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About SAP Road Maps

SAP road maps cover innovations that focus on business solutions and processes. They span products that are relevant for customer lines of business in their industries and explain how our innovations can add value to your business.

In SAP road maps, you can learn about our innovations along three different timelines:

1. **Recent innovations** for our solutions have been launched in the past weeks or months and can already be purchased.
2. **Planned innovations** for our solutions are expected to be launched in the short term or midterm.
3. **Future direction** provides a long-term perspective on high-level development plans on innovations for our solutions – inspired by your requirements.
Agenda

- Motivation
- Delivered Variant Configuration Capabilities in SAP S/4HANA
- Planned Variant Configuration Features & Analytics in SAP S/4HANA
- Future Direction of Variant Configuration in SAP S/4HANA
- Q & A
Agenda

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Customer individualized products are the main differentiator in a global competition market to expand their market position.

Individualized products will become the standard. As such, an efficient and transparent application support throughout the business process (end-to-end) will be key for a company.

<table>
<thead>
<tr>
<th>Business Trends</th>
<th>Main Requirements / Challenges</th>
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| **Coordination and collaboration**                                              | • Modeling department gets targets from sales and engineering  
• Decoupling regarding time because of different change cycles or regarding content because of different naming, packaging, or different characteristics |
| **Efficient configuration of sales orders & efficient modeling**               | • Missing syntax for efficient modeling  
• Insufficient change management process transparency  
• Higher performance, State-of-the-art usability & user experience |
| **Product complexity management**                                              | • Insurance of data quality and consistency  
• Transparency on characteristic level |
| **Profit & costs for individualized option**                                   | • Highly individualized product at the price of a standard product  
• Transparency on characteristic level |
| **Efficient organization for individualized option as “Mini Project” (ETO)**   | • Reuse of historic models, individualized options – search  
• Efficient & transparent tools supporting process & organization  
• Performance & Usability |
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Variant Configuration in SAP S/4HANA On Premise

Key Message
- Variant configuration (LO-VC) functions available nearly unchanged to support a maximum of compatibility
- Optimized low-level configuration for the bill of material (BOM) is activated by default

Changes /Optimizations /Enhancements:
- MRP Live using optimized low-level configuration on SAP HANA is switched on by default
- Support of field length extension of materials
- Configuration UI is vertical resizable
- Context sensitive syntax editor is switched on by default in TA CU0x
Variant Configuration in SAP S/4HANA On Premise

Key Message
- Obsolete functions are disabled but with an maximum on compatibility
- Redundant transactions were consolidated

Changes /Adaptions:
- Disabling of actions (documented as obsolete even earlier) - Existing models using actions still work
- Disabling of classification as a selection condition in BOMs - Existing models using it still work

The following transactions will NOT be available:
- CU51E -> Included in CU51
- CU52 -> Included in CU51
- CU52E -> Included in CU51
- CU55 -> Obsolete
- CU80 -> Use PMEVC instead
- CUMODEL -> Use PMEVC instead

For further details, see SAP simplification list 1511 FPS02: http://help.sap.com/s4hana_op_1511_002
SAP FIORI Launchpad UX for Variant Configuration

Key Message
- Variant configuration apps can be accessed using new personalized FIORI Launchpad
- New role-based UX for apps within SAP S/4HANA

Example in transaction PMEVC:

```
*Material: BIKE_CONFIG_VC
Date: 11.09.2016
Change No.: 0
Class Type: 300
BOM Applications:
```
Field Length Extension of Characteristic Values

Key Message
- Characteristic value length is extended and supported within SAP S/4HANA
- This feature will enable new use cases such as concatenation of single values into one technical value string

Example in transaction PMEVC:

Characteristic value length is extended to 70 characters

Extended characteristic value length is supported in syntax
SAP S/4HANA Embedded Analytics General Overview

SAP Cloud for Analytics, SAP BusinessObjects BI, SAP Lumira

S/4 HANA Embedded Analytics

SAP SMART BUSINESS COCKPITS
MULTI-DIMENSIONAL REPORTS
QUERY BROWSER
ANALYTICAL FIORI APPS
QUERY DESIGNER
SAP FIORI KPI MODELER
ABAP FOR ECLIPSE

FRONT END
BACK END

**SAP S/4HANA**
Virtual Data Models

- Spend of contract
- Incoming Sales Order
- PO Avg. Delivery Time
- Non-managed purchasing spend
- ...

*CDS: Core Data Service*
Embedded Analytics – Approach for Classification/Variant Configuration

Key Message
- Real-time added value insights by combining business data with classification and/or variant configuration data
- Flexible modeling speed up individualized analytics for configurable products

1. GENERATION REPORT
   RESULT: INTERFACE VIEWS

2. CREATE CDS CUBE VIEW COMBINING RELEVANT INFORMATION

3. CREATE CDS QUERY VIEWS

4. CONSUMPTION OF QUERY VIEWS IN APPLICATIONS

Application

BUSINESS USERS

POWER USERS

DEVELOPERS

VDM - Sales Order

VDM - Batches

VDM - Classification

VDM - Configuration

Physical Tables

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Core Data Service Views (CDS Views)

- Are SAP’s **strategic** modeling approach for Business Entities
- Are **flexible** to use for further use cases (such as Analytics, search, fact sheets, planning, and so on)
- Are **SQL-Views** that are created from scripted ABAP code + extensions
- Are **fully integrated** with ABAP:
  - Lifecycle
  - Authorization Management
  - Extensibility
  - Programmable through ABAP Development Tools for Eclipse

Integrated visualization of CDS query views using transaction RSRT directly in SAP S/4HANA - including filtering, sorting, and graphics.
Visualization in SAP Lumira – Example 1

