

# **Freshman RAP + Fiori-Elements**

A beginner's (easy?) Journey

# Ihr Vortragender



## Stefan Hillinger

Technische SAP Beratung und Entwicklung

[stefan.hillinger@snapconsult.at](mailto:stefan.hillinger@snapconsult.at)

+43 664 8474946

# Unser Team



# Unsere Kernkompetenzen



## Technologie und Beratung

SAP Dienstleister S/4HANA / ERP  
SAP Beratung  
SAP Logistik (SAP TM, SAP E(WM), SAP PM)  
SAP Technologie  
SAP Entwicklung  
snapWARE – Best Practice Software



SAP Quality Award Gewinner  
2010, 2012, 2013, 2014, 2016, 2019, 2020, 2021, 2022  
Seit 20 Jahren am Markt  
12 der ATX 20 Unternehmen vertrauen  
RIT & snap, ebenso wie viele KMU

## Healthcare – Logistik

Apotheke, Pflege und Materialwirtschaft  
Waren- und Gerätelogistik  
Verpflegungsmanagement  
Instandhaltung und Service

THINK BIG  
START SMART 

digital - sicher - einfach!

snap Tochterunternehmen/Softwareprodukt-  
entwicklung SAP basierte- bzw. integrierte Lösung  
zur **Digitalisierung** Ihrer **Freigaben-** und  
Unterschriftenprozesse. **Mobilisieren** Sie Ihre  
AnwenderInnen, gestalten Sie Ihre Prozesse  
**rechtssicher, fälschungssicher** und **nachvollziehbar.**



# Um was geht's?

## ➤ **Mein Einstieg in die SAP-Welt**

- Freshman RAP und Fiori Elements
- Fiori First Contact

## ➤ **Erstes riesiges Projekt**

- Kundenanforderungen umsetzen nur mit Fiori Elements?

## ➤ **Lessons Learned**

- Stolpersteine
- Wo finde ich Hilfe?

# Der Einstieg in die SAP-Welt

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# Der Einstieg in die SAP-Welt

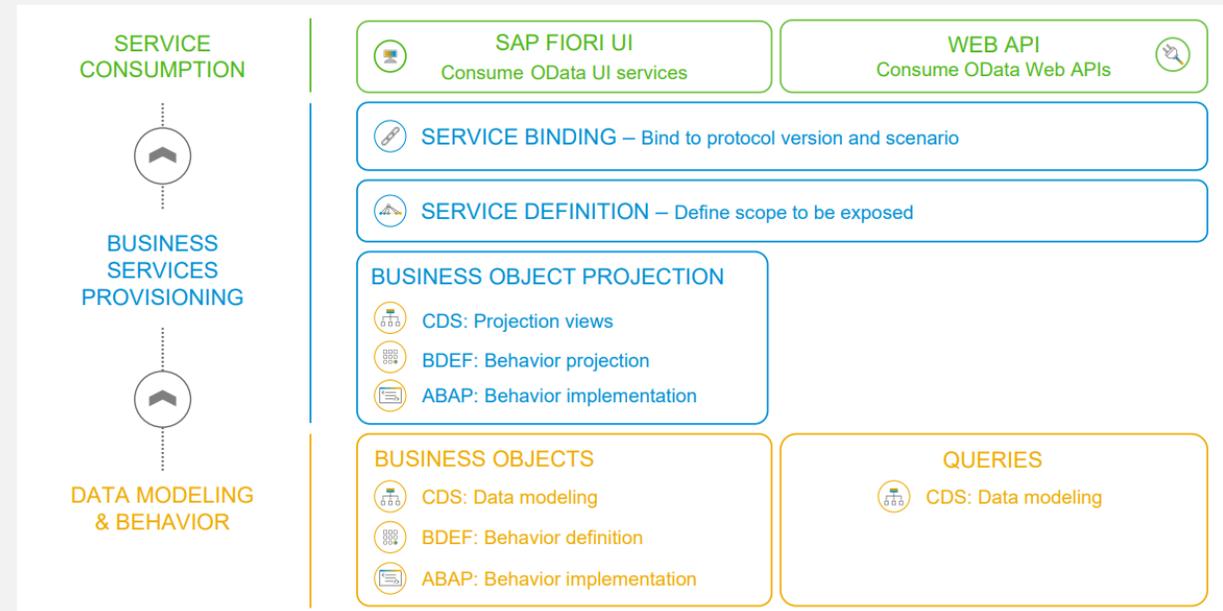
- Wie schon oft: Auf Empfehlung
- Die snap-Trainee-Akademie
  - [snap SAP Traineeprogramm](#)
- Grundausbildung in..
  - ABAP, ABAP OO (ungewohnte Sprache)
  - FPM
  - Basis Prozesswissen
  - NEU: RAP + Fiori Elements!
- Bewährt, Gut zu Lernen und Verstehen





