



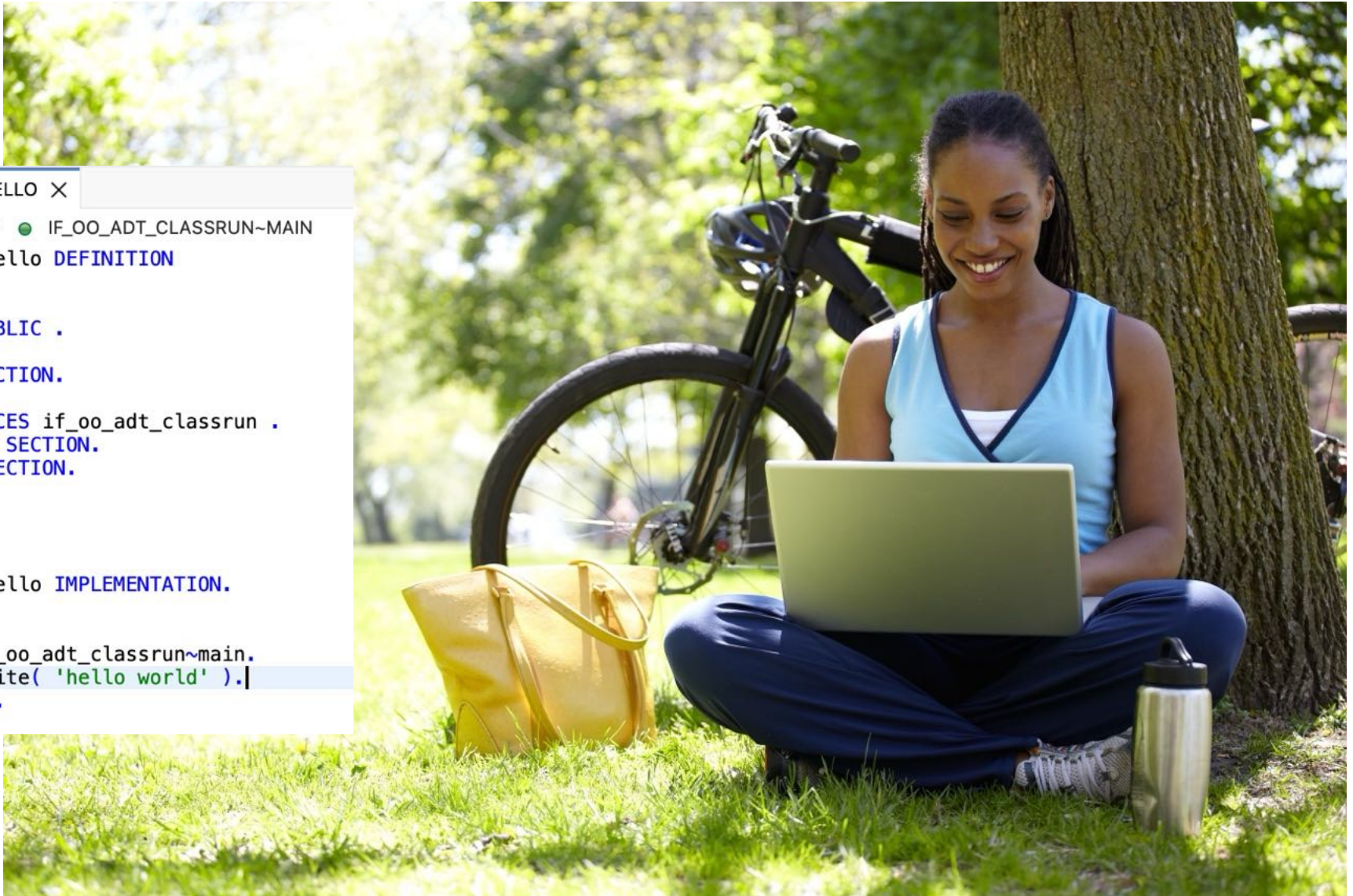
# Bits & Bikes: coding ☁️ ABAP Cloud to counter the Climate Crisis

Dr. Martin Knechtel (he/him), SAP  
September 26, 2025  
JUG Saxony Day

Public

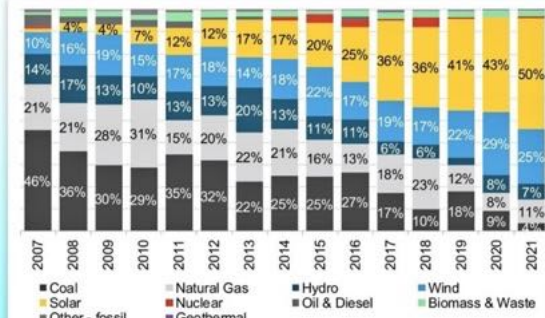


```
[TRL,100] ZMK_HELLO X
▶ ZMK_HELLO ▶ IF_OO_ADT_CLASSRUN~MAIN
1 CLASS zmk_hello DEFINITION
2   PUBLIC
3   FINAL
4   CREATE PUBLIC .
5
6   PUBLIC SECTION.
7
8   INTERFACES if_oo_adt_classrun .
9   PROTECTED SECTION.
10  PRIVATE SECTION.
11  ENDClass.
12
13
14
15 CLASS zmk_hello IMPLEMENTATION.
16
17
18 METHOD if_oo_adt_classrun~main .
19   out->write( 'hello world' ).|
20 ENDMETHOD.
21 ENDClass.
```



## Deutschland muss gar nicht allein die Welt retten

Anteil am weltweiten Kapazitätsausbau nach Technologie



Source: BloombergNEF. Note: Share of global capacity additions exclu

Money argues with us,  
time to be optimistic  
and constructive!



The price of electricity from new power plants  
Electricity prices are expressed in 'levelized costs of energy' (LCOE).  
LCOE captures the cost of building the power plant itself as well as the  
ongoing costs for fuel and operating the power plant over its lifetime.

Our World  
in Data



Data: Global Levelized Cost of Energy Analysis, Version 3.0.0  
OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY  
by the author, Alex Fisher

heise online heise + Jetzt 1 Monat gratis testen PUR

### Regelenergie: Batterien verdrängen Gaskraftwerke

Gaskraftwerke sollen die schwankende Stromerzeugung aus Sonne und Wind ausgleichen. Immer öfter übernehmen große Batterien den Job - aus Kostengründen.

Leszeit: 2 Min. speichern 722

(Bild: Steve Buissinne, gemeinfrei)

Menü anzeigen

heise autos Abo PUR

### Elektroautos sind inzwischen billiger und weniger umweltschädlich als Verbrenner

Eine umfangreiche Meta-Studie zeigt abgelaufen haben. Sie sind weniger günstiger.

www.heise.de/hintergru PUR

### IEA: Photovoltaik billigste Stromquelle in der Geschichte

Der Wechsel von fossiler zu erneuerbarer Stromerzeugung könnte schneller geschehen als gedacht. Solarenergie hat einen bemerkenswerten Rekord gesetzt.

Leszeit: 4 Min. speichern 1123

(Bild: Soonthorn Wongsaita/Shutterstock.com)

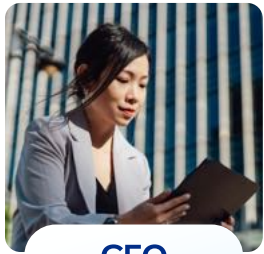
17.12.2020 11:01 Uhr | MIT Technology Review

# **Sustainability @SAP**



# Sustainability concerns all lines of business

Each challenge is unique, yet they all demand more intelligent and connected technology solutions to succeed



**CFO**

Ensure compliance and sustainable growth by connecting financial and non-financial data for AI-assisted reporting, planning, and cost control.



**COO**

Run sustainable, resilient supply chains by embedding sustainability metrics for transparency and AI-enabled, predictive risk management.



**CPO**

Optimize cost, quality, and availability through transparent, sustainable procurement across source-to-pay.



**CHRO**

Attract and retain talent with a sustainable brand backed by clear insights into corporate performance.



**CRO**

Support green pricing and credible marketing with trusted sustainability data that builds brand and drives revenue.



**CIO**

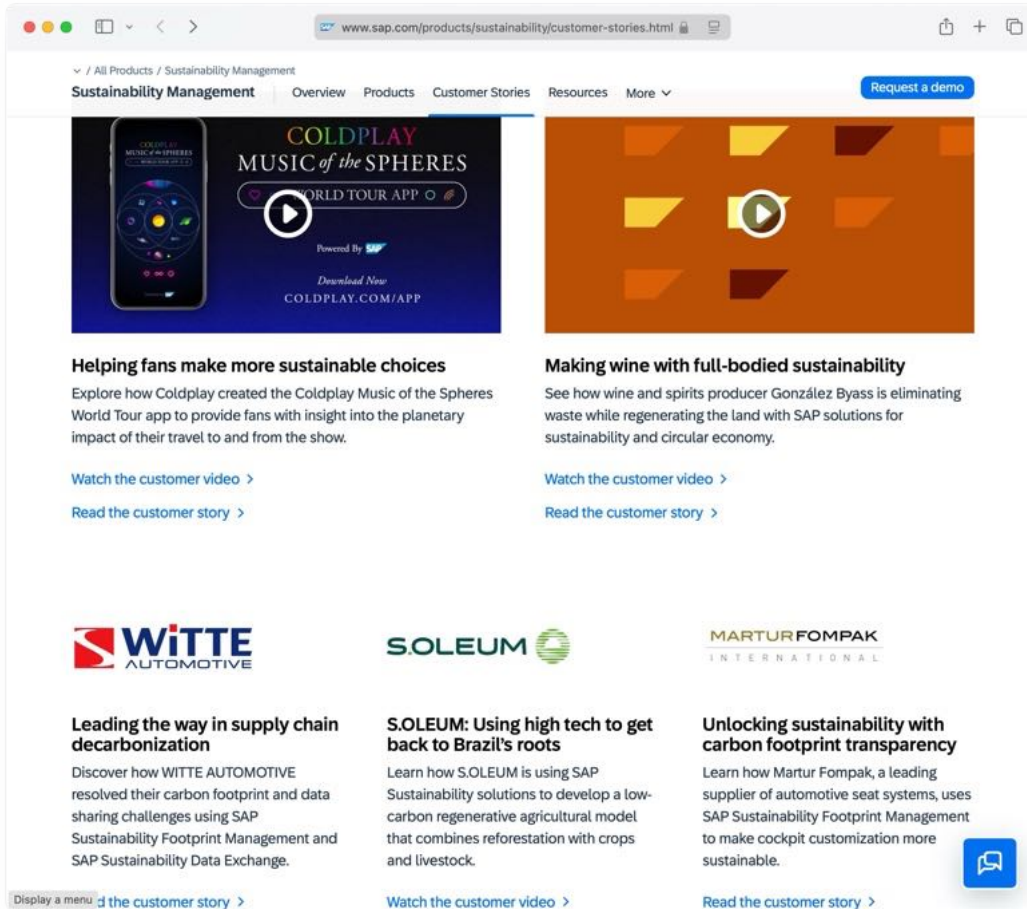
Enable AI-driven innovation and reduce TCO by integrating systems for connected, high-quality sustainability data.



