

IACs in Travel Management (FI-TV)



Release 4.6B



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Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax
	Tip

Contents

IACs in Travel Management (FI-TV).....	5
Trip Entry in the Internet (FI-TV-COS)	6
Create Trip Costs.....	8
Record Trips Offline in the Internet (FI-TV-COS).....	9
Modifying Excel Sheets for Travel Expenses	11

IACs in Travel Management (FI-TV)

Trip Entry in the Internet (FI-TV-COS)

Trip Entry in the Internet (FI-TV-COS)

Use

In this Internet Application Component (IAC), employees can record their own trip data and facts when they take business trips. The trip facts are needed in Travel Accounting to determine the resulting travel expenses for the employees and to effect payment of these expenses.

More information on Internet Application components can be found under [R/3 Internet Application Components \[Ext.\]](#).

The Internet Application Component type

Intranet Employee Self Service (ESS)

Using the Internet Application Component *Trip Data Entry in the Internet*, employees can create trips and record trip facts. Both employee and employer profit from this Internet Application Component:

Advantages for the employee:

- Recording of trip facts independent of time and place
- Less "paper work"

Advantages for the enterprise:

- GUI installation not necessary
- Only an HTML browser is needed
- Minimum management effort
- Decentralized recording of trip facts possible

Prerequisites

- Personnel numbers must exist for the employees in the R/3 System.
- The employees must have SAP R/3 user names.
- In the infotype *Communication* (0105, subtype 01), the employees must have their own respective user names stored.

Refer to [Assign R/3 User to a Personnel Number \[Ext.\]](#)

Authorizations/Security

The standard activity group supplied by SAP contains all necessary authorizations. For more information, see [PA ES Employee Self-Service \[Ext.\]](#).

Standard settings

General Customizing

- If you want to set up SAP user names, you have to make various settings in Customizing. For more information, see Customizing, *Personnel administration* → *Employee Self-Service*.

Specific Customizing for Travel Management

Trip Entry in the Internet (FI-TV-COS)

- Travel Accounting must be set to conform with your enterprise-specific requirements. For more information, see Customizing, *Financial accounting* → *Travel management* → *Travel accounting*.
- The employee must have the authorization to create trips.
- If you want to use the Internet Application Component *Travel Accounting*, you have to make various settings in Customizing. For more information, see Customizing, *Financial accounting* → *Travel management* → *Travel accounting* → *Internet application component*.

Features

When you call this function, the system displays an Excel sheet that is prepared for each employee with data supplied by the R/3 System. Here the employee can record trip data quickly and conveniently. To record more detailed trip facts, the employee can call further functions. After entering the trip facts, the employee can send this Excel sheet to the R/3 System, where a trip is created in the R/3 System from the data.

Unlike trip recording via the R/3 System, via the Internet scenario only one cost assignment can be entered for the entire trip. Costs assignments for stopovers, individual receipts and deductions can not be recorded but must be supplemented later in the R/3 System.

Modification options

The service name of this IAC is PRWW. You can find all relevant data under this service name in the [SAP@Web Studio \[Ext.\]](#). More information about modifying Excel sheets can be found under [Modifying the Excel sheets for Travel Expenses \[Page 11\]](#).

R/3 Development objects

For the technical realization of the Internet Application Components of Travel Accounting (FI-TV-COS), the following R/3 development objects are used:

- Development class: PTRA
- Function group: HRTR_ITS
- BAPIs:
 - EmployeeTrip.CreateFromData
 - EmployeeTrip.GetList
 - EmployeeTrip.GetExpenseForm
 - EmployeeTrip.GetOptions

Create Trip Costs

Create Trip Costs


Prerequisites

You are logged on to Employee Self-Service in the Intranet of your enterprise.


Procedure

1. Choose the service *Trips* → *Trip costs*.


You are now in the initial screen for travel accounting. You see a list of all the trips you created in the past.


2. Choose .

The *Choose trip schema* dialog box appears.


3. Enter, for example, whether you want to account a domestic or an international trip and then choose .

4. Enter data as required.

You only need to fill in the fields under *Cost assignment for entire trip, alternative to master cost assignment* if you want to account the trip costs to, for example, a project number, sales order or a different cost center rather than to your master cost center. If you want to distribute the costs across different account assignments, choose .

5. Save your trip costs by choosing .

You return to your list of trips.

