



Optimize SAP Controlling footprint in S/4HANA

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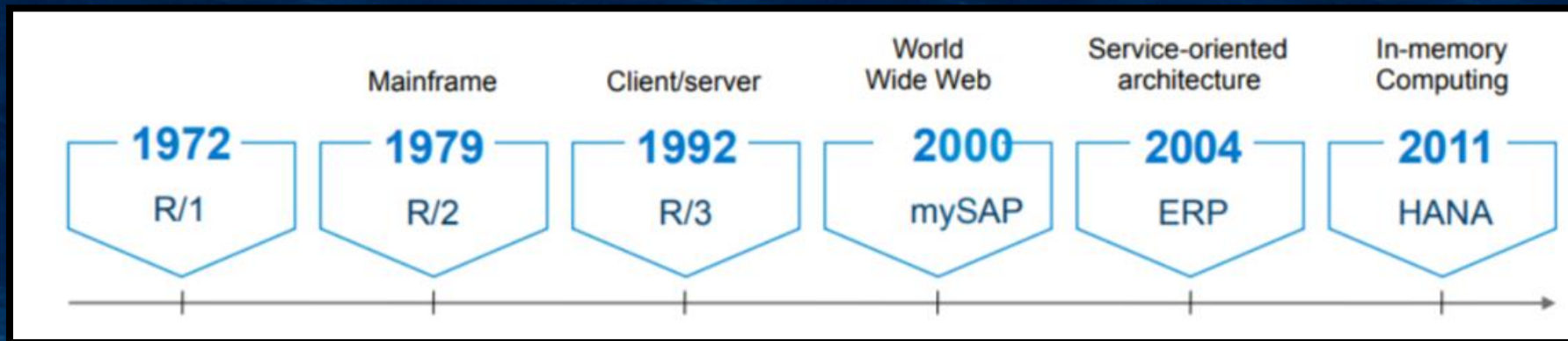
Introduction

- **How can you optimize SAP Controlling in S/4HANA to make the most of the available functionality.**
- **Look at the of how SAP has evolved over the last five decades, particularly in SAP Controlling. Also look at examples of how customers have optimized the use of SAP software for Controlling.**
- **Learn about important design and configuration changes for Controlling in S/4HANA**
 - **Cost Elements are now part of G/L Account**
 - **Material Ledger is mandatory**
 - **Cost components and variances break-down can now flow to Financial Accounting**
 - **Move towards Margin Analysis (based on Account-based CO-PA)**
- **How is Controlling different in S/4HANA?**
- **What system and process changes I need to make in order to prepare my organization for its move to S/4HANA?**
- **With Material Ledger being made compulsory with S/4HANA, do I need to train my team in its ways of working?**
- **With Margin Analysis / CO-PA changing from Costing-based to Account-based, what should I do to be ready to embrace/adapt to this change?**
- **What are the best practices in ECC which I can utilize to optimize my SAP Controlling implementation?**

Contents

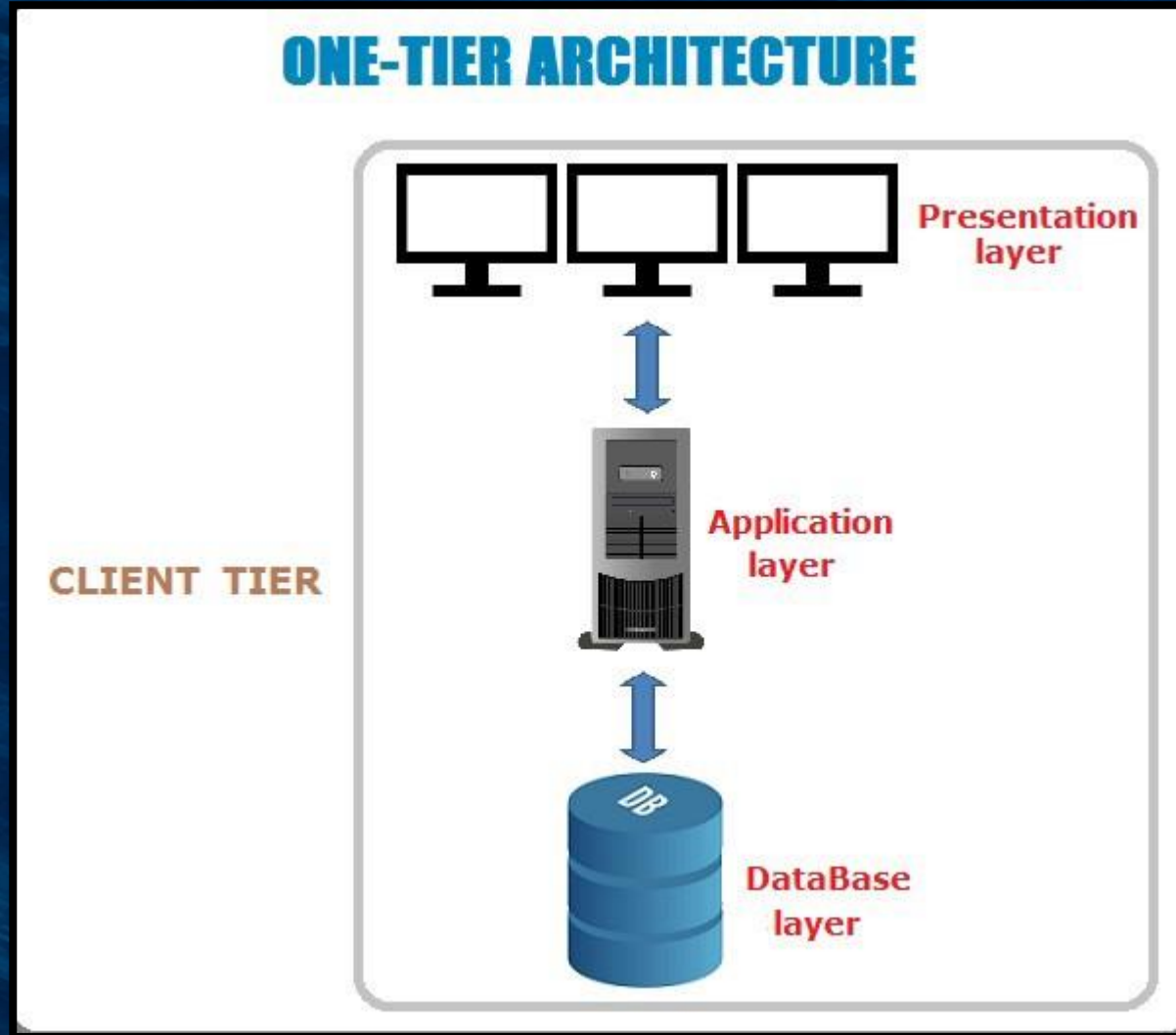
- **History of how SAP software has evolved over the last five decades**
- **CO-FI Real-Time Integration example in ECC**
- **Important design and configuration changes for Controlling in S/4HANA**
 - **Cost Elements are now part of G/L Account**
 - **Material Ledger is mandatory in S/4HANA**
 - **Cost components and variances break-down can now flow to Financial Accounting**
 - **Move towards Margin Analysis**
- **Other Features and Innovations**
- **Resources**
- **Questions and Answers**

How SAP Got Here



Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

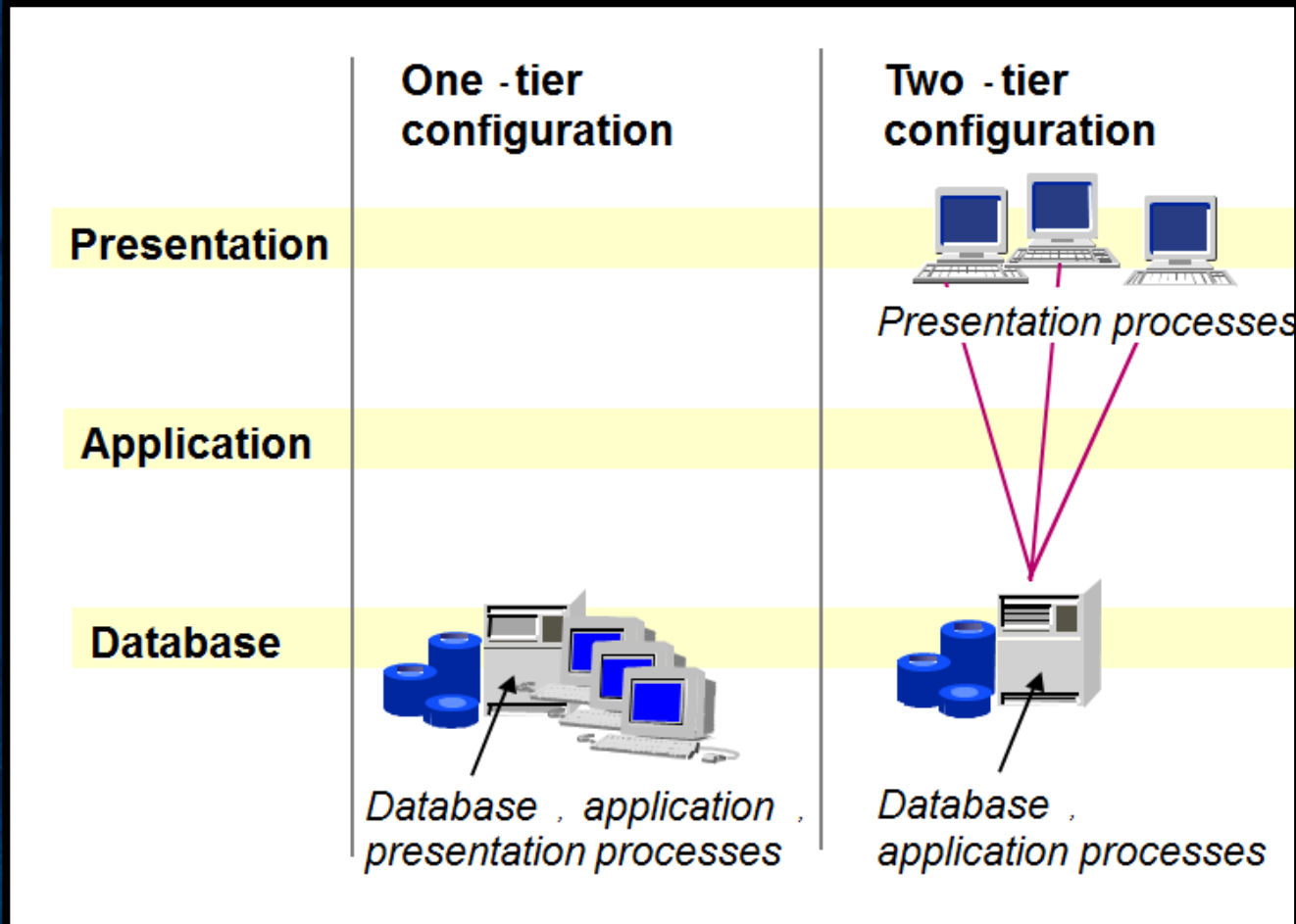
SAP R/1 System (1972)



SAP R/1 is the first ever product of the Software Giant – SAP (Systems, Applications and Products in Data Processing). As the name suggests, SAP R/1 is the system with one tier architecture. 'R' stands for real time data processing. A Software mainly consists of three layers – Presentation Layer, Application Layer and Database Layer. In one-tier architecture (SAP R/1), all these three layers were installed in one server. The first module developed was Financial Accounting System. It was introduced in the year 1972.

Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

SAP R/2 System (1979)

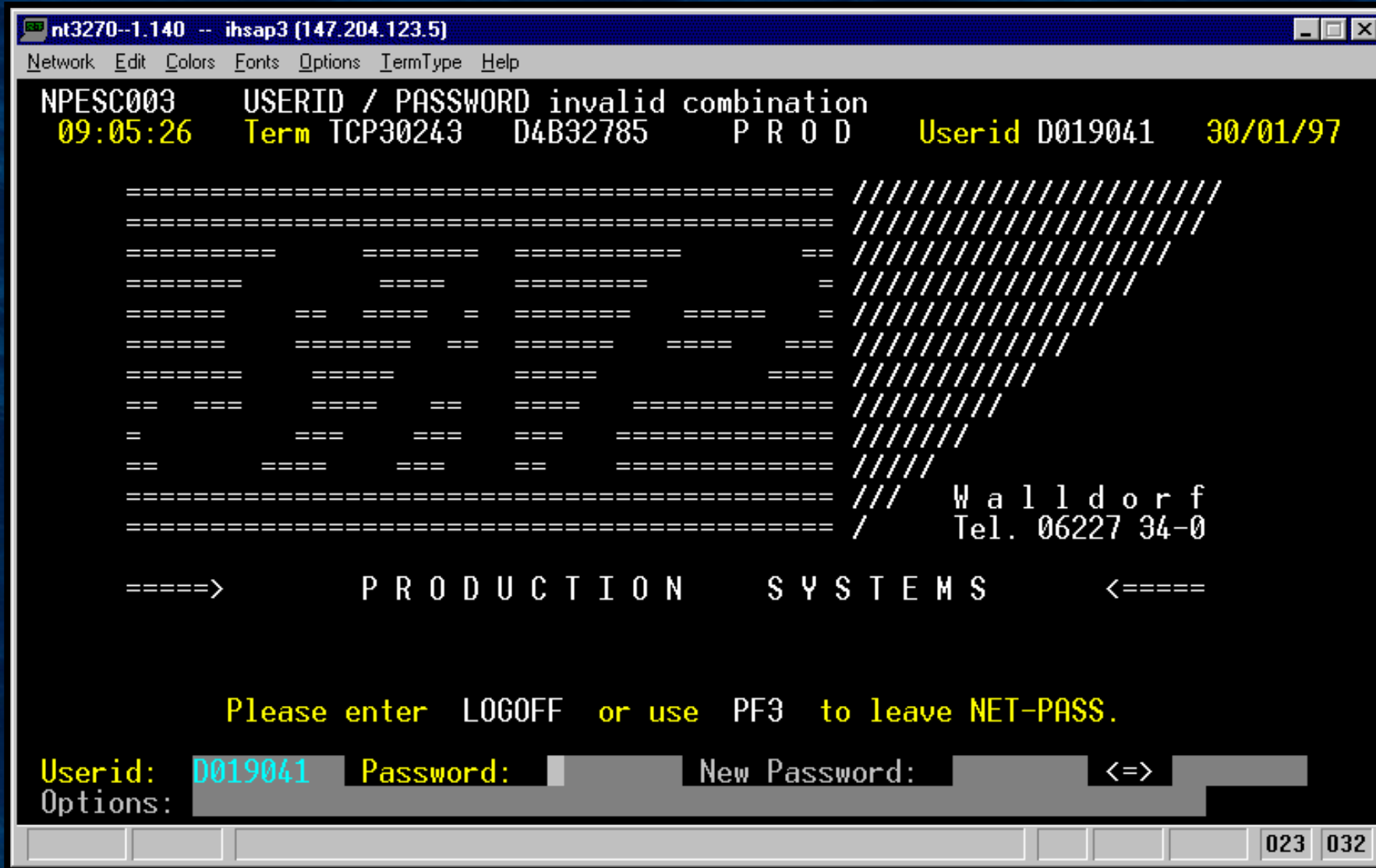


Introduced in 1979, SAP R/2 is the SAP's mainframe product, the first ever compact software package for the end-to-end business applications.

R/2 System is two-tier architecture-based product. Presentation layer is on one server while the application and database layers are present in another server.

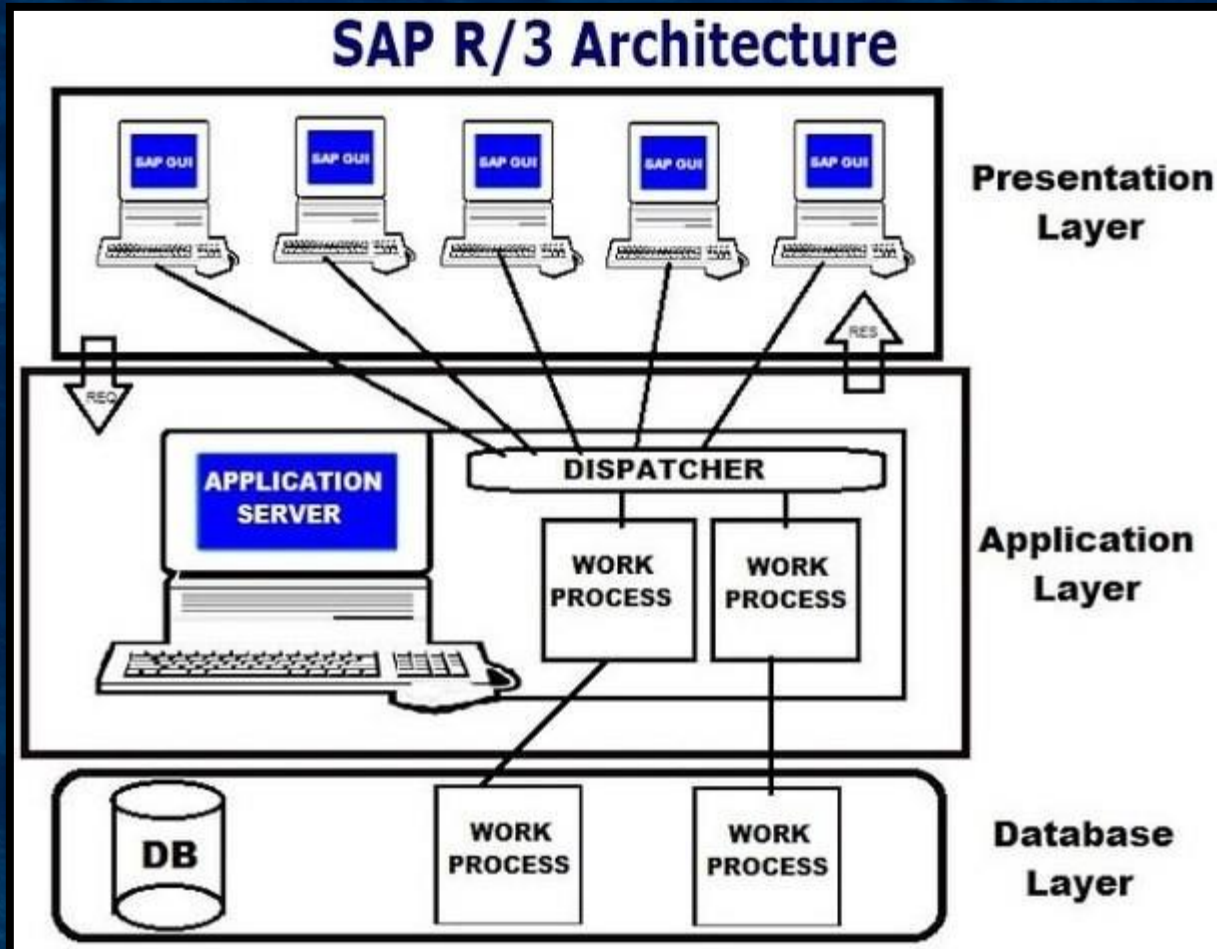
Modules of R/2: RF (Finance) / RK (Controlling) (current day FICO), RM (Materials Management); RV (Sales & Distribution); RP (Personnel).

SAP Logon Screen — SAP R/2 System



Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

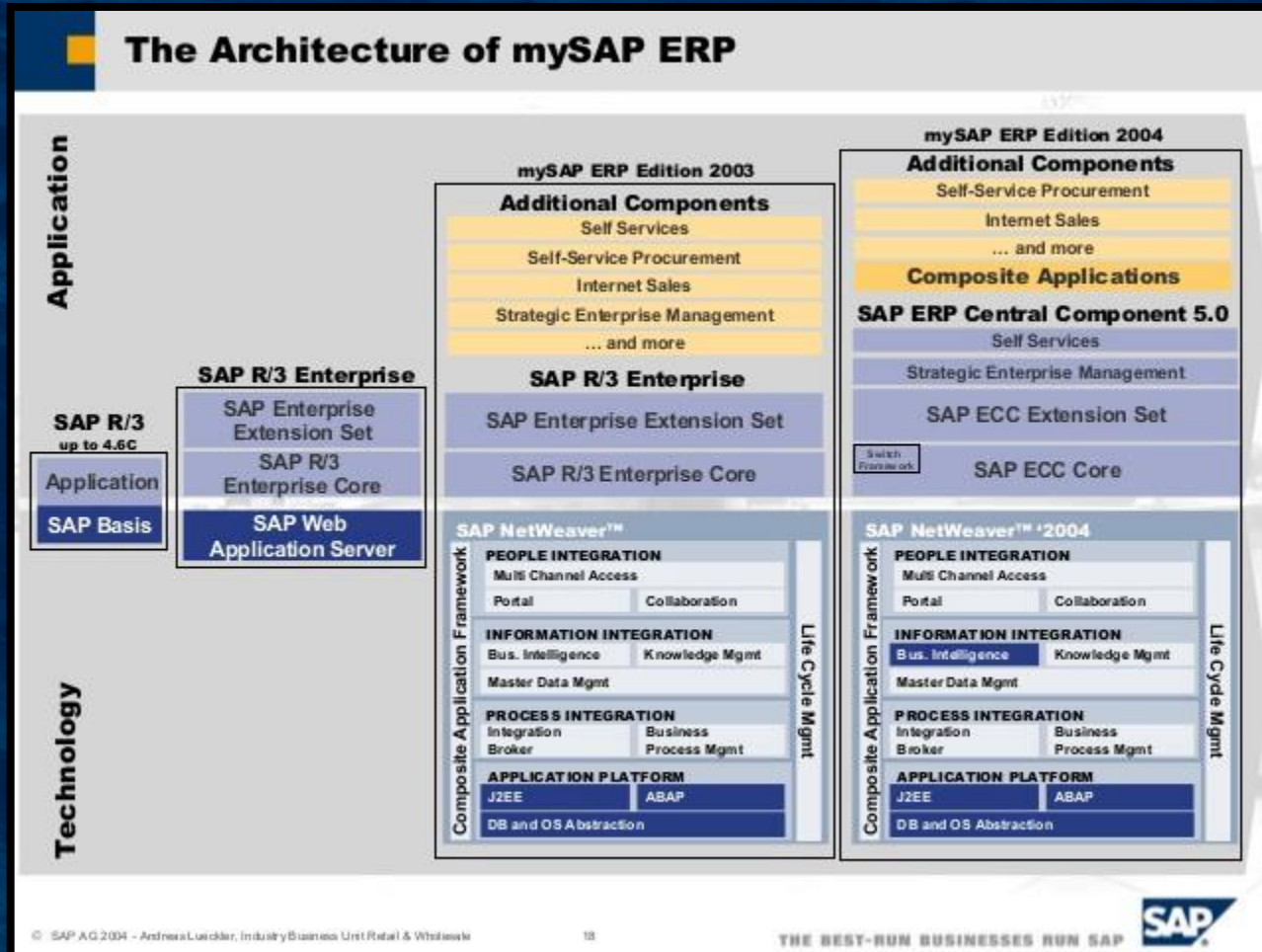
SAP R/3 System / Enterprise Edition (1992)



In 1992, SAP introduced R/3 with its client-server concept, uniform graphical interface, dedicated use of relational databases. The software is highly customizable using SAP's proprietary programming language, ABAP/4.

The R/3 basis software is the set of programs and tools which interfaces with the computer operating system, the underlying database, the communication protocols, and the presentation interfaces. This software enables the R/3 applications (FI, CO, SD, etc.) to have the same functionality

mySAP ERP (1999-2004)



Using the mySAP.com platform, employees, customers, suppliers, and other business partners can work together across company borders — anytime, anywhere.

