

Reading Sample

In this reading sample, you'll find a quick overview of one of the main CATS functionalities: collecting time entries. Then, you'll find information on common BADIs and user exits that are used to enhance different functions.



Introduction

"Time Entry"

"Deploying User Exits and BADIs to Enhance CATS"



Contents



Index



The Authors

Manuel Gallardo, Martin Gillet

SAP CATS

Configuration, Use, and Processes

464 Pages, 2015, \$79.95/€79.95

ISBN 978-1-59229-978-2



www.sap-press.com/3568

The days of punching the time sheet are gone. Learn how to interact with all aspects of the Cross-Application Time Sheet, integration with core SAP components, enhancements, and more.

1 Introduction

The Cross-Application Time Sheet, commonly called CATS or the Time Sheet, is an SAP tool that enables you to capture and approve an employee's time. CATS revolutionized the SAP time entry process by consolidating time capturing for multiple processes into a single screen.

This book provides a single source of content for beginner, intermediate, and seasoned CATS users. It delivers all the information that you need to set up and use CATS to help you get the most out of your implementation.

In this chapter, we'll quickly overview what this book discusses and what type of user will benefit from the information provided. We'll then introduce you to what CATS really is and touch quickly on CATS user interfaces (UIs), its technical functions, how it works with other SAP components, and how you can customize CATS to your business processes.

1.1 What This Book Discusses

The book is divided into three logical sections to make it easy for you to read the specific topics that interest you, which we'll quickly overview in the next sections.

Part I: CATS Functional Processes

Chapter 2 through **Chapter 9** contain a lot of useful information for new and intermediate CATS users. This section of the book delves into the CATS process flow, from time entry to posting to the various target components. We also examine the CATS master data prerequisites according to the intended target application such

as Human Resources (HR), Plant Maintenance (PM), and so on in **Chapter 2**. The focus then shifts to the CATS time entry process, the various options for collecting time, and the CATS approval process through the various UI options. We wrap up this section of the book with a review of the time data transfer process, workflow, authorizations, and reporting.

Part II: CATS Configuration

The complete CATS customization process is discussed in detail in **Chapter 10** through **Chapter 14** and is an excellent source of information for CATS business analysts and functional consultants. In this section of the book, we'll review the CATS configuration options, including a detailed look at the HR-Enabled CATS and the special approval functionality. This section of the book wraps up with a detailed look at the various options for using CATS to capture actual labor costs.

Part III: CATS Enhancements

We'll wrap up our book (**Chapter 15**, **Chapter 16**, and **Chapter 17**) with a detailed look at the various options for enhancing CATS to accommodate some of the more complex time-entry scenarios. This section of the book is intended for individuals with a solid understanding of ABAP development. This includes a detailed reviewed of the process of using user exits and Business Add-Ins (BADIs) to enhance the standard functionality of CATS, as well as using Business Application Programming Interfaces (BAPIs) to load data into CATS. The last chapter of our book, **Chapter 17**, takes an in-depth look at how to use application configuration and component configuration to enhance the CATS Regular Web Dynpro ABAP (WDA) screen.

In addition, we provide several appendices for helpful reference information. The appendices include FAQs about CATS, a description of SAP enhancement packages and their impact on CATS functionalities, and further resources for your CATS research.

1.2 Introduction to the Cross-Application Time Sheet

What business entity or company hasn't dreamed of being able to collect the time entries of each employee in real time through a tool that can be used by employ-

ees, administrative assistants, project leaders, and managers? This tool would ideally check the accuracy of the time entries online, such as the validity period, the budget status, and the quotas available. This useful tool would be accessible online through the intranet or even the Internet due to its security features. This is where CATS comes in.

1.2.1 Evolution of CATS

Since the early release of R/3, SAP has provided a simple and efficient tool, formally named the Cross-Application Time Sheet, better known as CATS. While lacking some functionality in the wish list presented in the preceding paragraph, the tool fulfilled its main purpose: to provide a quick, simple, efficient, and user-friendly interface for employees to report on their daily, weekly, or monthly activities. As SAP evolved through its release cycles, CATS was enriched with more and more functionalities, sometimes in response to questions from user groups.

Today, CATS is a standard tool that's provided by SAP to collect employees' working times for each target component that receives and processes labor time. CATS is provided as a standard functionality with SAP ERP and requires very little customizing to be quickly deployed. Thanks to its flexibility and its means of access, CATS can closely match each business requirement provided by a company, market, or process.

1.2.2 Business Requirements and CATS

The major asset of CATS is that it provides a single central point of entry for collecting all time entries. Its optional two-step process (release and approval) makes the time-collection loop clearly visible, allowing each individual to monitor his activities, release the time entries when they are ready to be approved, and approve or reject the time entries.

These release and approval steps are valuable because they aren't available as such in the time confirmation within each component. Furthermore, the approval process is provided in a standard form with different workflow tasks, allowing a smooth circulation of the information among the employee, the time administrator, and the manager.

Basically, the system allows two types of entries: individual-entry process or multiple-entry process. An additional nice-to-have feature is web-enabling, which allows each individual to collect or book his time entries around the clock, even if he's outside of the company's premises.

CATS is well equipped to meet complex business requirements and makes life easier for every participant in the time collection process. Figure 1.1 depicts the four-step operation of CATS among related components.

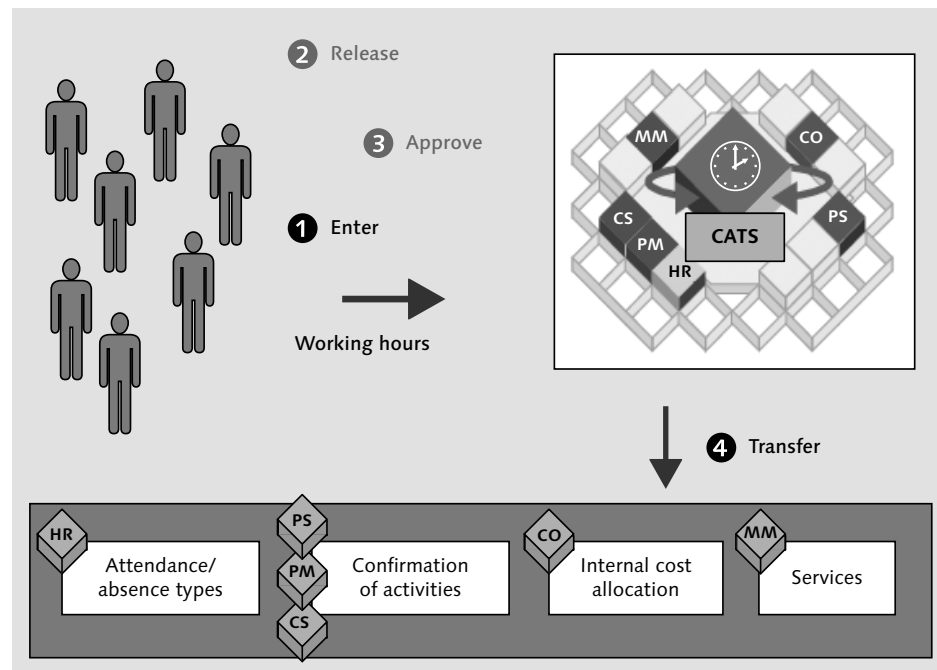


Figure 1.1 CATS and the Surrounding Target Components

The main steps are **1** and **4**; the optional steps are **2** and **3**.

Following are the key benefits of using CATS:

- ▶ Single point of entry for all working time processes (less administrative paperwork)
- ▶ Release and approval process to enforce the CATS process efficiency

- ▶ Large panel of UIs provided for each type of employee (sales representatives, managers, super users, end users, etc.)
- ▶ Real-time access to the information, making reporting more accurate
- ▶ Possible to default information provided to the employee
- ▶ Time sheet can be web-enabled
- ▶ Quicker follow-up on critical projects activities
- ▶ Enhanced billing process due to weekly time collection
- ▶ Full integration with SAP products: SAP Enterprise Portal, SAP Business Warehouse (SAP BW), and so on

1.2.3 CATS User Interfaces

Over time, the functionality provided by CATS has expanded to accommodate an increasing number of time-recording environments. For example, besides the SAP GUI time-recording screen, CATS now supports time entry via SAP Enterprise Portal, mobile devices, and so on.

However, not all CATS UIs provide the same functionality. Some UIs are designed for quick time entry so they only support the creation of new time records, while other UIs provide full functionality, such as changing and deleting previously entered data. The full functionality (also known as an independent UI) CATS UIs are listed here:

▶ CATS Classic

This UI can be accessed via the SAP GUI and is traditionally known as CAT2. CATS Classic is the original CATS UI and is best suited for users that regularly work in the SAP ERP system or make use of the advanced features available in the CATS menus. This is the best UI for multiple employee (multikeyer) time entry.

▶ CATS Regular

This UI is designed to support time entry via a web browser and is best suited to support employee self-time entry via a portal, such as Employee Self-Service (ESS). For ESS implementations in EHP5 and higher, this UI is also known as CATS Regular Web Dynpro (WDA).

► **CATS for Service Providers**

This UI is accessed via the SAP GUI (Transaction CATSXT) and is designed to support time entry of individuals that perform billable services. The main objective of this UI is to expedite time entry for activities that last more than one day. As such, it's a good fit for individuals who perform the same type of work for multiple days (such as consultants).

► **CATS Notebook (also referred to as Mobile CATS)**

This UI is an offline time entry solution that uses the Mobile Engine technology to synchronize time data with the SAP system. CATS Notebook is a good fit for highly mobile employees because it allows them to capture their time without connecting to the corporate network. The time data can be synchronized with the CATS database when the user connects to the network.

For more information on the different CATS UIs, see the SAP Library (<http://help.sap.com>) under CROSS-APPLICATION COMPONENTS • TIME SHEET • USER INTERFACE. Now that you're familiar with the CATS UIs, we'll discuss the CATS time entry process.

1.3 Brief Technical Overview

To better understand the core structure of CATS, let's look at the main technical information. CATS is built on its own database, the CATSDB, which allows each time-collection step to be safely stored.

Each time entry record is flagged with a status that identifies each event in the time-collection process:

- 10: In process (time entry saved).
- 20: Released by the employee (ready to get through the approval process).
- 30: Approved data.
- 40: Rejected data (data is returned to the employee for correction).
- 50: Data has been changed after approval.
- 60: Time entry has been cancelled.

Note that the release and approval steps are optional, so they can be disregarded if not applicable in your time-collection process. Only the time entries marked

with the status 30 (approved) are taken into consideration for transfer to the target components. After the data is approved by the manager or simply upon saving—depending on the customizing settings—the data is inserted and written into the interface tables.

The interface tables are meant to support a clean and smooth relationship between CATS and the target SAP components. They should never be changed or used for reporting. CATSDB remains the only central database to check, view, or report the time entries.

Hint

Because CATS can process several thousand records per month, it might be useful, from time to time, to ask the CATS owner within your team to run Transaction CATR to check the potential inconsistencies in these tables.

Execute this transaction carefully, because it can lead to severe inconsistencies if misused. We strongly advise using the TEST MODE option prior to any real action in a production environment.

1.4 Integration Overview

CATS allows time entry collection for further processing in SAP target components. Therefore, one of the components listed next must be installed prior to using CATS. The time entries either can be provided individually or in combination with the target components. Inside SAP core components, nearly all components, listed here, can be filled with information through CATS:

- **Human Resources (HR)**
Attendances, absences, and remuneration information.
- **External Services (MM-SRV)**
Entry of services performed by external providers.
- **Controlling (CO)**
Internal activity allocation, statistical key figures.
- **Plant Maintenance (PM)**
Confirmation for orders.

- ▶ **Customer Service (CS, formerly Service Management)**
Confirmation for orders.
- ▶ **SAP Project System (PS)**
Confirmation for networks.

Figure 1.2 illustrates how CATS works in an HR allocation scenario, for example.

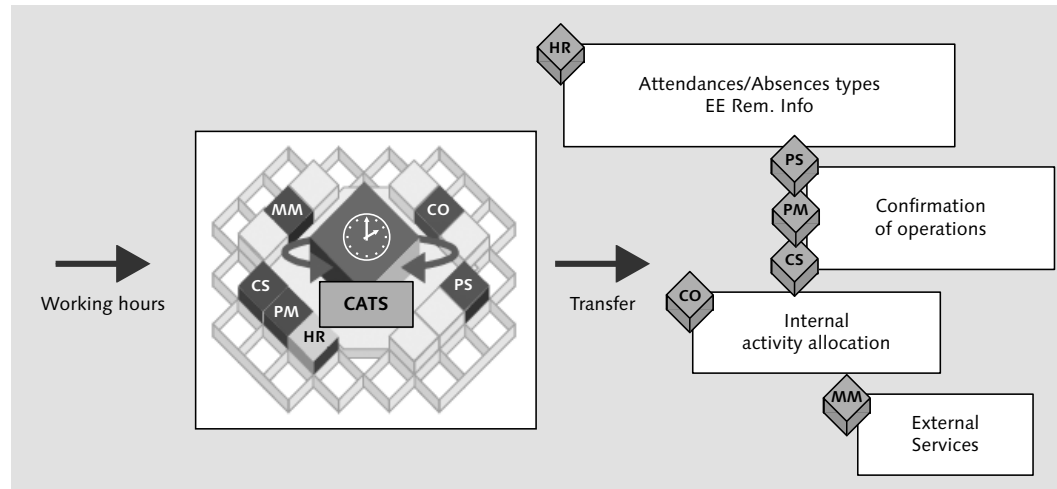


Figure 1.2 CATS and HR Allocation

Note

Be aware that the working times are only relevant for labor time spent, not machine time. The Production Planning (PP) component is therefore neither included nor supported in CATS.

CATS is also integrated with the surrounding SAP products, such as the following:

- ▶ SAP BW
- ▶ SAP Enterprise Portal
- ▶ CATS for Service Providers
- ▶ CATS offline (due to Mobile Engine)

Table 1.1 highlights the requirements versus the components in SAP. For instance, if you want to book expenses, you have to know that the Travel Expenses component is required.

Required Function	Required Component
Decentralized recording of employee attendances and absences	Personnel Time Management (PT)
Decentralized recording of employee remuneration information	Payroll (PY)
Internal activity allocation and entry of statistical key figures	Controlling (CO)
Confirmations	<ul style="list-style-type: none"> ▶ Logistics ▶ Plant Maintenance (PM) ▶ Project System (PS) ▶ Customer Service (CS) (formerly Service Management [SM])
Recording external services	External Services Management (PT-IN-ES)
Recording travel expenses with activity reports	Travel Management (FI-TV)
Recording activities for services provider	External Services Management (MM-SRV)

Table 1.1 Business Functions and SAP Components

1.5 System Enhancements

Occasionally, the functionality delivered by the SAP system may need to be adjusted to accommodate the specific needs of your organization. The SAP system delivers system enhancements in the form of user exits and Business Add-Ins (BAdIs), which you can use to enhance the functionality of your SAP system. CATS delivers multiple user exits and BAdIs you can use to adjust the time-recording process. These enhancements are fully supported by the SAP system, and upward compatibility is assured.

In the following sections, we'll overview the differences between user exits and BAdIs.

1.5.1 User Exits

User exits allow you to enhance the functionality of the SAP system without having to perform a system modification. System modifications aren't supported by SAP software, and their upward compatibility isn't assured. User exits are functions contained in the standard SAP code that allow you to add your own logic to the system. You can access the user exits available in the SAP system via the following menu path: **TOOLS • ABAP WORKBENCH • UTILITIES • ENHANCEMENTS • PROJECT MANAGEMENT**. From the Project Management screen, you can choose **UTILITIES • SAP** and then search through the catalog of available user exits.

1.5.2 BAdIs

BAdIs are a more flexible enhancement technique delivered by the SAP system as of release 4.6A. One of the main differentiators between a BAdI and a user exit is that the BAdI supports a multisystem landscape where definitions and implementations for SAP software, customer solutions, industry solutions, partner development, and so on, are developed independently. Additionally, you can make BAdI implementations that are dependent on specific criteria. You can access BAdIs via the following menu path: **TOOLS • ABAP WORKBENCH • UTILITIES • BUSINESS ADD-INS • DEFINITION**.

1.6 Summary

This concludes our overview of CATS UIs, integration, and system enhancements. In this chapter, you learned that CATS delivers multiple UIs you can use to accommodate different time-recording environments. Additionally, we discussed CATS integration with a variety of SAP components: Financial Accounting, Human Resources, Materials Management, Plant Maintenance, Project System, and Customer Service. Finally, you learned that user exits and BAdIs are collectively known as system enhancements that can be used to enhance the functionality of your SAP system.