6. To display the reimbursement amount, select the trip number and choose .

Record Trips Offline in the Internet (FI-TV-COS)

Purpose

Via *Load trip costs recording* in the Internet, your employees can record their trips and transfer the trip data to the expenses department anywhere and anytime. With this Internet Application Component (IAC) another step has been taken toward realizing the concepts of Employee Self Service and decentralized trip data recording, which can be used to reduce the work load of the expenses departments in your enterprise.

Prerequisites

- Travel Accounting must be installed.
- Personnel numbers exist for the relevant employees in the R/3 System.
- The employees must have SAP R/3 user names.
- The respective user names must be stored for each employee in the info type *Communication* (0105, subtype 01).
- The employee must have the authorization to create trips.

Process Flow

The process flow for this Internet application component is as follows:

1. A user wants to record a trip.
2. The user accesses the Internet of his enterprise and chooses *Travel*.
3. The *Travel Accounting* screen appears.
4. The user chooses the *Load trip costs recording* function.

Two successive dialog boxes appear. In the first dialog box, choose the *Open document* option. In the second dialog box, choose the *Activate macros* option.
5. The [Entry scenario: travel expense manager \[Ext.\]](#) of *Travel Accounting* is presented.

The entry scenario is offered in the form of a modified Excel worksheet.

The user has to record the trip *framework data* first. The user can use all other optional entry functions to record the trip facts in detail.
6. If the user wants to simulate trip costs accounting for the trip, he can choose the *Overview* function.
7. If the user wants to store the completed Excel sheet locally, he can choose the *Save* function.
8. If the user wants to transfer the completed Excel sheet to the R/3 System, he can choose the *Transfer* function.

The user can no longer change trips that have been transferred via the Internet Application Component. Changes to a recorded trip can only be made in an R/3 System.

Record Trips Offline in the Internet (FI-TV-COS)**Result**

After a successful transfer, the R/3 System creates a trip under the user's personnel number. The trip enters into the approval process.

See also:

Travel Management in the SAP Library under *Financial Accounting* → *Travel Management*. More information is offered on:

- Entry scenario: travel expense manager
- Entry function: miles/kilometers
- Entry function: stopovers
- Entry function: costs assignment for entire trip

Modifying Excel Sheets for Travel Expenses

Excel sheets are used to enter trip costs data in the IAC for travel expenses. If the installed Excel sheets do not suit your requirements, you can modify them (for example, insert or remove entry fields). This section gives you a short overview of the sheets that are supplied with the standard IAC installation and describes how you can modify them.

Introduction

When you install the Travel Expenses IAC on the Web server, the Excel sheets for trip costs are placed with the PRWW service files (in the subdirectory 99\SHEETS).

The Excel sheets EN_TRIP.xls and DE_TRIP.xls in the 99\Sheets directory are opened when the user clicks on the *Download receipt entry* link. We, however, recommend that you do not change these sheets, since it is much easier to modify the Excel sheet TRIP_ITS.xls. This sheet does not have standard protection. It contains additional macros that help you make modifications and translate into the relevant language, and that renew protection before sending them to the end user.

How it functions

When the user clicks on the *Download receipt entry* link, the 'LOAD' command field is processed in the R/3 System. During execution of this command, several OLE calls are sent to the server specified in RFCCOM destination customizing in table T706ESS1. All of the RFCCOM destinations in table T706ESS1 are processed consecutively, taking simple load balancing between multiple servers into account. First, the OLE calls start Excel on the RFCCOM server. Then the raw templates specified for the user's logon language are opened (for example, DE_TRIP.xls for German or EN_TRIP.xls for English). The directory the sheet is taken from is determined by the "RAW_TEMPLATE" parameter in table T706ESS2. To accelerate the loading process, you can copy the files to the local hard drive (for example, to C:\temp). After the sheet has been opened, all Customizing data derived from the EmployeeTrip.GetOptions method is transferred to the Excel sheet. The data is stored there in the background and not visible to the user. This data includes data validation rules, values for selection lists and business rules for receipts.

After initialization, the Excel sheet is protected and stored in the Web server's static directory under a predefined name (the user's personnel number). The directory the sheet is stored in is determined by the TEMPLATE parameter in table T706ESS2. After the sheet has been saved, a HTML page in the user's Web browser is displayed and the browser loads the Excel sheet from the Web server. The Web server the sheet is loaded from is also determined by the Customizing settings in table T706ESS2 (parameter HTTP_OUT). The parameters TEMPLATE and HTTP_OUT both refer to the same directory. The TEMPLATE parameter specifies the UNC name and the HTTP_OUT parameter the URL name for the directory.