CDS query views can as easily be visualized using SAP Lumira.
Visualization in SAP Lumira – Example 2

High & low runner configurations can be easily identified using SAP Lumira.
Correlation sales order net value with configurations characteristics and country can easily be visualized & identified using SAP Lumira.
Key Message
- State-of-the-Art SAP Fiori based UX. Also forerunner screen of new configurator UX
- Easy assignment of multiple classes to product master with higher transparency

Fiori classification UI integrated into product master
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Planned for Advanced Variant Configuration

Key Message
- Beside of LO-VC which is still available the new configurator will support basic scope for configuration in the first version
- Variant configuration will be available within SAP S/4HANA and SAP S/4HANA Cloud

Planned for the next release:
- New configurator with SAP Fiori UX
- First version will support basic scope
- First scenario for MTS (Material Variants search) and MTO
- Predefined embedded analytic scenarios using configuration & classification
- New SAP Fiori based simulation Environment
- Tight integration with SAP Hybris CPQ
Key Message

- Immediately usage of known mature variant configuration LO-VC within S/4HANA on Premise
- In parallel SAP is building the new advanced Variant Configuration using same foundation

Labs Preview

Coexistence of both solutions

LO-VC Configurator & Engine

New Configurator UI with an new engine

Configuration Data (cBase)

Master Data VC-Model

Within S/4HANA Cloud exclusively the new advanced Variant Configuration will be available

New Configurator UI with an new engine

Configuration Data (cBase)

Master Data VC-Model

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Advanced Variant Configuration – High-Level Architecture

UI
- Classic Configuration UI
- New Configuration UI

ABAP
- LO-VC
- New VC-Engine
- Generated CDS views

SAP HANA
- Configuration Data
- Master Data / Models
- New VC-Engine Core (C++)

SAP BusinessObjects Cloud

Labs Preview
- New SAP Fiori configurator UI with new capabilities & features
- Generated CDS views for new embedded analytics
- New high-performing engine core to solve constraints
Activating the new VC - Mixed Mode

Advanced Variant Configuration

- **Configurable Material**
  - Classic configuration profile for LO-VC
  - New additional profile for the new configurator UI + new engine

**Mixed Mode uses different configuration profiles:**

- New configuration profile must be maintained to leverage the new configurator UI and new engine
- The used application UI controls which VC-engine will be processed
- Object dependencies will be automatically marked/classified, if they are compatible with the new engine or not
New Engine Capabilities

Advanced Variant Configuration

Key Capabilities:

- New state of the art algorithms designed together with Fraunhofer Institute Kaiserslautern, Germany
- New engine Performance optimized for SAP HANA, leveraging HANA capabilities
- Solution Proposals for conflict solving
- More precise restrictions of values during configuration evaluation
- All constraints will be taken into account with higher performance, enhanced support of multi-values
- Engine architecture design prepared for future syntax enhancements
Advanced Variant Configuration – New Configurator - Mockup

- Comprehensive filter capability
- Evaluation Undo/Redo functionality
- New SAP Fiori Header Information for context information
- Groups are separate objects including the default group

Planned
Advanced Variant Configuration – New Simulation Environment I - Mockup

Labs Preview

SAP Fiori role based simulation environment

Save/Load configurations from/to database or external file

Comprehensively handling of different configurations - Favorites

Planned
Advanced Variant Configuration – New Simulation Environment II - Mockup

Labs Preview

- Highly efficient process oriented screen arrangement
- Parallel evaluation, results, trace
- Evaluation for incomplete configurations
- Basic trace functionality
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Future Direction of Variant Configuration

Key Message
- New capabilities with focus on efficient & flexible process support, this resulting in higher performance and more transparency
- Variant configuration will be available within SAP S/4 HANA and SAP S/4HANA Cloud

Strategy for Advanced Variant Configuration:
- Basic scope will extended
- New Syntax
- Extended Integration
- Decoupling
- Predefined embedded analytic scenarios using configuration & classification
- Enhanced extensibility
- Modelling Environment (incl. graphical UI-Modelling)
- Support of ETO scenario
Enable omnichannel customer experience
Focus on consumer-centric UI / visualization 3D
CPQ fully integrated into SAP Hybris
Strong mobile capabilities
Sales can flexibly enrich options & values

Focus on SAP S/4HANA related roles (such as sales representatives, engineers, modelers)
Full integration into business processes related to variant configuration in SAP S/4HANA
Fully leveraging SAP HANA capabilities
Real-time embedded Analytics

Future Direction
Customers & Partners

Partner Work Group

Additional partner workgroup focused on extensibility
Customers & Partners

Customer Work Group

Workgroup organized by Steve Schneider (Steelcase) & Nicole Krull (Getriebebau NORD)
Design Thinking Methods & Paper Mockups

Design Thinking

Ideas created by groups of key users from different industries

SAP Paper Mockup with real example data
“I have been working to influence SAP in the area of Variant Configuration since 1999, including the LO-VC, IPC, SCE, and PMEVC applications. Without a doubt, the SAP S/4HANA for Advanced Variant Configuration project has been the best example of SAP and customers working together that I have ever seen. The 2016 series of workshops using Design Thinking have been especially exciting.

Customers were directly able to see the things they had asked for in June applied by SAP and even expanded upon. SAP tries very hard to listen and asking clarifying questions. They try very hard to make sure the customers viewpoint is understood. We still have a long way to go, but I am confident that the continued use of Design Thinking and willingness of SAP to listen to their customers will make the SAP S/4HANA for Advanced Variant Configuration solution a fantastic product!”

Steve Schneider
Steelcase
Sr. Consulting Product Data Analyst
Product Data Services
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Thank you

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