SAP S/4HANA for advanced variant configuration

Current Releases and Roadmap

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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.
1. Overview
2. Capabilities 1808/1809
3. Planned innovations
4. Future Direction
5. Co-Innovation Customer Council
6. Further information
Overview
SAP S/4HANA Variant Configuration – Mission

SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to define, develop, sell, manufacture, deliver, and maintain individualized products.

Advantages / Value:

- Efficient configuration of sales orders & more efficient modeling
- Product complexity management focus on data quality and consistency
- Business transparency for configurable products
- Coordination and collaboration between sales and engineering
- Simplified, Efficient organization and process support for engineer-to-order use cases
SAP S/4HANA Variant Configuration – Evolutional Approach

- Classification
- UX Experience
- Embedded Analytics

- Single Level MTO & MTS
- Simulation Environment
- Advanced Analytics

- Multi-Level MTO & MTS
- Routing Integration

- Simplified ETO
  - Order BOM
  - Project Integration
- Loose coupling of Sales & Manufacturing

1808 S/4HANA Cloud
1809 S/4HANA on premise
The variant configuration will be available within SAP S/4HANA on premise and Cloud.

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 the same foundation.
Advanced Variant Configuration
Capabilities 1808/1809
SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to sell, manufacture, deliver individualized products.

**Key Highlights 1809 – Process integration:**

- Enabling of fast order entry for Sales Order
- Advanced Sales Configurator embedded into quotation
- Embedding advanced configurator into production order (in Cloud read-only)
- Embedding advanced variant configurator into purchasing order incl. fast order entry
- User interactive variant matching
- Integration of SAP Commerce Cloud to S/4 HANA OP
SAP S/4HANA for advanced variant configuration – Release 1808 and 1809

SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to define and develop individualized products

Key Highlights 1809 - Modelling

- Enabling of multilevel configuration
- Integration of routing into simulation environment
- Highly precise handling of float values
- New grouping functionality
- Overview page for product modeler
- Integrated syntax checks
- Integration of Advanced Variant Configuration Modelling environment into Requirements Management
- Machine Learning (ML) based auto-classification of documents
Analyze, Adapt, Validate, and Sell with Advanced Variant Configuration

Trigger: Customer behavior regarding service level agreement changed

Product Manager

S ➔ Analyze usage of service level agreement ➔ Define and document changed requirements to configuration model

Product Modeler

Check new requirements and adapt product configuration model ➔ Validate product configuration model

Configure customer order ➔ E

Internal Sales Representative

Demo of capabilities 1808/1809
Demo

Watch video here: https://youtu.be/_YXCbSQ62Wo
Advanced Variant Configuration
Planned Innovations
SAP S/4HANA Variant Configuration

SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to define, develop, sell, manufacture, deliver, and maintain individualized products.

Planned Key Highlights:
- Improved usability for complex models
- Enhanced simulation and trace possibilities
- Engine enhancements
- Machine Learning supported Analytics
- Enhanced Machine Learning based automatically classification of documents
- Integration of Order Engineering Workbench into SAP S/4HANA OP supporting LO-VC
- Classification search capabilities leveraging SAP HANA capabilities

Planned Innovations:
- New Configuration Engine
- Simulation Environment
- Classification
- Embedded Analytics
- Product Modelling
- Sales Configurator
- UX Experience
Improved usability for complex models

Increase quality and consistency for order configuration to **accelerate ordering process and improve customer satisfaction**

**Planned Capabilities:**

- Transparent handling of inconsistencies during valuation
  - Enhanced support to localize inconsistencies
  - Status information regarding consistency on instance level

- Group maintenance enhancements
  - Filter functionality for easier selection of characteristics
  - Improved sorting of characteristics
Enhanced simulation and trace possibilities

Improve quality for complex products and product changes by high-efficient simulation

Planned Capabilities:

- Dependency trace showing details on execution of object dependencies - Relation between user interaction and step is visible
- Possibility to reload master data
- Improved integration of routing
  - Display of super routing
  - Showing assigned phantom assemblies
- Additional filter possibilities for the trace
- Providing more details on related objects (e.g. constraint nets, production version)
Configuration Engine - Enhancements

Increase quality and consistency for order configuration to accelerate ordering process and improve customer satisfaction

Planned Capabilities:
- Support of variant functions
- Support of trigonometry functionality
- Syntax enhancements, e.g.
  - Support *NOT* on left side of *IF*
  - *Round-to* pattern to support flexible rounding
Machine Learning based Analytics

Increase business insights through Machine Learning based analytics in Sales segmented down to characteristic level

Planned Capabilities:

- Real-time analytics to identify top seller regarding characteristic value combination
- Identification of relevant characteristics is done by Machine Learning based algorithms, which are part of SAP HANA
- Out-of-the-box solution integrated into analytical sales app
  - No modelling effort on customer
  - Machine Learning algorithm works w/o training
Integration of Order Engineering Workbench supporting classical Variant Configuration (LO-VC)

