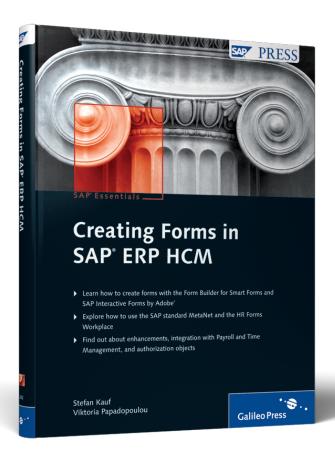
# **Creating Forms in SAP® ERP HCM**





## **Contents**

| 1 | Intr       | oduction  | 9              |
|---|------------|---|----------------|
|   | 1.1<br>1.2 | Target Audience of this Book Structure of this Book                         | 11<br>11       |
| 2 | Fun        | ctions of the HR Forms Workplace  | 13             |
|   | 2.1        | The SAP Standard MetaNet  2.1.1 MetaNet Objects                             | 14<br>16<br>19 |
|   | 2.2        | 2.1.2 Customizing and Enhancing the MetaNet                                 | 42<br>42<br>45 |
|   |            | <ul><li>2.2.2 Defining Form Attributes</li></ul>                            | 45<br>47<br>50 |
|   | 2.3        | Conclusion  | 51             |
| 3 | Des        | igning the Form Layout with the Form Builder                                | 53             |
|   | 3.1        | Using the Form Builder for Smart Forms                                      | 54<br>54       |
|   |            | 3.1.2 Creating Font Formats Using the Style Builder                         | 59<br>62<br>66 |
|   | 3.2        | 3.1.5 Outputting Bar Codes  | 68<br>71<br>72 |
|   | ۷.۷        | 3.2.1 A Brief Overview  3.2.2 Prerequisites for Using SAP Interactive Forms | 72<br>72<br>74 |
|   |            | 3.2.3 Font Formats and Graphical Options of Adobe LiveCycle Designer        | 76             |
|   |            | 3.2.4 Example of Designing a Form with Adobe LiveCycle  Designer            | 96             |
|   |            | 3.2.5 New Process Options with the Integrated Adobe Technology              | 104            |
|   | 3.3        | Conclusion  | 104            |

| 4 | Pays                              | lip —  | Creation and Customizing   | 107  |
|---|-----------------------------------|--|--|--|
|   | 4.1                               | 4.1.1<br>4.1.2<br>Custo<br>4.2.1<br>4.2.2<br>4.2.3<br>4.2.4<br>4.2.5 | ng the Form  SAP_PAYSLIP_DE  SAP_PAYSLIP_US2  mizing  The Selection Screen  Selecting and Grouping Wage Types  Defining and Outputting Cumulation Wage Types  Controlling the Printing of Retroactive Accounting  Considering the ESS Settings in Infotype 0655  usion | 107<br>109<br>113<br>118<br>119<br>124<br>132<br>137<br>144<br>144 |
| 5 | Time                              | State  | ement — Creation and Customizing   | 147  |
|   | <ul><li>5.1</li><li>5.2</li></ul> | 5.1.1<br>5.1.2   | ng the Form  SAP_TIM_99_0002  SAP_TIM_99_0001_P  mizing  The Selection Screen  | 147<br>147<br>150<br>152<br>153                                    |
|   |                                   | 5.2.3<br>5.2.4   | Notes in the Standard Form Outputting Provisional Time Balances Handling Recalculations Converting Industrial Time to Standard Hours and   | 155<br>158<br>164<br>168   |
|   | 5.3                               |  | Minutes  Considering the ESS Settings in Infotype 0655usion  | 172<br>173   |
| 6 | Enha                              | ıncem  | ents with BAdIs  | 175  |
|   | 6.1                               |  | ating Forms Automatically After Transport  DRM_AFTER_TRANSP)   | 175  |
|   | 6.2<br>6.3                        | Enhar<br>6.3.1   | atting a Business Address (HRFORM_BUSINESS_ADRS) Incements for HR Forms (HRFORM_HRF02)  CHECK_PERNR Method and CHECK_PERSON Method  CHECK_PERNR_LATE Method and  | 177<br>178<br>180  |
|   |                                   | 6.3.3  | CHECK_PERSON_LATE Method SET_ARCHIVE_INDEX Method  | 180<br>181   |

|                             |  | 6.3.4 BEFORE_PDF_PRINT Method   | 181<br>181                                    |
|-----------------------------|--|---|---|
|                             | 6.4<br>6.5   | Country-Specific Exit for MetaData (HRFORM_METADATA)  Conclusion  | 182<br>182                                    |
| 7                           |  | gration with the Payroll and Time Management ponents of SAP ERP HCM   | 183   |
|                             | 7.1<br>7.2<br>7.3  | Payroll Time Management Conclusion  | 183<br>18<br>190                              |
| 8                           | Autl   | horizations (Authorization Objects)   | 191   |
|                             | 8.1<br>8.2<br>8.3<br>8.4   | P_HRF_INFO Authorization Object P_HRF_META Authorization Object Maintaining the Two Authorization Objects Conclusion  | 191<br>192<br>193<br>194                      |
|                             |  |   |   |
| 9                           | Out  | look for SAP Interactive Forms by Adobe   | 195   |
| 9                           | Out<br>9.1   | look for SAP Interactive Forms by Adobe   | 195<br>199                                    |
|                             | 9.1  | · ·   | 199   |
|                             | 9.1<br>pend  | Conclusion  | 199   |
| Ар                          | 9.1  pend  List o  | Conclusion  | 199<br>201                                    |
| Ap                          | 9.1<br>Ppend<br>List of<br>SAP   | Conclusion  | 199<br>201<br>203<br>205<br>207               |
| Ap<br>A<br>B<br>C<br>D      | 9.1<br>List of<br>SAP<br>Form<br>Source  | Conclusion  Iices  Of Abbreviations  Notes for the Forms Workplace  I Templates  Code for the XSKIF Function Program  | 199<br>201<br>203<br>205                      |
| Ap<br>A<br>B<br>C           | 9.1<br>List of<br>SAP<br>Form<br>Source<br>Source  | Conclusion  Of Abbreviations  Notes for the Forms Workplace  Templates  Ce Code for the XSKIF Function Program  Ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  | 199<br>201<br>203<br>205<br>207<br>209        |
| Ap<br>A<br>B<br>C<br>D<br>E | 9.1<br>List of<br>SAP<br>Form<br>Source<br>Source<br>Mod   | Conclusion  Of Abbreviations  Notes for the Forms Workplace  Templates  Ce Code for the XSKIF Function Program  Ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule   | 199<br>201<br>203<br>205<br>207<br>209<br>215 |
| Ap<br>A<br>B<br>C<br>D      | 9.1  List of SAP   Form Source Source Mod Documents  | Conclusion  of Abbreviations  Notes for the Forms Workplace  Templates  ce Code for the XSKIF Function Program  ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule  umentation of the Relevant Features                                | 199 201 203 205 207 209 215 217               |
| Ap<br>A<br>B<br>C<br>D<br>E | 9.1<br>List of<br>SAP<br>Form<br>Source<br>Source<br>Mod   | Conclusion  Of Abbreviations  Notes for the Forms Workplace  Templates  Ce Code for the XSKIF Function Program  Ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule  Imentation of the Relevant Features  Name                          | 199 201 203 205 207 209 215 217 217           |
| Ap<br>A<br>B<br>C<br>D<br>E | 9.1  List of SAP   Form Source Source Mod Documents  | Conclusion  Iices  Of Abbreviations  Notes for the Forms Workplace  Templates  Ce Code for the XSKIF Function Program  Ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule  Immentation of the Relevant Features  Name  F.1.1 Task      | 199 201 203 205 207 209 215 217 217           |
| Ap<br>A<br>B<br>C<br>D<br>E | 9.1  List of SAP   Form Source Source Mod Documents  | Conclusion  Of Abbreviations  Notes for the Forms Workplace  Templates  Ce Code for the XSKIF Function Program  Ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule  Imentation of the Relevant Features  Name                          | 199 201 203 205 207 209 215 217 217 217       |
| Ap<br>A<br>B<br>C<br>D      | 9.1  List of SAP   Form Source Mod Documents of Same Page 1   Farm Source Mod Documents of Same Page 1   Farm Same Page 1   Far | Conclusion  of Abbreviations  Notes for the Forms Workplace  Templates  ce Code for the XSKIF Function Program  ce Code of the Z_HR_FORMS_READ_TIME_PERIODS Function  ule  umentation of the Relevant Features  Name  F.1.1 Task  F.1.2 Usage | 199 201 203 205 207 209 215 217 217           |