In the next chapter, we'll get right into our CATS discussion by reviewing the master data that you need to have in place to effectively work with CATS.

Now that we've reviewed the master data prerequisites across the system, let's focus on the time registration means of access. The system provides multiple options for collecting the time whereabouts through different user interface options.

3 Time Entry

This chapter highlights the different possibilities for time entry that the SAP system provides via CATS, so that you can assess which option is the best suitable solution for your organization's employees. Depending on your CATS installation, the system can provide a backend solution, a frontend solution, or a mobile solution. As usual, depending on the solution chosen, you must assess the technical prerequisites for the system. We recommend that you upgrade to the latest SAP ERP enhancement package to benefit from the latest SAP functionalities. Bear in mind that online solutions will also require extra setup, for example, to deploy a portal solution within your company or your customer.

The entire time registration process through CATS includes many system user exits, Business Add-Ins (BAdIs), and more (see Chapter 15 for more information on specific enhancements). Make sure to review in full these "extra miles" provided by SAP so you'll be fully ready to answer almost all business requirements.

Note

In this chapter, we use the terms "time entry" and "time registration" synonymously.

Let's start first with the basic end user interface (UI): the time registration through the on premise (backend) system. (You can find specific configuration information in Chapter 15.) Each screen is provided with fields that can be enabled or disabled, where applicable. Note that the example figures provided in this chapter may slightly differ from what you see in your system in terms of layout rendering, the screen design, and look and feel, depending on which version of the system you're running.

3.1 Individual Time Registration through the On Premise (Backend) System

The system provides the standard out-of-the-box solution that allows managers to collect time entries from end users through the backend system. The system provides Transaction CAT2 (Time Sheet: Maintain Times). All the configuration is stored under a data entry profile that consolidates the configuration to be applied per the business requirements.

In the following sections, we'll discuss the process of entering time entry data through this process, along with some additional settings that you can make to customize the process.

3.1.1 End-User Process

Transaction CAT2 requests input from the end user, after that person has accessed it. As shown in Figure 3.1, the system is requesting the DATA ENTRY PROFILE to be used as well the PERSONNEL NUMBER to be used.

Figure 3.1 Transaction CAT2 Initial Screen

After the user enters these values, the system will also default today's date (KEY DATE), as shown in Figure 3.2.

After you're ready to proceed from the selection screen, click on the pencil icon or press the **F5** key to enter the time collection main screen. Figure 3.3 shows a standard TIME SHEET: DATA ENTRY VIEW screen without any worklist that is designed for HR.

Figure 3.2 Transaction CATS Initial Screen with Values

Figure 3.3 Data Entry View for a CATS Data Profile Aimed at HR Processes

3.1.2 Enable Worklist

You can access a variant of this screen by enabling the option with a worklist, as we'll explain later in Chapter 10. The worklist isn't mandatory, but to make the

time collection registration easier (and to decrease the number of faulty postings and errors), the worklist is a handy solution to collect all pending tasks for an employee. It will speed up the selection of tasks, rather than browsing through a long list of potential entries.

Figure 3.4 shows the same data entry profile, in DATA ENTRY VIEW, with the worklist enabled. Worklists should be populated per the business requirements via standard configuration or a user exit. You'll find alternatives discussed in Chapter 10.

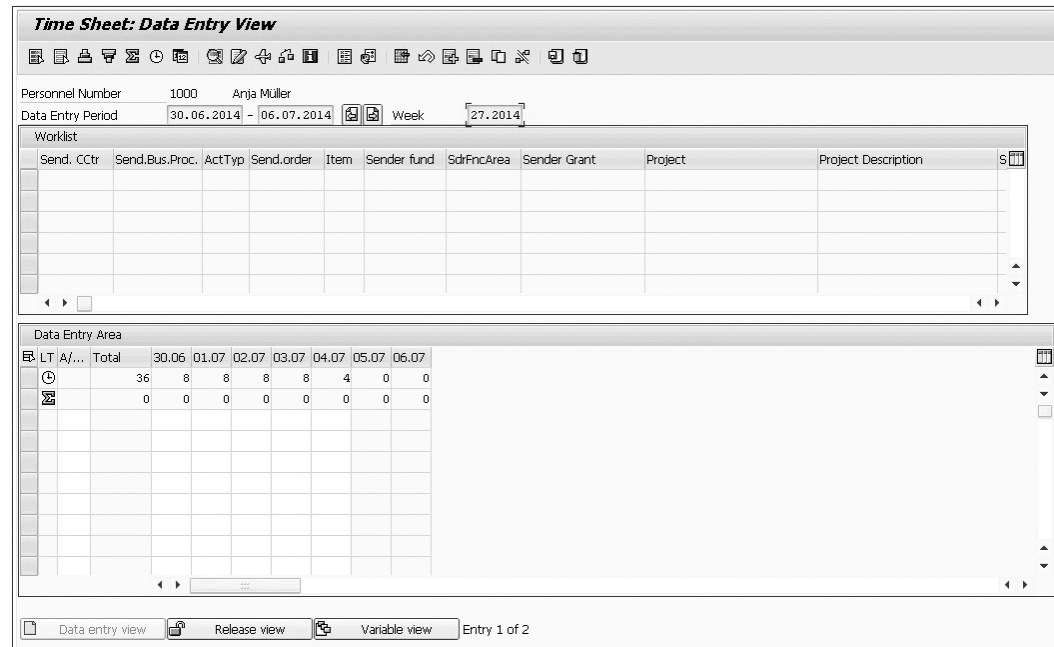


Figure 3.4 Data Entry View for a CATS Data Profile (HR Processes) with the Worklist Enabled

The employee can now enter the required input; for example, the attendance type "0800" regular hours with the hours for the week, as shown in Figure 3.5.

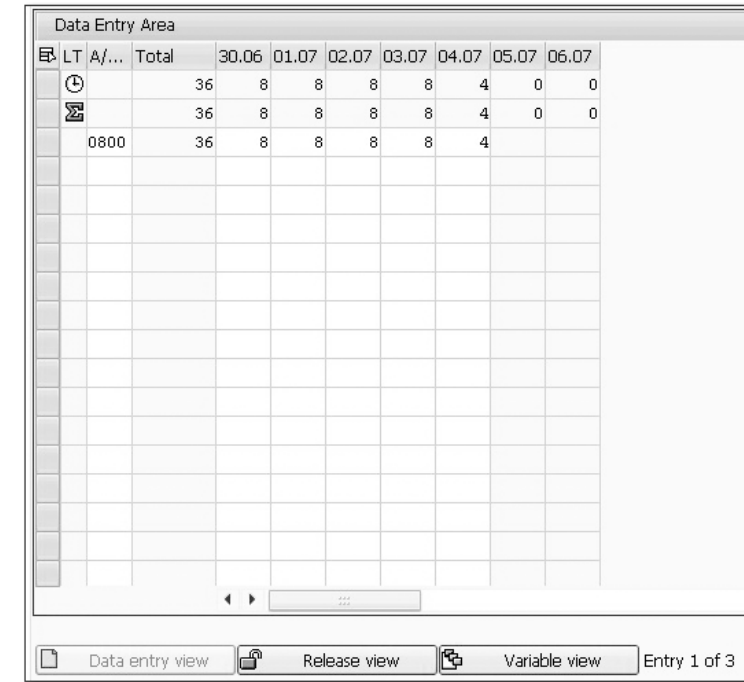


Figure 3.5 HR Time Entries for Regular Hours – Attendance Type 0800

3.1.3 Release and Approval

Because you're in the time collection process, you can now either save and come back later, or directly release the hours to go to your supervisor or manager.

Note

As we've discussed, the release mode and the approval mode are distinct options and are totally optional. The approval option is covered in more detail in Chapter 5, and the release option is covered in Chapter 4 for your convenience.

To release the hours, click RELEASE VIEW at the bottom of the screen. Notice that all pending entries to be released are marked in blue, as shown in Figure 3.6.

Select the day or each column, or select it all by clicking the upper-left icon. Then click on the padlock icon in the upper-right part of the screen, as shown in Figure 3.7.

Data Entry Area									
LT	A/...	Total	30.06	01.07	02.07	03.07	04.07	05.07	06.07
⌚		36	8	8	8	8	4	0	0
🔍		36	8	8	8	8	4	0	0
	0800	36	8	8	8	8	4		

Data entry view | Release view | Variable view | Entry 1 of 3

Figure 3.6 Time Entries to Be Released under the Release View

Time Sheet: Release View

Personnel Number 1000 Anja Müller

Data Entry Period 30.06.2014 - 06.07.2014 Week 27.2014

Release (Shift+F4)

Send. C.Ctr	Send.Bus.Proc.	ActTyp	Send.order	Item	Sender fund	SdrFncArea	Ser

Data Entry Area									
LT	A/...	Total	30.06	01.07	02.07	03.07	04.07	05.07	06.07
⌚		36	8	8	8	8	4	0	0
🔍		36	8	8	8	8	4	0	0
	0800	36	8	8	8	8	4		

Data entry view | Release view | Variable view | Entry 1 of 3

Figure 3.7 Entries Selected to Be Released by Clicking the Padlock Icon

The system has released the hours and is issuing a successful system message 5 TIMES WERE RELEASED, which means that five selected entries have been released (to target SAP components or approval, before entering the queue zone for transfer). Figure 3.8 illustrates the successful process.

Save your entries by clicking on the SAVE icon or by pressing the **F11** key.

Time Sheet: Release View

Personnel Number 1000 Anja Müller

Data Entry Period 30.06.2014 - 06.07.2014 Week 27.2014

Send. C.Ctr	Send.Bus.Proc.	ActTyp	Send.order	Item	Sender fund	SdrFncArea	Sender Grant	Project	Project Description

Data Entry Area									
LT	A/...	Total	30.06	01.07	02.07	03.07	04.07	05.07	06.07
⌚		36	8	8	8	8	4	0	0
🔍		36	8	8	8	8	4	0	0
	0800	36	8	8	8	8	4		

Data entry view | Release view | Variable view | Entry 1 of 3

5 times were released

Figure 3.8 Message Stating That Select Time Entries Have Been Released by the System

Note

If you need a display variant of the time collection process, SAP provides Transaction CAT3 to display the time entries. This is quite handy when you have to provide tools for the employees or the secretaries to view data to answer a query or just to provide support.

3.1.4 Configuration Considerations

Thanks to special configuration, you can bypass the initial time entry screen (refer to Figure 3.1) and direct the end user directly to the time collection screen. The user can always exit and return to the selection screen, upon request.

To proceed with this initial screen bypass, each user must be assigned respective user parameters. To make the time collection process easier, you can decide to update the end user's parameters with default values so that they don't have to be

provided manually each time. The parameter `CVR` will be used to add the default CATS data entry profile name as configured in the system (for more detailed information on this, see Chapter 10).

The parameter `PER` will be used to add the personnel number as a default for the user who is proceeding with the time entry.

Tip

Be careful when maintaining user parameters because, depending on his authorizations, an end user could overwrite them. Therefore, these parameters are used for UI maintenance and don't replace efficient authorizations.

The parameters can be maintained individually by the end user using Transaction `SU3`. Alternatively, they can be maintained by the system administrators or the authorization team by using Transaction `SU01`.

3.2 Mass Time Registration through the On Premise (Backend) System

Each SAP user is linked to a unique personnel number (the exception is if you're using concurrent employment), as you'll see in Chapter 15, Section 15.2. This means that one person can only collect time entries for his own activities. The system can't accommodate multiple entries in the standard design; it's an individual time registration.

The backend system offers the unique opportunity (because it's not available in the portal) to enter time entries for multiple users. This is handy, for example, when a team lead or a secretary must collect all entries at once for several personnel numbers. This is a collective time registration, which means the values to be defaulted by the user can be different, so the system doesn't allow you to enable the worklist.

The mass time registration is similar to a single time entry. To retrieve the data for people who relevant for this time collection, the system provides many options that are covered in Chapter 10. For example, you can use the cost center, the time administrator, or simply a regular program to select the employees.

Note

Mass time registration can only be done through the on premise (SAP ERP backend) system. It is not doable through the online service. However, a manager could register the time entries through ESS in Manager Self-Services (but this can only be done one employee at a time).

Figure 3.9 shows a multiple time entry for a team by selecting them in the initial screen through Report `RPLFST01`.

The screenshot displays the 'Time Sheet: Initial Screen' interface. At the top, there are icons for edit, print, and other functions. Below that, the 'Data Entry' section contains the following fields:

- Data Entry Profile: `HR` (with a dropdown arrow) and `HR: Presence (Approval)`
- Key date: `01.07.2014`

The 'Personnel Selection' section features a table with the following columns: `Personn...`, `Name`, `Pe...`, `Su...`, `E E...`, `Cost Ctr`, `Org.unit`, `T...`, and `Last name`. The table is currently empty. At the bottom of the screen, there is a button labeled 'Personnel Selectn' which is highlighted with a red box.

Figure 3.9 Selection of Employee for Multiple Time Entries

Click on the `PERSONNEL SELECTN` button to see the screen shown in Figure 3.10, which allows for fast data entry.

After you've run the report, the system issues a list of personnel numbers that meet the criteria you specified. Select the relevant numbers, and then go to the `TIME SHEET: INITIAL SCREEN`, as shown in Figure 3.11.

Figure 3.10 Fast Data Entry for CATS Multiple Entries

Personnel No.	Name	Pe...	Su...	E/E.	Cost Ctr	Org.unit	T...	Last name
1003	Stefan Pfändli	1300	1	DU	2100	50000563	001	PFANDLII
1006	Yasmin Awad	1300	1	DU	2100	50000563	001	AWAD YAS
1007	Hanna Ulrich	1300	1	DT	2100	50000564	001	ULRICH H
1008	Hilde Müller	1300	1	DS	2100	50000005	001	MULLER H
1009	Dr. Herbert Braunstein	1300	1	DS	1110	100	001	BRAUNSTE
1010	Dipl.Kfm. Frank Schmidtr	1300	1	DS	1110	1200	001	SCHMIDTR
1020	Beate Müller-Hinze	1300	1	DS	1110	100	001	MULLER H
1021	Dr. Werner Stadler	1300	1	DS	1110	100	001	STADLER
1022	Bruno Hochlehner	1300	1	DT	2100	50000566	001	HOCHLEHN
1024	Frank Bauer	1300	1	DU	2200	50000147	001	BAUER FR
1026	Dr. Johanna Browning	1300	1	DS	1000	50000000	001	BROWNING

Figure 3.11 Selected Personnel Numbers for Multiple Time Collection

Now that you've selected several personnel numbers, the system provides a multiple time entry time sheet as shown in Figure 3.12. This means no more Excel files or interfaces; instead, the end user can directly collect the information in a handy formatted chart.

LT	Pers.No.	A/...	Total	30.06	01.07	02.07	03.07	04.07	05.07	06.07
1024			36	8	8	8	8	4	0	0
1024			0	0	0	0	0	0	0	0
1021			36	8	8	8	8	4	0	0
1021			0	0	0	0	0	0	0	0
1010			36	8	8	8	8	4	0	0
1010			0	0	0	0	0	0	0	0
1008			36	8	8	8	8	4	0	0
1008			0	0	0	0	0	0	0	0
1003			36	8	8	8	8	4	0	0
1003			0	0	0	0	0	0	0	0

Figure 3.12 Multiple Time Entries for Several Personnel Numbers

3.3 Individual Time Registration through the Portal (Frontend)

As we've highlighted previously, an SAP user can only collect activities for his own personnel number. On the SAP Enterprise Portal (that is, the frontend system) the system doesn't allow multiple time entries. Only single time registration is allowed.

Note

Through the Manager Self-Services (MSS), the system allows a manager to proceed with a time registration process on behalf of one of his teammates. The process is known as Employee Self-Services (ESS) in MSS. This isn't exactly a mass time registration process, but it's quite useful because when employees are on leave or sick, and HR is waiting for them, the manager can take over.

The SAP Timesheet app is available in the iTunes App Store and can be downloaded and tested for free as it contains sample data. Figure 3.15 illustrates the SAP Timesheet app properties and its current version (as of this writing). You can download the app at <https://itunes.apple.com/us/app/sap-timesheet/id467586888?mt=8> or simply enter key word "SAP" in the App Store search engine.

Information	
Developer	SAP AG
Category	Business
Updated	Jun 24, 2014
Version	2.3.9
Size	3.3 MB
Rating	4+
Compatibility	Requires iOS 6.0 or later. Compatible with iPhone, iPad, and iPod touch. This app is optimized for iPhone 5.

