



## White Paper

# Moving average rate procedure in WINPACCS accounting 4

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21.03.2023

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## **1 About WINPACCS**

WINPACCS is an integrated industry solution aimed at addressing the special requirements of international development cooperation and humanitarian aid.

The application enables organisations to structure their financial processes to meet their particular requirements and fulfil the diverse demands of international donors for budgeting and calculating costs.

Initially designed purely for project Accounting purposes, the application has now evolved to become a fully integrated industry solution. Today, WINPACCS covers a range of functions for supporting processes in international aid organisations and consulting companies.

For more than three decades, WINPACCS and its predecessor PACCS have been successfully utilised in development cooperation projects worldwide.

The modular structure of the system and its design as a software as a service solution means that it can be adapted very flexibly to fit the individual requirements of aid organisations.

## **2 General information on the *moving average rate procedure***

The *moving average rate procedure* is a proven method in development cooperation for converting the currencies used in the projects (voucher currency) to the currency used by the accounts department of the implementing organisations' head office (company currency).

The *moving average rate procedure* was originally developed in the '80s on behalf of the German Federal Ministry for Economic Cooperation and Development for calculating the funding of the German Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Over time the procedure was adopted by other European agencies and has now become a firmly established currency conversion procedure for development cooperation. Many donor organisations such as the European Community Humanitarian Office (ECHO), the UN World Food Programme or the German Foreign Office accept this procedure for settling their funds.

The procedure ensures that, rounding up/down differences aside, no gains or losses are made/incurred due to fluctuations in exchange rates, i.e. the funding provided is translated into costs of the equivalent amount in company currency.

### 3 Method for calculating the average rate

Two currencies are always used for the *moving average rate procedure* method:

#### Voucher currency

The voucher currency is the currency in which the expenses (vouchers) are incurred and have to be posted.

#### Company currency

The company currency is the currency used by the head office accounts department. As a rule it is the currency of the respective country in which the aid organisation has its head office.

WINPACCS Accounting uses the *moving average rate procedure*.

Calculating the conversion of the voucher currency to the company currency is performed using the *moving average rate procedure* method according to the following formula:

$$\text{average rate} = \frac{\text{balance company currency}}{\text{balance voucher currency}}$$

The “balance” is understood as the cumulated balance of the sub-accounts of the “Real accounts (bank, cash)” account class.

**Note:** Up to and including WINPACCS Accounting version 3.2.2 the basis for calculating the balance was the “Real accounts (receivables, payables)” account class, in addition to the “Real accounts (bank, cash)” account class.

## 4 Average rate procedure for postings

### 4.1 Standard procedure for conversion of voucher currency to company currency

For most postings in WINPACCS Accounting an amount is entered in voucher currency and the equivalent amount in company currency is calculated automatically using the **current average rate**.

### 4.2 Deviating procedure for converting voucher currency to company currency

In certain cases, the standard procedure of converting voucher currency to company currency is not followed, for instance:

- with postings in which the amount in company currency is entered manually, as the rate of posting is fixed by contract or predetermined by an external system;
- in settling unsettled items the equivalent value in company currency is always calculated using the rate of the original posting of the unsettled item. If several unsettled items are settled in a posting, the positions are each converted with the respective rate of the unsettled items. For the amount in company currency on the other side, the total of the converted amounts in company currency is applied.

Below a list of transactions which the deviating procedure from the standard procedure are or can be used for.

Transaction category	Transaction type	Deviating procedure
1 Supply of funds	1 By Head Office 2 Due to currency exchange 3 By external project 4 By local own project 6 By local external project	Manual entry of amount in company currency
2 Forwarding of funds	3 To external project CC	Manual entry of amount in company currency
4 Costs	1 Own project 3 External project	When an unsettled item balancing is performed the amount in company currency is calculated using the rate/rates of the balanced unsettled items.

	2 Own project CC 4 External project CC	Manual entry of amount in company currency
6 Income	1 Own project 3 External project	When an OP balancing is performed the amount in company currency is calculated using the rate/rates of the balanced OPs.
8 Funds received	1 Repayment of advance payments	The amount in company currency is calculated using the rate of the balanced unsettled items.
9 Balancing of payables	-	The amount in company currency is calculated using the rate/rates of the balanced unsettled items.
10 Return of funds	2 Local own project 4 Local external project	Manual entry of amount in company currency
11 Flexible posting	-	See chapter on “Special postings”
12 Netting of unsettled items	-	See chapter on “Special postings”

Postings of these transactions lead to a follow-on new calculation of the average rate, if the balance is changed that is relevant for the posting of the average rate calculation. Also see chapter: “New calculation of the average rate”.