**CSO**

Partner, align and engage all lines of business to achieve sustainability targets, manage risk, and seize opportunity through unified action.

# Customer Stories and Portfolio



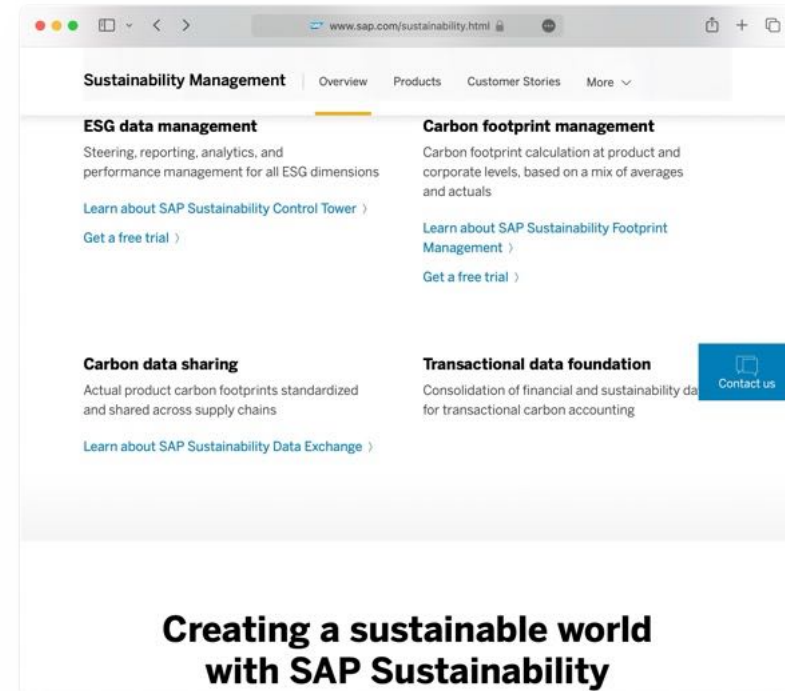
The screenshot shows the SAP Sustainability Management Customer Stories page. The navigation bar includes 'Sustainability Management', 'Overview', 'Products', 'Customer Stories', 'Resources', and 'More'. A 'Request a demo' button is visible in the top right. The main content area features two featured stories:

- Helping fans make more sustainable choices:** A story about Coldplay's 'Music of the Spheres' World Tour app, powered by SAP. It includes a video player and links to watch the video and read the customer story.
- Making wine with full-bodied sustainability:** A story about González Byass, a wine and spirits producer, using SAP to eliminate waste and regenerate land. It also includes a video player and links to watch the video and read the customer story.

Below these are three more stories:

- Leading the way in supply chain decarbonization:** A story about WITTE AUTOMOTIVE, which resolved carbon footprint and data sharing challenges using SAP Sustainability Footprint Management and SAP Sustainability Data Exchange. It includes a video player and links to watch the video and read the customer story.
- SOLEUM: Using high tech to get back to Brazil's roots:** A story about S.OLEUM, which uses SAP Sustainability solutions to develop a low-carbon regenerative agricultural model combining reforestation with crops and livestock. It includes a video player and links to watch the video and read the customer story.
- Unlocking sustainability with carbon footprint transparency:** A story about Martur Fompak, a leading supplier of automotive seat systems, using SAP Sustainability Footprint Management for cockpit customization. It includes a video player and a link to read the customer story.

A 'Display a menu' button is located at the bottom left, and a 'Contact us' button is at the bottom right.



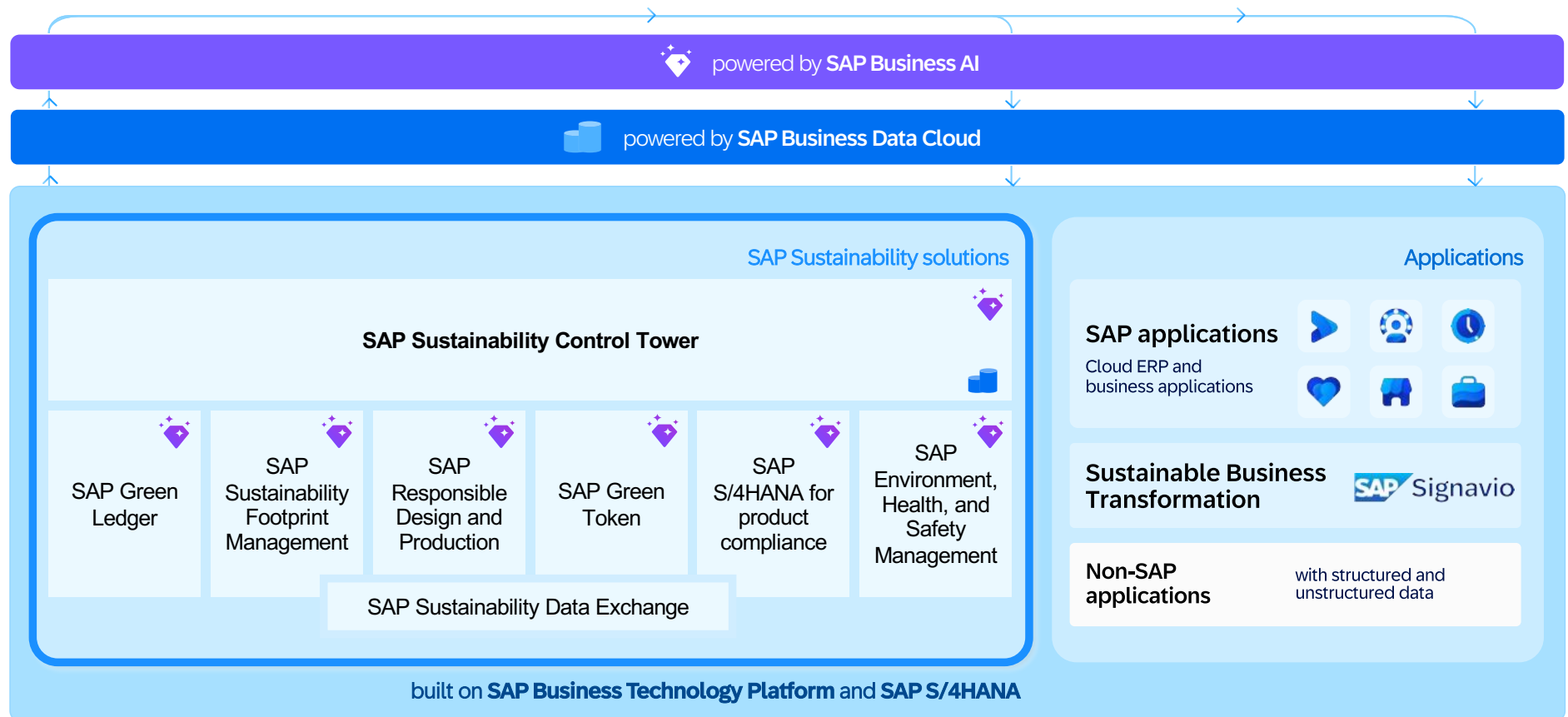
The screenshot shows the SAP Sustainability Management Products page. The navigation bar includes 'Sustainability Management', 'Overview', 'Products', 'Customer Stories', and 'More'. The main content area is divided into four product categories:

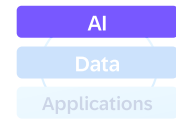
- ESG data management:** Steering, reporting, analytics, and performance management for all ESG dimensions. Includes links to 'Learn about SAP Sustainability Control Tower' and 'Get a free trial'.
- Carbon footprint management:** Carbon footprint calculation at product and corporate levels, based on a mix of averages and actuals. Includes links to 'Learn about SAP Sustainability Footprint Management' and 'Get a free trial'.
- Carbon data sharing:** Actual product carbon footprints standardized and shared across supply chains. Includes a link to 'Learn about SAP Sustainability Data Exchange'.
- Transactional data foundation:** Consolidation of financial and sustainability data for transactional carbon accounting. Includes a 'Contact us' button.

At the bottom of the page, the text reads: **Creating a sustainable world with SAP Sustainability**

# The SAP Sustainability solutions portfolio, executed through SAP Business Suite

Integrated, connected and AI-powered solutions leverage and extend existing enterprise capabilities





# AI for Sustainability at Scale

AI that reduces cost, lowers risk, drives performance and improves the overall user experience — enabling smarter, faster action across reporting, carbon, supply chain and operational compliance.

## Data readiness

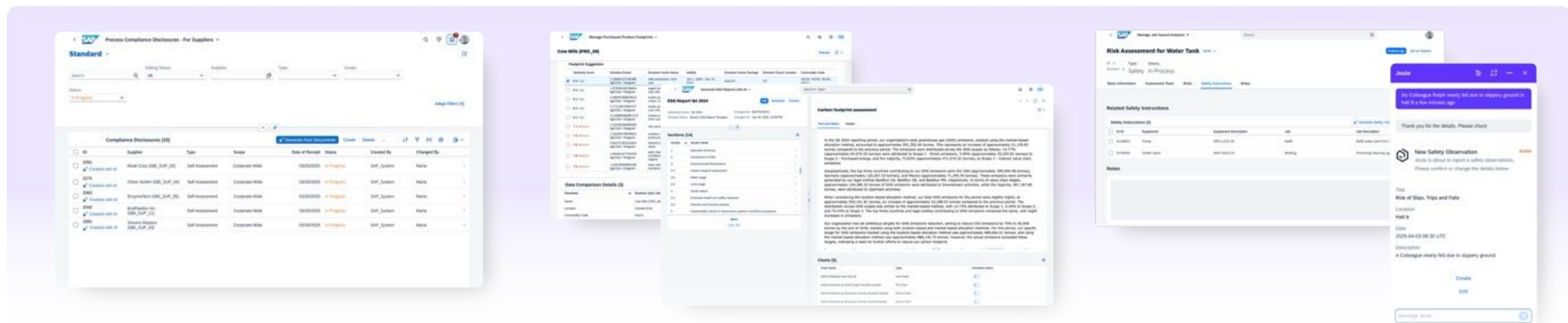
Leverage robust, autonomous data processing to unify, enrich, and prepare data sets, ensuring the data is accurate and actionable

## Automation and acceleration

Automate complex and time-consuming tasks to reduce effort, cost and risks associated with manual processes while achieving the highest ESG standards

## Amplification of expertise

Get strategic, predictive recommendations and in-depth operational insights that enable informed decisions delivering sustainable impact



SAP Product Compliance

**AI-assisted compliance information processing**

SAP Green Token

**AI-assisted declaration image analysis**

SAP Environment, Health, and Safety Management

**AI-assisted permit management**

SAP Sustainability Footprint Management

**AI-assisted emission factor mapping**

SAP Sustainability Control Tower

**AI-assisted ESG report generation**

SAP Green Ledger

**AI-assisted carbon emission analysis with Joule**

SAP Environment, Health, and Safety Management

**AI-assisted safety observation reporting with Joule**

SAP Environment, Health, and Safety Management

**AI-assisted safety instruction generation**



# Ready to unleash your sustainability strategy?

<http://sap.com/sustainability>



[Schedule a demo](#)



[Contact us for a consultation](#)



[Download a white paper](#)



**SAP Labs**  
Dresden



# The World's Largest Provider of Enterprise Software

SAP helps companies and organizations of all sizes and industries run their businesses profitably, adapt continuously, and grow sustainably.

