KERN

COPA

ALLEVO

User manual

Valid from Allevo 4.3

Interface to SAP COPA

Allevo satellite tables are used for planning the COPA component. Due to their flexibility, there is a complete freedom about how the structure of planning COPA data should look like.

The interface can:

- Read data from COPA and transfer them to a satellite table as a basis for further planning

- Read plan values from a satellite table, process them and post them to COPA

Allevo supports costing-based profitability analysis, accounting-based profitability analysis (also called "margin analysis" in S/4Hana) and, via customer-specific enhancements, combined profitability analysis (cPA).

Content

Allevo: COPA

Error! Use the Home tab to apply Überschrift 1 to the text that you want to appear here.

Table of contents

Allevo: COPA

Error! Use the Home tab to apply Überschrift 1 to the text that you want to appear here.

Allevo: COPA

Error! Use the Home tab to apply Überschrift 1 to the text that you want to appear here.

1   Allevo and COPA - the idea

1.1   The Initial Situation: Separated Worlds

From a technical point of view, planning the profitability analysis is a process completely isolated from Cost Center Accounting (CCA) in SAP (COPA), since different data models and consequently different input screens exist for plan values. Therefore, COPA knows characteristics and value fields that can be used in a flexible way and expanded in a customer-specific way, while cost accounting or Profitcenter accounting builds on a more or less static structure of cost elements (accounts), activity types and statistical key figures. Including both plannings in a consistent process is not intended by SAP.

The difficulty is first finding a suitable access to COPA planning. In cost center planning, the cost center is regularly the access object; in profit center planning, it is the profit center etc. However, what is the access object in revenue planning? Plenty of characteristics are available (division, sales employee, sales organization, articles etc.), while all of them can define the access by themselves or in combination.

1.2   The Solution: Allevo COPA Interface

It is possible to continue with the usual procedure. A start into COPA planning is made via a cost center, an order, a WBS element (CCA object) or a Profitcenter. Alternatively, the Allevo own objects (object type KX) are suitable for an access especially in this case.

During the planning process, COPA data are managed by representative objects of CCA, Profitcenter accounting or Allevo own objects. This way, the representative object stands for a self-contained planning scope that is defined by certain forms of COPA characteristics, e.g. a division or a combination from a sales office and a sales employee etc.

Note:	Thus, the task is to define the respective planning scope that is to be covered by a planer and to assign it to a representative object. This is achieved by the assignment table (see chapter 0) of the Allevo COPA interface.

The Allevo standard functions can now be used due to the representative object (e.g. planning layouts, status management). Furthermore, the SAP authorization system can be used for controlling the authorizations.

COPA data are provided by a classic satellite table. The communication between the Allevo planning form and the satellite table on the SAP side operates in the normal Allevo standard. In particular, all additional functions intended specifically for working with satellites are available in Allevo.

Example:	„Merge" function when reading satellite tables: Especially when working with the COPA interface, it can be useful to mix data of two tables. In Allevo, the constant SATxx_MERGEyy is available for this purpose.

Allevo: COPA

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	Example of application: Current plan data shall be completed regularly by inputs from an external system, while plan values that are already entered in Allevo shall remain intact (for details see F1 documentation on the constant).

It remains unclear, how reference data are transferred from the COPA tables to the satellite tables and how data that are to be planned are delivered from the satellite table to SAP. This is the task of the COPA interface.

Note:	Allevo supports both the costing-based and the account-based operating concern. The basic differences between both COPA methods are described in the SAP Note 69384.

Allevo: COPA

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2 Properties of the interface

2.1 Functional Overview

The interface works with a line-oriented specification of the data structure in the satellite, with lines being dependent on year, period, Plan/Actual indicator and version. In this structure, satellite data fields for columns correspond to the required value fields from COPA. The interface can:

- Read data from COPA and transfer them to a satellite table as a basis for further planning

- Read plan values from a satellite table, process them and post them to COPA

The structure of the satellite table varies depending on the project requirements.

Allevo supports costing-based profitability analysis, accounting-based profitability analysis and, via a customer-specific extension, combined profitability analysis (cPA). Control happens via a constant (see TYPE_OF_PA).

Read

COPA data can be read from the operating concern. Contents are:

1. Annual values (Actual / Plan values) or

2. Period values (Actual / Plan values), filing line by line

3. Period values in columns (constant MONTH_ACTIVE)

Plan/Write

The interface allows providing plan values via the satellite in different ways. These are:

1. Annual values equally distributed (including the calculation of remaining amounts in period 12)

2. Annual values distributed based on an integrated period distribution table

3. Period values in lines

4. Period values in columns (Constant MONTH_ACTIVE)

Except for case 2, the distribution based on any characteristic is also possible (Constant DISTRIBUTION).

In the mapping of the Allevo COPA interface, only one cost element can be addressed per schema. Consequently, for accounting-based COPA planning, one schema per cost element has to be available, which then also defines the sequence of the transfer.

Other Functions

Both during reading and planning, various schemes per satellite can be established and actively involved in the Allevo planning process in the desired sequence (Constant ALLEVO_ACTIVE).

Allevo: COPA

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Read/write parameters can additionally or alternatively be taken via an Allevo layout (Constant ALLEVO_ACTIVE).

All six object types supported by Allevo are supported especially in the mapping of satellite fields, especially the Allevo own object type KX.

2.2 Program call

The COPA interface is called via the transaction /ALLEVO/COPA: it allows both reading reference data from SAP COPA and posting plan data (writing to COPA). To call the COPA interface, a suitable license has to be available (see associated notes on licensing in the Allevo SAP manual).

The following selection screen shows the call of the transaction.

Figure 2.1: Initial screen of the COPA interface

On the one hand, parameters for the selection of the interface data are entered here; on the other hand, all settings of the interface are made here (see e.g. additional function "Constants" in the toolbar, detailed explanations; more on this below).

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In earlier versions of the interface, separate transactions were explicitly available for reading and writing data; today, this distinction is made via the associated switch in the initial screen (see the "Action" section in the figure above).

Notice:	For the sake of completeness, here is a list of COPA relevant transactions that were used in previous Allevo versions:
	• /KERN/IPPCOPA_NR for reading COPA data
	• /KERN/IPPCOPA_N for planning in COPA
	• /KERN/IPPCOPA equivalent to /ALLEVO/COPA
	These transactions are no longer supported today. When switching to a current Allevo version, the authorizations may also need to be reassigned.

The information on the planned year and version in the initial screen (see figure above) refers to the relevant index fields PYEAR and VERSION of the satellite: this should be the same information that is later used to access the Excel interface (Allevo Workplace). If COPA data is to be read for several years, the associated information on year and version is usually transferred to other fields of the satellite via mapping (if necessary, a different procedure is also possible, see also notes on mapping below).

When reading COPA data with monthly values, an additional sorting of the read data by periods can be useful (especially with new SAP versions; previously the defined sequence was ensured via the used BAPI). See constant MONTH_ACTIVE.

In addition, the structure of the interface also has changed over the years to a sequential display of period data in the satellite (with one column per value field). When switching from an older Allevo version (less than 3.0), it may also be necessary to adapt the satellite structures and the structure of the Allevo master.

2.3   Scheme

Before using the program, the interface has to be established. For this purpose, a scheme has to be created via the |Schemes| button on the start screen of Allevo COPA.

Allevo: COPA

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Figure 2.2: Schematic maintenance of the Allevo COPA interface

Schemes can be created and deleted in the scheme maintenance. Schemes are created per controlling area, object type and satellite table. It is possible to carry along a sequence and a description, apart from an up to 6-character name in the maintenance table.

2.4   Constants

A created scheme subsequently needs to be filled with content. This is carried out via the |Constants| button on the start screen of Allevo COPA (see Figure 2.1).

Constants are maintained depending on controlling area, object type, satellite table and scheme. Before using the |Constants| button, select these four parameters on the start screen.

Different constant settings can be saved simultaneously under the name of the scheme, which can be freely assigned. Already created schemes can be called using the function key F4.

The entire business process of the interface is controlled via the constants.

2.5   Permissions

In current SAP versions, the called SAP BAPI checks the authorization object K_KEPL_TC with ACTVT = 02 when writing and ACTVT = 03 when reading (see also SAP Note 2404629).

