

Joint Venture Accounting

SAP solution for Oil & Gas Industry – Exploration & Production

A photograph of an offshore oil rig at night, illuminated by its own lights against a dark sky and sea. The rig is a complex structure of steel beams and platforms, with a tall derrick on the left and another on the right. The lights create a warm glow on the dark metal and the surrounding water.

Introduction
Introduction

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1. Introduction

Background

- In oil and gas industry, certain ventures are considered high risk, demanding extensive capital investment and a long payback period.
- To minimize risks, oil companies develop partnerships called joint ventures.
- A joint venture consists of an operating partner (operator) and one or more non-operating partners who combine monetary or personnel resources to share a project's expenses and revenues.
- The operator manages the venture, arranges venture activities, and maintains accounting records.
- The operator remits venture expenses, collects revenues, and distributes these to the partners, according to their equity.
- This process is known as Joint Venture Accounting (JVA).

Components

- SAP JVA allows to process expenses & revenues for joint ventures and assign them to partners.
- Five SAP JVA objects are used to associate expenses with ventures and their partners:
 - 1.1 Joint Operating Agreement.
 - 1.2 Equity Group.
 - 1.3. Venture.
 - 1.4. Equity Type.
 - 1.5. Recovery Indicator.

1.1 Joint Operating Agreement (JOA)

- A The JOA is the contract between JVA partners, and it governs all venture operations.
- At the outset of a joint venture arrangement, one partner agrees to develop and manage the project and is called the operator.
- The JOA contains all information for an operating agreement, such as allowed overhead provisions.

1.2 Equity group

- The equity group defines joint venture partners, their participation, and it reflects each partner's contractual interest.
- Equity groups are defined in the JOA, and are assigned to the venture.
- In SAP JVA, the following types of ownership arrangements are possible:
 - A. Operated** – The operator in this equity group holds less than a 100% share. The other partners own the remaining shares.
 - B. Non-Operated** – This represents a company's interest in a joint venture operated by another party.
 - C. Non-Operated, On-Billing** – In this type of ownership, the company can re-bill part of its share of a non-operated venture expenses to third parties.
 - D. Corporate** – The operator has a 100% share of the venture.

1.3 Venture

- The venture is the object used in SAP JVA to capture expenditures and revenues.
- It links related SAP R/3 objects, such as cost centres, projects, orders, and profit centres to the JOA.
- The Venture and its related cost objects are tied to an equity group at a specific time.
- This allows effective date allocation of joint venture expenses.

1.4 Equity Type

- The JOA has different development stages, such as engineering and design, construction, and production. Different partners participate at each stage.
- SAP manages the different stages by using equity types.
- The equity type links the venture and the equity group contained in the JOA.
- This relationship between JOA, venture, and equity type defines ownership, and changes of ownership throughout the life of the property.

1.5 Recovery Indicator

- The recovery indicator divides general ledger account balances into subclasses, such as billable and non-billable adjustments.
- Because it carries a billable or non-billable indicator, it determines those expenditures to be billed to venture partners.
- The recovery indicator is also the basis for reporting and allocations.

2. Structure of Joint Operating Agreement

Key note : Major users of JVA model in UK are BP and Shell. Their names are used throughout this presentation just for illustration purposes.

Joint Operating Agreement

2.1 Features

- Joint Operating Agreement (JOA) is an agreement that governs a Joint Venture (JV)
- Master data is globally designed, but the records are maintained locally.
- Joint Venture numbers will be created to match the JOA number for Operated, Non-Operated and On-billing ventures.
- Corporate Joint Venture numbers are internally assigned.

2.2 Types

Four JOA types exist in the SAP JVA solution:

- Operated: Where BP/Shell is the operator of the agreement.
- Non-Operated: Where BP/Shell have an equity holding but another partner is the agreed operator.
- On-billing: Where BP/Shell has (or will have) a Non-Operated position as well as an Operated position (eg. Other Partner running production and BP/Shell still running Exploration).
- Corporate: Purely 100% BP/Shell costs, no partners.

Structure of Joint Operating Agreement (cont.)

Joint Operating Agreement

2.3 SAP Rules

- There can be any number of JOA's within one company code.
- There can be only one JOA in one Company Code.
- Operated and Non-Operated JOA's will always have a 1:1 relationship with Joint Ventures.
- For corporate JOA's there can be multiple Joint Ventures.
- Equity groups are defined at the JOA level and activated within the JV.
- An equity group will be created for every set of different working interest percentages and is time dependant.

