR	5	00000000000000000000000100...	Original file co...			SAPLCON...	Batch pro...	000000000000000000950883
> 09.05.2020 00:24:09 JAKHTAR	5	00000000000000000000000100...	Original file co...			SAPLCON...	Batch pro...	000000000000000000950915

Type	Message Text	Ltxt	Current Date	Time	Document
■	Connection set up to converter DMS, number 001		09.05.2020	00:00:40	100070
●	Incorrect program in RFC Destination in CONVERTER.CONV_UTIL_DEST	?	09.05.2020	00:00:40	100070
●	> Function module "CONV_UTIL_ABOUT" not found.		09.05.2020	00:00:40	100070
●	All converters DMS for this conversion are not available at this time	?	09.05.2020	00:00:40	100070
●	Not all resources available: Job will be started later	?	09.05.2020	00:03:11	100070

Figure 5.25 Document Info Record Conversion Log

5.4.2 Conversion with SAP 3D Visual Enterprise Generator

SAP 3D Visual Enterprise Generator is a client-server application that automates the processing, conversion, and publication of 2D and 3D data with lightweight formats such as PDF or JPG in the downstream processes. In several industries, such as discrete manufacturing, it's necessary to convert CAD files into lightweight formats to share the models with different areas of the organization. This saves money on CAD licenses and increases performance. Therefore, SAP 3D Visual Enterprise Generator is used as a conversion server, which completely integrates with DMS. As already discussed in Chapter 2, engage an SAP NetWeaver expert for the installation of SAP 3D Visual Enterprise Generator into the SAP system.

The conversion process can be manually or automatically started, for example, by changing the status of a document info record. The configuration of the SAP 3D Visual Enterprise Generator workflow determines how viewables are generated based on a document structure and how to assign material and document attributes and characteristics.

If the CAD system isn't directly integrated with SAP S/4HANA but is connected to a third-party team data management/product data management (TDM/PDM) system, Visual Data Integration (VDI) can be used to make the visual formats available in SAP. VDI is a component of the SAP 3D Visual Enterprise Generator. The VDI tool has the ability to import CAD data from a foreign TDM/PDM system into DMS.

Note

Visual Design Stream (VDS) 4 is the standard visualization format of SAP 3D Visual Enterprise 9.0 and is replacing the Right Hemisphere (RH) format. It supports multiple CAD configurations in one single file and supports monolithic and shattered assemblies with references. Many other features are available, such as the SAP 3D Visual Enterprise Viewer integration in HTML5, loading on demand (via streaming), enhanced rendering quality, and more.

To register document info records for conversion through the SAP 3D Visual Enterprise Generator, use Transaction DMS_REGO1 or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Conversion with SAP Visual Enterprise Generator • Register Document for Conversion** to open the **Document Registration For Conversion** screen, as shown in Figure 5.26.

Enter the document info record details as shown, and choose **Execute**. SAP 3D Visual Enterprise Generator returns the converted documents to the DMS storage. These documents contain a metadata identifier that links the converted document and SAP business data. The models from the documents can be displayed through the SAP 3D Visual Enterprise Viewer. Metadata identifiers tagged to the models enable the business application to display the associated viewables from DMS storage in the side panel in the form of thumbnails and a 3D view.

Document Registration For Conversion

Save as Varia... More

Documents Search

Document Number: 100070 to: []

* Document Type: Lc1

Document Part: 000

Document Version: 00

Document Status: IW

Explode Assembly Options

Explode Assembly:

Explosion Mode:

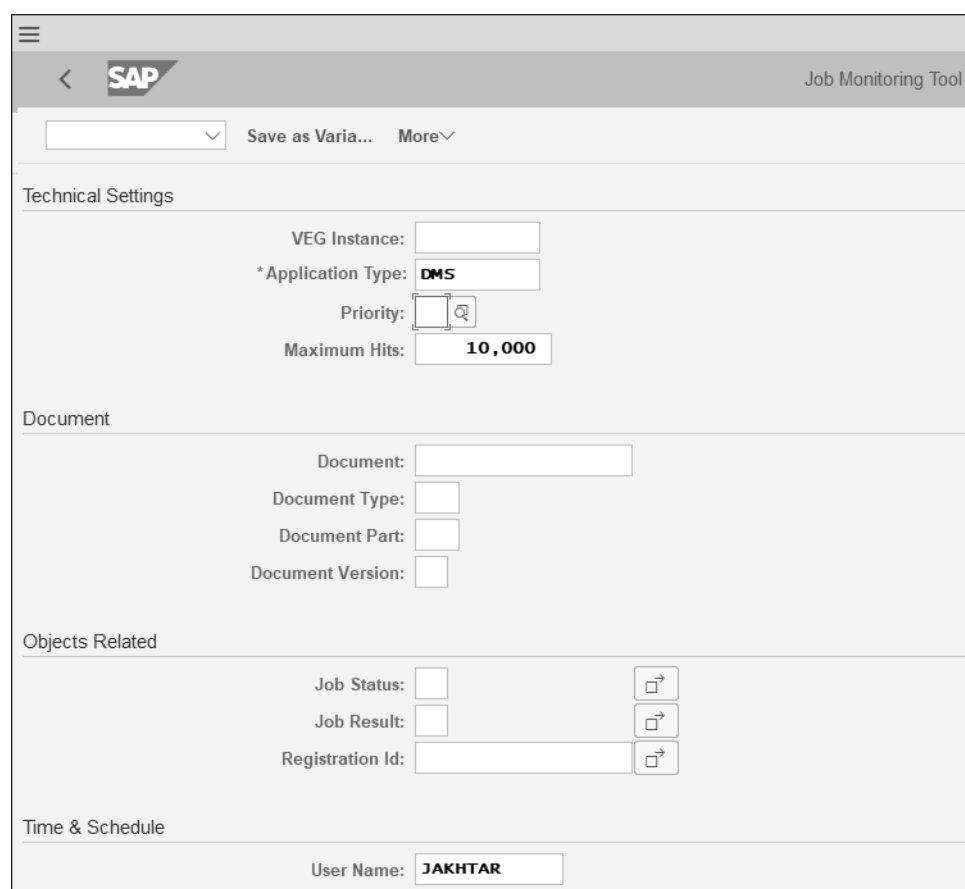
Figure 5.26 Document Registration for Conversion

Note

For direct conversion to the PDF format using the SAP 3D Visual Enterprise Generator tool, use Transaction DMS_PDFCONV or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Conversion with SAP Visual Enterprise Generator • Direct PDF Conversion**.

Finally, to monitor the conversion status of originals in the document info records that have been registered for conversion, use Transaction VEG_JOBMONITOR or follow the menu path **Logistics • Central Functions • Document Management System • Environment • Conversion with SAP Visual Enterprise Generator • Monitor Conversion Status**.

In Figure 5.27, enter the initial parameters as shown, and choose **Execute**.

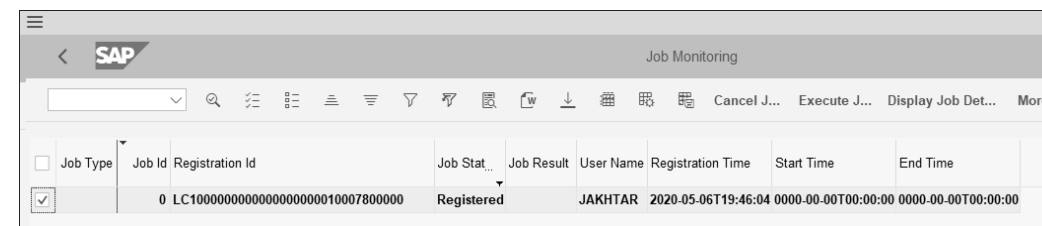


The screenshot shows the SAP Job Monitoring Tool configuration screen. The interface includes a navigation bar with the SAP logo and the title 'Job Monitoring Tool'. Below the navigation bar is a 'Save as Varia...' button and a 'More' dropdown. The main configuration area is divided into several sections:

- Technical Settings:**
 - VEG Instance: []
 - * Application Type: DMS
 - Priority: []
 - Maximum Hits: 10,000
- Document:**
 - Document: []
 - Document Type: []
 - Document Part: []
 - Document Version: []
- Objects Related:**
 - Job Status: []
 - Job Result: []
 - Registration Id: []
- Time & Schedule:**
 - User Name: JAKHTAR

Figure 5.27 Job Monitoring

Figure 5.28 shows that one document info record of document type LC1 has been registered for conversion through the SAP 3D Visual Enterprise Generator conversion tool.