SAP R/3 has many modules such as HR, Finance, MM covering all enterprise. Other products in the mySAP product suite includes SRM (Supplier Relationship Management), CRM (Customer Relationship Management), PLM (Product Lifecycle Management), SCM (Supply Chain Management).

SAP R/3 Modules, SAP ERP and Business Suite

R/3 Core Business Processes

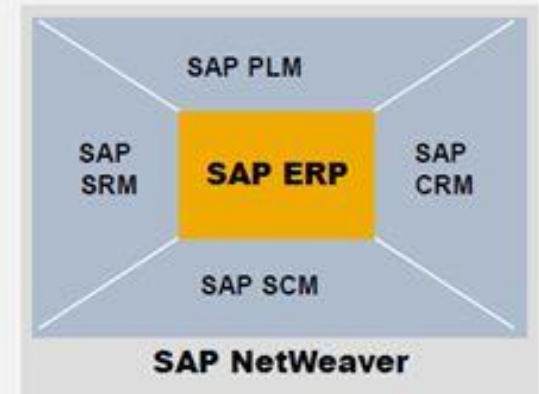
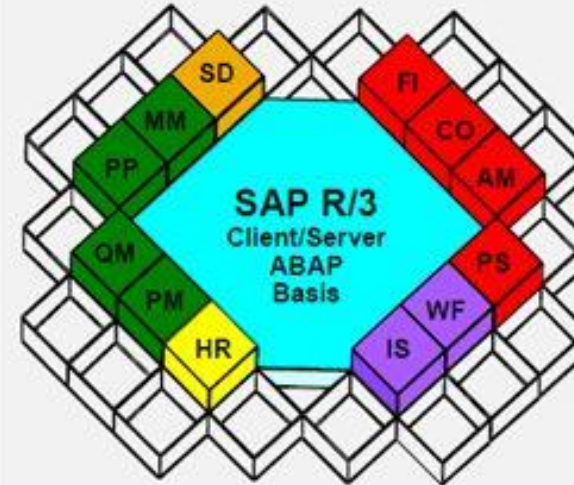
Sales &
Distribution
Material
Management
Production
Planning
Quality
Management
Plant
Maintenance
Human
Resources



Financial
Accounting
Controlling
Fixed Asset
Management
Project
System
Workflow
Industry
Solutions

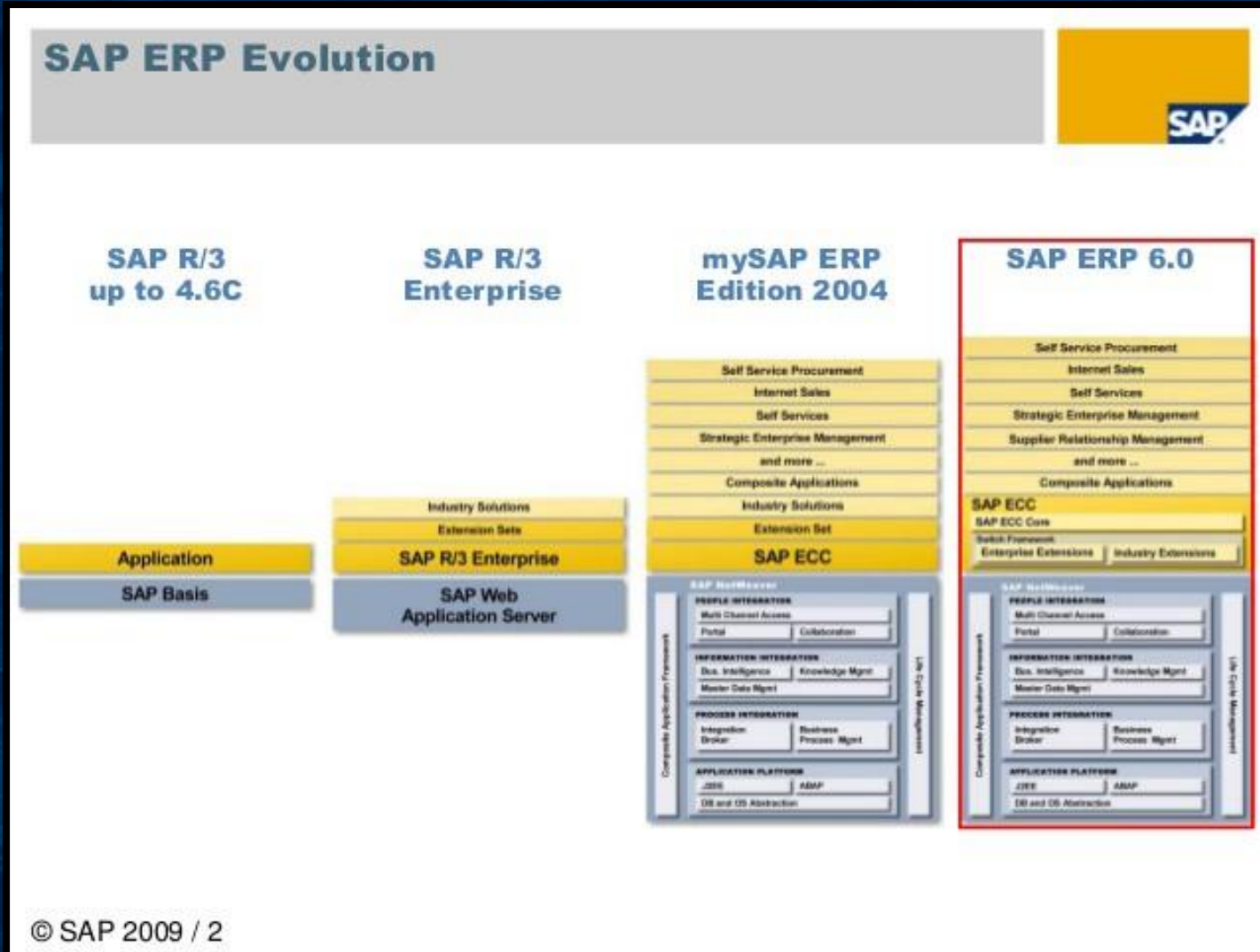
SAP ERP

SAP Business Suite



Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

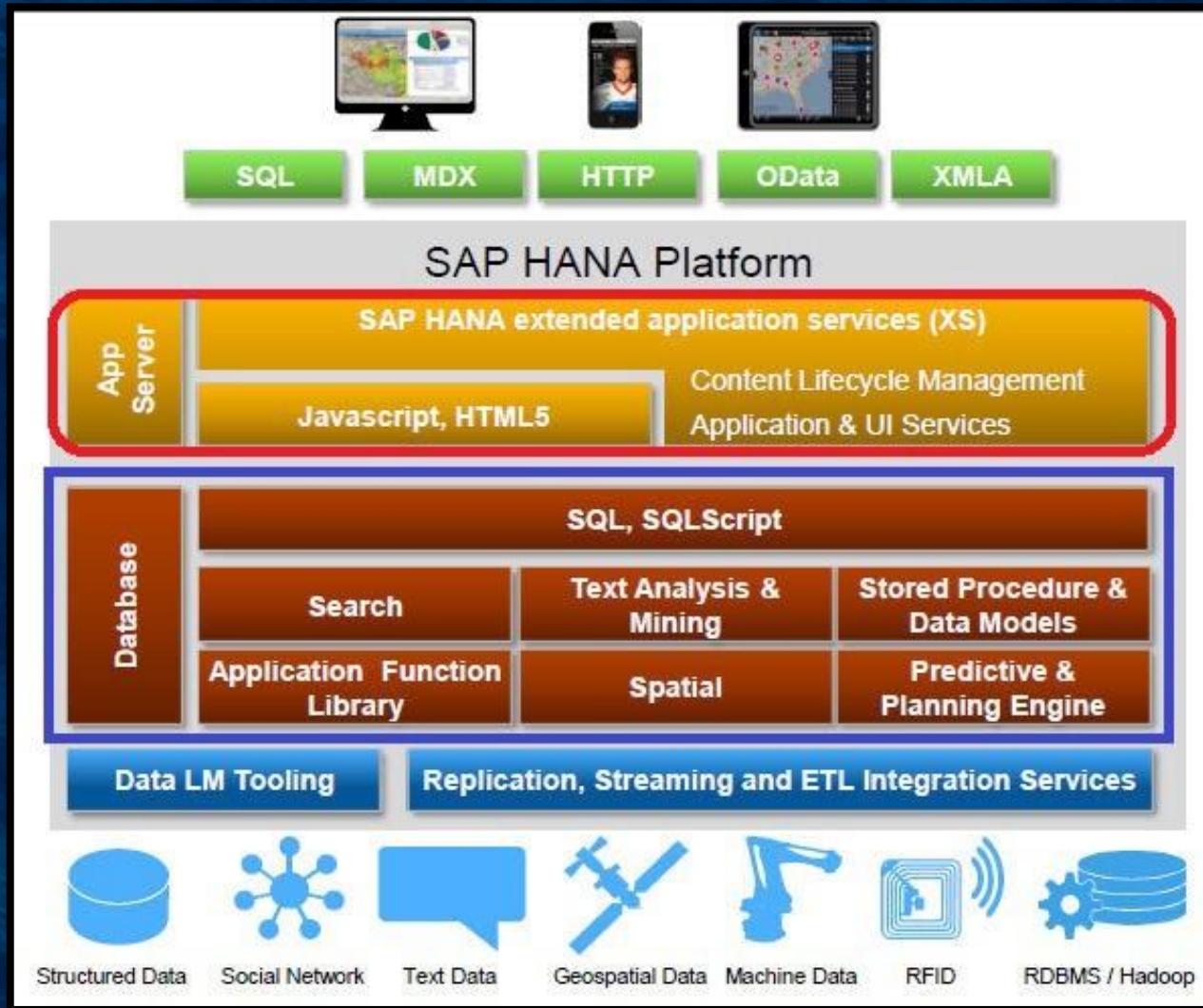
SAP Enterprise Core Component (2004-)



- ECC 5.0 (2004)
- ECC 6.0 (2005)
 - Enhancement Packs (EhP) (mini-upgrades)
 - EhP 1 (2006)
 - EhP 2 (2007)
 - EhP 3 (2007)
 - EhP 4 (2008)
 - EhP 5 (2010)
 - EhP 6 (2011)
 - EhP 7 (2013)
 - EhP 8 (2016)

Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

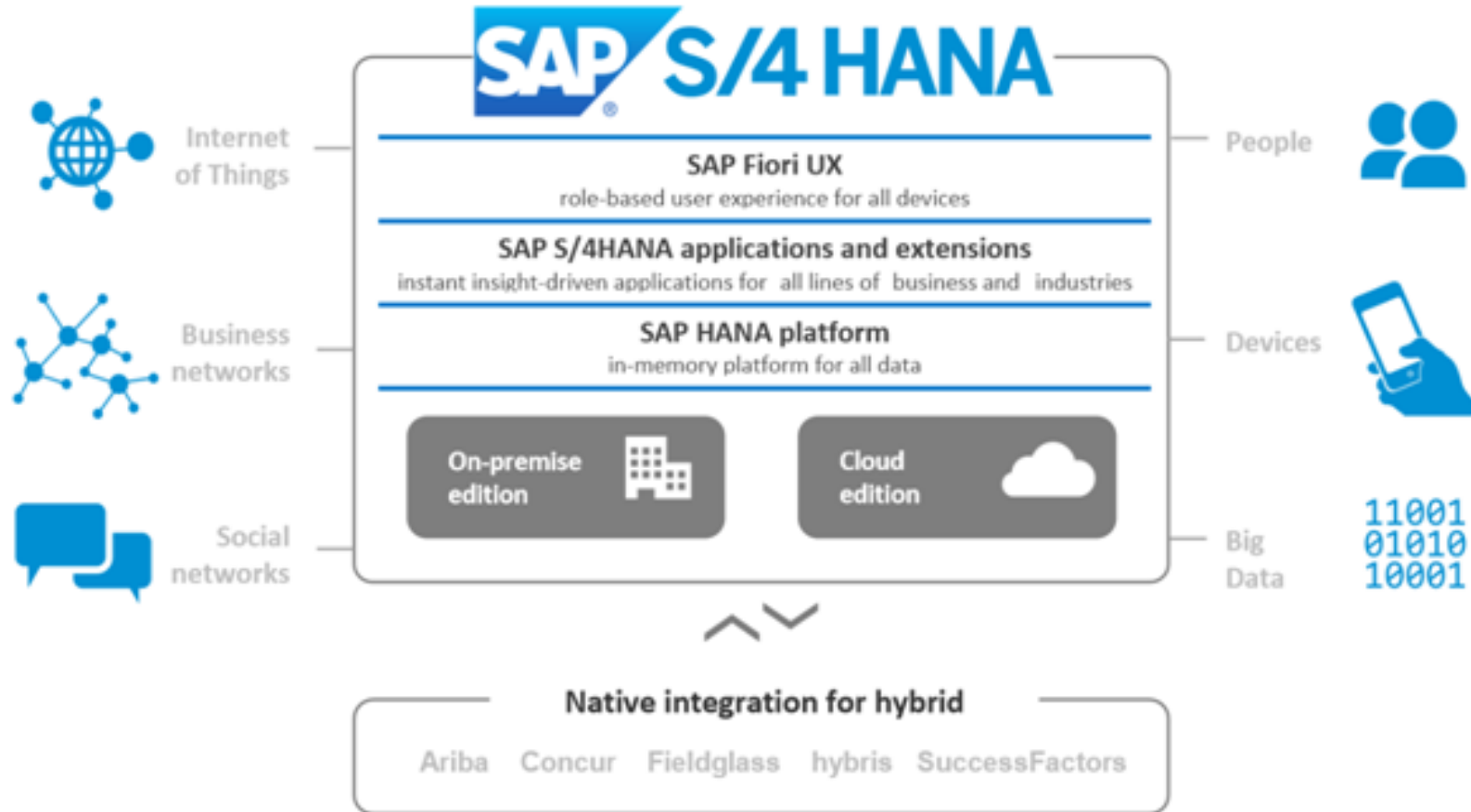
SAP HANA (2011)



SAP HANA is an in-memory, column-oriented, relational database management system developed and marketed by SAP SE. Its primary function as a database server is to store and retrieve data as requested by the applications. In addition, it performs advanced analytics (predictive analytics, spatial data processing, text analytics, text search, streaming analytics, graph data processing) and includes ETL capabilities as well as an application server.

Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

SAP S/4HANA (2015-)



SAP S/4HANA is the next-generation business suite. It is a new product fully built on the most advanced in-memory platform today – SAP HANA – and modern design principles with the SAP Fiori user experience (UX).

Source: History of SAP S/4HANA
<https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>

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CO-FI Real-Time posting in ECC (Assessment example)

Controlling document: Cost Element 700010 (category 42) used for allocation between cost centres

Financial Accounting document: GL 499998 (Reconciliation FI-CO)

CO-FI Real-Time Integration account used from: OBYB / OK17

DocumentNo	Doc. Date	Document Header Text	RI	RefDocNo	Rev	RvD
PRw	OTy	Object	CO object name	Cost Elem.	Val/COArea	Crcy O PTy Partner object
600047968	10/11/2018	ITS2	20180101Beispiel Umlage			
1	CTR 4200		Motorcycle Prod.	700010	45,000.00	CTR 4100
2	CTR 4100		Technical Service I	700010	45,000.00-	CTR 4200

Data Entry View											
Document Number		100000108		Company Code		1000		Fiscal Year		2018	
Document Date		10/11/2018		Posting Date		10/31/2018		Period		10	
Reference				Cross-Comp.No.							
Currency		EUR		Texts exist		☐		Ledger Group		L8	
Co...	Itm	PK	Account	Description	Amount	Curr.	Tx	Cost Center	Order	Profit Center	Segment
1000	1	40	499998	Reconciliation FI-CO	45,000.00	EUR		4200		1000	
	2	50	499998	Reconciliation FI-CO	45,000.00-	EUR		4100		1600	

Configuration Accounting Maintain : Automatic Posts - Accounts			
Posting Key		Rules	
Chart of Accounts		INT Chart of accounts - international	
Transaction		CO1 CO - FI reconciliation posting	
Account assignment			
CO Transaction			
KZPI		Debit	Credit
RKIU		499998	499998
RKL		499998	499998
		499998	499998

FI-CO RTI, different accounts in FI for CO secondary postings

- Cost allocations between cost objects using secondary cost elements can create some confusion in reporting
- All such cost flows send an in/out entry in FI, total balance of GL 499998 (Reconciliation FI-CO) is zero
- Not possible to explain the flow between departments using reports in financial accounting, but rely on reports in controlling
 - Example: Postings going to secondary cost element 640000 (Benefits Accrual Overhead) should go to GL 450000 (Benefits Accrual)

OKC9 - Two steps were created, one for the debit, and another for credit postings.

Step 1: Prerequisite: RCL_ICCF-RACCT = '640000' AND RCL_ICCF-BEKNZ = 'C'

Substitute GL 450000

Step 2: Prerequisite: RCL_ICCF-RACCT = '640000' AND RCL_ICCF-BEKNZ = 'D'

Substitute GL 450000

Change Substitution: GCI1 - Step 001 - Overview

Substitutions

- Cost Accounting
 - Line Item
 - Order
 - Reconciliation ledger: Acc
 - GCI1
 - CO-FI Reconciliation
 - Step 001 Benefits Accrual-Credit
 - Prerequisite
 - Substitutions (for fulfilled requirements)
 - Step 002 Benefits Accrual-Debit
 - Prerequisite
 - Substitutions (for fulfilled requirements)
- Rules
 - Document header
 - Allocation: Sender-Recipient
 - Allocation: sender
 - Allocation: Recipient

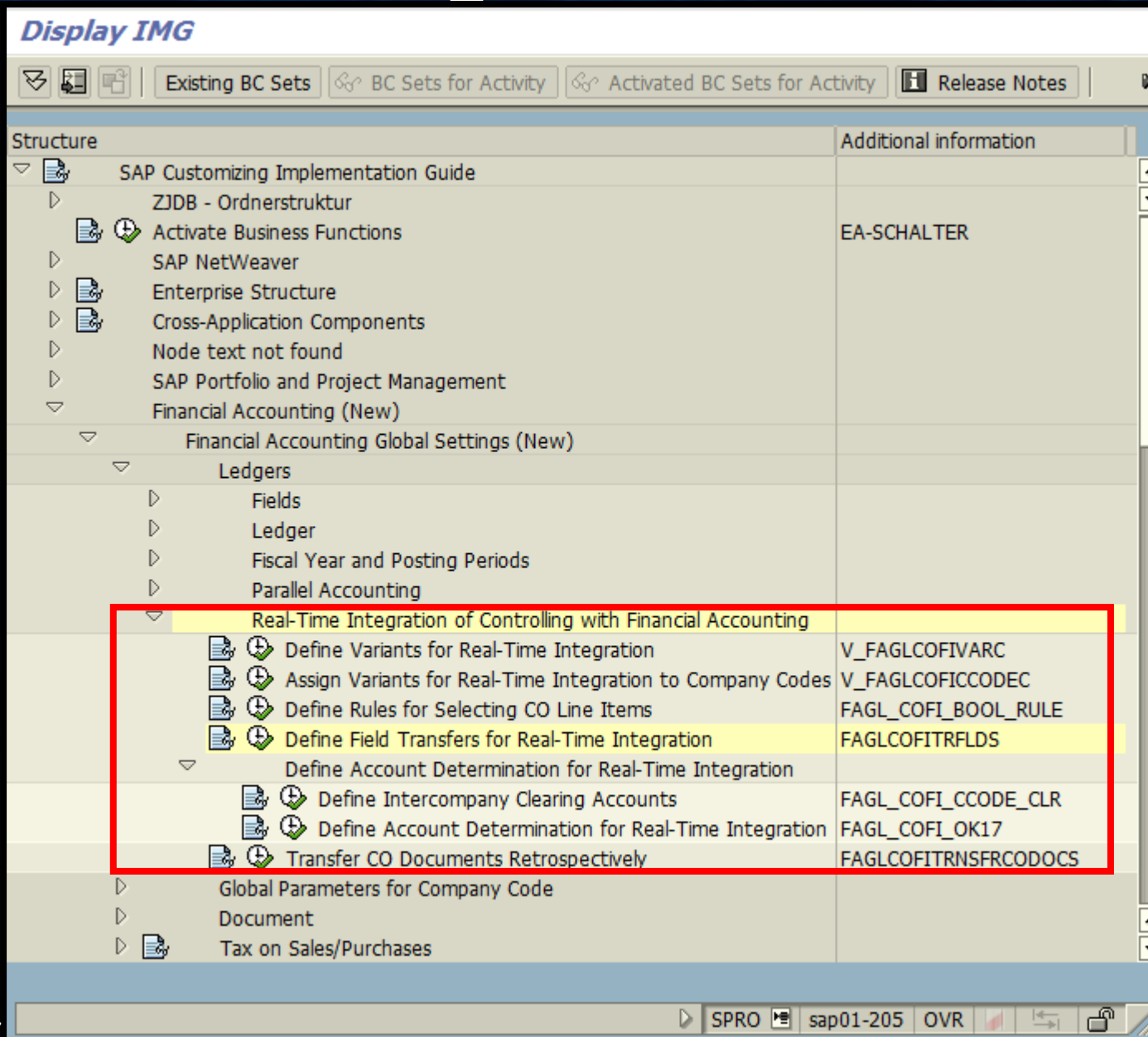
Current postings:

- CO side:
 - Debit GL 640000, cost center C51101
 - Credit GL 640000, cost center C51900
- FI side:
 - Debit GL 499998, cost center C51101
 - Credit GL 499998, cost center C51900

Revised postings:

- CO side:
 - Debit GL 640000, cost center C51101
 - Credit GL 640000, cost center C51900
- FI side:
 - Debit GL 450000, cost center C51101
 - Credit GL 450000, cost center C51900

Real-Time Integration from CO to FI is obsolete in S/4HANA



Configuration path in ECC: Financial Accounting → Financial Accounting (New) → Financial Accounting Global Settings (New) → Ledgers → Real-Time Integration of Controlling with Financial Accounting

