

Header Data

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Symptom

This note provides documentation about the Business Add-Ins for the new depreciation calculation.

The system activates the new depreciation calculation after you activate the SAP ECC Extension Financials (EA-FIN) in Release ECC 6.0. If user exits were previously used in the old depreciation calculation to calculate individual (or customer-specific) depreciation values, the system no longer uses these user exits in the calculation. For the individual (or customer-specific) calculation of depreciation using the new depreciation calculation, there are two Business Add-Ins (BAdI) available. However, the documentation for these Business Add-Ins was incomplete until now.

To enable the calculation methods of the old user exits to be adapted to the new Business Add-Ins, this note provides documentation about the existing BAdI methods and a description of the interfaces of these methods.

Other Terms

New depreciation calculation, FAA_DC_CUSTOMER, FAA_EE_CUSTOMER, USER-EXIT

Reason and Prerequisites

The documentation is incomplete.

Background information:

Due to various functional restrictions and legal requirements in some countries, which could not be taken into account in the previous depreciation calculation (or only with restrictions), the depreciation calculation in Asset Accounting was completely redeveloped and delivered with Release ECC 6.0.

From a technical point of view, the depreciation calculation method was changed from a line-item-based process (old depreciation calculation) to a time-interval-based process (new depreciation calculation).

Comparison example - line-item-based to time-interval-based:

Fixed asset with depreciation start January 01, xxxx; 10 years useful life; straight-line depreciation calculation method

Acquisition 1,000 on January 01, xxxx, partial retirement 500 on July 01, xxxx.

Basic formula for depreciation calculation:

- Depreciation = base value x depreciation percentage rate x period factor
- Annual depreciation = total of individual depreciation results

Line-item-based calculation in the old depreciation calculation:

1. Transaction: $1.000 * 10\% * 12 / 12 * (-1) = 100-$
 2. Transaction: $-500 * 10\% * 6 / 12 * (-1) = 25+$
 Annual depreciation = 75-

Time-interval-based calculation in the new depreciation calculation:

1. Time segment from January 01, xxxx to June 30, xxxx
 $1.000 * 10\% * 6 / 12 * (-1) = 50-$
 2. Time segment from July 01, xxxx to December 31, xxxx
 $(1.000 - 500) * 10\% * 6 / 12 * (-1) = 25-$
 Annual depreciation = 75-

Conclusion:

In the old depreciation calculation, additional transactions or changes to the depreciation terms usually only represent corrections to the calculations of all previous results. However, the new depreciation calculation includes all transactions or terms that fall within the same time segment, and accumulate in this segment and are calculated on a period basis. The first acquisition in the example above is initially calculated in the old depreciation calculation entirely with 12/12; whereas in the new depreciation calculation, the acquisition is distributed to both time slots of

the year.

Definition of a time segment (or calculation segment):

A time segment is the time span in periods for which a depreciation amount, revaluation amount or interest amount is to be calculated for each fixed asset and depreciation area. A time segment always includes at least one (calculation) period. The total depreciation for a fixed asset in a depreciation area is the total of the individual depreciation amounts across all time segments of a fiscal year.

A capitalized asset has at least one time segment for each depreciation area in each fiscal year, regardless of whether or not depreciation is to be calculated for the depreciation area in this fiscal year.

Changes to the depreciation terms or transactions may mean that time segments have to be split. Therefore, all transactions of a fiscal year that flow into the same time segment are only processed as a cumulative transaction within the time segment.

A segment split may be required in the following cases (this list is not conclusive):

- For mid-year changes to depreciation terms (time-dependent depreciation terms, change of depreciation phases, shutdown, and so on)
- For transactions that cannot be fully included in existing time segments

A period factor is determined for each segment using the number and weighting of the periods that fall within this time segment. If a time segment includes all periods of a fiscal year, the period factor is 1. Accordingly, the period factor is weighted pro rata for several time segments for each fiscal year and for each segment.

Previously available customer enhancements in the old depreciation calculation:

- AFAR0001 => Enhancement for base value determination
- AFAR0002 => Enhancement for depreciation calculation method
- AFAR0003 => Enhancement for changeover method
- AFAR0004 => Enhancement for calculation of proportional values

Important:

Except for enhancement AFAR0004, all other enhancements are replaced by the relevant implementations in the BADIs of the new depreciation calculation. The enhancement for calculating proportional values is also processed in exit AFAR0004 in future, and existing enhancements are also taken into account in the new depreciation calculation. You do not have to adjust existing implementations. Future scheduled individual calculations of proportional values must continue to be implemented in AFAR0004, as there is still no BADI method available for the new depreciation calculation.

Solution

The implementations of the new depreciation calculation are available in the Implementation Guide (IMG) for Asset Accounting under "Depreciation -> Valuation Methods -> Enhancements -> Program Enhancement for New Depreciation Calculation", or directly in the BADI Builder (transaction SE18).

The Support Packages specified in this note deliver the revised IMG documentation for the Business Add-Ins FAA_DC_CUSTOMER and FAA_EE_CUSTOMER.

Furthermore, examples for the individual FAA_EE_CUSTOMER are defined directly in the BADIs. After you import the relevant Support Packages, you can display these examples in transaction SE18 for the Business Add-Ins FAA_DC_CUSTOMER and FAA_EE_CUSTOMER. Choose "Goto -> Sample Code -> Display" to access the individual example implementations for the relevant method.

Alternatively, you can access the example implementations directly using the classes CL_EXM_IM_FAA_DC_CUSTOMER and CL_EXM_IM_FAA_EE_CUSTOMER.

Documentation:

For the individual calculation of depreciation in the new depreciation calculation, there are two Business Add-Ins available:

- FAA_DC_CUSTOMER
- FAA_EE_CUSTOMER

In technical terms, the new depreciation calculation is divided into two blocks. This consists of the "Segmentation" block and the "Valuation" block. These have the following functions:

- Segmentation
 - Reads the entire configuration (company code, chart of depreciation, and so on)
 - Reads all of the depreciation terms (depreciation keys, period control methods, number of units, revaluation measures, and so on)

- Reads all of the data about the fixed asset (master data, transactions, and so on)
- Generates the time segments
- And so on
- Valuation
 - Determines the base value of the time segment
 - Determines the depreciation percentage rate and depreciation amount of the time segment
 - Checks the positive/negative sign rules and reduces the depreciation amount (if required)
 - And so on

Simply speaking, the complete "environment analysis" takes place in the outer part of the new depreciation calculation (segmentation), whereas the actual final calculation of depreciation for each time segment takes place in the inner part of the new depreciation calculation (valuation).