When the sheet has been loaded from the Web server, it is displayed on the client (either in the browser or in a separate Excel window). The user can now begin entering travel expenses or save the sheet on the local hard drive and use it as a template for entering trips.

After entering the data, the user chooses *Submit*. This command starts the Excel macro "Submit_Web" which extracts the data entered. When the data is extracted from the sheet, it is not transferred to the Web server immediately. The data is stored in a file on the local hard drive first, under C:\EmployeeID.htm, EmployeeID being the user's personnel number. This file contains all of the data entered in hidden HTML fields and entry fields for the user name and

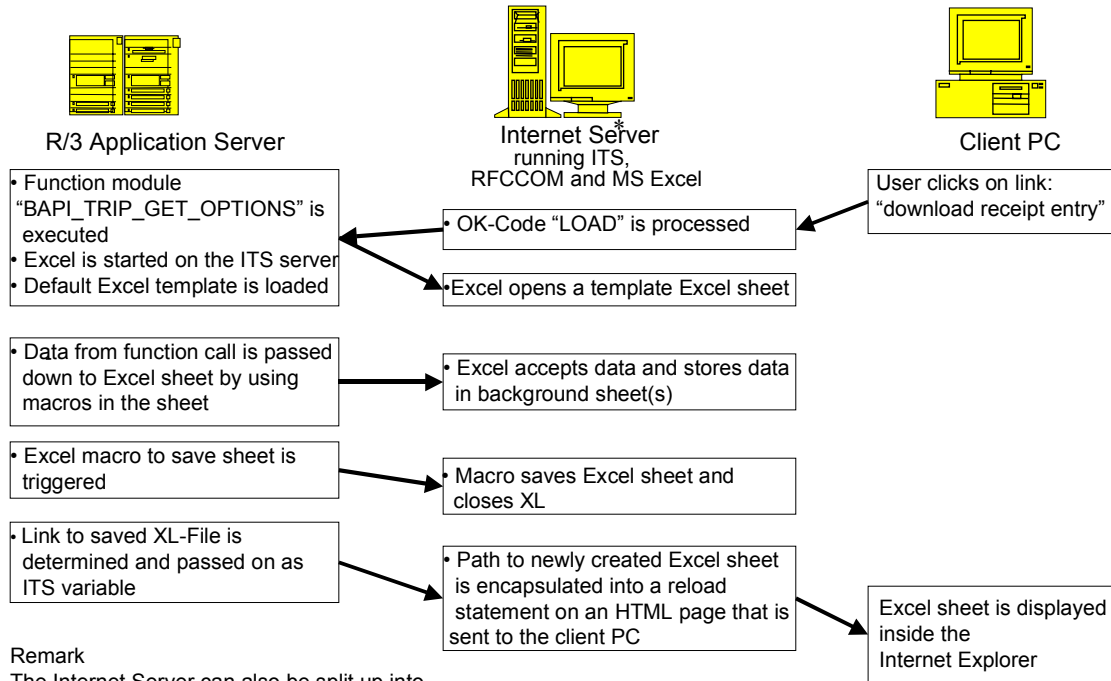
Modifying Excel Sheets for Travel Expenses

password (the employee may have been offline between downloading the sheet and submitting the data).

After the user has entered the password and chosen *Submit*, the form is transferred to the Web server. The PRWW service is started and the CREA command field is processed immediately. All of the data is extracted from the HTTP data stream and posted to method `EmployeeTrip.CreateFromData`.