## Contents

| G   | Naming Conventions in the Time Statement Form |                       |     |
|-----|---|-----------------------|-----|
| Н   | Additional Information                        |                       | 221 |
|     | H.1   | Additional Literature | 221 |
|     | H.2   | SAP Trainings         | 221 |
|     | H.3   | Web Sites             | 221 |
| I   | The A   | Authors               | 223 |
|     |   |                       |     |
| Ind | dex   |                       | 225 |

## 1 Introduction

A form is the hallmark of every enterprise and should be accurate, clear, and have an attractive design. This applies to all areas of business, including HR. In this book, we will focus on two typical HR forms: the payslip and the time statement.

In the SAP world, different options for designing a form have developed over the years, so customers who have been using SAP software will recognize the primary tools used for form creation and output, including *SAPscript*, *Smart Forms* (in HR, also called *HR Forms*), and *SAP Interactive Forms by Adobe*. However, because SAPscript is used primarily in SAP components outside of HR, in this book, we'll focus on form design with Smart Forms and SAP Interactive Forms.

#### Note

In this book, both the interactive forms and the print forms are always referred to as *SAP Interactive Forms by Adobe* — for SAP and Adobe. This is the official terminology for the technology integrated with SAP, which also applies to print forms without any restrictions. The forms are called *interactive* forms because users can make changes with a mouse or keyboard, and they can select from dropdown lists or enter text or numbers.

SAP Interactive Forms became available with SAP ERP Human Capital Management (SAP ERP HCM) 6.0 and SAP NetWeaver 7.0 (see Figure 1.1) and will be continuously extended in future. The integration of the Adobe technology provides you with extensive new options — particularly the more comprehensive and more convenient WYSIWYG (*What You See Is What You Get*) design functions directly in the SAP NetWeaver system as well as the direct printout of PDF forms.

#### Note

The use of SAP Interactive Forms and PDF forms is subject to licensing in specific circumstances, but the classic print forms, such as payslip and time statement, are license-free. For additional information, read SAP Note 750784. For further questions, don't hesitate to contact your SAP contact person.

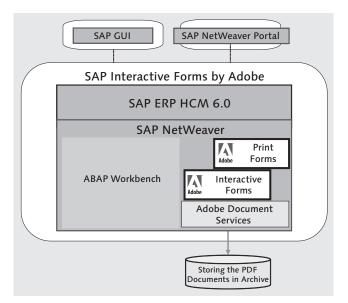


Figure 1.1 Integration of the Adobe Technology with SAP NetWeaver

Although the previous technologies for creating print forms continue to be supported within the framework of the release strategy, the future is geared toward SAP Interactive Forms. More functional and basic developments will be made based on the newly integrated Adobe technology today and in the future, but all existing forms will be gradually changed over to Adobe technology and delivered as such. The integration of SAP Interactive Forms with the standard functions of SAP ERP HCM means that these new technological components are integrated with *all* areas, so the forms based on Adobe components can be called directly from Customizing into the SAP ERP HCM system. The created forms are then provided by the system in an integrated manner within the framework of the application, for instance, for the call and creation of the payslip.

For the foreseeable future, you will be able to choose whether you want to design and create the form using Smart Forms or SAP Interactive Forms. So, this book focuses on the function and application of these two tools for designing and creating print forms. Notes for the selection of the technology are provided for cases in which forms are delivered both for Smart Forms and for SAP Interactive Forms.

Within SAP ERP Human Capital Management, the HR Forms Workplace provides the framework to create flexible evaluations of HR master data, time data, and payroll results in an attractive design using these two technologies. The HR Forms Workplace enables you to consistently and conveniently select, design, and print data from different sources. Unfortunately, applying the design and adjusting the forms to the enterprise requirements isn't always that easy, so throughout the book we will give you detailed, practical guidelines for creating forms using the HR Forms Workplace.

## 1.1 Target Audience of this Book

This book is written for:

- ► Consultants and developers who want to (or have to) deal with this subject
- ► Key users who create reports or forms and deploy the HR Forms Workplace tools for this purpose

The book will help you classify and apply the form design with Smart Forms and SAP Interactive Forms. Knowledge of ABAP and ABAP Workbench, Smart Forms, and Adobe LiveCycle Designer will be helpful.

## 1.2 Structure of this Book

The HR Forms Workplace is the interface to design and create forms in SAP ERP HCM, so in **Chapter 2**, Functions of the HR Forms Workplace, we will first explain the data retrieval for the form before discussing the functions and how to use the individual components, such as MetaNet, MetaFields, and so on. **Chapter 3**, Designing the Form Layout with the Form Builder, outlines how you can create and change forms using Smart Forms and SAP Interactive Forms. **Chapter 4**, Payslip — Creation and Customizing, guides you through all of the form setting steps, including customizing the selection screen and other processing steps. **Chapter 5**, Time Statement — Creation and Customizing, assumes that you understand the information in the previous chapters and focuses on the specifics in time management. **Chapter 6**, Enhancements with BAdIs, describes how you can use BAdIs (Business Add-Ins) to format business addresses or activate forms automatically after a transport. **Chapter 7**, Integration with the Payroll and Time Management Components of SAP ERP HCM, outlines how the payslip and time statement are integrated with the SAP ERP HCM components of Payroll and Time Management

and how you can control the call via features. **Chapter 8**, Authorizations (Authorization Objects), considers the subject of authorizations, which is particularly important in HR. And, finally, **Chapter 9**, Outlook, answers the following questions: What are the future prospects in the area of form design? What happens to SAP Interactive Forms by Adobe? How can you use the same technical basic principles in other processes of HR? The many **appendices** summarize the most important SAP Notes, BAdIs, and other useful information.

