



S/4HANA Essentials Workshop

Innovation Opportunities Beyond SAP S/4HANA

Work Smarter, Not Harder

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Massive Modifications have pushed many ERP customers past the point of **no** return

■ Sins of past ERP implementations

- Potentially only 20% of existing modifications might be used
- Almost impossible to identify the 80% of never/not any more used modifications
- 90% of the costs of a typical system arise in the maintenance phase
source: [The Mythical Man-Month](#),
- Probable risks of hidden dependencies of unused modifications lead to
 - Extended life spans for modifications
 - Long running, time-consuming test phases during upgrades
- Resulting in:
 - **Falling behind on upgrades and EHP implementations**



Massively modified systems have become unsustainable to the point where IT spends 80% of their resources on keeping the lights on

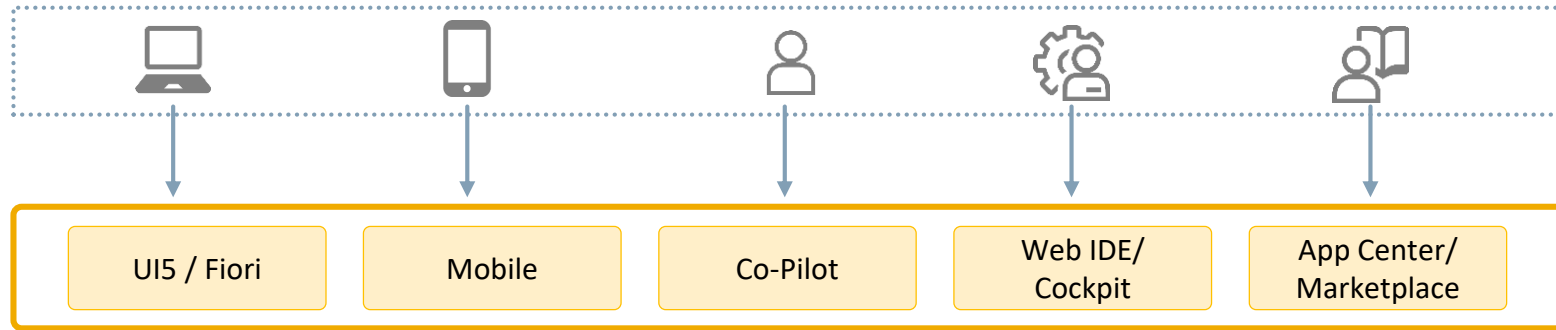


SAP Cloud Platform

Patrick Wong, SAP
April, 2019

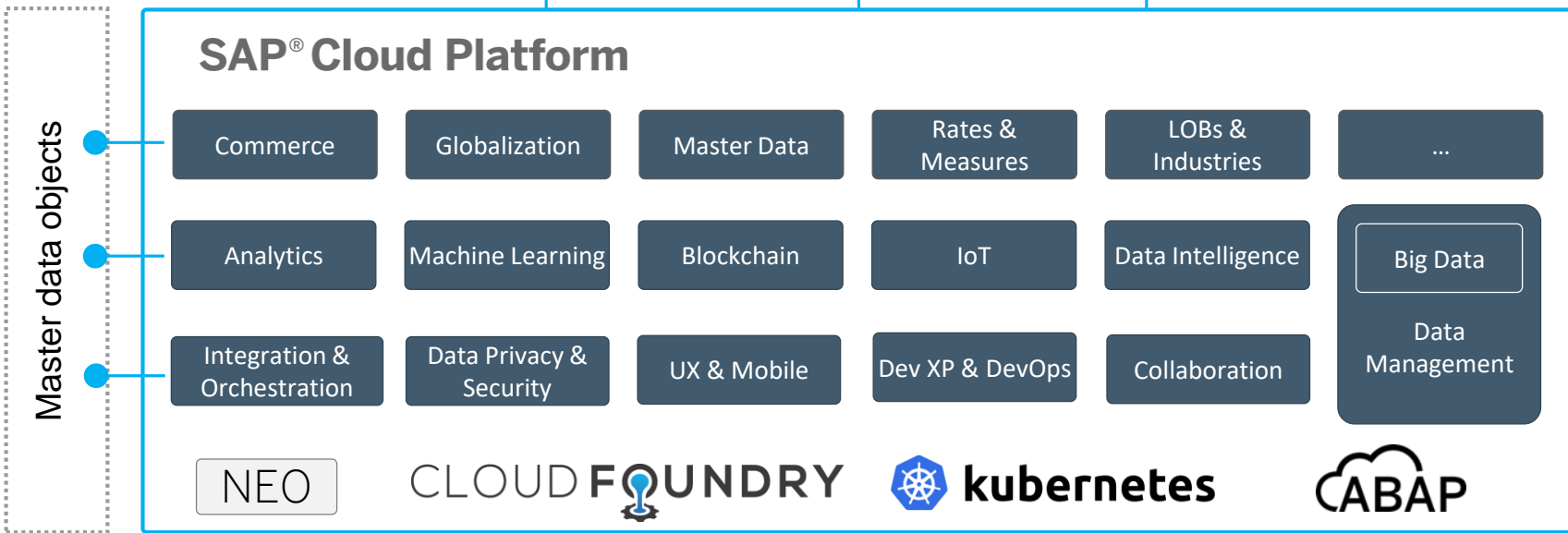
Public

SAP Cloud Platform



- SAP SuccessFactors
- SAP Concur
- SAP Ariba
- SAP Fieldglass

- SAP S/4HANA®
- Business Suite
- BW
-

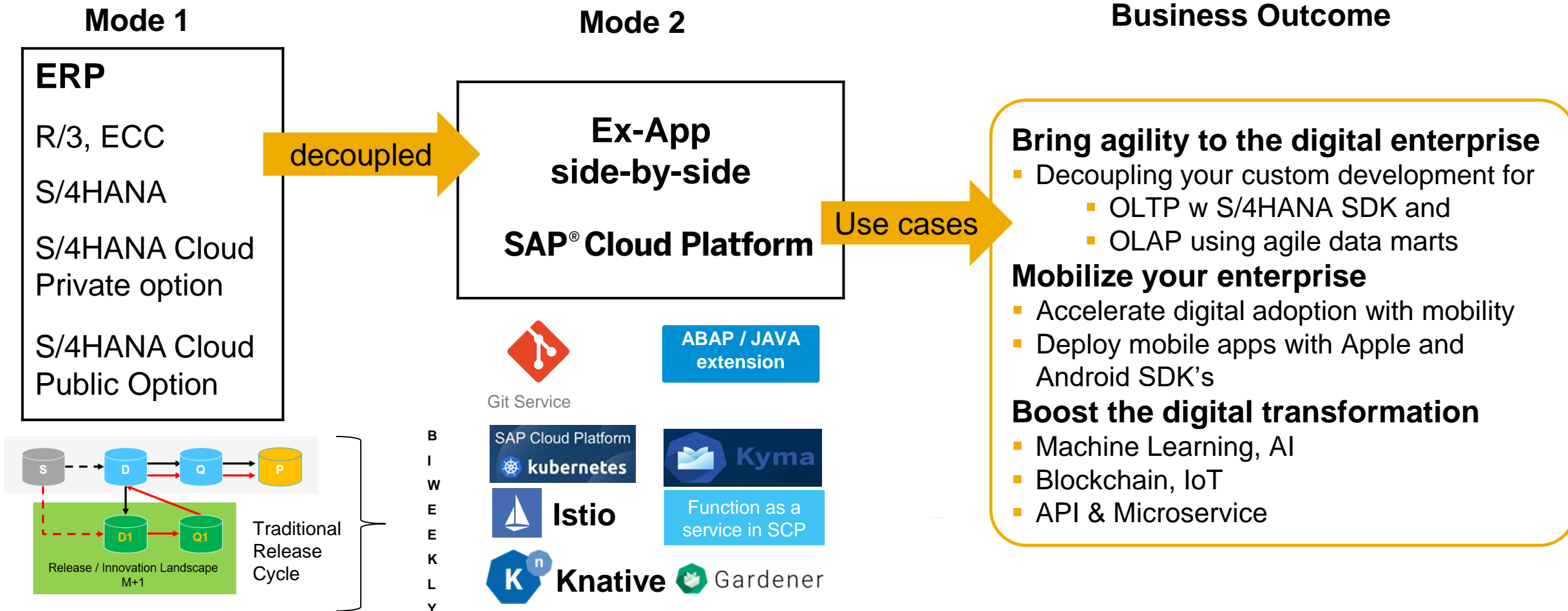


Extend S/4 HANA with SAP Cloud Platform

“...Bring Agility to the Intelligent Enterprise and create a clean S/4”