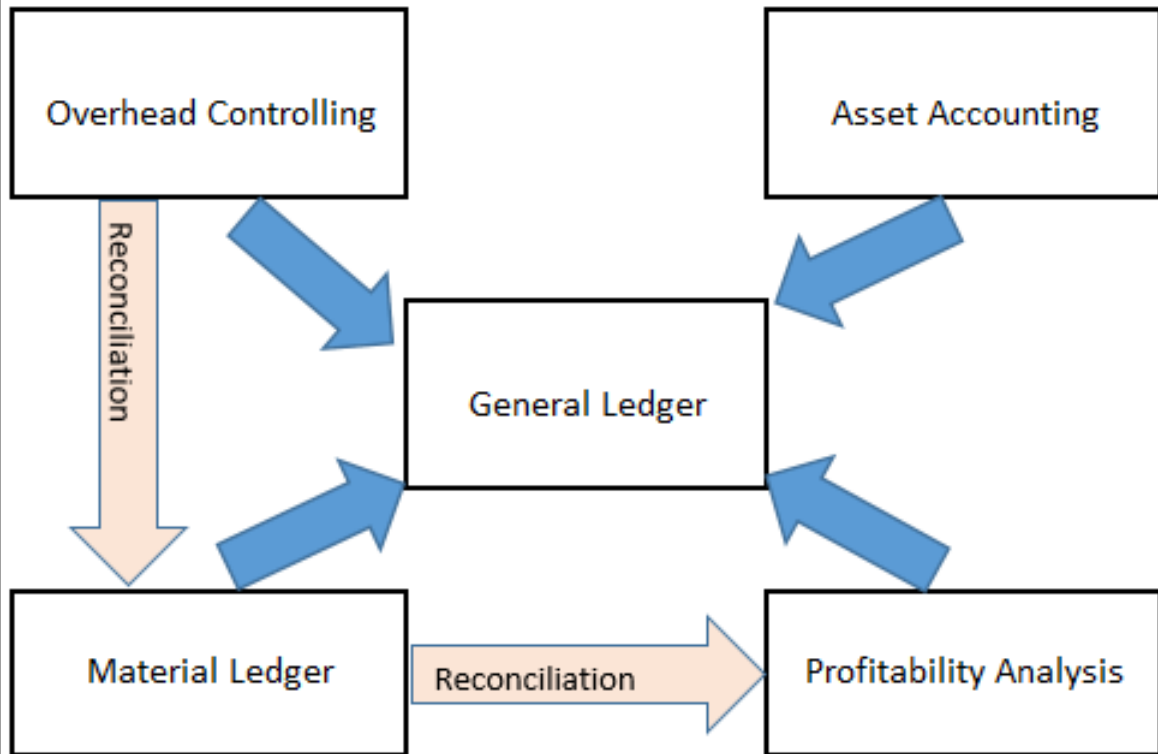
ECC configuration shown here is not relevant / not available in S/4HANA Finance

Contents

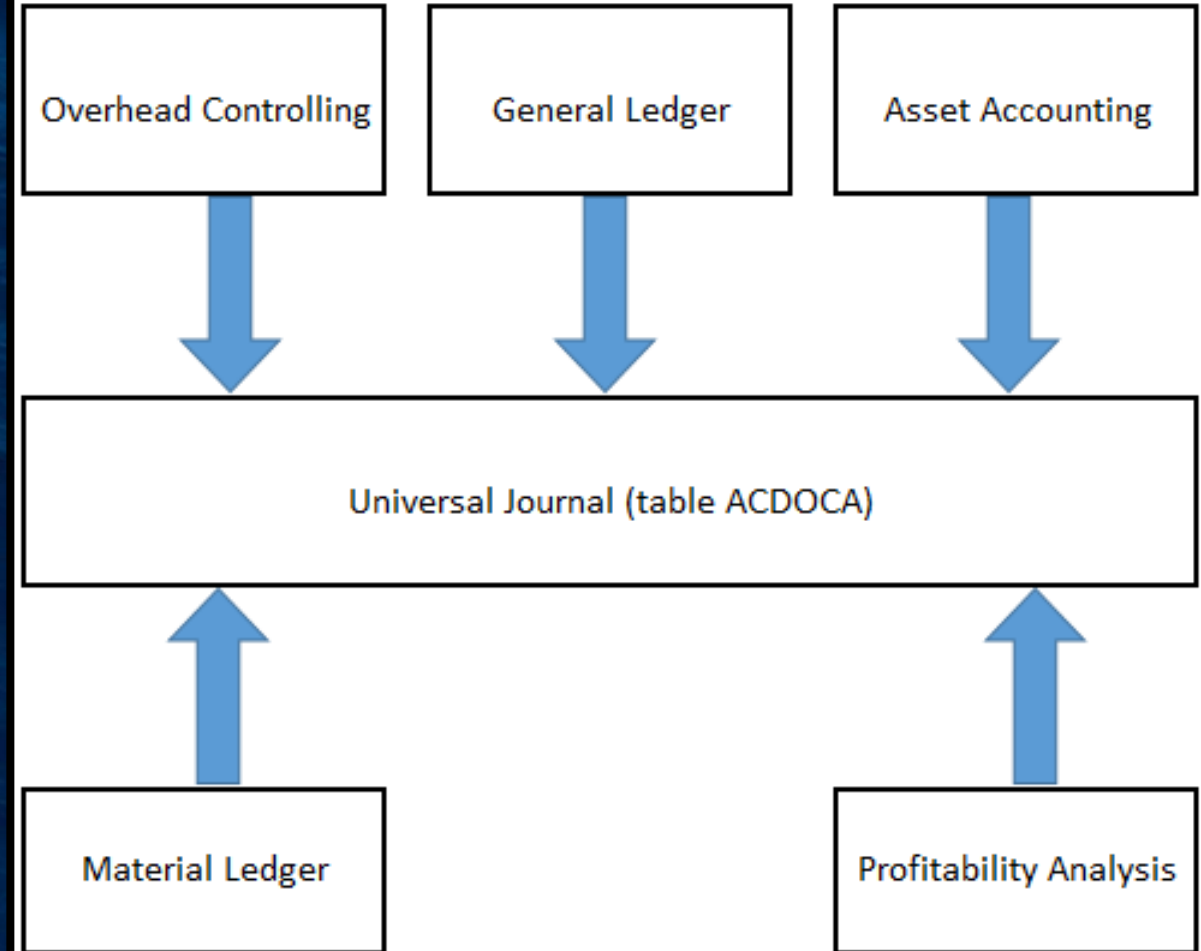
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FI-CO Data Flow in ECC and S/4HANA

Overview of Finance and Controlling data flow in ECC



Overview of Finance and Controlling data flow in S/4HANA



Cost Element is now part of G/L Account in S/4HANA

In ECC, Cost Elements are created within Controlling module

Display G/L Account Centrally

G/L Account: 94202000 Assessment Quality costs
Company Code: 1710 Company Code 1710

Type/Description Control Data Create/bank/interest Key word/translation

Account control in company code

Account currency: USD United States Dollar
Balances in Local Crncy Only: ☐
Alternative Account No.:

Account Management in Company Code

Sort key:

Account Settings in Controlling Area A000 Controlling Area A000

CElem category: 42 Assessment
Record Quantity: ☐
Int. meas. unit:

Restrictions

Fixed Val.	Short Descript.
21	Internal settlement
31	Order/project results analysis
41	Overhead Rates
42	Assessment
43	Internal activity allocation
50	Project-related incoming orders: Sales revenue
51	Project-related incoming orders: Other revenues
52	Project-related incoming orders: Costs
61	Earned value
66	Reporting Cost Element CO-PA

10 Entries found

Type/Description Control Data Create/bank/interest Key word/translation

Control in Chart of Accounts YCOA Standard Chart of Accounts

G/L Account Type: S Secondary Costs
Account Group: X Balance Sheet Account
Detailed Control for P&L Statement: N Nonoperating Expense or Income
Functional Area: P Primary Costs or Revenue
S Secondary Costs

New field in G/L master: G/L Account type
Cost element category now maintained on G/L

Transaction codes KA01 / KA02 / KA03 / KA06 now point to FS03 / FS00

CO-FI Real-Time posting in ECC (Assessment example)

Controlling document: Cost Element 700010 (category 42) used for allocation between cost centres

Financial Accounting document: GL 499998 (Reconciliation FI-CO)

CO-FI Real-Time Integration account used from: OBYB / OK17

DocumentNo	Doc. Date	Document Header Text	RI	RefDocNo	Rev	RvD
PRw	OTy	Object	CO object name	Cost Elem.	Val/COArea	Crcy
600047968	10/11/2018	ITS2	20180101Beispiel Umlage			
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Data Entry View											
Document Number		100000108		Company Code		1000		Fiscal Year		2018	
Document Date		10/11/2018		Posting Date		10/31/2018		Period		10	
Reference				Cross-Comp.No.							
Currency		EUR		Texts exist		☐		Ledger Group		L8	
Co...	Itm	PK	Account	Description	Amount	Curr.	Tx	Cost Center	Order	Profit Center	Segment
1000	1	40	499998	Reconciliation FI-CO	45,000.00	EUR		4200		1000	
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Account assignment			
CO Transaction			
KZPI		Debit	Credit
RKIU		499998	499998
RKL		499998	499998
		499998	499998

Assessment posting example from S/4HANA

Controlling document: Cost Element
700010 (category 42) used for
allocation between cost centres

DocumentNo	Doc. Date	Document Header Text	RT RefDocNo
PRw	OTy	Object	Cost Elem.
3000000014	01.02.2019	UML1	20190101Beispiel Umlage
1	CTR	3010	7000010
2	CTR	4010	7000010
3	CTR	3020	7000010
4	CTR	4010	7000010
5	CTR	3010	7000020
6	CTR	4010	7000020
7	CTR	3020	7000020
8	CTR	4010	7000020

Data Entry View											
Document Number		2300000023		Company Code		M010		Fiscal Year		2019	
Document Date		01.02.2019		Posting Date		31.01.2019		Period		1	
Reference				Cross-Comp.No.							
Currency		EUR		Texts Exist		☐		Ledger Group			
Ledger 0L											
FiscalYear		2019		Period		1					
Co...	Account	Description	Amt.in loc.cur.	LCurr	Amount	Curr.	Cost Ctr	Profit Ctr	Text	L.item	
M010	1 7000010	Umlage IT	8.000,00	CHF	7.093,23	EUR	3010	3000	10 Verrechnung IT	000001	
	2 7000010	Umlage IT	8.000,00	CHF	7.093,23	EUR	4010	3000	10 Verrechnung IT	000002	
	3 7000010	Umlage IT	12.000,00	CHF	10.639,84	EUR	3020	3000	10 Verrechnung IT	000003	
	4 7000010	Umlage IT	12.000,00	CHF	10.639,84	EUR	4010	3000	10 Verrechnung IT	000004	
	5 7000020	Umlage IT Sonstige	6.000,00	CHF	5.319,92	EUR	3010	3000	10 Verrechnung IT	000005	
	6 7000020	Umlage IT Sonstige	6.000,00	CHF	5.319,92	EUR	4010	3000	10 Verrechnung IT	000006	
	7 7000020	Umlage IT Sonstige	9.000,00	CHF	7.979,88	EUR	3020	3000	10 Verrechnung IT	000007	
	8 7000020	Umlage IT Sonstige	9.000,00	CHF	7.979,88	EUR	4010	3000	10 Verrechnung IT	000008	

Financial Accounting document:
Original Assessment GL 700010,
700020 original account retained (no
need for CO-FI Real-Time Integration
Account)

FINSC_LEDGER: Extension Ledger for management reporting in S/4H

Extension ledger brings controlling flavor to ACDOCA

With both internal and external reporting being driven from the ACDOCA finance table, you might wonder how such adjustment postings can be made. Extension ledgers address this requirement. An extension ledger becomes the main vehicle to bring a controlling aspect to ACDOCA.