For the execution of the Allevo interface to COPA, only the authorization to call the associated transaction has to be present (i.e. /ALLEVO/COPA).

The execution of the Allevo setup steps for schema, constants and assignment of objects are usually reserved for employees with administration authorization. Accordingly, Allevo-specific individual authorizations are required for this; in this case, mapped via the authorization groups ZIPP_CP1, ZIPP_CP2, and ZIPP_CP3. Users of the higher-level authorization groups ZIPP_ADM also have access automatically.

Allevo: COPA

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For more information, see the notes on the ZIPP_PROG authorization object in the "Allevo SAP Manual".

2.6   GroundTables

As of Allevo Version 3.5.44, the Allevo delivery package includes several GroundTables that can be used to easily map standard COPA planning cases (Use Cases).

Table name	Description
/CORE/U_COPA01_A	Read/write COPA interface
/CORE/U_COPA02_A	COPA Interface (accounting)
/CORE/U_COPA03_A	COPA Interface (phasing)

For the basic function of GroundTables when using Allevo satellites, see the Allevo SAP manual.

2.7   Conversions

The Allevo COPA interface expects the data in the satellite to be stored in the internal format that is also relevant for transfer to SAP (e.g. when displaying a material number that is managed internally with 18 digits in SAP ERP). The COPA interface does not perform its own conversion for satellite data.

Consequently, the features have to be correctly stored in the satellite: this is especially important if the input of plan data is done via Excel. Features should then be preserved. From Allevo 4.0, an entry in the satellite cockpit can ensure that conversion to internal format takes place automatically when new data is saved.

Allevo: COPA

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3 Constants

3.1 Function overview

The program dialog for constant settings on the transaction /ALLEVO/COPA is divided into three screen areas (see following Figure 3.1):

- **General constants** (General Constants) with basic settings for the COPA interface

- **Field mapping**: Here the fields of the satellite table are mapped to the characteristic and value fields of COPA.

- **Read-Write-Parameters**: Here you specify what should be read and what should be planned. All constants are dependent on controlling area, object type, schema and satellite table.

Figure 3.1: Constants of the Allevo COPA interface (here imputed)

Here is a simple example of application in the accounting-based operating concern.

Allevo: COPA

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Figure 3.2: Example of the COPA interface in the accounting operating concern

3.2   General constants

For the general constants (see Figure 3.1; top left) the following entries are possible (supported by an F4 help):

- ALLEVO_ACTIVE

- The COPA scheme can be integrated actively into the Allevo planning process, but also has to be activated there via the Allevo constant SATXX_COPA.

- In Value_to, it can be restricted to one or more Allevo layouts.

- The entry of a layout is mandatory if Allevo TimeSets are to be used (see chapter 3.4).

- CURRENCY

- When activated, it is assumed that all values in the satellite table are in the currency selected here (e.g. entry **USD**). However, the posting will be made in the currency of the operating concern (see also section 7.1).

- If this definition is missing, the settings in the COPA plan version apply as default (see transaction OKEQN). The exchange rate type of the conversion can be set via constant EXRATE_TYPE.

- Note: a choice of currency is only available for costing-based profitability analysis; for accounting-based COPA, the transfer has to be made in the currency of the controlling area (see details in section 7.1).

- EXRATE_TYPE

- Here you define which exchange rate type applies when translating currencies (e.g. **M** for standard translation at the average rate or **P** for standard translation in cost accounting). If you do not specify a constant, the setting for the plan version in the operating concern will be used.

- DISTRIBUTION

Allevo: COPA

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- Defines a table with defaults for a distribution function: "Value from" contains the name of the table where the rules of the distribution are stored; "Value to" contains a field name prefix. The distribution functions are described in chapter 4).

  ▪ FACTOR

- This constant should no longer be used from version 4.0: now an individual factor per value/quantity field can be assigned in the field assignments.

  Via this constant it is possible to multiply values of the COPA interface by an arbitrary factor. The function is available during reading and writing. When reading, there is the additional function of determining values in the satellite via addition and subtraction from several value fields.

  ▪ FD_CURRENCY

- In this parameter the name of the field of the satellite table is entered, which contains the currency for a record (see section 7.1).

  ▪ FD_SENDER

- In the parameter the name of the field of the satellite table is entered, in which the partner object for the object named in the COOBJECT field is located. The field is only important if the table is to be mirrored, since with the mirror function the object and partner object are swapped in the data set (see section 3.7).

  ▪ FD_STATUS

- In this parameter, the name of the field of the satellite table is entered, which contains the status of a record (see section 6.5).

  ▪ FD_PERIOD

- Optional output of a from and/or to period, which is used when reading several periods into a target value (e.g. per quarter). This specification allows a clear distinction of the read data also in Excel and reduces the amount of data in many cases.

  ▪ MONTH_ACTIVE

- For reading and planning, monthly values for quantities and values can also be stored in 12 separate columns of the satellite. This constant has to be activated for this purpose. Which columns are to be seen by month is recognized automatically via the field assignment: from 4.0, the PERDE characteristic for the period field is no longer relevant for reading the data (it is ignored).

  ▪ OP_CONCERN

- Here you have to enter the name of the operating concern from which data is to be read and to which planning data is to be posted.

  ▪ PALEDGER

- The currency key is needed exclusively for reading actual data, the valuation type (in Value_to) even only for reading accounting actual data.

Allevo: COPA

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- ▪ SAVE_LOG

- • Messages from the COPA interface can be written to the SLG (SAP Application Log).

- ▪ TYPE_OF_PA

- • Switching between costing-based, accounting-based and combined operating concern. Alternatively, support for a flexible planning for S/4HANA (see Documentation on the constant or Allevo SAP manual).

- ▪ VRGAR

- • Here you have to enter the transaction type with which the plan data is to be read or written: it describes the business transaction from which the data transferred to CO-PA originates. Usual transactions:

A	Customer order receipt
B	Direct account assignment accounting
C	Accounting of orders/projects
D	Overhead costs (allocation of cost center costs)
F	Facture data
G	Customer agreements / contracts
H	Statistical key figures

- • When <u>reading,</u> all transaction types entered in the "Value from" field are taken into account (multiple entries are possible: the individual values have to be separated by commas and without spaces).

- • When <u>writing</u> (planning), the transaction type entered in the "Value to" field is used for posting. However, the constant can be overdriven by specifying the transaction type in the satellite (see Mapping via ZZIPP_VRGAR). The entries in the satellite are used if the corresponding field (in the RWX column with Z, X or W) is marked.

Notice:	Since version 3.2, the general constants depend on the schema and satellite table!

3.3   Field-Mapping

A field-mapping table is used to map the fields of the current satellite table to the characteristic and value fields in COPA. During the input, the F4 value help is available (see area "Field mapping" on the right in Figure 3.1)

In the column "Sort", an order of the characteristics can be assigned: it defines the order in which the data is read from COPA, grouped/summed and displayed in the Excel form.

Allevo: COPA

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The entries in the "RWX" column control how fields with COPA characteristics and quantity/value fields are to be handled in the interface (relevance). A field without an entry in this column will be ignored by the COPA interface. The following options are available:

- For characteristic fields, the following applies:

- **X** defines a field relevant for reading and writing

- **Z** is like X, the field is additionally relevant for the object assignment (max 3 fields)

- **R** stands for "read only",

- **W** stands for "write only"

    An entry "**D**" (= Distribute) specifies that this feature is to be provided for the distribution function of the COPA interface (see section 0).

For **value/quantity fields,** the following applies:

- **V** = Value field is the default entry

- **Q** = Quantity field

- **U** = indicates a field with base unit of measure for the quantity field

    - Special markings for reading in "FP mode

- **E** = Value field (FP mode)

- **F** = Quantity field (FP mode)

- **G** = Unit for quantity field (FP mode)

Special feature for quantity fields: there, the field with the unit of measure has to always be selected in addition and thus, of course, also created in the satellite. There, the field of the satellite table containing the unit of measure has to be linked to the corresponding unit field in SAP (SE11).

Object assignment: Characteristic fields that are used for object assignment (see chapter 0) have to be marked with **Z** in the column "RWX" (instead of X). A maximum of three fields is possible. The sorting has to correspond to the sequence in which the data is to be entered in the object allocation table.

