DAT262

Integrating SAP S/4HANA into SAP Data Intelligence: Deep Dive and Hands On.

Bengt Mertens, SAP SE

Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

Agenda

1. Short Introduction to SAP Data Intelligence

2. Integrating SAP S/4HANA into SAP Data Intelligence - Overview

3. Deep Dive and Exercise Scenario (Workshop Use Case)

4. The Enterprise Procurement Model (EPM) in SAP S/4HANA

5. Getting Started

Short Introduction to SAP Data Intelligence

Bringing together enterprise applications and intelligent technologies

New Opportunities and new challenges

Applications
Operationalize and maintain applications to assist in solving the organization's challenges in a sustainable way
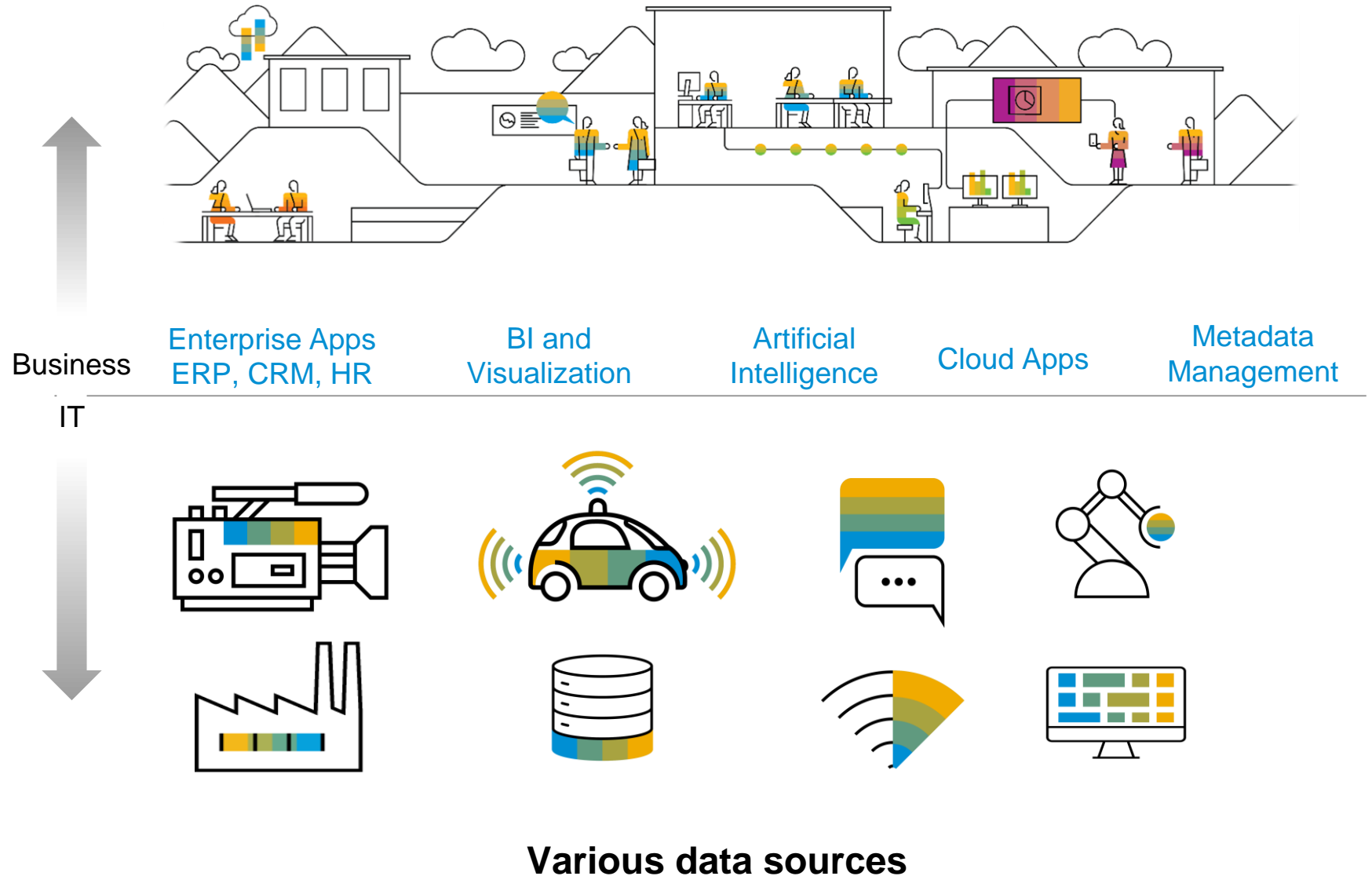
Intelligent Technologies
Harness intelligent technologies to create and enrich enterprise applications