Display View "Ledger": Overview

Dialog Structure

- Currency Types
- Global Currency Conversion Settings
- Currency Conversion Settings for Company Codes
- Ledger**
- Company Code Settings for the Ledger
 - Accounting Principles for Ledger and Company Code

Ledger	Ledger Name	Leading	Ledger Type	Extn. Ledger Ty...	Underlyi...	Man.Pstgs ...
0L	IFRS	☒	Standard Ledger			
2L	Ledger 2L	☐	Standard Ledger			
HG	Local GAAP	☐	Standard Ledger			
JS	Simulation	☐	A Extension Led...	S Simulation	0L	☐
MM	Controlling	☐	A Extension Led...	P Predictio...	0L	☐
TA	Local Tax Ledger	☐	Standard Ledger			
US	US GAAP	☐	Standard Ledger			
ZE		☐	A Extension Led...	P Predictio...	0L	☐

Position... Entry 1 of 8

FINSC_LEDGER hana-is8-appl OVR

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Material Ledger in S/4HANA

In ECC, Material Ledger is optional, which includes Actual Costing functionality that calculates Actual Cost / Periodic Unit Price

With SAP S/4HANA's Material Ledger is mandatory (Price Determination 2 – Transaction-based); but Actual Costing is still optional (Price Determination 3 – Single-/Multilevel)

Material Ledger related fields are available in the Universal Journal (table ACDOCA)

- Price Determination 2 (Transaction-based) values are stored in ACDOCA

New tables for Material Documents (MATDOC), Material Ledger Document (MLDOC) Cost Components (MLDOCCCS)

- Price Determination 3 (Single-/Multilevel) values are stored in MLDOC, MLDOCCCS

CKM3N now integrates cost component split view within main CKM3N view (no need to switch between Price Determination Structure and Cost Component views)



Display Material B-0001 (Finished Product)

Additional Data Org. Levels

Quality management Accounting 1 Accounting 2 Costing 1

Material: B-0001
Descr.: Excel für Controller
Plant: M020 Werk 1 - DE

Period 009.2019 Period 008.2019 Period 012.2018 Future costing run

General Valuation Data

Total Stock	2.809	Base Unit	PC Piece
Division		Valuation Cat.	
Valuation Class	7920	☐ Valuated Un	
VC: Sale Ord. Stk		☒ ML Act.	Mat. Price Analysis
Project Stock VC		Price Determ.	3 Single-/Multilevel

Prices and values

Currency: EUR

Standard Price	
Price Unit	1
Prc. Ctrl	S
Inventory Value	

Material Price Determination: Control (2) 2 Entries found

Price Determ.	Short Descript.
2	Transaction-Based
3	Single-/Multilevel

2 Entries found

MM03 hana-is8-appl OVR

Material Ledger Closing Cockpit (CKMLCP) changes

- CKMLCP now has reduced number of steps
- One single step called “Settlement” in S/4HANA replaces several steps in ECC: Single-Level Price Determination, Multilevel Price Determination, Revaluation of Consumption (and WIP Revaluation, if functionality is in use)

Costing Cockpit: Actual Costing - Change / Execute

Costing run: CHC1 CHC1
Period: 4 2015

General Data

Create Cost Estimate

Flow step	Authorizn	Paramete...	Execute	L...	Status	Successful	Erro...	Still open
Selection		»»	⌚	📄	🟢	2	0	0
Determine Sequence		»»	⌚	📄	🟢	2	0	0
Single-Level Pr. Determinati...	🔒	»»	⌚	📄	🟢	2	0	0
Multilevel Pr. Determination	🔒	»»	⌚	📄	🟢	1	0	0
Revaluation of Consumption	🔒	»»	⌚	📄	🟢	2	0	0
Post Closing	🔒	»»	⌚	📄	🟢	2	0	0
Mark Material Prices		»»	⌚	📄	🟢	0	0	0

Job Overview Schedule Manager Activity Types Status Data From 05/3

Costing Cockpit: Actual Costing - Change / Execute

Costing run: ML201904 ML Run for 2019 04
Period: 4 2019
Application: ACRU Actual Costing

General Data

Processing

Flow step	Authorizn	Locked	Paramete...	Execute	L...	Mat St...	Successful	Erro...	Still open	Act Stat	Successful	Erro...	Still open
Selection			»»	⌚	📄	🟢	1	0	0		0	0	0
Preparation	🔒	✓	»»	⌚	📄	🟢	1	0	0		0	0	0
Settlement	🔒	✓	»»	⌚	📄	🟢	1	0	0		0	0	0
Post Closing	🔒	✓	»»	⌚	📄	🟡	0	0	1		0	0	0
Mark Prices			»»	⌚	📄		0	0	0		0	0	0

Job Overview Schedule Manager Results

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Cost of Goods Sold (CoGS) posting by Cost Component in FI

In ECC, costing-based CO-PA allows visibility of various cost components in profitability reports. However, in FI, only one line item is visible for COGS.

With SAP S/4HANA's account-based CO-PA, different cost components can be mapped to multiple general ledger accounts

Display View "Source Accounts and Valuation Views": Overview

Splitting of Cost of Goods Sold

- Cost Splitting Profile
- Source Accounts and Valuation Views
 - Strategy Sequence
 - Target Accounts
- Offsetting Accounts
- Company Code Settings
- Document Type Mapping

Cost Splitting Profile: ET

CO Area: M000

Chart of Accounts: YCOA

Source Account	G/L account short text	Valuation View
54083000	Inv Chg COGS w/CE	

Splitting of Cost of Goods Sold

- Cost Splitting Profile
- Source Accounts and Valuation Views
 - Strategy Sequence
 - Target Accounts
- Offsetting Accounts
- Company Code Settings
- Document Type Mapping

Cost Splitting Profile: ET

Source Account: 54083000

Valuation View:

Basis: 1

CO Area: M000

Chart of Accounts: YCOA

Cost ...	Cost Com...	Name of C...	Target Acc...	Target account...	Default
E2	10		99000010		☒
E2	20		99000020		☐
E2	30		99000030		☐

Configuration path: Financial Accounting → General Ledger Accounting → Periodic Processing → Integration → Materials Management → Define Accounts for Splitting the Cost of Goods Sold (IMG Activity: SIMG_FCOC_COGS_SCHEM)

COGS posting in ECC

One document in FI at Post Goods Issue:

- Credit Inventory, Debit COGS

Note: COGS split is available only in CO-PA

Display Document: Data Entry View

Document Number: 49000000002 Company Code: 1000 Fiscal Year: 2019
Document Date: 01/28/2019 Posting Date: 01/28/2019 Period: 1
Reference: 0080015294 Cross-Comp.No.: Ledger Group:
Currency: EUR Texts exist: ☐

Co...	Itm	PK	S	Account	Description	Amount	Curr.	Profit Center
1000	1	99		792000	Finished goods inven	27,118.50	EUR	1010
	2	81		893015	Cost of goods sold	27,118.50	EUR	1010

Display Line Items

Document number: 100056325 Item number:
Posting date: 01/28/2019 Period: 1

Characteristics Value fields Origin data Administrat.data

Foreign currency
Currency key: EUR Euro
Exchange rate: 1.00000

Legal view (operating concern currency)

Value field	Amount	Un.
Material Input	8,791.50	EUR
Material Overhead	2,945.16	EUR
Produc. machine fix	5,176.29	EUR
Produc. machine var	650.89	EUR
Production Labor fix	9,227.68	EUR
Production Labor var	99.99	EUR
Production Setup	142.97	EUR

COGS posting in S/4HANA

S/4HANA Finance

Material Quantity Where P

Movement type 601 - GD

Plant Werk 1 - DE

Storage location Lagerort 1

Goods recipient KUNDE1

List of Documents in Accounting

Document	Object type text
4900000029	Accounting document
4900000030	Accounting document
A0001TAI00	Controlling Document
A0001TAH00	Controlling Document
A0001TAH00	Material ledger

Display Document: Data Entry View

Display Currency General Ledger View

Data Entry View

Document Number 4900000029 Company Code M020 Fiscal Year 2019

Document Date 02.05.2019 Posting Date 02.05.2019 Period 5

Reference 0080020881 Cross-Comp.No.

Currency EUR Texts Exist Ledger Group

Co...	Itm	Account	Description	Loc.curr.amount	LCurr	Amount	Curr.
M020	1	13400000	Inventory FinishedGd	15,40-	EUR	15,40-	EUR
	2	54083000	Inv Chg COGS w/CE	15,40	EUR	15,40	EUR

Data Entry View

Document Number 4900000030 Company Code M020 Fiscal Year 2019

Document Date 02.05.2019 Posting Date 02.05.2019 Period 5

Reference Cross-Comp.No.

Currency EUR Texts Exist Ledger Group

Ledger OL

FiscalYear 2019 Period 5

Co...	Itm	Account	Description	Loc.curr.amount	LCurr	Amount	Curr.
M020	1	54083000	Inv Chg COGS w/CE	15,40-	EUR	15,40-	EUR
	2	99000010	Materialkosten	0,75	EUR	0,75	EUR
	3	99000020	Fertigungskosten	14,57	EUR	14,57	EUR
	4	99000030	Gemeinkosten	0,08	EUR	0,08	EUR

Two documents in FI at Post Goods Issue:

- Credit Inventory, Debit COGS
- Credit COGS, Debit COGS Split accounts

Production variances in FI by variance category

- In ECC, all production variances are bundled and posted to one price difference (PRD-PRF) account. Analysis of variances is carried using Controlling reports
- With SAP S/4HANA, variances can be posted to different G/L accounts

Price Diff. Splitting Profile

Controlling Area

1000

Chart of Accounts

ZCOA

Detailed Price Difference Accounts

Line	Description	Cost Elem. From	Cost Elem. To	CElem Group	VCat	Target Acco...	Default
0001	Price Difference PRIV				PRIV	52071000	☐
0002	Price Difference QTYV				QTYV	52072000	☐
0003	Price Difference RSUV				RSUV	52073000	☐
0004	Price Difference INPV				INPV	52074000	☐
0005	Price Difference MXPV				MXPV	52075000	☐
0006	Price Difference OPPV				OPPV	52076000	☐
0007	Price Difference LSFV				LSFV	52077000	☐
0008	Price Difference REMV				REMV	52078000	☒

Most literature points to variance split by variance category. And this may work for some clients.

However, some clients may want to further breakdown variance by source cost element, apart from variance category (see next slide for an alternative solution)

Configuration path: Financial Accounting New → General Ledger Accounting New → Periodic Processing → Integration → Materials Management → Define accounts for Splitting Price Differences (IMG Activity: SIMG_FCOC_VARX_SCHEM)

Production variances in FI by cost element and variance category

- Production variance split configuration setup can be enhanced by cost element range, (or cost element group), apart from variance category which is typically maintained.

Price Diff. Splitting Profile

Controlling Area

Chart of Accounts

1000

ZCOA

Detailed Price Difference Accounts

Line	Description	Cost Elem. From	Cost Elem....	CElem Group	VCat	Target Account	Default
1000	Raw-QTYV	51100000	51100000		QTYV	52072100	☐
1001	Pack-QTYV	51500000	51500000		QTYV	52072200	☐
1002	SFG-QTYV	54300000	54300000		QTYV	52072300	☐
1003	WIP-QTYV	54400000	54400000		QTYV	52072400	☐
1100	Raw-RSUV	51100000	51100000		RSUV	52072100	☐
1101	Pack-RSUV	51500000	51500000		RSUV	52072200	☐
1102	SFG-RSUV	54300000	54300000		RSUV	52072300	☐

Detailed Price Difference Accounts							
Line	Description	Cost Elem....	Cost Elem. To	CElem...	VCat	Target Acc...	Default
1603	WIP-LSFV	54400000	54400000		LSFV	52077000	☐
1700	Raw-REMV	51100000	51100000		REMV	52078000	☐
1701	Pack-REMV	51500000	51500000		REMV	52078000	☐
1702	SFG-REMV	54300000	54300000		REMV	52078000	☐
1703	WIP-REMV	54400000	54400000		REMV	52078000	☒
2000	Machine Hours-Variable	94301000	94301000			52072500	☐
2001	Labor Hours	94311100	94311100			52072600	☐
2002	Machine Hours-Fixed	94301100	94301100			52072700	☐

Production variance split configuration was setup by cost element, along with variance category.

