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Digitalization
Every company to become a software-driven company by

Intelligently connecting people, things, and businesses

- Real-time analytics
- Integration
- Collaboration
- Mobile
- Microservices

- Real-time data
- Machine learning
- UX
- IoT
- Integration
- APIs
SAP’s vision for enterprise machine learning

SAP Leonardo
Machine Learning
Create your own intelligent infrastructure

Automate Knowledge Work
- Transformational HR services
- Lights out finance operations
- Self-driving customer service
- Conversational sales bots
- Customer retention insights

SAP Cloud Platform and SAP HANA

Do the Impossible
- Image-based Ariba commerce
- Contextual Concur travel concierge
- Video-aware marketing
- Visual store execution
- Drone and satellite-based asset management
- Vision-enabled manufacturing
- Contextual logistics
Build your intelligent enterprise now
SAP makes machine learning incredibly simple

SAP Assets

76% of the world’s transaction revenue touches an SAP system

25 industries

12 lines of business

The world’s largest business network

SAP Leonardo
Machine Learning

Applications/tools

Business Services

Functional Services

Training and Lifecycle management

Foundation

SAP Cloud Platform and SAP HANA

Business Outcomes

Increase revenue with superior sales targeting and execution

Re-imagine business processes with digital intelligence

Improving quality time at work for employees

Increased customer satisfaction with superior service

Enabling product, process and business model innovations
SAP Leonardo Machine Learning Foundation
Enabling customers and partners to build the intelligent enterprise

- **Business services**
  - Ready to integrate

- **Functional services**
  - Natural language processing
  - Image and video
  - Tabular and time series
  - Speech and audio

- **Lifecycle management**
  - Ready to train

- **Applications**
  - Ready to use
Business service: Service ticketing
Enabling SAP Service Ticketing to accelerate customer service in omnichannel scenarios

SAP Service Ticketing application processes customer queries automatically to deliver best-in-class customer service.

Based on the REST API, the functionality can be integrated in any software stack.

Improved service response times with automated processing

Integrated with the SAP Hybris Cloud for Customer solution for reduced time to value

Enabled to scale customer service with increased digital interactions
# SAP Leonardo Machine Learning Foundation

Planned service portfolio for 1710 release and beyond

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<th>General availability 1710</th>
<th>Alpha 1710</th>
<th>Roadmap In process</th>
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<td>Customizable text</td>
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<td>classification</td>
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<td><strong>Roadmap In process</strong></td>
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<td>Hate speech detection</td>
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<td><strong>Partner In process</strong></td>
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<td>Customizable recommender</td>
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</tbody>
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Functional service: Image classification

Detects objects in an image and classifies them into a fixed set of categories.

Via Rest API this functionality can be integrated in any software stack.

- Recognize patterns and unlock new insights from images
- Exploit knowledge from external sources e.g. images on social media
- Improve business processes such as visual quality inspection
**Functional service: Topic detection**

Detects topics in a document and provides scores for each topic
Extracts keywords describing each topic

Via Rest API this functionality can be integrated in any software stack.

- Unlock insights from natural language text
- Understand what customers are talking about you on the web
- Improve search and organization of text contents
SAP Leonardo Machine Learning Foundation: Benefits
Realize intelligent applications with easy-to-use ML services

Unlock insights from Big Data and infuse your apps with intelligent services

Scalable and managed services
Process Big Data without worries about the infrastructure

Flexibility and agility
Make immediate use of intelligent services, or build your own ML models

Integration
Smooth integration and access to data sources from SAP as well as non-SAP software

End-to-end coverage
Create, run and maintain intelligent applications – the entire lifecycle is covered
SAP Leonardo Machine Learning Foundation: Use Case Sample
Trend Color Prediction powered by functional services

SAP Leonardo Machine Learning analyzes images to better understand fashion trends for increasing the quality of apparel production forecast

Social Media Data
Influencers Fashion Data

Apparel type detection
Color detection

Color Trend Prediction
In-Store Manufacturing
Micro Season Forecast

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SAP Leonardo Machine Learning Foundation: Use Case Sample
Broken product similarity search

Service Ticket, e-mail incl. image of broken product

Image Feature Extraction
Similarity Scoring

Product Identification and automatic classification

SAP’s Machine Learning automatically classifies product images and enables faster customer interaction with precise information on potential product repair cost or item substitution.
Functional Service Demo: Image Similarity Scoring

SAP Leonardo
Machine Learning

Image Similarity Scoring

Results

100%

96%

95%
The SAP Machine Learning Services are available on API Business Hub
https://api.sap.com

Image
- Image classification
- Image feature extraction
- Product image classification

Text
- Document feature extraction
- Similarity scoring
- Product text classification
- Topic detection
- Translation

Tabular & Time-Series
- Time series changepoint detection
- Time series forecasting
## SAP Leonardo Machine Learning Foundation Road Map

<table>
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<tr>
<th>Business services (one-off training)</th>
<th>Functional services (pre-trained)</th>
<th>Functional Services (customizable)</th>
<th>Customer Services (pre-trained)</th>
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<tr>
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<td>✓ Deployment of trained services</td>
<td>✓ Customer-defined training</td>
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<td>✓ Development of training projects</td>
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<tr>
<td>✓ Training by service team from SAP</td>
<td>✓ Easy integration scenarios</td>
<td>✓ Tuned on customer-specific data</td>
<td>✓ Initially supporting TensorFlow</td>
<td>✓ Customer-defined algorithms</td>
<td>✓ Support for data streaming</td>
<td>✓ Monitoring and control of training runs</td>
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<tr>
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<td>✓ Example: Topic detection</td>
<td>✓ Example: Image classification</td>
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<td>✓ Enables continuous training</td>
<td>✓ Based on Big Data Platform</td>
<td>✓ Enables data exploration</td>
<td>✓ Provided as appliance</td>
</tr>
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**TechEd 2017**

**FKOM 2018**

**SAPPHIRE 2018**

**SAPPHIRE 2017**
### Links and further information

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<td><strong>Early adoption and co-innovation</strong></td>
<td>Be an early adopter and co-innovate with us for next-wave cases</td>
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Thank you.