Data Management
Take care of
- different data types
- data governance
- data integration
- orchestration of data processing

Business

IT

| Enterprise Apps ERP, CRM, HR | BI and Visualization | Artificial Intelligence | Cloud Apps | Metadata Management |

Various data sources

SAP Data Intelligence

One solution to support the end-to-end workflows for intelligent enterprise applications and business processes

Manage metadata across a diverse data landscape and create a metadata repository

Create data pipelines to leverage your data projects and orchestrate the data integration processes

Operationalize machine learning models and contents to accelerate, scale and automate your Data Science projects

IT Administrator   Data Admin   Data Engineer   Data Scientist   Data Steward   Business Analyst
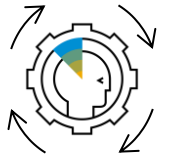
Access & connect data

Govern & discover data

Prepare & manage data

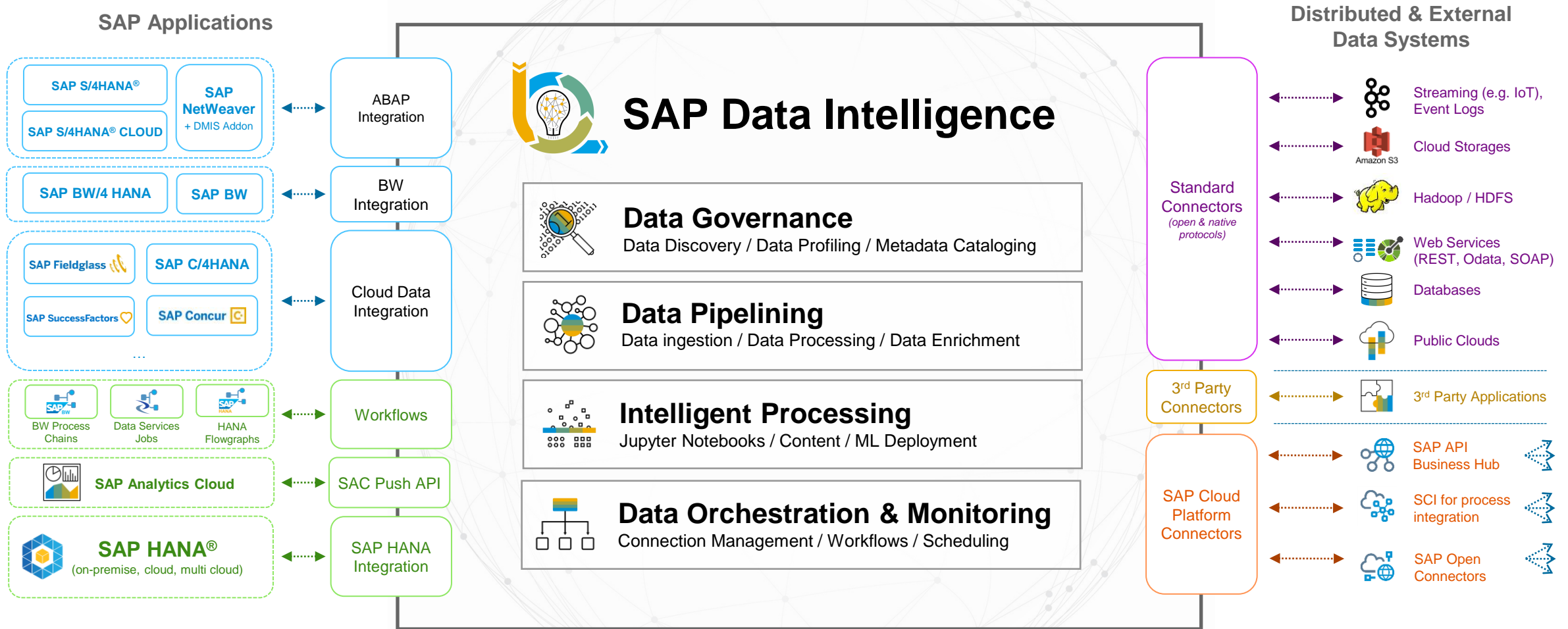**Build scalable & flexible data processes**

Deploy & integrate intelligent scenarios

Monitor & orchestrate the lifecycle

SAP Data Intelligence
End to End Data Integration and Processing

SAP Applications

SAP S/4HANA®
SAP S/4HANA® CLOUD
SAP NetWeaver + DMIS Addon
— ABAP Integration

SAP BW/4 HANA
SAP BW
— BW Integration

SAP Fieldglass
SAP C/4HANA
SAP SuccessFactors
SAP Concur
...
— Cloud Data Integration