- Any number of characteristic fields can be created in a satellite table: for which combination the data is read or written can be decided year by year or schema by schema.

Notice:	Summarization level
	Creating a summarization level of the operating concern according to the characteristics set here is recommended. The program will find it automatically and will be accelerated. The corresponding transactions in SAP are KEDV (for creating) and KEDU (for filling with data).

Allevo: COPA

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If more than one plan year is to be read and written, it is mandatory that the satellite fields for the COPA characteristics GJAHR, PERDE, PLIKZ and VERSI are available. The following applies:

- When writing (transferring plan data), the PLIKZ field for plan/actual indicator PLIKZ always has to be filled with 1 (= plan data), since the write program only allows plan values.

- If annual values are read and planned, then no entry should be made in the RWX column for the PERDE field. To edit period values, X is entered.

Please note that each record of the satellite table is posted with the set up feature combination for writing. If a characteristic is not filled in the satellite, then this characteristic is taken over in COPA as "empty".

Index fields of the satellite (year, version)

The information on plan year and version in the initial screen of the COPA transaction (see Figure 2.1 above) refer to the relevant index fields PYEAR and VERSION of the satellite: these should be the same entries that are later used to access the Excel interface (Allevo Workplace). Consequently, both fields are also not intended for the internal field assignments (and are therefore not available for selection in the F4 help).

Notice:	In special cases, however, it may be useful to transfer the year and version of read COPA data directly to the index fields (Badi may be required for transfer to Allevo Workplace). To achieve this, the index fields PJAHR and VERSION can be entered manually in the field mapping; they should then remain empty in the initial screen.
	Advantage of such a procedure: Actual data from a previous year would remain in the satellite and would not have to be re-read if the planned year or version were changed. If necessary, the data could also be read separately in Allevo Workplace, which would have advantages in the operation of the interface.
	Please also note that reading in this case has to be done block by block to achieve a reasonable sorting of the data (see section 0).

If COPA data is to be read for several years, the associated information on year and version is usually transferred to other fields of the satellite via mapping (if necessary, a different procedure is also possible, also see the notes on the mapping below).

3.4 Read/write parameters

Function overview

Within this section you specify in which time period the data should be read or planned (see Figure 3.1; bottom left). The columns "Year", "From period", "To period", "PLIKZ" and "Version" define the time ranges and then read the corresponding data fields of the satellite table (see section 3.3). A time restriction via "from period" and "to period" applies for reading as well as for writing. It is independent of whether annual or period values are processed.

Allevo: COPA

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Example: If annual values are planned, but the write year is restricted to the periods 1 to 6, then the "annual" value is divided by 6 and posted to those 6 periods.

Instead of the entries for year, periods, PLIKZ, version and RWX, TimeSets of the Allevo main planning can also be entered in the first column in order to assign all parameters centrally. However, a layout has to be entered for the constant ALLEVO_ACTIVE.

Notice:	It is also possible to leave this table completely empty and only enter a layout in the Value-to of the General constant ALLEVO_ACTIVE. Then all (active) TimeSets from Layouts are used.

Additional Notes:

- If year and/or version are not filled, the values from the initial screen are taken as an alternative (identical to the satellite key fields under which the data were stored).

- If the period field is missing (or value = 0), the information in the respective record is interpreted as an annual value.

- If the plan/actual indicator is not set, actual data is read (corresponds to PLIKZ = 0).

- To read plan data (as reference data for further planning), a **1**has to be entered in the PLIKZ column for the plan/actual indicator (also enter the appropriate version to be read).

Define time range (RWX column)

An entry in this column specifies what should happen in the defined time range:

- **R** (= Read) activates the time range for reading reference data.

- For **W** (= Write) it is mandatory to enter a version with which the plan data is to be posted.

- For entry **X** (= both), read and write is performed.

Single or total data transfer (TS column)

Here it is defined how the data exchange with the SAP interface functions is to take place. Initially, the option was primarily introduced for the processing logic during the posting (write), but it now also has an effect during reading. Two options are available for selection.

- Option **S** (= Single, Structure)

  Individual processing offers the user full flexibility on the Excel side and is the safest variant of posting. In this case, satellite data is transferred to COPA line by line and posted with one document number each there(the mode is correspondingly slow with large data volumes). Use cases are e.g. subsequent postings or new postings of individual data records.

- Option **T** (= Total/Tablewise, Blockwise)

  In this case, all relevant data is transferred to the update module in one step and is also posted there with only one document number (e.g. all data for one year and in one version). The mode

Allevo: COPA

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ensures complete processing of all characteristic combinations of the selection specifications, as it is also specified by the object assignment for the process of processing (and is therefore also particularly performant): however, certain rules have to be adhered in order to avoid data loss.

Rules for plan data transfer with option T (write)

With update option 'T' the data range is restricted only by the Z characteristics and additionally: KOKRS, PALEDGER, PERIO (year/month), VERSI and VRGAR. Option **T** should therefore only be usedfor plan data transfer if the data in the satellite represents the planning in each case or the plan version is still undescribed. Otherwise, this mode can lead to loss/overwriting of existing data in COPA:

- This is exactly the case if a combination of characteristics (with data) already existing in COPA is not present in the satellite table, but this combination of characteristics is a subset of the selection conditions (according to object mapping).

- When overwriting the data, those value (fields) are reset which are also given in the field list for reposting.

Use case

- Posting via T is therefore particularly useful if data is read from COPA and only value fields are changed via Allevo (i.e. no combinations of characteristics are added as new data records).

- Posting via T is normally not useful if COPA planning is carried out in several sub steps.

Effects on reading

From Allevo 4.0, option T also has an effect when reading and particularly improves the performance for large data volumes (now centrally via "Collect" function). In this case, the read data is also automatically re-sorted internally (numbering in the satellite index field LINE, comparable with entry for value-to in constant MONTH_ACTIVE).

Switching to individual processing

When plan data is transferred, processing is automatically reset to S (individual processing) if only new or changed data records are to be processed (based on constant FD_STATUS). See option "Only unmarked" in the initial screen of the COPA start transaction; when called from Allevo main planning, constant SATxx_COPA is relevant ("Value to").

3.5 Import, export and check

These functions are executed via the respective buttons in the constant maintenance (see Figure 3.1).

Via the „Export" button, the constants of the actual scheme will be saved in a text file. This can be used as a backup for these schemes but it can also be imported as a template for a different scheme (Import).

Allevo: COPA

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By using the button „Check", you can verify the correctness of the general constants, the presence of the operating concern entered under OP_CONCERN and the presence of the characteristics used in the field assignment, EXRATE_TYPE, PALEDGER and CURRENCY. Furthermore, the mapping of all satellite fields as well as data types of the fields for PLIKZ, VRGAR, VERSI, PERDE and GJAHR will be checked. A message will appear only in the case of check errors.

3.6 Read and plan monthly values (standard)

Normally, the COPA interface expects monthly values in 12 consecutive rows of the satellite: the respective quantity/value fields form the columns. In this case, a mapping to the satellite field with the specification of the period has to be available for the component PERDE.

Sorting when reading COPA data: normally it is desired that the rows with COPA data in the satellite are sorted according to the periods. This is normally already taken care of by the SAP BAPI that is called when reading. However, in newer SAP versions this sorting is not always guaranteed (e.g. under HANA). To avoid unwanted results when transferring to the satellite, an additional sorting can be useful (see F1 documentation for the constant MONTH_ACTIVE).

Alternatives to the standard display with one line per period are described in the following two sections.

3.7 Monthly values in columns (read and plan)

Normally, the COPA interface expects the monthly values in 12 consecutive rows of the satellite (with the respective quantity and value fields in columns). Via constant MONTH_ACTIVE a function is activated which allows the display in defined monthly columns: the monthly data of a value field are thereby stored in 12 columns of the satellite table (and only one row). In parallel, other quantity/value fields can be managed with one entry per year.

For this function, twelve fields with the same name have to be created in the associated satellite table, which only differ in the last two digits of the field name: there with mandatory endings "01" to "12". The associated name body (prefix without the last two digits) is then entered for the relevant value and quantity field.

Notice:	If several value/quantity fields are to be managed as period-related fields in this way, the satellite table may become very wide (twelve times the number of quantity/value fields).
	In this case, a representation referred to as "FP mode" in the following section may be useful.