## 4.3 Special postings that require particular handling

The following lists special posting functions for which particular features are to be used in applying the average rate procedure.

The special features particularly affect the usage of differing exchange rates in a posting. In WINPACCS a distinction is made between the “Average rate of the posting” and the “Average rate of the posting position” in order to show in an orderly manner all the constellations that can occur in using the average rate procedure.

Frequently, the “average rate of the posting” and the “average rate of the posting positions” do not vary.

### 4.3.1 Flexible posting (transaction category 11)

If one or several unsettled items are settled in a flexible posting on one side (debits or credits), the average rate or mean average rate of the unsettled items is used for the posting, as described above. If another posting position is added to this side, so that no unsettled items can be balanced, the current average rate will be used for this item. The average rate for the posting and all the posting positions on the other side is calculated from the **mean average rate via the settling of the unsettled items and other further positions on this side**, that are calculated with the current average rate.

Note: It is not possible to balance unsettled items on both sides of the posting.

### 4.3.2 Clearing of unsettled items (transaction category 12)

In clearing unsettled items (transaction category 12) unsettled items are cleared against each other, that frequently have different average rates. As every posting position balances an unsettled item, the respective average rate of the unsettled item to be balanced is used for these positions. For the entire posting the **average rate** is used **from the relationship between the posting amounts and the unsettled item balances**.

### 4.3.3 Reversal and correction posting

The average rate of the reversed posting is used for a reversal.

If a correction posting follows the reversal, the average rate of the reversed posting is used for the correction posting.

### 4.3.4 Reposting

For repostings the rate of the reposted voucher position is used.



## 5 Recalculation of the average rate

### 5.1 Transactions causing recalculation of the average rate

The average rate is always recalculated when the standard procedure for converting the voucher currency into company currency is not used, and the money balance that is relevant for the average rate calculation is changed.

The following transactions lead to a recalculation of the average rate:

Transaction category	Transaction type	Recalculation of average rate
1 Supply of funds	1 By Head Office 2 By other journal 3 By external project 4 By local own project 6 Local external project	The average rate is always recalculated.
2 Forwarding of funds	3 To external project CC	The average rate is always recalculated.
4 Costs	1 Own project 3 External project	The average rate is recalculated when there is a cost reduction with a balancing of an unsettled item for VAT or withholding tax and if it concerns a payment from bank / cash.
4 Costs	2 Own project CC 4 External project CC	The average rate is recalculated when it concerns a payment from bank / cash.
8 Funds received	1 Repayment of advance payments	The average rate is always recalculated.
9 Balancing of payables	1 With average rate recalculation	The average rate is always recalculated.

10 Return of funds	2 Local own project 4 Local external project	The average rate is always recalculated.
11 Flexible posting	-	The average rate is recalculated when balancing an unsettled item and when it concerns a payment from bank / cash.
12 Netting of unsettled items	-	The average rate is not recalculated, as the money balance does not change.

The average rate is also recalculated:

- after a reversed posting, if the reversed posting has caused a recalculation of the average rate;
- within the framework of a revaluation of the bank and cash balances for the month-end closing (see “Month-end closing” chapter).

## 5.2 Method for recalculating the average rate

The new average rate is calculated from the bank and cash account balances (“balance”) and the change due to the postings, which led to the recalculation:

$$\text{new average rate} = \frac{\text{balance company currency} + \text{posting amount in company currency}}{\text{balance voucher currency} + \text{posting amount in voucher currency}}$$

Information on the average rate ☰

**i** The average rate for the posting is obtained via the manually entered amount in company currency. The average rate will be recalculated after the posting.

	GBP	EUR	Rate
Balance (old)	47.588,11	54.345,66	1,14200072227
Posting	-1.200,00	-1.500,00	1,25000000000
<b>Balance (new)</b>	<b>46.388,11</b>	<b>52.845,66</b>	<b>1,13920700800</b>
Variance in %			0,245

After the new average rate has been calculated, the amount in company currency for all the following postings is calculated using this new average rate. This rate is then used until a further posting causes the average rate to be recalculated again.