Accordingly, for the individual calculation of depreciation you have to specify which part of the calculation you want to influence. The BAdI for changing the segmentation phase is `FAA_DC_CUSTOMER`. The BAdI for changing the actual calculation of depreciation is `FAA_EE_CUSTOMER` according to the formula mentioned at the beginning.

1. BAdI `FAA_DC_CUSTOMER`

Methods:

- a) `SET_PARAMETER` -> Set Differing Calculation Parameters
- b) `CHANGE_CALCORDER` -> Change Sequence of Calculation in General
- c) `CHANGE_ROUNDING` -> Change Rounding Specifications
- d) `DEFINE_CHANGEOVER_YR` -> Specify Changeover Year Based on Values at Fiscal Year Start
- e) `DEFINE_CHANGEOVER_YR_AND_PRD` -> Specify Changeover Year and Changeover Period
- f) `DEFINE_SEGMENT_LENGTH` -> Specify Maximum Number of Periods Segment Can Have
- g) `DEFINE_USE_OF_MAX_PERIODS` -> Specify If Calculation Is Made for Each Individual Period
- h) `CHANGE_PROPORTIONAL_VALUES_ERP` -> Currently not supported

2. BAdI `FAA_EE_CUSTOMER`

Methods:

- a) `SET_BASE_VALUE` -> Determination of Base Value of Segment
- b) `SET_PERCENT_AMOUNT` -> Determination of Depreciation Percentage Rate and Depreciation Amount of Segment
- c) `SET_MINVAL_VIRTAREA` -> Determination of Cutoff Value for Derived Areas of Segment

Detailed description of individual methods:

For detailed information about each of the interface structures and interface references available in the BAdI, see the end of this note.

1. `FAA_DC_CUSTOMER->SET_PARAMETER`

Description:

You can use this enhancement to change or replace the following depreciation terms.

- `BASEVAL_FACTOR` (Factor for Reducing the Base Value)
- `BASEVAL_KEY` (Base Value)
- `BASEVAL_FACT_ADD` (Reduction of Base Value for Individual Asset)
- `BASEVAL_STATED` (External Base Value)
-> set using this BAdI implementation only
- `PERCENT_STATED` (External percentage rate or percentage rate from number or units/total number of units, depending on percentage rate key used)
- `PERCENT_FACTOR` (Multiplication factor for declining-balance method of depreciation)
- `PERCENT_KEY` (Percentage rate key)
- `AMOUNT_FACTOR` (Correction factor of depreciation amount to be calculated, resulting from usage of multiple-shift operation and shutdown)

- MINVAL_PERCENT (Scrap value percentage rate/cutoff value percentage rate)
- MINVAL_STATED (Scrap value)
- MINVAL_TOLERANCE (Tolerance for calculation of minimum value)
-> set using this BAdI implementation only
- MINVAL_RNDMETHOD (Rounding method for scrap value or cutoff value)
- MINVAL_RNDPLACE (Relevant decimal places for rounding the scrap value)
- MINVAL_RNDDECIM (Number of decimal places for rounding scrap value)
- MINVAL_KEY (Indicator to control whether cutoff value key is used for derived depreciation area)
-> set using this BAdI implementation only
- MINVAL_PERC_ADD (Additional scrap value percentage rate valid from start of following year)
-> set using this BAdI implementation only
- MINVAL_STATED_ADD (Additional amount-based scrap value valid from start of following year)
-> set using this BAdI implementation only
- ROUNDING_OFF (Indicator that can be used to deactivate rounding of the calculated result)
-> set using this BAdI implementation only
- CHECK_AMOUNT (Separate net book value check for acquisitions - prior-year acquisitions and current-year acquisitions)
-> set using this BAdI implementation only

In the import table IT_PARAMETER, the current depreciation terms are available for each segment. In the return table CT_PARAMETER, you should only add entries for segments of IT_PARAMETER that you want to change. You do not have to add entries to CT_PARAMETER if they are the same as the entries in IT_PARAMETER.

The implementation for SET_PARAMETER is called in the method _PARAMETER_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

None.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- ITS_HLPSEG (type FAA_DC_TS_HLPSEG)
- IT_PARAMETER (FAA_EE_T_PARAMETER)

Return values:

- CT_PARAMETER (FAA_EE_T_PARAMETER)

2. FAA_DC_CUSTOMER->CHANGE_CALCORDER

Description:

You can use this method to change the predefined calculation sequence for individual time segments. The current calculation sequence is contained in the import table ITS_CALCORDER. The table has an entry for each time segment, depreciation area and value type. You must then set the changed sequence in the export table CTS_CALCORDER. The tables ITS_CALCORDER and CTS_CALCORDER must have the same number of entries. This means that CTS_CALCORDER also requires an entry for each time segment. It is insufficient to add only the changed entries from ITS_CALCORDER to CTS_CALCORDER.

To change the sequence of the calculation, you have to adjust the sequence number of the calculation sequence (field SEQNO). The time segments are processed within the depreciation calculation in the sequence "SEQNO ascending".

The implementation for CHANGE_CALCORDER is called in the method _CALCORDER_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

None.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- ITS_CALCORDER (FAA_EE_TS_CALCORDER)

Return values:

- CTS_CALCORDER (type FAA_EE_TS_CALCORDER)

3. FAA_DC_CUSTOMER->CHANGE_ROUNDING

Description:

You can use this enhancement to define individual rounding settings for each value type. The current rounding settings for each value type are available in the structure CS_ROUNDING as soon as the method is called.