The following figure shows an example of mapping for monthly values in columns:

ZZ_GJAHR	GJAHR	7	R
ZZ_PERDE	PERDE	8	R
ZZ_SALES_	VV010	10	V
ZZ_WERT	VV020	11	V

Figure 3.3: Monthly planning via defined columns

Allevo: COPA

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The satellite field "ZZ_SALES_" is assigned as a prefix to the value field VV010. Case distinction:

- If the field "ZZ_SALES_" exists exactly like this in the satellite, the content of VV010 is expected or entered there.

- Otherwise, the COPA interfaces automatically searches for the fields ZZ_SALES_01 to ZZ_SALES_12 in the satellite to store the respective monthly values.

Of course, it is still possible to restrict which periods are to be worked with in the write/read parameters.

The PERDE period field is NOT relevant from Allevo 4.0 when working with a monthly breakdown.

Sorting

When reading COPA data with monthly values, an additional sorting of the read data by period may be necessary, especially with new SAP versions (in our experience from EHP7). In previous SAP versions, this sequence was ensured by the BAPI used. This setting also has to be made via the constant MONTH_ACTIVE ("value to").

Year/month columns combined

The described function is available for reading and writing (planning). A "mixed operation" with year and month columns is also possible: i.e. parallel working with monthly values in columns as described here and (!) yearly values for other value/quantity fields.

3.8 Process values/quantities line by line ("FP mode")

The option described in the previous section for displaying value/quantity fields in columns leads to very wide satellite tables if several quantity/value fields are to be managed on a period basis (= 12 times the number of fields with monthly display each).

Alternatively, a representation that is also called "FP mode" can be useful: in this case, all quantity/value fields are managed in a uniform period block. Each quantity/value field has its own line: the period block thus contains the data for one quantity/value field each in lines below each other.

| Notice: | In this representation, the quantity/value field is considered equivalent to a posting element such as a cost element or activity type; it is therefore comparable to the structure of satellites that are intended for postings via Allevo FP. In concrete terms, this also directly results in the advantage that the data intended for COPA can also be posted in parallel to other objects via FP (e.g. account and profit center).

Another advantage: this line structure makes it easier to implement calculation functions in the Allevo Master (e.g. distribution of annual value to periods).

Important: this mode was initially only supported for planning. Reading COPA data with display of the results in "FP mode" is only possible from Allevo 3.5.66. |

- Central components in the "FP mode" are the constants FD_ELEMENT and FD_UNIT at the General constants of the COPA interface:

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- FD_ELEMENT describes the columns in the satellite with information on the relevant quantity or value field (with one row for each combination of characteristics).

- Constant FD_UNIT describes the column in the satellite with information about the associated unit (the constant therefore only has to be set when working with quantities).

Both constants only have a meaning in the "FP mode" described here and have the same structure:

- For FD_ELEMENT, the satellite field containing the abbreviation of the relevant COPA quantity/value field is to be entered in the **Value_of** (for FD_UNIT, it is field name for unit specification).

- In FD_ELEMENT, the satellite field is to be entered in the **Value_to** which the associated value or quantity is to be contained (for FD_UNIT it is the unit).

A mapping can be done for month columns (then MONTH_ACTIVE has to be set), as well as a year column. Year values can subsequently be distributed via the distribution table of the Allevo COPA interface.

Here is an example of constant mapping:

| Kostenrechnungskreis | 1000 | Objektart | KX | Satelit | 50 | Schema | 10 |

Allgem. Festwerte

Festwert	Wert von	Wert bis	
ALLEVO_ACTIVE		COFI	
EXRATE_TYPE	P		
FD_ELEMENT	VALUEFIELD	VALUE	
FD_UNIT	UNITFIELD	UNIT	
MONTH_ACTIVE	X		
OP_CONCERN	IDEA		
PALEDGER	B0		
VRGAR	F,D,A	F	

Feldzuordnung

Satelit	Ergebnisbereich	Sort	RWX	
PJAHR	GJAHR	1	X	
PERDE	PERDE	2	R	
VERSION	VERSI	4	X	
BUKRS	BUKRS	5	X	
VKORG	VKORG	6	Z	
KTGRD	SPART	15	X	
KTGRM	MATKL	16	X	
ARTNR	ARTNR	17	X	
	VVIQT ME	19		

Figure 3.4: Mapping for data acquisition via monthly values in "FP mode

Behavior of the COPA interface in this example:

- Here VALUEFIELD is the column in the satellite where the abbreviation of the respective COPA value/quantity field is provided (e.g. "VV010").

- Column VALUE in the satellite should contain the corresponding value or quantity. This could be a yearly value, but here in the example MONTH_ACTIVE is set: Allevo will therefore try to take the content from matching month columns VALUE01 to VALUEV12.

- For quantity postings, UNITFIELD is the satellite field where the name of the respective COPA unit field can be found.

- Column UNIT in the satellite then has to contain the unit itself (i.e. "KG")

Read/write parameters with aggregation

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Via column 'TS' of the read/write parameters, an aggregation of related data records can optionally be performed; the associated indicator is "T": in this, rows with identical characteristic combinations are summed up (analogous to COLLECT in FP). This function exists when writing (transfer to SAP COPA) and when reading data from COPA.

Posting records in FP mode

Which value or quantity field (incl. unit) is to be posted in COPA is automatically determined from those rows of the satellite that carry valid entries in the above fields (see mapping at FD_ELEMENT and, if required, also FD_UNIT). Consequently, no value ('V'), quantity ('Q') and unit ('U') fields may be mapped in table "Field mapping" of the COPA constant maintenance.

If the COPA interface does not find any valid quantities/value fields in FD_ELEMENT at all, no data will be posted to SAP.

Special feature: "empty" data records with data transfer "T

For performance reasons, data can be transferred to COPA in "T" mode, i.e. all plan data are processed simultaneously (see feature "TS" in the read/write parameters). If, in this transfer mode, individual lines of the satellite do not contain a quantity/value field in the field that is set via FD_ELEMENT (i.e. the corresponding field in the satellite is simply empty), then previous entries for the current characteristic combination in COPA are deleted.

This is more or less a cancellation function that automatically takes place in the background!

Notice:	For reasons of traceability, however, data in the satellite should always be complete (and empty data sets should be avoided).

Reading data in FP mode

The constants FD_ELEMENT and FD_UNIT have the same meaning as described above: they control in which columns of the satellite the COPA data should be stored.

Which of the components offered by COPA with value, quantity and units are to be transferred to the satellite is again controlled by the entries in the table "Field assignment". The following abbreviations are reserved for this (see also F4 Help in column RWX):

- E = Read value (FP mode)

- F = Read quantity (FP mode)

- G = Read unit (FP mode)

Since at the end all value/quantity fields are in the same block of the satellite, the mapping no longer contains an assignment to the satellite field. Here is an example:

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Figure 3.5: Activation value field for read data in FP mode

The relevant fields in the satellite result from the two constants described above (FD_ELEMENT and FD_UNIT).

3.9   Post values and quantities with factor

In certain use cases, it may be useful to pass certain value/quantity fields with a factor to SAP. In the simplest case, this could be a sign reversal (corresponds to the factor "-1"). Such a sign reversal can also be useful when summing values (see next section).

For this application, the constant FACTOR was used in previous Allevo versions. This allowed a consistent factor to be assigned to a defined list of value/quantity fields.

From Allevo 4.0, the relevant factor can be assigned individually per value/quantity field in the field assignments of the COPA interface. The following figure shows an example:

3.10   Sum up values into a satellite field

If several COPA fields are assigned to the same satellite field in the mapping of constants, Allevo adds the associated values while reading data from COPA (summation). When working with monthly values in columns, the summation functions are also available (see previous section).

For the summation, it is also useful to interact with constant FACTOR to allow a combination of addition and subtraction (see previous section).

Example: the value fields ERLOS, RABAT and PRABA are placed on a common satellite field. In the constant FACTOR, the discount fields RABAT and PRABA are stored with a negative sign. In this case, the calculation for the associated satellite field would look like this: ERLOS minus RABAT minus PRABA.