We hope that you'll enjoy reading this book, and we wish you a lot of success in form design!

Stefan Kauf and Viktoria Papadopoulou

As you can see in Figure 3.26, the international SAP\_TIM\_99\_0002 template has been provided for the time statement with the corresponding variables. Here, you see form ZZZ\_TIM\_01\_0002, which is a copy of the SAP\_TIM\_99\_0002 template. We will discuss this in more detail in Chapter 5, Time Statement — Creation and Customizing.

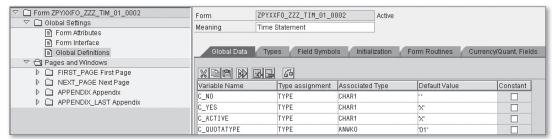


Figure 3.26 Global Definitions of the Time Statement

Now we will detail the use of the Form Builder for SAP Interactive Forms.

## 3.2 Using the Form Builder for SAP Interactive Forms

This section introduces the Form Builder for SAP Interactive Forms and describes how you can use this tool. In this context, the focus is on the differences in the Form Builder for Smart Forms.

## 3.2.1 A Brief Overview

In 2002, SAP and Adobe Systems entered a strategic partnership with the aim to integrate interactive forms as well as Adobe's print and design expertise with the SAP NetWeaver platform. In 2005, SAP finally brought SAP Interactive Forms by Adobe to market. Since then, numerous print forms have been converted, that is, changed from SAPscript or SAP Smart Forms to the PDF technology. With the release of enhancement package 4 for SAP ERP 6.0, SAP now provides more than 2,200 PDF-based print forms across all components.

#### Note

The same SAP NetWeaver components are used both for PDF-based print forms and for interactive PDF forms. Section 3.2.2, Prerequisites for Using SAP Interactive Forms, describes the technical prerequisites for using PDF-based forms.

When using Adobe technologies in the SAP system, the *data retrieval* and *layout* are strictly separated; that is, the data is retrieved from the SAP Dictionary through the interface, and the form is processed in Adobe LiveCycle Designer. This separation also requires a strict task separation and consequently allows for task sharing. This makes it easier to create forms and programs and implement necessary adaptations and changes in an easier and more cost-effective way.

When creating a form, it always needs to be assigned to a form interface. This means that there is always an interface for data retrieval. This data interface can be addressed using Transaction SFP in the SAP system or has a corresponding navigation in Customizing for the payslip or time statement. Figures 3.27 and 3.28 illustrate the process of calling the interface in Transaction SFP.

| Form Builder: Entry Point |               |  |  |  |
|---------------------------|---------------|--|--|--|
|                           |               |  |  |  |
|                           |               |  |  |  |
| ● Form                    |               |  |  |  |
| O Interface               |               |  |  |  |
| & Display                 | Change Create |  |  |  |

Figure 3.27 Interface and Form — Call

| Create Form | ×                        |
|-------------|--------------------------|
| Form        | ZZ_PYXXFO_SAP_PAYSLIP_US |
| Description |                          |
|             |                          |
| Interface   | PYXXFO_SAP_PAYSLIP_US2   |
| ✓ Save      |                          |

Figure 3.28 Interface and Form — Assignment

You could already generate a PDF document from an SAP print output (SP01), for example, using function modules or downstream tools or services, but the difference in the use of the Adobe technology is that both the data retrieval and the generation of the result document are implemented in the SAP system when SAP Interactive Forms are used. So, all modules of the software development are integrated with the known *Software Lifecycle Management* (Correction and Transport System) of SAP. This applies to ABAP Workbench (ABAP) and SAP NetWeaver Developer Studio (Java).

The same entry point through the interface for data retrieval is used both for Smart Forms and for SAP Interactive Forms. The two technology components only differ in Customizing and later processing, so you can call both technologies in SAP ERP HCM using Transaction HRFORMS. The following sections discuss this aspect in more detail.

## 3.2.2 Prerequisites for Using SAP Interactive Forms

To use the Adobe components in the SAP environment, you must meet some prerequisites:

- ▶ Adobe Document Services (ADS) must be installed in the SAP system.
- ► To use the payslip and time statement for HR, the corresponding enhancement packages must be implemented.
  - ► For the payslip, Release SAP ERP 6.0 and SAP Enterprise Extension HR (EA-HR 0002) are required.
  - ▶ The time statement isn't currently available for customers and will be delivered with EA-HR 0004.

To use the Adobe technology, the following components must be available (see Figure 3.29):

## • Form design

Adobe LiveCycle Designer must be installed locally on the client and is automatically called by the SAP GUI when it's called from the SAP environment, for example, from Transaction HRFORMS or Transaction SFP. The necessary steps for the installation are described in SAP Notes 962762 and 1121176.

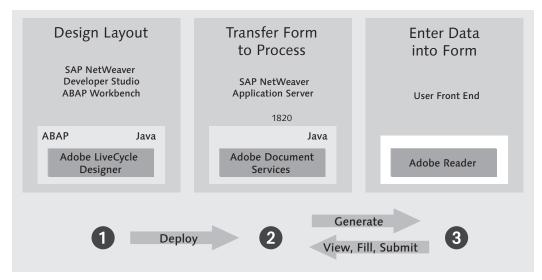


Figure 3.29 Workflow with SAP Interactive Forms

## 2 Form usage

To convert the generated templates into PDF documents within the SAP environment, you need Adobe Document Services (ADS) installed as a component of the basis. The ADS installation must be implemented in a Java environment. The installation steps are described in the SDN under Adobe: SAP Interactive Forms By Adobe • Installation And Configuration • SAP Interactive Forms • Configuration Guide.

## Form display

At the minimum, Adobe Reader must be installed to display the created forms. The Adobe Reader software can be downloaded from the Adobe website (*www. adobe.com*) free of charge.

#### Note

You can check the installation of ADS anytime by calling the FP\_PDF\_TEST\_00 report. The return message then displays the ADS version information. Use the FP\_PDF\_TEST\_01 report to generate and display a form for testing purposes.

# 3.2.3 Font Formats and Graphical Options of Adobe LiveCycle Designer

All SAP customers can download Adobe LiveCycle Designer from the SAP Service Marketplace. This tool is the new form development environment in the SAP system and is called from the respective Customizing. Chapter 4, Payslip — Creation and Customizing, and Chapter 5, Time Statement — Creation and Customizing, describe in detail how you can access Adobe LiveCycle Designer to design the payslip and time statement. In addition to the entry point via Customizing, you can also directly access it using Transaction HRFORMS in SAP ERP HCM or Transaction SFP in the application development. These entry points navigate you to the Form Builder and thus to Adobe LiveCycle Designer.