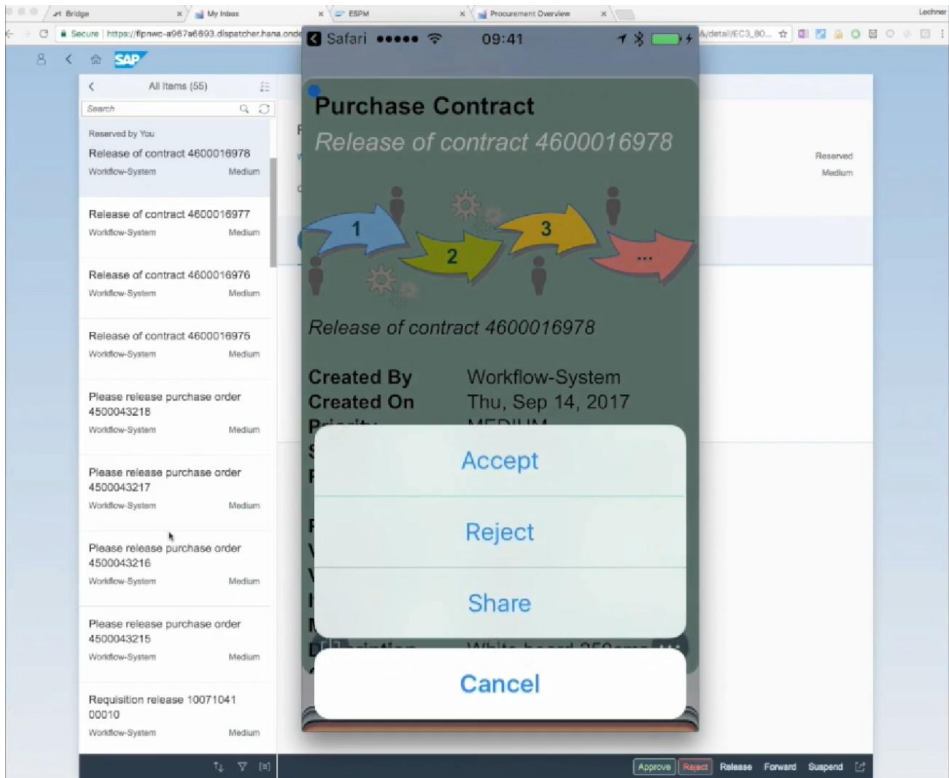
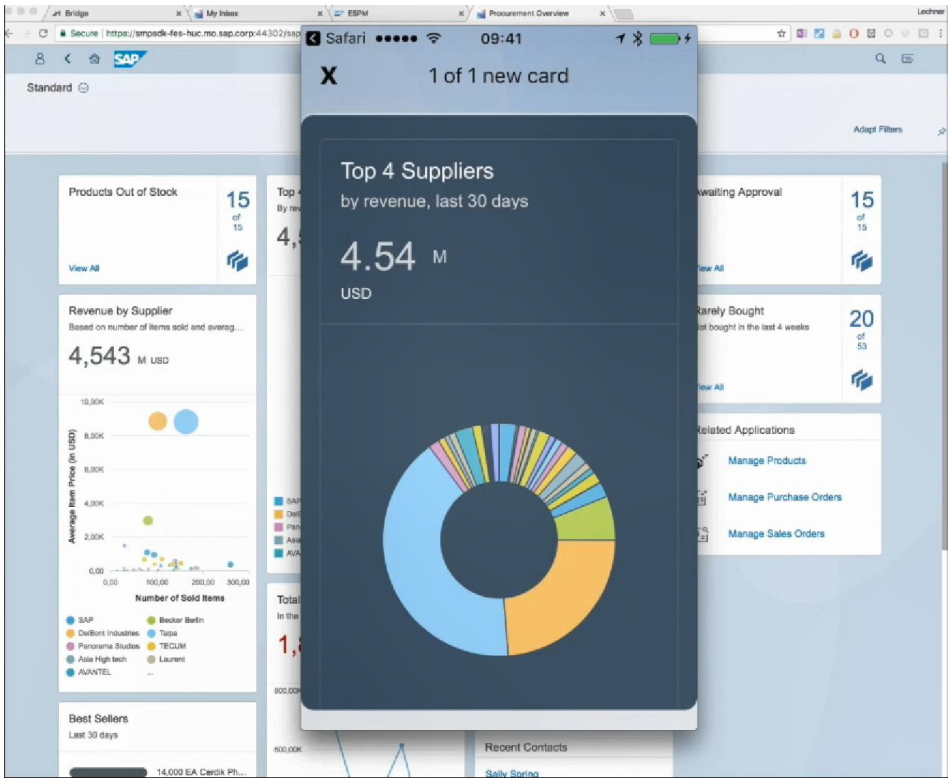


... with Ex-App – Side-by-Side Extensibility aka Mode 2 (Gartner)



SCP Mobile Card Kit (Video)

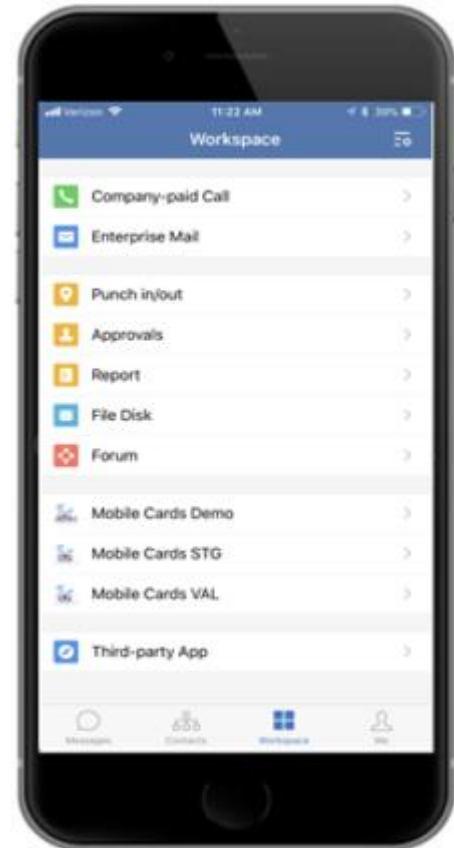
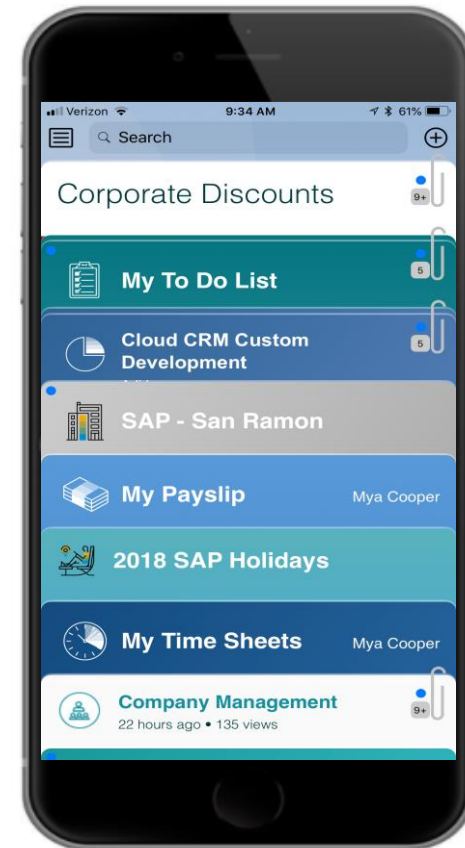
SAP Cloud Platform Mobile Service



