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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.
Background – SAP Digital Project and Product Innovation

Innovations
- SAP S/4HANA Cloud for Intelligent Product Design – Closing the Loop with Live Engineering
- SAP S/4HANA and SAP CoPilot – Natural Language Support for Project Management
- Machine Learning in Configuration Management

Summary
**Summary** – Digitalization is here to stay and is changing “product innovation”

- Software is everywhere – intelligent products with embedded systems
- Data is everywhere – everything and everyone is connected
- Personalization is everywhere – from consumer to manufacturer, lot size of 1
- Product data is everywhere – from design to service, supply chain to finance to HR
- Complexity is increasing – management of lot size of 1, distributed design and manufacture
- Latency is disappearing – over-the-air updates, order to delivery in days
Software-Updates

Tesla-Fahrzeuge empfangen regelmäßig Software-Updates über Mobilfunk, um neue Funktionen und Merkmale einzurichten. Sobald ein Update verfügbar wird, sehen Sie eine entsprechende Meldung auf dem Mittelkonsoledisplay. Sie haben dann die Option, das Update sofort oder zu einem späteren Zeitpunkt zu installieren. Wir empfehlen, dazu Ihr Fahrzeug mit Ihrem W-LAN (WiFi) zu Hause zu verbinden, um das Herunterladen zu beschleunigen.

Die aktuelle Software-Version ist 8.1.

All Tesla vehicles with Enhanced Autopilot and the latest software update now have improved capabilities, including: Autosteer up to 150 kilometers per hour, Auto Lane Change, Summon (Beta), Lane Departure Warning and Automatic Emergency Braking.
By 2019, more than 50% of all industries will price and package their offerings as services with flexible subscription or consumption-based pricing models.

There must be a way to quickly determine what products to bring to market, which suppliers to work with, when a product has a quality issue, and if a product is underperforming. These are really baseline PLM analytics.

The next step beyond this for manufacturers is to use analytics to leverage the enormous amount of information generated by connected products, supply chain, and manufacturing to enhance decision making for products, processes, innovation, and people.

Jeff Hojlo, Program Director

“

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Products

Lifecycle services

2 worlds connected
The digital twin transforms the collaboration between manufacturers of products and operators of assets.

**Manufacturer**
- Design
- Produce
- Retire
- Service
- Deliver

**Operator**
- Plan
- Acquire
- Dispose
- Operate
- Deploy

**Product**

**Asset**
Live engineering – a manufacturer’s perspective

Wear-and-tear analysis

Customer complaints / service

Problem fixing

Production engineering

Design collaboration

Requirements → Design → Production → Installation → Operation → Decommission

You own it → Your customer owns it
Building upon a solid foundation

LIVE engineering

Requirements ➔ Design ➔ Production ➔ Installation ➔ Operation ➔ Decommission

The digital world

The physical world
Agenda

Background – SAP Digital Project and Product Innovation

Innovations

- SAP S/4HANA Cloud for Intelligent Product Design – Closing the Loop with Live Engineering
- SAP S/4HANA and SAP CoPilot – Natural Language Support for Project Management
- Machine Learning in Configuration Management

Summary
SAP S/4HANA offers unique value for business

**Reimagined business models**
Simplicity to connect to people, devices, business networks

**Reimagined business decisions**
Simplicity to get any insight on any data from anywhere

**Reimagined business processes**
Simplicity to focus on the essential tasks and change business processes

No more complex collaboration – all business connected

No more batch – all processes in real time

No more manual consolidation – all decisions on the fly and at the highest level of granularity
Experience: Enterprise portfolio and project management in SAP S/4HANA

Planned innovations
S/4HANA Project Management PoC with CoPilot NLP - with Project Object Page
Example from discrete manufacturers
Digital twin – product lifecycle management – vision demo

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   SAP Asset Intelligence Network: Analytics performance benchmarking and product manager overview
   - FLEET ANALYTICS
     - David
     - Product manager

2. REQUIREMENTS-DRIVEN DEVELOPMENT
   SAP S/4HANA Cloud for intelligent product design: Requirements and software management
   - REQUIREMENTS MANAGEMENT
     - Thomas
     - Systems engineer

3. MANAGEMENT and OPTIMIZATION OF PRODUCT COST
   SAP Product Lifecycle Costing
   - PRODUCT LIFECYCLE COSTING
     - Petra
     - Controller