BW Process Chains
Data Services Jobs
HANA Flowgraphs
— Workflows

SAP Analytics Cloud
— SAC Push API

SAP HANA®
(on-premise, cloud, multi cloud)
— SAP HANA Integration

SAP Data Intelligence

Data Governance
Data Discovery / Data Profiling / Metadata Cataloging

Data Pipelining
Data ingestion / Data Processing / Data Enrichment

Intelligent Processing
Jupyter Notebooks / Content / ML Deployment

Data Orchestration & Monitoring
Connection Management / Workflows / Scheduling

Distributed & External Data Systems

Standard Connectors
(open & native protocols)
- Streaming (e.g. IoT), Event Logs
- Cloud Storages (Amazon S3)
- Hadoop / HDFS
- Web Services (REST, Odata, SOAP)
- Databases
- Public Clouds

3rd Party Connectors
- 3rd Party Applications

SAP Cloud Platform Connectors
- SAP API Business Hub
- SCI for process integration
- SAP Open Connectors

Integrating SAP S/4HANA into SAP Data Intelligence - Overview

ABAP Integration
Overview

One model to consolidate all interaction scenarios between SAP Data Intelligence and an ABAP-based SAP systems directional and bi-directional

SAP S/4HANA

SAP S/4HANA Cloud

Business Warehouse

Business Suite

SAP Data Intelligence
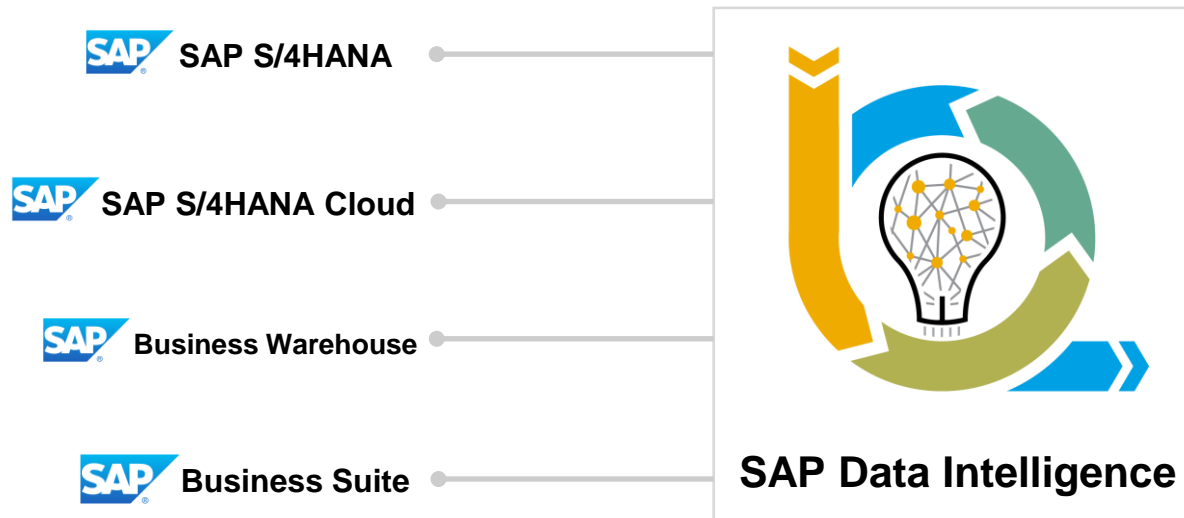
Capabilities

Provide **ABAP METADATA** to the SAP Data Intelligence Metadata Explorer

ABAP DATA PROVISIONING to transfer data into SAP Data Intelligence

ABAP FUNCTIONAL EXECUTION that is triggerable as a SAP Data Intelligence Operator

Integration requires certain system level, planned at least SAP S/4HANA 1909, SAP S/4HANA cloud 1911, SAP NetWeaver 7.00 with DMIS 2011/2018 Q4/2019 version. Certain functionality can only be made available for certain release levels.

Enterprise Application Integration
Unified integration model to consume and interact with SAP S/4HANA & SAP Business Suite systems

Available ABAP operators to consume and interact with

ABAP CDS VIEW READER
Operator that supports initial load and delta replication of CDS views.

CUSTOM ABAP OPERATOR
Operator to implement your ABAP custom code that will be executed as part of a pipeline in the connected ABAP system. For example to call a function module.

SLT CONNECTOR OPERATOR
Operator to communicate with SAP LT Replication Server (SLT). Leverage existing replication scenarios to bring data into a SAP Data Intelligence pipelines.