Introducing SAP Mobile Card kit – a feature of Mobile Services

With Mobile Services customers have access to a microapp platform to publish data into a consumer grade, “wallet” or “passbook” style app

- Creates cards that work across iOS, Android and WeChat
- Targets simple 1-2 screen apps & lean workflows.
- Plug-in for SAP Fiori Launchpad
- Simplifies app management with content updates handled automatically
- Pre-built cards for SAP SuccessFactors, SAP Ariba and other scenarios

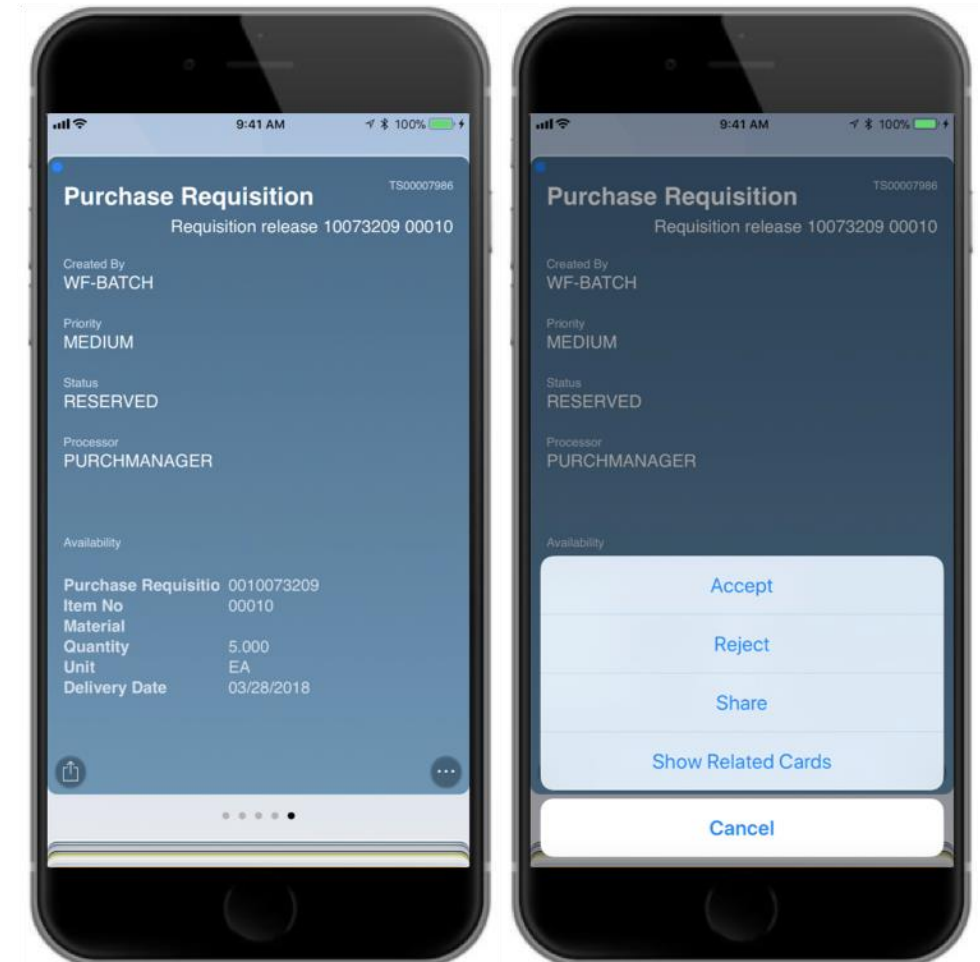


Introducing the SAP Mobile Cards app

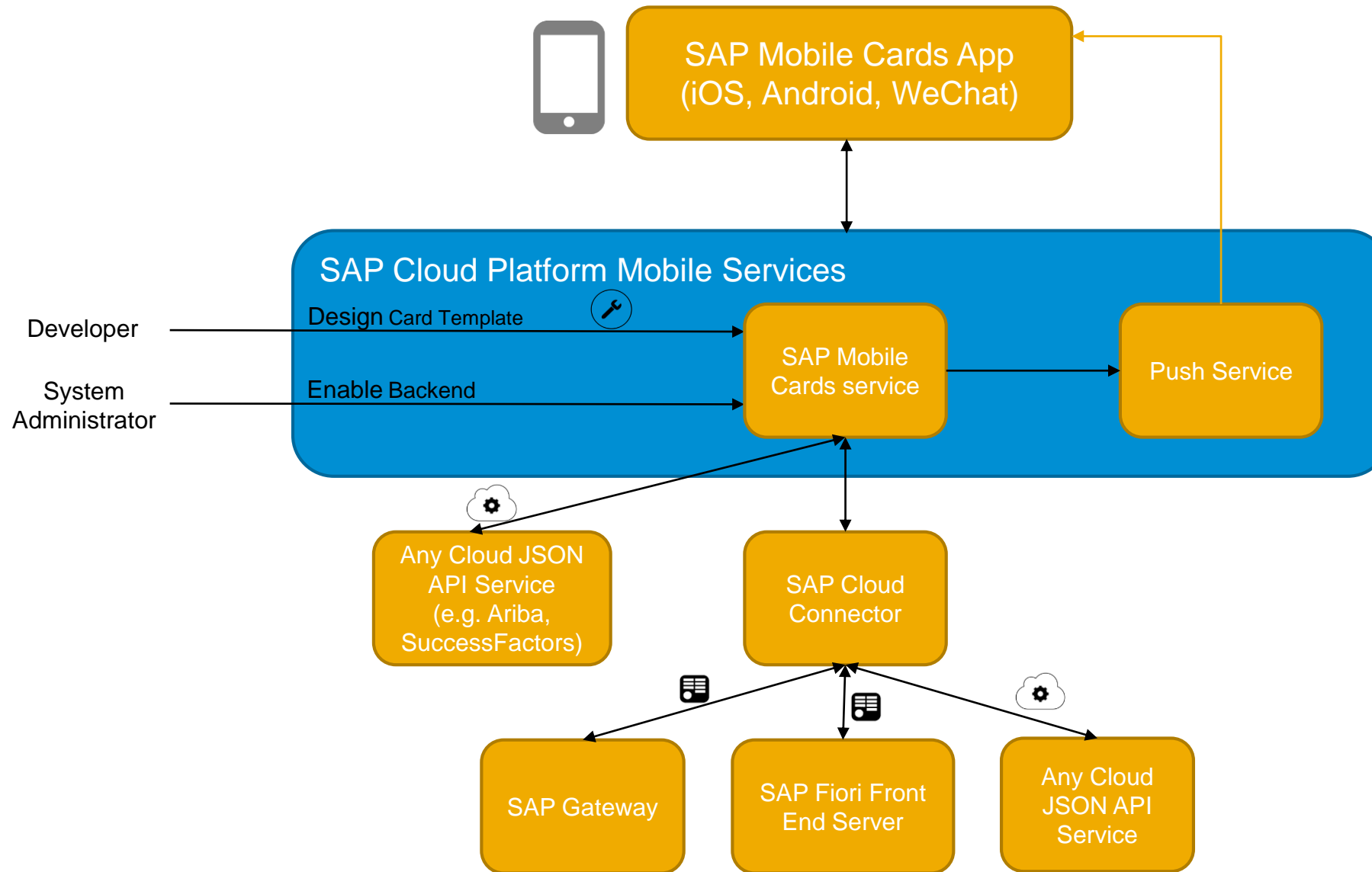
Provides instant content, context, and availability

Example Use Cases:

- Simple approvals - purchase orders, leave requests, deal approval
- Company news & alerts, facility information, sales promotions
- KPIs like charts, inventory levels, order exceptions
- My timesheets, vacation accrued, pay slip details