Value types available (CS_ROUNDING-AMOUNT_TYPE):

C -> Revaluation using index series
A -> Revaluation using index series by age
I -> Inflation
N -> Ordinary depreciation
S -> Special tax depreciation
Z -> Interest
1 -> Enhancement value type 1
2 -> Enhancement value type 2
3 -> Enhancement value type 3

You can change the following parameters in the structure CS_ROUNDING:

- a) VALUE: Defines which value is rounded
 - V -> Rounding of net book value
 - A -> Rounding of depreciation amount
- b) METHOD
 - 0 -> Arithmetic rounding
 - 1 -> Round up
 - 2 -> Round down
- c) PLACE: Specifies the number of decimal places the value is rounded to
- d) DECIMALS: Number of digits for rounding in depreciation calculation

The implementation for CHANGE_ROUNDING is called in the method _ROUNDING_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

None.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)

Return values:

- CS_ROUNDING (type FAA_EE_S_ROUNDING)

4. FAA_DC_CUSTOMER->DEFINE_CHANGEOVER_YR

Description:

You can use this SAP enhancement to set the changeover year of an asset in a depreciation area using individual changeover methods of a depreciation key. The changeover year is used in the depreciation calculation to determine the time at which phase 1 of the depreciation key changes to phase 2.

You can set or change the changeover year of a depreciation area using the parameter CD_CHANGEOVER_YR.

This enhancement replaces the enhancement AFAR0003 in the old depreciation calculation (EXIT_SAPLAFAR_003).

The implementation for DEFINE_CHANGEOVER_YR is called in the method _HLPSEG_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

The changeover method of the depreciation key must be provided for a customer enhancement (changeover methods X, Y or Z).

The changeover year of the depreciation area must be initial.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- IS_HLPSEG (type FAA_DC_S_HLPSEG)

Return values:

- CD_CHANGEOVER_YR (type FAA_EE_FYEAR)

5. FAA_DC_CUSTOMER->DEFINE_CHANGEOVER_YR_AND_PRD

Description:

You can use this SAP enhancement to set the changeover year and the mid-year changeover period of an asset in a depreciation area using individual changeover methods of a depreciation key. The changeover year and the changeover period are used in the depreciation calculation to determine the time at which phase 1 of the depreciation key changes to phase 2.

The changeover year and the changeover period of a depreciation area are defined using

the parameters CD_CHANGEOVER_YR (year) and CD_CHANGEOVER_PRD (period).

This enhancement replaces the enhancement AFAR0003 in the old depreciation calculation (EXIT_SAPLAFAR_003).

The implementation for DEFINE_CHANGEOVER_YR_AND_PRD is called in the method GET_CO_YR_AND_PRD_RULE_XYZ of the class CL_FAA_DC_SEGMENTS_SERVICES.

Prerequisite:

The changeover method of the depreciation key must be provided for a customer enhancement (changeover methods X, Y or Z).

The changeover year of the depreciation area must be initial.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- IS_HLPSEG (type FAA_DC_S_HLPSEG)

Return values:

- CD_CHANGEOVER_PRD (type UMPER)
- CD_CHANGEOVER_YR (type UMJAR)

6. FAA_DC_CUSTOMER->DEFINE_SEGMENT_LENGTH

Description:

You can use this enhancement to define the maximum number of periods that a (time) segment can have. If, for example, you want to determine a base value for each quarter (or for each half-year, month, and so on), the underlying segmentation of the depreciation calculation may not be detailed enough. To define the maximum segment length to 3 periods (equal to one quarter), you have to set the parameter CD_SEGMENT_LENGTH accordingly (in this example, to the value 3). The depreciation calculation would then generate at least 4 segments in the initial example (periods 1 - 3, 4 - 6, 7 - 9, 10 - 12). This means that, after each quarter, you would be able to determine the base values for the relevant start of quarter.

The implementation for DEFINE_SEGMENT_LENGTH is called in the method _HLPSEG_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

None.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- IS_HLPSEG (type FAA_DC_S_HLPSEG)

Return values:

- CD_SEGMENT_LENGTH (type FAA_DC_RANGE_LENGTH)

7. FAA_DC_CUSTOMER->DEFINE_USE_OF_MAX_PERIODS

Description:

You can use this enhancement so that the depreciation calculation generates the maximum number of time segments or calculation segments for this depreciation area. Implicitly, this means that a depreciation calculation is executed for each individual period.

To generate the maximum number of time segments for each depreciation area, you have to set the parameter CB_USE_MAX_PERIODS. When you set the parameter CB_USE_MAX_PERIODS in the depreciation area, the system generates the maximum number of segments, not only within a specific time period.

If you use depreciation to the day, the parameter CB_USE_MAX_PERIODS is not useful and should not be set.

The implementation for DEFINE_USE_OF_MAX_PERIODS is called in the method _HLPSEG_CALL_BADI of the class CL_FAA_DC_SEGMENTS.

Prerequisite:

None.

Import parameters:

- IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)
- IS_HLPSEG (type FAA_DC_S_HLPSEG)

Return values:

- CB_USE_MAX_PERIODS (type BOOLEAN)

8. FAA_DC_CUSTOMER->CHANGE_PROPORTIONAL_VALUES_ERP

Description:

To calculate the individual accumulated depreciation upon retirement of the asset, continue to use the enhancement project AFAR0004 (function module EXIT_SAPLAFAR_004). You can access this enhancement in the Implementation Guide (IMG) for Asset Accounting under "Depreciation -> Valuation Methods -> Enhancements -> Develop Enhancement for Calculating Proportional Values".

9. FAA_EE_CUSTOMER->SET_BASE_VALUE

Description:

You can use this method to set the base values of time segments individually. You can use the import structure ISX_CDATA to access the time segment being processed, as well as all calculation results currently known for this segment.

This enhancement replaces enhancement AFAR0001 in the old depreciation calculation (EXIT_SAPLAFAR_001).

The calculated base values of the time segment being processed must be filled in the following fields of the structure CS_CALCDATA:

- BASEVALUE_PREV = Base value - prior-year acquisition (this is required for the subsequent calculation of proportional values for a fixed asset retirement)
- BASEVALUE = Base value - prior-year acquisition + base value - current-year acquisition
- BASE_ADD_PREV = Additional base value for calculating revaluations and inflation for prior-year acquisition (this is required for the subsequent calculation of proportional values for a fixed asset retirement)
- BASE_ADD = Additional base value for calculating revaluations and inflation

The additional base values BASE_ADD and BASE_ADD_PREV are used as the basis for calculating AM_ADD and AM_ADD_PREV in the methods CL_FAA_EE->PERCENT_INFL_CALC and CL_FAA_EE->PERCENT_REVL_CALC.