2.4

Represented in 6 Digits

Operated : 100000 to 199999

Non-Operated : 500000 to 599999

On-billing: 600000 to 699999

Corporate : 900000 to 999999

(single Corporate JOA created per Company Code)



Co Code	Description	JOA
GBGI	UK Corporate JOA	900011
GBGI	UK Non-Operated JOA	500187
GBGI	UK Operated JOA	100100

3. SAP JVA - Overview of Solution

#	The following overview of functions provide a high-level understanding of SAP JVA :
3.1	☐ Cash Call
3.2	☐ Overhead Cost Calculation.
3.3	☐ Cutback
3.4	☐ Suspense Processing.
3.5	☐ Equity Adjustment.
3.6	☐ Joint Venture Billing
3.7	☐ Partner Billing
3.8	☐ Asset and Material transfers
3.9	☐ Controlling
3.10	☐ Net profit and carried interest profit partners
3.11	☐ Non-operated properties
3.12	☐ Inter-company functions
3.13	☐ Balanced books by venture
3.14	☐ Audit support
3.15	☐ Bank account switching

Joint Venture Accounting

Overview of Solution (cont.)

Overview of SAP JVA Solution

3.1 Cash Call

- Cash calls allow the operator to invoice partners for future estimated venture costs.
- SAP JVA cash calls are available for operated and non-operated ventures.
- Operated ventures are integrated with accounts receivable.
- Non-operated cash calls are integrated with accounts payable.

3.2 Overhead Cost Calculation

- Joint venture operators incur indirect expenses, and can charge overheads to their partners to recover these costs.
- The charges for non-operating partners are based on their equity shares.
- **Percentage-Based** - overheads are based on percentages and types of costs defined in the JOA.
- **Stepped-Rate-Based** - overheads are based on specified overhead percentages.
- **Statistical-Rate-Based** - overheads are based on a defined statistical quantity and contractual overhead rate defined in the JOA.

3.3 Cutback

- The operating partner carries all of the operating costs of a venture throughout the accounting period.
- SAP JVA analyzes expenditures and creates invoice amounts for billing the partners.
- This process typically occurs at the end of the accounting period after all transactions have been posted and allocations done.
- Cutback is the process of allocating these transactions to operator and non-operating partners, according to their equity shares.
- In some countries, transactions between SAP JVA partners are subject to value added tax (VAT).
- The cutback process also handles VAT postings to joint venture partners.

Joint Venture Accounting

Overview of Solution (cont.)

Overview of SAP JVA Solution

3.4 Suspense Processing

- Suspense processing allows the operator to continue regular processing in the event of dispute or uncertainty.
- SAP JVA provides three levels of suspense processing: partner suspense, equity group suspense, and project suspense.
- Partner-level suspense allows to suspend a partner or partners in an equity group.
- During cutback, charges for the suspended partner are not processed.
- The operator retains these charges temporarily.
- After the partner is released from suspense, the charges distributed against other partners.
- Equity group and project suspense functions are designed for circumstances in which the ownership of an equity group or project is undefined, but the operator wishes to proceed with the project.
- The operator carries 100% of expenditure related to suspended items, until their release.

3.5 Equity Adjustment

- Ownership changes during the project can result in expenditure being posted across multiple venture or equity groups.
- Pre-cutback equity change allows the operator to correct these transactions, and to cut all venture expenditures back to a single venture or equity group combination.
- This process reverses postings to the original venture or equity group, and books them to the active venture or equity group combination at month end.
- These adjustments are made only in the JVA ledgers. The original entries in the originating SAP R/3 components remain unaffected, thereby preserving the audit trail.
- Equity change management is designed to make retroactive changes at the AR level for prior period ownership adjustments.
- SAP JVA determines the net change in share for each partner and the operator, and posts an adjustment document to the affected partners.

Joint Venture Accounting

Overview of Solution (cont.)

Overview of SAP JVA Solution

3.6 Joint Venture Billing

- Joint venture billing allows the operator to invoice partners for expenditure and revenues, and to issue cash calls.
- The billing statements are fully configurable and can accommodate special billing formats required in different countries or industries.

3.7 Partner Netting

- The netting process calculates the sum of a partner's open expenses and cash calls, within the venture, to a single residual entry of outstanding expenses.
- It then posts that entry to the partner's accounts receivable account for billing.