#### Note

The individual form functions depend on the respective SAP release and the corresponding Adobe LiveCycle Designer version. The descriptions and examples here are based on Adobe LiveCycle Designer Version 7.1.

You can install Adobe LiveCycle Designer in the Windows C: directory under PROGRAMS • ADOBE • DESIGNER 7.1. For additional information on this installation, refer to SAP Note 962763. After the installation, the entire environment of Adobe LiveCycle Designer — integrated with the SAP system — is available.

You should call Adobe LiveCycle Designer from the SAP environment to use the data fields of the SAP Data Dictionary. They aren't available if you call Adobe LiveCycle Designer locally. Additionally, you must ensure that the installation of Adobe LiveCycle Designer isn't updated and, for example, replaced by another version when you process or create a form because such changes may lead to problems.

## Main Areas of Adobe LiveCycle Designer

Adobe LiveCycle Designer consists of one workspace, which is divided into four main areas (see Figure 3.30):

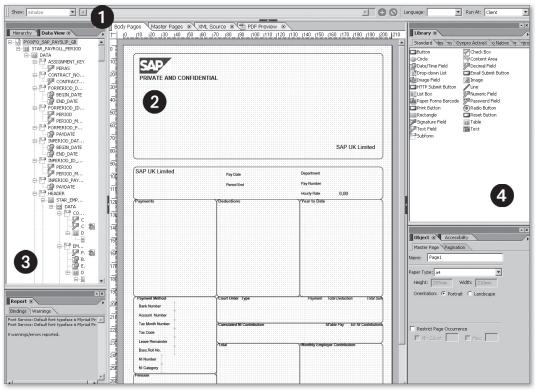


Figure 3.30 The Four Main Areas of Adobe LiveCycle Designer

## O Script Editor

The upper area contains the Script Editor, which you can activate or deactivate using the Script Editor palette or pressing the Ctrl + + + F5 key combination (see Figure 3.31). Here, for example, you can enter scripts in the two supported script languages, JavaScript and FormCalc, to create advanced form templates. This aspect is further discussed in the context of XML sources.



Figure 3.31 Script Editor

#### 2 Central area

The structure of the area in the center is predefined. This area contains the Body Pages, Master Pages, XML Source, and PDF Preview tabs. In "The Central Area of Adobe LiveCycle Designer" section later in this chapter you will find more information on this.

#### 3 Left area

You can customize the left area according to your individual requirements via the PALETTES menu item.

## 4 Right area

In addition to the left area, you can also customize the right area according to your individual requirements via the PALETTES menu item.

Before detailing the central area, let's consider the right area and the left area, which provide the following functions:

- ► The PALETTES WORKSPACE menu item enables you to display or hide the left and right workspace (palettes) and the upper workspace (palettes or Script Editor).
- ► You can also use PALETTES WORKSPACE to display and access the individual functions, such as TOOLBARS, HIERARCHY, DATA VIEW, LIBRARY, LAYOUT, BORDER, OBJECT, and so on, in the right, left, and upper workspace.
- ► If you want to "clean up" the areas, you can select PALETTES WORKSPACE RESET PALETTE OPTIONS to reset all of your settings and restore the default state.

Figure 3.30 shows the individual palettes in detail. The Toolbar palette enables you to display or hide specific functions, such as grids or sizes. The Standard, Font, Paragraph, Layout, and Table toolbars can be individually customized using the Tools • Toolbars menu path. The Hierarchy palette maps the structure of the form and the nesting of the lines and blocks. The Data View palette displays the dictionary structures, that is, the fields with which the form is provided via the interface and context. You have the following options:

## ▶ Positioning a field

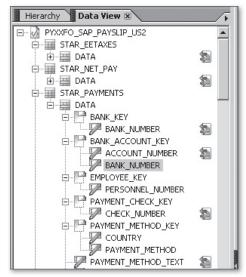
Double-clicking in the navigation directly takes you to the central area and the respective field in the form.

#### ► Additional information

Right-clicking on the required field causes the system to display additional information, such as Options, Show Data Names, and Show Data Descriptions.

## Active integration of the Form Designer

A red/green double arrow indicates an active integration of the Form Designer in the SAP development environment. This enables you to identify which fields have an active binding to SAP Dictionary fields (see Figure 3.32).



**Figure 3.32** Data View — Active Integration of the Form Designer

The LIBRARY palette (see Figure 3.33) contains all available objects; it also includes, for example, STANDARD libraries, which are provided within Adobe LiveCycle Designer, or various BARCODE libraries. The STANDARD library displays all available form field types:

- ► Static form fields, such as image, text, line, or rectangle
- Form fields in which data is input or output, such as text fields or check boxes
- ► Interactive form fields, such as buttons or drop-down lists

In the context of the integration of the Form Designer by Adobe, SAP has extended these libraries, for example, by *Web Dynpro ActiveX*, *Web Dynpro Native*, and *ISR Control*. (Internet Service Request is a library for interactive online forms in the HR environment.) You can also add your own libraries to these existing libraries. To do this, click on the arrow in the top-right corner as shown in Figure 3.33, and wait until another window opens in which you can create a new group. Then, you can use the options, for example, ADD GROUP, to add your own objects to the library.

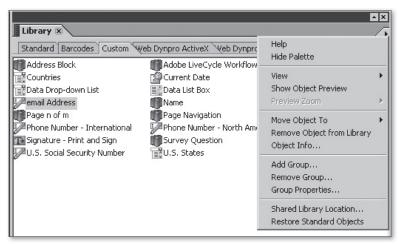


Figure 3.33 Creating Your Own Library

#### Note

Always make sure that your libraries can be accessed appropriately by using a shared file server or a shared directory, for example.

The LAYOUT palette enables you to define the size and position of the objects. You can also specify whether the height and width of objects (e.g., fields) can be dynamically adapted to the field content (e.g., text). This is particularly interesting for interactive forms because the option to dynamically adapt the field size is used more often for interactive forms than for print forms.

In addition to defining the size of the objects, you can also define their position, such as top left or bottom right. Various rotations are also possible, and you can configure details for the borders or define the position and distance of the caption.

You have various options for designing the document border, which can be done via the BORDER PALETTE: You can configure the design of the border and corners (e.g., inverted rectangles, notched corners), the color, and the background fill according to your individual requirements. Figure 3.34 shows an overview of these options.

#### Tip

There are many design options for the color, border, and so on. If you need a detailed design image, you should implement additional design tests that enable you to test possible designs.

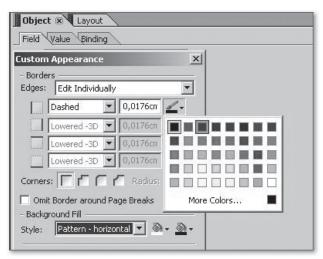


Figure 3.34 The Borders Palette

The OBJECT palette enables you to define fields. Fields from the SAP system, such as the personnel number, are already provided. Figure 3.35 shows the palette in Adobe LiveCycle Designer.