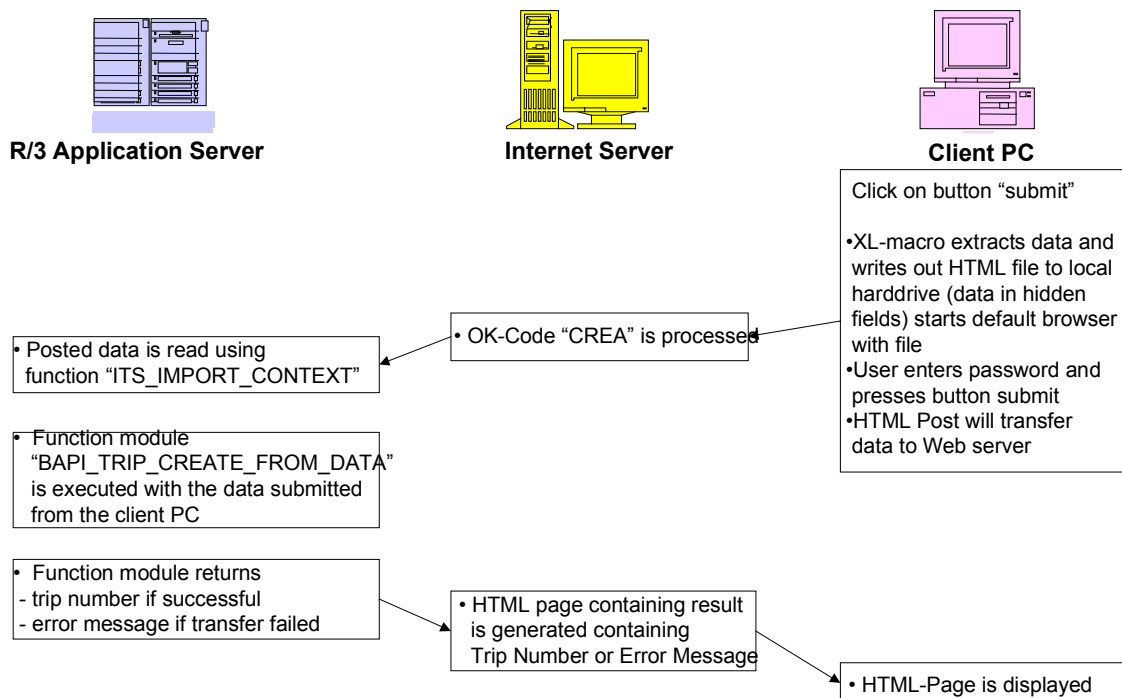
The initialization and submit processes are illustrated in the following graphics:

Initializing process



Modifying Excel Sheets for Travel Expenses

Submit process



Basic functions

General functions

When the Excel file is created for the employee, the "Lookup_Data" sheet is filled with the Customizing information for this employee. This sheet contains all of the information retrieved from the R/3 System (for example, expense types and countries).

When the data is entered, the "Data" sheet stores all receipt data (especially additional receipt information). All other information is stored in the relevant entry screens, to avoid duplicate storage of information in more than one place.

The "Texts" sheet contains all resource strings needed to display messages or field texts in the appropriate language so that the Excel file can be translated. If error messages are required, the "MsgText" macro (in the function module) is called. It takes the text from this sheet and replaces the variables \$v1 to \$v3 with the appropriate field values or other texts.

If the user opens the Excel file on the local hard drive or calls the file from the Web browser, the "Auto_open" macro is executed. This macro starts the events "Change" ("Field_OnChange" macro) and "Double click" ("Field_OnDoubleClick" macro) in the main entry screen and suppresses the Start button. (The start button is only visible in cases where the "Auto_open" macro is not executed, as in some earlier versions of Excel.

The Excel module "Submit" contains coding for extracting the entered data from the Excel file and creates a HTML file on the local hard drive. When the data is extracted, a character string is

Modifying Excel Sheets for Travel Expenses

created that contains all necessary HTML statements for a complete HTML page (for example, <HTML> <BODY> <...> </BODY> </HTML>). In this string, all entered data is stored in hidden HTML fields (<INPUT TYPE=HIDDEN NAME=xyz VALUE="abc">). This string is then stored in Excel under the file name EmployeeID.htm using the standard I/O statements. Finally, after the file has been saved, the "Define_Transfer" macro is executed. This macro specifies how the standard browser is to be started. (Excel 95 uses the start statement, NT 4.0 the cmd statement, and Windows 3.x the complete path to the Web browser.) Then the browser is started with the Shell statement and the relevant transfer mode to start the newly created file.

Modifying sheets - basics

You can modify the raw templates using Excel 97 (do not use earlier versions), beginning with the translation template (TRIP_ITS.xls). The raw templates (for example, DE_TRIP.xls and EN_TRIP.xls) can be created semi-automatically later in the process using the translation template. The translation template contains additional macros that can help you during the modification process.

To open the translation template, choose the TRIP_ITS.xls file in the "Open file" dialog and press Shift while you choose "Open".

This prevents the Auto_open macro from being executed. Once the Auto_open macro has been executed, some buttons may no longer be displayed and all events for the sheet are started: this makes it nearly impossible to modify the sheet.

Modifying Excel Sheets for Travel Expenses

Create language-dependent sheets

Prerequisites:

1. MS Excel 97 or higher is installed.
2. SAP Automation RFC library is installed.

As already mentioned, you should not use the language-dependent sheets to modify the sheet. Use the TRIP_ITS.xls to make your changes, and then recreate the language-dependent sheets.