## 6 Average rate procedure for the closings

For month-end closings, the *moving average rate procedure* requires a recalculation of the balances in company currency for the sub-accounts, whose balances are relevant for the balance in calculating the average rate (Revaluation). These are the sub-accounts of the “Balance account (bank, cash)” account class.

The balances in company currency of the individual sub-accounts change, but the total of the balances remains the same.

This procedure can lead to rounding up/down differences that can be posted as costs or income within the framework of the revaluation. A clearing account serves as an offset account, which is only used for the posting of the revaluation. The balance of this account is always zero after the revaluation.

Example:

Balances before revaluation

Account	Voucher currency	Company currency
Bank	10,000.00	4,999.00
Cash	1,000.00	499.90

Current rate of the journal at closing for revaluation: 0.49998

Revaluation:

Bank:  $10,000.00 \text{ VC} \times 0.49998 \text{ CC/VC} = 4,999.80 \text{ CC}$

Cash:  $1,000.00 \text{ VC} \times 0.49998 \text{ CC/VC} = 499.98 \text{ CC}$

Postings:

- Derecognising balances company currency
 

Debit	Clearing account	5,498.90 CC
Credit	Bank	4,999.00 CC
	Cash	499.90 CC

## 2. Posting of balances in company currency

Debit	Bank	4,999.80
	Cash	499,98
	Income from rounding differences	0.88
	Credit Clearing account	5,498.90

During revaluation, higher costs or income from rounding differences may arise if unsettled items with comparatively high amounts and greatly deviating exchange rates were settled in the meantime, see also chapter 4.2.

Example: Prior to the revaluation, an older advance of 1,000.00 VC was offset by a repayment at the rate of 0.513.

Posting: per cash to receivables 1,000.00 VC / 513.00 CC

The balances before revaluation are thus:

Account	Voucher currency	Company currency
Bank	10,000.00	4,999.00
Cash	2,000.00	1,012.98

Revaluation:

Bank:  $10,000.00 \times 0.49998 = 4,999.80$

Cash:  $2,000.00 \times 0.49998 = 999.96$

Postings:

### 1. Derecognising balances in company currency

Debit	Clearing account	6,011.98
Credit	Bank	4,999.00
	Cash	1,012.98

## 2. Posting of balances in company currency

Debit	Bank	4,999.80
	Cash	999.96
	Costs from rounding differences	12.22
Credit	Clearing account	6,011.98

The revaluation is also performed when exactly the same amounts are debited and credited. This ensures that the revaluation is always documented.

For journals in which the company currency and the voucher currency are identical, a revaluation is not performed.

For filing purposes a voucher with a specific voucher number is created that is to be treated as an original voucher.

## 7 Special cases

This chapter describes special cases that can occur when using the average rate procedure.

### 7.1 Company currency = voucher currency

This average rate procedure is not used in journals in which the voucher currency is identical to the company currency.

This means:

- The amount in company currency can never be entered manually in the postings.
- The average rate is always 1. In every posting, the amount in company currency is identical to the amount in voucher currency.
- A revaluation is not performed with the month-end closing.

### 7.2 The average rate deviation is greater than x%

For average rate changing postings, WINPACCS Accounting checks whether the deviation from the previous average rate is greater than a fixed percentage in the currency table. If this is so, the accountant must manually confirm that the deviation is correct, before the posting is saved in the system.

A common cause for an overly high average rate deviation is the posting of fund receipts or forwarding of funds with incorrect amounts in voucher and/or company currency. The new average rate affects the company currency amounts of all the following postings and cannot be changed retrospectively. **This is why it is very important to check carefully how the rate is developing.**

However, sometimes it is not unusual for a currency to have a higher deviation. It also makes sense here for the accountant to perform a check as WINPACCS Accounting always shows the full average rate deviation in percentage. In this scenario, the accountant can thus check whether the expected average rate deviation corresponds to the real rate development or whether it is too high.

If a high average rate deviation is mistakenly accepted, it has the following impacts:

- too high or too low amounts in company currency are employed for the subsequent postings in the journal. These postings CANNOT be corrected retrospectively;
- frequently automatic crediting/debiting with very high amounts are created in the month-end closing, which leads to high rounding up/down differences;
- correcting the posting data properly is time-consuming, as the only practical solution is often reposting the vouchers.