Figure 3.15 SAP Timesheet App Properties and Current Version (as of September 2014)

Figure 3.16 shows the CALENDAR as it appears in the SAP Timesheet app.



Figure 3.16 Example of the App Calendar

The next screenshots show a standard time registration process through the SAP Timesheet app to give a better understanding on the different screens that will be provided to the end user. Figure 3.17 shows the welcome screen for the SAP Timesheet app.

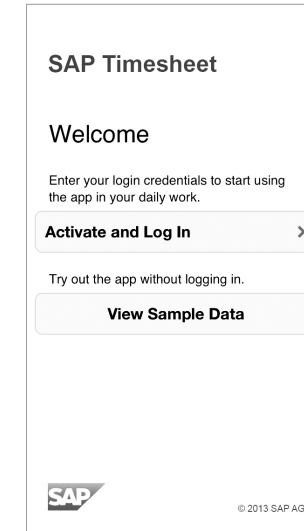


Figure 3.17 Logging On to the SAP Timesheet App

After you click **ACTIVATE AND LOG IN**, you'll be able to choose whether you want to create a new timesheet entry, or check your existing timesheet (see Figure 3.18).

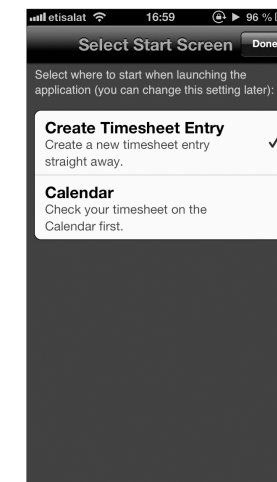


Figure 3.18 Creating a Time Entry

In this example, we're going to create a new time entry. As you can see in Figure 3.19, the user is entering four working hours to his time sheet.

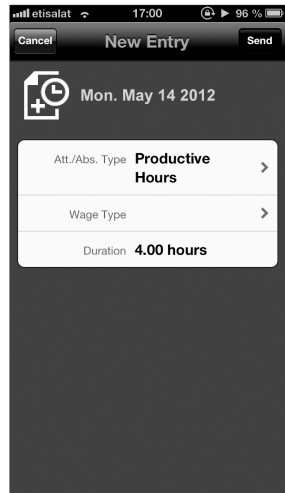


Figure 3.19 Creating an Entry for Productive Hours

After you enter all of the hours you need into your time sheet, click SEND. You'll see a confirmation message (Figure 3.20), letting you know that your timesheet was successfully submitted.

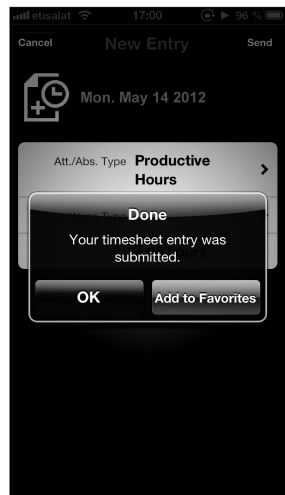


Figure 3.20 Successful Time Registration

You can also view the status of different timesheets. As shown in Figure 3.21, one timesheet has been released, and one is still in progress.

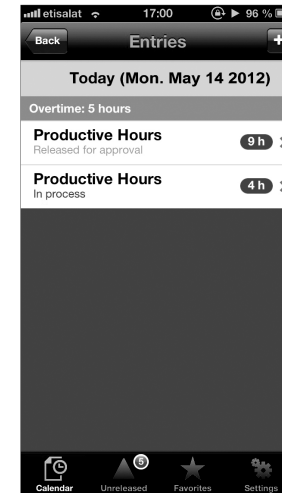


Figure 3.21 Overview of Time Entries

As shown in Figure 3.22, the app will provide an overview of the pending time entries to be released, either to the approval process or straight for transfer to the target SAP component.

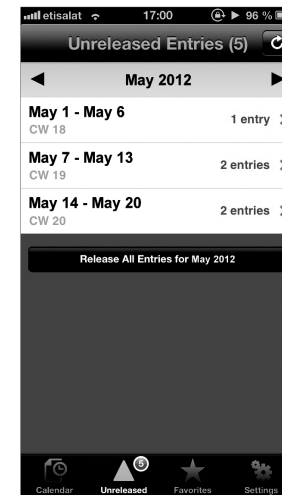


Figure 3.22 Overview of Unreleased Time Entries

3.4.2 Time Registration through SAP Fiori

Alternatively, quite recently, SAP began providing a new powerful tool through the SAP Fiori Client app. This useful app supports the latest technical possibilities when it comes to coding and developments. Whether you use this app or the standard app most likely depends on what technologies you've enabled. The SAP Fiori app may prove to be more flexible, but it's really a matter of taste and preferences. This new alternative is detailed in Chapter 10 with step-by-step instructions on how to set it up.

Figure 3.23 shows an example of a simple time registration through the SAP Fiori Client app.

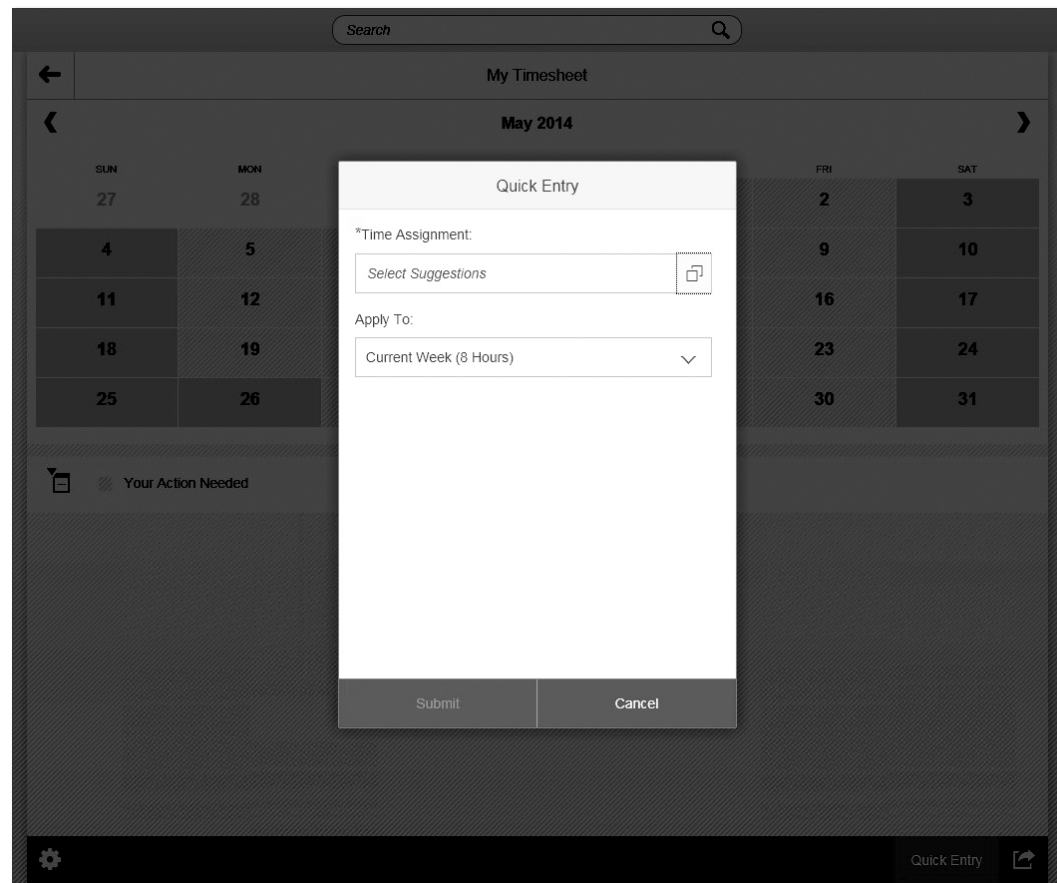


Figure 3.23 Quick and Simple Time Entry through the SAP Fiori Client App

3.5 Summary

SAP provides many functionalities to enter and release time entries through different UIs. You have the options to individually or mass enter time entry data in the frontend or backend systems, as well as via mobile devices. Organizations should assess which methods meet end user requirements.

Now that you're acquainted with the time-release process and its UI possibilities, let's review in detail the release and approval process in the next two chapters.

You can use dozens of enhancements to tailor the CATS system to fit your needs. From customized edit checks to print forms, CATS offers tremendous flexibility to meet the most complex time entry scenarios.

15 Deploying User Exits and BAdIs to Enhance CATS

The SAP system delivers a number of user exits and Business Add-Ins (BAdIs) that allow you to enhance the functionality of the Cross-Application Time Sheet to meet your custom requirements. Throughout this chapter, we'll refer to user exits and BAdIs collectively as *enhancements*.

Here, we'll explore the most commonly used CATS enhancements. For the purposes of this chapter, we'll categorize the CATS enhancements according to the processes they support:

- ▶ Time entry
- ▶ Concurrent employment
- ▶ CATS for service providers
- ▶ CATS in Employee Self-Service/Manager Self-Service (ESS/MSS) using Web Dynpro ABAP (WDA)
- ▶ Time approvals, workflow, and reporting

We'll review over two dozen different enhancements in detail, and we'll look at each of the following characteristics for each:

- ▶ **Enhancement type**
CATS delivers two types of enhancements: BAdIs and user exits. Though both of these enhancement types enable you to implement custom requirements, there are many differences between these two enhancement techniques, as explained in Chapter 1.

► **CATS user interfaces**

The BAdIs and user exits discussed in this section apply to one or more of the following CATS UIs: Classic, Regular WDA, Service Providers, or Notebook.

► **Trigger event**

The trigger events are the conditions under which each enhancement is triggered.

► **Functionality**

The functionality includes the capabilities of the user exits and BAdIs.

How to Locate User Exits and BAdIs

User exits and BAdIs are only available if they have been added by SAP developers to the transaction you want to enhance. To identify the user exits available in the SAP system, you can perform a search via the following menu path: TOOLS • ABAP WORKBENCH • UTILITIES • ENHANCEMENTS • DEFINITION. In the SAP ENHANCEMENTS screen, choose UTILITIES • FIND. The ensuing selection screen allows you to perform your own search through the catalog of available user exits.

To search for BAdIs, the menu path is TOOLS • ABAP WORKBENCH • UTILITIES • BUSINESS ADD-INS • DEFINITION.

Keep these in mind as we work through the chapter.

Now let's look at how to enhance your data entry process with user exits and BAdIs.

15.1 Enhancements for the Time Entry Process

CATS provides a number of user exits and BAdIs to assist the user during the time entry process. In fact, most of the enhancements available in CATS are designed to support this stage of the time entry process.

In this section, we'll first review the enhancement specific to the CATS Classic (CAT2) UI. Then we'll discuss enhancements designed specifically for CATS Regular (ESS) via Web Dynpro ABAP (WDA). We'll finish by reviewing the enhancements used to compile the CATS Worklist, perform changes to the data, execute data validation, and, finally, populate customer-specific fields.

15.1.1 CATS Classic Screen Enhancements

The ensuing list of user exits has been delivered specifically to enhance the CATS Classic UI. Let's look at each of these in detail.

CATS0004—Deactivate Functions in the User Interface

Use the user exit CATS0004 to remove screen functions from the CATS TIME SHEET: INITIAL SCREEN or detail screens. You can take into account the CATS data entry profile or the personnel number in your decision-making process.

Enhancement Type	User exit
CATS User Interfaces	Classic
Trigger Event	Any time the CATS TIME SHEET: INITIAL SCREEN or detail (TIME SHEET: DATA ENTRY VIEW) screen is accessed in EDIT or DISPLAY mode.

To hide the screen functions, you must specify the respective function code. You can find the function code by following these steps:

1. Find the option you want to hide in the pull-down menu.
2. Highlight the menu option by placing your cursor over it (*do not* click on it).
3. While the menu option is highlighted, press **F1** on your keyboard. As shown in Figure 15.1, the TECHNICAL INFORMATION dialog window displays the function code associated with the menu option you highlighted.



Figure 15.1 Function Code for the Release View User Command

For illustrative purposes, we'll follow the steps that are required to hide the button and menu option for the RELEASE VIEW and VARIABLE VIEW functions. This is necessary only if the data entry profile is configured to release the data on saving (hence making the RELEASE VIEW button unnecessary).

Our first step is to find the function code for the RELEASE VIEW button. The RELEASE VIEW menu option can be found in the CAT2 TIME SHEET: DATA ENTRY VIEW screen by choosing GOTO • VIEW • RELEASE VIEW. With the RELEASE VIEW menu option highlighted (as previously discussed in step 2), press **[F1]** on your keyboard, and the TECHNICAL INFORMATION window displays the user command: FREE. Following similar steps, we're able to determine that the user command for the VARIABLE VIEW is STAT.

The second step in the process of deactivating screen functions is to add function codes FREE and STAT to Table T_CUAF in user exit CATS0004. The ABAP code in Listing 15.1 illustrates this step.

```
* Is the data entry profile customized to release on saving?
IF TCATS-FREEATSAVE IS NOT INITIAL.
* Release on Saving = Yes. Hide the "Release View" Function
  T_CUAFC-FCODE = 'FREE'. APPEND T_CUAFC.
* Hide the Variable View Function
  T_CUAFC-FCODE = 'STAT'. APPEND T_CUAFC.
ENDIF.
```

Listing 15.1 CATS0004 User Exit Code Used to Deactivate CAT2 Screen Functions

The third and last step is to add user exit CATS0004 to your own enhancement customer project (Transaction CMOD) and activate the project. As shown in Figure 15.2, the end result of this user exit implementation is that the RELEASE VIEW and VARIABLE VIEW menu functions and screen buttons are inactive.



Figure 15.2 Release and Variable View Buttons Deactivated by User Exit CATS0004

CATS0011—Customer Functions

This user exit allows you to add custom functions to the CATS TIME SHEET: INITIAL SCREEN as well as the TIME SHEET: DATA ENTRY VIEW screen.

Enhancement Type	User exit
CATS User Interfaces	Classic
Trigger Event	Every time the CATS TIME SHEET: INITIAL SCREEN or detail (TIME SHEET: DATA ENTRY VIEW) screen are accessed in EDIT or DISPLAY mode.

The TIME SHEET: INITIAL SCREEN accommodates two custom functions (Figure 15.3) and the TIME SHEET: DATA ENTRY VIEW screen accommodates four. Two of these functions can be found under the EXTRAS menu option and the other two appear under the ENVIRONMENT menu. The user exit internal Table SAP_CATSD contains the data in the DATA ENTRY section. You can query which SAP_CATSD field the cursor is positioned in when the function is called using the SAP_CURSOR_FIELD and the SAP_CURSOR_CATSDDLNE fields. You could, for example, use this user exit to trigger a report that would show you an employees' quota balance.

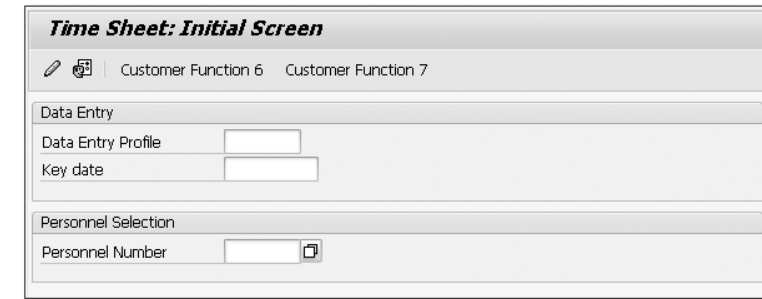


Figure 15.3 Customer Functions 6 and 7 Activated in the CATS Time Sheet: Initial Screen

Tip
All CUSTOMER FUNCTIONS become visible when you activate user exit CATS0011. You can use user exit CATS0004 to hide any CUSTOMER FUNCTIONS you don't want to use.

CATS0005—Customer Field Enhancements

There are two different techniques for including customer fields in the TIME SHEET: DATA ENTRY VIEW screen.

Enhancement Type	User exit
CATS User Interfaces	Classic
Trigger Event	Any time the CATS detail screen is accessed in EDIT or DISPLAY mode.

Method 1

The first method requires the activation of user exit CATS0005. Available as of Release 4.5a, this user exit allows you to add a dialog window with custom fields to the TIME SHEET: DATA ENTRY VIEW screen as shown in Figure 15.4. The custom fields must first be created in table `Include CI_CATSDB`.