ODP READER
Operator that can read from Operational Data Provisioning out of a SAP Business Warehouse or SAP BW/4HANA into SAP Data Intelligence.

Integration requires certain system level, planned at least SAP S/4HANA 1909, SAP S/4HANA cloud 1908, SAP NetWeaver 7.00
with DMIS 2011/2018 Q4/2019 version. Certain functionality can only be made available for certain release levels.

ABAP CDS Reader

Data provisioning for SAP S/4HANA

ABAP CDS is the semantically rich data model in SAP S/4 HANA and allows the consistent representation of a business object like a Business Partner
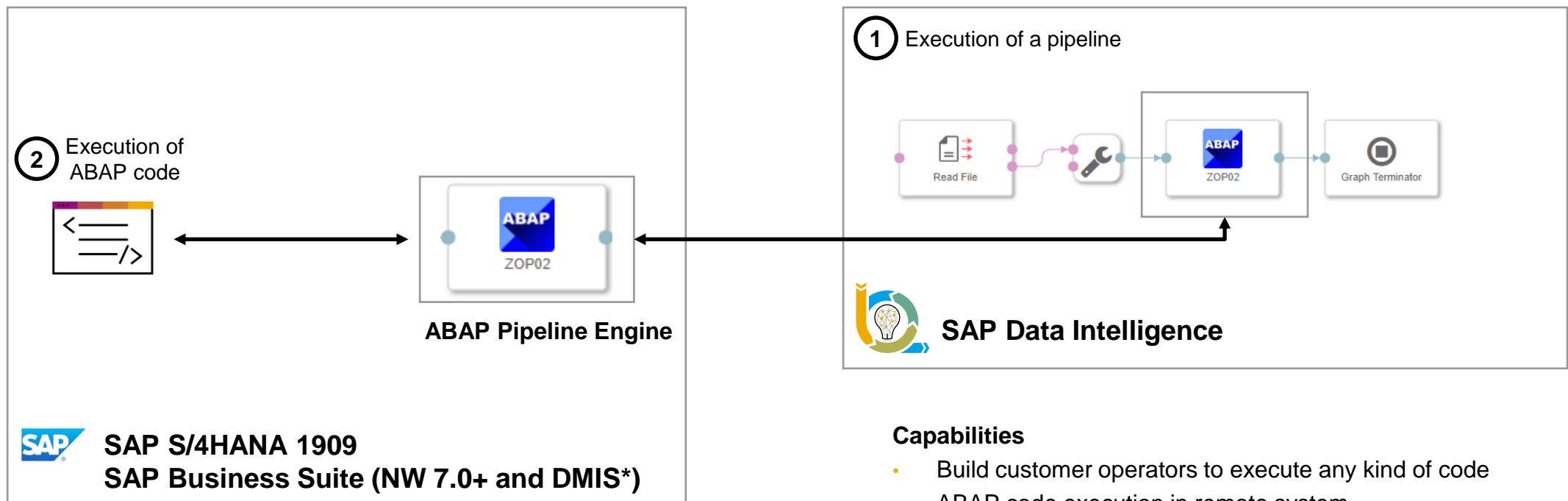