# Freshman RAP

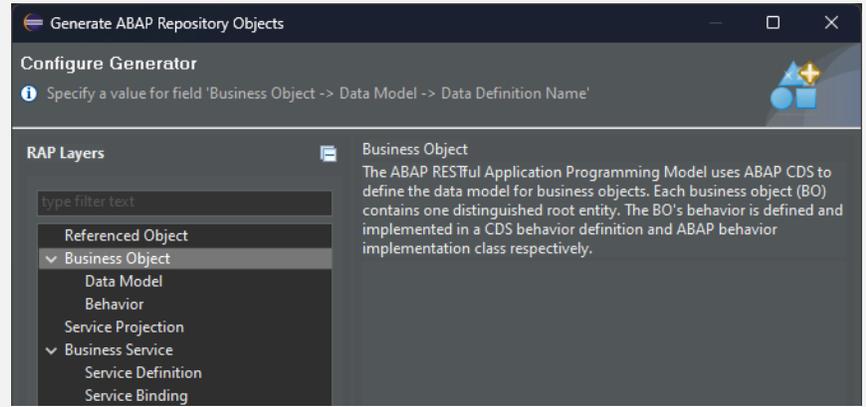
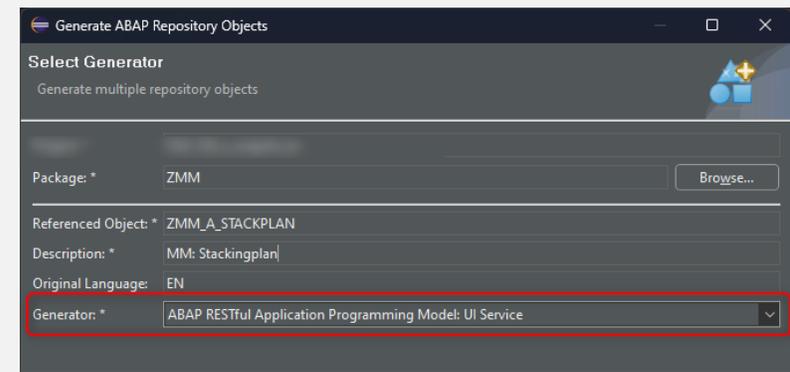
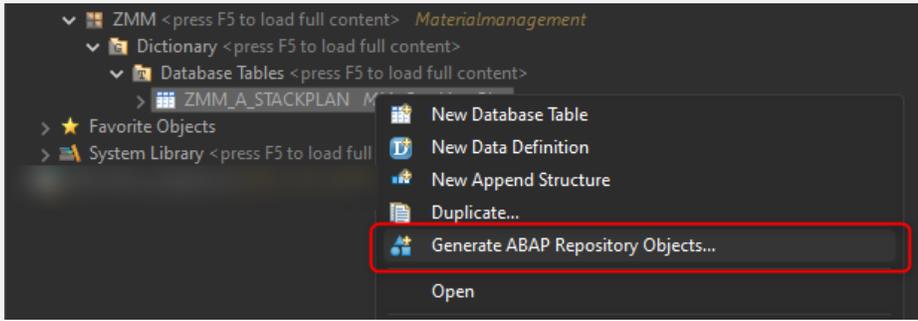
- Noch kein RAP Wissen, was nun?
  - SAP Developer Tutorials
  - OpenSAP Kurse (bis Juni)
  
- Viele A-Ha! Momente
  - Eclipse ADT
  - RAP als Programmiermodell
  - OData
  - Metadata Extension
  - Arten von Previews
  - Und viel mehr...





# Freshman RAP

➤ **RAP Generator:** Grundgerüst einer RAP-Applikation ausgenerieren



Repository Object Name	Type
<b>D</b> ZI_MM_PALLETTYPE	Data Definition
<b>B</b> ZI_MM_PALLETTYPE	Behavior Definition
<b>G</b> ZBP_I_MM_PALLETTYPE	Global Class
<b>M</b> ZMM_D_PALLETTYPE	Database Table
<b>D</b> ZC_MM_PALLETTYPE	Data Definition
<b>B</b> ZC_MM_PALLETTYPE	Behavior Definition
<b>E</b> ZC_MM_PALLETTYPE	Metadata Extension
<b>G</b> ZUI_MM_PALLETTYPE	Service Definition
<b>P</b> ZUI_MM_PALLETTYPE_O4	Service Binding