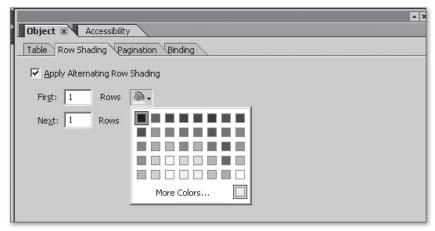


Figure 3.35 The Object Palette

The left area (DATA VIEW) displays the Personnel Number field as a technical definition from the SAP Data Dictionary (see Figure 3.36). The central area (MASTER PAGES OR BODY PAGES) maps the Personnel Number field accordingly. In this example, the right area shows the object with the Personnel Number field as well as the definition. In

the OBJECT window, the FIELD tab is active, and the appearance and type assignment are mapped. When navigating to the VALUE tab, the read only option is selected for this field because it has been provided from the SAP environment.

You also can change the *value of the field* by determining whether the user input is optional or mandatory and whether you want to define validation patterns. These decisions can be specified in the OBJECT palette.

In addition to these mainly optional functions, you can also define the corresponding *data binding* of the field to the fields in the SAP system (see Figure 3.36), which is much more important here. The workspace on the right contains the form field that is bound to the appropriate SAP Dictionary field through the assignment of the STANDARD BINDING field and the values provided in the dropdown list. The BINDING tab and the respective icon in the data view illustrate the connection to the HCM system.

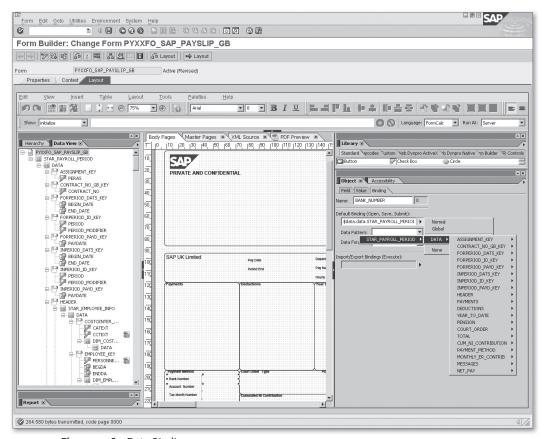


Figure 3.36 Data Binding

In Figure 3.37, you can also see the following critical options:

## Accessibility

Define information on fields.

#### ▶ Font

Define formats for the font types, font styles, and sizes of individual fonts.

## Paragraph

Specify the respective paragraph formats, such as indentation, line spacing, and justification.

## Drawing Aids

Implement layout changes, loggings, and documentations by using Drawing Aids, Info, Report, and Procedure entries.

You can activate and deactivate these settings when you need to, and you can call some of these functions directly using key combinations. Figure 3.37 provides an overview of the functions for which this is possible as well as the corresponding shortcuts.

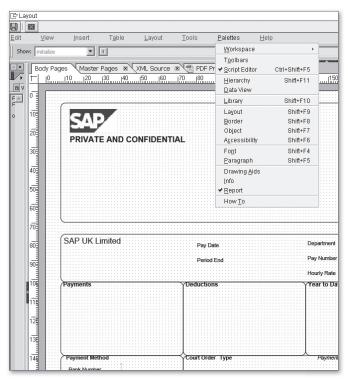


Figure 3.37 Palettes

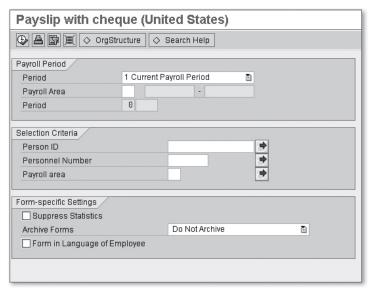


Figure 4.16 Selection Screen with the Parameters of the Print Program

## 4.2 Customizing

In addition to creating the form in the Forms Workplace and designing the layout in the Form Builder, you have more customizing options that enable you to modify the form and output. In this section, we describe how you can modify the selection screen of the print program, which effects the available parameters you have. You will also see how to identify and group the wage types that you want to output in your payslip. In addition to using and outputting wage types, which you maintain in Table T512W, you can define cumulation wage types, which you can also provide in your InfoNet and position in your payslip. We will also describe how to specifically suppress the output of retroactive accounting results. However, this aspect cannot be considered a mere Customizing step because it involves more development work. This also applies if you include Infotype 0655 (ESS Settings Remuneration Statement) for providing employees with the payslip in Employee Self-Service (ESS).

#### Note

If Customizing varies depending on the layout editor you use (Form Builder for Smart Forms or Form Builder for SAP Interactive Forms), the respective section explicitly indicates this.

### 4.2.1 The Selection Screen

The selection screen of your print program enables you to choose the data and the personnel numbers for the people you want to create the payslips for. You decide whose payroll results will be evaluated. You can modify the selection screen of your form via the maintenance of the InfoNet properties in the Forms Workplace in the Selection Screen tab. The maintenance doesn't depend on the selected layout editor (Form Builder for Smart Forms or for SAP Interactive Forms). The following *report categories* are available to define the number and visibility of the fields in the selection screen:

- ► HRF\_PACE (Remuneration Statements With Off-cycle and CE)
- ► HRF\_PNOC (Remuneration Statements Without Off-cycle and CE)
- ► HRF\_PAYS (Remuneration Statements With Off-cycle)

#### Note

The logical database, PNPCE, is similar to the logical database, PNP, but can process the concurrent employment concept. The logical databases, PNP and PNPCE, allow for quick access to personnel master data and are used for its evaluation. For the logical database, PNPCE, all report categories are valid.

CE (*Concurrent Employment*) in the description of the two report categories, HRF\_PACE and HRF\_PNOC, indicates that the field for the entry of external person IDs can be used in the selection screen. This ID is relevant for concurrent employment and is used as a unique number for identifying a person in the SAP system. The difference between the report categories with or without *off-cycle* (special run) is that the possible input values for the period include the special run in the selection screen. If you select this period, the selection screen changes, and you can enter the reason and time for the special run (see Figure 4.17).

| Payroll Run        |               | 125 |
|--------------------|---------------|-----|
| Evaluation Run     | 3 Special Run |     |
| Run                | A 15.11.2008  |     |
| Selection Criteria |               |     |
| Person ID          |               | \$  |
| Personnel Number   |               | 4   |
| Payroll area       |               | \$  |

Figure 4.17 Special Run and Person ID in the Selection Screen

You can use the report categories as templates for your own categories. You can navigate to the maintenance of a report category by double-clicking on it. Select the change mode, and copy the report category to customize it accordingly.