SAP Cloud Platform Mobile Services architecture

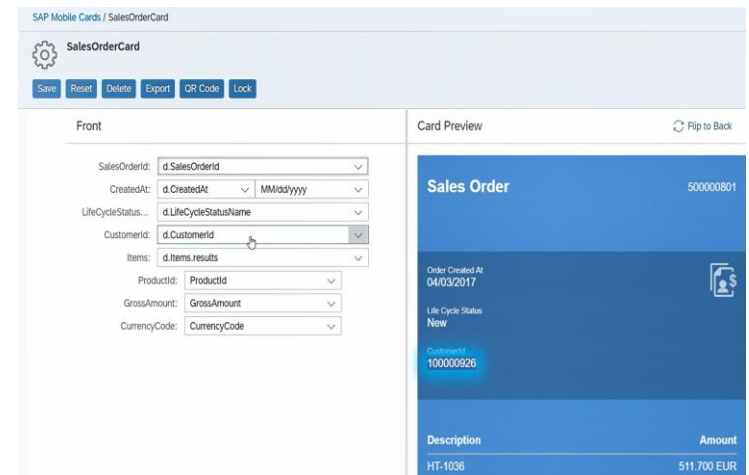
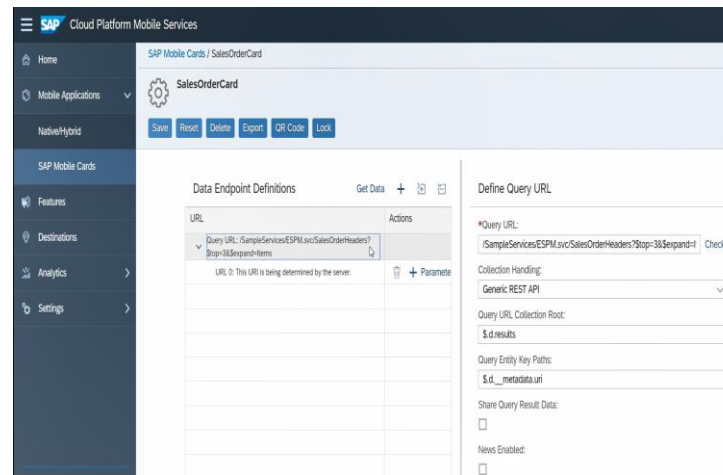
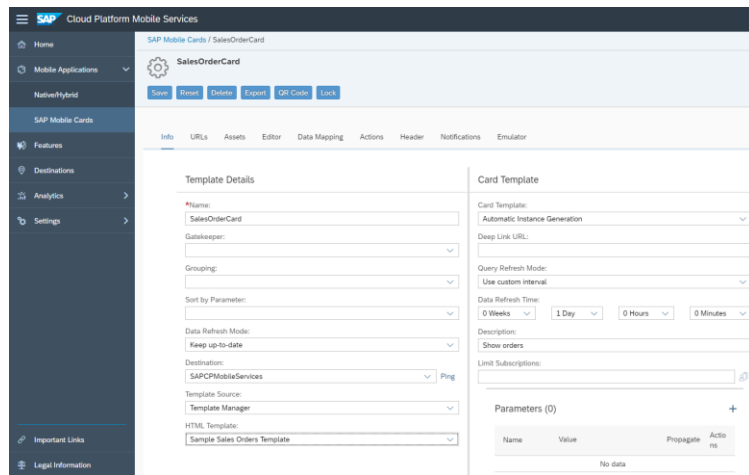


SAP Mobile Cards (Demo)

Custom card creation with simplified development

Unlock content from any REST service returning JSON in just a few steps:

1. Identify your JSON REST service.
2. Provide our admin a sample dataset response
3. In our HTML editor design the look of the card.
4. In our Data Mapping tool map the fields with the items to display in the card.
5. Deploy





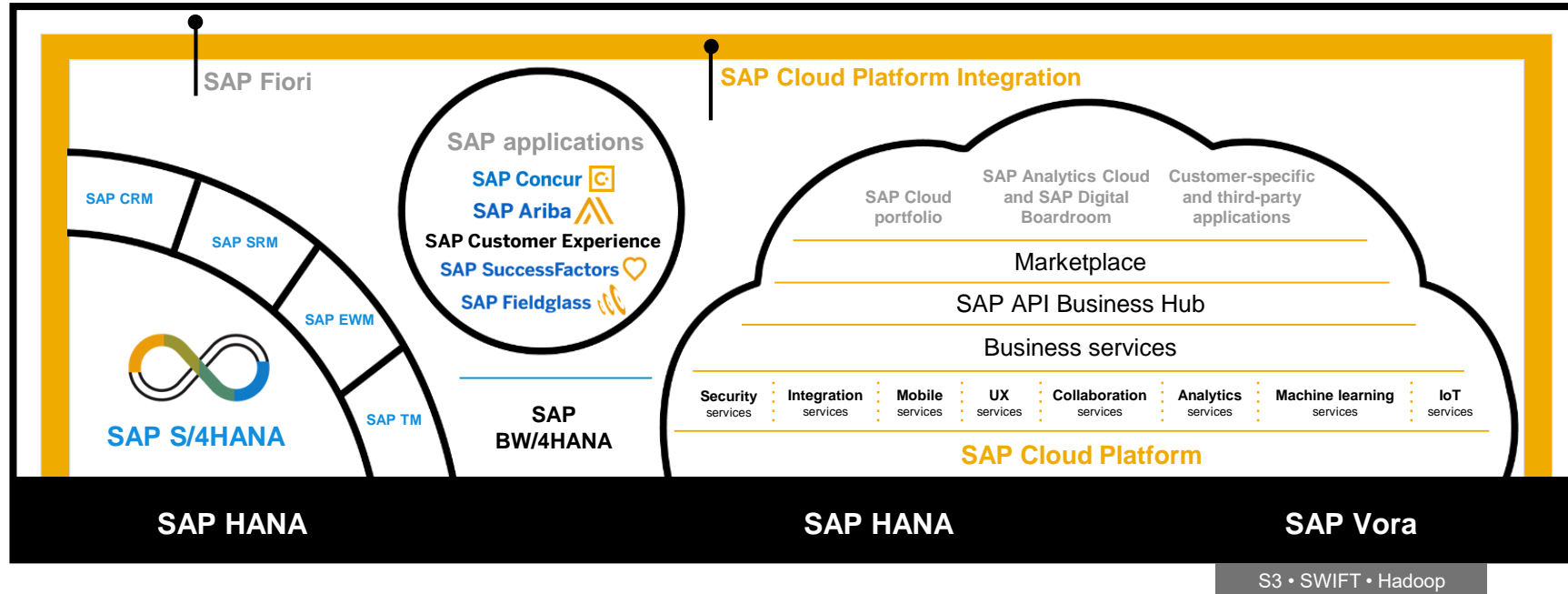
SAP

UI Field Security (UI Masking and Logging)

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April, 2019

Public

UI data protection masking for SAP S/4HANA



Manage users and permissions

SAP Identity Management
SAP Cloud Platform
Identity Provisioning

UI data protection masking
for SAP S/4HANA

SAP Access Control
SAP Cloud Identity
Access Governance

UI Masking (classic
solutions)



Secure access

SAP Single Sign-On
SAP Cloud Platform
Identity Authentication



Secure code

SAP NetWeaver
Application Server,
add-on for code
vulnerability analysis



Detect attacks

SAP Enterprise
Threat Detection

UI data protection logging
for SAP S/4HANA

UI logging (classical
solutions)

UI Data Security

How does it work?