The following options for correction are available:

- The average rate can be corrected again with further average rate changing postings. This can take a long time, depending on the overall balance of the journal. Until the average rate has been corrected again, all the postings are too high or too low in the company currency.
- The data is reset to a period from before the incorrect posting was made. All the missing postings have to be repeated and performed correctly. This solution is time-consuming, but it ensures that the amounts in company currency are calculated correctly again.

## 7.3 Low or negative cash balances

The cash balance that is relevant for the average rate calculation consists of cumulated balances of the sub-accounts of the balance accounts (bank, cash) account class.

If only very low or even negative cash balances are available in the journal, the average rate calculation is inaccurate or even wrong. This is why low or negative balances should be avoided.

Negative balances occur in the journal when more funds are spent than received. Below an example of average rate development, i.e. when the supply of funds only occurs after high expenses have been posted.

### 7.3.1 Average rate development with positive balance

	Voucher currency	Company currency (EUR)	Average rate
1. Supply of funds	100,000.00	50,000.00	0.50000
Expenses	-80,000.00	-40,000.00	0.50000
<i>Cash balance</i>	<i>20,000.00</i>	<i>10,000.00</i>	<i>0.50000</i>
2. Supply of funds	100,000.00	60,000.00	0.60000
<i>Cash balance</i>	<i>120,000.00</i>	<i>70,000.00</i>	<i>0.58333</i>
Expenses	-90,000.00	-52,499.70	0.58333



## 7.3.2 Average rate development when expenditure occurs before funds are supplied (negative balance)

	Voucher currency	Company currency (EUR)	Average rate
1. Supply of funds	0.00	0.00	0.50000
Expenses	-80,000.00	-40,000.00	0.50000
<i>Cash balance</i>	<i>-80,000.00</i>	<i>-40,000.00</i>	<i>0.50000</i>
2. Supply of funds	100,000.00	60,000.00	0.60000
<i>Cash balance</i>	<i>20,000.00</i>	<i>20,000.00</i>	<i>1.00000</i>
Expenses	-90,000.00	<b>-90,000.00</b>	<b>1.00000</b>

If the average rate develops in the wrong direction, the company currency is incorrectly assessed for all future postings!

## 7.3.3 Solution

The average rate of the journal is adapted when the cash balances are posted manually (debiting and crediting) with the correct rate:

- debiting using the Forwarding of funds transaction category with the current rate of the journal;
- crediting using the Supply of funds transaction category with manual input of the amount in company currency.

## 7.4 **The average rate calculation produces 0/0**

If the balances of the bank and cash accounts are 0 in a journal, then the calculation rule of the average rate new calculation applies:

$$\frac{\text{balance company currency} + \text{posting amount in company currency}}{\text{balance voucher currency} + \text{posting amount in voucher currency}} = \frac{0}{0}$$

with division by 0, which is not possible mathematically.

In such cases the old average rate is retained.

## 7.5 The average rate is negative

Very occasionally the average rate becomes negative because of an average rate changing posting in a journal. This always happens when the the sign is different in the balances of the voucher currency and company currency, for example:

	Voucher currency	Company currency (EUR)	Average rate
1. Supply of funds	100,000.00	50,000.00	0.500000000000
Costs	80,000.00	40,000.00	0.500000000000
<i>Total balance</i>	<i>20,000.00</i>	<i>10,000.00</i>	<i>0.500000000000</i>
2. Supply of funds	15,000.00	12,000.00	0.800000000000
<i>Total balance</i>	<i>5,000.00</i>	<i>-2,000.00</i>	<i>-0.400000000000</i>

The average rate that occurs due to the Forwarding of funds would be negative, which is not allowed. WINPACCS Accounting recognises that the average rate after the posting would be negative and warns the accountant with a message. The accountant now has the chance to cancel the posting and check the entire balance as well as the posting.

If the posting should still be performed, WINPACCS Accounting then automatically conducts debiting and crediting of all the balance accounts. In doing so, the cash balance will first be debited with the average rate of the current balance and then credited again with the rate of the new posting. This may lead to costs or income from rounding differences (see chapter 6). The original posting is only then carried out after the automatic debiting and crediting has taken place.