You can define a different or individually specified base value key (BASEVAL_KEY) in the method SET_PARAMETER of the BAdI FAA_DC_CUSTOMER.

The implementation for SET_BASE_VALUE is called in the method _BASEVAL_BADI_CALC of the class CL_FAA_EE.

Prerequisite:

The base value within the multilevel method of a depreciation key must be provided for a customer enhancement (base values ZA, ZB, ZZ).

From a technical point of view, this is the field BASEVAL_KEY of the internal table T_PARAMETER in the import structure ISX_IDATA.

Import parameters:

- ISX_IDATA (type FAA_EE_SX_IDATA)
- ISX_CDATA (type FAA_EE_SX_CDATA)

Return values:

- CS_CALCDATA (type FAA_EE_S_CALCDATA)
=> Fields BASEVALUE_PREV, BASEVALUE, BASE_ADD_PREV, BASE_ADD

10. FAA_EE_CUSTOMER->SET_PERCENT_AMOUNT

Description:

You can use this method to set the depreciation percentage rate and the depreciation amount of a time segment individually. You can use the import structure ISX_CDATA to access the time segment being processed, as well as all calculation results currently known for this segment.

This enhancement replaces enhancement AFAR0002 in the old depreciation calculation (EXIT_SAPLAFAR_002).

The calculated results of the time segment being processed must be filled in the following fields of the structure CS_CALCDATA:

- AMOUNT = Depreciation amount
- AMOUNT_PREV = Depreciation amount - prior-year acquisition (this is required for the subsequent calculation of proportional values for a fixed asset retirement)
- PERCENT = Depreciation percentage rate

You can define a different or individually specified percentage rate key (PERCENT_KEY) in the method SET_PARAMETER of the BAdI FAA_DC_CUSTOMER. This may be required to pass on percentage rates from the multilevel method or unit-of-production method of depreciation to the methods of the BAdI FAA_EE_CUSTOMER, which are not filled in such cases when using individual algorithms (due to PERCENT_KEY 'X', 'Y' or 'Z').

The implementation for SET_PERCENT_AMOUNT is called in the method _PERCENT_BADI_CALC of the class CL_FAA_EE.

Prerequisite:

The depreciation method within the base method of a depreciation key must be provided for a customer enhancement (depreciation methods X, Y or Z).

From a technical point of view, this is the field PERCENT_KEY of the internal table T_PARAMETER in the import structure ISX_IDATA.

Import parameters:

- ISX_IDATA (type FAA_EE_SX_IDATA)
- ISX_CDATA (type FAA_EE_SX_CDATA)

Return values:

- CS_CALCDATA (type FAA_EE_S_CALCDATA)
=> fields AMOUNT, AMOUNT_PREV, PERCENT

11. FAA_EE_CUSTOMER->SET_MINVAL_VIRTAREA

Description:

You can use this method to define the individual cutoff values for derived depreciation areas. You can use the import structure ISX_CDATA to access the time segment being processed, as well as all calculation results currently known for this segment.

The calculated results of the time segment being processed must be filled in the following fields of the structure CS_VIRTDATA:

- MINVALUE = Minimum value or cutoff value of derived area
- MINVALUE_PREV = Minimum value or cutoff value of derived area - prior-year acquisition

Prerequisite:

None.

Import parameters:

- ISX_IDATA (type FAA_EE_SX_IDATA)
- ISX_CDATA (type FAA_EE_SX_CDATA)

Return values:

- CS_VIRTDATA (type FAA_EE_S_VIRTDATA)
=> fields MINVALUE, MINVALUE_PREV

Use of customer-specific or asset-specific data that is not contained in the standard tables - combination of BAdI methods:

The inner part of the depreciation calculation (valuation) cannot access asset-specific data. Strictly speaking, the valuation part is only a "calculator" for determining the multiplication result from the base value, percentage rate and period factor. Asset-specific information - such as the asset number or asset class - is no longer required for this. All of the data and values required for the calculation already exist.

If you want to incorporate customer-specific or asset-specific parameters into the calculation, this information cannot be determined in the BAdI FAA_EE_CUSTOMER because the required data (for example, company code or asset number) is not available here.

In these cases, a combination of the relevant methods for the BAdI FAA_EE_CUSTOMER and the method SET_PARAMETER for the BAdI FAA_DC_CUSTOMER provides the correct result. In the method SET_PARAMETER, you can use the object reference IO_HANDLE to access all asset data. This information can then be used to read customer-specific tables. You can use the fields BASEVAL_STATED and PERCENT_STATED to pass on the individually calculated base value (BASEVAL_STATED) and the depreciation percentage rate (PERCENT_STATED) to the calculation part of the depreciation calculation.

However, a base value calculated in the method SET_PARAMETER is not automatically used to calculate the depreciation. If you use customer-specific base values or depreciation percentage rates, you must continue to use the method SET_BASE_VALUE SET_PERCENT_AMOUNT to explicitly set the base value for the depreciation calculation. This type of implementation would use the fields BASEVAL_STATED and/or PERCENT_STATED for the calculation.

Detailed description of the main interfaces (structures, references):

Note the following: For the example implementations of the BAdI, use the access to the relevant interfaces as an example.

1. IO_HANDLE (type FAA_DC_SEGMENT_HANDLE)

Reference for the class CL_FAA_DC_SEGMENTS

This reference allows access to the existing tables and parameters of the class CL_FAA_DC_SEGMENTS. You can use this reference to access the required asset information and configuration information within the BADI FAA_DC_CUSTOMER.

2. HLPSEG (type FAA_DC_TS_HLPSEG)

The internal table MTS_HLPSEG and the import structure IS_HLPSEG in the BAdIs contain all of the relevant basis information for segment generation. For each of the time intervals calculated, one entry is generated in MTS_HLPSEG for each area and each value type. All consecutive periods containing the same segment information are summarized in one segment, which is "compounded" by the relevant from-period and to-period. As soon as a new time interval is to be generated, the system creates the relevant number of segments. In the example described at the start, one segment exists (for each value type and depreciation area) after the first acquisition posting, and this segment is valid from period 1 to period 12. After the retirement in period 7, this segment is split into two segments (for each value type and depreciation area). The first segment is valid for period 1 to 6; the second segment is valid for period 7 to 12. The relevant period factor resulting from this is defined in the field PERFACTOR of the structure CALCDATA.