# Freshman Fiori Elements



## ➤ Visual Studio Code: Neue Entwicklungsumgebung

```
com.mam.ui5.pallettype > webapp > {} manifest.json > {} sap.app > {} dataSources > {} annotation
3  "sap.app": {
10  "title": "{{appTitle}}",
11  "description": "{{appDescription}}",
12  "resources": "resources.json",
13  "sourceTemplate": {
14    "id": "@sap/generator-fiori:lrop",
15    "version": "1.9.0",
16    "toolsId": "071b27e8-6320-495e-9c73-665b0e5c7b86"
17  },
18  "dataSources": {
19    "mainService": {
20      "uri": "/sap/opu/odata4/sap/zui_mm_pallettype_o4/srvd/sap/zui_mm_pallettype/0001/",
21      "type": "OData",
22      "settings": {
23        "annotations": [
24          "annotation"
25        ],
26        "localUri": "localService/metadata.xml",
27        "odataVersion": "4.0"
28      }
29    },
30    "annotation": {
31      "type": "ODataAnnotation",
32      "uri": "annotations/annotation.xml",
33      "settings": {
34        "localUri": "annotations/annotation.xml"
35      }
36    }
37  },
38  "sap.ui": {
39    "technology": "UI5",
40    "icons": {
41      "icon": "",
42      "favIcon": "",
43      "phone": "",
44      "phone@2": "",
45      "tablet": "",
46      "tablet@2": ""
47    }
48  }
}
```

# VSCode: SAP Fiori Tools



## ➤ Fiori: Open Application Generator

SAP Fiori application 🔗 Explore and Install Generators...

**Template Selection**  
Choose your application template.

Application Type \*  
SAP Fiori elements

Which template do you want to use? \*

- List Report Page**  
Create an SAP Fiori elements application containing a list report and an object page.  
[More information](#)
- Worklist Page**  
Create an SAP Fiori elements application containing a worklist and an object page.  
[More information](#)
- Analytical List P...**  
Create an SAP Fiori elements application containing an analytical list and an object page.  
[More information](#)

Overview Page    Form Entry Obj...    Custom Page

SAP Fiori application 🔗 Explore and Install Generators...

**Data Source and Service Selection**  
Configure the data source and select a service.

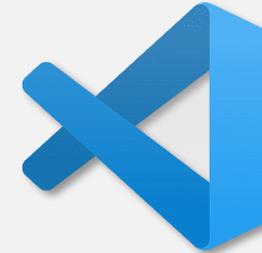
Data source \*  
Connect to an OData Service

OData service URL 🔗 \*

[← Back](#)    [Next >](#)

```
MAM (ARBEITSBEREICH)
├── com.mam.ui5.paltype
│   ├── dist
│   │   ├── annotations
│   │   ├── i18n
│   │   ├── localService
│   │   ├── resources
│   │   ├── test
│   │   └── utils
│   ├── JS Component-dbg.js
│   ├── JS Component-preload.js
│   ├── JS Component.js
│   ├── index.html
│   ├── manifest.json
│   ├── node_modules
│   ├── webapp
│   ├── .gitignore
│   ├── package-lock.json
│   ├── package.json
│   ├── README.md
│   ├── ui5-deploy.yaml
│   ├── ui5-local.yaml
│   ├── ui5-mock.yaml
│   └── ui5.yaml
```

# Die erste Eigene RAP + Fiori Elements App



SAP Pallet Type

Standard

Editing Status: All Pallet type: Pallet description: Go Adapt Filters (1)

Pallet Types (4)

Pallet type	Pallet description	Material	Product Description
<input type="checkbox"/> EU	Euro pallet	200000025	PALETTE_EUR
<input type="checkbox"/> COW	Palette THT TEST	200000024	PALETTE_COW
<input type="checkbox"/> TEST1	TEST 1	200000024	PALETTE_COW
<input type="checkbox"/> TEST3	TEST 3	200000010	PALETTE_EUR



List Report

Object Page

SAP Pallet Type

EU

Edit Delete

Pallet type

Pallet type:	Product Description:	Width:
EU	PALETTE_EUR	800,000 MM
Pallet description:	Height:	Length:
Euro pallet	2.200,000 MM	1.200,000 MM
Material:	Net Weight:	
200000025	19.000,000 G	

# Fiori (Elements) First

Erstes Projekt nach der Grundausbildung

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## Das erste Projekt

- Private Cloud (2022) Einführung bei MAM Babyartikel Schweiz
  - Microsoft Dynamics -> SAP Private Cloud
- Fiori First
  - Überlegung: Schaffen wir die Anforderungen mit Fiori Elements?
    - Erfahrung andere Projekte
  - **Ja!**