Improved **Order Engineering** for more efficient variant configuration and Sales Order BOM processing

**Planned capabilities:**

- Integration of Order Engineering Workbench supporting classical Variant Configuration (LO-VC) into SAP S/4HANA on premise
- Intuitive User Interface (Drag and Drop, Context menus etc.)
- Versioning of Sales Order BOMs and characteristic value assignments
- Reimport of versions (roll back functionality)
- Reuse of previously created order BOMs for similar sales orders in the past
- Increases efficiency by allowing iterative development and roll-back possibility
- Reduces errors by increasing the traceability of all activities during the Order Engineering process
- Saves time and costs by offering reuse possibilities
Classification

Increase operational efficiency through classification of business objects

Planned capabilities:
- Enhanced Machine-learning-based auto-classification in Document Master
- Grouping functionality in classification Fiori UI streamlined with configuration UI
  - Easy structuring of characteristics via tabs in the classification Fiori UI
  - Reuse of groups
- Enterprise Search for classes, characteristics and classification based on CDS views
- Enhanced public interfaces
Advanced Variant Configuration
Future Direction
SAP S/4HANA Variant Configuration

SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to define, develop, sell, manufacture, deliver, and maintain individualized products.

Future Key Highlights:

- Enhancements of configuration engine
- Integration of advanced variant configuration into further processes
- Integration of the advanced variant configuration into a Simplified Engineer To Order (ETO) process
- Loose coupling of Sales and Manufacturing Configuration
- Machine Learning supported configuration process
- Classification enhancements

Future Direction
Configuration Engine - Enhancements

Increase quality and consistency for order configuration to **accelerate ordering process and improve customer satisfaction**

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**Future Capabilities:**

- Further syntax enhancements (will be defined together with co-innovation customer council)
- Extended string functionality (e.g. Substring, Regular Expressions, …)
- Enhanced functionality of variant tables:
  - Support of wildcards (*)
  - Full Engineering Change Management support
  - SAP HANA optimized storage of variant tables
- System support to solve inconsistencies during valuation in sales order by suggestion of solution proposal based on existing configurations
Integration of advanced variant configuration into further processes

SAP S/4HANA for advanced variant configuration provides an efficient set of enhanced capabilities to sell, manufacture, deliver individualized products

Future Capabilities:
- Enhanced integration into SAP Product Configuration
- Support of multi-level SET scenario
- Integration into product costing
- Introduction of a configuration object for better reuse of configurations
- Support of product modeling for Hardware, Electrics, Electronics, Software and Services
Sales Configurator – Simplified Engineer To Order (ETO)

Accelerate order execution for ETO scenarios leveraging efficient and transparent tools which supporting process and organization

Future Capabilities:
- Efficient ETO scenario support for small and medium complex cases
- Improved transparency on customer requirements and costs
- Reuse of historic models, individualized options using advanced search
- Integration into OEWB (on premise only)
Loose Coupling of Sales and Manufacturing Configuration

Increase business agility using one product model which supports different levels configurations

Future Capabilities:
- Split the configuration process into business process activities
- Every step contains only the relevant information
- Guided configuration process
- Modularized VC model for improved transparency and testability enabled by new master data objects and enhanced syntax
Machine Learning supported MTO process with classification and variant configuration

Machine Learning supports users efficiency through the complete Business Process

Future Capabilities:

- Optimize the product model by using predictive Analytics on Sales & Production data to identify characteristic combinations driving costs, selling or quality
- Machine Learning based support to set up master data (e.g. automatically classification of documents or materials, proposals for material variants)
- Configure a product supported by Machine Learning (e.g. analyzing documents)
- Use Machine Learning to analyze VC related Production data to improve quality & efficiency
Classification enhancement

Increase operational efficiency through advanced classification of business objects

**Future Capabilities:**
- Integration of advanced variant configurator
- Import tool for external class structures e.g. ecl@ss
- Enhanced mass-change capabilities for classification and variant configuration
- Enhanced Machine-learning-based auto-classification
- Extended characteristic types (e.g. long text, data files, attribute groups)
Roadmaps
# SAP S/4HANA for advanced variant configuration roadmap - highlights

## Recent Innovation 1808 / 1809
- **Support of multi-level configuration models and integration into further applications**
- **High precise handling of characteristic values of type float**
- **Integration of Routing into simulation environment**

## Planned Innovations
- **Simulation environment / enhanced trace**
- **Machine Learning supported Analytics**
- **Engine enhancements**

## Future direction
- **Loose coupling of Sales and Manufacturing**
- **Simplified Engineer To Order**
- **Machine Learning supported configuration process**