- FYEAR (old depreciation calculation: GJAHR)
Fiscal year
- AREA (old depreciation calculation: AFABE)
Depreciation area
- AMOUNT_TYPE (old depreciation calculation: AFATYP)
Value type
C -> Revaluation using index series
A -> Revaluation using index series by age
I -> Inflation
N -> Ordinary depreciation
S -> Special tax depreciation
Z -> Interest
1 -> Enhancement value type 1
2 -> Enhancement value type 2
3 -> Enhancement value type 3
- PERIOD_TO (old depreciation calculation: BISPERS)
To-period of calculation
- PERIOD_FROM
From-period of calculation
- PERIODS (old depreciation calculation: PERFY)
Number of periods in fiscal year
- PERIODS_SHORT_FY (old depreciation calculation: PERFY_GJ)
Number of periods in shortened fiscal year
- DEPR_KEY (old depreciation calculation: AFASL)
Depreciation key
- PHASE (old depreciation calculation: PHASE)
Depreciation phase (defined in the depreciation key)
- START_DATE (old depreciation calculation: AFABG)
Start date of calculation
- START_PRD
Start period of calculation
- START_YR
Fiscal year in which calculation begins
- USEFUL_LIFE (old depreciation calculation: NDJAR, NDPERS)
Useful life in periods
- EXP_LIFE (old depreciation calculation: NDABJ, NDABP)
Expired useful life in periods at start of fiscal year
- EXP_LIFE_SEG
Expired useful life within a period interval
- EXP_LIFE_NEW
Expired useful life in periods from changeover year
- AGE_INDEX (old depreciation calculation: ALIND)
Index series for replacement values by age
- RPLCMNTVAL_INDEX (old depreciation calculation: WBIND)
Index series for replacement values
- REVALTN_KEY (old depreciation calculation: J_1AARVKEY)
Revaluation key
- INVSUPPORT_KEY (old depreciation calculation: INVSL)
Investment support key
- SCRAPVALUE (old depreciation calculation: SCHWR)

Asset scrap value

- SCRAPVALUE_PRCTG (old depreciation calculation: SCHRW_PROZ)
Scrap value as percentage of APC
- NEG_VALUES (old depreciation calculation: XNEGA)
Indicator: Negative values allowed
- CHANGEOVER_YR (old depreciation calculation: UMJAR)
Depreciation key for the changeover year
- CHANGEOVER_PRD (old depreciation calculation: UMPER)
Changeover period of depreciation key
- CHANGEOVER_IND (old depreciation calculation: UMSTM)
Indicator for changeover on exact day or year
- VAR_DEP_PORTION (old depreciation calculation: APROP)
Variable depreciation portion
- SHIFT_FACT (old depreciation calculation: MSFAK)
Multiple-shift factor for multiple shift operation
- IS_SHUTDOWN (old depreciation calculation: XSTIL)
Asset shutdown
- ASSETCLASS (old depreciation calculation: ANLKL)
Asset class
- CAP_DATE (old depreciation calculation: AKTIV)
Asset capitalization date
- INITIAL_ACQ (old depreciation calculation: ZUGDT)
Asset value date of the first posting
- INITIAL_ACQ_YR (old depreciation calculation: ZUJHR)
Fiscal year in which first acquisition was posted
- INITIAL_ACQ_PRD (old depreciation calculation: ZUPER)
Period in which first acquisition was posted
- ORIG_ACQ_DATE (old depreciation calculation: AIBDT)
Original acquisition date of AuC/ transferred asset
- USAGE_IMPACT_IND (old depreciation calculation: MSFAKR)
Influence of multiple-shift factor or shutdown
- SORT_INDICATOR
Auxiliary indicator for determining calculation sequence
- MULTI_LEVEL_INDX
Index of entry used from step table
- CUTOFF_VALUE_INDX
Index of entry used from cutoff value table
- IGNORE_MEMVAL
Indicator: Ignore memo value
- HAS_TDDP
Asset has time-dependent valuation parameters in ANLBZA
- TO_DATE_OF_TDDP
Validity end date time-dependent depreciation parameter interval
- GRP_ASSET_ASSGND (old depreciation calculation: ANLGR, ANLGR2)
Group asset is assigned
- USE_USAGE_DATA
Consider usage data The indicator is set if the relevant phase in the depreciation key is to consider shutdown or multiple-shift use.
- RANGE_LENGTH
Initial interval length in periods for segment generation
- CALC_INFLATION
Perform inflation calculation
- CALC_PERFORM
Calculate values
- RECALC_PERFORM
Repeat calculation (not used)
- CALC_END_REACHED
End of useful life reached within period interval (obsolete)

- **USE_ALIGNMENT**
Generate same period intervals for value types/areas
- **USE_MAX_PERIODS**
Perform calculations for each individual period
- **USE_DAYS** (old depreciation calculation: XDAILY)
Depreciation calculation to exact day
- **FIRST_DAY_IN_YR**
Date of first day of fiscal year
- **LAST_DAY_IN_YR**
Date of last day of fiscal year
- **IS_SHORTFISCYEAR**
Indicator: Shortened fiscal year
- **IS_BEHIND_UL**
Period interval is after end of useful life
- **AMOUNT_FACTOR**
Correction factor for multiple-shift operation or shutdown
- **USE_EXP_LIFE_NEW**
Calculate useful life starting from changeover year
- **CURRENCY** (old depreciation calculation: WAERS)
Currency Key
- **BASEVAL_KEY** (old depreciation calculation: BEZWKZ)
Base value indicator
- **BASE_ADD_KEY**
Additional base value indicator
- **PERCENT_KEY**
Calculation method indicator
- **PERCENT_STATED**
External percentage rate
- **AREAREF**
Initial screen for reading assets configuration via dep. area
- **KEYREF**
Access to depreciation key
- **INFLATIONREF**
Inflation Customizing

3. **CALCDATA (type FAA_EE_TS_CALCDATA)**

-> Current calculation results

The table **MTS_CALCDATA** contains the calculation results of the previous calculations. The table **MT_PARAMETER** contains exactly one table row for each segment to be processed. This table row is valid for this segment and can be used. The table contains the following fields:

- **FYEAR** (database field: GJAHR)
Fiscal year
- **AREA** (database field: AFABE)
Depreciation area
- **CURR_TYPE** (old depreciation calculation: CURTP)
Currency Type
- **AMOUNT_TYPE** (old depreciation calculation: AFATYP)
Value type
C -> Revaluation using index series
A -> Revaluation using index series by age
I -> Inflation
N -> Ordinary depreciation
S -> Special tax depreciation
Z -> Interest
1 -> Enhancement value type 1
2 -> Enhancement value type 2
3 -> Enhancement value type 3
- **PERIOD_TO** (old depreciation calculation: BISPER)
To-period of calculation
- **PERFACTOR**
Period factor of time segment being processed If the segment includes a complete fiscal year, the period factor is 1. For a time segment that has 3 to 12 calculation periods according to 3/12 (0.25).

- PERCENT
Percentage rate
 - BASEVALUE
Base value
 - BASEVAL_PREV
Base value - prior-year acquisition
 - BASE_ADD
Additional base value revaluation
 - BASE_ADD_PREV
Additional base value revaluation prior-year acquisition
 - MINVALUE
Minimum value or cutoff value
 - MINVAL_PREV
Minimum value or cutoff value - prior-year acquisition
 - MINVAL_PERC_USED
Indicator: Cutoff value was calculated
 - NO_MINVAL
Indicator: Calculation below net book value of zero
 - NETVALUE
Net book value
 - NETVAL_PREV
Net book value - prior-year acquisition
 - SUM_APC
Total APC
 - SUM_APC_PREV
Total APC - prior-year acquisition
 - AMOUNT
Depreciation amount
 - AMOUNT_PREV
Prior-year acquisition depreciation amount
 - AM_ADD
Additional depreciation amount - ordinary depreciation revaluation
 - AM_ADD_PREV
Additional depreciation amount - ordinary depreciation revaluation - prior-year acquisition
 - SIGN
+/- sign depreciation amount in segment being processed
+ Only positive values and zero allowed
- Only negative values and zero allowed
* All values allowed
 - AMOUNT_REDUCED
Indicator: Depreciation amount was reduced
 - PERSEG_REDUCED
Number of periods with depreciation in a time segment
 - AMOUNT_SKIPPED
Indicator: Depreciation amount is skipped
4. **PARAMETER (type FAA_EE_T_PARAMETER)**
-> Data for calculation of depreciation amounts

The table MT_PARAMETER contains the required parameters for calculating the depreciation amounts. The table MT_PARAMETER contains exactly one table row for each segment to be processed. This table row is valid for this segment and can be used. The table contains the following fields:

- FYEAR (database field: GJAHR)
Fiscal year
- AREA (database field: AFABE)
Depreciation area
- AMOUNT_TYPE (old depreciation calculation: AFATYP)
Value type
C -> Revaluation using index series
A -> Revaluation using index series by age
I -> Inflation
N -> Ordinary depreciation
S -> Special tax depreciation
Z -> Interest

- 1 -> Enhancement value type 1
- 2 -> Enhancement value type 2
- 3 -> Enhancement value type 3

- PERIOD_TO (old depreciation calculation: BISPERS)
To-period of calculation
- BASEVAL_KEY (old depreciation calculation: BEZWKZ)
Base value
- BASE_ADD_KEY
Additional base value key for calculating depreciation revaluation
- BASEVAL_MAX (old depreciation calculation: MBZWRT)
Maximum base value (base value key '05')
- BASEVAL_FACTOR (old depreciation calculation: KGPROZ)
Factor for reducing the base value
- BASEVAL_FACT_ADD (old depreciation calculation: BZWPRZ)
Reduction of base value for individual asset
- BASEVAL_STATED
External base value (to be set externally using the BAdI FAA_EE_CUSTOMER)
- PERCENT_KEY (old depreciation calculation: AFAMET)
Percentage rate key
- PERCENT_STATED (old depreciation calculation: AFPROZ or STZAHN/GSTZAHN)
External percentage rate or percentage rate from number or units/total number of units, depending on percentage rate key used
- PERCENT_FACTOR (old depreciation calculation: DEGFAK)
Multiplication factor for declining-balance depreciation
- PERCENT_MAX (old depreciation calculation: MAXPRZ)
Maximum depreciation percentage rate for declining-balance depreciation
- PERCENT_MIN (old depreciation calculation: MINPRZ)
Minimum depreciation percentage rate for declining-balance depreciation
- PERCENT_ROUND (old depreciation calculation: PROZST)
Number of decimal places that depreciation percentage rate is rounded to
- AMOUNT_FACTOR (old depreciation calculation: APROP / MSFAK / XSTIL)
Correction factor of depreciation amount to be calculated, resulting from usage of multiple-shift operation and shutdown
- AMOUNT_MAX (old depreciation calculation: MAFWRT)
Maximum depreciation amount allowed
- USE_YEAR_AMOUNT (old depreciation calculation: XKUMU)
Cumulates maximum amount or annual value. Specifies whether the maximum amount for the depreciation refers to the accumulated depreciation or the annual depreciation.
- SKIP_AMOUNT (old depreciation calculation: XNAAUS / XZIAUS)
No ordinary depreciation with special depreciation/no interest if there is no depreciation planned
- CHECK_AMOUNT
Separate net book value check for acquisitions - prior-year acquisition and current-year acquisition (to be set externally using the BAdI FAA_DC_CUSTOMER)
- MINVAL_PERCENT (old depreciation calculation: SCHRW_PROZ / AHPROZ)
Scrap value percentage rate/cutoff value percentage rate
- MINVAL_STATED (old depreciation calculation: SCHRW)
Scrap value
- MINVAL_MEMO (old depreciation calculation: ERWRT)
Memo value
- MINVAL_RNDMETHOD
Rounding method for scrap value or cutoff value
0 -> Arithmetic rounding
1 -> Round up
2 -> Round down
- MINVAL_RNDDECIM
Number of decimal places for rounding scrap value
- MINVAL_RNDPLACE
Relevant decimal places for rounding the scrap value
- SUBTRACT_MINVAL (old depreciation calculation: XSCHRO)
Indicator to control whether the minimum value is deducted from the base value; that is, taken into account from the start of the depreciation phase for the asset.