3.11   Additional function: Mirroring plan data

Additionally, the COPA interface program allows mirroring two Allevo satellite tables, which are identical in their structure. In doing so, two fields of the satellite table are exchanged with each other and signs of the data related to value fields are switched.

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This function is executed via the button |Mirror Plan Data| in the constant maintenance (see Figure 3.1).

Notice:	Mirroring two tables is recommended if sender-receiver relationships shall be mapped. In table SAT05, for example, there is a data record that represents the credit of sender A (object, field COOBJECT of the satellite table) due to the allocation to receiver B (partner object). When mirroring, a data record of receiver B (object) is thus generated in table SAT06, which shows the debit by the allocation to the sender A (partner object).
	For this purpose, the constants of the COPA interface are to be defined for the source table. Under "Field assignment characteristics" the field COOBJECT of the satellite table as well as the further field, whose contents are to be exchanged with COOBJECT, are to be specified. The field name of the further field is also to be entered in the parameter FD_SENDER of the general constants (section 3.2).
	Mapping with the actual characteristics of the operating concern can be omitted if no further processing by Allevo COPA is required in addition to mirroring.
	The fields whose sign is to be changed during mirroring are now listed under "Field mapping value fields". Here, too, a mapping with the corresponding value fields of the operating concern can be omitted if no further processing into COPA is desired.
	The source and target table need an identical table append. The append has to have a field ZZ_STATUS (NUMC1).

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4   Distribution functions

4.1   Function overview

Planning for COPA may sometimes occur less in detail than desired in the operating concern. In such a case, the COPA interface offers a possibility to distribute planned values/quantities according to self-determined rules. In the following, two distribution functions will be distinguished that are automatically performed by the interface before posting a plan value:

1. Distribution of annual values to periods

    The planning for COPA is often performed based on annual values per value field. In the standard case, entries will be distributed equally to periods. However, it may be desired to specify the distribution to periods (months) individually.

2. Distribution based on any characteristic

    In this case, the distribution of the planned values/quantities may be performed based on any characteristic (e.g. period values to sales days).

Both functions are activated using the general constant DISTRIBUTION:

▪   the „Value of" contains the name of a table that holds the rules for the distribution functions (e.g. about percentage rates)

▪   „Value to" additionally contains a field name prefix. To distribute based on any COPA characteristic, this characteristic additionally has to be marked with „D" in the field assignments.

Note:	A combined approach is possible via various schemes by processing in consecutive steps: e.g. distribution to periods and subsequently to a different characteristic. The result of the first step can be saved with any version in COPA; these data would be read again in the next step and be saved in the satellite for another distribution.

The structure of the additional tables and the related rules will be explained in the two following sections.

4.2   Distribution of annual values to periods

The planning for COPA often occurs based on annual values per value field. In the standard case, entries will be distributed equally to periods. In some cases, however, it may be desired to define the distribution to periods (months) individually. Here, the required distribution keys (distribution curves) are determined automatically with the help of a determination table in SAP; before executing the posting, the period values will be calculated.

For this application, the additional table contains the name of the value field and of further fields with percentages per period. Optionally, you can use up to five characteristics for an individual determination that will be evaluated upon executing the interface.

Basic properties:

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- You can create the table as a client-specific Z-table or as append of a satellite table: in the latter case, it may be possible to update the monthly percentages directly when planning via the Allevo Master (you might need to pay attention to the sequence when saving!)

- The distribution function considers limited period frames; when planning a year completely, the rounding to the exact annual value will be considered in the last period.

- The distribution may be applied with any value or quantity field and for any year.

Table structure for the distribution year to months

To find the respective right distribution, the table has to contain fields with three different contents (please note the naming convention):

- Value Field VF (=Value Fieldname): here you enter the name of a value field that the distribution shall be applied for.

- Characteristic C01 to C05: you may use up to five characteristic fields for the determination of the right distribution. These may involve any characteristics used also in COPA. In the simplest case, only one distribution per value field is intended: no characteristics are necessary then.

- Percentage P01 to P12 (=Percentage per period): period values reflect the desired distribution function. At least the fields P01 to P11 have to be available. It will not be verified whether the percentages per table line result in a sum of 100.

The following figure shows an extract of the table structure as an example.

ZZVF	☐	☐	FIELDNAME	CHAR	30	0	Feldname
ZZC01	☐	☐	/KERN/IPPCOPACHAR…	CHAR	50	0	IPP COPA Merkmal
ZZC02	☐	☐	/KERN/IPPCOPACHAR…	CHAR	50	0	IPP COPA Merkmal
ZZC03	☐	☐	/KERN/IPPCOPACHAR…	CHAR	50	0	IPP COPA Merkmal
ZZC04	☐	☐	/KERN/IPPCOPACHAR…	CHAR	50	0	IPP COPA Merkmal
ZZC05	☐	☐	/KERN/IPPCOPACHAR…	CHAR	50	0	IPP COPA Merkmal
ZZP01	☐	☐		DEC	5	2	
ZZP02	☐	☐		DEC	5	2	
ZZP03	☐	☐		DEC	5	2	
ZZP04	☐	☐		DEC	5	2	
ZZP05	☐	☐		DEC	5	2	

Figure 4.1: Distribution on periods: structure of the table for the distribution function

In this example, the maximum possible five characteristics for the determination are provided (fields ZZ01 to ZZ05). The concrete characteristics of the interface expected there are described in chapter 4.2.2.

Note:	In this example, general data elements are saved with C01, C02 etc. If contents of the fields are known, you will choose appropriate data elements that are also self-explaining to some extent.

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The field names in the table correspond to the abbreviations listed above. Additionally, a „ZZ" is preceding: this prefix can be selected freely: however, it has to be specified in the constant DISTRIBUTION in „Value to".

The table name itself has to be specified in the general constant DISTRIBUTION in „Value from".

Field assignment with constants of the COPA interface

For the interpretation of the presented table, it has to be known which COPA characteristic to look for in column C01, which one in column C02 etc. upon execution of the COPA interface. This decision is made by means of the sort sequence saved in the settings of the COPA interface (column "Sort").

Satellite table	Op. Concern	Sort	RWX
ZZIPP_BUKRS	BUKRS	1	X
ZZIPP_KDGRP	KDGRP	2	X
ZZIPP_PC	PRCTR	3	Z
ZZIPP_SPART	SPART	4	Z
ZZIPP_YEAR	GJAHR	6	X
ZZIPP_PERIO	PERDE	7	

Figure 4.2: Distribution on months: field assignment with sort sequence

The example shows the company code in the sort sequence in position 1; a company code is consequently expected in column 01, customer group KDGRP in column 02 etc.

The sorting number exactly has to match the number entered in the general field mapping (see the corresponding list in Figure 3.1).

Determination Logic

The following example shows the table above with data.

Field	CH1	CH1	CH1	CH1	CH1	Percentage Value Jan	Percentage Value Feb	Percentage Value Mar	Pe
ERLOS	1000	02	0000001015	01		10,00	10,00	5,00	
ERLOS	1000	02	0000001015			10,00	10,00	5,00	
ABSMG	1000	02				10,00	10,00	5,00	
RABAT	1000	02	0000001015			8,00	8,00	8,00	
ERLOS	1000	02	0000001016			10,00	0,00	5,00	
ERLOS	2000					0,00	0,00	0,00	

Figure 4.3: Distribution over months (example data for finding)

The first column shows the relevant value field. Entries were maintained with a maximum of four characteristics of determination (first line).

Upon executing the COPA interface, the table is interpreted in the following way:

- The interface first tries to read one data record across all fields, since five characteristic fields are created in the table.

- Then without the fifth characteristic, without the fourth etc.: up to the first match.

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- If no matching line can be found, the interface will eventually read the line that contains all characteristic fields empty. The percentages in such a line consequently describe the most general distribution (Default Distribution).

- Without any match, a linear distribution will be applied (same procedure without using a distribution table).

If the table is created without fields for characteristics (not even C01), you may enter only one valid line per value field (this corresponds to the already mentioned Default Distribution).

Note:	The parameters can additionally depend on year and version (see section 4.4).

Explanation of the Period distribution

The interface distributes based on percentages entered in the fields P01 to P11. Period 12 is filled with the rest (this prevents rounding errors).