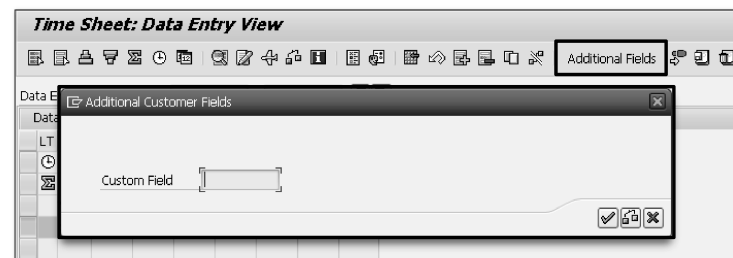


Figure 15.4 Capturing Custom Data via User Exit CATS0005

The advantage of this method is that you can output context-sensitive information in the dialog window. For example, you could use this user exit to capture data that correlates to the contents of the selected CATS record. This data will be saved with the rest of the CATS data in Table CATSDB.

Follow these steps to implement this user exit:

1. Define customer `Include CI_CATSDB` in the ABAP Data Dictionary. Be sure to include only fields in the customer name range.
2. Create screen SAPLXCAT number 1000, and assign the custom fields to the screen. Make sure to create the screen as type SUBSCREEN.
3. Define a Process Before Output (PBO) function module for the screen.
4. Define a Process After Input (PAI) function module for the screen.

`Include ZXCATU06` is processed before the PBO processing for the custom dialog window. The Include contains information on the record selected in the CATS screen.

Method 2

The second method for capturing data into custom fields is to include these fields in the DATA ENTRY AREA in the CATS DATA ENTRY screen (Figure 15.5).

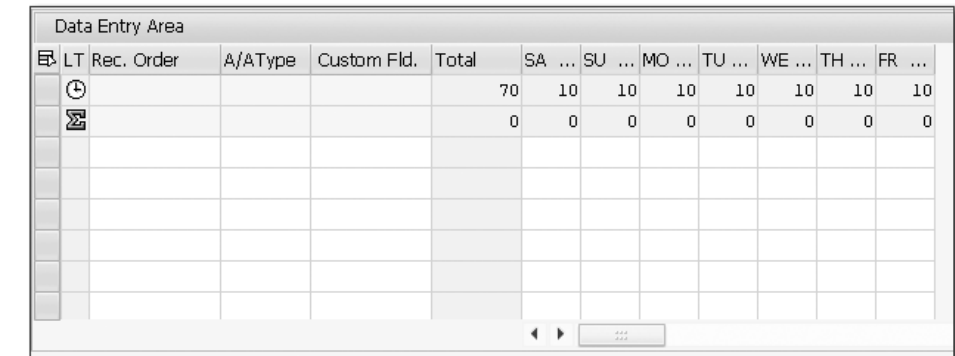


Figure 15.5 Adding Custom Fields to the Data Entry Section

For example, you could use this user exit to capture data that doesn't depend on the contents of the CATS data fields. This data will be saved with the rest of the CATS data in Table CATSDB. This method for including custom fields on the screen doesn't require you to activate user exit CATS0005. To add the fields to the screen, follow these steps:

1. Define customer `Include CI_CATSDB` via Transaction SE11.
2. Add the custom field(s) to `Include CI_CATSDB`.
3. Assign the custom field(s) to the predefined CATS CUSTOMER FIELDS in the configuration IMG (Transaction SPRO) via path CROSS APPLICATION COMPONENTS • TIME SHEET • SETTINGS FOR ALL USER INTERFACES • CUSTOMER-SPECIFIC • MODIFICATIONS • CREATE CUSTOMER FIELDS • MAKE FIELD ASSIGNMENT.
4. Add the customer field to your CATS profile via the IMG. Access the IMG via Transaction SPRO, and follow the path CROSS APPLICATION COMPONENTS • TIME SHEET • SETTINGS FOR ALL USER INTERFACES • CUSTOMER-SPECIFIC MODIFICATIONS • CREATE CUSTOMER FIELDS • ADD CUSTOMER FIELDS TO FIELD SELECTION.

Tip

Custom fields to be included in the CATS data entry profile must be NUMERIC or CHARACTER type and have a length of 40 characters or less.

Tip
 Values from customer fields are saved in the CATS database but aren't transferred to any of the target applications.

CATS0007—Subscreen on Initial Screen

This user exit activates a subscreen at the bottom of the TIME SHEET: INITIAL SCREEN (Figure 15.6), which you can use to display custom information.

Enhancement Type	User exit
CATS User Interfaces	Classic
Trigger Event	Any time the CATS TIME SHEET: INITIAL SCREEN is accessed in EDIT or DISPLAY mode.

You can also use this enhancement in combination with user exit CATS0002 to capture data you can subsequently use during the data entry process. For example, you could use the subscreen to capture receiving objects that you can use as default values during data entry.

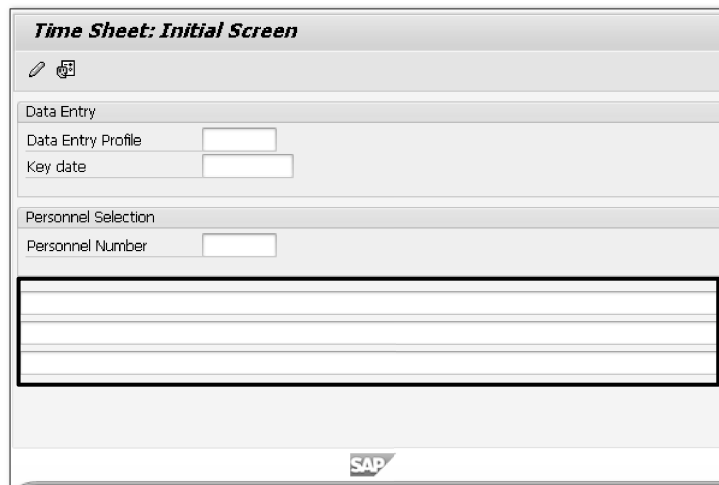


Figure 15.6 Subscreen Activated via User Exit CATS0007

To use this enhancement, you must create SCREEN NUMBER 2000 for Program SAP-LXCAT. The screen type must be SUBSCREEN and the maximum dimensions are a length of 82 columns and a height of 4 lines.

CATS0012—Subscreen on Time Sheet: Data Entry View Screen

This user exit allows you to create a subscreen on the header of the TIME SHEET: DATA ENTRY VIEW screen (SAPLCATS numbers 2002, 2003, and 2500). The maximum dimensions of the customer subscreen (SAPLXCAT number 3000) are a length of 83 columns and a height of 3 lines.

Enhancement Type	User exit
CATS User Interfaces	Classic
Trigger Event	Each time the CATS detail screen is accessed in EDIT or DISPLAY mode.

You can use function module EXIT_SAPLCATS_012, which is an additional component of user exit CATS0012, to feed custom data to the subscreen. Furthermore, as shown in Figure 15.7, you can hide the top row of the standard screen header by setting return parameter NO_OTHER_HEADER_INFO to X. You can use this user exit, for example, to display a person's vacation balance.

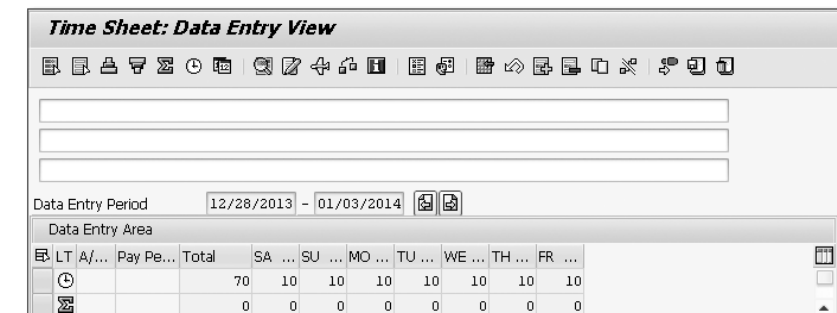


Figure 15.7 Custom Subscreen on the Time Sheet: Data Entry View Screen

CATP0001—Determine Target Hours

This user exit populates the TARGET HOURS row in the CATS UIs listed previously with a value you calculate based on your own business rules. For example, you

could use this user exit if you don't use the SAP Time Management module. Alternatively, you could implement this user exit if the work schedule stored in Info-types 0007 (Planned Working Time) or 2003 (Substitutions) doesn't meet your business needs.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In CATS Classic, the event is triggered each time a new time entry screen is accessed (in DISPLAY or EDIT mode). For all other applicable CATS interfaces, the system calls the user exit at the start of the application.

Tip

In CATS Classic, this user exit is only triggered if the TARGET HOURS are displayed on the TIME SHEET: DATA ENTRY VIEW screen. Therefore, you may want to activate the WITH TARGET HOURS parameter in your data entry profile.

In the CATS Regular WDA for ESS application, the determine target hours user exit can influence the scheduled hours (and by default, the incomplete days) displayed in the CATS calendar. In the MSS application, the user exit influences the planned hours used in the Time Recording application in the MSS home page as well as the time recording status for the MY TEAM tab in the Approve Working Times application (Figure 15.8).

Send Mass Reminder					
Actions	Employee Name	Personnel Number	Missing Time	Recorded Time	Target Time
✉	John Doe	00001303	8.00 H	32.00 H	40.00 H
✉	Cristian Gallardo	00001304	0.00 H	46.00 H	40.00 H
✉	John Smith	00001305	40.00 H	0.00 H	40.00 H

Figure 15.8 Using User Exit CATP0001 to Calculate the Target Time in Manger Self-Service

15.1.2 Worklist Enhancements

A *worklist* is a user-specific list of logistics objects such as work orders and WBS elements that can be displayed on the TIME SHEET: DATA ENTRY VIEW screen (see Figure 15.9) and used for data entry. You can copy the contents of the WORKLIST

section into the DATA ENTRY AREA section to facilitate finding the objects against which you need to charge time. The worklist is an optional function in the CATS data entry profile and can only be used for profiles customized for single employee time entry.

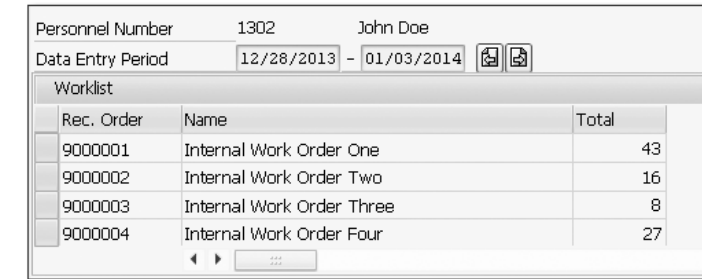


Figure 15.9 The Time Sheet Worklist

You can activate the worklist on your data entry profile from the configuration IMG (Transaction SPRO) via the menu path CROSS-APPLICATION COMPONENTS • TIME SHEET • SPECIFIC SETTINGS FOR CATS CLASSIC • SET UP DATA ENTRY PROFILES.

CATS delivers two enhancements you can use to build your own worklist or complement the list generated by SAP. These enhancements are user exit CATS0001 and BAdI CATS_WORKLIST_ADDIN (we'll discuss these more in the following subsections). Both of these enhancements support the same CATS UIs. Enhancement CATS_WORKLIST_ADDIN, however, is a BAdI and is therefore the recommended technique for building your own worklist. An example of how you could use this enhancement is to build a worklist of internal orders where the responsible cost center matches the employee's home cost center.

User exit CATS0001 uses function module EXIT_SAPLCATS_001, whereas BAdI CATS_WORKLIST_ADDIN uses interface IF_EX_CATS_WORKLIST_ADDIN, which, in turn, contains one method: GET_WORKLIST. The parameters for the method correspond to the parameters for function module EXIT_SAPLCATS_001.

The system will process user exit CATS0001 before calling BAdI CATS_WORKLIST_ADDIN. It's possible to modify the worklist data in both the user exit and the BAdI. The changes performed by the BAdI, however, take precedence over changes performed by the user exit. The system builds the worklist based on the CATS data

entry profile configuration settings (e.g., IN PROCESS SINCE, FROM RESOURCE PLANNING, BY WORK CENTER, etc.) before calling these enhancements. The contents of the standard worklist are subsequently transferred to the user exit and BAdI.

Note

For both the worklist enhancements to be triggered, the CATS data entry profile must be customized to display a WORKLIST and the CUSTOMER ENHANCEMENT option must be selected.

CATS_WORKLIST_ADDIN—Compile Worklist

You can use this BAdI to edit the contents of the worklist built by the system according to the worklist configuration settings assigned to the CATS data entry profile. The user exit allows you to modify the contents of each worklist row as well as add or remove records.

Enhancement Type	Business Add-In
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In the CATS Classic interface, the system calls the BAdI upon opening the TIME SHEET: DATA ENTRY VIEW screen as well as when moving between data entry periods. For all other applicable CATS interfaces, the system calls the BAdI at the start of the application, after user exit CATS0001 has been processed.

CATS0001—Compile Worklist

You can use this user exit to build a worklist based on your own requirements. This user exit delivers the same functionality as BAdI CATS_WORKLIST_ADDIN: you can edit the contents of the system-built worklist by adding or removing entries, or you can decide to build the worklist completely on your own based on custom requirements.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In the CATS Classic interface, the system calls the user exit upon opening the TIME SHEET: DATA ENTRY VIEW screen as well as when moving between data entry periods. For all other applicable CATS interfaces, the system calls the user exit at the start of the application, before processing BAdI CATS_WORKLIST_ADDIN.

If you're using the Mobile Time Sheet application, it's important to keep in mind that the worklist will work differently from other CATS interfaces. In the Mobile Time Sheet, the contents of the worklist are displayed as the possible values (picklist) for the respective LOGISTICS field. This helps to limit the number of records that must be synchronized between the SAP ERP backend system and the Mobile Time Sheet application. For example, to populate the RECEIVER ORDER field (to capture time against maintenance work orders) in the MOBILE TIME picklist, you must configure the data entry profile for the Mobile Time Sheet application to build a worklist of work orders.

This worklist functionality applies to the following Mobile Time Sheet fields:

- ▶ SENDING PURCHASE ORDER
- ▶ SENDING PURCHASE ORDER ITEM
- ▶ RECEIVER COST CENTER
- ▶ RECEIVER NETWORK
- ▶ RECEIVER ORDER
- ▶ RECEIVER SALES ORDER
- ▶ RECEIVER WBS ELEMENT

15.1.3 Data Edits

CATS provides the following two enhancements to allow you to modify the contents of CATS records.

CATS0002—Supplement Recorded Data

This user exit modifies the contents of CATS records. You can modify the contents of an existing record or create a new record.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In CATS Classic, this user exit is called once per Hour field after a sending/receiving object and hours have been specified. The user exit is processed before the standard edit checks are performed. In CATS Regular WDA, the user exit is triggered when you save your data. The trigger event for the Notebook UI is the synchronization of the data with the SAP ERP system.

Example

You can use this user exit to default the `ACTIVITY TYPE` associated with a work order/operation or, as described in Chapter 14, to default the `ACTIVITY TYPE RATE`. The user exit inserts additional lines for new records on the Data Entry Area. This user exit only processes records that have been edited (created or modified) during the time-entry process. Preexisting records aren't processed by the user exit if they haven't been edited.

The CATS data is supplied to the user exit one record at a time via Table `ENRICH_TABLE`. Therefore, if you implement this user exit, you must make sure to loop through Table `ENRICH_TABLE` to insure you properly process all records (including records newly added within your user exit).

This user exit doesn't contain an export parameter to communicate messages back to the user. Even so, you should avoid using ABAP keyword `MESSAGE` within this user exit because this stops the ABAP flow and could produce unexpected results. A technique you may use to transmit messages generated by this user exit is to store them in an internal table declared in `Include ZXCATTOP` and subsequently move the contents of this table to Table `I_MESSAGES` in user exit `CATS0003`. You can download sample code for user exit `CATS0002` on this book's home page at www.sap-press.com/3568.

Note

User exit `CATS0002` only processes records modified in the CATS entry screen, so it can't be used to create the initial record (default) for a data entry period.

CATS_DERIVATIVES—Changes to Derivatives

This BAdI allows you to use the contents of the `TASK TYPE`, `TASK COMPONENT`, and `TASK LEVEL` fields to derive default values for the following CATS fields:

- ▶ `ACTIVITY NUMBER` (Materials Management–Service)
- ▶ `ACTIVITY TYPE` (Controlling)
- ▶ `ATTENDANCE/ABSENCE TYPE` (Human Resources)
- ▶ `SENDER BUSINESS PROCESS`
- ▶ `STATISTICAL KEY FIGURE` (Controlling)
- ▶ `WAGE TYPE` (Human Resources)

Enhancement Type	Business Add-In
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	This BAdI is called at the moment of time entry if you fill in the <code>TASK TYPE</code> , <code>TASK COMPONENT</code> , and <code>TASK LEVEL</code> fields.