- **NO_MINVAL** (old depreciation calculation: XUNTNL)
Indicator for base method to control whether or not a depreciation below the net book value of zero is allowed
- **MINVAL_TOLERANCE**
Tolerance for calculation of minimum value (set externally using the BAdI FAA_DC_CUSTOMER)
- **MINVAL_KEY**
Indicator to control whether the cutoff value key is used for the derived depreciation area (set externally using the BAdI FAA_DC_CUSTOMER)
- **MINVAL_PERC_ADD**
Additional scrap value percentage rate valid from start of following year (set externally using the BAdI FAA_DC_CUSTOMER)
- **MINVAL_STATED_ADD**
Additional amount-based scrap value valid from start of following year (set externally using the BAdI FAA_DC_CUSTOMER)
- **ROUNDING_OFF**
Indicator that can be used to deactivate rounding of the calculated result (set externally using the BAdI FAA_DC_CUSTOMER)

5. **TIMESEG (type FAA_EE_T_TIMESEG)**

-> Amounts posted and depreciation amounts of the current fiscal year

The table **T_TIMESEG** contains the posted asset transactions beginning with the time segment being processed. These amounts are available in the database table **ANEP** and usually correspond to the field **ANEP-ANBTR**.

For postings with (proportional) value adjustments (for example, gross acquisition, retirement, intracompany transfer), these are stored in the database table **ANEA**.

Postings to fixed assets must be assigned to the current fiscal year or previous fiscal years depending on the transaction type. This is determined by the transaction type used, which is controlled as a current-year acquisition transaction type or prior-year acquisition transaction type.

The link between **ANEP** amounts and **ANEA** amounts, and the table **T_TIMESEG**, is as follows:

- **FYEAR** (database field: **GJAHR**)
Fiscal year
- **AREA** (database field: **AFABE**)
Depreciation area
- **CURR_TYPE** (old depreciation calculation: **CURTP**)
Currency Type
- **AMOUNT_TYPE** (old depreciation calculation: **AFATYP**)
Value type
C -> Revaluation using index series
A -> Revaluation using index series by age
I -> Inflation
N -> Ordinary depreciation
S -> Special tax depreciation
Z -> Interest
1 -> Enhancement value type 1
2 -> Enhancement value type 2
3 -> Enhancement value type 3
- **PERIOD_TO** (old depreciation calculation: **BISPER**)
To-period of calculation
- Values with reference to the current fiscal year
CUR-
 - **APC** (database field: **ANEP-ANBTR** [Current-year acquisitions])
Acquisition and production costs
 - **REVL** (database field: **ANEA-AUFWL** [Current-year acquisitions])
Revaluation of replacement value
 - **INVS** (database field: **ANEA-INVZL** [Current-year acquisitions])
Investment support
 - **DEPR_0** (database field: **ANEA-NAFAL** [Current-year acquisitions])
Proportional value adjustment - ordinary depreciation for current year
 - **DEPR_S** (database field: **ANEA-SAFAL** [Current-year acquisitions])
Proportional value adjustment - special depreciation for current year
 - **DEPR_U** (database field: **ANEA-AAFAL** [Current-year acquisitions])
Proportional value adjustment - unplanned depreciation for current year
 - **RESV** (database field: **ANEA-MAFAL** [Current-year acquisitions])

Proportional transfer of reserves for current year

- INTR (database field: Does not exist).
Interest
- REVL_D (database field: ANEA-AUFNL [Current-year acquisitions])
Ordinary depreciation revaluation
- DOWNP (database field: ANEP-ANBTR [Current-year acquisitions])
Down payment

• Values with reference to previous fiscal years
PREV_PREV-

- APC (database field: ANEP-ANBTR [Prior-year acquisitions])
Acquisition and production costs
- REVL (database field: ANEA-AUFWV)
Revaluation of replacement value
- INVS (database field: ANEA-INVZV)
Investment support
- DEPR_0 (database field: ANEA-NAFAV)
Proportional value adjustment - accumulated ordinary depreciation for previous years
- DEPR_S (database field: ANEA-SAFV)
Proportional value adjustment - accumulated special depreciation for previous years
- DEPR_U (database field: ANEA-AAFAV)
Proportional value adjustment - accumulated unplanned depreciation for previous years
- RESV (database field: ANEA-MAFAV)
Proportional transfer of reserves for previous years
- INTR (database field: Does not exist).
Interest
- REVL_D (database field: ANEA-AUFNV)
Ordinary depreciation revaluation
- DOWNP (database field: ANEP-ANBTR [Prior-year acquisitions])
Down payment

PREV_CUR-

- APC (database field: Does not exist).
Acquisition and production costs
- REVL (database field: ANEA-AUFWL [Prior-year acquisitions])
Revaluation of replacement value
- INVS (database field: ANEA-INVZL [Prior-year acquisitions])
Investment support
- DEPR_0 (database field: ANEA-NAFAL [Prior-year acquisitions]) + ZUSNA
Proportional value adjustment - accumulated ordinary depreciation + write-up of ordinary depreciation
- DEPR_S (database field: ANEA-SAFAL [Prior-year acquisitions]) + ZUSSA
Proportional value adjustment - accumulated special depreciation + write-up of special depreciation
- DEPR_U (database field: ANEA-AAFAL [Prior-year acquisitions]) + ZUSAA
Proportional value adjustment - accumulated unplanned depreciation + write-up of unplanned depreciation
- RESV (database field: ANEA-MAFAL [Prior-year acquisitions]) + ZUSMA
Proportional transfer of reserves for previous years + write-ups of transferred reserves
- INTR (database field: Does not exist).
Interest
- REVL_D (database field: AUFNL [Prior-year acquisitions])
Ordinary depreciation revaluation
- DOWNP (database field: Does not exist).
Down payment

Comments:

a) The note "Prior-year acquisitions" or "Current-year acquisitions" refers to the relevant time base of the transaction type used. This results in the proportional value adjustments of retirements or intracompany transfers with reference to current acquisitions or acquisitions from previous years.

b) CUR amounts always refer to acquisitions from the current year.

c) PREV_PREV amounts represent proportional accumulated value adjustments from previous years for retirements or intracompany transfers.

d) PREV-CUR amounts refer to proportional value adjustments from prior-year acquisition transactions of acquisitions from previous years, which:

1) Were posted directly in the current fiscal year, or

2) Were automatically calculated by the system in the current year, before the accumulated depreciation from the retirement or intracompany transfer was determined.