3.8 Asset and Material transfer

- The operating partner carries all of the operating costs of a venture throughout the accounting period.
- SAP JVA functions in SAP Asset Management (SAP AM) and SAP Material Management (SAP MM) allow asset and material transfers with joint venture properties at the current replacement price, rather than at historical cost.

SAP MM Functions

- SAP MM can use the current replacement price for material movements between warehouses and goods issues, and returns to and from assets and projects.
- For the oil and gas industry, one can split the current replacement price between tangible and intangible development costs

SAP AM Functions

- SAP AM allows you to track the operator's net asset cost, as well as gross cost.
- Three additional asset books contain all billable, non-billable, and total gross book costs associated with the asset.

Joint Venture Accounting

Overview of Solution (cont.)

Overview of SAP JVA Solution

3.9 Controlling

- In SAP JVA, user need to allocate various costs among multiple cost objects for distribution to the ventures.
- It is also required to bill joint venture partners through cutback.
- Allocation is the process by which billable and non-billable costs are assigned to the partners.
- The SAP CO processes. assess and distribute, and facilitate all allocations.
- Settlement consists of the final allocation of costs from orders or Work Breakdown Structure (WBS) elements to cost centers, projects, fixed assets, general ledger accounts, networks, materials, sales orders, or cost objects defined in the settlement rule for the sender.
- SAP JVA allows users to determine whether or not billable items should be charged to the joint venture partner, based on the information of either the sending cost object or the receiving cost object.
- This is important particularly if the venture information in the sending and receiving objects is different. A user-defined manipulation rule of the recovery indicator governs this feature.

3.10 Net Profit and Carried Interest Profit Partners

- A Net Profit Interest is one in which the non-operating partner has interest in the venture, but does not pay for venture development or operation expenditure.
- If revenue exceeds expenditure, this partner receives a percentage of the revenue.
- This type of interest can occur when a prospective partner proposes a venture opportunity to the operator, but chooses to remain inactive.

Joint Venture Accounting

Overview of Solution (cont.)