CDS replication from SAP S/4HANA to file storage

ABAP CDS Layer

Application Tables

DB triggers → Logging table

CDC engine

ABAP Pipeline Engine

ABAP CDS Reader

Initial Load &
Inserts, Updates, Deletes

ABAP CDS Reader

ABAP Converter

Write File

SAP Data Intelligence

**SAP S/4HANA 1909
SAP S/4HANA CE 2002**
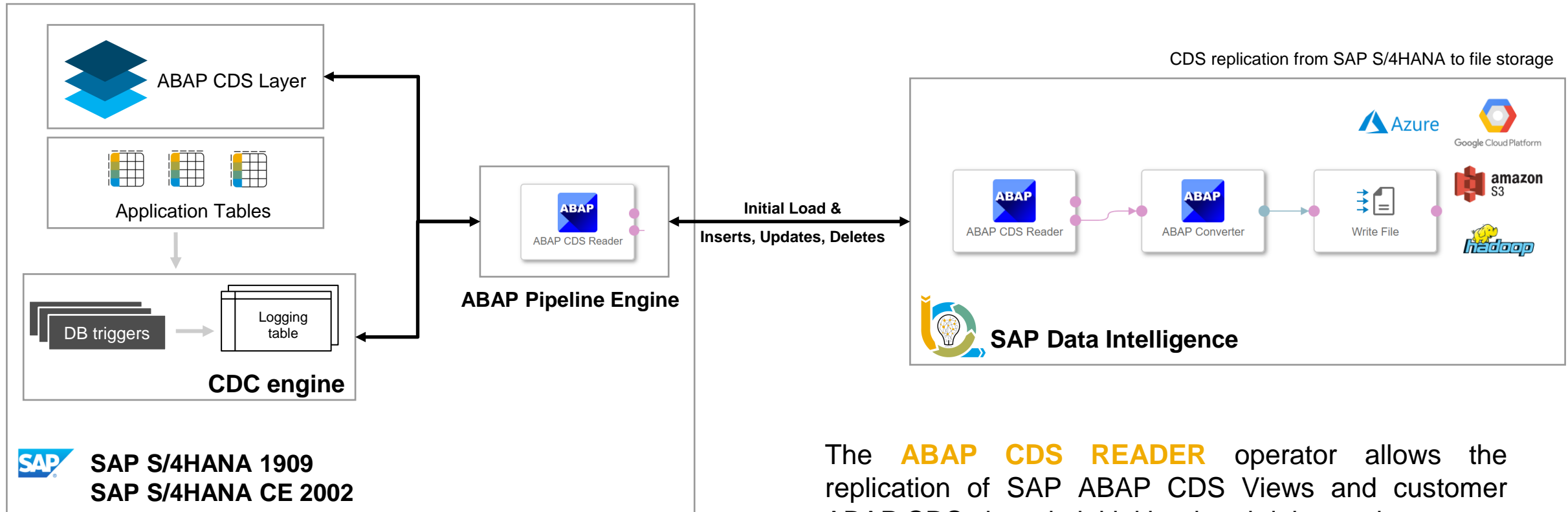
The **ABAP CDS READER** operator allows the replication of SAP ABAP CDS Views and customer ABAP CDS views in initial load and delta mode.

Custom ABAP Operator
Execute custom code and function modules

CUSTOM ABAP OPERATORS can be used to enhance the scope of a data-driven application. For example it is necessary to execute a function module within a pipeline to read data into SAP Data Intelligence, post information into an ABAP-based SAP system or trigger an execution in the remote system.

ABAP Pipeline Engine

SAP Data Intelligence

② Execution of ABAP code

① Execution of a pipeline

SAP S/4HANA 1909
SAP Business Suite (NW 7.0+ and DMIS*)

Capabilities
- Build customer operators to execute any kind of code
- ABAP code execution in remote system
- Exchange of data and results if required

* DMIS 2011 SP18 or DMIS 2018 SP2

SLT Connector

Data provisioning for SAP S/4HANA and SAP Business Suite

The **SLT CONNECTOR** operator establishes a communication to the remote ABAP System and consumes data (initial load and delta) via SAP LT Replication Server technology. This allows the consumption of business data directly within a Data Hub pipeline to leverage a tight integration between business data and big data.
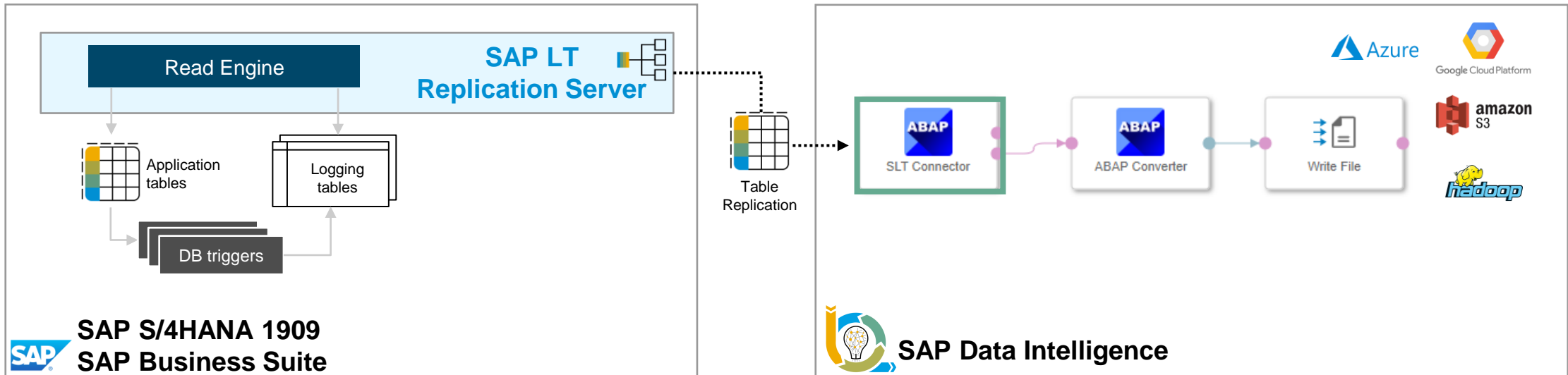
ODP Reader – Overview
Data provisioning for SAP Business Warehouse systems

The use of the **ODP READER** allows to extract any data object supported by the Operational Data Provisioning framework (such as DSO). This operator is positioned to provision data out of SAP Business Warehouse systems to SAP Data Intelligence based on initial loads and/or delta replication.