Besides the report category, you can predefine default values for optional fields for your selection screen (see Figure 4.18).

| HR Form  | InfoStars Documentation Select. Screen                       | Cumulation WTs    |               |  |
|--|--|-------------------|---------------|--|
| Report category HRF_PAYS HRFORMS: Remuneration Statements - With Off-cycle |  |                   |               |  |
| Optional field   | s in the selection screen                                    |                   |               |  |
| Show   | Selection Field  | Set Default Value | Default Value |  |
| ~  | Include retroactive accounting: no, yes, also retr accg runs | ~                 | X             |  |
| ~  | Consider and Display Archived Payroll Results                |                   |               |  |
| ~  | Currency conversion  |                   |               |  |
| ~  | Only Read Infotype Records in the Time Interval              |                   |               |  |
| ~  | In-view payroll periods X                                    |                   | X             |  |
| ~  | Alternative Currency   |                   |               |  |
| ~  | Number of Employees per Form (0= All)                        | ~                 | 1             |  |
| ~  | Simulate multiple payroll                                    |                   |               |  |

Figure 4.18 Select. Screen Tab

By selecting the Show column, you specify whether the field in the selection field of the print program is visible when the print program is executed (see Figure 4.19).

#### Note

The visibility of selection fields is managed independently of the definition of the default values. A default value remains valid even if the field isn't displayed in the selection screen.

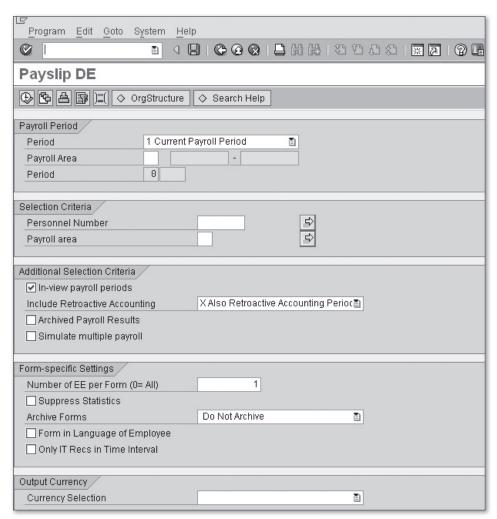


Figure 4.19 Selection Screen of the Print Program

The following list describes the selection screen parameters (see Figure 4.19):

▶ By entering the payroll Period or a special run and further selection criteria, such as the Personnel Number or Payroll Area, you define when and for whom the system is supposed to create the payslip.

- 4
- ► Select the IN-VIEW PAYROLL PERIODS checkbox if you want to select the payroll results according to their *in-period*. If this flag isn't set, the system selects the data according to the *for-period*. You can have the system consider retroactive accounting by using the INCLUDE RETROACTIVE ACCOUNTING option. The system includes retroactive accounting based on the following options:
  - ▶ O: No other results are included besides original results.
  - X: Retroactive accounting and current results are included so that differences may be displayed.
  - ▶ Blank: The system includes retroactive accounting but not the related retroactive periods so that no differences are displayed.
    - If you want to display the differences, select the in-period view, and enter X for the display of retroactive accounting.
- ► The Archived Payroll Results checkbox is used for the *payroll account* and includes archived results if set.
- ► Select the SIMULATE MULTIPLE PAYROLL checkbox if you want to run the payroll for multiple reference personnel numbers of an employee or if you want to simulate multiple payroll. If this isn't the case, you can neglect this parameter.
- ▶ The Number Of EE Per Form parameter defines how many personnel numbers are processed in one form. If you enter "0," the form is called only once, and all personnel numbers are processed in the same form. If you enter a value that is greater than "0," the system completes the form as soon as the value is reached and then calls it again. If you process multiple personnel numbers in one form, you must ensure that the person-dependent InfoStars contain at least one of the EMPLOYEE or ASSIGNMENT InfoDimensions. If you set the value to "1," the system calls the form for each selected personnel number. For SAP Interactive Forms, this means that the greater this value, the faster the processing. However, if the value is too large, this may lead to overflow errors. For Smart Forms-based forms, the system only distinguishes between "0" and "not equal to 0"; that is, either a form is called for each personnel number or for all personnel numbers. If you want to provide cross-person data in your form, specify the value "0." Note that this may lead to an overflow error. This applies to both SAP Interactive Forms and Smart Forms.

- ► As the name of the SUPPRESS STATISTICS checkbox already implies, select it if you want to avoid outputting the statistics that contain the number of processed and rejected personnel numbers as well as the number of printed pages and processed payroll results. The system still outputs error messages if you set this parameter.
- ► The next parameter, Archive Forms, includes the following definitions:
  - ► P: Archive and print
  - X· Archive
  - ▶ Blank: Do Not Archive

The form is transferred into the archive if you select P or X. If you set the P parameter, the system also prints the form. You can change the key for archiving in the HRFORM HRF02 Business Add-In in the SET ARCHIVE INDEX method as described in Section 6.3.3, SET\_ARCHIVE\_INDEX Method. If you want to archive the form, you must generate the form for each employee. Set the NUM-BER OF EE PER FORM parameter accordingly. More information about archiving in SAP ERP HCM is available in the SAP PRESS book, Archiving Your SAP Data (see Appendix H, Additional Information).

- ▶ If you want to output the form in the employee's language, use the FORM IN LANGUAGE OF EMPLOYEE parameter. If you start the form from ESS, it's output in the logon language of the employee. Otherwise, the form is output in the language that is defined in Infotype 0002 (Personal Data).
- ► The ONLY IT RECS IN TIME INTERVAL option enables you to restrict the time interval for the selection of the infotypes that are supposed to be output to the start and end date. This only makes sense if you want to solely use current infotype records and don't need data from the past for retroactive accounting.
- ▶ The Currency Selection parameter can be used to define the conversion of the currency. The following values are available:
  - ► A: Use alternative currency
  - F: Use currency of the for-period
  - I: Use currency of the in-period
  - N: No currency conversion

When you select the alternative currency, the selection screen displays an additional field in which you can enter the alternative currency (see Figure 4.20).



**Figure 4.20** Defining the Alternative Currency

With the F and I indicators, you select the currency of the for-period or inperiod. If the output currencies within the periods vary, and you want to output only one currency, you need to select one of these indicators. If you don't want to convert the currency, select K.

## 4.2.2 Selecting and Grouping Wage Types

You can control the output of wage types in the payslip by grouping wage types via Evaluation Classes 02 (Assigning Wage Types for Form Printout) and 03 (Assigning Wage Types for Payroll Account). Customizing for grouping wage types via evaluation classes is carried out in the same way for both layout editors.