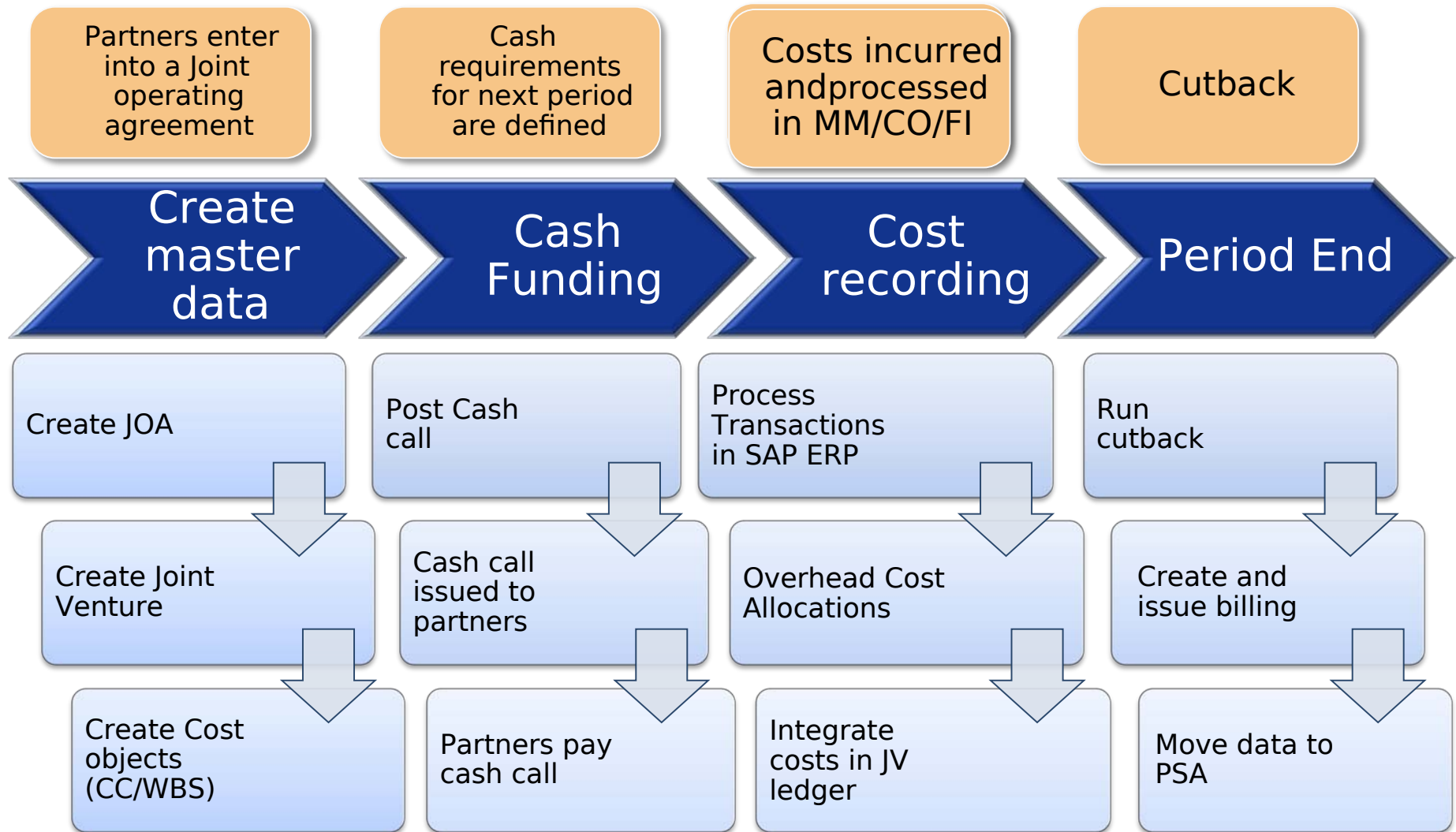
#	Overview of SAP JVA Solution
3.11	Non Operated Properties <ul style="list-style-type: none">□ The processing of incoming, non-operated invoices is fully integrated with SAP accounts payable functions.□ Users can enter cash call requests for outside operators online and these are fully integrated into accounts payable for payment.
3.12	Inter Company Functions <ul style="list-style-type: none">□ An operator may have an affiliated company (a legal entity within the same SAP system) as a partner.□ In this instance, SAP JVA allows users to book inter-company entries on the books of the operator and all affiliates.□ By identifying these relationships through inter-company mappings of accounts and other relevant objects, SAP JVA automates processing of inter-company joint venture transactions.
3.13	Balanced book by venture <ul style="list-style-type: none">□ Operators are often obligated to produce balanced venture financial statements for non-operating partners.□ For this purpose, SAP JVA allows end users to balance books by venture.□ If a document without balancing-entries-by-venture is posted to the joint venture ledger, the data capture process creates the inter-venture booking to balance the document by venture.
3.14	Audit Support <ul style="list-style-type: none">□ SAP JVA can give non-operating partners detailed accounting transaction records in an electronic format to assist transaction audits.□ These records are based on operator-defined selection criteria and can be restricted at multiple levels.

Overview of SAP JVA Solution

3.15 Bank Account Switching

- The operating partner carries all of the operating costs of a venture throughout the accounting period.
- Outside North America, large ventures are commonly funded from one or more dedicated bank accounts called Venture Bank Accounts (VBA).
- Depending on the venture, SAP JVA determines the bank account from which an invoice is paid.
- If the invoice applies to more than one venture, the venture with the greatest expenditure on the invoice determines the paying bank.
- In the event of payments from a central bank, the existence of multi-venture invoices, or inter-venture allocation or settlements, SAP JVA calculates the bank account movements required to restore each account to its correct position.
- SAP JVA also produces correspondence, notifying the bank to make all required transactions for the movement of cash between accounts.

4.SAP JVA - Process



5. Benefits of SAP JVA Solutions

Benefits of SAP JVA Solution

5.1 Project Support

- ❑ Cash Calls request cash payments from partners for future venture operations.
- ❑ Partner Billing calculates partner shares for venture expenses.
- ❑ SAP JVA calculates different types of overhead as agreed in the Joint Operating Agreement (JOA).
- ❑ Allocations distribute billable and non-billable costs to cost centres.
- ❑ Multi-Currency Processing supports the multi-currency requirements of typical venture activities.

5.2 Real Time Data Capture

- ❑ Joint Venture Data Capture captures and codes all transactions, including vendor invoices, inventory movements and allocations.
- ❑ Joint venture documents are created in the accounting interface in real time and are stored in separate joint venture database tables.
- ❑ SAP JVA captures all expenditure and other transactions by using cost centers, projects, orders, and profit centers.
- ❑ Manipulation of the recovery indicator ensures that all expenses are distributed between the partners at the correct time during the procurement process.
- ❑ These include goods receipts, invoice receipts, and payment.