Read-Write-Parameter:

Year	from period	to period	PLIKZ	Version	RWX	T..
2007			1	000		S
2008				000		
2008			1	000	W	T
2009				000		
2009	7	12	1	000	X	S
2010				000		
2010	1	14	1	000	X	T

Figure 4.4: Distribution to months: effects due of period frames

However, it is possible to continue working with a deviating period frame in the write parameters. Examples from Figure 4.4:

- Here, the year 2008 is posted completely (Months 1 to 12, Dec. with remaining amount)

- For the year 2009, only the second half-year is provided: again, the percentages of the belonging periods are used (including the percentage in December, no calculation of remaining amounts is carried out here).

- For the year 2010, postings shall be made with 14 periods: the interface uses the percentages from 01 to 11 according to the distribution table; period 12 again receives the remaining amount, periods 13 and 14 stay on 0.

4.3 Distribution Based on any Characteristic

Planning for COPA can occur less in detail than desired in the operating concern. In this case, it is possible to distribute the planned values/quantities based on any characteristic according to self-determined rules (e.g. period values to sales days).

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This function is also activated by the constant DISTRIBUTION and configured with the aid of an additional table.

To distinguish from the period distribution, the COPA characteristic that shall be used for distributing, additionally has to be marked with "D" (= Distribute) in the column RWX of the field assignments (see Figure 4.5).

General Constants: valid for all Satellites and Schemata			
Constant	Value From	Value to	
DISTRIBUTION	/KERN/IPPSAT24	ZZ	
EXRATE_TYPE	C		
FLD_SENDER	ZZIPP_PC		
OP_CONCERN	S001		
PALEDGER	B0		
VRGAR	F,B,1,2	F	

Field-Mapping:			
Satellite table	Op. Concern	Sort	RWX
ZZIPP_YEAR	GJAHR	1	X
ZZIPP_PERIO	PERDE	2	X
ZZIPP_BUKRS	BUKRS	3	X
ZZIPP_KDGRP	KDGRP	4	X
ZZIPP_PC	PRCTR	5	Z
ZZIPP_SPART	SPART	6	Z
ZZIPP_PLIKZ	PLIKZ	9	X
ZZIPP_VERSN	VERSI	10	
DISTRIBUTE OVER:	VTWEG	11	D

Figure 4.5: Constant settings for distribution based on any characteristic

Structure of the table for the distribution function

The functionality, including the determination rules, is identical to the functions for the distribution year to periods: however, each line of the additional table contains only one percentage value (see Figure 4.6).

Component	RT...	Component type	Data Type	Length	Deci...	Short Description
ZZDF		FIELDNAME	CHAR	30	0	Field Name
ZZVF		FIELDNAME	CHAR	30	0	Field Name
ZZC01		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZC02		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZC03		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZC04		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZC05		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZCD		/KERN/IPPCOPACHAR...	CHAR	50	0	IPP COPA Characteristics
ZZPV			DEC	5	2	Percentage Value

Figure 4.6: Distribution on any characteristic: Structure of the table for the distribution function.

The table for this distribution function requires fields with the following suffix nomenclature; only the last two lines (see Figure 4.6) are compulsively needed.

- CD (= Characteristic Distribution) for the specification of the characteristic that shall be distributed
- PV (= Percentage value) for the corresponding percentage value.

As usual, one can further define dependencies of up to 5 characteristics (C01 to C05) as well as fields for the validity of the distribution criterion (DF= characteristic name in COPA) or of the value field in VF (= Value Field name in COPA).

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Explanation of the distribution

The following example shows the previously described table with data:

ZZDF	ZZVF	ZZC01 ▲	ZZC02 ▲	ZZC03 ▲	ZZC04 ▲	ZZC05 ▲	ZZCD ▲	ZZPV
VTWEG	ABSMG	2009					01	80,00
VTWEG	ABSMG						10	20,00
VTWEG		2010					01	35,00
VTWEG							10	65,00
VTWEG			02				01	0,00
VTWEG							10	100,00

Figure 4.7: Distribution on an arbitrary characteristic: Example data for finding

The following rules apply:

- Column ZZPV contains the desired percentage of the distribution.

- Column ZZFF specifies that a distribution is to be made for feature VTWEG = distribution channel (according to the percentage values in the last column). The distribution channels "01" and "02" are provided according to the entries in column ZZCD.

- Column ZZVF specifies that the content in the quantity field ABSMG is to be distributed individually, but only in 2009: for distribution channel "01" 80% in ABSMG is provided, for distribution channel "10" it is 20%. All other value or quantity fields would therefore be distributed equally, i.e. 50% is allocated to each of the distribution channels "01" and "02".

- For 2010, a general 35% to 65% split is planned, only period 02 is an exception.

- A distribution only takes place if matching entries are found in the table. In the example above, only data for 2009 and 2010 are available for the first criterion "Year", so postings to other years would be made without distribution.

In the example, the distribution channel VTWEG is maintained "completely" as distribution criteria with characteristics "01" and "10" respectively, i.e. there is an entry for both "01" and "10". This "clean" maintenance is recommended. If a criterion is missing, the quantity/value = 0 is posted by default.

4.4 Distribution depending on setclass, year and version

If the additional table is created according to the rules of the distribution in a satellite, the key fields "PJAHR" and „VERSION" may be considered as well; i.e. the distribution itself may be different depending on year and version (the corresponding parameters in the start screen of the COPA interface transaction will then be used for searching).

Data are read in the following order (search is performed until a record is found):

- Reading with "Setclass", "Plan year" and "Version".

- Reading with "Plan Year" and "Version

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- Read only with "Plan Year"

- Read only with "Version

- Read without "Plan Year" and without "version": in this case, the data from the most current year with the highest version will be taken.

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5 Object assignment

Allevo supports six start scenarios for the planning: the cost center, the order, the WBS element, the Profitcenter, the business process and the Allevo own object. A direct start into COPA planning is not possible since potential selectable characteristics are too numerous. For this reason, planning is always performed via the representative object from the selection mentioned before.

> **Note:** We recommend getting started via the Allevo own object type KX, since this access is understandable also for the user (e.g. the object titles can correspond to the actual contents/characteristics of planning). Object type KX is available from version 3.3.

Therefore, it is necessary to create the link between the CO objects of Allevo and the relevant characteristic combinations of the profitability analysis. This is performed in the object assignment table that you open using the button |Object Mapping|.

Figure 5.1: Object assignment in the Allevo COPA interface

The object assignment is, like the constant maintenance, dependent on controlling area, object type, satellite table and schema from the initial screen. In the table, you can now assign a COPA characteristic or a combination of up to three characteristics to the CO objects (object type and number).

> **Notice:** The fields "Characteristic 1" to "Characteristic 3" list the characteristics marked with **Z** in the "Field Assignment" (there in column RWX, see section above).

When running the COPA interface, the relevant objects have to be marked as "Active" (see first column in Figure 5.1). Other object entries are ignored:

- During the read operation, data is read from SAP-COPA only for active characteristic combinations and stored in the satellite under the specified CO object number.

- During the write process, data is read from the satellite and posted to COPA only for the active CO objects.

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6 Calling the COPA interface for reading and posting

6.1 Program start

After starting the Allevo COPA interface program, a start screen appears (s. Figure 2.1), which contains the following selection criteria:

- Controlling area

  Selection of the relevant controlling area

- Object type

  Short description of the respective object type (KS = cost center, OR = order, PR = WBS elements)

- Satellite table

  Selection of the respective satellite table

- Scheme

  Selection of the scheme for which the constants are to be edited or according to which the reference data are to be read or the plan data are to be posted.

- Fiscal year/version

  Important: This information refers to the entries of the satellite table that is to be processed. Here it is not determined in which year and in which version in COPA should be posted (this is determined via the field assignments at the constants to the current schema).

- Only activated objects

  If the check for "Only activated objects" is set, the data is only read or posted for the CO objects selected in the object allocation table (see section 0).

- Delete existing data

  - During the read operation, the satellite table is cleared for the selected combination of entry object(s), year and version <u>before </u>the read data is transferred.

  - **Important:** If the option here is not set when reading the reference data, those records will be retained to whose key no new information has been added.

- Only unmarked (status)

  - If this check is set, the booking process (writing) is performed depending on the status field of the satellite table (see section 6.5).