Focus on  
**Cloud, AI, Sustainability**



## SAP Dresden

we believe in the power  
of synergy and diversity

- › Europe's largest microelectronics cluster
- › Vibrant ecosystem of industry leaders, academic institutions, and top-tier talent
- › \$18 billion in local investments since 2018 by Bosch, Infineon, Global Foundries, Zeiss, and TSMC
- › 40,000 employed in the software industry



# Innovation makes us future proof

**100+**

Global Development Locations

**19**

Labs leading the way

SAP Labs Dresden is growing and adapting to meet future demands.

Innovation at SAP is shaping the future of business with technology that drives progress and sustainability. We use emerging technologies like AI, machine learning, and advanced analytics to turn billions of data points into a clear picture of where your business is today—and where it can go tomorrow.

# SAP Dresden by the numbers

1990

the year the Dresden office was established

2023

the year the Dresden office joined the global SAP Labs Network

1000

employees

36

nationalities

24%

women in leadership

8%

young professionals

20%

Workforce growth since 2020

2

Modern buildings with 1200+ capacity

# Academic collabs & talent attraction

1

of 5 locations in Germany  
with dual students and trainees

80+

members of the local Early  
Talent community

10+

Internal & external events  
addressing tech talents



**HTW**  
Hochschule für Technik und  
Wirtschaft Dresden  
University of Applied Sciences



**HHL**



**barkhausen**  
institut



**TECHNISCHE  
UNIVERSITÄT  
DRESDEN**



**DHSN**  
DUALE HOCHSCHULE  
SACHSEN

and more...

# Internal community engagement



**Business Women Network** *Early Talents*  
Internships @ SAP Labs Dresden **New Work**  
**Rhetoric Club** **Toastmasters** Women in Tech  
SAP Dresden Internationals **Security Community**,  
*UI Dev in Dresden* **AI Community of Practice**  
**Running Soccer** Roadbike

# 170

members belong to the Dresden location's largest and longest-standing community – SAP Business Women's Network

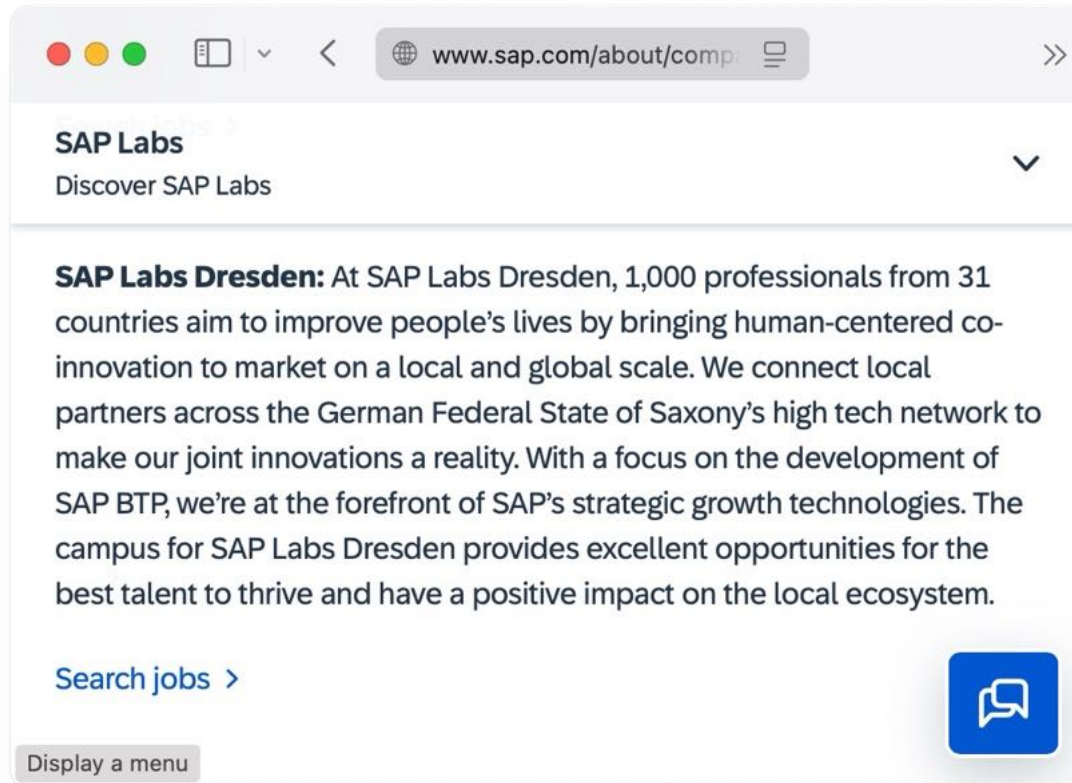
# 30%

of employees are actively engaged in employee initiatives at the Dresden location

# 50

employees with an international background meet regularly in the Dresden Internationals Community

# We are #hiring!



The screenshot shows a web browser window with the URL [www.sap.com/about/comp](http://www.sap.com/about/comp). The page content includes the following elements:

- SAP Labs** header with a dropdown arrow.
- Sub-header: **Discover SAP Labs**
- Main text: **SAP Labs Dresden:** At SAP Labs Dresden, 1,000 professionals from 31 countries aim to improve people's lives by bringing human-centered co-innovation to market on a local and global scale. We connect local partners across the German Federal State of Saxony's high tech network to make our joint innovations a reality. With a focus on the development of SAP BTP, we're at the forefront of SAP's strategic growth technologies. The campus for SAP Labs Dresden provides excellent opportunities for the best talent to thrive and have a positive impact on the local ecosystem.
- Call to action: [Search jobs >](#)
- Utility button: [Display a menu](#)
- Chat icon: A blue square button with a white speech bubble icon.



## SAP-led Open Source Projects

SAP-led open source projects are thriving with active community engagement in 2024. We invite you to join us in contributing and collaborating on these dynamic projects!



Open Source Contributor Index

Welcome to OSCI, where commercial organizations are ranked by the volume of

Monthly Daily Difference compared to March 31st, 2024

Q Organizations... Industry April 2024

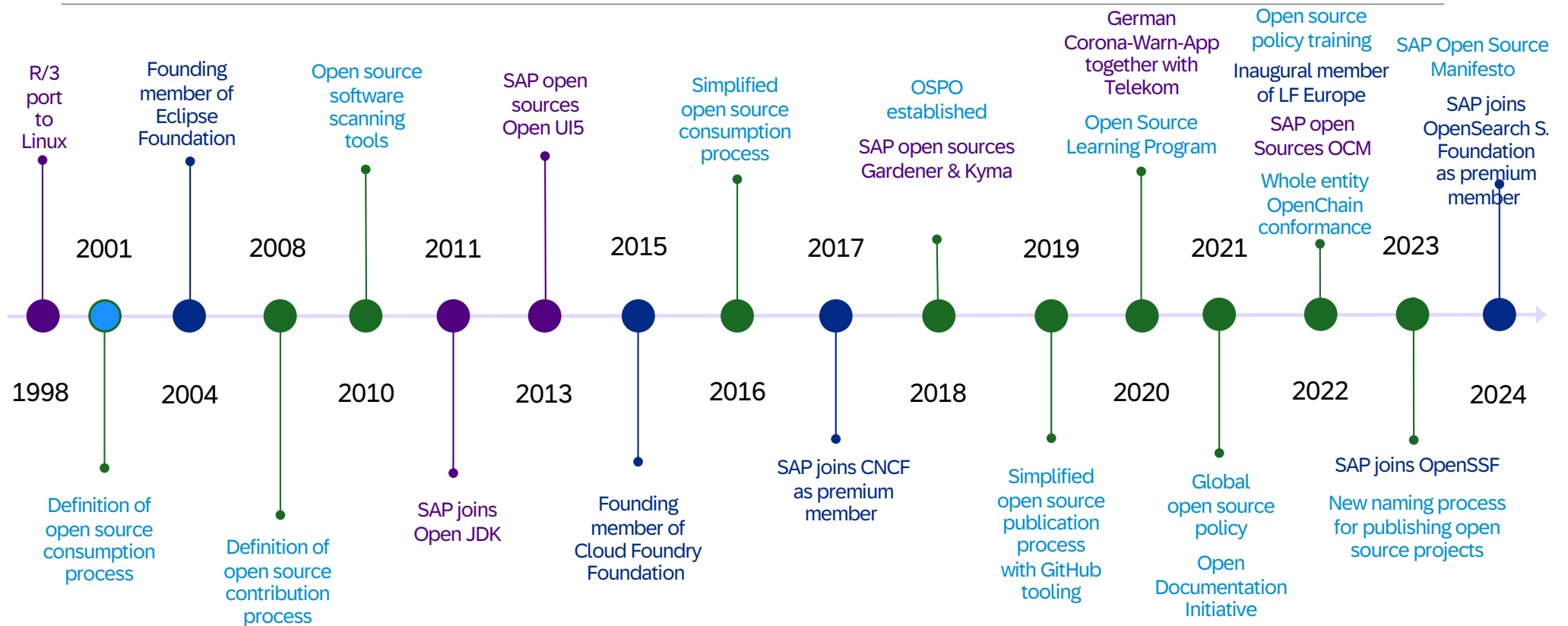
RANK	ORGANIZATION	ACTIVE CONTRIBUTORS	TOTAL COMMUNITY
1	Google	3640 +783	8120 +1788
2	Microsoft	3131 +577	6575 +1281
3	Red Hat	2759 +354	4273 +681
4	Intel	1477 +245	3207 +552
5	IBM	1206 +294	2993 +693
6	Amazon	1199 +244	2857 +656
7	GitHub	640 +120	1404 +273
8	SAP	619 +121	1179 +202
9	Huawei	607 +285	2483 +1623
10	NVIDIA	552 +97	1212 +204

330 records

Open Source Report 2024

<https://www.sap.com/about/company/innovation/open-source.html>

# SAP's Open Source Journey – milestone examples



## Legend

- open source management
- foundation memberships
- projects



EXECUTIVE BOARD

MICROSOFT  
Mr. Bill Gates

Fax ( )

23. Februar 1999

Hannelore Adametz/Prof. Dr. Hasso Plattner  
Tel.: (+49) ( )

Fax: (+49) ( )

E-Mail: ( ) :@sap-ag.de

### SAP R/3 on Linux

Dear Bill,

The feedback we have received from our partners in response to the 'R/3 on Linux' letter (Feb. 3, 1999) has been extremely positive. In order to accommodate the wishes of our customers, we have therefore decided to offer and fully support R/3 on Linux (Redhat distribution).