Operational Data Provisioning

SAP Business Warehouse ≥730 SP14
SAP BW/4HANA

ODP Reader

ANY SUBGRAPH

Python

Azure

SAP Data Intelligence
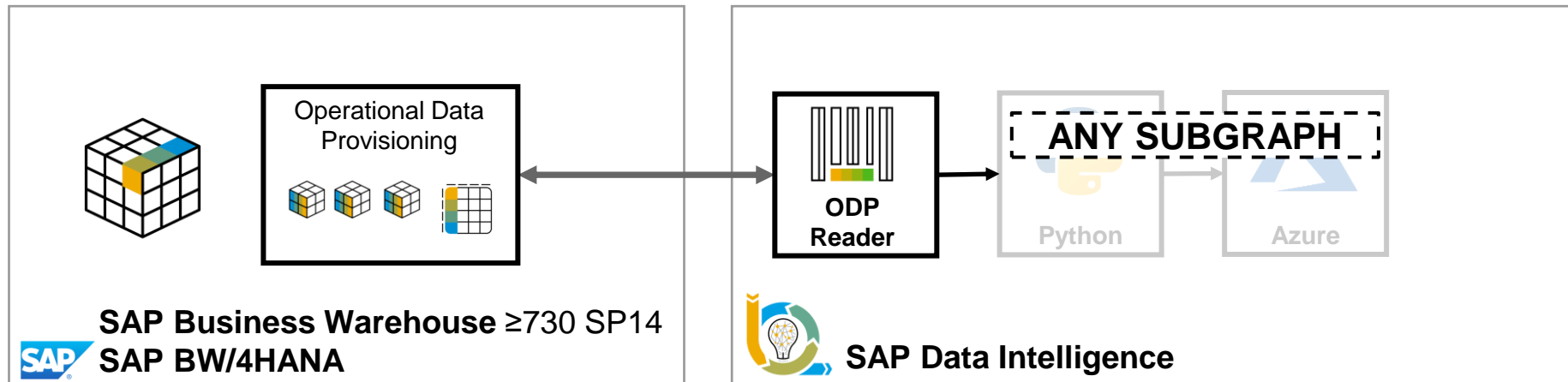
Deep Dive and Exercise Scenario (Workshop Use Case)