- Test run

  If this option is set, the data is only fetched from SAP COPA, but not transferred to the satellite table. The test run is ideal for determining whether the data material in the satellite table contains errors or whether data read from COPA can be used.

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- Show data

  A log is generated that shows all read data/postings (can be very extensive if necessary!).

- Output level

  - All messages are collected and displayed at the end of program execution or appended to the log there when called from Allevo. In dialog mode, the "Output level" defines the level from which program messages are to be displayed (e.g. only errors).

6.2   Run as background job

Especially for reading large amounts of data, the COPA interface can also be executed in the background.

In the spool entry for job execution, usually only error messages are output then (see constant SAVE_LOG): this can be used via the SAP job administration for automatic notification by email, if necessary.

6.3   Call directly from Allevo planning transaction

It may be desired that postings are made exactly at the time when the user executes the |Take over plan data| function in the Allevo main program. An automatic call has to be set up for this application. Allevo then directly transfers the necessary selection parameters (such as controlling area, plan year, version, cost center...) and starts the COPA interface.

For the automatic call, two conditions have to be fulfilled on the side of the COPA interface:

- The constant ALLEVO_ACTIVE of the COPA interface has to be active and
- The relevant Allevo layout has to be entered in „Value to". Several entries for the layout (separated by comma) are possible: the COPA interface will be executed only for the layouts named here.

Settings in the Allevo main module for the direct call-up

In the Allevo main module, the constant SATxx_COPA also has to be set to activate the COPA interface (with xx as the number of the satellite). All COPA schemes are executed for which the ALLEVO_ACTIVE constant is active for the current layout.

The COPA interface can also be active for several satellites within a layout via constant SATxx_COPA. The order of processing is determined by the satellite number (e.g. Sat.01, then Sat.02...) or controlled by the Allevo constant ACTIVE_SAT_SORT. This is particularly important in the case of dependencies (e.g. satellites with distribution curves).

The call can additionally be made in the background or via RFC. These functions are activated via the Allevo constant ACTIVE_COPA_PARAM:

- The call in the background improves performance if a very large number of bookings are to be made via the interface. In this case, Allevo does not wait for the interface to finish executing. Error messages are written to a log.

Allevo: COPA

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▪ RFC call: a planner does not always have all the authorizations required for posting in COPA. In such cases, it can be useful to perform the posting via RFC, whereby only the user stored for the RFC destination has to have the necessary authorization.

The COPA data is in a classic satellite table. Here, the communication between the Allevo planning form and the satellite table on the SAP side works in the absolute Allevo standard. In particular, all additional functions in Allevo that are specifically intended for working with satellites are available.

Example:	„Merge" function when reading satellite tables: especially when working with the COPA interface, it can be useful to mix data of two tables. In Allevo, the constant SATxx_MERGEyy is available for this purpose. Example of application: current plan data should be completed regularly by inputs from an external system, while plan values that are already entered in Allevo should be maintained.

▪ For further details, see F1 help for the constants mentioned.

6.4   Adjustments for Allevo initial screen

▪ If COPA planning is carried out via Allevo, then a representative object is often used for the initial screen for Allevo planning (this could be an internal order created for this purpose, for example). In this case, it is of course clearer for the user if a suitable text is already mentioned on the initial screen for Allevo planning (e.g. the associated characteristic in COPA).

Note	In current Allevo versions (from 3.4), you are more likely to use an Allevo object to get started with COPA instead of the internal order as mentioned in the example.

▪ Two functions for the Allevo entry screen are available via the Allevo constant TEXT_OBJTYPE:

• The text (title) in front of the representative initial object is changed: for example, in the initial screen of transaction /ALLEVO/OR, the term "order" is replaced by the text mentioned here.

• The text for the selected initial transaction is changed (e.g. "COPA sales planning" instead of "Orders").

▪ When using Allevo objects, the text for the representative object is determined via the stored Allevo object category (individual entry via the constant TEXT_OBJTYPE is then not required).

6.5   Status field

In the satellite, a status field can be used (field type "CHAR1") to identify lines where plan values have changed: the value **1** should then be entered there. The name of this field has to be entered in the FD_STATUS parameter of the general constants (see section 3.2).

This allows to activate the function „Only unmarked" prior to posting data in the start screen, resulting in only those data records being processed that do not contain a 1 in the status field.

Allevo: COPA

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From the perspective of the planning process, there are thus two options for dealing with the status field of the satellite table:

1. It is simply omitted on the Excel page. Thus, this field is always empty again when the cost center data is updated.

2. The field is actively operated on the Excel page, either by manual entry of the planner or by a formula.

Notice:	If the Allevo COPA interface is called automatically via an Allevo layout, then the use of the status field is determined by the Allevo constant SATxx_COPA (i.e. no COPA constant):
	If an "X" is set there in the **value-to**, the status field is checked.
	Thus, only those lines are updated that do not have an entry in the status column.

6.6 Parallel posting to cost element via Allevo FP

The Allevo module Flexible Planning (FP) allows data in a satellite to be posted to suitable cost or activity types in CO. This can optionally also be done as a co-posting based on the data that was originally entered within COPA planning.

For this application, the "FP mode" of the COPA interface can be advantageous: it stores the data with one line per value field (and associated characteristics) in the satellite. For parallel posting via FP, only an individual determination for the cost type has to be set up for entry per line. This creates the basis for direct processing.

Alternatively without display in FP mode: in a standard display, the value/quantity fields are in columns of the satellite. To process this data, FP has to be able to recognize the relevant cost type for different value fields/columns: in this case, the FP constants FD_QNTY_FIX0 to FD_QNTY_FIX9 or FD_VALUE_FIX0 to FD_VALUE_FIX9 can be helpful.

For details, see the section "Planning across multiple cost elements" in the Allevo FP manual.

Allevo: COPA

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7   Special features of the Allevo COPA interface

7.1   Use of currencies for imputed COPA

Imputed COPA

When handling the currency for plan values, a distinction has to be made between how the values in the satellite table are to be interpreted and in which currency the data is processed when posted to COPA. Relevant keys in the SAP system:

- 10 Company code currency

- 12 Company code currency, Profitcenter evaluation

- B0 Operating concern currency

- B2 ErgBer currency, Profitcenter evaluation

The decisive factor is the COPA setting for the version (see transaction OKEQN). The version can be either company code currency (10) or operating concern currency (B0): both at the same time in one version is not possible, if necessary, separate version have to be used.

If there is no currency information in the satellite table (constant mapping FD_CURRENCY) or in the COPA constant (CURRENCY), it is always assumed that the values in the satellite table are to be interpreted according to the version setting:

- If 10 = company code currency is set, the values of the satellite table are interpreted as values in company code currency. If company codes with different currencies are addressed in the satellite, then the posting is made in the currency of the respective company code.

- If the version setting is "B0", postings are always made in the operating concern currency.

If the values in the satellite table are to display currencies other than the operating concern currency or the respective company code currency, Allevo converts to the respective expected currency before serving COPA. To do this, Allevo has to know which currency is present in the satellite:

- Either by an entry of the currency abbreviation in the constant CURRENCY. This is then valid for the entire satellites, or

- A separate column in the satellite, which is then addressed via FD_CURRENCY. Constant CURRENCY must not be used in this case.

The following variants are available for selection:

If values in the satellite carry currencies other than the operating concern currency or the respective company code currency, Allevo converts to the expected COPA currency. To do this, Allevo has to know which currency is present in the satellite: this is done either by means of a separate column in the satellite, which is then mapped via FD_CURRENCY, or by entering a currency abbreviation in the constant CURRENCY.

Allevo: COPA

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The exchange rate type to be used for the conversion is determined by the constant EXRATE_TYPE (e.g. "M" for standard conversion). If no rate type is defined there, the entry for the plan version in the operating concern is relevant again.

A conversion usually takes place depending on the date: Allevo transfers the first of January of the current planned year for this purpose (applies from Allevo 3.5.25, previously it was the current date).

Multiple currencies

If you want to use several currencies for imputed COPA, this is only possible via separate versions.

Accounting COPA

The operating concern currency is irrelevant for account-based profitability analysis (storage of data in COEP). Data is updated in parallel in the transaction currency, company code currency, and controlling area currency.