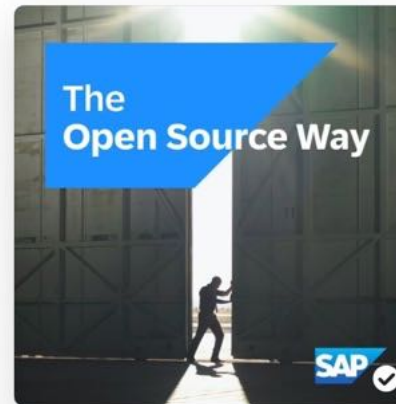
Initially, this will only apply to the Intel platforms already supported by SAP. Intel is the main platform for Linux development and is today the only platform where Linux is stable enough to meet our requirements. This establishes Linux as the Unix platform for SAP on Intel hardware. We assume that our partners will provide the same degree of support for Linux as they already do for their respective UNIX operating system.

We will announce and present R/3 on Linux for our customers at the CeBIT 99.

Should you have any questions, please contact Harald Kuck, Client-Server Technology (email: [hq@sap.com](mailto:hq@sap.com), fax: (+49) ( ))

Best regards,

Hasso Plattner



24. OCT 2024 · EP 45 · 36 MIN

## SAP R3 Port to Linux The Open Source Way

↻ Play Again

Played

<https://podcasts.apple.com/de/podcast/the-open-source-way/id1535460646?l=en&i=1000674289991>

The screenshot shows a web browser window displaying the GitHub repository page for 'SAP RDP Integration Accelerator'. The browser's address bar shows the URL 'github.com/SAP-samples/sap-rdp-integration-accelerator'. The repository page includes a navigation bar with links for 'README', 'Code of conduct', 'Apache-2.0 license', and 'Security'. The main content area features a title 'SAP RDP Integration Accelerator', a 'Description' section, and a 'Requirements' section. The right sidebar contains a 'Security policy' link, an 'Activity' section, 'Custom properties', and statistics for '0 stars', '5 watching', and '0 forks'. Below these are sections for 'Releases' (No releases published), 'Packages' (No packages published), and 'Languages' (ABAP 100.0%).

github.com/SAP-samples/sap-rdp-integration-accelerator

README Code of conduct Apache-2.0 license Security

## SAP RDP Integration Accelerator

### Description

The SAP Responsible Design and Production (RDP) Integration Accelerator is an ABAP package designed to streamline the integration of SAP RDP with backend ECC systems or older S/4HANA systems. The package includes prebuilt integration content that allows for selection, extraction, and replication of relevant data into the cloud-based RDP solution via standard RDP push APIs.

The code in the ABAP package can be used as it is published in this repository, or you can use it as a sample reference for your own implementation. However, if you require support, you must use it as it is and enhance it if needed via BAdI implementation.

### Requirements

- SAP ERP ECC 6.0 EHP7 SP16 (or later)/EHP8 or S/4HANA 1909/2021.
- Minimum SAP\_BASIS 740 (Package Level 0019 or higher).
- Access to SAP Business Technology Platform (BTP) for creating RDP replication services instances.
  - More details on [BTP configurations](#).

Security policy

Activity

Custom properties

0 stars

5 watching

0 forks

Report repository

### Releases

No releases published

### Packages

No packages published

### Languages

ABAP 100.0%



# ABAP Cloud

# ☁️ ABAP Cloud rocks 🤘


- Realizing business processes for sustainable decisions: alternative suppliers, transport logistics...
- On-stack extensibility (key user / developer)
- Carbon is the first metric, pollution, waste, land use, child labor ... will follow
- Knowledge from ERP into our BTP applications. Basis for CO2 footprints: product, plant, supplier, purchase order, ...
- Side-by-side extensibility: customer/partner apps on BTP extend our [SAP Cloud for Sustainable Enterprises](#)

based on business data, that is extracted from SAP S/4HANA Cloud. The following data is retrieved from SAP S/4HANA Cloud for the purpose of footprint calculation:

- Enterprise structure
  - Plant
  - Company Code
  - Valuation Area
  - Cost Center
  - Activities
  - Region
  - Country
  - Projects
- Product data
  - Product
  - Product group
  - Product type
  - Product plant
  - Product unit of measure
  - Commodity code
- Business partner
  - Supplier
- Configuration
  - Unit of measure
  - Unit of measure dimension
  - Currency
- Business activity metrics
  - Manufacturing Order Confirmations
  - Physical goods movements
  - Physical stock inventory
  - Cost estimate calculation results

Product footprints calculated in SAP Sustainability Footprint Management are transferred to SAP S/4HANA Cloud and are stored in an integration component for Product Footprint Management. From here, they are integrated into the end-to-end processes in SAP S/4HANA Cloud or can be viewed via the SAP Fiori application *View Product*

[Set-Up Instructions](#)  
[Setting Up Product Footprint Management \(5IM\)](#)

A portrait of Jensen Huang, the founder, president, and CEO of NVIDIA. He is an older man with short, graying hair, wearing glasses and a black leather jacket over a black t-shirt. He is smiling slightly and looking towards the camera. The background is a plain, light gray.

“At SAP, the most  
valuable language  
is ABAP.”

Jensen Huang, Founder, President and CEO of NVIDIA

# Origin and Future of ABAP

ABAP is Part of SAP's DNA

```
17 READ ENTITIES OF I_BusinessPartnerTP_2 ENTITY BusinessPartner ALL FIELDS WITH VALUE #(
18     ( %key-BusinessPartner = '000000101' ) ) RESULT DATA(lt_result) FAILED DATA(ls_failed).
19
20 " Write result to console
21 out->write( data = lt_result
22             name = 'Business Partner Data' ).
23 ENDMETHOD.
24 ENDCLASS.
```

## The ABAP language...

- is optimized for business applications,
- is human readable and visible to customers and partners,
- has a low entry barrier,
- provides many re-use services,
- and minimizes overhead to meet product standards, localization and compliance requirements.



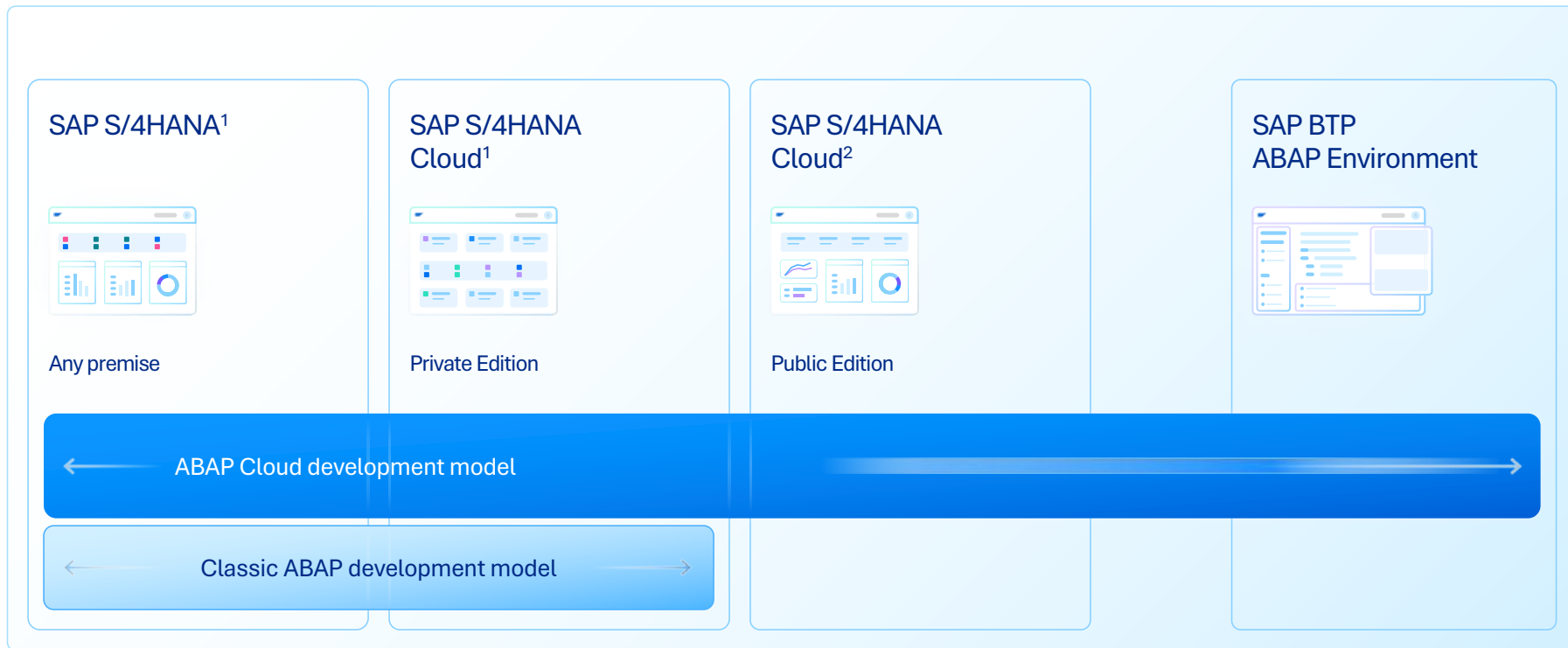
## The ABAP server...

- is highly robust, reliable and scalable,
- supports transactional, analytical and integration scenarios,
- offers robust security features,
- has rich lifecycle management and troubleshooting support,
- and has proven itself in use (as part of SAP S/4HANA) with 85 out of the 100 largest companies in the world



# Origin and Future of ABAP

ABAP Cloud – One Development Model for SAP S/4HANA and SAP Business Technology Platform