To use this functionality, you must first customize the `TASK TYPE`, `TASK COMPONENT`, and `TASK LEVEL`. You can customize these fields via the configuration IMG (Transaction `SPRO`). From the SAP Reference IMG, follow path `CROSS-APPLICATION COMPONENTS • TIME SHEET • SETTINGS FOR ALL USER INTERFACES • TIME RECORDING • SPECIFY TASK TYPES, COMPONENTS, AND LEVELS`. This customizing task allows you to set default values for the `TASK TYPE/TASK COMPONENT/TASK LEVEL` combination. You would only have to implement the `CATS_DERIVATIVES` BAdI if the standard default functionality doesn't provide you with the flexibility you require. For example, you may want to default a different `ATTENDANCE` type depending on the employee's `PERSONNEL AREA`.

The second step in customizing the `TASK TYPE/TASK LEVEL/TASK COMPONENT` functionality is to make these fields available for input in your data entry profile. You can customize the field selection for your profile from the IMG via path `CROSS-APPLICATION COMPONENTS • TIME SHEET • SETTINGS FOR ALL USER INTERFACES • TIME RECORDING • CHOOSE FIELDS`. From the `FIELD SELECTION` screen, place your cursor on `DATA ENTRY SECTION`, and click on the `INFLUENCING` button. Select your data entry profile in the `CONTENTS` field, and press `[Enter]`. Set the following fields to input:

- ▶ CATSD-TASKTYPE – ACTIVITY TYPE (TASK TYPE)
- ▶ CATSD-TASKLEVEL – TASK LEVEL
- ▶ CATSD-TASKCOMPONENT – TASK COMPONENT

If you plan to implement BAdI `CATS_DERIVATIVES`, then it's important to keep in mind that the default implementation class `CL_DEF_IM_CATS_DERIVATIVES` is delivered in an active status and is deactivated as soon as you activate your own BAdI implementation. This will cause the default value functionality for the TASK TYPE/TASK COMPONENT/TASK LEVEL to cease working. The `CATS_DERIVATIVES` BAdI contains only one method: GET (provide derivatives). You can download sample code for this BAdI on the book's home page at www.sap-press.com/3568.

15.1.4 Custom Data Validation

User exits `CATS0003` and `CATS0006` are supported by all CATS UIs, and they allow you to perform your own data validation checks. We'll discuss these user exits in more detail in the following subsections.

CATS0003—Validate Recorded Data

The purpose of this user exit is to allow you to perform your own data validations after the standard validations have been executed. This user exit performs validations one record at a time, which means that it's not possible to perform edit checks that depend on the content of other CATS records.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In CATS Classic, this user exit is called at the moment of time entry when you save your data, select the CHECK-ENTRIES function, or switch to a new time-entry period. In CATS Regular WDA, the user exit is triggered when you save your data. The trigger event for the Notebook UI is the synchronization of the data with the SAP ERP system.

Example	You could implement this user exit to check that absence records have a duration of four hours or more.
----------------	---

The message generated by this user exit is added to Table `I_MESSAGES`. As shown in Figure 15.10, the user exit displays the error message at the bottom of the screen. Only the row that contains the processed data will remain open for entry if Table `I_MESSAGES` contains a message type `ERROR`. This makes it very easy for users to see which record generated the error message.

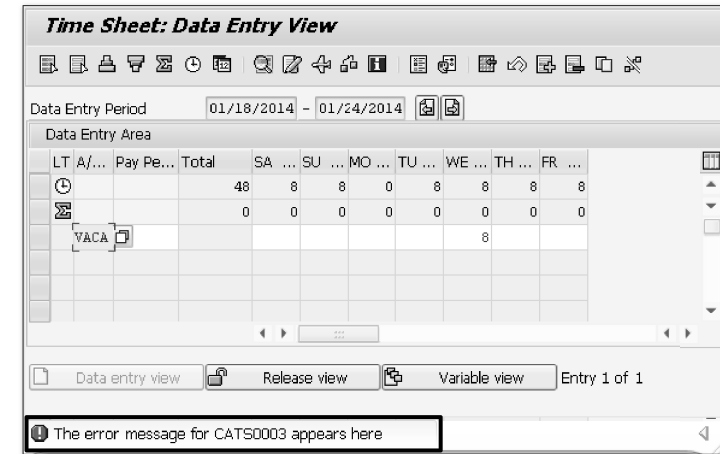


Figure 15.10 Messages from User Exit CATS0003 at the Bottom of the Screen

CATS0006—Validate Entire Time Sheet

This user exit allows you to validate all data records in the CATS screen at the same time. This enables you to perform edit checks that depend on the content of other records on the screen.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider, Notebook
Trigger Event	In CATS Classic, the validations are carried out when you save or check data, and also when you switch between views or change the data entry period regardless of whether a record has been edited or not. In CATS Regular WDA, the user exit is triggered when you save your data. The trigger event for the Notebook UI is the synchronization of the data with the SAP system.

Example

You could check that an employee doesn't record an absence type and overtime on the same day. The data records to be processed are contained in Table CHECK_TABLE.

In contrast to user exit CATS0003, this user exit allows you to generate multiple messages for multiple employees at the same time. Any messages generated by this user exit are added to Table I_MESSAGES. As shown in Figure 15.11, the messages are displayed in a dialog window.

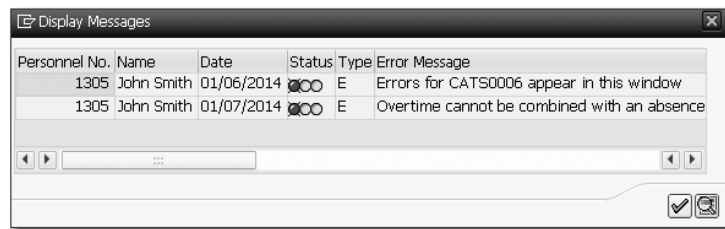


Figure 15.11 Messages from User Exit CATS0006 in a Dialog Window

As shown in Figure 15.12, the messages generated by user exits CATS0003 and CATS0006 are consolidated into the same screen section in the CATS Regular WDA.

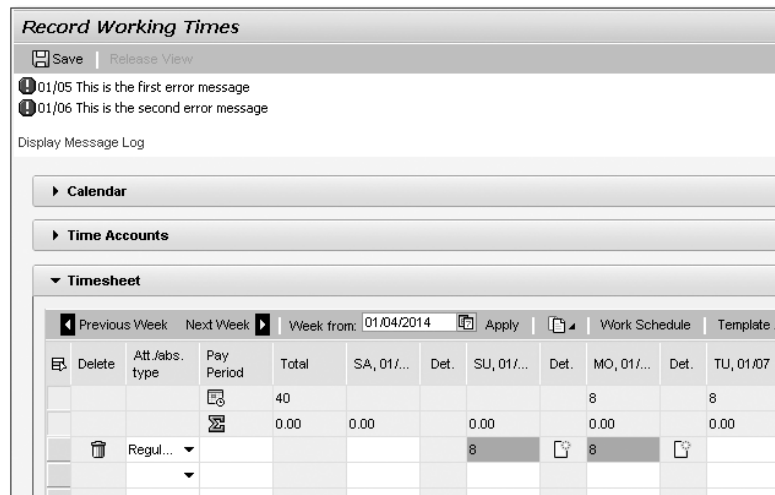


Figure 15.12 Messages from User Exits CATS0003 and CATS0006 in the CATS Regular Web Dynpro ABAP Application

Warning

Messages generated by user exits CATS0003 and CATS0006 must be added to Table I_MESSAGES instead of using ABAP command MESSAGE.

It's important to keep in mind that, in CATS Regular WDA, this user exit doesn't have access to all of the time data visible on the screen as in CATS Classic. In the CATS Regular WDA application, the CATS0006 user exit will only have access to the time records that have been edited.

You can download sample code for user exits CATS0003 and CATS0006 on the book's home page at www.sap-press.com/3568.

15.1.5 Populate Customer-Specific Text Fields

CATS provides you with four customer-specific fields you can use to populate with any text you want in the context of a CATS record. As shown in Figure 15.13, these fields are available in the WORKLIST and in the DATA ENTRY AREA. The header description for these customer-specific text fields is NAME, and you can add them to your CATS data entry profile via the configuration IMG (Transaction SPRO). From the SAP Reference IMG, follow configuration path CROSS-APPLICATION COMPONENTS • TIME SHEET • SETTINGS FOR ALL USER INTERFACES • TIME RECORDING • CHOOSE FIELDS. From the FIELD SELECTION screen, place your cursor on the DATA ENTRY SECTION or WORKLIST, and click on the INFLUENCING button. Select your data entry profile in the CONTENTS field, and press .

We'll now review the two user exits available for you to populate the customer-specific fields in both the CATS WORKLIST and the DATA ENTRY AREA sections. An example of how these two user exits could be used is to display the description of the receiving order in both the WORKLIST and DATA ENTRY AREA section.

CATS0009—Customer-Specific Text Fields in Data Entry Area Section

The DATA ENTRY AREA section of the CATS data entry profiles have two generic text fields called NAME (CATSFIELDS-DISPTEXT1 and CATSFIELDS-DISPTEXT2), which you can use to display any text you want (refer to Figure 15.13). You can use user exit CATS0009 to populate these fields. The content of these fields isn't stored in the CATS database.

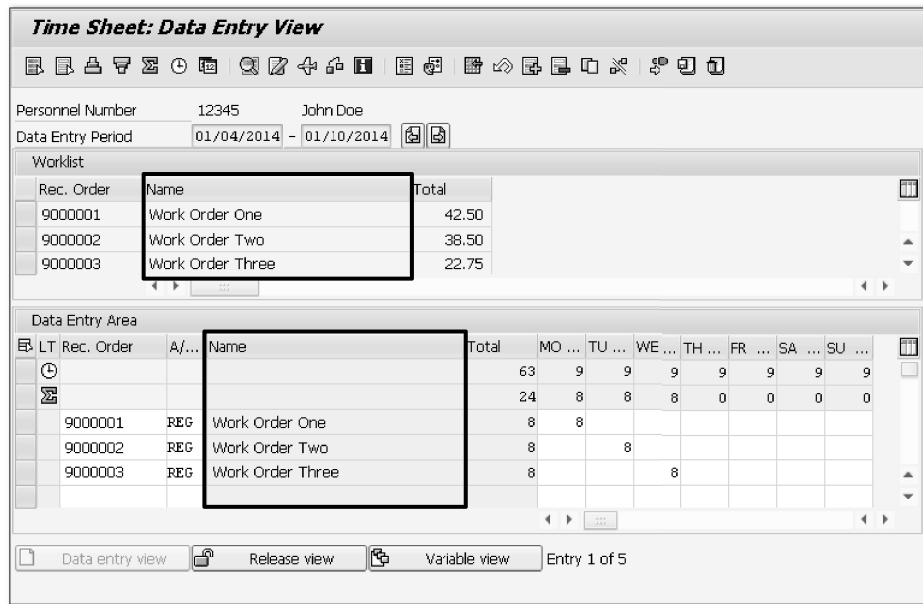


Figure 15.13 Time Sheet Displaying Text Fields in the Worklist and Data Entry Area Sections

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular
Trigger Event	The event is triggered when the application is first accessed. In CATS Classic, it's also processed when you switch data entry periods.

User exit CATS0009 allows you to include up to two generic text fields in the CATS DATA ENTRY AREA section. There are, however, various differences between using the generic fields related to CATS0009 and the method we discussed in relation to user exit CATS0005 for adding your custom fields to the CI_CATSDB structure and to the DATA ENTRY AREA section:

- ▶ Creating your own fields allows you to have more control over the characteristics of the field. You can, for example, assign your own DATA ELEMENT to your custom field. This allows you to specify your own length (to no more than 40 characters), description, search help, check table, user documentation, and so on.

- ▶ The custom field data is saved in the CATS database. This data, however, isn't transferred to any of the target applications.

In other words, the customer-specific fields associated with user exit CATS0009 are used only to *display* data, whereas the custom fields allow you to *display or save* the data.

CATS0010—Customer-Specific Text Fields in the Worklist

In addition to the NAME fields available in the DATA ENTRY AREA section, the CATS data profile delivers two generic text fields (CATSFIELDS-DISPTEXTW1 and CATSFIELDS-DISPTEXTW2) in the WORKLIST section of the screen. You can populate the text for these two fields via user exit CATS0010. You must keep in mind, however, that the content of these fields isn't stored in the CATS database.

Enhancement Type	User exit
CATS User Interfaces	Classic, Regular, Service Provider
Trigger Event	The event is triggered when the application is first accessed. In CATS Classic, it's also processed when you switch data entry periods.

You can download sample code for user exits CATS0009 and CATS0010 on the book's home page at www.sap-press.com/3568.

15.2 CATS Enhancements for Concurrent Employment

CATS supports time entry for concurrent employment systems as of SAP ERP 6.0 EHP4. To facilitate the concurrent employment time entry process, the SAP system delivers enhancement spot PRFL_TMPLT_BY_PERNR (Profile/Template for Each Employee Relationship), which contains BAdI definitions HRCATS_PROFILE_BY_PERNR (Generate Data Entry Profile for Each Employment Relationship) and HRCATS_TEMPLATE_BY_PERNR (Generate Personal Templates for Each Employment Relationship). We'll discuss these in more depth in the following subsections.

You can access the CATS concurrent employment functionality in the configuration IMG via the following path: PERSONNEL MANAGEMENT • EMPLOYEE SELF-

SERVICE (WEB DYNPRO ABAP) • SERVICE-SPECIFIC SETTINGS • WORKING TIME • RECORD WORKING TIME • RECORD WORKING TIME FOR CONCURRENT EMPLOYMENT.

15.2.1 HRCATS_PROFILE_BY_PERNR—Generate Data Entry Profile for Each Employment Relationship

This enhancement was created to support the selection of the proper CATS data entry profile for each employee assignment in a concurrent employment environment via the CATS Regular application. The SAP system is delivered with an inactive sample implementation of this BAdI (HRCATS_PROFILE_BY_PERNR) that serves to provide examples of how this enhancement could be implemented by a customer.

When this BAdI is activated, it will identify the proper CATS data entry profile to be used for each employee assignment using custom ABAP code. If the BAdI isn't implemented (or if it is but doesn't assign a data entry profile to an employee assignment), then the system will use the standard process for identifying the default data entry profile.

15.2.2 HRCATS_TEMPLATE_BY_PERNR—Generate Personal Templates for Each Employment Relationship

During the time entry process, CATS allows you to save sender and receiver account assignments in the DATA ENTRY AREA section of the application. This is known as a personal template and allows employees to save time because they only have to enter working times. The personal template, however, can only be created for each combination of CATS data entry profile and user ID. This creates a problem for employees entering time in a concurrent employment environment because a single user ID could have multiple employee assignments.

You can implement BAdI HRCATS_TEMPLATE_BY_PERNR in a concurrent employment environment to support the assignment of personal templates for an employee's various personnel assignments. As such, the BAdI contains the following three methods where you can implement your own concurrent employment personnel assignment functionality:

- ▶ **INSERT_TEMPLATE**
Save the concurrent employment personal template.

- ▶ **GET_TEMPLATE**
Retrieve the concurrent employment personal template.
- ▶ **DELETE_TEMPLATE**
Delete the concurrent employment personal template.

A key activity when implementing this BAdI is to create a custom transparent table of the type CATS_TEMP_PERNR_STRUC to process the personal templates.

The following BAdI isn't part of the PRFL_TMPLT_BY_PERNR enhancement spot, but it was still designed for a concurrent employment environment.

15.2.3 BADI_CATS_FILTER—Filter Assignments

The CATS functionality for concurrent employment doesn't automatically exclude inactive personnel assignments from the time-entry process. This BAdI can be used to remove inactive assignments from the CATS process. The SAP system comes delivered with BAdI implementation CL_CATS_CE_FILTER, which, in turn, contains methods FILTER_ASSIGNMENTS and FILTER_ASSIGNMENTS_TEXT. These methods contain inactive sample ABAP code that demonstrates how to remove inactive personnel assignments from the CATS application. You can copy this standard code and use it in your own implementation of this BAdI to remove inactive employee assignments.

15.3 Enhancements for CATS for Service Providers

In addition to the user exits discussed earlier in the chapter, the SAP system is delivered with a BAdI designed to support the specific needs of CATS for Service Providers.