• UI Masking



conceal specific data (values in fields/columns) – unless required for tasks

- make **data elements unavailable** for data abuse (opportunistic and targeted), on top of existing access control / role & authorization setup
- sensitive values are **masked per default**, unmasking requires **explicit access rights** (on top of existing access control / role & authorization setup)
- **auditable access trace** configurable on field level



• “the speed limiter”



• UI Logging



keep data accessible, log and analyze access, know how to react

- “screen perfect” log – output & input with metadata
- alerting & analysis options
- → **induce compliant behavior**
- → **identify & prove irregular data access**



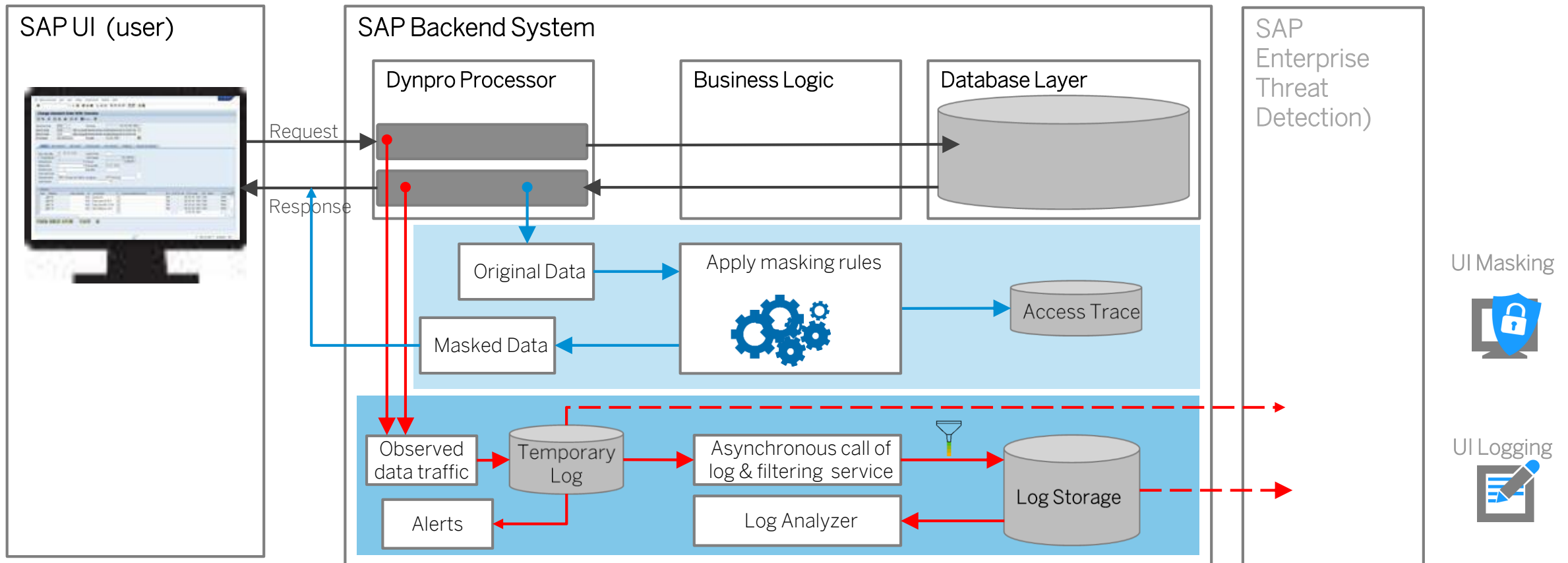
• “the speed camera”

- awareness for data security (“human firewall”) – decrease inadvertent breaches
- top-of-class protection measures build trust (employees, customers, and investors)

UI Data Security

High level solution architecture (example: SAP GUI)

- UIL & UIM are non-modifying **add-ons based on SAP NetWeaver** – minimal application impact
- UI Logging captures the data stream between SAP UI and the backend system (input & output)
- UI Masking achieves a data value masking before the system output



UI Masking

Refine data access into transactions



Data masking: UI layer on server side

- business and technical transactions
- **download, export, print**

Highly configurable

- what: on field level (inside transactions)
- how: pattern
- who: role required for unmasked access
- **dynamic determination of data access authorizations based on the data context**
- **reveal on demand**, sensitive fields will only be unmasked after giving a reason/comment
- BADIs to introduce additional logic

Aligned with SAP standard → no modifications

Based on SAP NetWeaver releases 7.00 – 7.50

Change Basic Pay

Pers.No. 200031 Name
 EE group 1 Active Pers.area
 EE subgroup CB Division manager ... Cost Center
 Start ***** to *****
 Payment type 0 ***** Object

Display Basic Pay

Salary amount Payments and deductions
 Pers.No. 00000069 Name Mr. Arun Verma
 EE group 1 Active Pers.area 200 Corporate - United Kingdom
 EE subgroup 02 Salaried Start 01.02.2003 to 31.12.9999 Chng 03.06.2010/C5214633
 Subtype 0 Basic contract
 Pay scale Cap.UT.M 100,00
 PS type 02 Salaried Wages/period 149,00/Monthly
 PS Area 01 Rest of U. K. Next inc.
 PS group GR04 Level Ann.salary 4.000,00/4,00 E08
 W... (Wage Type Long Text) O. Amount: ***** Curr... L... A... Number/Unit: Unit: *****
 8610 5***** GBP 0,00

Data Browser: Table PA0008 Select Entries 20

Table: PA0008
 Displayed Fields: 34 of 284 Fixed Columns:

MANDT	PERNR	SUBTY	OBJPS	SPRPS	ENDDA	BEGDA	SEQNR	AEDTM
300	00010154	&			*****	*****	000	12.03.
300	00010155	&			*****	*****	000	12.03.
300	00010270	&			*****	*****	000	12.03.
300	00010271	&			*****	*****	000	12.03.
300	00010451	&			*****	*****	000	14.03.

pa0008.txt - Notepad

MANDT	PERNR	SUBTY	OBJPS	SPRPS	ENDDA	BEGDA	SEQNR	AEDTM	UNAME	HISTO	ITX
300	10154	&			*****	*****				12.03.2002	
300	10155	&			*****	*****				12.03.2002	
300	10270	&			*****	*****				12.03.2002	
300	10271	&			*****	*****				12.03.2002	
200	10451	&			*****	*****				14.03.2002	

SAP Data Table

PERNR	SUBTY	ENDDA	BEGDA	AEDTM	DIVGV	ANSAL
10154	&	*****	*****	12.03.2002	86,67	*****
10155	&	*****	*****	12.03.2002	173,6	*****
10270	&	*****	*****	12.03.2002	86,65	*****
10271	&	*****	*****	12.03.2002	86,65	*****
10451	&	*****	*****	14.03.2002	81,25	*****
10451	&	*****	*****	15.03.2002	81,25	*****

UI Masking Configuration



1. Define fields to be masked, and rules

- Define which fields are Masked / Hide / Disabled
- Configure on field level how a field is displayed. Define on digit base whether and how data are masked.

Change View "Maintain Masking Configuration": Details

Table Name: PA0002
Field Name: ENDDA

Maintain Masking Configuration

General Details

Role: /UIM/PFCG_ROLE
Track Field Access: Always Track Regardless of Masking
 Masking Control Indicator
 Field Is HR Relevant

Masking Approach

Hook Point Approach
 Conversion Exit Approach

Masking Pattern

	Position	Masking Character(s)
Set 1		
Set 2		
Set 3		

Mask Override

2. Register Authorized Users per Field

- In transaction PFCG, assign users to the UI Masking authorization a role.
- Users assigned to these roles will be able to see unmasked values for the applicable fields

Change Roles

Role: ZKR_TAXID
Description: KR TAXID Role
Target System: No destination

User Assignments

User ID	User name	From	to	I...
I804587	Ted Sohn	26.11.2011	31.12.9999	

UI Masking

Masking result

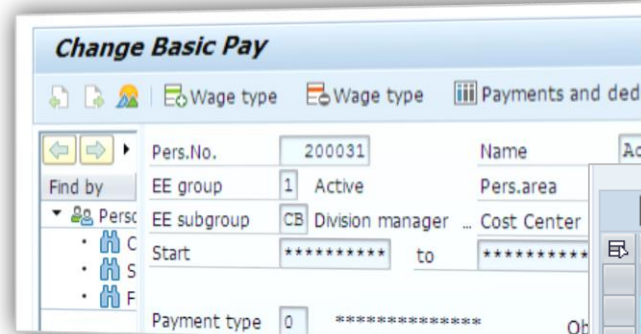


3. Result: data masking

Data is masked in GUI transaction display for un-authorized users.