Evaluation classes and their characteristics belong to the properties of a wage type and control the processing of a wage type for the evaluation and mapping of the payroll results. You use Evaluation Class 02 to group wage types by their characteristics. Table 4.1 lists the default characteristics of this evaluation class to which you can add your own characteristics.

| Characteristic | Description  |
|----------------|--|
| -              | Printout in the form without specific assignment               |
| 00             | No printout in the form  |
| 01             | Print control for personal payments and deductions             |
| 02             | Print control for wage types that are included in gross (/101) |

Table 4.1 Characteristics of Evaluation Class 02

## Index

#### C ABAP Dictionary, 17 Characteristic → see Wage types, 125 ABAP Workbench, 74 Class Builder, 178 Adobe Document Services (ADS), 10, 74, 89, Code39, 69 Code93, 69 Adobe LiveCycle Designer, 77, 96 Code128, 69 Payslip, 113 Code initialization, 143 Concurrent employment, 119 Time statement, 152 Area Country grouping, 43 Activate, 71 Cumulated Result Table, 135 Deactivate, 71 Cumulated Tax Results, 135 Cumulation wage types, 132 Authorization object, 191 Maintain, 193 Create, 133 P\_HRF\_INFO, 191, 192, 194 InfoStars, 135 P\_HRF\_META, 191, 192, 193, 194 Subapplication, 133, 136 Authorizations, 191 B Database table, 30 BAdI, 175 Data Dictionary → see SAP Data Dictionary, Activate, 176 ACTIVATE\_FORMS, 175 DDIC table, 30 Documentation, 176 HRFORM\_AFTER\_TRANSP, 175 HRFORM\_BUSINESS\_ADRS, 177 Ε HRFORM\_HRF02, 138, 143, 144, 172, Electronic personnel file, 195 HRFORM\_METADATA, 182 Employee Self-Service → see ESS, 118 Implementation, 175 ESS, 118, 144, 195, 196 MAKE\_ADDRESS, 177 Integration, 183, 187 Parameter, 175 Payslip, 143 Signature, 175 Time statement, 152, 172 BAdI Builder, 175, 176 EVALCLASS02 MetaDimension, 128 BAdI method → see BAdI, 175 Evaluation class → see Wage types, 124 Bar code, 68 Create, 68 Symbologies, 69 System, 68 Business Add-In $\rightarrow$ see BAdI, 175 Feature, 183 Business Document Server, 67 HRFOR, 185, 189

| РВСНО, 186                                      | Integrate with a form, 66                     |
|---|---|
| Form  | Graphics                                      |
| Activate, 49                                    | Import, 67                                    |
| Attributes, 45, 55                              | Grid, 96                                      |
| Call, 50  |   |
| Create, 42                                      |   |
| Layout type, 49                                 | Н   |
| Print program, 49                               | ··  |
| Report category, 42                             | HRDATA parameter, 56                          |
| Test, 50  | HRFORMS_DE standard style, 61                 |
| Form Builder, 11, 53, 150                       | HRFORMS → see Transaction HRFORMS, 107        |
| Initial screen, 55                              | HR Forms Workplace → see Forms Workplace      |
| SAP Interactive Forms, 53                       | 13  |
| Smart Forms, 53                                 | HR Metadata Workplace → see Metadata          |
| Form class → see Forms Workplace, 41            | Workplace, 13                                 |
| Form interface, 55                              | HR Support Package, 16                        |
| Code initialization, 138                        | 0   |
| Form Painter, 113, 149                          |   |
| Forms Workplace, 11, 13, 41, 42, 107            | 1   |
| Data retrieval, 148                             | <u>-</u>                                      |
| Form class, 41, 44, 110                         | Industrial time → see Time statement, 168     |
| Getting started, 42, 43                         | InfoDimension                                 |
| Layout, 53                                      | Selection, 48                                 |
| Other forms, 44                                 | WAGETYPE, 127                                 |
| Payroll account, 44                             | ZEVALCLAS20, 132                              |
| Payroll journal, 44                             | InfoNet, 19, 45, 47                           |
| Payslip, 44                                     | Create, 47                                    |
| Process-oriented view, 14                       | InfoStar, 19, 47                              |
| Time statement, 44                              | Create, 48                                    |
| Transaction, 14                                 | Selection, 48                                 |
| Function module                                 | Infotyp                                       |
| FP_JOB_OPEN, 96                                 | 0007, 172                                     |
| HR_FORMS_READ_TIME_PERIODS, 165                 | Infotype                                      |
| HR_FORMS_TIM_GET_B2_RESULTS, 36                 | 0002, 123                                     |
| HRF_PASS_PERAS, 166                             | 0655, 118, 144, 172, 180                      |
| Z_HR_FORMS_READ_TIME_PERIODS, 167               | Inheritance, 21                               |
| Function XSKIF, 137, 138, 139, 141              | INIT $\rightarrow$ see Program Node INIT, 138 |
| Сору, 142                                       | Integration, 183                              |
|   | ESS, 183, 187                                 |
|   | Payroll, 183                                  |
| G   | Shift Planning, 190                           |
|   | Time Evaluation, 190                          |
| Global Definitions $\rightarrow$ see SmartForms | Time Management, 183, 187                     |
| global, 55                                      | Time Management Pool, 190                     |
| Graphic, 66                                     | TMW, 187, 189                                 |
| As a background picture, 66                     | Interleaved 2of5, 69                          |
|   |   |

| L                                    | Master data, 34                                      |  |
|--------------------------------------|--|--|
|                                      | PAY_ABSENCES, 40                                     |  |
| Layout editor, 44, 96                | PAY_CORP_STRUCT, 177                                 |  |
| Library, 103                         | PAYMENTS, 35   |  |
| Logical database                     | PAY_RESULT, 35, 129, 135                             |  |
| PNPCE, 153                           | Payroll, 34  |  |
|                                      | Read function, 38                                    |  |
|                                      | Special Type A, 36                                   |  |
| M                                    | Special Type U, 37                                   |  |
| 701                                  | Time evaluation data, 36                             |  |
| Manager Self-Services → see MSS, 196 | Туре, 34   |  |
| Metadata Workplace, 13               | ZPAY_RESULT, 129                                     |  |
| Functions, 21                        | ZTIM_ZES, 160  |  |
| Maintenance interface, 20            | MetaStar type, 34                                    |  |
| Tabs, 21                             | Method   |  |
| Transaction, 15                      | AFTER_PDF_PRINT, 179, 181                            |  |
| MetaDimension, 16, 17                | BEFORE_PDF_PRINT, 179, 181                           |  |
| Attributes, 28                       | CHANGE_PAYROLL_SPLITS, 182                           |  |
| BUSINESS_ADDR, 177                   | CHECK_PERNR, 143, 144, 179, 180                      |  |
| EVALCLASSO2, 130                     | CHECK_PERNR_LATE, 179, 180                           |  |
| EVALCLASSO3, 130                     | CHECK_PERSON, 179, 180                               |  |
| Key fields, 28                       | CHECK_PERSON_LATE, 179, 180                          |  |
| WAGETYPE, 30                         | MAKE_ADDRESS, 177                                    |  |
| ZEVALCLASS20, 129                    | SET_ARCHIVE_INDEX, 179, 181                          |  |
| MetaField, 16, 17                    | MSS, 196   |  |
| Attribute, 17                        | ,  |  |
| Key, 17                              |  |  |
| MetaFigure, 16, 17                   | N  |  |
| Create, 24                           | 14   |  |
| MetaNet, 13                          | Node types → see Smart Forms <kursiv>Node</kursiv>   |  |
| Country dependency, 15               | type, 57   |  |
| Country grouping, 23                 | Notes $\rightarrow$ see Time statement, 155          |  |
| Country grouping 99, 15              |  |  |
| Customize, 19                        |  |  |
| Delete, 24                           | 0  |  |
| Enhance, 19                          | <u> </u>   |  |
| Functions, 21                        | $OCR \rightarrow see Optical Character Recognition,$ |  |
| Inheritance, 21                      | 195  |  |
| Naming convention, 19                | Off-cycle, 119                                       |  |
| Objects, 16                          | Optical Character Recognition, 195                   |  |
| SAP_DEFAULT, 15                      | opious emission recognision, 199                     |  |
| Tab, 22                              |  |  |
| Transport system, 20                 | D  |  |
| MetaStar, 16, 18                     | <u>P</u>   |  |
| Create, 32                           | Pay Bill Choice (PBCHO) → see Feature, 186           |  |
| CUMULATED_PAY, 35                    | Payslip, 42  |  |
| ITY_DATE_SPEC, 40                    | •  |  |
|                                      | Customizing, 118                                     |  |