1. After you have finished modifying the translation template, you have to recreate the language-dependent raw template. To do so, proceed as follows:
2. Save the current version of the TRIP_ITS.xls sheet in the 99\sheets directory.
3. Open the "xxx_ITS" function module.
4. Choose the "Translate" macro.
5. Choose the relevant language, by setting the "Language" variable (for example, Language = "EN" for English).

The character strings are read for the selected language from the R/3 System.

6. Start the "Translate" macro.

This macro reads the character strings from the R/3 System by calling the GET_TEXTELEMENT_FOR_SHEET function module several times. You can add more text elements to table T706ESS3 in the customer name ranges X*, Y*, and Z*.

7. If you wish, you can delete the xxx_ITS function module, to save transfer band width during transfer to the client PC. To delete, right-click on the function module and select "Delete" from the popup menu.
8. Save the newly created raw template in the 99\sheets directory under the name [Language]_TRIP.xls, [Language] being the R/3 two-character language key.
9. Reload the translation template and repeat this procedure from step 2 for all languages you want to offer on your Web server.

This procedure guarantees that the Excel sheets are the same in all different languages and function in the same way.

10. If the "RAW_TEMPLATE" variable in table T706ESS2 does not correspond with the path where you stored the raw templates, you have to send the new sheets to all of the servers running RFCCOM and put them in the relevant directories.

Naming Conventions for Data Transfer

When data is transferred to the Web server using HTTP Post, there are several field names that you should not use when adding fields to the sheet. These field names are already used by the Excel file. The following section contains a list of these field names.

Receipt entry

General trip data:

Field name	Description	Field name	Description
PID	Employee ID		
SDATE	Begin date of trip	STIME	Begin time of trip
EDATE	End date of trip	ETIME	End time of trip
REASON	Trip reason	DEST	Trip destination
COUNTRY	Main trip country	REGION	Main trip region
PDMEALS	Per-diem accounting for meals	PDACCOM	Per-diem accounting for accommodations
NONIGHTS	Number of nights PD accounting		
DATEOUT	Date border crossing departure	TIMEOUT	Time border crossing departure
DATEIEN	Date border crossing return	TIMEIN	Time border crossing return
COUNTRYIN	Country from which returned	REGIONIN	Region from which returned
TTCSIN	Trip type company-specific for border crossing		
SCHEMA	Trip schema	TTCS	Global trip type company-specific
TTSTAT	Global trip type statutory	TTACTI	Global trip activity type

Receipts:

(xxx is a placeholder for the relevant receipt number, for example, RTY012 for receipt type 12)

RNOxxx	Receipt number	RTYxxx	Expense type
RAMxxx	Receipt amount (4 dec. places)	RCUxxx	Currency
RRAXxx	Currency rate (5 dec. places)	RVAXxx	VAT rate (2 char.)
RDAXxx	Receipt date	RTExxx	Short text (11 char.)

Naming Conventions for Data Transfer

RSTxxx	Stopover assignment	RPSxxx	Share percent or absolute
RBRxxx	Number of breakfasts	RCNxxx	Country for receipt
RRGxxx	Region for receipt	RTTxxx	Trip type for receipt
RFDxxx	From date	RTDxxx	To date
RNUxxx	Number (of nights/persons)	RDExxx	Description (50 char.)
RLOxxx	Location (50 char.)	RPUxxx	Purpose (50 char.)
RRExxx	Reason (50 char.)	RCCxxx	Credit card company (2 char.)
RCDxxx	Credit card document no.	RCTxxx	Credit card service establishment

Miles/Kilometers.

(xxx is a placeholder for the relevant miles/kms item, for example, MICO012 for miles/kms item 12, country)

MINOxxx	Mileage/Kms number	MIDAxxx	Mileage/Kms date
MITOxxx	Mileage/Kms total	MIDOMxxx	Domestic miles/kms
MIPLxxx	License plate	MIMAxxx	Car make
MITYxxx	Vehicle type	MICLxxx	Vehicle class
MICOxxx	Country	MIRGxxx	Region

Stopovers:

(xx is a placeholder for the relevant stopover item, for example, STFD01 for start date, stopover item 1)

STNOxx	Stopover number	STFDxx	From date
STFTxx	From time	STTDxx	To date
STTTxx	To time	STRExx	Reason
STLOxx	Location	STCOxx	Country
STRGxx	Region	STSTxx	Statutory trip type
STTTCSxx	Company-specific trip type	STATTxx	Trip activity type
STNIGHTxx	No. nights at stopover		

Text:

TEXTxxx	Text line		
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