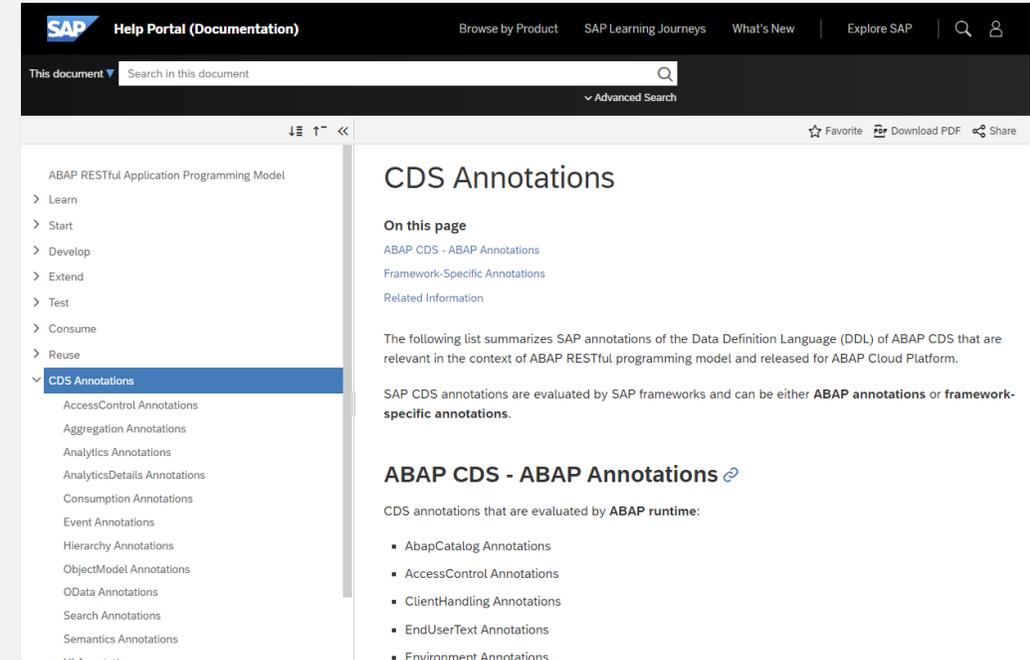


# Tutorials vs Echte Anforderungen

- Suchhilfen?
- Custom Actions?
- Metadata-Extension
  - Aussehen und Gruppieren der Felder?
- Verhalten der App steuern?

# Woher bekomme ich die Infos?

- [help.sap.com](https://help.sap.com)
  - Annotationen (UI, Semantics, Consumption)
  - Custom Actions
- VSCode Hilfen
  - Fiori: Open Application Generator
  - Fiori: Open Guided Development
    - Side Effects
      - Verfügbar ab SAP S/4HANA 2023 bereits im Backend verfügbar
  - Page Map
    - Layoutstyle ändern
    - Feldeigenschaften bearbeiten



# VSCode: Fiori Open Guided Development



com.mam.ui... | Search guides | ?

Page Type | Project Guides | Filter

- Add a field group to an object page
- Add a header facet to an object page using data points
- Add a micro chart column to a table
- Add a new contact view column to a table
- Add a new section to an object page
- Add a progress indicator column to a table
- Add a rating indicator column to a table
- Add a smart chart facet to an object page
- Add a value help to a field in the filter bar
- Add and edit table columns
- Add multiple fields to a column in responsive tables
- Add semantic highlights to line items in a table
- Add status colors and icons to a column in a table
- Configure multiple selection for a table
- Configure object page header
- 1 Configure side effects**
- Configure table type

### Configure side effects

About | **Step 1** | Step 2

#### Add the side effect source

In this step, you will configure the source of the side effect. A source acts as a trigger for the side effect execution. The trigger can be a property change or a structural change to the entity or a function import action.

- Entity Type Selection**

Select the **Entity Type** of the side effect source.

**2** Entity Type \*

  - PalletTypeType
  - I\_DraftAdministrativeDataType
  - PalletTypeType

To execute a side effect after the execution of **PalletTypeType** import action, configure it as a source. If function import is selected as a source then skip the insert snippet in step 1 and proceed to step 2 for adding the target.

- 3** Action ?