This can be visualized at KE11 – PA transfer structure for variances. Clients on ECC who use KE11 extensively may benefit from adapting this hidden feature



Production variances in FI by cost element and variance category

Transaction	Origin	Origin (Text)	Cost Element	Cost Element (Text)	OUM	Qty Variance	ResUsqVar	Price Var.	OutPricV...	Rem. Var.	Variance
Goods Issues	1000/60000751		51500000	COGS - Consumption - Packaging Material	EA	5.31-	0.00	0.00	0.00	0.00	5.31-
Goods Issues	1000/60002422			COGS - Consumption - Packaging Material	IM	266.50	0.00	0.00	0.00	0.00	266.50
Goods Issues	1000/60000744			COGS - Consumption - Packaging Material	FT	0.00	0.00	0.00	0.00	0.00	0.00
Goods Issues	1000/60001561			COGS - Consumption - Packaging Material	EA	0.01	0.00	0.01-	0.00	0.00	0.00
Goods Issues	1000/60002374			COGS - Consumption - Packaging Material	EA	3.54	0.00	0.00	0.00	0.00	3.54
			51500000	COGS - Consumption - Packaging M...		264.74	0.00	0.01-	0.00	0.00	264.73
Goods Issues	1000/40000240		54300000	COGS - Inventory Change - Semi Finished	LB	326.75-	0.00	0.01-	0.00	0.00	326.76-
			54300000	COGS - Inventory Change - Semi Fi...		326.75-	0.00	0.01-	0.00	0.00	326.76-
Goods Receipt	1000/20001274		55100000	COGS - Plant Activity Production Order	CV	0.00	0.00	0.00	0.04	0.00	0.04
Settlement				COGS - Plant Activity Production Order		0.00	0.00	0.00	0.00	0.00	2,785.55-
			55100000	COGS - Plant Activity Production Or...		0.00	0.00	0.00	0.04	0.00	2,785.51-
Confirmations	10001231/1		94301000	Machine Hours	H	2,103.63	0.00	0.09	0.00	0.00	2,103.72
			94301000	Machine Hours		2,103.63	0.00	0.09	0.00	0.00	2,103.72
Confirmations	10001231/2		94311100	Personnel Hours	H	743.79	0.00	0.03	0.00	0.00	743.82
			94311100	Personnel Hours		743.79	0.00	0.03	0.00	0.00	743.82
						2,785.41	0.00	0.10	0.04	0.00	0.00

Data Entry View

Document Number: 1000 Fiscal Year: 02/22/2025 Period: 02/22/2025

Reference: Cross-Comp.No. Currency: USD Texts Exist: ☐ Ledger Group:

CoCd	Item Key	Account	Description	Amount	Curr.	Trs	Cost Ctr	Order
1000	1 91	55100000	Plnt act prod.order	2,785.55-	USD	GBB		30006141
	2 86	52041002	PPV - Other	2,785.55	USD	PRD		
	3 50	52041002	PPV - Other	2,785.55-	USD			
	4 40	52071000	Price Difference PRI	0.10	USD			
	5 40	52072000	PRD- Input Qty Var	2,785.41	USD			
	6 40	52076000	PTD-Output Price Var	0.04	USD			
				0.00	USD			

Earlier settlement document
– before change

Data Entry View

Document Number: 1000 Fiscal Year: 02/22/2025 Period: 02/22/2025

Reference: Cross-Comp.No. Currency: USD Texts Exist: ☐ Ledger Group:

Item	Key	Account	Description	Amount	Curr.	Trs	Order	Profit Center
1	91	55100000	Plnt act prod.order	2,785.55-	USD	GBB	30006141	
2	86	52041002	PPV - Other	2,785.55	USD	PRD		
3	50	52041002	PPV - Other	2,785.55-	USD			
4	50	52071000	Price Difference PRI	0.02-	USD			
5	40	52072200	MUV-Pack	264.74	USD			
6	50	52072300	MUV-SFG	326.75-	USD			
7	40	52072500	Usg Var-Machine	2,103.72	USD			
8	40	52072600	Usg Var-Labor	743.82	USD			
9	40	52078000	PRD- Remaining Varia	0.04	USD			
				0.00	USD			

New settlement document
– after change

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Margin / Profitability Analysis in SAP S/4HANA

- In ECC, Costing-based CO-PA has several advantages over Account-based CO-PA. Costing-based has been a preferred choice for majority of the clients
- With S/4HANA Finance, most limitations of Account-based CO-PA have been addressed (e.g. COGS Split, Production Variance Split, Realignment)
- Account-based CO-PA helps remove duplication of two separate sources of information for FI-GL and Profitability
- Clients migrating to S/4HANA, will automatically switch to Account-based CO-PA, but will also face a decision point on whether to continue using Costing-based CO-PA
- It may be good option to continue to use Costing-based CO-PA (at least for couple of years), so as to become familiar with the two different versions of CO-PA. Costing-based CO-PA may be deactivated at a future date, once the client is comfortable with interpreting Account-based CO-PA
- There is no standard way to convert historical data from costing-based CO-PA to account-based CO-PA. Either one needs to activate account-based CO-PA ahead of time, or use custom tools to build history for prior periods
- Option to activate account-based CO-PA prior to moving to S/4HANA—this would enable history data build-up prior to migration. However, such a strategy requires careful planning, possibly years before the actual migration

Comparison of Costing and Account-based CO-PA

Conceptual explanation of Costing-based and Account-based CO-PA in ECC and S/4HANA

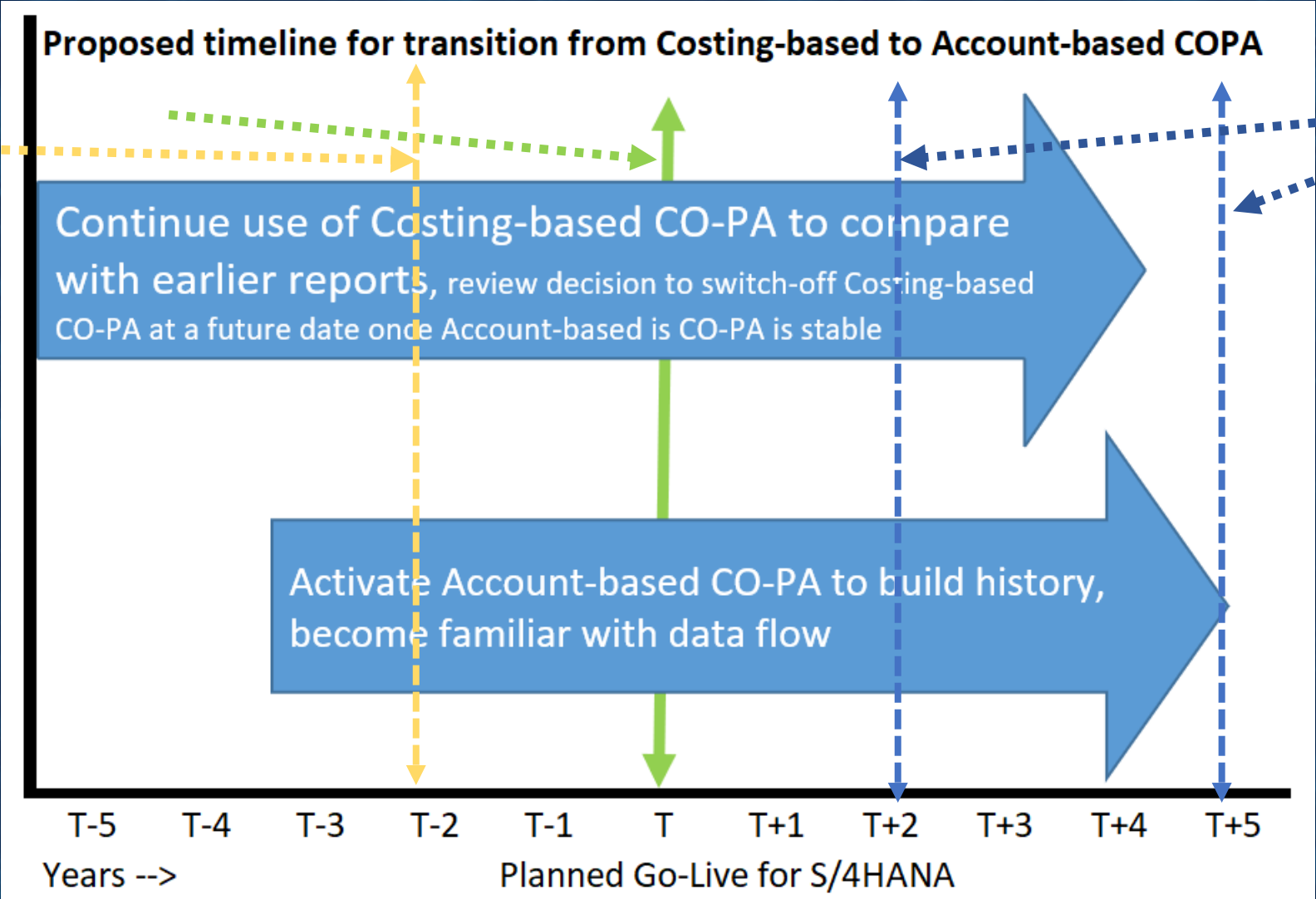
Costing-based CO-PA in ECC and S/4HANA			Account-based CO-PA in ECC			Account-based CO-PA in S/4HANA		
Val. Field	Description	Amount	Account	Description	Amount	Account	Description	Amount
VVSAL	Sales revenues	2,000,000	110000	Sales rev - Domestic	-1,200,000	110000	Sales rev - Domestic	-1,200,000
VVDED	Sales deductions	-200,000	120000	Sales rev - Export	-800,000	120000	Sales rev - Export	-800,000
	Net Revenue	1,800,000	130000	Sales deductions	200,000	130000	Sales deductions	200,000
				Net Revenue	-1,800,000		Net Revenue	-1,800,000
VVMAT	Material cost	800,000						
VVPRD	Labor cost	380,000	500000	Cost of Goods Sold	1,380,000	500100	Material cost	800,000
VVMOH	Material overhead	120,000	501000	Production Variance	20,000	500200	Labor cost	380,000
VVPOH	Production overhead	80,000				500300	Material overhead	120,000
	Cost of Goods Sold	1,380,000				500400	Production overhead	80,000
			700100	Research and Dev	40,000			
VVIPV	Input price variance	10,000	700200	Marketing	100,000			
VVRUV	Resource usage var	8,000	700300	Sales and Distrib	60,000			
VVREM	Remaining variance	2,000		Net margin	-200,000			
	Production Variance	20,000				501100	Input price variance	10,000
	Gross margin	400,000				501200	Resource usage var	8,000
						501300	Remaining variance	2,000
VVRND	Research and Dev	40,000						
VVMKT	Marketing	100,000				700100	Research and Dev	40,000
MMSNA	Sales and Distrib	60,000				700200	Marketing	100,000
						700300	Sales and Distrib	60,000
	Net margin	200,000					Net margin	-200,000

Note: Positive / Negative signs controlled by Debit / Credit amount in Account-based CO-PA

*Cost of Goods Sold (CoGS) split in FI
Production variance split in FI

Proposed timeline for transition from Costing-based to Account-based COPA

Possible use cases (before / during S/4 migration)



Alternate use case (after S/4 migration)

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Other Features and Innovations

- **Fiori for better user-experience across devices**
- **Semantic Tags for Reporting (SPRO → Financial Accounting → General Ledger Accounting → Master Data → G/L Accounts → Financial Statement Structures → Semantic Tags)**
- **OKTZ Maximum allowed Cost Components increased from 40 to 120**
- **CK40N Costing Run – Simplified steps, Recurrence feature**
- **Attributed profitability segment (SPRO → Controlling → Profitability Analysis → Master Data → Activate Derivation for Items without Profitability Segment)**
- **Embedded Analytics/Core Data Services (CDS)**
- **Production/operation level info in CO, Real-time WIP and variance**

Flori: KSB1 Cost Center Line Items

Display Actual Cost Line Items for Cost Centers : Initial Scr...

Further Selection Criteria...