4. DETAIL ENGINEERING
   SAP Engineering Control Center: Mechanic electric/electronics and software integration
   - SAP Engineering Control Center
     - John
     - Systems engineer

5. DIGITAL TWIN
   SAP Asset Intelligence Network: Handover thing definition and onboarding
   - Internet of Things
     - Daniel
     - Thing engineer

6. CUSTOMER SALES ORDER CREATION
   SAP Hybris solution: Configure, price, and quote
   - SAP Hybris solution
     - Michael
     - Customer
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     - **SAP Hybris solution**
     - Michael (Customer)

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<table>
<thead>
<tr>
<th>Title ID</th>
<th>Name</th>
<th>Priority</th>
<th>Type</th>
<th>Risk</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parts or items must be grasped and held without damage</td>
<td>1</td>
<td>Functional</td>
<td>High</td>
<td>Approved</td>
</tr>
<tr>
<td>1.1</td>
<td>The gripper must not damage the part being handled</td>
<td>1</td>
<td>Functional</td>
<td>High</td>
<td>Approved</td>
</tr>
<tr>
<td>1.2</td>
<td>The gripping force must be customizable in a wide range</td>
<td>1</td>
<td>Functional</td>
<td>Medium</td>
<td>Approved</td>
</tr>
<tr>
<td>1.2.1</td>
<td>The minimum gripping force shall be equal or less than 50 N</td>
<td>1</td>
<td>Technical</td>
<td>Medium</td>
<td>Approved</td>
</tr>
<tr>
<td>1.2.2</td>
<td>The maximum gripping force must reach up to 600 N</td>
<td>1</td>
<td>Technical</td>
<td>Medium</td>
<td>Approved</td>
</tr>
<tr>
<td>2</td>
<td>The speed of gripping must be customizable via parameters</td>
<td>2</td>
<td>Functional</td>
<td>Medium</td>
<td>Defined</td>
</tr>
<tr>
<td>2.1</td>
<td>The gripping speed shall have little impact on the gripping force</td>
<td>2</td>
<td>Functional</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>2.2</td>
<td>The gripper must open or close completely in less than 1 sec</td>
<td>2</td>
<td>Technical</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>3</td>
<td>Parts must be positioned firmly or rigidly while being operated on</td>
<td>4</td>
<td>Functional</td>
<td>Underdefined</td>
<td>Draft</td>
</tr>
<tr>
<td>3.1</td>
<td>The jaws of the gripper must be self-aligning to ensure a centric load of weight</td>
<td>4</td>
<td>Functional</td>
<td>Underdefined</td>
<td>Draft</td>
</tr>
<tr>
<td>4</td>
<td>The gripper must accommodate parts of different and varying sizes and weight</td>
<td>2</td>
<td>Functional</td>
<td>Medium</td>
<td>Defined</td>
</tr>
<tr>
<td>4.1</td>
<td>The fingers of the gripper should be at least 100 mm of length</td>
<td>2</td>
<td>Functional</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>4.2</td>
<td>A part of 80 mm width shall be handled by the gripper</td>
<td>2</td>
<td>Functional</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>4.3</td>
<td>The gripper must handle parts of weight up to 3 kg</td>
<td>2</td>
<td>Functional</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>5</td>
<td>The gripping unit must be flexibly applicable within a mounting hall</td>
<td>2</td>
<td>Functional</td>
<td>Medium</td>
<td>Defined</td>
</tr>
<tr>
<td>6</td>
<td>The gripping unit must not exceed the given physical data</td>
<td>2</td>
<td>Design</td>
<td>High</td>
<td>Defined</td>
</tr>
<tr>
<td>6.1</td>
<td>The maximum length (without jaws) must be less than 150 mm</td>
<td>4</td>
<td>Design</td>
<td>Medium</td>
<td>Defined</td>
</tr>
<tr>
<td>6.2</td>
<td>The gripping unit must be less than 2 kg of weight</td>
<td>2.5</td>
<td>Design</td>
<td>High</td>
<td>Defined</td>
</tr>
<tr>
<td>7</td>
<td>The motor current shall support the maximum gripping force at a range of non</td>
<td>3</td>
<td>Functional</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>7.1</td>
<td>The motor current shall be up to 4 A in a temperatur range from 5 °C up to 25 °C</td>
<td>5</td>
<td>Technical</td>
<td>Low</td>
<td>Defined</td>
</tr>
<tr>
<td>8</td>
<td>An adaption of the gripping unit via software and standard USB interface must</td>
<td>1.5</td>
<td>Functional</td>
<td>Low</td>
<td>Approved</td>
</tr>
<tr>
<td>9</td>
<td>The Control via Industry standard (CAN bus) must be guaranteed</td>
<td>2</td>
<td>Functional</td>
<td>Defined</td>
<td>Defined</td>
</tr>
<tr>
<td>9.1</td>
<td>Software communication hub interface</td>
<td>2</td>
<td>Functional</td>
<td>Defined</td>
<td>Defined</td>
</tr>
<tr>
<td>9.2</td>
<td>Plug connectivity</td>
<td>2</td>
<td>Functional</td>
<td>Defined</td>
<td>Defined</td>
</tr>
<tr>
<td>10</td>
<td>The gripping unit must be maintenance-free by normal usage within the guar</td>
<td>2</td>
<td>Undefined</td>
<td>Medium</td>
<td>Verified</td>
</tr>
</tbody>
</table>
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   - PHYSICAL ENTITY
   - DIGITAL TWIN