Select the function import action
- 4** Side Effects Qualifier  
Enter a unique qualifier

< Back | Next > | Exit Guide

# VSCode: Page Map



The screenshot shows the VS Code Page Map interface for a project named 'pallettype'. The left pane displays a tree view of pages:

- List Report (PalletTypeList) - PalletType
- Object Page (PalletTypeObjectPage) - PalletType

A blue arrow points from the 'List Report' page to the 'Object Page' page, which is highlighted with a red circle labeled '1'. The right pane shows the configuration for the selected 'Object Page' page, with a red circle labeled '2' highlighting the 'Flexible Column Layout' section.

**Flexible Column Layout** (Object Configuration Manifest)

The flexible column layout allows users to see more details on the page, and to expand and collapse the screen areas. For the overview page, this layout is not relevant.

- Standard Layout
- Flexible Column Layout

**Flex Enabled** (Boolean Configuration Manifest)

To enable key user adaptation for the application, set the flexEnabled property to "true".

True

**Controller Extensions** (ListReport) (Arr... Configurat... Manif...)

Controller extensions for all ListReport Pages.

[Add Controller Extension](#)

ListReport
No controller defined

**Controller Extensions** (ObjectPage) (Arr... Configura... Manif...)

Controller extensions for all ObjectPage Pages.

Standard

Editing Status:  Material:  Plant:

Ship. Instruction ID:  Packaging Number:  Outer Material:

Inner Material:  Control on:  Control by:

[Go](#) [Adapt Filters \(1\)](#)

Logistic Data (11) Copy Calculate All Create Delete

Material	Product Description	Plant
<input type="checkbox"/> 10000012	F_260ML_TEAT_2_SIL	2000
<input type="checkbox"/> 10000003	F_6M_SIL_ISCC+	5000
<input type="checkbox"/> 100000133	F_260ML_TEAT_3_SIL	2000
<input type="checkbox"/> 100000113	F_16+M_SIL_ISCC+	2000
<input type="checkbox"/> 100000118	F	2000
<input type="checkbox"/> 100000007		2000
<input type="checkbox"/> 100000007		1000
<input type="checkbox"/> 100000133	F_260ML_TEAT_3_SIL	3000
<input type="checkbox"/> 100000004	M_6M_ISCC+	1000
<input type="checkbox"/> 100000113	F_16+M_SIL_ISCC+	1000
<input type="checkbox"/> 100000116	F	1000

General Information Calculating History

General Info

Material: 100000012	Customer: 9001110000	Inner Material: -	Control on: -
Product Description: F_260ML_TEAT_2_SIL	Name: -	Manual: No	Control by: -
Plant: 2000	Packaging Number: FS-265-1A	No Update: No	
Ship. Instruction ID: TESTING	Outer Material: -	Note: -	

Calculating

<b>Consumer</b>	<b>Inner Carton</b>	<b>Outer Carton</b>	<b>Pallet</b>
Cons. Package Depth: 47,000 MM	Inner Depth: 0,000 MM	Outer Depth: 0,000 MM	Pallet Depth: 0,000 MM
Cons. Package Width: 69,000 MM	Inner Width: 0,000 MM	Outer Width: 0,000 MM	Pallet Width: 0,000 MM
Cons. Package Height: 145,000 MM	Inner Height: 0,000 MM	Outer Height: 0,000 MM	Pallet Height: 0,000 MM
Cons. Package Weight: 20,290 G	Inner Weight: 0,000 G	Outer Weight: 121,740 G	Pallet Weight: 0,000 G
Cons. Package Volume: 0,650 CD3	Inner Volume: 0,000 CD3	Outer Volume: 0,000 CD3	Pallet Volume: 0,000 CD3
Cons.Pack.Q: 0	Inner Cons. Packages: 0	Outer Cons. Packages: 6	Cons. Packages: 0
			Pallet Outer Count: 0
			Pallet Layer Count: 0
			Pallet OuterPLayer: 0
<b>Product</b>			
Product weight: 10,150 G			

History



Standard

Editing Status: All

Material: [Material] Plant: [Plant]

Ship. Instruction ID: [SID] Packaging Number: [PN] Outer Material: [OM]

Inner Material: [IM] Control on: [CO] Control by: [CB]

Go Adapt Filters (1)

- Copy
- Calculate All
- Create
- Delete

Logistic Data (11)