Controlling Area: A000

Cost Center: | to

or

Cost Center Group: to

Cost Element: to

or

Cost Element Group: to

Posting Data

Posting Date: 01.09.2019 to 30.09.2019

Settings

Layout: 1SAP Primary cost posting

More Settings

Selection screen
←ECC
S/4H Fiori→

Display Actual Cost Line Items for Cost Centers : Initial Screen

Further Selection Criteria... More ▾ Exit

Controlling Area: A000

Cost Center: to

or

Cost Center Group: to

Cost Element: to

or

Cost Element Group: to

Posting Data

Posting Date: 01.09.2019 to 30.09.2019

Settings

Layout: 1SAP Primary cost posting

More Settings

Execute

Display Actual Cost Line Items for Cost Centers

Document Master Record

Layout: 1SAP Primary cost posting
Cost Center: 1301... Sett1. Receiver...
Report Currency: EUR Euro

Cost Elem.	Cost element name	Σ	Val.in rep.cur.	Total quantity	PUM	OffsetAcct	Name of Offsetting Account
	Cost Center 3000 Manufacturing 2 (DE)	*	44.438,00				
	Cost Center 10101101 Financials (DE)	*	3.227.218,00				
	Cost Center 10101201 Purch & Store 1 (DE)	*	50.593,50				
	Cost Center 10101301 Manufacturing 1 (DE) / Personnel Hours	*	2.000,00-				
	Cost Center 10101321 Services/Consltg(DE)	*	5.000,00				
	Cost Center 10101602 Sales (DE)	*	1.389,00				
65400000	Freight		272,22		K	11300080	Domestic UK Supplier 80 (Ariba Netw
	Cost Center 11101601 Marketing (GB)	*	272,22				
	Cost Center KS-01	*	6.325,00				
	Cost Center KS-02	*	5.045,00				
	Cost Center T-CCA01	*	3.366,00				
	Cost Center T-CCA02	*	34.470,00				
	Cost Center T-CCA04	*	666,00				
		**	3.376.782,72				

KSB1 hana-is8-appl OVR

Display Actual Cost Line Items for Cost Centers

Document Master Record

Layout: 1SAP Primary cost posting
Cost Center: 1301... Sett1. Receiver...
Report Currency: EUR Euro

Cost Elem...	Cost element name	Σ	Val.in rep.cur.	Total quantity	PUM	OffsetAcct	Name of offsetting account
	Cost Center 3000 Manufacturing 2 (DE)	*	44.438,00				
	Cost Center 10101101 Financials (DE)	*	3.227.218,00				
	Cost Center 10101201 Purch & Store 1 (DE)	*	50.593,50				
	Cost Center 10101301 Manufacturing 1 (DE) / Personnel ...	*	2.000,00-				
	Cost Center 10101321 Services/Consltg(DE)	*	5.000,00				
	Cost Center 10101602 Sales (DE)	*	1.389,00				
65400000	Freight		272,22		K	11300080	Domestic UK Supplier 80 (Ariba Netw
	Cost Center 11101601 Marketing (GB)	*	272,22				
	Cost Center KS-01	*	6.325,00				
	Cost Center KS-02	*	5.045,00				
	Cost Center T-CCA01	*	3.366,00				
	Cost Center T-CCA02	*	34.470,00				
	Cost Center T-CCA04	*	666,00				
		**	3.376.782,72				

Cost Components

In ECC, the total number of cost component fields are limited to 40. If a cost component is denoted as a fixed cost, then it takes up two fields in the KEPH table. With 4 fixed cost components, 8 fields are used up, thereby leaving 32 cost components for full cost, taking the total number of cost components to 36.

Any attempt to create more cost components results in an error message—Maximum number of cost fields reached (40)

New Entries: Details of Added Entries

Dialog Structure: Cost Comp. Str. RE Cost Comp. 399 399

Cost Component Structure

- Cost Components with Attributes
 - Assignment: Cost Comp
 - Update of Additive Costs
 - Transfer Structure
- Cost Component Views
- Assignment: Organiz. U
- Cost Component Groups

Control: Cost Share Cost Summarization

Performance Assistant

Maximum number of cost fields reached (40)

Message no. KQ304

Diagnosis

The maximum number of cost fields defined in the system for saving the fixed and variable portions of the cost components has now been exceeded because of the new cost component.

External Procurement Initial Cost Split

Transfer Price Surcharge Not Relevant

Maximum number of cost fields reached (40)

Dictionary: Display Table

Transparent Table: KEPH Active

Short Description: Product Costing: Cost Components for Cost of Goods Mfd

Attributes Delivery and Maintenance Fields Input Help/Check Currency/Quantity Fields

Srch Help Built-In Type 55

Field	Key	Initial	Data element	Data Type	Length	Decimal	Short Description
KST037			KSTEL	CURR	13		2 Cost Field
KST038			KSTEL	CURR	13		2 Cost Field
KST039			KSTEL	CURR	13		2 Cost Field
KST040			KSTEL	CURR	13		2 Cost Field

SE11 sap01-205 OVR

With S/4HANA release 1909, the number of cost components has now increased to 120. New cost components can be appended to the existing structure, starting from position 41 onwards.

Dictionary: Display Table

Transparent Table: KEPH Active

Short Description: Product Costing: Cost Components for Cost of Goods Mfd

Attributes Delivery and Maintenance Fields Input Help/Check Currency/Quantity Fields Indexes

Search Built-In Type 133 / 136

Field	Key	Initial	Data element	Data Type	Length	Decimal	Coordinate	Short Description
KST117			KSTEL	CURR	13	2	0	Cost Field
KST118			KSTEL	CURR	13	2	0	Cost Field
KST119			KSTEL	CURR	13	2	0	Cost Field
KST120			KSTEL	CURR	13	2	0	Cost Field

SE11 hana-is9-appl OVR

Transaction codes for WIP, Variance and Settlement

- **ECC transaction codes:**
 - **KKA0—WIP mass processing; KKAQ—WIP mass display**
 - **KKAX—WIP individual processing; KKAY—WIP individual display**
 - **KKS1—Variance mass**
 - **KKS2—Variance individual processing**
 - **C088—Settlement mass**
 - **K088—Settlement individual processing**
- **New transaction codes in S/4HANA:**
 - **KKA0H (WIP)**
 - **KKS1H (Variance)**
 - **C088H (Settlement)**



These are optimized to work on the new S/4HANA table structures

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Resources

- **History of SAP S/4HANA** <https://medium.com/@ktern/history-of-sap-s-4hana-ad6b0d938bbc>
- **First Steps in SAP (Second Edition)** by Martin Munzel and Sydnie McConnell; 2015; Espresso Tutorials <https://www.espresso-tutorials.com/product/first-steps-in-sap-second-edition/>
- **First Steps in SAP S/4HANA Controlling (Second Edition)** by Ashish Sampat and Tom King; 2025; Espresso Tutorials <https://www.espresso-tutorials.com/learning-content/first-steps-in-sap-s4hana-controlling-second-edition>
- **SAP S/4HANA Delta for CO Configuration** by Ashish Sampat; 2020; Espresso Tutorials <https://www.espresso-tutorials.com/product/sap-s-4hana-delta-for-co-configuration/>
- **Delta from SAP ERP Financials to SAP S/4HANA Finance** by Oona Flanagan; 2019; Espresso Tutorials <https://www.espresso-tutorials.com/product/delta-from-sap-erp-financials-to-sap-s-4hana-finance/>
- **Material Ledger in SAP S/4HANA: Functionality and Configuration** by Paul Ovigele; 2019; SAP Press https://www.sap-press.com/material-ledger-in-sap-s4hana_4863/
- **Migrating from Costing-Based to Account-Based CO-PA in SAP S/4HANA** by Ajay Maheshwari; 2020; SAP Press https://www.sap-press.com/migrating-from-costing-based-to-account-based-co-pa-in-sap-s4hana_5043/

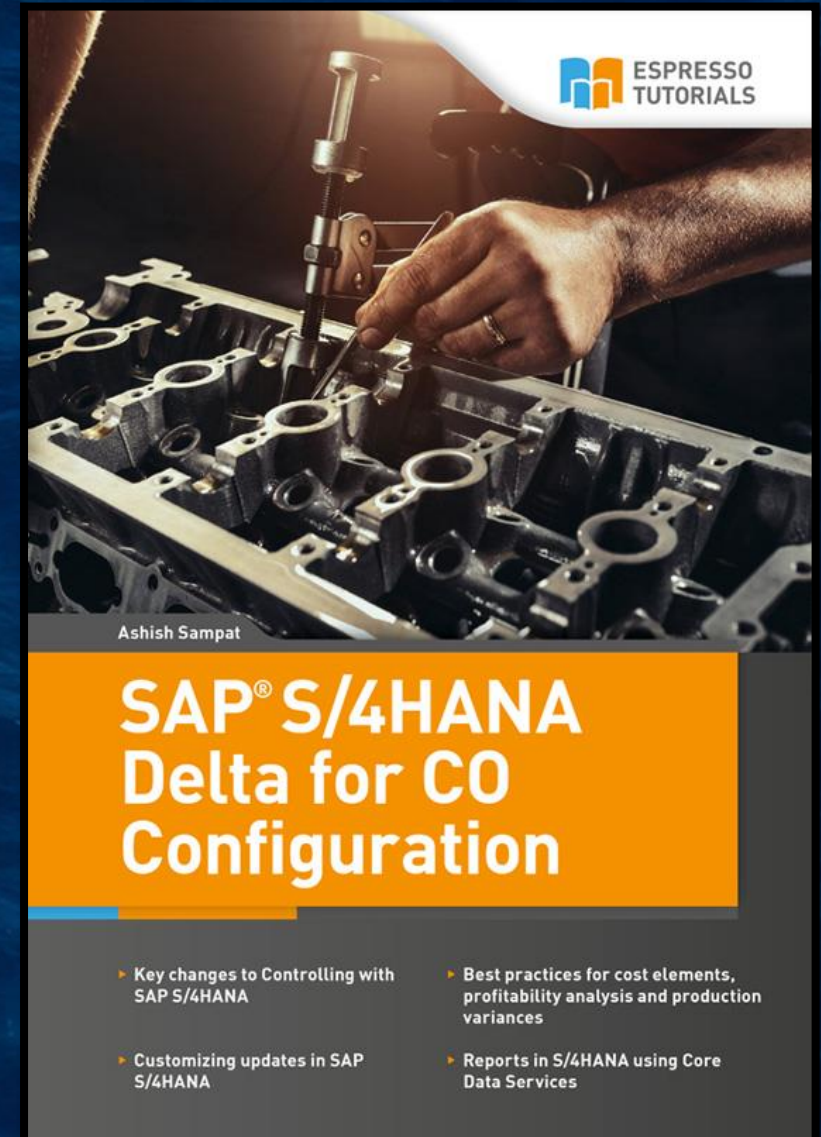
SAP S4HANA Delta for CO Configuration

- Key changes to Controlling with SAP S/4HANA
- Customizing updates in SAP S/4HANA
- Best practices for cost elements, profitability analysis and production variances

<https://www.espresso-tutorials.com/product/sap-s-4hana-delta-for-co-configuration/>

French: SAP S/4HANA Delta pour la configuration CO

<https://www.espresso-tutorials.fr/produit/sap-s-4hana-delta-pour-la-configuration-co/>



Other Books on Controlling Authored by this Speaker

First Steps in SAP Controlling (CO)

English: <https://www.espresso-tutorials.com/product/first-steps-in-sap-controlling-co/>

French: Vos premiers pas avec SAP Contrôle de gestion (CO)

<https://www.espresso-tutorials.fr/produit/vos-premiers-pas-avec-sap-controle-de-gestion-co/>

Portuguese: Guia para iniciantes do SAP Controlling

<https://www.espresso-tutorials.com.br/0188.php>

Japanese: First Steps in SAP CO

<https://www.amazon.com/gp/product/B08B3TR369/>



Expert tips to Unleash the Full Potential of SAP Controlling

<https://www.espresso-tutorials.com/product/expert-tips-to-unleash-the-full-potential-of-sap-controlling/>



First Steps in SAP S/4HANA Controlling by Ashish Sampat and Tom King



This is the second edition of the book “First Steps in SAP Controlling” which I had the honor of authoring in 2015. The second edition is updated for S/4HANA and Fiori.

- Cost center and product cost planning, actual cost flow
- Best practices for cost absorption using Product Cost Controlling
- Month-end closing activities in SAP S/4HANA Controlling
- Examples and screenshots based on a case-study approach

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Questions & Answers

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Thanks for attending this session!

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