DAT262 Workshop Scenarios
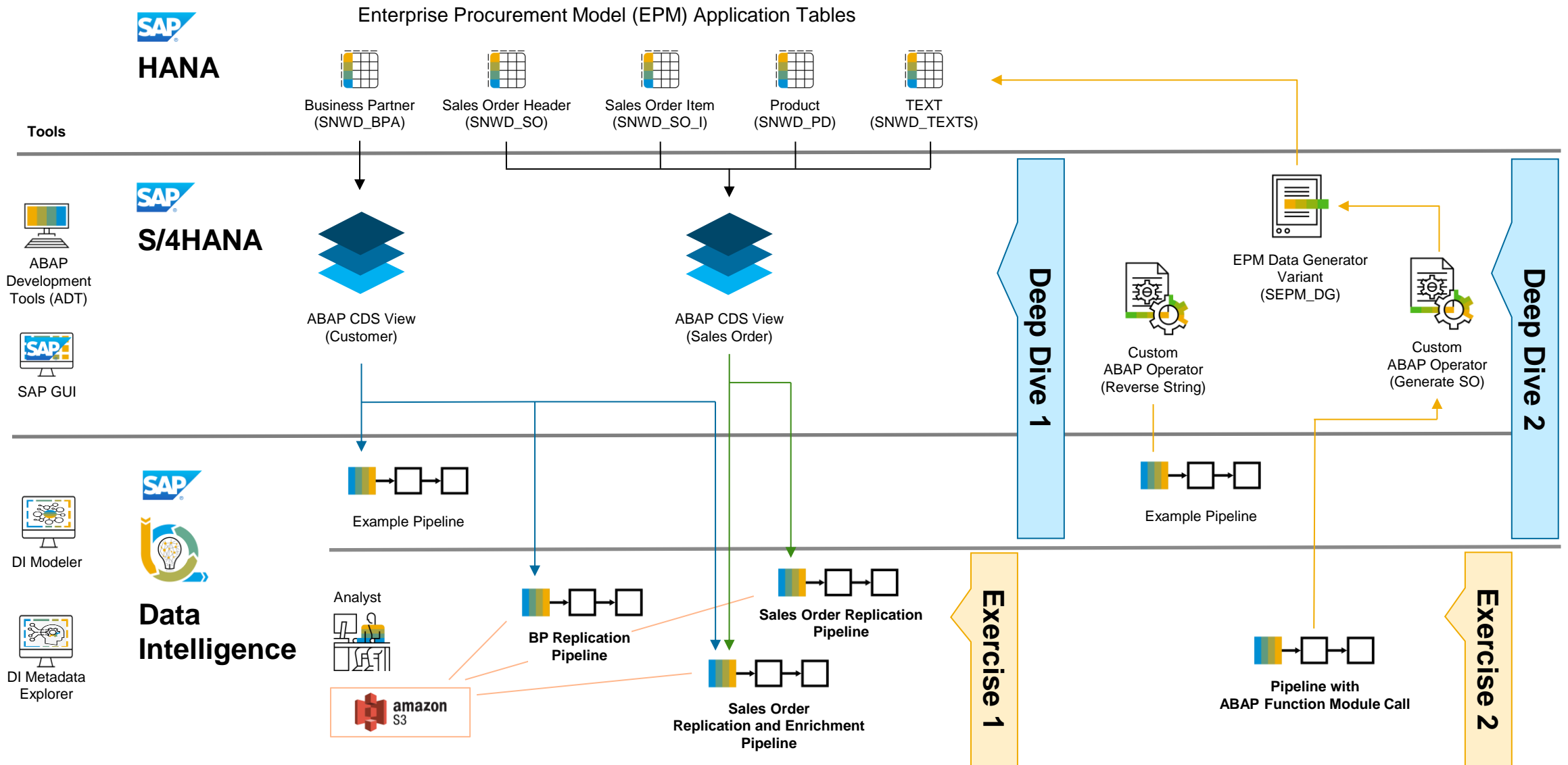
The Enterprise Procurement Model (EPM)
(EPM)
in SAP S/4HANA

Brief introduction to the Enterprise Procurement Model (EPM)

The business scenario at the core of EPM is that of a web shop run by a retail company called ITelO, a fictitious company that buys and sells computers & accessories.

Even though EPM also provides several predefined CDS Views, which are all linked to each other via associations, we'll be using the underlying physical tables in our Deep Dive demos and the Exercises. They are starting with the prefix SNWD_.

The relevant tables for our scenario are

- BUSINESS PARTNER (SNWD_BPA),

- SALES ORDER HEADER (SNWD_SO),

- SALES ORDER ITEM (SNWD_SO_I),

- PRODUCT (SNWD_PD),

- and TEXTS (SNWD_TEXTS).

Business Partner (Buyer)

"SAPHANADB".SNWD_BPA
- CLIENT
- NODE_KEY
- BP_ROLE
- EMAIL_ADDRESS
- PHONE_NUMBER
- FAX_NUMBER
- WEB_ADDRESS
- ADDRESS_GUID
- BP_ID
- COMPANY_NAME
- LEGAL_FORM
- CREATED_BY
- CREATED_AT
- CHANGED_BY
- CHANGED_AT
- CURRENCY_CODE
- DUMMY_FIELD_BPA
- APPROVAL_STATUS

Sales Order Header

"SAPHANADB".SNWD_SO
- CLIENT
- NODE_KEY
- SO_ID
- CREATED_BY
- CREATED_AT
- CHANGED_BY
- CHANGED_AT
- CREATED_BY_BP
- CHANGED_BY_BP
- NOTE_GUID
- BUYER_GUID
- CURRENCY_CODE
- GROSS_AMOUNT
- NET_AMOUNT
- TAX_AMOUNT
- LIFECYCLE_STATUS
- BILLING_STATUS
- DELIVERY_STATUS
- OP_ID
- _DATAAGING
- DUMMY
- OVERALL_STATUS
- BUY_CONTACT_GUID
- SHIP_TO_ADR_GUID
- BILL_TO_ADR_GUID
- PAYMENT_METHOD
- PAYMENT_TERMS

Sales Order Item

"SAPHANADB".SNWD_SO_I
- CLIENT
- NODE_KEY
- PARENT_KEY
- SO_ITEM_POS
- PRODUCT_GUID
- NOTE_GUID
- CURRENCY_CODE
- GROSS_AMOUNT
- NET_AMOUNT
- TAX_AMOUNT
- ITEM_ATP_STATUS
- OP_ITEM_POS
- _DATAAGING
- DUMMY