CATSXT_EVENT—CATSXT: Customer Fields and Data Checks

This BAdI contains 36 different methods that can be used to enhance a myriad of functionality within the CATS for Service Providers time entry process. Some of these methods provide similar functionality to the CATS Regular WDA enhancements. You can, for example, implement custom edit checks or modify the time data entered on the screen.

Contents

Acknowledgments	17
-----------------------	----

1 Introduction 21

1.1 What This Book Discusses	21
1.2 Introduction to the Cross-Application Time Sheet	22
1.2.1 Evolution of CATS	23
1.2.2 Business Requirements and CATS	23
1.2.3 CATS User Interfaces	25
1.3 Brief Technical Overview	26
1.4 Integration Overview	27
1.5 System Enhancements	29
1.5.1 User Exits	30
1.5.2 BAdIs	30
1.6 Summary	30

PART I CATS Functional Processes

2 Master Data Foundations for CATS Processes 33

2.1 Master Data for Human Resources	34
2.1.1 Enterprise Structure	35
2.1.2 Core HR Infotypes	37
2.1.3 Human Resources Mini-Master Data	39
2.1.4 Time Management Infotypes	43
2.1.5 Human Resources Personnel Development	50
2.1.6 Basic Settings for Time Management	52
2.2 Master Data for Finance and Controlling	53
2.2.1 Key Elements for Integrating CATS with Financial Accounting	55
2.2.2 CATS Integration in Financial Accounting	56
2.2.3 Customizing Integration with Financial Accounting	64
2.2.4 Key Elements for Integrating CATS with Controlling	66
2.2.5 Document Generation with Controlling	67
2.2.6 Customizing Integration in Controlling	69
2.2.7 CATS and Controlling Transfer	70

2.3	Master Data for Plant Maintenance and for Customer Service	71
2.3.1	Key Elements for Integrating CATS with Plant Maintenance and Customer Service	71
2.3.2	Transactions	72
2.3.3	Available User Exits to Enhance CATS	80
2.3.4	CATS and Plant Maintenance Transfer	80
2.4	Master Data for Materials Management (External Services)	80
2.4.1	Basic Information for MM	81
2.4.2	Integration with Human Resources	84
2.4.3	Available Fields for Materials Management	88
2.4.4	CATS and Materials Management Transfer	89
2.5	Master Data for SAP Project System	90
2.5.1	Basic Information about SAP Project System Transactions to Be Integrated	91
2.5.2	Available Fields for Project System	95
2.5.3	Integration with Collaboration Projects (cProjects) Since EHP5	96
2.5.4	CATS and Project System Transfer	97
2.6	Summary	98

3 Time Entry 99

3.1	Individual Time Registration through the On Premise (Backend) System	100
3.1.1	End-User Process	100
3.1.2	Enable Worklist	101
3.1.3	Release and Approval	103
3.1.4	Configuration Considerations	105
3.2	Mass Time Registration through the On Premise (Backend) System	106
3.3	Individual Time Registration through the Portal (Frontend)	109
3.4	Mobile Time Registration	111
3.4.1	Standard SAP Timesheet App	111
3.4.2	Time Registration through SAP Fiori	116
3.5	Summary	117

4 Time Entry Release Process 119

4.1	Activating the Release Process	119
-----	--------------------------------------	-----

4.2	On Premise (Backend) Release Process	121
4.3	Web Interface Release Process	123
4.4	Summary	127

5 Approval Process 129

5.1	Approval from the On Premise Side (Backend System)	129
5.1.1	Approve Working Times by Selecting Master Data	130
5.1.2	Approve Working Times via Report RCATS_APPROVE_ACTIVITIES	131
5.1.3	Approve Working Times and Travel Expenses	133
5.2	Approval from the Online Side (Frontend System)	135
5.2.1	Collective Approval	138
5.2.2	Individual Approval	139
5.2.3	Review and Save	140
5.2.4	Customizing the New Web Dynpro Approval Screen	141
5.3	Summary	146

6 Transferring Time Entries 147

6.1	Configuration	147
6.1.1	Configuration for the Human Resources (HR)/Human Capital Management Direct Transfer	148
6.1.2	Configuration for the Controlling Component Transfer	148
6.2	Standalone Transfer into Individual SAP Components	150
6.2.1	Transferring into SAP ERP HCM and Human Resources	150
6.2.2	Transferring to SAP Project System	151
6.2.3	Transferring to the Plant Maintenance (PM) or Customer Service (SM/CS) Components	152
6.2.4	Transferring to the Accounting Component (FI-CO)	153
6.2.5	Transferring to the Materials Management (MM) Component	155
6.2.6	Transfer Combinations	156
6.3	Mass Transfer Program	157
6.4	Scheduling a Batch	159
6.5	Reorganizing Interface Tables	160
6.6	Reporting	162
6.7	Summary	166

7	Enabling Workflow	167
7.1	Introduction to Standard Workflow	168
7.2	Basic Configuration	169
7.2.1	Standard Documentation	169
7.2.2	Technical Prerequisites	169
7.2.3	Organizational Management	170
7.2.4	Workflow Authorizations	171
7.2.5	SAP User ID Mapping against Personnel Number and Email Address	172
7.3	Configuring a Standard Workflow in an SAP ERP HCM Process	172
7.3.1	Maintaining a Task	172
7.3.2	Additional Data: Agent Assignment	176
7.3.3	Adjusting the Customizing Configuration	177
7.3.4	Refreshing the Organizational Buffer	178
7.3.5	Testing the Workflow Process	179
7.4	Notifications	180
7.4.1	Receiving the Workflow Notification	180
7.4.2	Dealing with Notifications and Work Items	181
7.5	Configuring a Substitution Rule	182
7.5.1	Substitution Rule through Workflow Agent Determination	182
7.5.2	Substitution Rule through the Organizational Assignment	182
7.5.3	Substitution Rule through the SAP Business Workplace ...	183
7.5.4	Substitution Rule through the Universal Worklist (UWL)	184
7.6	Troubleshooting	185
7.6.1	Standard Reports for Troubleshooting	185
7.6.2	Some Leads for Troubleshooting	187
7.7	Summary	189
8	Authorizations	191
8.1	Authorization Groups	192
8.1.1	Set Up the Group	192
8.1.2	Assigning the Authorization Group to the Data Entry Profile	194

8.2	Restricting Access to a Determined Data Entry Profile and/or for Personnel	194
8.3	Authorization for Reporting in CATS	196
8.4	System Authorizations for Working with CATS Regular Version ...	196
8.5	Summary	197
9	Reporting	199
9.1	Frontend Reporting	199
9.1.1	Employee Listing	199
9.1.2	Master Data Export	200
9.1.3	Display Working Times	201
9.2	Backend Reporting	204
9.2.1	Time Leveling via Transaction CATC	205
9.2.2	Display Single Document Number	207
9.2.3	Approve Working Times	208
9.3	General Reporting	208
9.4	Reorganizing the Time Sheet	211
9.5	User-Linking to Employees	212
9.6	Reporting in Common SAP Components	215
9.6.1	Human Resources	215
9.6.2	Finance and Controlling	215
9.6.3	Plant Maintenance and Customer Service	215
9.6.4	Project System	215
9.6.5	Materials Management	216
9.7	Auditing the Process and the Master Data	216
9.7.1	Log Report Starts	216
9.7.2	Data Tracking for Self-Services	218
9.7.3	Enabling Data Tracking for Self-Services	221
9.7.4	Viewing the Logged Activities	223
9.7.5	Logged Changes in Infotype Data for Personnel Administration Data	225
9.7.6	Display Change Documents for Personnel Development Data	228
9.7.7	Event Linkage for Customer (Table T779X)	229
9.8	Summary	231

PART II CATS Configuration

10 Configuring the Cross-Application Time Sheet	235
10.1 Customizing the CATS Data Entry Profiles	237
10.1.1 General Settings	239
10.1.2 Time Settings	241
10.1.3 Person Selection	242
10.1.4 Accounting Variant	244
10.1.5 Default Values	244
10.1.6 Worklist	245
10.1.7 General Data Entry Checks	246
10.1.8 Print Entry Data Sheet	248
10.1.9 Integrating CATS with SAP Business Workflow	248
10.1.10 Determine Variant of Approval Report for Workflow	253
10.2 Customizing the CATS Fields	254
10.3 Customizing CATS for Web-Enabling	257
10.3.1 Create Data Entry Profiles for Employee Self-Services (ESS)	258
10.3.2 Create Data Entry Profiles for ESS	261
10.3.3 Select Allowed Absence Types	261
10.4 Additional CATS Customizing	263
10.4.1 Define Print Report	263
10.4.2 Define Authorization Groups	263
10.4.3 Specify Task Types, Components, and Levels	264
10.4.4 Define Rejection Reasons for the Approval Process	264
10.4.5 Determine How to Fill Controlling Documents during Transfer to Controlling	266
10.4.6 Recording Working Time through the SAP NetWeaver Business Client (NWBC)	267
10.4.7 Activation of the Composite Role(s)	268
10.5 Recording Working Time through SAP Fiori	269
10.5.1 Prerequisites for Installation	270
10.5.2 My Time Sheet App Customizing	278
10.5.3 (Optional) Deploy the Business Add-Ins (BADIs) for the My Time Sheet App	279
10.5.4 End-User Perspective of the SAP Fiori My Time Sheet App	281
10.6 Summary	284

11 Additional Functionality for SAP ERP HCM Users	285
11.1 SAP ERP HCM Integration Configuration Steps	286
11.1.1 Display Quota Balance Details	287
11.1.2 Incorporate Work Schedule Information	288
11.1.3 Consolidate Attendances and Absences Created via Alternate Applications	289
11.1.4 Incorporate Public Holidays into Time Sheet	290
11.1.5 Present Color-Coded Time Entry Status Information	292
11.1.6 Completion Status Messaging	292
11.1.7 Time Entry Cutoff Date Notice	293
11.2 HR-Enabled CATS Technical Requirements	293
11.2.1 Activate the ESS WDA Business Function	293
11.2.2 Set Up Proxies	294
11.2.3 Activate ICF Services	295
11.3 Troubleshooting	296
11.4 Summary	296
12 CATS Approval Configuration	297
12.1 Customizing the Approval Determination Logic	298
12.1.1 Customizing Special Approvals	298
12.1.2 Automatic Approvals via BADI_CATS_APPROVAL	304
12.2 Customizing the Approval User Interfaces	306
12.2.1 Enhancing CATS Classic Approval	306
12.2.2 Enhancing CATS for Service Provider Approval	307
12.2.3 Enhancing CATS MSS Approval	307
12.3 Summary	311
13 CATS Performance and Support Tools	313
13.1 CATS Performance	313
13.1.1 CATS Archiving	315
13.1.2 Interface Table Cleanup	316
13.1.3 Performance Recommendations for HR	318
13.1.4 Additional Performance Recommendations	319
13.2 Support Tools	321
13.3 Summary	325

14 Actual Labor Costing	327
14.1 Options for Calculating Labor Costs	327
14.1.1 Labor Costing Using Current Payroll Results	328
14.1.2 Labor Costing Using Prior Payroll Results	329
14.1.3 Labor Costing Using Basic Pay	330
14.2 Implementing Your Labor Rate Calculation	330
14.2.1 Rate Calculation Using Estimated Costs	331
14.2.2 Rate Calculation Using Payroll Results	337
14.3 Select the Right Costing Variant	347
14.4 Summary	348

PART III CATS Enhancements

15 Deploying User Exits and BAdIs to Enhance CATS	353
15.1 Enhancements for the Time Entry Process	354
15.1.1 CATS Classic Screen Enhancements	355
15.1.2 Worklist Enhancements	362
15.1.3 Data Edits	365
15.1.4 Custom Data Validation	368
15.1.5 Populate Customer-Specific Text Fields	371
15.2 CATS Enhancements for Concurrent Employment	373
15.2.1 HRCATS_PROFILE_BY_PERNR—Generate Data Entry Profile for Each Employment Relationship	374
15.2.2 HRCATS_TEMPLATE_BY_PERNR—Generate Personal Templates for Each Employment Relationship	374
15.2.3 BADI_CATS_FILTER—Filter Assignments	375
15.3 Enhancements for CATS for Service Providers	375
15.4 Enhancements for CATS Regular WDA	378
15.4.1 HRESS_CATS_CAL_DISPLAY—Calendar Display for Recording Working Times	379
15.4.2 HRESS_CATS_CAL_LEGEND—Calendar Legend for Recording Working Times	380
15.4.3 HRESS_CATS_DIR_REL_POPUP_TEXT—Direct Release Confirmation Text Change	381
15.4.4 HRESS_CATS_PROFILE_FILTER—Data Entry Profile Filter	382

15.4.5 HRESS_CATS_PRINT_FROM—PDF Print Forms for CATS	383
15.4.6 HRESS_CATS_PUB_HOLIDAY_DISPLAY—CATS Partial Day Public Holiday Display	384
15.4.7 HRMSS_CATS_APPR_DASHBRD_EMAIL—CATS Approval Mass Email Reminder	385
15.5 Approvals, Workflow, and Reporting Enhancements	386
15.5.1 Approval and Workflow Enhancements	387
15.5.2 Enhancing the Working Times and Approval Reports	390
15.5.3 Additional Enhancement	394
15.6 Summary	394

16 Importing and Extracting CATS Data 395

16.1 Introduction to BAPIs	396
16.2 Analysis of the Time Sheet Manager Business Object	398
16.2.1 Create CATS Records via a BAPI	400
16.2.2 Change CATS Records via a BAPI	402
16.2.3 Delete CATS Records via a BAPI	403
16.3 Techniques for Building a Time Interface	404
16.3.1 Customizing a CATS Data Entry Profile	404
16.3.2 Loading Data via ALE	408
16.3.3 Loading Data via an ABAP Program	409
16.4 Tools for Extracting CATS Data	411
16.4.1 Extracting CATS Records	411
16.4.2 Extracting the CATS Worklist	412
16.5 Summary	413

17 Enhancing the CATS Web Dynpro ABAP Applications 415

17.1 Floor Plan Manager	416
17.2 Customizing the User Interface	417
17.3 Application Configuration	418
17.3.1 Modifying the Application Parameters	420
17.3.2 Finding Application Parameters	423
17.4 Component Configuration	424
17.5 Enhancement Implementations	426
17.5.1 Creating Custom Fields and Structures	427

Contents

17.5.2 Adding Custom Processing Logic and Modifying the View	427
17.6 Summary	430
Appendices	431
A Further Resources	433
A.1 Useful Reference Material	433
A.2 Commonly Used Transactions	434
A.3 SAP Reference Documentation on SAP Fiori	436
A.4 Further Enhancements via Enabling Enhancement Packages	438
B Frequently Asked Questions	443
C The Authors	449
Index	451

Index

A

- ABAP, 409
- Absence quotas, 45
 - generation, 46
- Absences, 47, 328
- Accounting variant, 244, 331
- Activity allocation
 - additional, 344
 - master/sender, 344
- Activity allocation process, 154
- Activity type, 59
 - plan data for, 61
 - price planning, 61
- Actual costs
 - determine, 64
- Actual labor costing
 - direct/indirect labor costing, 327
 - hourly rate, 327
 - total labor cost, 327
- Actual time, 321
- Add dialog window, 358
- Administrator, 40, 41, 242
- Agent
 - assignment, 176
 - determination substitution, 182
 - rule determination, 168
- Alternate payment, 339, 340
- Application configuration, 285, 421
 - for time entry, 419
- Application Link Enabling (ALE), 404
 - build time interface, 408
- Application parameter, 418
 - find, 423
 - modify, 420
- Approval, 129, 208
 - ABAP code, 304
 - automatic, 204, 304, 307
 - collective, 138
 - customize, 298
 - customize UI, 306
 - customize Web Dynpro screen, 141
- Approval (Cont.)
 - customizing, 387
 - define view, 141
 - enhance reports, 390
 - frontend, 135
 - individual, 139
 - mass email reminder, 386
 - most common program, 130
 - process, 208
 - profile, 308, 310, 388
 - released for, 298
 - review, 140
 - rule, 252
 - Web Dynpro, 135
 - web-enabled Java, 135
- Approval Procedure for Exceptions, 298
- Approval process
 - define rejection reason, 264
- Approval record
 - modify selection criteria, 310
- Approval variant
 - for workflow, 253
- Approved, 298
- Archive, 314
 - unused confirmations, 320
- Archiving object
 - CATS_DATA, 315
- Assignment of cost to receiver, 338
- Assignment of personnel cost to sender, 341
- Asynchronous, 409
- Attendance, 48, 328
 - absences types, 262
 - consolidate from alternate application, 289
- Auditing, 216
- Authorization, 191, 241
 - check, 310
 - define groups, 263
 - for CATS Regular, 196
 - for reporting in CATS, 196
 - for self-service, 196
 - infotype, 195
 - profile, 196