Material	Product Description	Plant
<input checked="" type="checkbox"/> 10000012	F_260ML_TEAT_2_SIL	2000
<input type="checkbox"/> 10000003	F_6M_SIL_ISCC+	5000
<input type="checkbox"/> 10000133	F_260ML_TEAT_3_SIL	2000
<input type="checkbox"/> 10000113	F_16+M_SIL_ISCC+	2000
<input type="checkbox"/> 10000118	F	2000
<input type="checkbox"/> 10000007		2000
<input type="checkbox"/> 10000007		1000
<input type="checkbox"/> 10000133	F_260ML_TEAT_3_SIL	3000
<input type="checkbox"/> 10000004	M_6M_ISCC+	1000
<input type="checkbox"/> 10000113	F_16+M_SIL_ISCC+	1000
<input type="checkbox"/> 10000116	F	1000

Calculate Update Material Master

Draft General Information Calculating History

10000113 9001120000 - 15.04.2024

Product Description: F\_16+M\_SIL\_ISCC+ Name: - Manual:  Control by: Z\_SNAPSHI

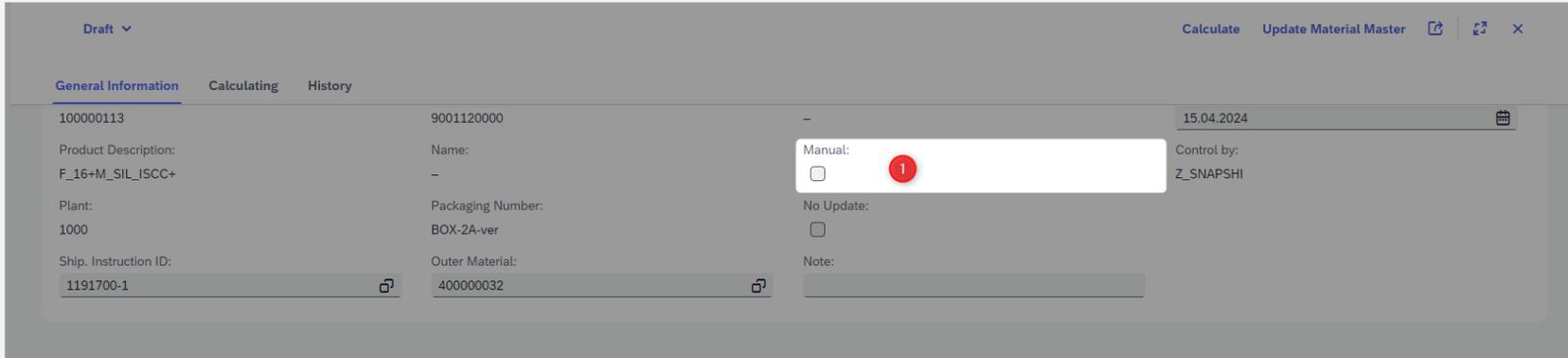
Plant: 1000 Packaging Number: BOX-2A-ver No Update:

Ship. Instruction ID: 1191700-1 Outer Material: 400000032 Note:

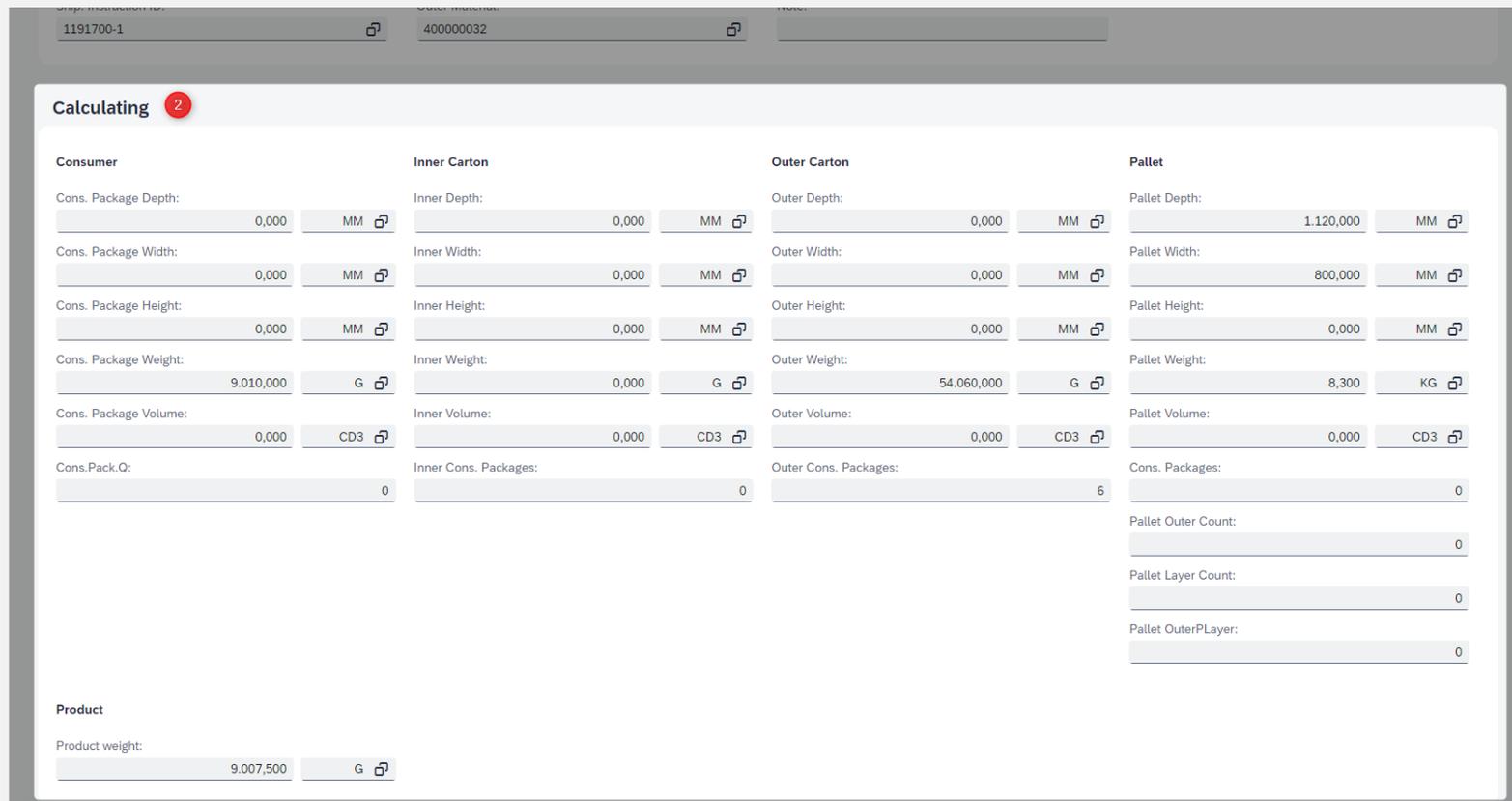
Calculating

Consumer	Inner Carton	Outer Carton	Pallet
Cons. Package Depth: 0,000 MM	Inner Depth: 0,000 MM	Outer Depth: 0,000 MM	Pallet Depth: 1,120,000 MM
Cons. Package Width: 0,000 MM	Inner Width: 0,000 MM	Outer Width: 0,000 MM	Pallet Width: 800,000 MM
Cons. Package Height: 0,000 MM	Inner Height: 0,000 MM	Outer Height: 0,000 MM	Pallet Height: 0,000 MM
Cons. Package Weight: 9,010,000 G	Inner Weight: 0,000 G	Outer Weight: 54,060,000 G	Pallet Weight: 8,300 KG
Cons. Package Volume: 0,000 CD3	Inner Volume: 0,000 CD3	Outer Volume: 0,000 CD3	Pallet Volume: 0,000 CD3
Cons.Pack.Q: 0	Inner Cons. Packages: 0	Outer Cons. Packages: 6	Cons. Packages: 0
			Pallet Outer Count: 0
			Pallet Layer Count: 0
			Pallet OuterPLayer: 0
<b>Product</b>			
Product weight: 9,007,500 G			





Checkbox um Felder im Edit-Mode umzuschalten zwischen Read/Edit



## Side Effect Beispiel

Eingabe eines Feldes

Control on:  
1 dd.MM.yyyy 

Control by:  
-



Beeinflusst ein/mehrere Feld/er

Control on:  
15.04.2024 

Control by:  
Z\_SNAPSHI 2

# Anderes Pflegebild nach Anlageart

**Create**

Type:

New plant

Change (C)

New plant (N)

SAP Material New/Changes

SH

Edit Delete

General New

**General Info**

Running Number: 23	Material: -	Plant 1000: Yes
Created At: 10.08.2023, 09:25:04	Basic Material: -	Plant 5000: No
Type: New plant	Template ID: -	Delete Reason: Test deletion
Created By: Z_SNAPJSP	Collection number: -	Note: -
Completed By: Z_SNAPJSP	Pack: 456568648569	
Completed At: 10.08.2023	Status: New (00)	

**New**

Priority: No	KTN Layout PV: -	Quantity: 0,000
New Creation: No	KTN Layout released: No	Material: -
Copy: No	Pricelist updated at: 10.08.2023	Quantity: 0,000
Pricelist: No	Comment pricelist: -	Material: -

### Create

Type:

Change

Change (C)

New plant (N)