6. **YEARSEG (type FAA_EE_T_YEARSEG)**

-> Cumulative values from previous years

The table MT_YEARSEG contains cumulative asset values from previous years from the database table ANLC.

The link between (cumulative) ANLC amounts and the table T_YEARSEG, is as follows:

- FYEAR (database field: GJAHR)
Fiscal year
- AREA (database field: AFABE)
Depreciation area
- CURR_TYPE (old depreciation calculation: CURTP)
Currency Type
- Cumulative Values
CUM-
 - APC (database field: KANSW*)
Cumulative acquisition and production costs
 - REVL (database field: KAUFW)
Accumulated revaluation of replacement value
 - INVS (database field: KINVZ)
Cumulative investment support
 - DEPR_O (database field: KNAFA)
Accumulated ordinary depreciation
 - DEPR_S (database field: KSAFA)
Accumulated special depreciation
 - DEPR_U (database field: KAAFA)
Accumulated unplanned depreciation
 - RESV (database field: KMAFA)
Cumulative reserves transfer
 - INTR (database field: KZINW)
Cumulative interest
 - REVL_D (database field: KAUFN)
Accumulated ordinary depreciation revaluation
 - DOWNP (database field: KANZA)
Cumulative down payments

*ANLC-KANSW contains the total of the acquisition and production costs (APC), investment support and down payments. The field YEARSEG-CUM-APC contains the APC total only; the other amounts are available using the relevant CUM fields.

7. **PERIOD (type FAA_EE_T_PERIOD)**

-> Data about the expired useful life, remaining life and period factor

The internal table MT_PERIOD contains relevant information for determining the period factor and for calculating the percentage rate from the (remaining) useful life. There is a row within the table that refers to the current segment. The table contains the following fields:

- FYEAR (old depreciation calculation: GJAHR)
Fiscal year
- AREA (old depreciation calculation: AFABE)
Depreciation area
- AMOUNT_TYPE (old depreciation calculation: AFATYP)
Value type
 - C -> Revaluation using index series
 - A -> Revaluation using index series by age
 - I -> Inflation
 - N -> Ordinary depreciation
 - S -> Special tax depreciation

Z -> Interest
 1 -> Enhancement value type 1
 2 -> Enhancement value type 2
 3 -> Enhancement value type 3

- PERIOD_TO (old depreciation calculation: BISPERS)
To-period of calculation
- USEFUL_LIFE (old depreciation calculation: NDJAR, NDPERS)
Useful life in periods
- EXP_LIFE (old depreciation calculation: NDABJ, NDABP)
Expired useful life in periods at start of fiscal year
- EXP_LIFE_NEW
Expired useful life in periods from changeover year
- EXP_LIFE_SEG
Expired useful life within a period interval
- PERYEAR_WEIGHTED
Weighted periods using the 4-4-5 rule
- PERYEAR (old depreciation calculation: PERFY)
Calculation periods in fiscal year
- SHORT_YR_PRDS (old depreciation calculation: PERFY_GJ)
Calculation periods in shortened fiscal year
- PERSEG_WEIGHTED (old depreciation calculation: PERAFAGW)
Calculation periods in time segment weighted according to 4-4-5 rule
- IGNORE_SHORT_YR (old depreciation calculation: XRAFA, XRNAFA (S, Z, A))
No reduction of depreciation amount or interest amount in shortened fiscal year
- CHANGEOVER_YR (old depreciation calculation: UMJAR)
Changeover year
- CHANGEOVER_PR (old depreciation calculation: UMPER)
Changeover period

8. **CALCORDER (type FAA_EE_S_CALCORDER)**

-> Calculation sequence

This table contains the calculation sequence of the relevant segments. Dependencies exist for this because, for example, APC revaluations should be performed before the actual depreciation calculations, so that these already exist in the base value of the depreciation calculation. Or the specific time segments predefined by a derived depreciation area have to be calculated consecutively in a certain sequence. The table MT_PARAMETER contains exactly one table row for each segment to be processed. This table row is valid for this segment and can be used. The table contains the following fields:

- FYEAR (old depreciation calculation: GJAHR)
Fiscal year
- SEQNO
Sequence number
- AREA (database field: AFABE)
Depreciation area
- AMOUNT_TYPE (old depreciation calculation: AFATYP)
Value type
 C -> Revaluation using index series
 A -> Revaluation using index series by age
 I -> Inflation
 N -> Ordinary depreciation
 S -> Special tax depreciation
 Z -> Interest
 1 -> Enhancement value type 1
 2 -> Enhancement value type 2
 3 -> Enhancement value type 3
- PERIOD_TO (old depreciation calculation: BISPERS)
To-period of calculation
- IS_VIRTUAL_AREA
Indicator: Depreciation area is a derived depreciation area
- IS_DEPENDANT
Indicator: Depreciation area has dependencies

Software Component	From Rel.	To Rel.	And Subsequent
EA-APPL	600	600	<input type="checkbox"/>
	602	602	<input type="checkbox"/>
	603	603	<input type="checkbox"/>
	604	604	<input type="checkbox"/>
	605	605	<input type="checkbox"/>

Support Packages & Patches

Support Packages		
Software Component	Release	Support Package
EA-APPL	600	SAPKGPAD14
	602	SAPK-60204INEAAPPL
	603	SAPK-60303INEAAPPL

References

This document refers to:

SAP Notes

- 1427160 [Serbia: Base value for depreciation after revaluation](#)
- 1297720 [No depreciation for base value 28](#)
- 1170563 [FAA_DC_CUSTOMER: Fields are not transferred](#)
- 965032 [Differences between old and new depreciation calculation](#)

This document is referenced by:

SAP Notes (3)

- 1427160 [Serbia: Base value for depreciation after revaluation](#)
- 1170563 [FAA_DC_CUSTOMER: Fields are not transferred](#)
- 965032 [Differences between old and new depreciation calculation](#)