This also affects high-level “admin” system users (in dynamic transactions, e.g. SE11, SE12, SE16, SE16n) – unless they are explicitly authorized for a field

UI Masking also protects data during **download, export, and print**



PersNo.	STy.	ObjID	LI	End Date	Start Date	RNo	UtilLvl
10154	&			*****	*****		100,00
10155	&			*****	*****		100,00
10270	&			*****	*****		100,00
10271	&			*****	*****		100,00
10451	&			*****	*****		100,00
10451	&			*****	*****		100,00
10452	&			*****	*****		100,00
10452	&			*****	*****		100,00

Data Browser: Table PA0008 Select Entries 20

Table: PA0008
Displayed Fields: 34 of 284 Fixed Columns:

MANDT	PERNR	SUBTY	OBJPS	SPRPS	ENDDA	BEGDA	SEQNR	AEDTM
300	00010154	&			*****	*****	000	12.03.
300	00010155	&			*****	*****	000	12.03.
300	00010270	&			*****	*****	000	12.03.
300	00010271	&			*****	*****	000	12.03.
300	00010451	&			*****	*****	000	14.03.

pa0008.txt - Notepad

MANDT	PERNR	SUBTY	OBJPS	SPRPS	ENDDA	BEGDA	SEQNR	AEDTM	UNAME	HISTO	ITX
300	10154	&			*****	*****				12.03.2002	
300	10155	&			*****	*****				12.03.2002	
300	10270	&			*****	*****				12.03.2002	
300	10271	&			*****	*****				12.03.2002	
300	10451	&			*****	*****				14.03.2002	

C2

	A	B	C	D	E	F	G
	PERNR	SUBTY	ENDDA	BEGDA	AEDTM	DIVGV	ANSAL
2	10154	&	*****	*****	12.03.2002	86,67	****
3	10155	&	*****	*****	12.03.2002	173,6	****
4	10270	&	*****	*****	12.03.2002	86,65	****
5	10271	&	*****	*****	12.03.2002	86,65	****
6	10451	&	*****	*****	14.03.2002	81,25	****
7	10451	&	*****	*****	15.03.2002	81,25	****



UI Logging

The log – the key element of UI Logging

- Logging based on roundtrips (frontend → server → frontend)
- filtering options to **control log file size**
- **efficient analysis:** log data organized with unique <name> → value pairs
 - on demand: **detailed analysis** of log file via Log Analyzer
 - **real time: configurable alerts/notifications**
 - automated: integrated with ETD → usable as powerful data source



Change Basic Pay

Personnel No: 1 Name: Christian Schubert
 EE group: 1 Active Pers.area: DE01 Personnel area DE01
 EE subgroup: DU Salaried employees
 Start: 01.01.2013 to 31.12.9999 Chng: 24.11.2016 EDEBALI

Payment type: 0 Basic contract Object ID:
 Reason: Next increase:
 Pay scale: Type: 40 Metall Area: 01 Baden-Wuerttemberg Group: M3 Level:
 Further information: Capacity Util. Level: 100,00 % PER Work hours/period: 167,40 Monthly Ann.salary: EUR

W...	Wage Type Long Text	O. Amount	Curr...	I...	A.. Number/Unit	Unit
MA10	Standard salary	1.602,00	EUR	✓		
MA20	Standard bonus	153,40	EUR	✓		
MA30	Standard bonus (%)		EUR	I ✓		Percent

IV 25.01.2017 - 31.12.9999 1.755,40 EUR

transaction: PA30
"Maintain HR Data"

Infotype 8
"Basic Pay"

```

===== HEADER =====
GUID=89F783586FB23949E1000000A60883B
TIMESTAMP=25.01.2017 16:38:28
TRX_NAME=PA30-Maintain HR Master Data
USERNAME=KELLERTO
CLIENT_IP=10.66.6.234
LOG_CLIENT=200
SYSID=YPX
HOST_NAME=WDFN33937027A
TECHNOLOGY=10
SUB_TECHNOLOGY=
TID=0000000040
MODNO=0000000000
SESSION_ID=000402555882FC3ED4F2697DE1000000A60883B
CONTEXT_ID=000400005882FC3ED4F2697DE1000000A60883B
===== INPUT =====
SAP_SYSTEM=YPX
SAP_CLIENT=200
TITLE=Maintain HR Master Data
Function code that PAI triggered=MOD
PA30.SAPMP50A.1100.SAPMP50A.1100.RP50G-PERNR[0]=1
Function code that PAI triggered=MOD
PA30.SAPMP50A.1100.SAPMP50A.0350.RP50G-CHOIC[0]=8
PA30.SAPMP50A.1100.SAPMP50A.0350.RP50G-SUBTY[0]=
PA30.SAPMP50A.1100.SAPMP50A.0350.SUBTY_TEXT[0]=
.....

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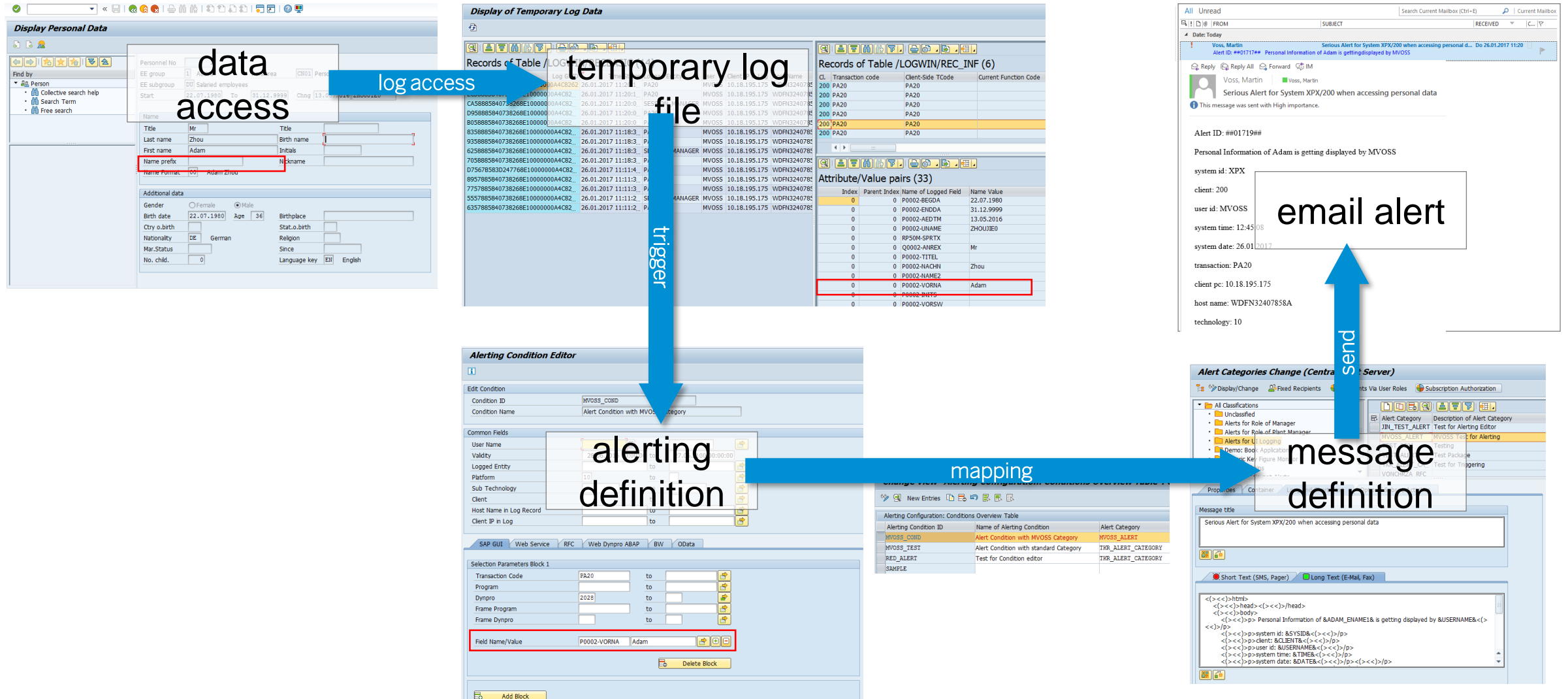
```