6. Production Sharing Agreement (PSA)

#	Production Sharing Agreement
6.1	Features <ul style="list-style-type: none">□ Production Sharing Agreement is the key master data element used in the SAP PSA module□ Details the fiscal arrangement between the government and the contracting company□ Specifies the rights and obligations of the parties□ Provides the formulas to calculate the recoverable costs from the government by the contractor (BP/Shell), and the contractor's production entitlement□ PSA master data element holds the details of the physical PSA e.g. Contractor, Reporting Frequency, Contract Length and Government□ Generally, PSA's will have a 1:1 mapping with Joint Ventures□ The PSA master data element in SAP will be an electronic version of the PSA signed between the relevant Government and The Contractor.
6.2	SAP Rules <ul style="list-style-type: none">□ Actual PSA ID will mirror the JV name□ PSA Master data is defined and maintained locally□ Length : Max 10 digits□ Format : Alphanumeric

7.SAP JVA - Integration with other SAP modules

#	SAP Integration
7.1	<p>SAP JVA uses functions from other SAP modules</p> <ul style="list-style-type: none">□ Financial Accounting (SAP FI)□ Controlling (SAP CO)□ Asset Management (SAP AM)□ Materials Management (SAP MM)□ Plant Maintenance (SAP PM)□ Project System (SAP PS)
7.2	<p>JVA, PSA & PRA - Relationship</p> <ul style="list-style-type: none">□ Joint Venture Accounting (JVA), Production Sharing Accounting (PSA) or Production and Revenue Accounting (PRA) affect each and every area of the financial postings.□ When JVA is activated on a SAP system, as one of the cross module components, it places a number of specialised routines in other modules at master data and transactional data level.□ This emphasises the strong integration role of accounting modules with other areas like logistics.□ The most affected modules are:<ol style="list-style-type: none">1. Financial Accounting (mostly on the Assets (AA) sub-module)2. Controlling (CO)3. Material management (MM) including plant maintenance4. Project system (PS)



Joint Venture Accounting

SAP solution for Oil & Gas Industry – Exploration & Production

Data Mapping to Financial Templates



8. Exploration & Production (E&P) - Project life cycle & SAP Processes

#	Project life cycle & SAP processes	
8.1	Project Life Cycle : <ul style="list-style-type: none"> <input type="checkbox"/> Pre exploration <input type="checkbox"/> Exploration <input type="checkbox"/> Appraisal <input type="checkbox"/> Development <input type="checkbox"/> Production <input type="checkbox"/> Decommissioning 	
#	SAP Processes	
8.2	1. Project Creation <ul style="list-style-type: none"> <input type="checkbox"/> Create master data <input type="checkbox"/> Create JOA <input type="checkbox"/> Create joint venture <input type="checkbox"/> Create cost objects (CC/WBS) 2. Cash funding (Cash call) <ul style="list-style-type: none"> <input type="checkbox"/> Create master data <input type="checkbox"/> Post cash call <input type="checkbox"/> Cash call issued to partners <input type="checkbox"/> Partners pay cash call 	3. Cost Recording <ul style="list-style-type: none"> <input type="checkbox"/> Process transactions in SAP <input type="checkbox"/> OH allocations <input type="checkbox"/> Integrate costs in JV ledger 4. Period End (Cutback) <ul style="list-style-type: none"> <input type="checkbox"/> Create master data <input type="checkbox"/> Post cash call <input type="checkbox"/> Cash call issued to partners <input type="checkbox"/> Partners pay cash call

9. Financial Data Structure for E&P

#	Financial Data Structure (FDS) in SAP for Exploration & Production
9.1	Key Fields in SAP <ul style="list-style-type: none">□ Company code□ Controlling Area□ Profit Centre□ Cost centre□ Joint Operating Agreement□ Production sharing agreement (PSA)□ Internal Orders□ WBS Element□ Tax Codes□ Project systems
9.2	Data Flow - Cost Capture <ul style="list-style-type: none">□ Controlling Area → Profit Centre → Company code → Cost centre
9.3	Controlling Area defined in SAP <ul style="list-style-type: none">□ CEGB - Controlling area (CE) + Country (GB)□ Controlling area defines currency