Authorization (Cont.)
reporting, 214
user profile, 238
workflow, 171

Authorization group
assign to data entry profile, 194
define character range, 192
set up, 192

B

B2 cluster, 340

Backend
approval, 129
reporting, 204

Background, 318

BAdI, 29, 30, 353
BADI_CATS_APPROVAL, 298, 388
BADI_CATS_FILTER, 375
CATS_DERIVATIVES, 367
CATS_REPORTING, 306, 390
CATS_WORKLIST_ADDIN, 364
CATSXT_EVENT, 375
CHECK_APPROVAL_BY_EXCEPTION, 304
HRCATS_APPR_CUST, 307, 387
HRESS_CATS_CAL_DISPLAY, 293, 379
HRESS_CATS_CAL_LEGEND, 292, 380
HRESS_CATS_DIR_REL_POPUP_TEXT, 381
HRESS_CATS_PRINT_FROM, 383
HRESS_CATS_PROFILE_FILTER, 382
HRESS_CATS_PUB_HOLIDAY, 291
HRESS_CATS_PUB_HOLIDAY_DISPLAY, 384
HRMSS_CATS_APPR_DASHBRD_EMAIL, 385

BADI_CATS_APPROVAL
CHECK_APPROVAL_BY_EXCEPTION, 388
DETERMINE_APPROVER, 388

BAdI, 324
business object, 397
change CATS records, 402
create CATS record, 400
delete CATS Records, 403
test run, 399

BAdI Explorer, 396, 402

BAdI_CATIMESHEETMGR_CHANGE, 325

BAdI_CATIMESHEETMGR_DELETE, 325

BAdI_CATIMESHEETMGR_INSERT, 325

Basic pay, 330

Benefits, 330

Buffer, 179

Business Add-In → BAdI

Business Application Programming Interfaces (BAdIs), 395

Business function
HCM_ESS_WDA_1, 293

Business object, 397
delivered as of release 4.6a, 397

C

CAETX, 301
available fields decision criteria, 250
Rule for Special Approval, 302

Calendar
display for recording working time, 379
legend for recording working times, 380

Case copy
customizing, 220

Case type, 218
maintenance, 219

CATS
authorization group, 192
Calendar, 292
configuration and customizing, 235
configuration IMG, 236
database, 26
detail screen, 355
document reduction, 69
for Service Providers, 354, 375
implementation, support tools, 321
Implementation Guide, 297
integrate with SAP Business Workflow, 248
integration in Financial Accounting, 56
interface tables, 160
interface with third parties, 200
Notebook, 354
profile, 239
time entry, 99
Web Dynpro applications, 417
web-enabled, 257
worklist, 354

CATS Approval by Supervisor, 172

CATS Classic, 354
enhance approval, 306
UI enhancements, 354

CATS Mobile
user exit recommendations, 394
worklist, 365

CATS Regular
hide time entry tab, 420

CATS Regular WDA, 354
consumer services, 294
enhancements, 378
ICF services, 295
print time sheet as PDF, 383
proxies, 294
quota balance, 286
troubleshooting, 296
work schedule, 288
worklist, 245

CATS user interfaces, 354
CATS Classic, 25
CATS for service providers (also known as Extended CATS), 26
CATS Notebook, 26
CATS Regular, 25
Extended CATS, 26

CATS_DERIVATIVES
GET, 368

CATS_REPORTING
APPROVE_CATS_CLASSIC, 392
APPROVE_CATS_SERVICE_PROVIDER, 393
APPROVE_TRIP, 393
AT_SELECTION_SCREEN, 391
AT_SELECTION_SCREEN_OUTPUT, 391
AUTH_CHECK_CATS_CLASSIC, 392
AUTH_CHECK_CATS_SERVICE_PROV, 392
AUTH_CHECK_TRIP, 392
BEFORE_CATS_DATA_SELECTION, 391
BEFORE_DISPLAY, 393
BEFORE_DISPLAY_APPR, 393
BEFORE_DISPLAY_DTL, 393
BEFORE_TRIP_DATA_SELECTION, 391
CATS_DATA_SELECTED, 392
DOCUMENT_FLOW_SELECTED, 393
INITIALIZATION, 390
LOAD_OF_PROGRAM, 390
START_OF_SELECTION, 391

CATS_REPORTING (Cont.)
TRIP_DATA_SELECTED, 392

CATS_WORKLIST_ADDIN
GET_WORKLIST, 363
IF_EX_CATS_WORKLIST_ADDIN, 363

CATS0001
EXIT_SAPLCATS_001, 363

CATS0002
ENRICH_TABLE, 366

CATS0005
SAPLXCAT, 358
ZXCATU06, 358

CATS0012
EXIT_SAPLCATS_012, 361

CATSDB, 26

CATW, 258, 443

Change Data Records, 403
BAdI, 402

Change document
display, 228
set up, 226

Check current software release, 270

Client, 35

Clock times, 288
activate, 288
hide, 419

CO
customize UI, 66
direct transfer configuration, 148
document flow analysis, 203
document generation, 67
document reduction, 69
enabling default values, 65
integrating CATS, 66
single transfer to HR, 338
transfer, 70

CO_CATS_EMPLOYEE_TIME_CALENDAR, 295

CO_CATSEMPLOYEE_TIME_AGREEMENT, 295

Collaboration Project, 96

Collective Approval, 137, 138
screen, 308
specify text, 309

Collective time registration, 106

Communication, 195, 240

- Company code, 36
 - Comparative columns, 308
 - Completion Status section, 292
 - Component configuration objects, 424
 - Component controller, 427
 - Concurrent employment, 373
 - filter assignment*, 375
 - personal templates*, 374
 - Confirmation, 325
 - Controlling, 27, 36, 66
 - fill documents*, 266
 - master data*, 53
 - transfer data to*, 266
 - Cost accounting variant, 64, 244, 330
 - Cost center, 58, 199, 243
 - Cost distribution, 337
 - Costing scenario, 328
 - Costing variant
 - how to select*, 347
 - Creating custom fields and structures, 427
 - Custom data validation, 368
 - Custom messages, 308
 - Custom program, 323
 - Customer
 - field enhancements*, 357
 - functions*, 356
 - Customer Service (CS), 28, 30
 - Customer-specific fields, 371
 - Customizing
 - fields in CATS*, 254
 - general settings*, 239
 - My Time Sheet app*, 278
 - Cutoff date, 293
- D**
-
- Data
 - archiving*, 315
 - basic profile settings*, 239
 - create, change, delete with BAPI*, 397
 - edit en masse*, 324
 - extract with BAPI*, 411
 - extract/load with BAPI*, 395
 - load via ABAP*, 409
 - load via ALE*, 408
 - remove from CATS tables*, 315
 - Data (Cont.)
 - submit to CO*, 324
 - transfer process*, 319
 - transfer to component from CATS*, 33
 - Data entry
 - enhance process*, 354
 - section*, 255, 407
 - Data entry profile, 100, 363
 - activate WDA*, 285
 - activate worklist*, 363
 - activate worklist settings*, 413
 - administrator*, 240
 - authorization check*, 405
 - authorization group*, 194
 - cost accounting variants*, 330
 - create and customize*, 406
 - create for ESS*, 261
 - customize field selection*, 407
 - customize to insert data records from external system*, 404
 - customizing*, 237
 - data load via BAPI*, 405
 - enable approval process*, 208
 - ESS*, 258
 - filter*, 382
 - for SAP Business Workflow*, 177
 - generate for employment relationship*, 374
 - naming convention*, 238
 - restrict access*, 194
 - rule group*, 303
 - transfer configuration*, 147
 - worklist*, 245
 - worklist enabled*, 102
 - Data entry view
 - subscreen*, 361
 - Data tracking, 218
 - activate for all services*, 221
 - enable*, 221
 - set individual*, 222
 - view log*, 223
 - Database consistency, 325
 - Days, 293
 - Default Rules tab, 175
 - Delete data records, 403
 - Delete only, 318
 - mode*, 318

- Derivatives, 367
 - Dialog window, 358
 - Distributed systems, 408
 - Document number
 - display*, 207
 - Document reduction, 69
 - Double cost posting, 70, 154
- E**
-
- EE remuneration info checkbox, 318
 - EHP5, SP3, 419
 - Employee
 - absence*, 47
 - attendance*, 48
 - calculate payment for*, 328
 - compile activities for*, 245
 - generate messages for*, 370
 - group*, 36
 - listing*, 199
 - remuneration*, 328
 - remuneration statement*, 48
 - select for approval*, 144
 - selection*, 144
 - subgroup*, 36
 - Employee Self-Service (ESS), 25
 - Employee Self-Services in Manager Self-Services, 109
 - Employee time sheet, 412
 - BAPI_CATIMESHEETRECORD_GETLIST*, 412
 - EmployeeCATimeSheet*, 397, 412
 - object*, 397
 - End user
 - request time-entry input*, 100
 - Enhancement, 353
 - customer project*, 356
 - project*, 333
 - spot*, 373, 427
 - type*, 353
 - Enterprise structure, 41
 - Environment, 357
 - ESS, 258, 443
 - activate multiple data entry profiles*, 419
 - activate WDA business function*, 293
 - CATS Regular*, 415
 - create data entry profile*, 258, 261
- ESS (Cont.)
- data tracking*, 218
 - profile*, 258
 - Time Accounts application*, 287
- Estimated rate, 330
 - Event linkage, 229
 - Export parameter, 400
 - External services, 27
 - post data to*, 155
 - External Services Management, 80
 - integrate CATS*, 81
 - External staff, 86
 - External time system, 404
 - Extras, 357
- F**
-
- Feature
 - CATEX*, 250
 - FI-CO
 - reporting*, 215
 - transfer time entry data to*, 153
 - Field
 - assign custom*, 359
 - create custom*, 427
 - customize*, 254
 - hide*, 255
 - hide with custom code*, 430
 - populate customer-specific text*, 371
 - Field selection, 407
 - define*, 143
 - Finance, 36
 - Financial Accounting
 - customizing integration*, 64
 - integration*, 55
 - master data*, 53
 - organizational unit*, 57
 - Financial Accounting (FI), 30
 - Flexible reporting, 196
 - Floor Plan Manager, 416
 - FLUID editor, 426
 - Frontend
 - approval*, 135
 - release process*, 123
 - reporting*, 199
 - Function code, 355

G

General Settings subsection, 239
Generic text fields, 372

H

HIDE_CLOCK_TIMES_IN_WEEKLY, 419
Holiday
 calendar, 290
 leave entitlement, 45
 partial day display, 384
Home cost center, 331, 332
 debit with labor costs, 332
Hourly labor rates, 330
Hourly rate calculations, 333
HR, 30
 aplit data transfer, 323
 attendance/absence, 261
 automatic approval transfer, 133
 CATS tools, 321
 configuration for transfer, 148
 cost center, 58
 enterprise structure, 35
 infotype, 37
 integration with CATS, 34
 integration with Financial Accounting, 56
 master data, 34, 191
 mini-master data, 39
 online data checks, 248
 Organizational Management, 170
 performance recommendations, 318
 Personnel Development, 50
 personnel structure, 37
 purchase order, 84
 reporting, 215
 subtract hours option, 290
 time-entry screen, 100
 transfer to, 322
 working time approval, 129
HRCATS_APPR_CUST
 CHECK_AUTHORIZATION, 388
 EDIT_SELECTION, 387
 FILL_COMPARATIVE_COLUMNS, 387
 FILL_TEXT_COLUMN_CONS, 387
 FILL_TEXT_COLUMN_SINGL, 387

HRCATS_APPR_CUST (Cont.)
 GET_PROFILE_ID, 388
HRCATS_PROFILE_BY_PERNR, 374
HRCATS_TEMPLATE_BY_PERNR, 374
HR-Enabled CATS, 285, 290
 features, 286
 implementation steps, 293
HRESS_A_CATS_1, 417
HRESS_A_CATS_PRINT, 417
HRESS_AC_CATS_1, 418
HRESS_C_CATS, 416
HRESS_CC_CATS_1, 418
HRMSS_A_CATS_APPROVAL, 417
Human Resources (see HR), 27, 34, 61

I

IDoc, 409
Implementation Guide (IMG), 235
Import parameter, 400
In process since setting, 364
Include
 CI_CATSDB, 358, 359
Independent user interface, 25
Individual Approval
 text for single column, 309
 view, 309
Individual approval, 139
Infotype, 37
 0105, 195
 authorization check, 195
 create, 95
 logged changes, 225
 Planned Working Time, 362
 substitutions, 362
 time management, 43
 virtual, 195
Infotype 0000
 Actions, 39
Infotype 0001
 Organizational Assignment, 40
Infotype 0002
 Personal Data, 41
Infotype 0007
 Planned Working Time, 44

Infotype 0302
 additional actions, 39
Infotype 0315
 Time Sheet Defaults, 42
Infotype 2006
 Absence Quotas, 45
Infotype 2010
 Employee Remuneration Info, 48
Initial screen
 subscreen, 360
Insert data records, 401
Integration
 FI, customizing, 64
 HR and FI, 56
 overview, 27
 PM, 71
Interface
 IF_FPM_UI_BUILDING_BLOCK, 416
Interface table, 27, 160, 314
 CATSCO, 316, 319
 CATSMM, 316
 CATSPM, 315, 316, 319
 CATSPS, 316, 319
 HR, reorganize, 317
 PTEX2000, 315, 316
 PTEX2010, 315, 316
 reorganize, 316
Internal order, 63, 328, 332
Internet Communication Framework, 295
iPhone app, 111

J

Java Web Dynpro, 138

L

Labor costing
 basic pay, 330
 current payroll results, 328
 prior payroll results, 329
Labor rate, 329
 ABAP calculation, 333
 implement calculation, 330
 implementation of user exit, 334
Labor time, 23

Leave entitlement, 45
Leave request, 187
Leave Requests application, 289
Level, 264
Line_manager folder, 136
List of data records, 411
 BAPI_CATIMESHEETRECORD_GETLIST, 411
Log report start, 216
Logged activities
 view, 223
Logged changes in infotype data, 225
Logical database PNP, 201
Logistics, 338

M

Maintenance order, 71, 74, 75
 confirmation, 77
 review open, 76
Manager Self-Service (MSS), 297
Master data, 33
 approve working time, 130
 audit, 216
 export, 200
 Materials Management, 80
 personnel master data, 49
 Project System, 90
Materials Management
 master data, 80
 reporting, 216
 transfer, 89
 transfer time entry data to, 155
Materials Management (MM), 30
Method, 427
 APPROVE_CATS_CLASSIC, 133
 APPROVE_CATS_SERVICE_PROVIDER, 307
 CATS_REPORTING
 APPROVE_CATS_CLASSIC, 306
 CHECK_AUTHORIZATION, 310
 EDIT_SELECTION, 310
 enhancement spots, 427
 FILL_COMPARATIVE_COLUMNS, 308
 FILL_TEXT_COLUMN_CONS, 309
 FILL_TEXT_COLUMN_SINGL, 309
 GET_PROFILE_ID, 310
 UPDATE_CAL_DISPLAY, 380

Method (Cont.)
WDDOMODIFYVIEW, 430

Microsoft Excel
report export, 199

Mini-master data, 84

Missing time, 321

Mobile CATS, 26

Mobile Engine, 26

MSS
calculate target time, 362
collective approval, 138
customize approval, 307
data tracking, 218
mass time registration, 107
time entry, 109

Multiple time-entry time sheet, 109

MULTIPLE_PROFILE, 419

My Time Sheet app
customizing, 278
optional BADIs, 279
start, 279

N

Network, 328

Number of tasks, 319

O

Off-cycle payment, 329

Operations, 74

Order confirmation, 77

Organization Management
hide selection icon, 201

Organizational Assignment, 57, 332
substitution, 182

Organizational buffer, 179

Organizational Management
concept, 50
integration with Personnel Administration, 50
workflow, 170

Organizational Management (OM), 50

Organizational plan, 41

Organizational structure, 57
buffer, 254
build, 51

Organizational unit, 243

Overhead costs, 330

P

Parallel jobs, 324

Parameter
CVR, 106, 238
HIDE_CLOCK_TIMES_IN_WEEKLY, 288
PER, 106, 240

Pay period end date, 293

Payroll, 34, 56, 86, 87, 322
area, 324
attendance hours, 48
cost-accounting variant, 64
current period, 328
driver, 340
period, 321, 324
prior period, 328
remuneration, 48
simulated run, 328
use results for labor costing, 328
use results for rate calculation, 337