===== OUTPUT =====
SAP_SYSTEM=YPX
SAP_CLIENT=200
TITLE=Module Pool for Infotype 0008 (Basic Pay)
PA30.MP000800.1000.MP000800.1000.[1]=Person
PA30.MP000800.1000.MP000800.1000.[1]=Collective search help
PA30.MP000800.1000.MP000800.1000.[2]=Search Term
PA30.MP000800.1000.MP000800.1000.[3]=Free search
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG01_200A02_DAT_P0000_PERNR[0]=1
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG02_200A02_DAT_P0001_ENAME[0]=Christian Schubert
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG03_200A02_DAT_P0001_PERSG[0]=1
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG04_200A02_DTX_P0001_PERSG[0]=Active
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG05_200A02_DAT_P0001_WERKS[0]=DE01
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG06_200A02_DTX_P0001_WERKS[0]=Personnel area DE0
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG07_200A02_DAT_P0001_PERSK[0]=DU
PA30.MP000800.2000./IPAPAXX/HRD_20002A.0100.$_DG08_200A02_DTX_P0001_PERSK[0]=Salaried employees
PA30.MP000800.2000.MP000800.2000.P0008-BEGDA[0]=01.01.2013
PA30.MP000800.2000.MP000800.2000.P0008-ENDDA[0]=31.12.9999
PA30.MP000800.2000.MP000800.2000.P0008-AEDTM[0]=24.11.2016
PA30.MP000800.2000.MP000800.2000.P0008-UNAME[0]=EDEBALI
PA30.MP000800.2000.MP000800.2000.RP50M-SPRXTX[0]=
PA30.MP000800.2000.MP000800.2000.P0008-SUBTY[0]=0
PA30.MP000800.2000.MP000800.2000.T591S-STEXT[0]=Basic contract
PA30.MP000800.2000.MP000800.2000.P0008-OBJPS[0]=
PA30.MP000800.2000.MP000800.2000.P0008-PREAS[0]=
PA30.MP000800.2000.MP000800.2000.T530F-RTEXT[0]=
PA30.MP000800.2000.MP000800.2000.P0008-STVOR[0]=
PA30.MP000800.2000.MP000800.2000.P0008-TRFAR[0]=40
PA30.MP000800.2000.MP000800.2000.T510A-TARTX[0]=Metall
PA30.MP000800.2000.MP000800.2000.P0008-BSGRD[0]=1=100,00
PA30.MP000800.2000.MP000800.2000.T546T-ATEXT[0]=PER
PA30.MP000800.2000.MP000800.2000.P0008-TRFG[0]=01
PA30.MP000800.2000.MP000800.2000.T510G-TGBTX[0]=Baden-Wuerttemberg
PA30.MP000800.2000.MP000800.2000.P0008-DIVGV[0]=167,40
PA30.MP000800.2000.MP000800.2000.Q0008-ZTEXT[0]=Monthly
PA30.MP000800.2000.MP000800.2000.P0008-TRFGRI[0]=M3
PA30.MP000800.2000.MP000800.2000.P0008-TRFSTI[0]=
PA30.MP000800.2000.MP000800.0300.Q0008-LGART[1]=MA10
PA30.MP000800.2000.MP000800.0300.Q0008-LGTX[1]=Standard salary
PA30.MP000800.2000.MP000800.0300.Q0008-OPKEX[1]=
PA30.MP000800.2000.MP000800.0300.Q0008-BETRGS[1]=1.602,00
PA30.MP000800.2000.MP000800.0300.Q0008-WAERS[1]=EUR
.....
PA30.MP000800.2000.MP000800.0300.Q0008-IBBEG[0]=25.01.2017
PA30.MP000800.2000.MP000800.0300.Q0008-IBEND[0]=31.12.9999
PA30.MP000800.2000.MP000800.0300.Q0008-SUMMB[0]=1.755,40
PA30.MP000800.2000.MP000800.0300.P0008-WAERS[0]=EUR

```

UI Logging

Alerting/Notification scenario: mail notification for specified data access





SAP

Master Data Governance



Patrick Wong, SAP
April, 2019

Public

All lines of business

Are impacted by master data quality issues

Organizations and Roles

 <p>Financials CFO</p>	 <p>IT CIO</p>	 <p>Sales (S)VP of Sales, (S)VP of Marketing</p>	 <p>Supply Chain VP of Supply Chain, VP of Planning</p>
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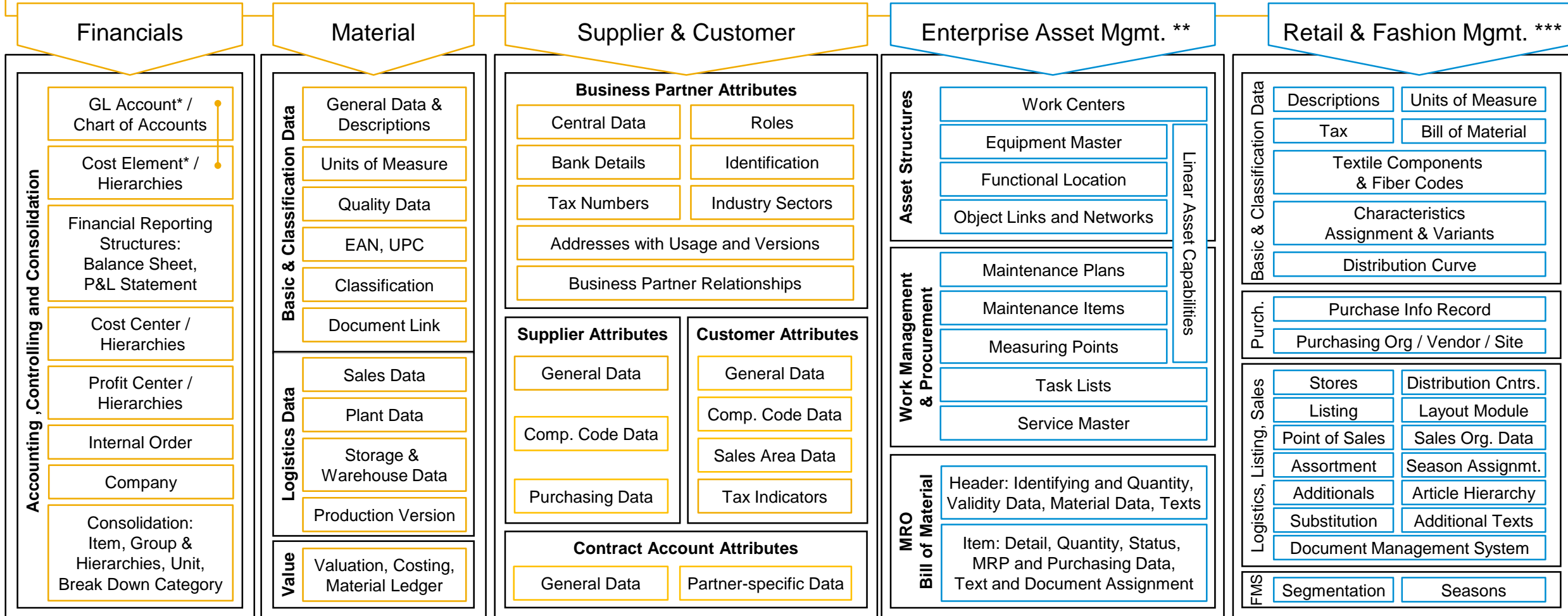
Challenges

- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> ▪ Inconsistent financial master data across the enterprise ▪ Manual efforts to update financial master data in local financial systems ▪ Risk of non-compliance to IFRS, SOX etc. ▪ Slow group closes ▪ Lack of transparency about changes (who, what, when, why) | <ul style="list-style-type: none"> ▪ High master data maintenance costs ▪ Need for multiple systems to manage master data in different domains ▪ Lack of flexibility in dynamic business environments | <ul style="list-style-type: none"> ▪ Lack of consistent consolidated view of customer data across all channels ▪ Customer transactions are compromised due to a limited view of the facts | <ul style="list-style-type: none"> ▪ Lack of transparency relating to suppliers and products ▪ High costs due to insufficient supplier selection and rationalization ▪ Loss of potential for benefit realization (i.e. discounts, conditions, central contracts) ▪ Limited availability of up-to-date master data in my business network |
|---|--|---|--|

SAP Master Data Governance

Integrated Object Model

Out-of-the box delivery of proven data models for operational and financial master data



* User interface integration between GL Account and Cost Element only supported in SAP MDG on SAP S/4HANA

** SAP MDG, enterprise asset mgmt extension by Utopia

*** SAP MDG, retail & fashion mgmt. extension by Utopia

SAP Master Data Governance

Data Model

- Create / Edit Data Model

UI

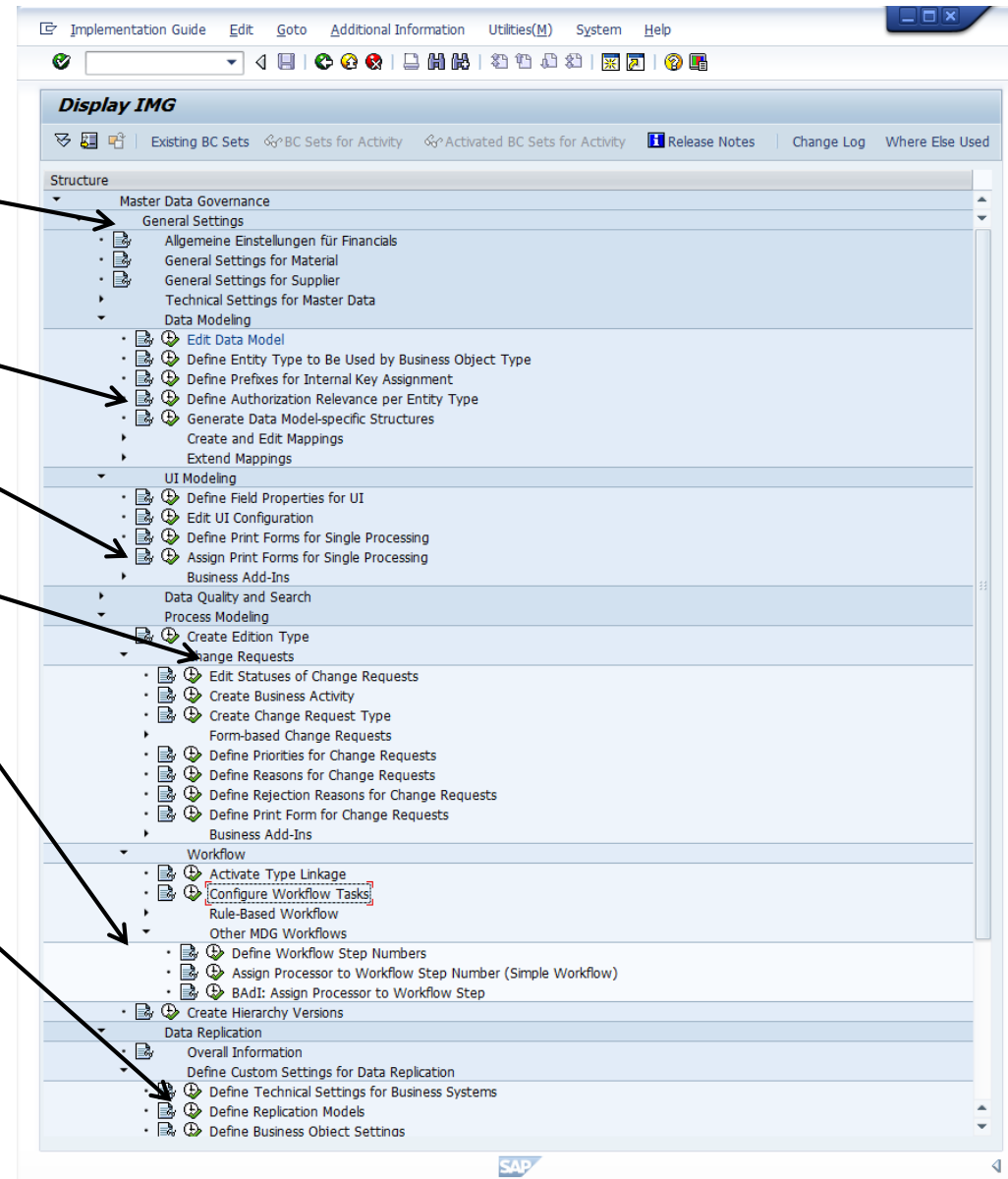
- Create / Edit UI Configuration

Process Modeling

- Create Business Activity (optional)
- Create Change Request Type
- Assign Processor to Workflow Step

Data Replication

- Define Replication Model



Typical approaches to master data management

Central governance and distribution / de-central ownership and consolidation



Systems under central governance

SAP Master Data Governance, **consolidation**

Consolidate master data into a single view for accurate analytics and operational insight (continuously or on request e.g. for initial load or mergers & acquisitions)



Enterprise master data

SAP Master Data Governance, **central governance**

Create master data in-line with business processes (e.g., integrated product development, supplier management)

Systems not under central governance



Legacy systems



Reporting and analytics



Business networks



Cloud

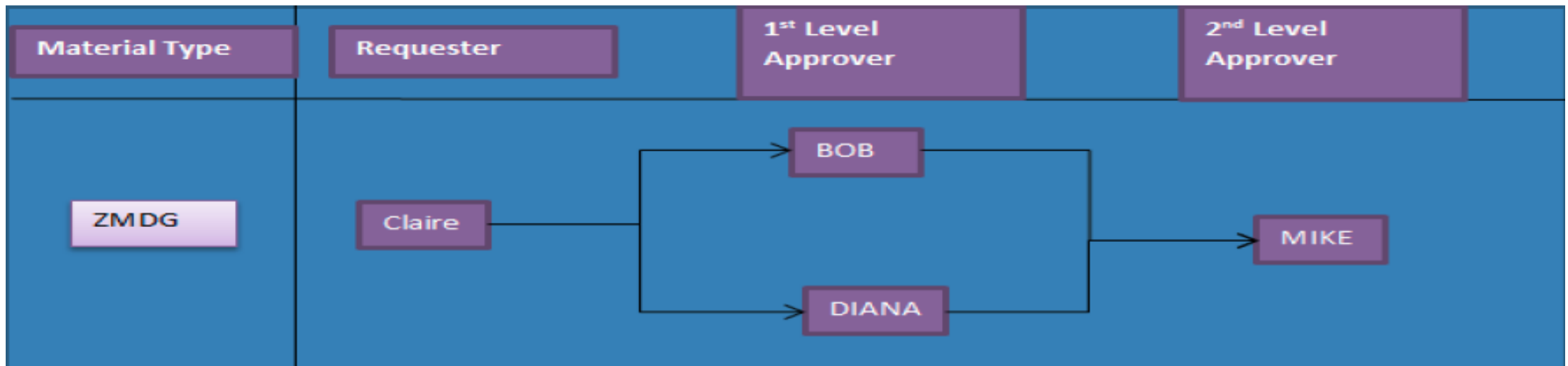
MDG Demonstration



Change Request For Material Creation

Conditional Based Workflow approval process (Based on Material Type)

Predefined User (Role)	Component
Claire	Requester
Diana	Approver
Bob	Approver
Mike	Final Approver



Change Request For Material Creation (Video)

Conditional Based Workflow approval process (Based on Material Type)

ci ec3.wdf.sap.corp:50080/nwbc/?sap-nwbc-node=navigate_absolute&sap-nwbc-new_window=X

Material: New \$1213 Side Panel

Save Submit Cancel Edit Expand all Collapse all Check Assignment Block:

Change Request Edit

General Notes Attachments

General Data

Change Request ID: 39563

* Description: Create Material-Based on Mat Type(10216) (Claire Thomas)

Priority: Medium Priority

Due Date: 30.12.2018

Reason: Customer Request

Process Data

Status: Changes to Be Executed

Current Workitem: New Change Request

Created On/By: 28.12.2018 02:23:40 Claire Thomas

Type of Change Request: ZMAT_CON

Basic Data Edit Replication Status

General Data

* Material: \$1213

Base Unit of Measure:

* Material Type:

* Industry Sector:

Material Group:

Old Material Number:

Authorization Group:

Cross-Plant Material Status:

Batch Management: No

Serialization Level: Serialization within the stock material number

Grouping

External Material Group:

Product Hierarchy:

Generic Item Group Category:

Material Group Packaging Materials:

Design Data

Lab/Office:

Industry Standard Description:

Basic Material:

Production/Inspection Memo:

Page Format of Production Memo:

Thank you.

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