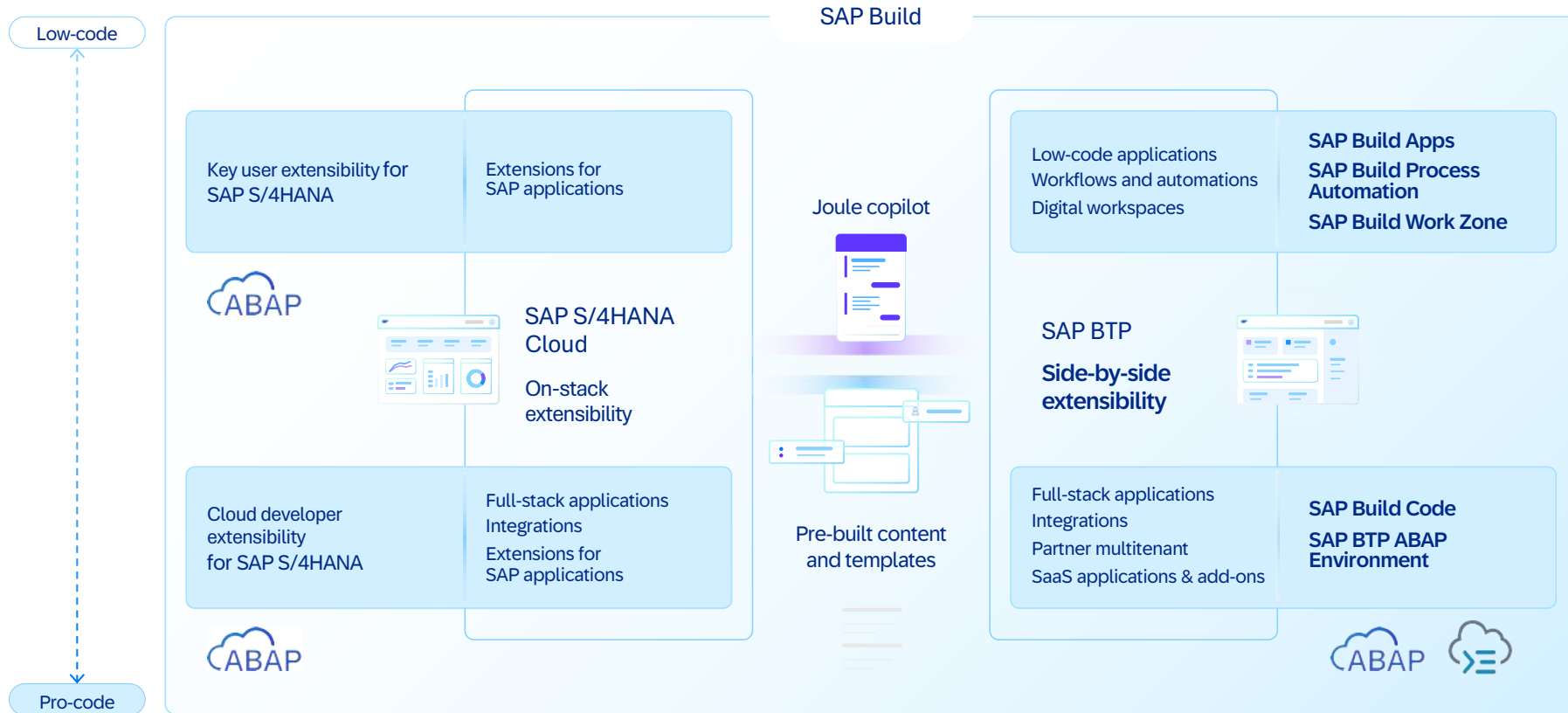


<sup>1</sup> SAP S/4HANA any premise or SAP S/4HANA Cloud, private edition release ≥ 2022

<sup>2</sup> SAP S/4HANA Cloud, public edition release ≥ 2208, 3-system landscape required

# Origin and Future of ABAP

ABAP Cloud in SAP Build



# Origin and Future of ABAP

ABAP in Numbers



# 300k

ABAP installations

**>100k** productive SAP systems



# 250m

ABAP lines of code in SAP S/4HANA

on average **20k** custom ABAP objects per ERP system

**670** certified ABAP partner solutions



# 5m

registered ABAP developers worldwide

**2m** active ABAP developers worldwide

~ **5k** ABAP developers working on new SAP S/4HANA versions

# ABAP Cloud Trivia ;-)

- CDS views? Abstract from the underlying tables and name-length limits, good for non-German speaking devs  
*mara = Material, ersda = Erstelldatum, ernam = Ersteller Name etc.*

```

define view I_Product
as select from mara
// left outer j
association [0..*]
association [0..1]
association [0..*]
association [0..1]
association [0..*]
association [0..1]
association [0..*]
association [0..1]
association [0..*]
association [0..1]
association [0..*]
association [0..1]

```

Column	Component Type	Data Type	Description
mandt	mandt	cint(3)	Client
matnr	matnr	char(40)	Material Number
ersda	ersda	dats(8)	Created On
created_at_time	created_at_time	tims(6)	Time of Creation
ernam	ernam	char(12)	Name of Person Respon
laeda	laeda	dats(8)	Date of Last Change

```

CL_SURDP_UPH_PROC_BASE_MCL
43 CLASS CL_SURDP_UPH_PROC_BASE_MCL IMPLEMENTATION.
145 METHOD determine_mat_clas_params.
147     DATA: lv_valid_from TYPE datuv,
148           lv_valid_to   TYPE datub.
149

```

- ABAP starts counting with 1

```

77 " arrays beginnen in ABAP bei 1, aber interessanterweise zählt find() und find_any_of() ab 0
78 " bei internal tables, listen, segment(), substring(), wird immer ab 1 gezählt
79 result = find(          val = text sub = substring off = offset case = abap_true ).
80

```

- Boolean? Well .... char(1), true='X'

```

920 characterdetail-data_type = CHAR
929 characterdetail-case_sensitiv = 'X'
930 characterdetail-length = 20

```

```

types:
  ABAP_BOOL type C length 1.
* constants for abap_bool
constants:
  ABAP_TRUE type ABAP_BOOL value 'X',|
  ABAP_FALSE type ABAP_BOOL value '-',|
  ABAP_UNDEFINED type ABAP_BOOL value '-',|
  ABAP_ON type ABAP_BOOL value 'X',|
  ABAP_OFF type ABAP_BOOL value '-'.

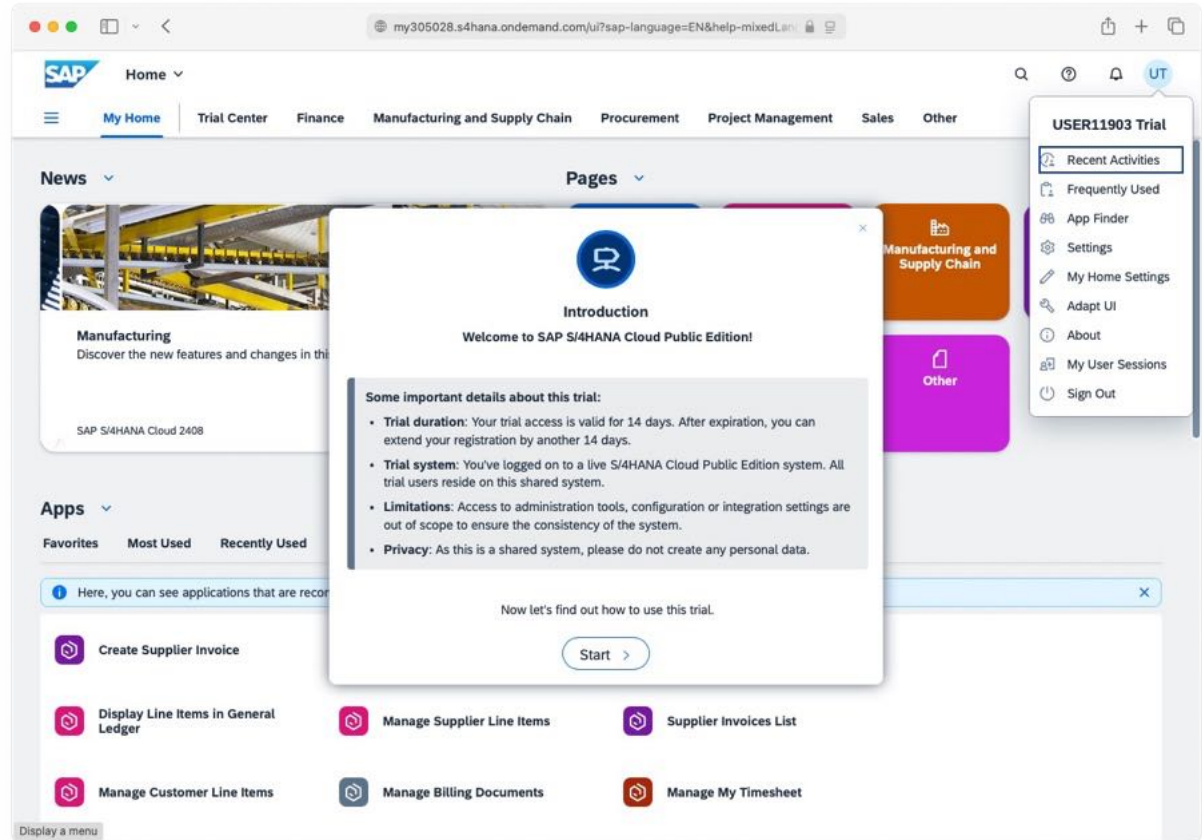
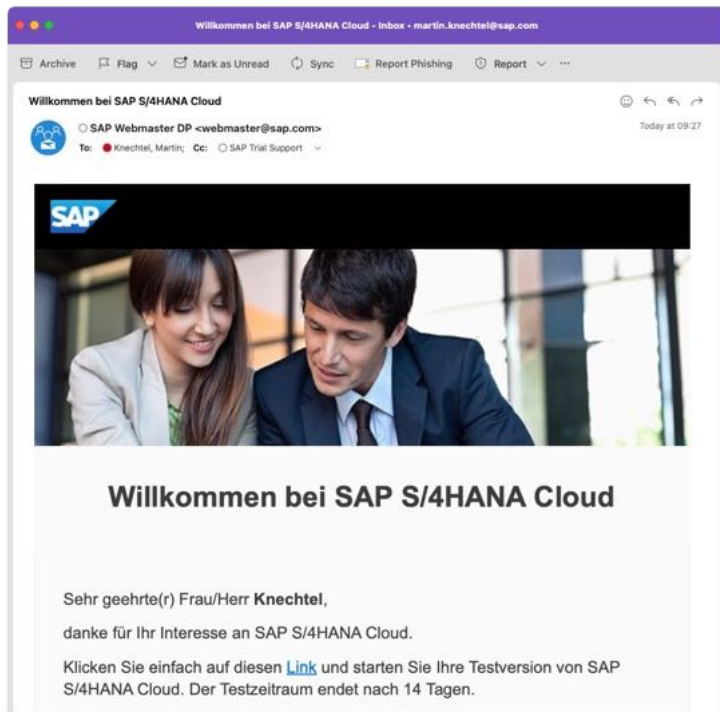
```



# Bikes (and more) in Cloud ERP



# S/4HANA Public Cloud trial



<https://www.sap.com/germany/products/erp/s4hana/trial.html>

## Velotics Inc. Product Lines



Youth – ZYOUTH



Exercise Bikes – ZEXBK



Racing – ZRACING



E Bikes – ZELBK



Cruise – ZCRUISE



Mountain – ZMNT

<https://education.hana.ondemand.com/education/pub/tad/index.html?libra>

my305028.s4hana.ondemand.com/ui?sap-language=EN&he

SAP Product List

Standard

Product:  Manufacturer Part Number:  Plant:  Product Type:

Product Group:  Created By:  Valuated Products Only:

**Product Lists (4)**

Product	Plant	Product Type	Produ
Cruise E-Bike (MZ-FG-26ECR)	Plant 1 US (1710)	Finished Product (FERT)	E Bike
Mountain E-Bike (MZ-FG-26EMN)	Plant 1 US (1710)	Finished Product (FERT)	E Bike
"26" In-Home Exercise Bike" (MZ-FG-26XR1)	Plant 1 US (1710)	Finished Product (FERT)	Exercise Bikes (ZEXBK)
E BIKE 1 (MZ-FG-EB01)	Plant 1 US (1710)	Finished Product (FERT)	E Bikes (ZELBK)

Inventory Price Total

my305028.s4hana.ondemand.com/ui?sap-language=EN&he

SAP Product

**Mountain E-Bike**  
MZ-FG-26EMN

Warehouse Management | Product Compliance | Components | Classification | Configuration | Sales | Storage | Distri

**General Packaging**

Handling Unit Type: - Overcapacity Tolerance: 0.000 % Maximum Capacity: 0.000 Variable Tare Weight: No

**Maximum Packaging**

Length: 0.000 Width: 0.000 Height: 0.000

Warehouse Standard

Warehouse ... Party Entitled to Dis... Plant

No entries found. Try adjusting the filter settings.