Example:

	Voucher currency	Company currency (EUR)	Average rate
1. Supply of funds	100,000.00	50,000.00	0.5000000000
Expenses	80,000.00	40,000.00	0.5000000000
<i>Cash balance</i>	<i>20,000.00</i>	<i>10,000.00</i>	<i>0.5000000000</i>
Automatic debiting	20,000.00	10,000.00	0.5000000000
<i>Cash balance</i>	<i>0.00</i>	<i>0.00</i>	<i>0.0000000000</i>
Automatic crediting	20,000.00	16,000.00	0.8000000000
2. Forwarding of funds	15,000.00	12,000.00	0.8000000000
<i>Cash balance</i>	<i>5,000.00</i>	<i>4,000.00</i>	<i>0.8000000000</i>

Postings that lead to a negative average rate are very rare and should be initially cancelled and checked for plausibility.

## 7.6 Revaluation when +/- signs of VC and CC differ

In rare cases, when revaluing the balances at a closing, the voucher currency (VC) and company currency (CC) balances of one or more sub-accounts can show different +/- signs. This may occur when there are very low balances in the sub-accounts.

When the VC and CC amounts have different +/- signs the posting cannot be processed by downstream systems, e.g. SAP. Therefore, in such a case, it is not the current account balance that is derecognised, but the balance of all postings since the last revaluation.

The following rules apply when the amount to be derecognized is calculated:

Amount in VC in debit = VC amounts in credit with positive sign (amount >= 0) + ABSOLUTE VALUE [VC amounts in debit with negative sign (amount < 0)]

Amount in CC in debit = CC amounts in credit with positive sign (amount >= 0) + ABSOLUTE VALUE [CC amounts in debit with negative sign (amount < 0)]

Amount in VC in credit = VC amounts in debit with positive sign (amount >= 0) + ABSOLUTE VALUE [VC amounts in credit with negative sign (amount < 0)]

Amount in CC in credit = CC amounts in debit with positive sign (amount >= 0) + ABSOLUTE VALUE [CC amounts in credit with negative sign (amount < 0)]

If there was a balance on the sub-account during the last revaluation, it will be added to these values. If the balance at that time was negative, it is added to the debit, if it was positive, it is added to the credit. This is also performed for the voucher currency and the company currency:

Balance in VC after last revaluation = VC in debit - VC in credit

If "Balance in VC after last revaluation" < 0, then: "Amount in VC in debit" += ABSOLUTE VALUE["Balance in VC after last revaluation"]

If "Balance in VC after last revaluation" >= 0, then: "Amount in VC in credit" += "Balance in VC after last revaluation"

Balance in CC after last revaluation = CC in debit - CC in credit

If "Balance in CC after last revaluation" < 0, then: "Amount in CC in debit" += ABSOLUTE VALUE["Balance in CC after last revaluation"]

If "Balance in CC after last revaluation" >= 0, then: "Amount in CC in credit" += "Balance in CC after last revaluation"

**Example:**

The balance on a bank sub-account at the time of the last revaluation was 15 VC and 11.25 CC (average rate 0.7500000000).

The following expense is posted against the bank sub-account on the credit side:

	Voucher currency	Company currency (EUR)	Average rate
Expenses	12.00	9.00	0.7500000000
Balance	3.00	2.25	

Postings against other balance sub-accounts change the average rate to such an extent that the next posting to the bank sub-account results in a positive balance in voucher currency and a negative balance in company currency.

The following expense is posted against the bank sub-account on the credit side:

	<b>Voucher currency</b>	<b>Company currency (EUR)</b>	<b>Average rate</b>
Expenses	2.00	4.00	1.99999999813
<i>Balance</i>	<i>1.00</i>	<i>-1.75</i>	

The average rate change is very extreme in this case and only serves to illustrate the problem.

Next, the revaluation of the balances takes place. When the balance of the bank sub-account is derecognised, the following derecognitions occur:

	<b>Voucher currency</b>	<b>Company currency (EUR)</b>
Derecognition 1 (debit)	$12.00 + 2.00 = 14.00$	$9.00 + 4.00 = 13.00$
Derecognition 2 (credit)	$0.00 + 15.00 = 15.00$	$0.00 + 11.25 = 11.25$

When posting, the real balance (1 BW, 2 CC) is posted. Since both sides have the same sign, an artificial splitting of this entry is not necessary.