The screenshot shows the SAP Job Monitoring Log table. The table has the following columns: Job Type, Job Id, Registration Id, Job Stat..., Job Result, User Name, Registration Time, Start Time, and End Time. The data row shows:

Job Type	Job Id	Registration Id	Job Stat...	Job Result	User Name	Registration Time	Start Time	End Time
0	LC10000000000000000000000000000000	10007800000	Registered		JAKHTAR	2020-05-06T19:46:04	0000-00-00T00:00:00	0000-00-00T00:00:00

Figure 5.28 Job Monitoring Log

5.5 Summary

This chapter built on and enhanced the concepts and foundations laid in the previous chapter on managing document info records. This chapter discussed how to create document structures and document hierarchies, as well as how to distribute document info records and then find them in the SAP Fiori My Inbox app as well as Business Workplace. The chapter also covered various reporting tools available in DMS. Finally, the chapter delved deep into conversion tools available in DMS to convert original files into “neutral” formats.

The next chapter is on integrating the digital signature functionality in DMS.

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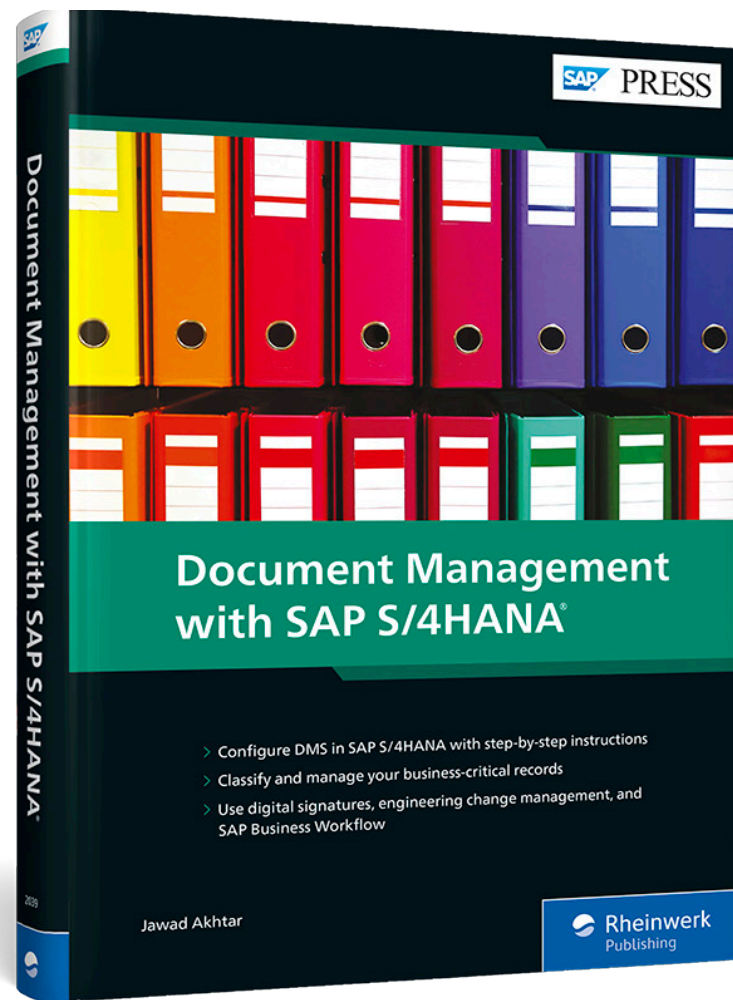
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