**Product Compliance**

Display a menu

# S/4HANA Public Cloud trial – DIY Guided Tours (1/2)

1. Buyer: Procure to Invoice ... you buy with Purchase Order and pay your Supplier Invoice
2. Seller: Order to Cash ... sales process from sales order, outbound delivery, to customer invoice

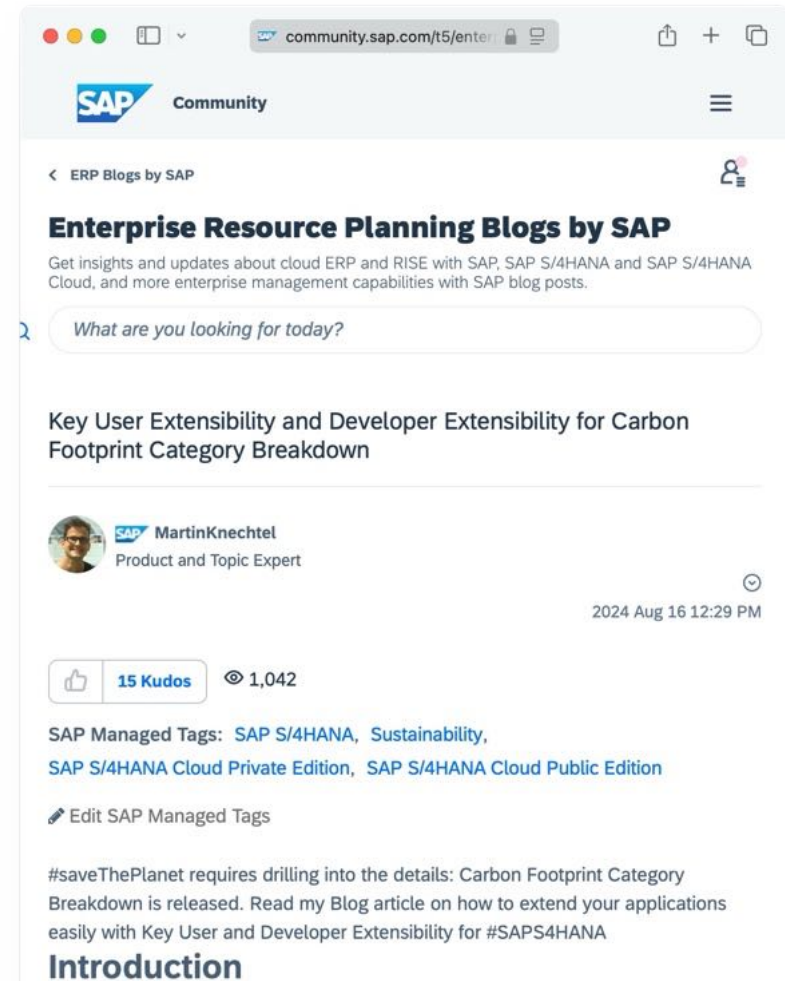
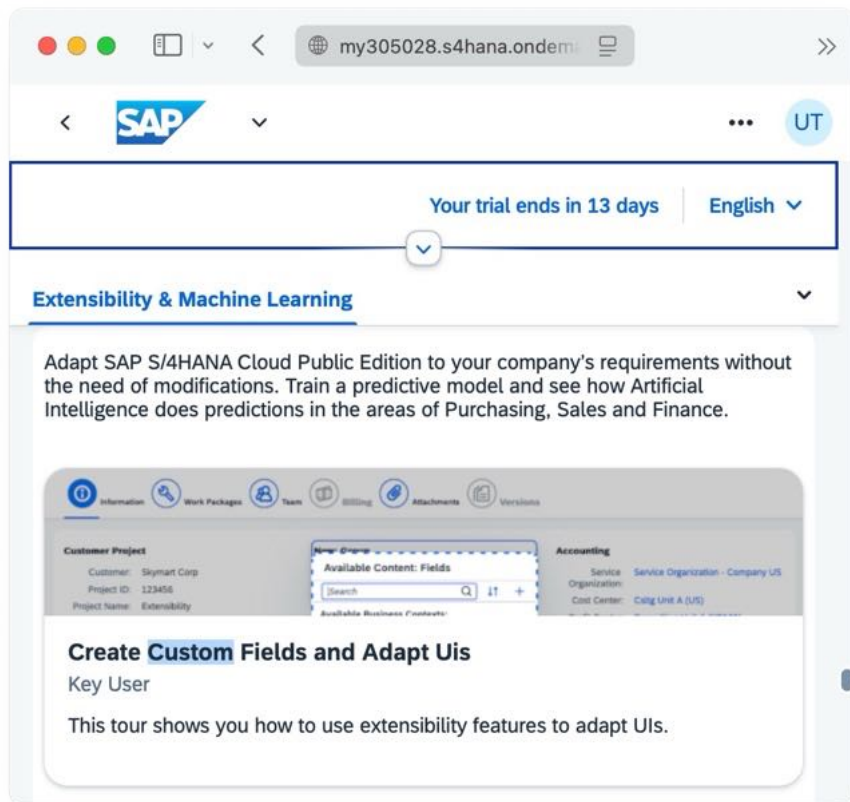
The image displays five screenshots from the SAP S/4HANA Public Cloud trial, illustrating the Buyer (Procure to Invoice) and Seller (Order to Cash) processes.

- Purchase Order 4500052599:** Shows a Standard PO in Approval status, dated 03/25/2025, with a Net Value of 408.60 USD. The supplier is BikeTRSupply, Inc. (USSU-TRL07).
- Supplier Invoice 5106812612025:** Shows a Gross Invoice Amount of 408.60 USD, invoiced to USSU-TRL07 (BikeTRSupply, Inc).
- Pick Outbound Delivery:** Shows a Delivery Header for Delivery 80263231. The Actual GI Date is 03/31/2025, and the Planned GI Date is 03/31/2025. The Picking Status is 'Not Yet Processed'. The delivery items table shows 10 units of material 'E BIKE 1 (M2-FG-EB01)' with a picking quantity of 10.
- Manage Billing Documents:** Shows an Invoice (TMP0001817) with a Billing Document Status of 'Temporary', a Net Value of 7,000.00 USD, and a Total Amount of 7,000.00 USD. The payer is Cityscape Cycles (USCU\_S14).
- Create Billing Document:** A dialog box prompts the user to 'Review the billing document and choose Save'.



# S/4HANA Public Cloud trial – DIY Guided Tours (2/2)

Admin: Create Custom Fields and Adapt Uis ... shows Key User Extensibility in action, e.g. add (empty) footprint



my305028.s4hana.ondemand.com

Purchase Requisition It...

10003848 / **10** M550 BIKE

Status Release Completed **CO2e Footprint 0.000**

USER11903 Trial

- Recent Activities
- Frequently Used
- App Finder
- Settings
- About
- My User Sessions
- Adapt UI**
- Input History Settings
- Sign Out

General Information    Quantity and Date    Valuation    Account

Product Type Group: Material (1)    Item Description: M550 BIKE

Item Category: Standard    Material: M550 BIKE (MZ-FG-M550)

Plant: Plant 1 US (1710)    Material Group: Mountain (ZMTN)

Account Assignment Category: -    Supplier Material Number: -

Desired Supplier: -

Display a menu    ge Location:

my305028.s4hana.ondemand.com/ui?sap-language=EN&hel...

Original App    UI Adaptation    Navigation    Visualization

10003848 / **10** M550 BIKE

Available Content: Fields

foo | Create Custom Fields

Available Business Contexts:  
Additional Fields available via Datasource Extensions  
Procurement: Purchase Requisition Item

- CO2e Footprint
- CO2e Footprint Unit

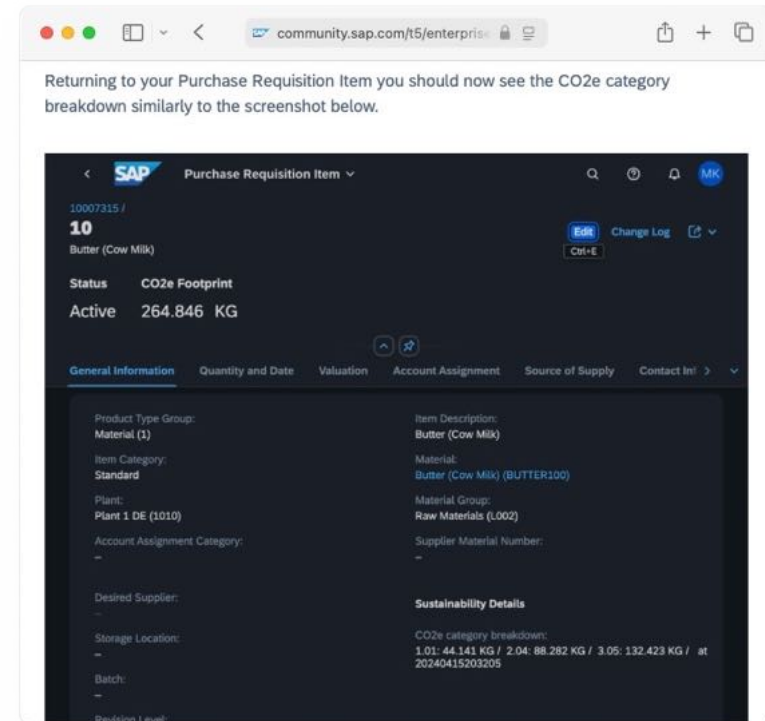
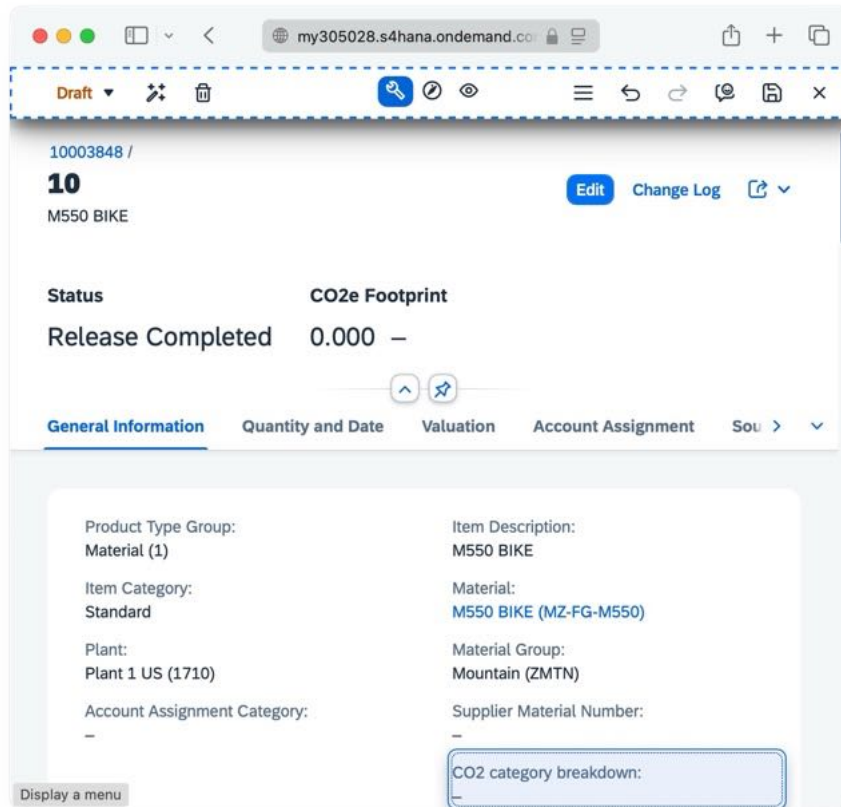
General Information    Quantity and Date    Contact Information    Delivery Address