Performance, 318

Person selection, 242

Personal Object Worklist (POWL), 181

Personal templates, 374

Personnel action flow, 49

Personnel Administration (PA), 36, 37, 57
log of infotype changes, 225

Personnel area, 36, 199

Personnel change document, 226

Personnel Development (PD), 37, 50, 57
display change documents, 228

Personnel number, 240, 319
add default, 106
range, 85

Personnel structure, 41

Personnel Time Management, 43, 73
work center, 91

Personnel Time Management (PT), 43

Picklist, 365

Planned activity type rate, 332

Plant Maintenance
master data, 71
transfer, 80

Plant Maintenance (Cont.)
transfer time entry data to, 152

Plant Maintenance (PM), 27, 30

PNPCE, 324

Posting date, 324

Print, 241, 248, 383
define, 263
forms for CATS, 383

Process Before Output (PBO) function module, 358

Profile authorization group, 405

Program
CATSSHOW, 208
R_APPROVE_ACTIVITIES_EXPENSES, 133
RCATSCO1, 130
RCATSTAL, 155

Project Builder, 93

Project Management category, 92

Project Self-Service, 297

Project System, 28
transfer, 97

Proxy, 294

Public holiday, 290, 384
as non-working day, 291
reduce associated hours, 291
type, 291

Purchase order, 365
create, 82
item, 365
maintain/display, 82

Q

Quota balances, 287

R

R_APPROVE_ACTIVITIES_EXPENSES, 306

RCATS_APPROVE_ACTIVITIES, 306

RCATS_DISPLAY_ACTIVITITES, 322

Receiver
cost center, 365
network, 365
object, 332
order, 365

Reception approval step, 156

Recording working time, 259
SAP Fiori, 269

Records
authorization check, 310
change, 402
delete, 403
extract, 411
modify contents, 365

Rejection notification, 131

Rejection reason, 264

Release, 119
on saving, 355
view function, 355

Remuneration, 48

Reorganizing, 314

Report
choose CATS interface, 202
employee listing, 199
on data transferred, 162
RCATS_APPROVE_ACTIVITIES, 131
RCATS_DISPLAY_ACTIVITIES, 201
RCATSRIF, 211, 316
RCATSTCO, 324
RPLFST01, 107
RPTEXTPT, 317
time entries, 203
ZCATS_CONF, 325

Reporting, 199
authorizations, 196
backend, 204
flexible, 196
frontend, 199
general, 208
Human Resources, 215
in SAP components, 215

Resource planning setting, 364

Retro-calculation, 329

Rule
assign to rule group, 300
CATEX, 301
for special approval, 250, 298

Rule group, 300
assign rules to, 300
assign to data entry profile, 303
create, 144

RV_APPROVAL_NEEDED, 304

S

Sales order, 365
 SAP Business Warehouse, 25
 SAP Business Workflow, 167, 205, 248
 basic configuration, 169
 notifications, 180
 SAP Business Workplace, 180
 notification, 181
 substitution, 183
 substitution rule, 183
 SAP components
 standalone data transfer to, 150
 SAP Data Archiving, 315
 SAP enhancement package, 438
 SAP Enterprise Portal, 25, 443
 approve time, 297
 record working time, 110
 SAP ERP 6.0 EHP5, 285, 415
 SAP ERP HCM
 configure workflow, 172
 integration with CATS, 285
 transfer time entry data to, 150
 SAP Fiori, 269
 build/customize apps, 275
 My Time Sheet app, 273
 reference documentation, 436
 time entry, 116
 SAP NetWeaver Business Client, 136, 267
 activate composite roles, 268
 SAP Note, 319
 SAP Profile Configurator, 194
 SAP Project System
 master data, 90
 reporting, 215
 transfer time entry data to, 151
 SAP Time Management, 362
 SAP user ID mapping, 172
 SAP_LINE, 310
 SAPconnect, 170, 206
 Schedule
 default, 44
 Scheduled hours, 321
 Screen grouping, 255
 Self-services, 196
 case type H_XSS, 218

Self-services (Cont.)
 data tracking, 218
 data tracking, individual, 222
 enable data tracking, 221
 Sender object, 332
 Sensitive report, 216
 Service providers, 28, 375
 approval, 307
 Settings, 255
 SHOW_DAILY_VIEW, 420
 SOAMANAGER, 295
 Special Approval, 298
 CATEX, 301
 customize, 298
 process flow, 304
 rule groups, 300
 Special Approval → Approval Procedure for
 Exceptions
 Standard workflow, 168
 Submit, 323
 Subscreen, 361
 Substitution rule, 182
 Substitutions, 318
 Summary Display section, 292
 Support Package Manager, 272
 Synchronous, 409
 System
 enhancements, 29
 performance, 313
 session, 324
 status, 75

T

Table
 CATSDB, 314, 409
 CATSPS, 319
 SAP_CATS, 357
 T779X, 229
 Table inconsistencies, 27
 Target component, 443
 Target hours, 361
 Task
 assign, CATS functionality, 177
 maintain, 172
 technical information, 174

Task (Cont.)
 triggering events, 174
 TS31000007, 172
 type, 264
 Technical overview, 26
 Text fields
 customer specific, 373
 generic, 372
 Third-party interface, 396
 Time Accounts, 287
 Time clocks, 401
 Time collection
 central point of entry, 244
 general data entry check, 246
 screen, 105
 Time data
 external system, 402
 import from external systems, 398
 retrieve/reformat, 410
 save to CATS from external system, 401
 Time entry, 99
 add date and time text, 427
 automatic approval, 133
 backend, 100
 bypass initial screen, 105
 cancellation, 155
 central point of entry, 23
 color-coded status info, 292
 concurrent employment, 373
 cutoff date, 293
 cutoff date notice, 286
 detailed transcript, 148
 determine actual costs, 64
 display, 105
 enhancements, 354
 enter for multiple users, 106
 indirect transfer, 156
 iPhone app, 111
 mass, 106, 242
 mass transfer, 157
 mobile, 111
 monitor, 205
 on premise system, 99
 record status, 26
 release, 119
 release and approval, 103

Time entry (Cont.)
 report on data transfer, 162
 reports, 203
 rules, 300
 SAP Fiori, 116
 standard screen, 100
 template, 110
 transfer, 147
 transfer data to CO, 148
 transfer data to HR, 148
 transfer troubleshooting, 160
 via web browser, 25
 Time Evaluation, 86, 87, 339
 automatic generation, 47
 automatic transfer of data to HR, 133
 driver, 340
 initial selection screen, 47
 process, 34
 Time interface, 404
 create with ABAP report, 410
 Time leveling, 321
 Time Management, 34, 56
 infotype, 43
 settings, 52
 working time approval, 129
 Time record
 load with BAPI, 395
 Time registration
 entry, 109
 Time settings subsection, 241
 Time sheet
 activate service approvals, 276
 customizing, 237
 customizing CO options, 68
 customizing for transfer, 147
 data entry view, 362
 defaults, 61
 display data, 162
 include public holidays, 286
 maintain profiles, 119, 177
 maintain times, 100
 personal work schedule, 44
 print as PDF, 383
 record times option, 53
 remind employees to submit, 206
 remove functions from initial screen, 355

- Time sheet (Cont.)
 - reorganize*, 211
 - selection*, 206
 - show public holidays*, 290
 - transfer to target components*, 158
 - use work schedule values*, 288
 - worklist*, 363
 - Time Sheet Manager
 - BAPI_CATIMESHEETMGR_CHANGE*, 325, 398, 402
 - BAPI_CATIMESHEETMGR_DELETE*, 325, 398, 403
 - BAPI_CATIMESHEETMGR_INSERT*, 325, 398, 401
 - CATimeSheetManager*, 397
 - Time Sheet Manager object, 397, 398
 - Time Sheet Record
 - CATimeSheetRecord*, 398
 - Time Sheet Record object, 398
 - Time wage type, 340
 - Time-leveling report, 53
 - Transaction
 - ACTEXP_APPR_LITE*, 133
 - CAC1*, 147, 177, 237
 - CAC4*, 192
 - CADO*, 131, 162, 208, 215
 - CAPS*, 130
 - CAT2*, 100
 - CAT3*, 105
 - CAT6*, 150, 317
 - CAT8*, 207
 - CATA*, 155
 - CATC*, 205
 - CATM*, 155
 - CATR*, 27, 211
 - CATS_APPR_LITE*, 131
 - CATS_DA*, 201, 314
 - CATSARCH*, 315
 - CATSXT*, 26
 - CMOD*, 356
 - PA30*, 38
 - PA40*, 84
 - PA61*, 44
 - PAR2*, 199
 - PE03*, 243
 - PFTC_CHG*, 172
 - Transaction (Cont.)
 - PPOME*, 170
 - PT_QTA00*, 46
 - SBWP*, 180
 - SCOT*, 170
 - SE16N*, 223
 - SE80*, 416
 - SICF*, 295
 - SM36*, 159, 206
 - SPRO*, 302
 - SU01*, 238
 - SU3*, 238
 - Transfer/delete, 317, 318
 - Travel expenses
 - approve*, 133
 - Travel Management, 29
 - Triggering event, 174
 - Troubleshooting
 - questions*, 187
 - time entry transfer*, 160
 - workflow*, 185
- U**
-
- Unapproved time, 322
 - Universal Worklist (UWL), 181, 310
 - process notification*, 181
 - substitution*, 184
 - User exit, 29, 30, 353
 - BADI_CATS_APPROVAL*, 304
 - CATP0001*, 361
 - CATS0001*, 364
 - CATS0002*, 332, 333, 360, 366
 - CATS0003*, 291, 368
 - CATS0004*, 355
 - CATS0005*, 357
 - CATS0006*, 369
 - CATS0007*, 360
 - CATS0008*, 389
 - CATS0009*, 371
 - CATS0010*, 373
 - CATS0011*, 356
 - CATS0012*, 361
 - locate in SAP system*, 354
 - ZXCATU02*, 333

- User interface, 25
 - deactivate functions*, 355
 - time entry*, 99
 - User Interface Building Blocks (UIBB), 416
 - User parameters, 240
 - maintain*, 106
- V**
-
- Validate
 - entire time sheet*, 369
 - recorded data*, 368
 - Variable view function, 355
 - Virtual infotype, 39, 195
 - reporting access*, 196
- W**
-
- Wage, 48, 321
 - type*, 263, 318
 - WBS
 - assign element to employee*, 94
 - confirmations on a network*, 95
 - create/display*, 93
 - element*, 332, 362, 365
 - WD_ANALYZE_CONFIG_APPL - Display Configuration Data, 423
 - WD_ANALYZE_CONFIG_COMP, 424
 - WDA
 - applications*, 417
 - change application functionality*, 418
 - complex enhancements*, 424
 - enhance application objects*, 426
 - enhance flow logic*, 426
 - enhance process logic with method*, 427
 - personalize flow logic*, 424
 - Web Application Server, 443
 - Web Dynpro, 136, 258
 - applications*, 417
 - customize approval screen*, 141
 - record working time*, 259
 - time sheet*, 197
 - Web Dynpro ABAP, 415
 - Web Dynpro ABAP (WDA), 285, 354
 - Web time sheet, 257
 - Weekly planned working time, 44
 - With Target Hours parameter*, 362
 - With Worklist checkbox*, 413
 - Work breakdown structure (WBS), 63, 90
 - Work center, 71, 90
 - business card*, 73
 - create for PS*, 91
 - PM*, 72
 - setting*, 364
 - Work order, 328, 332, 362
 - Work schedule, 362
 - information*, 286
 - Workflow, 167
 - agent assignment*, 176
 - agent determination*, 182
 - approval report variant*, 253
 - authorization*, 171
 - CATS data entry profile*, 177
 - configure for SAP ERP HCM*, 172
 - determine recipients for approval*, 389
 - enhancements*, 387
 - receive notification*, 180
 - selection report*, 186
 - substitution rule*, 182
 - task*, 249
 - test*, 179
 - text*, 399
 - trigger events*, 175
 - troubleshooting*, 185
 - variant for standard report*, 178
 - with approval procedure*, 249
 - Workflow-based approval, 307
 - Working time
 - approve*, 133, 208
 - approve by master data*, 130
 - approve via Report*
 - RCATS_APPROVE_ACTIVITIES*, 131
 - calendar display*, 379
 - customize approval*, 141, 388
 - display*, 162, 201, 203
 - display for service providers*, 203
 - enhance reports*, 390
 - query*, 199
 - record*, 259
 - record on mobile device*, 269
 - record through NWBC*, 267
 - release*, 260

Index

Worklist, 245, 365

compile, 364

customer-specific fields, 371

customer-specific text fields, 373

enable, 101, 245

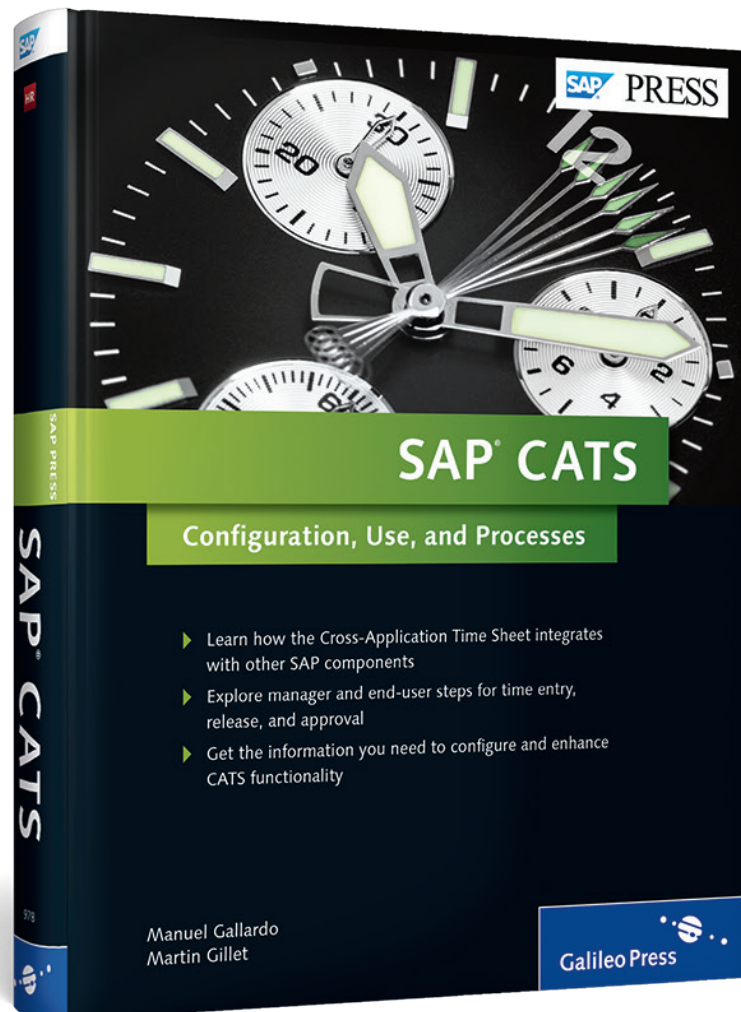
Worklist (Cont.)

enhancement to change or create, 363

enhancements, 362

extract, 412

screen grouping, 255



Manuel Gallardo, Martin Gillet

SAP CATS

Configuration, Use, and Processes

464 Pages, 2015, \$79.95/€79.95

ISBN 978-1-59229-978-2

 www.sap-press.com/3568



Manuel Gallardo is a former SAP platinum consultant and has been working on SAP ERP HCM implementations since 1994. He is the director of HCM consulting at /N SPRO and serves as a content advisor for HR Expert. With expertise in SAP ERP HCM enterprise architecture, time management, and SuccessFactors Employee Central, Manuel frequently speaks at domestic and international conferences.



Martin Gillet is an SAP-certified SAP ERP HCM/HR consultant (SAP ERP 6.0, SAP R/3 Enterprise, and 4.0B) who works as a freelancer on international projects. He graduated with honors in human resources management from the Belgian Haute Ecole Namuroise Catholique and has worked with SAP R/3 since 1998 in the chemical, pharmaceuticals, telecommunications, banking, public sector, and oil industries.

We hope you have enjoyed this reading sample. You may recommend or pass it on to others, but only in its entirety, including all pages. This reading sample and all its parts are protected by copyright law. All usage and exploitation rights are reserved by the author and the publisher.