#	Financial Data Structure in SAP JVA
9.4	Profit Centre <ul style="list-style-type: none">□ Profit centre is an organisation that collects that collects revenue, expenses & assets.□ Profit centre is parent of cost centre□ It can represent field, asset or region.□ Profit centre aligned to company code 1:1.□ Standard hierarchy is centrally created by controlling area□ This cannot be amended by local users□ Alternative hierarchies can be created to satisfy local reporting requirements.
9.5	Company Code defined in SAP <ul style="list-style-type: none">□ GBGI – Country code (GB) + Company (GI)
9.6	Cost Centre <ul style="list-style-type: none">□ 10 digits of which first 5 is global defined and last five local defined

Financial Data Structure in SAP JVA

9.7 Joint Operating Agreement

- Operated (>50%) - BP /Shell is the operator
- Non Operated (<50%) - BP/Shell has equity but another partner is the operator
- On billing - BP has both operating and non operating position in the same venture
- Corporate - No Partner.

9.8 Production Sharing Agreement (PSA)

- PSA is a fiscal arrangement between contractor (BP/Shell) and respective government.
- PSA specifies recoverable costs from government and contractor's production entitlement.
- PSA will have 1:1 mapping with joint ventures.

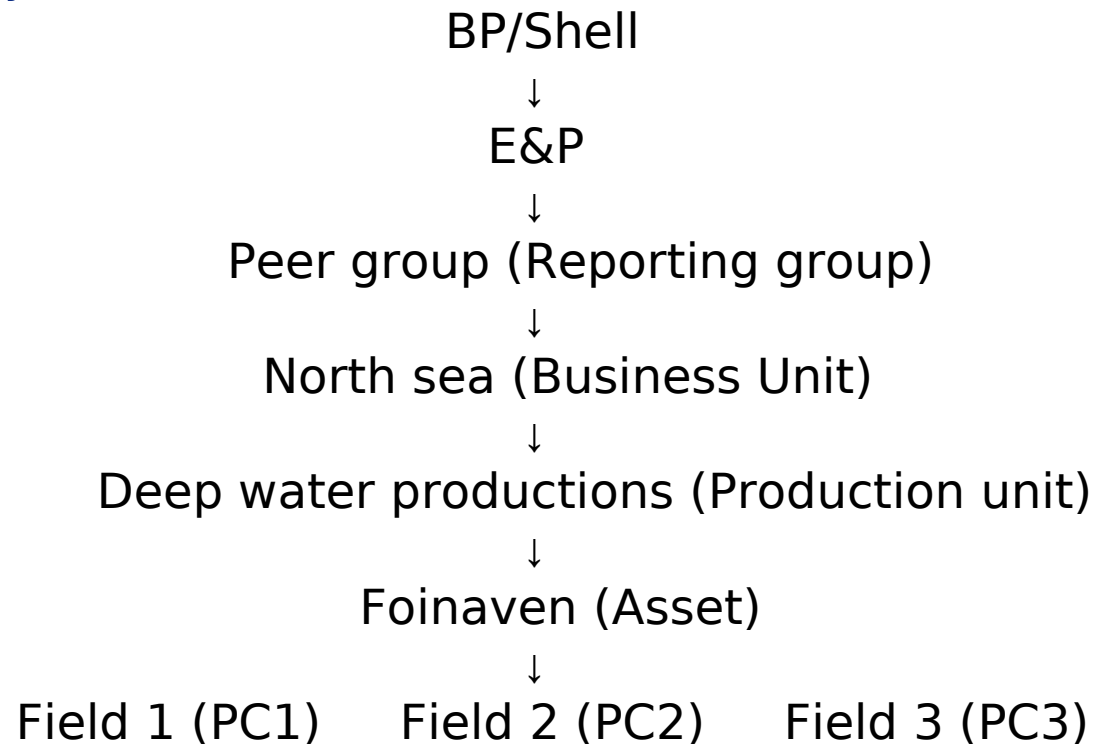
9.9 Internal Orders

- Used to capture costs of different activities.
- Mapped to a cost object (CC / WBS)

#	Financial Data Structure in SAP JVA
9.10	WBS Elements <ul style="list-style-type: none">□ WBS break down work required to carryout a project and record associated costs□ Linked to a cost centre and JV in master data.□ Settlement to asset (Capex) and Cost Centre (Opex) at the end of the month.
9.11	Tax Code <ul style="list-style-type: none">□ Input or output tax□ Dummy tax codes - AO or VO in case there is no tax□ Denoted by 2 digits customised for each country.
9.12	Project System <ul style="list-style-type: none">□ Each project is composed of multi levels of WBS elements□ End dated projects WBS should be used□ Ongoing projects cost centres should be used (Opex)□ For all Capex projects WBS should be used□ Every WBS element is mapped to a CC and JV□ BP/Shell uses hierarchy level of WBS elements□ First level is the project definition□ Subordinate levels specify posting levels□ Costs are posted at the lowest level.