Product Type Group: Material (1)    Item Category: Standard    Plant: Plant 1 US (1710)    Account Assignment Category: -

Quantity and Date

Quantity: 100.000 PC    Delivery Date: 12/27/2025

OK    Cancel

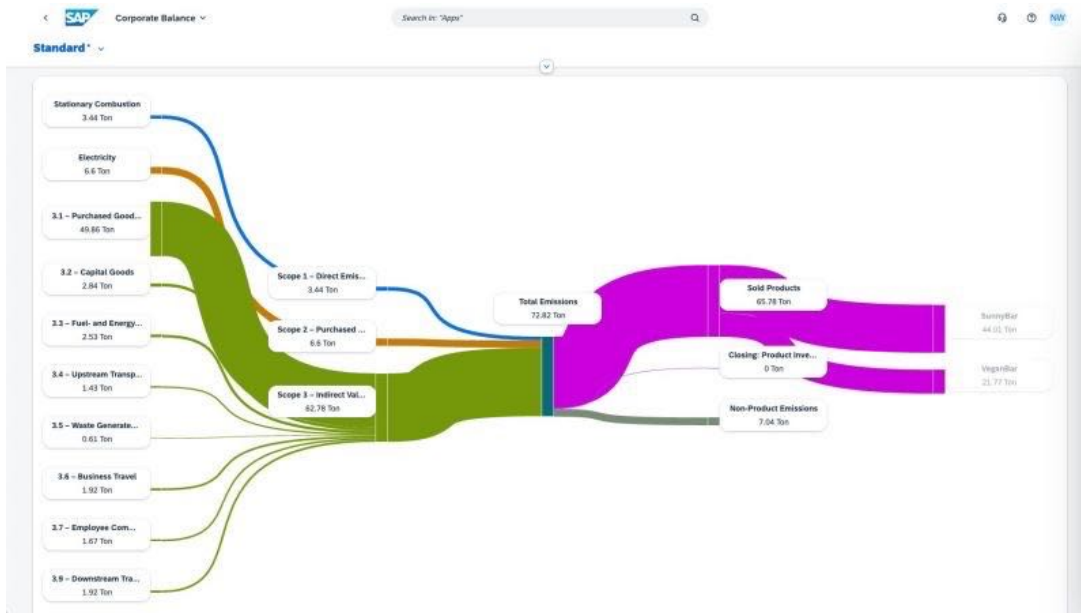


Continue with [my Blog article "Key User Extensibility and Developer Extensibility for Carbon Footprint Category Breakdown"](#)

\*Disclaimer: For 🌱 sustainability/cost reason, Developer Extensibility and Custom Logic is beyond [Public Edition trial](#). You could use your own system or Developer Extensibility on [SAP S/4HANA 30-day advanced trial](#) on your own AWS/GCP/Azure Hyperscaler.

# How are CO2 Footprints calculated?

## Sustainability Footprint Management trial - DIY



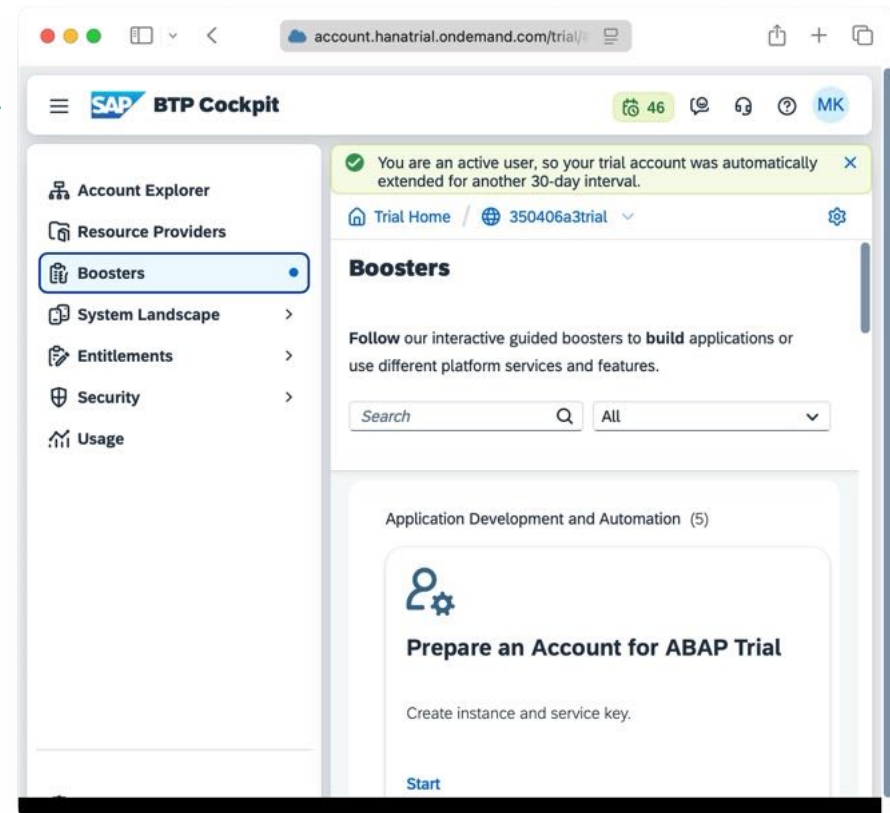
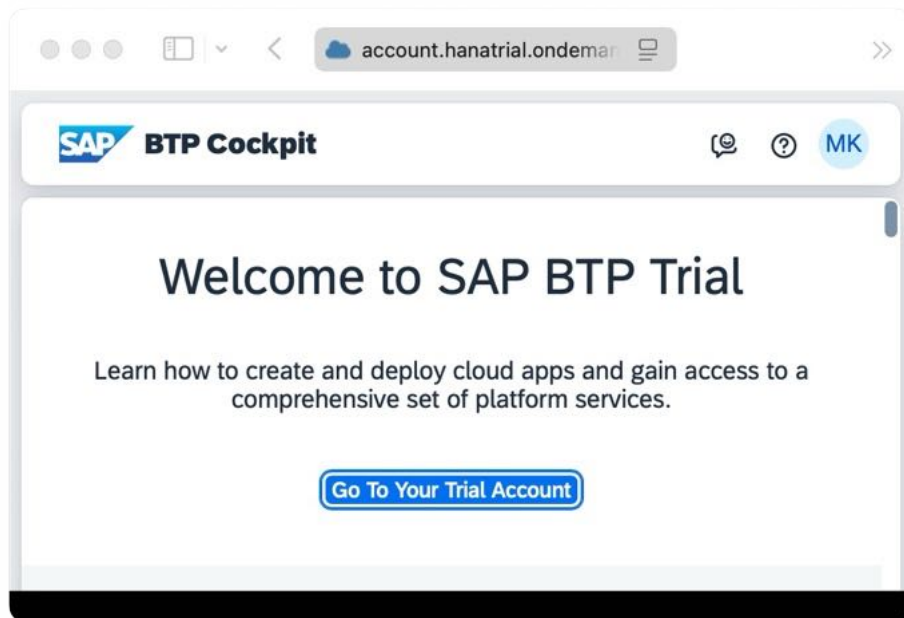
<https://www.sap.com/products/scm/sustainability-footprint-management/trial.html>

The screenshot shows the SAP Learning course page for "Climate Action with SAP Sustainability Footprint Management". The course is 3 weeks long, 3 hours 30 minutes in duration, and is free. A "Start learning" button is visible. Below the button is a video player featuring a man in a white shirt speaking. The video title is "Climate Action with SAP Sustainability Footprint Management" and the subtitle is "Challenges climate action brings for business".

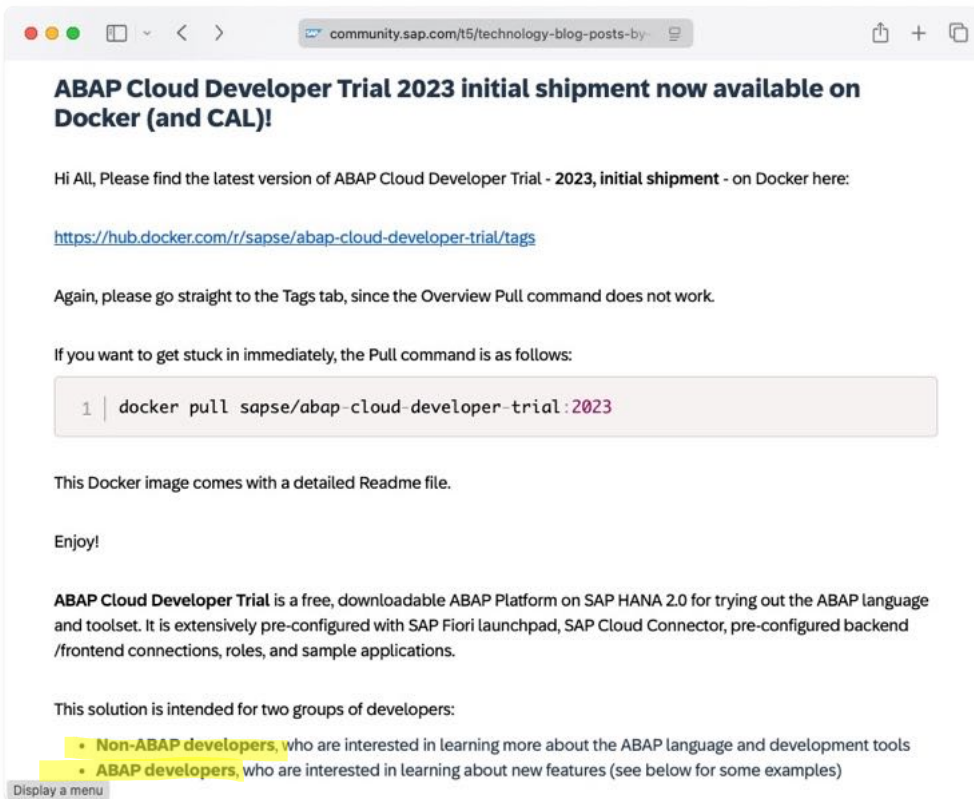
<https://learning.sap.com/courses/climate-action-with-sap-sustainability-footprint-management>

# Let's code some ABAP: SAP Business Technology Platform, ABAP Environment

<https://www.sap.com/products/technology-platform/trial.html>



# Offline alternative: Docker image (23GB)



community.sap.com/t5/technology-blog-posts-by-

## ABAP Cloud Developer Trial 2023 initial shipment now available on Docker (and CAL)!

Hi All, Please find the latest version of ABAP Cloud Developer Trial - 2023, initial shipment - on Docker here:

<https://hub.docker.com/r/sapse/abap-cloud-developer-trial/tags>

Again, please go straight to the Tags tab, since the Overview Pull command does not work.