SAP Material New/Changes

Search, Notifications, SH

Edit Delete

General Change Change 2 Change 3 Change 4

#### General Info

Running Number: 26	Material: 100000013	Plant 1000: No
Created At: 11.08.2023, 08:26:07	Basic Material: -	Plant 5000: No
Type: Change	Template ID: -	Delete Reason: -
Created By: Z_SNAPJSP	Collection number: -	Note: -
Completed By: -	Pack: -	
Completed At: -	Status: New (00)	

#### Change

Old Material: 100000013	Do not mix in order: No	Modified PA-s: -
Material Old Plant: 1000	Valid from next order: No	Outer Layout: No
Quantity Old: 0 PC	Use up: No	Additional Material: -
Material New 1: 100000005	All: Yes	Add. Material Quan.: 0,000

Standard

Bearbeitungsstatus:

Versandvorschrift ID:

Gültig ab:

gültig bis:

Kunde Intercompany:

Etikettentyp:

Palettentyp:

Versandvorschriften (11)

<input type="checkbox"/>	Versandvorschrift ID	Gültig ab	gültig bis	Kunde Intercomp...	
<input type="checkbox"/>	1191700	10.07.2023	16.07.2023	1191700	>
<input type="checkbox"/>	1191700	17.07.2023	25.06.2023	1191700	>
<input type="checkbox"/>	1191700	26.06.2023	31.12.9999	1191700	>
<input type="checkbox"/>	1191700-1	01.05.2023	31.05.2023	1191710	>
<input type="checkbox"/>	1191700-1	01.06.2023	30.06.2023	1192100	>
<input type="checkbox"/>	1191700-1	01.07.2023	31.12.9999	1191800	>
<input type="checkbox"/>	TEST_JSP	01.07.2023	31.12.9999	1191900	>
<input type="checkbox"/>	AS1	25.06.2023	29.06.2023		>
<input type="checkbox"/>	AS1	30.06.2023	10.06.2023		>
<input type="checkbox"/>	TESTING	06.06.2023	19.02.2024		>
<input type="checkbox"/>	TESTING	20.02.2024	31.12.9999		>

TEST\_JSP Entwurf

Allgemeine Information Position Nachhaltigkeit

Allgemein

Versandvorschrift ID: TEST\_JSP

Gültig ab: 01.07.2023

gültig bis: 31.12.9999

Etikettentyp:

Palettentyp:

Max. Palettenhöhe:

Kunde Intercompany

Kunde Intercompany:

Lieferland:

Kunde Intercompany Name:

Sprachenschlüssel:

Position

Materialien (2)

<input type="checkbox"/>	Material	Produktbeschreibung	Menge	
<input type="checkbox"/>	100000039	V_R315-92A	1,500	M >
<input type="checkbox"/>	100000043	V_L_UNPRINTED_E50X65A	2	ST >

Nachhaltigkeit

Sustainabilities (1)

<input type="checkbox"/>	Nachhaltigkeit Code	Beschreibung	Nachhaltigkeit	Massnahme	Beschreibung	Länder-/Reg...
<input type="checkbox"/>	SUSTAINABILITY_2	Nachhaltigkeit Code 2	4711_0815_ABC			<input type="button" value="↕"/> >

# Mein Lessons Learned...

...und was ich euch mitgeben möchte

# Stolpersteine und Lessons Learned

## ➤ Verfügbare Annotationen

```
@Consumption.valueHelpDefinition: [ { entity: { name: 'ZI_MM_PalletTypeHelp',  
                                             element: 'PalletType' },  
                                     useForValidation: true } ]
```

## ➤ OData

- Conversion Routinen Komptabilität
- V2 vs V4
  - V4 -> keine Möglichkeit zu Filtern ohne UnitOfMeasure





## Unterm Strich

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- Leichter zu Lernen als gedacht
- Viel Unterstützung
  - Tutorials
  - Erfahrene Kollegen
  - Unkomplizierte Lösungen
- Riesige Ergänzungen je Release
  - Neue und erweiterte Annotationen
  - Backend Befehle für Frontend Lösungen

# The best time to start the Fiori + RAP Journey is now!

- Hilfsmittel
  - RAP Generator
  - Visual Studio Code
- SAP Developer Tutorials
  - [Get to Know the ABAP RESTful Application Programming Model](#)
  - [Generate an SAP Fiori Elements Application based on a RAP-based Service](#)
  - [Building Apps with the ABAP RESTful Application Programming Model](#) (bis Juni)
  - [Developing and Extending SAP Fiori Elements Apps](#) (bis Juni)

# Danke fürs zuhören!

Und viel Spaß beim ausprobieren 😊