Financial Data Structure in SAP JVA - Profit Centre Accounting

9.13 Profit Centre Hierarchy (Example)



#	Financial Data Structure in SAP JVA
9.14	Data Flow - Group Reporting <ul style="list-style-type: none">□ GL → CC/WBS → JVA → Special GL → Special ledger cube BW → Group Consolidation
9.15	Chart of Accounts <ul style="list-style-type: none">□ Global CoA□ Operational CoA□ Local CoA□ Group CoA
9.16	Accounting Group <ul style="list-style-type: none">□ Balance sheet□ Profit & Loss□ Statistical accounts
9.17	Accounting Type <ul style="list-style-type: none">□ Group□ Related□ Third Party

Joint Venture Accounting

Financial Data Structure for E&P (cont.)

#	Financial Data Structure in SAP JVA
9.18	Reporting Types <ul style="list-style-type: none">□ GAAP / IFRS□ Local
9.19	Mapping Process <ul style="list-style-type: none">□ Business Transaction Identifier□ Business Code□ Group reporting number (GRN)□ WBS / CC → Profit centre → Business Code → GRN

Financial Data Structure in SAP JVA - Joint Venture Attributes

9.20 Joint Venture Attributes

- Controlling Area
- Cost centre number
- Short description
- Long text
- Profit Centre
- Cost centre category
- Hierarchy area
- Company code
- Valid - From to
- Function indicator
- Actual / Plan revenues
- E&P Indicator
- E&P product type
- Joint Venture
- Recover Indicator
- Equity type

Joint Venture Accounting

Financial Data Structure for E&P (cont.)

Financial Data Structure in SAP JVA - Joint Venture Attributes (cont.)

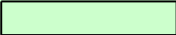
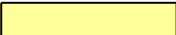

9.21 Joint Venture Attributes

- The Controlling Area & Cost Centre will form a 'unique key' and the additional attributes will determine how the cost can be used for reporting purposes.