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   - SAP Hybris solution
     - Michael, Customer

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<table>
<thead>
<tr>
<th>Version</th>
<th>Description</th>
<th>Costs</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 1 - 2017</td>
<td>Standard Components / Make Parts 909 PB Blende &amp; Servicefenster</td>
<td>52.20 EUR</td>
<td>1.00 PC</td>
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<tr>
<td>Version 2 - Cost Estimate</td>
<td>Standard Components / Make Parts</td>
<td>758.73 EUR</td>
<td>1.00 PC</td>
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<tr>
<td>Version 3 - Should-cost</td>
<td>Standard Components / Make Parts</td>
<td>669.61 EUR</td>
<td>1.00 PC</td>
</tr>
<tr>
<td>Drive and Control Unit - Version...</td>
<td>Standard Components / Make Parts Drive and Control Unit - M</td>
<td>285.75 EUR</td>
<td>1.00 PC</td>
</tr>
</tbody>
</table>
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   - **Product Lifecycle Costing**: Petra Controller

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Live Business. Transforming Industries
The SAP platform combined with an industry focus is uniquely capable of delivering the win

Embedded Systems
- Integrate mechanics, electronics, and software into smart connected products.
- Enable requirements-driven systems engineering
- Link engineering master with digital twin completing the extended supply chain

Project and design collaboration
- Provide virtual collaboration on engineering documents and 3D designs
- Plan and execute collaborative tasks across company boundaries
- Connect IoT, digital core, and business networks creating seamless value chain

SAP Cloud Platform services
- Embedded systems
- Project and Design Collaboration
- SAP Cloud Platform
- Manufacturing Cloud Services
- IoT/AIN
- SAP Ariba

Planned innovations

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The SAP platform combined with an industry focus is uniquely capable of delivering the win.
Agenda

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Summary
Digital evolution for product and project lifecycles with SAP

True, compliant
Systems of record

Digital, embedded
System of differentiation

Open, “live,” intelligent
System of innovation

Product innovation platform
SAP Portfolio and Project Management
SAP Product Lifecycle Management
Product safety and stewardship

Extensions:
SAP Engineering Control Center
SAP Product Lifecycle Costing
SAP Innovation Management

“Digital” – product innovation platform
SAP S/4HANA releases
- Portfolio and project management
- Product lifecycle management

Extensions:
Systems engineering integration
SAP Asset Intelligence Network

SAP S/4HANA

Enabling “live” product innovation with SAP Leonardo
SAP S/4HANA in the public cloud
Intelligent product design
Digital project network
Open platform integration

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Closing

The next-generation, **intelligent business**
for a digital world

**Immediate**
Empowering business users with insights to act in the moment

**Intelligent**
Beyond automation, to predictive suggestion

**Integrated**
Not only between your departments, but connected to the world
Thank you.

John McNiff

Global Vice President – IoT and Digital Supply Chain

Digital Project and Product Innovation

SAP SE

John.mcniff@sap.com