The transfer of plan values to SAP has to take place in the controlling area currency; the translation into other currencies takes place automatically in the background (e.g. in object currency).

Special case: both COPA procedures active

Both COPA procedures can be active in the SAP system. If, in this case, Allevo is also to supply both processes with planning data, this is usually done with the help of two separate COPA schemas, created for the same satellite (to avoid double entry). Consequently, the planning data will then be recorded uniformly in controlling area currency or additional conversions will be provided during recording.

Functions when reading:

In case of imputed COPA, data are read via the currency key according to constant PALEDGER (entry in column "Value from":).

- For **B0** or **B2**, the operating concern currency applies;

- For **10** or **12,** the currency of the respective company code applies.

For accounting COPA, (see constant TYPE_OF_PA) it is necessary to specify the so-called "Valuation-Type" according to the entry in column "Value to" for constant PALEDGER.

7.2   Unit for quantity fields

SAP requires the associated unit for posting quantities. This also has to exist as an independent field in the satellite table. This is necessary because the unit is based on the characteristic (usually the article) and not on the quantity field. For example, the sales quantity for screws can be in the unit piece, but that for water in the unit liter. Consequently, it has to be possible to assign a separate unit to each data record.

Allevo: COPA

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7.3   Data formats of the satellite table

It is generally important to ensure that the data formats in the satellite table match the format for the COPA. For example, the key field for Profitcenters is an alphanumeric field with length 10. An entry **4711** in the satellite table can therefore be interpreted differently in the interface than the entry **0000004711**.

Notice:	This format rule is relevant for almost all characteristics, especially for the company code. Furthermore, all value and quantity fields in the satellite table have to be created with the data type DEC and at least two decimal places.

.APPEND	☐	☐	ZZIPPSAT08	STRU	0	0	Append zu sAt08
ZZIPP_PC	☐	☐	PRCTR	CHAR	10	0	Profitcenter
ZZIPP_BUKRS	☐	☐	BUKRS	CHAR	4	0	Buchungskreis
ZZIPP_VKORG	☐	☐	VKORG	CHAR	4	0	Verkaufsorganisation
ZZIPP_PPC	☐	☐	PPRCTR	CHAR	10	0	Partnerprofitcenter
ZZIPP_KDGRP	☐	☐	KDGRP	CHAR	2	0	Kundengruppe
ZZIPP_VTWEG	☐	☐	VTWEG	CHAR	2	0	Vertriebsweg
ZZIPP_KUNDE	☐	☐	KUNNR	CHAR	10	0	Debitorennummer 1
ZZIPP_SPART	☐	☐	SPART	CHAR	2	0	Sparte
ZZIPP_ARTIKEL	☐	☐	ARTNR	CHAR	18	0	Artikelnummer
ZZIPP_WARGRP	☐	☐	MATKL	CHAR	9	0	Warengruppe
ZZIPP_YEAR	☐	☐	GJAHR	NUMC	4	0	Geschäftsjahr
ZZIPP_PERIO	☐	☐	PERBL	NUMC	3	0	Periodenblock
ZZIPP_PLIKZ	☐	☐	PLIKZ	CHAR	1	0	Plan-/Istkennzeichen
ZZIPP_VERSN	☐	☐	VERSN	CHAR	3	0	Version
ZZIPP_ABM_ACT	☐	☐		DEC	15	3	Absatzmenge Ist
ZZIPP_ABM_PLA	☐	☐		DEC	15	3	Absatzmenge Plan
ZZIPP_ABM_ME	☐	☐	UNIT	UNIT	3	0	Unit
ZZIPP_ERLOS_ACT	☐	☐		DEC	15	3	Erlös Ist
ZZIPP_ERLOS_PLA	☐	☐		DEC	15	3	Erlös Plan

Figure 7.1: Example of a COPA append

7.4   SAP derivation rules

The Allevo interface supports the use of derivation rules for characteristics if these are set up in SAP Customizing. When checking derived master data, the SAP BAPI uses the "Date for characteristic derivation in planning" as stored for the version (table field TKEVS- ABLEDA). This has to be taken into account for time-dependent master data (e.g. for ProfitCenter) when these are newly created ("Valid from" has to match).

7.5   Implicit cancellation function

Allevo posts plan data to COPA via BAPI functions that are provided by SAP as an interface to COPA (see list in the next section). This also results in rules for handling and resetting existing plan data, which we will refer to here as the "implicit cancellation function".

Background: The SAP BAPI uses characteristics on "header level" and on "item level". Characteristics used on header level define the general data space where the postings are made on the more detailed item level. All characteristic values on item level, which are not taken along by a new

Allevo: COPA

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posting, are automatically reset (values to zero) within the frame defined by the header level. As a result, COPA contains exactly the results that were generated by posting the last available characteristic combinations.

Example:

- In division 1 and product hierarchy P, articles A1 and A2 were planned in the first posting run (characteristics division and product hierarchy are header characteristics, in Allevo: assignment characteristics).

- In the second posting run, only article 1 is planned in division 1 and product hierarchy P. Consequence: Values for article 2 are zeroed.

- In the next run, posting is done as before, but only division is header characteristic. Consequence: in division 1 everything is deleted that is not article 1 and product hierarchy P (i.e. also the articles from other product hierarchies such as Q, R etc.).

In Allevo, the assignment rules not only decide on concrete characteristics that represent the planning perspective, but also which characteristics are used at the header level. If there are no entries in the satellite table, a characteristic migrated from the header level to the item level (so when a posting is made, any existing postings are overwritten).

The completeness of the characteristic combinations and the maintenance of the assignment table should be observed, especially when calling directly from Allevo Planning.

7.6   Technical background (BAPIs used etc.)

The data of the respective profitability analysis are stored in the following SAP tables (with xxxx as abbreviation of the 4-digit operating concern at the customer):

Area	Calculatory	Accounting
Actual line items	CE1xxxx	COEJ
Plan line items	CE2xxxx	COEP
Totals records result object	CE4xxxx	COSS/COSP

In case of combined profitability analysis, additional tables and auxiliary structures are used in the namespace CE9xxxx.

SAP interfaces used

The Allevo interface uses the following SAP standard BAPIs for reading and writing (scheduling) COPA data. Here is a tabular list

SAP BAPI	Notes
BAPI_COPAQUERY_GETCOST_PLANDAT	Read imputed planning data
BAPI_COPAQUERY_GETCOST_ACTDATA	Read imputed actual data
BAPI_COPAQUERY_GETACC_PLANDATA	read accounting plan data
BAPI_COPAQUERY_GETACC_ACTDATA	read actual accounting data
BAPI_COPAPLANNING_POSTDATA	Write costing and accounting plan data

Allevo: COPA

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BAPI_COPAACTUALS_POSTCOSTDATA	Write imputed actual data (currently not yet activated, if required please coordinate in the Allevo implementation project)

7.7   COPA Production costs/evaluation

The so-called "Evaluation" is a function within the SAP transaction KEPM. It allows, for example, to subsequently add the associated cost of goods manufactured to a sales plan via Allevo (e.g. based on standard cost estimates). In this case, the evaluation has to be set up for plan data and associated versions in SAP Customizing (often only for actual) and relevant characteristics (e.g. quantity specification) has to be filled in COPA.

For details, see SAP transaction KEPM and related setup documentation.

If plan data is transferred via the Allevo interface, SAP Bapi does NOT automatically perform such an evaluation (see e.g. SAPnote 2596902 for this). If necessary, the evaluation has to be done manually via KEPM or via KEGV as a background job (see SAPnote 600122).

7.8   Aggregation of COPA data

The Allevo COPA read function transfers the relevant data to a satellite, i.e. the basis for further planning. Depending on the planning process, it may be useful to carry out further aggregation according to certain characteristics.

- In the simplest case, the built-in aggregation function in Allevo Cockpit should be provided: This aggregation takes place directly when the data is saved to the satellite tables.
- Alternatively, transaction /ALLEVO/AGGR_SATDATA can be called explicitly for this purpose: Then all data in the satellite are aggregated together. This is advantageous if e.g. COPA data are read in several steps with different read/write parameters.

In FP mode of the COPA interface, an aggregation can also be done directly via column 'TS' of the read/write parameters. This function is available when writing (transfer to SAP COPA) and when reading data from COPA. See section 3.8.