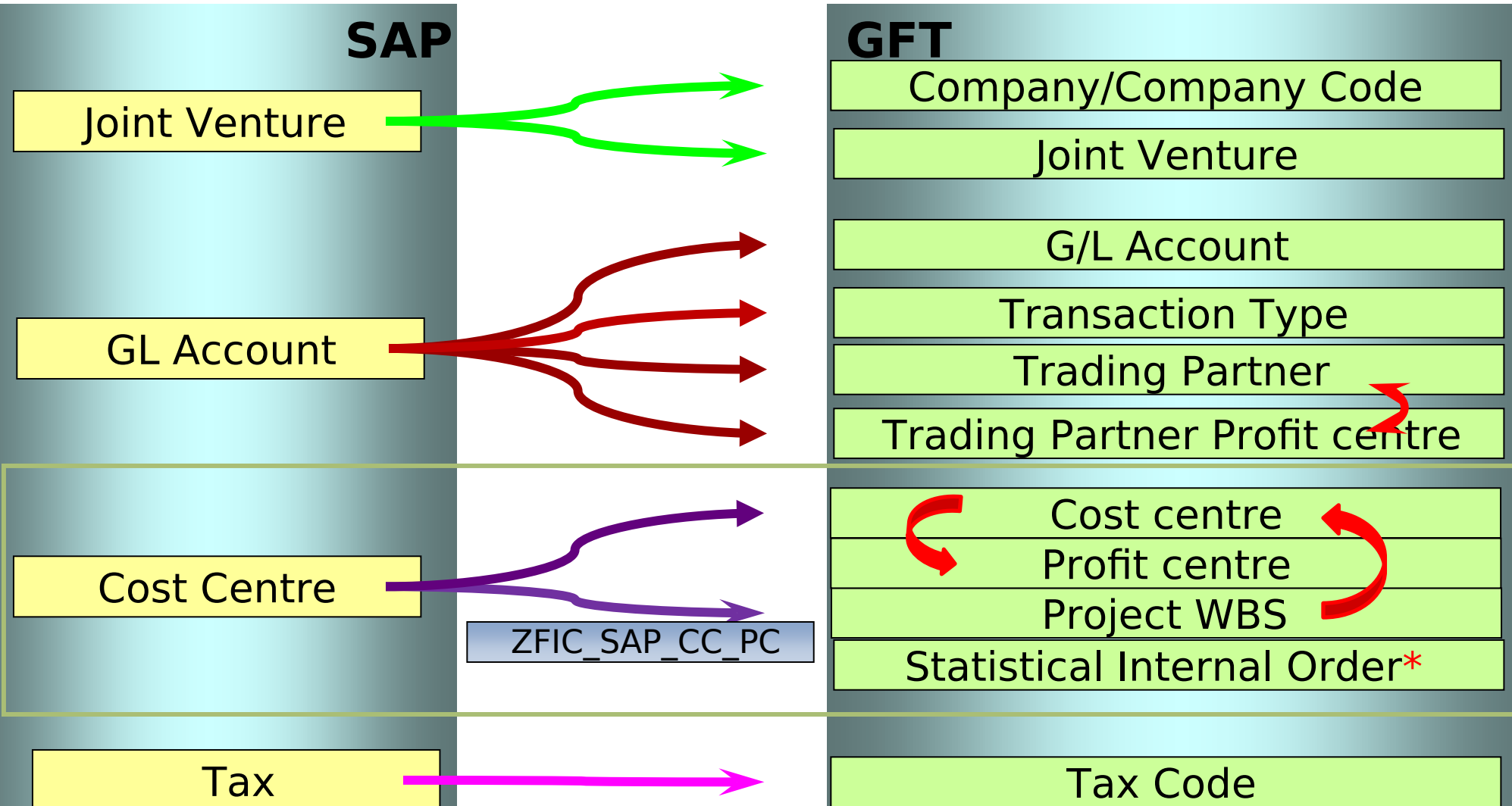
Controlling Area
Cost Centre
Valid To
Valid From
Company Code
Cost Centre Category
Person Responsible
Profit Centre
Actual revenues
Plan revenues
E&P indicator
E&P Product Type
Name
Description
Hierarchy Area

E&P MI Org Indicator
E&P MI Activity Indicator
E&P indicator
Functions Indicator

Actual primary costs
Plan primary costs
Actual secondary costs
Plan secondary costs
Commitment update
Plant
Department
Rechargeable Object

-  SAP Mandatory Fields
-  Key fields used for reporting
-  Optional Fields

Joint Venture Accounting Financial Data Structure for E&P (cont.)



* In exceptional circumstances Statistical internal orders may be used to break down costs into further detail

Financial Data Structure for E&P (cont.)

#	Template for Joint Venture Accounting
9.22	<p>SAP Rules</p> <ul style="list-style-type: none"> □ Ventures where construction is completed, costs are posted against Cost Centre □ Ventures where construction is ongoing, Costs are posted against WBS Elements □ Operated JV starts with Oj - OJABC123456 □ Non Operated JV starts with NJ - NJABC123456 □ Recovery indicator is divided into - Billable & non billable.
9.23	<p>Building Financial Template - Profit Centre</p> <ul style="list-style-type: none"> □ 11SVT1001→ 11 (north sea) SVT (Operator name) 1 (Operator) 001 (locally defined value) □ 11SVT2001→ 11 (north sea) SVT (Operator name) 2 (non Operator) 001 (locally defined value) □ 11SVT1xxx→ Profit Centre operator □ 11SVT2xxx→ Profit Centre non operator
9.24	<p>Building Financial Template - WBS Element</p> <ul style="list-style-type: none"> □ H-U0xxx→ WBS Operator □ H-U1xxx→ WBS Non Operator □ WBS Level→ H-U1DMSSVT11-EX-MR-C1 □ H-U1DMSSVT11(Level 1)-EX(Level 2)-MR(Level 3)-C1(Level 4) □ Postings at lowest level.

Joint Venture Accounting

Version Control

Document	Name/version	Date	Status
SAP JVA - Introduction	Joint Venture Accounting v0310	01/12/2022	Draft
SAP JVA - Data Mapping	Joint Venture Accounting v0310	01/12/2022	Draft