| Design, 98   | SAP Records Management, 195                            |
|--|--|
| Report category, 119                                       | SAPscript, 9   |
| Retroactive accounting, 138                                | SAPscript font maintenance, 68                         |
| Selection screen, 119                                      | SAP standard MetaNet, 14                               |
| PC Editor, 62  | SAP_TIM_99, 147  |
| PDF417, 69   | SAP_TIM_99_0001_P, 150                                 |
| Portal, 195  | SAP_TIM_99_0002, 147, 153                              |
| Print program  | SAP Training BC 480, 94                                |
| Call, 50   | Selection field  |
| Program node INIT, 143                                     | Visibility, 120  |
| Program nodeINIT, 181                                      | Selection screen                                       |
| Program Node INIT, 138                                     | Hide fields, 120                                       |
|  | In-view, 122   |
|  | Parameter, 122   |
| R  | Payroll period, 121                                    |
| N .  | Show fields, 120                                       |
| Recalculation $\rightarrow$ see payslip or time statement, | Selections screen                                      |
| 164  | Archiving, 123   |
| Report   | Smart Forms, 9   |
| RSTXTRAN, 65   | Dynamic text, 62, 64                                   |
| Report category, 119                                       | Elements, 57   |
| Create, 120  | Field list, 55   |
| HRF_PACE, 119  | Form Painter, 55                                       |
| HRF_PAYS, 119  | Global definitions, 55, 168                            |
| HRF_PNOC, 119  | Include text, 62, 65                                   |
| Ruler, 97  | Interface, 55, 56                                      |
| ·  | Node type, 57  |
|  | Overview, 55   |
| S  | Style, 59  |
| <u>-</u>   | Text element, 62                                       |
| Sample implementations, 179                                | Text module, 62  |
| Copy, 179  | Software Lifecycle Management, 74                      |
| SAP Data Dictionary, 30, 81, 114, 115                      | Special run → see Off-cycle, 119                       |
| SAP_DEFAULT, 14  | Standard MetaNet → see SAP standard                    |
| SAP ERP HCM 6.0, 9   | MetaNet, 14  |
| SAP Interactive Forms by Adobe, 9, 72, 195                 | Style  |
| SAP NetWeaver 7.0, 9                                       | Assign, 61   |
| SAP NetWeaver Developer Studio, 74                         | Character format, 61                                   |
| SAP Note   | Сору, 61   |
| 430887, 69   | Create, 61   |
| 645158, 69   | Delete character formats, 61                           |
| 750784, 9  | Paragraph format, 61                                   |
| 962762, 74   | Style Builder, 59                                      |
| 962763, 76   | Subapplication $\rightarrow$ see Cumulation wage types |
| 1121176, 74  | 133  |
| SAP_PAYSLIP_DE, 107, 109, 111                              | Switch wage type, 138                                  |
| SAP_PAYSLIP_US2, 107, 113                                  | Create, 140  |

| Т  | Note, 155, 156, 157                              |
|--|--|
|  | Recalculation, 164                               |
| Tab                                      | Report category, 153                             |
| Compatibility, 93                        | SAP Interactive Forms, 150                       |
| Cumulation Wage Types, 46, 136, 137      | Selection screen, 153                            |
| Defaults, 93                             | Time balances, 158                               |
| Documentation, 26, 32, 46                | Transaction                                      |
| Field, 82                                | HRFORMS, 42, 74, 76, 88, 107, 147                |
| Form Classes, 41                         | HRFORMS_METADATA, 15                             |
| Form Interface, 56                       | HRFORMS_METADATE, 19                             |
| Global Data, 57                          | PC00_M99_DLGA20, 125                             |
| HR Form, 187                             | PC00_M99_HRF, 184                                |
| Info, 93                                 | PC00_M99_HRF_CALL, 183                           |
| InfoStars, 45                            | PDSY, 26   |
| Interface, 178                           | PT00_M99_HRF, 187                                |
| MetaDimensions, 30, 33, 40, 130          | PT_CLSTB2, 164                                   |
| MetaFields, 28, 30, 33, 40               | QCYT, 65   |
| MetaFigure, 25                           | SE18, 175, 177                                   |
| MetaFigures, 33, 41                      | SE19, 175, 176, 177                              |
| MetaStar, 33, 34, 35, 36, 37             | SE37, 38   |
| Output Options, 60                       | SE73, 68   |
| Pagination, 85                           | SE78, 58, 67                                     |
| PDF Preview, 91                          | SFP, 59, 73, 76, 88, 107, 147                    |
| Performance, 93                          | SM30, 125, 141                                   |
| Properties, 49                           | SMARTFORMS, 54, 59, 61                           |
| Selection Screen, 46, 119, 154           | SMARTSTYLES, 59, 61                              |
| Status, 26, 32                           | SO10, 65   |
| Table Field Values, 31                   | SU21, 191  |
| Value, 82                                |  |
| Variables, 93                            |  |
| XML Source, 87                           | W  |
| Table                                    | VV   |
| HRFORMS, 148                             | Wage types                                       |
| T512W, 118                               | Characteristic, 125                              |
| Time evaluation function CHECK NOB1, 156 | Evaluation class, 124, 128                       |
| Time Manager's Workplace, 187            | Group, 124                                       |
| Time Manager's Workplace → see TMW, 187  | Wage type utilization statement, 125             |
| Time statement, 42                       | What You See Is What You Get $\rightarrow$ see   |
| Activate areas, 153                      | WYSIWYG.   |
| Convert industrial times, 170            | WYSIWYG, 9, 91, 97                               |
| Customizing, 152                         | W 131W 1G, 5, 51, 57                             |
| 3  |  |
| Deactivate areas, 153                    | V  |
| ESS, 172 Evaluation period, 156          | X  |
| Evaluation period, 156                   | VCVIE Fund' VCVIE 427 420                        |
| Global definitions, 72                   | XSKIF $\rightarrow$ see Function XSKIF, 137, 138 |
| Individual results, 158                  |  |