Text (Product Names)

"SAPHANADB".SNWD_TEXTS
- CLIENT
- NODE_KEY
- PARENT_KEY
- LANGUAGE
- TEXT
- _DATAAGING

Product

"SAPHANADB".SNWD_PD
- CLIENT
- NODE_KEY
- PRODUCT_ID
- TYPE_CODE
- CATEGORY
- CREATED_BY
- CREATED_AT
- CHANGED_BY
- CHANGED_AT
- NAME_GUID
- DESC_GUID
- SUPPLIER_GUID
- TAX_TARIF_CODE
- MEASURE_UNIT
- WEIGHT_MEASURE
- WEIGHT_UNIT
- CURRENCY_CODE
- PRICE
- PRODUCT_PIC_URL
- WIDTH
- DEPTH
- HEIGHT
- DIM_UNIT
- DUMMY_FIELD_PD

Getting Started with the Exercises

Access to the exercises' Data Intelligence environment

All participants are requested to register for a individual user name and password on the workshop specific SAP Data Intelligence tenant.

SAP provides a specific Data Intelligence
User Registration Tool:
https://register.cfapps.eu10.hana.ondemand.com/

SAP TECHED

Workshop

SAP Data Intelligence Hands-on

Workshop

| DAT262_1 - Integrating SAP S/4HANA into SAP Data Intelligence - Deep Dive and Hands On ⌄ |

Your name:

| Prename Familyname |

Submit

After having successfully obtained the credentials for the SAP Data Intelligence system, you can log on as follows:

- In a Chrome or Firefox Browser, open the link to:
  https://vsystem.ingress.dh-6srbrjhsl.dh-canary.shoot.live.k8s-hana.ondemand.com/login/?tenant=dat262
- The tenant name for this workshop is always *dat262*.
- User credential as received from the user registration service described above
- Participants will also find a step-by-step guidance in the **exercise documentation** on Github:
  https://github.com/SAP-samples/teched2020-DAT262

Enjoy!

More information

Related SAP TechEd sessions

- Introduction to SAP Data Intelligence [DAT111]
- Road Map: SAP Data Intelligence [DAT829]
- Integrating SAP S/4HANA into SAP Data Intelligence [DAT206]
- Integrating SAP S/4HANA into SAP Data Intelligence: Overview and Use Cases [DAT203]
- Create and Manage End-to-End Data Pipelines with SAP Data Intelligence [DAT263]
- How SAP Data Intelligence Supports Your Data Governance Projects [DAT112]
- A Data Governance Journey with SAP Data Intelligence [DAT163]
- Create Data Flows Covering Both SAP and Non-SAP Using SAP Data Intelligence [DAT164]
- Upscaling to Hybrid: EIM and SAP Data Intelligence [DAT205]
- SAP Data Intelligence: Extensibility & Business Content [DAT942]
- Hybrid Data Management SAP Data Intelligence Cloud [DAT110]
- Expert Q&A on SAP Data Intelligence [DAT943]
- SAP Data Intelligence as Part of SAP HANA Cloud [ST102]

Public SAP Web sites

- SAP Community: www.sap.com/community
- SAP products: www.sap.com/products

Continue your learning experience from SAP TechEd in 2020

Your exclusive path to build and maintain SAP solution skills anytime, any place

Get empowered with access to relevant, up-to-date digital learning for SAP TechEd participants through a complete enablement solution that drives adoption and innovation.

Deepen your learning experience from SAP TechEd

Activate your free access to SAP Learning Hub, event edition, for:

- **Learning Journey** illustrations to guide you through **complementary** self-paced learning content
- **Content specific to SAP TechEd** in the online **SAP Learning Room for SAP TechEd**
- Access to SAP experts in **special live sessions**

Deepen and validate your SAP solution skills

Subscribe to SAP Learning Hub, solution editions, for:

- **Solution-specific Learning Journey guides, content, collaborative learning,** and **hands-on practice** for your role and goals
- Drive performance and business success with validated solution expertise from the **SAP Global Certification** program

Your benefits

- Gain insight into the latest innovations, and master software proficiency
- Keep skills up-to-date, and enable performance and business success with help from SAP solution experts
- Achieve competitive advantages and digital transformation success with trusted certifications

500,000+
Learners in SAP Learning Hub

100+
Experts getting certified per day

150+
SAP Global Certifications

Thanks for attending this session.

Contact for further topic inquiries

Bengt Mertens
(bengt.mertens@sap.com)

Tobias Koebler
(tobias.koebler@sap.com)

THE BEST RUN **SAP**

Follow us

THE BEST RUN **SAP**