If you want to get stuck in immediately, the Pull command is as follows:

```
1 | docker pull sapse/abap-cloud-developer-trial:2023
```

This Docker image comes with a detailed Readme file.

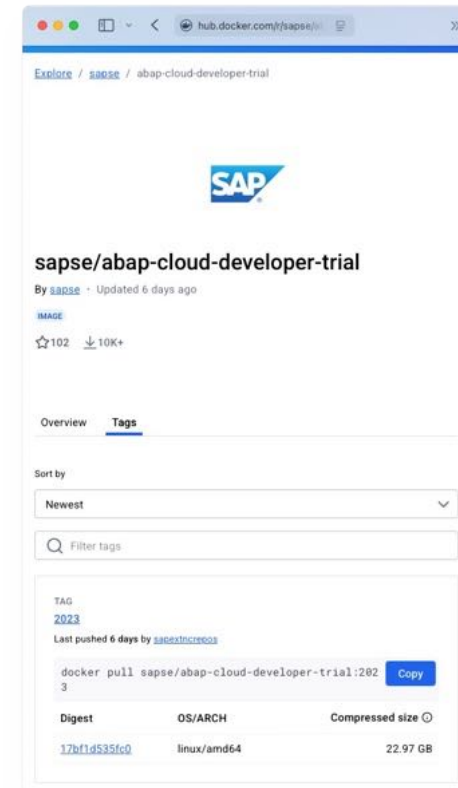
Enjoy!

**ABAP Cloud Developer Trial** is a free, downloadable ABAP Platform on SAP HANA 2.0 for trying out the ABAP language and toolset. It is extensively pre-configured with SAP Fiori launchpad, SAP Cloud Connector, pre-configured backend /frontend connections, roles, and sample applications.


This solution is intended for two groups of developers:

- **Non-ABAP developers**, who are interested in learning more about the ABAP language and development tools
- **ABAP developers**, who are interested in learning about new features (see below for some examples)

Display a menu



Explore / sapse / abap-cloud-developer-trial



## sapse/abap-cloud-developer-trial

By sapse · Updated 6 days ago

IMAGE

☆102 ↓10K+

Overview **Tags**

Sort by

Newest

Filter tags

TAG

2023

Last pushed 6 days by sapsestinecos

```
docker pull sapse/abap-cloud-developer-trial:2023
```

3

Digest	OS/ARCH	Compressed size
17b1d535c0	linux/amd64	22.97 GB

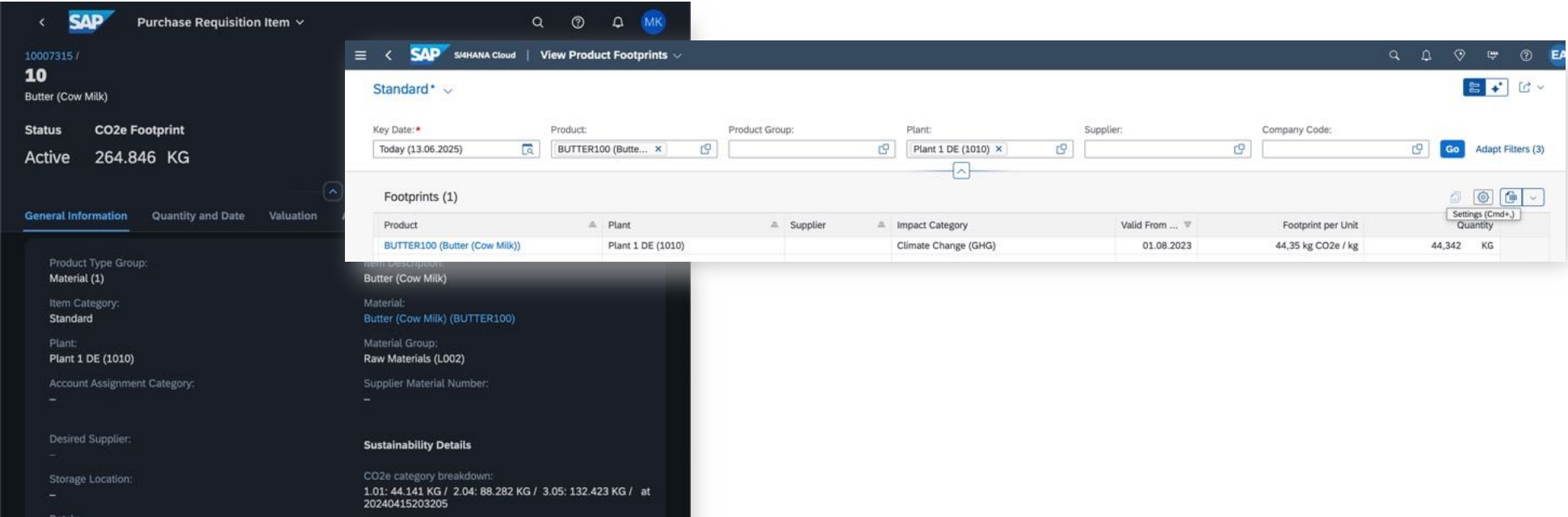
# For you: DIY, create ABAP Cloud Project with your first Hello World

The image displays two screenshots of the SAP Learning Journey interface. The top screenshot shows the 'Preparing the Development Environment' step, which is completed. The bottom screenshot shows the 'Developing Your First ABAP Program' step, which is also completed. Both screenshots feature a 'Start Demo' button and a 'Demo' placeholder image.

```
[TRL,100] ZMK_HELLO X
ZMK_HELLO ▶ IF_OO_ADT_CLASSRUN~MAIN
1 ⊖ CLASS zmk_hello DEFINITION
2   PUBLIC
3   FINAL
4   CREATE PUBLIC .
5
6   PUBLIC SECTION.
7
8   INTERFACES if_oo_adt_classrun .
9   PROTECTED SECTION.
10  PRIVATE SECTION.
11  ENDClass.
12
13
14
15 ⊖ CLASS zmk_hello IMPLEMENTATION.
16
17
18 ⊖ METHOD if_oo_adt_classrun~main.
19   out->write( 'hello world' ).|
20  ENDMETHOD.
21 ENDClass.
```

# Playing with some CO2 footprints (1/2) - full

Full example if you have an own S/4HANA system: my [Blog on Carbon Footprint Category Breakdown](#)



The screenshot displays the SAP S/4HANA interface for viewing product footprints. The main window is titled "View Product Footprints" and shows a table with one footprint entry for Butter (Cow Milk) at Plant 1 DE (1010). The footprint is categorized under Climate Change (GHG) with a footprint per unit of 44,35 kg CO2e / kg and a total quantity of 44,342 KG.

**Product Footprint Details:**

Product	Plant	Supplier	Impact Category	Valid From ...	Footprint per Unit	Quantity
BUTTER100 (Butter (Cow Milk))	Plant 1 DE (1010)		Climate Change (GHG)	01.08.2023	44,35 kg CO2e / kg	44,342 KG

**General Information:**

- Product Type Group: Material (1)
- Item Category: Standard
- Plant: Plant 1 DE (1010)
- Account Assignment Category: -
- Desired Supplier: -
- Storage Location: -
- Batch: -

**Sustainability Details:**

CO2e category breakdown:  
1.01: 44.141 KG / 2.04: 88.282 KG / 3.05: 132.423 KG / at 20240415203205



# 👣 Playing with some CO2 footprints (2/2) - simplified

Using free trial, no prerequisites:

[https://github.com/martinknechtel/ABAP\\_CO2e\\_products\\_webshop](https://github.com/martinknechtel/ABAP_CO2e_products_webshop)

Local Objects (\$TMP) <press F5 to load full content>

- KNECHTEL <press F5 to load full content> Dr. Martin Knechtel
  - Core Data Services <press F5 to load full content>
    - Data Definitions <press F5 to load full content>
      - ZMK\_R\_PRODUCT\_CO2 Martin's view**
    - Dictionary <press F5 to load full content>
      - Database Tables <press F5 to load full content>
        - ZMK\_PRODUCT\_CO2 Martin's product table**
      - Source Code Library <press F5 to load full content>
      - Classes <press F5 to load full content>
        - ZMK\_TESTDATA Martin's testdata**

ZMK\_R\_PRODUCT\_CO2

Data Preview

find pattern 3 rows retrieved - 20 ms

Product	Plant	Supplier	Co2e_Kg	ghg_scope_category
Bikeframe_900	P_SV	Yellowframe	30.00	Scope 3.1 - Purchased goods and services
Bikeframe_900	P_DE	Greenframe	10.00	Scope 3.1 - Purchased goods and services
Bikeframe_900	P_US	Redframes	50.00	Scope 3.1 - Purchased goods and services

SAP Preview for Fiori Elements App

Standard

Product:  Plant:  Supplier:  Co2e\_Kg:

ghg\_scope\_category:

Go Adapt Filters

Product	Plant	Supplier	Co2e_Kg	ghg_scope_category
Bikeframe_900	P_DE	Greenframes	10.00	Scope 3.1 - Purchased goods and services
Bikeframe_900	P_SV	Yellowframes	30.00	Scope 3.1 - Purchased goods and services
Bikeframe_900	P_US	Redframes	50.00	Scope 3.1 - Purchased goods and services



### Product Footprint Management (5IM)

Solution Process

Full story for activating and testing on your own S/4HANA system...

Used In

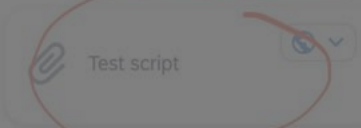
#### Solution Scenarios

Name	Version
SAP Best Practices for SAP S/4HANA Cloud for public sector	2402
SAP Best Practices for SAP S/4HANA Cloud Public Edition	2402
Two-Tier ERP	2402

#### Accelerators

Implementation (3)

PDF Set-up instructions

 Test script

Test script (SAP Cloud ALM)

# Now you! Let's build a greener world! 🌍

- Go back to my DIY slides and try yourself! 🧰🔧
- [Learning Journey: Acquiring Core ABAP Skills](#) ... ABAP rocks 🙌
- Beyond CO2e: [SAP UNSDG Web Book](#) describes SAP's impact and products for Health and Wellbeing, Education, Reduced Inequalities etc.
- We are #hiring! <https://jobs.sap.com/search/?q=sustainability> 🧑💻🧑💻

# Thank you.

Contact information:

Dr. Martin Knechtel (he/him)