For details, please see: [https://apps.support.sap.com/innovation-discovery](https://apps.support.sap.com/innovation-discovery)
SAP S/4HANA for advanced variant configuration – On Premise (Additional license)

1809 – Recent innovations*

**Advanced Variant Configuration**
- Support of multi-level scenario
- Integration into SAP Hybris Commerce
- Integration of new configuration along key processes
- Integration of routing with simulation environment
- Support for characteristics of type “decimal” in object dependencies with a high degree of precision
- Improved user experience: Grouping of characteristics; handling of alternative values
- Interactive user selection of material variants during the sales order process
- Overview page for modeler
- Integration of requirement handling

**Classification**
- Machine-Learning based auto-Classification for documents
- New public interfaces

2019 – Planned innovations*

**Advanced Variant Configuration**
- Integration of the advanced variant configurator into further processes
- ML based Analytics
- Syntax enhancements
- Variant functions
- Enhanced simulation and trace possibilities
- OEW integration

**Classification**
- Improved user experience: Grouping of characteristics
- Extended search and where-used capabilities for classification and variant configuration

2020 – Product direction*

**Advanced Variant Configuration**
- Support of multi-level SET scenario
- Enhanced Engineer To Order Process
- Syntax enhancements
- Introduction of a configuration object
- Support of product modeling for Hardware, Electrics, Electronics, Software and Services
- Enhanced ML based Analytics
- ML based support creation of configuration

**Classification**
- Integration of advanced variant configurator
- Import tool for external class structures e.g. ecl@ss
- Enhanced mass-change capabilities for classification and variant configuration

2021 – Product vision*

**Advanced Variant Configuration**
- Separate configuration for sales and manufacturing through loose coupling
- Integrated interactive 3D visualization for configurable products in Engineering, Sales and Production processes
- Test environment supporting systematically tests and analysis of variant configuration models

**Classification**
- Extended characteristic types: long text, data files, attribute groups

*This is the current state of planning and may be changed by SAP at any time without notice.
Potential data protection and privacy features include simplified deletion of personal data, reporting of personal data to an identified data subject, restricted access to personal data, masking of personal data, read access logging to special categories of personal data, change logging of personal data, and consent management mechanisms. This is the current state of planning and may be changed by SAP at any time without notice.

Advanced Variant Configuration
- Enhanced Multi-Level configuration
- Syntax enhancements
- Enhanced user experience
- Trace enhancement
- Machine Learning supported Analytics for configuration data in sales order

Classification
- Enhancement of classification search capabilities
- Align the look and feel of the classification SAP Fiori user experience with advanced variant configuration

Advanced Variant Configuration
- Integration of the advanced variant configurator into further processes
- Integration into SAP Product Configuration
- ML based identification of critical combination of options (Production)
- Variant functions / Dependency trace

Classification
- List report search
- SOAP services

Planned H2/2019
- Support of multi-level SET scenario
- Enterprise Search
- Enhanced Engineer To Order Process
- Introduction of a configuration object
- Support of product modeling for Hardware, Electrics, Electronics, Software and Services
- Enhanced ML based Analytics
- ML based support creation of configuration

Classification
- Integration of advanced variant configurator
- Import tool for external class structures e.g. ecl@ss
- Enhanced mass-change capabilities for classification and variant configuration
- Extension of SOAP services

Planned 2020

1. Potential data protection and privacy features include simplified deletion of personal data, reporting of personal data to an identified data subject, restricted access to personal data, masking of personal data, read access logging to special categories of personal data, change logging of personal data, and consent management mechanisms. 2. This is the current state of planning and may be changed by SAP at any time without notice.
Co-Innovation Customer Council
Innovate with Customers and Partners
SAP S/4HANA for advanced variant configuration

Design Thinking Methods & Paper Mockups

Co-Innovation Customer Council

Ideas created by groups of key users from different industries

SAP Paper Mockup with real example data

Customer Council organized by Steve Schneider (Steelcase) and Nicole Krull (Herose)
Further information
Further Information

SAP Help Portal:
SAP Help - Advanced Variant Configuration - Cloud
SAP Help - Advanced Variant Configuration – OP

YouTube Videos:
Teaser AVC
Embedded Analytics with AVC
Embedded Analytics AVC for Metals
Featuring Sven Denecken from S/4HANA Cloud AVC

SAP Innovation Discovery – On Premise:
SAP S/4HANA OP 1709 available

SAP Press Books, E-Bite:
New: E-Bite SAP S/4HANA for AVC
Variant Configuration with SAP

SAP Innovation Discovery - Cloud:
SAP S/4HANA Cloud Q1 2018
SAP S/4HANA Cloud Q2 2018
SAP S/4HANA Cloud Q3 2018
SAP S/4HANA Cloud Q4 2018
Thank you.

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