



SAP IoT Application Enablement

Driving the Digital Transformation of Your Business

Smitha Rayala

Global Solution Management GTM & Strategic Partnerships

SAP Leonardo IoT



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SAP Leonardo IoT – Webinar Series 2018

Introduction and Overview on Applications		
SAP Leonardo Internet of Things Overview Session	Tom Raftery	15.2.
SAP Leonardo Internet of Everything	Pushkar Ranjan	22.2.
SAP Leonardo for Enterprise Internet of Things	Rakesh Gandhi, Ken Pierce	22.3.
IoT Adoption Enablers		
SAP Leonardo Technical Services	Giorgio Murrone	29.3.
SAP Leonardo Business Services	Smitha Rayala	5.4.
SAP Leonardo Bridge	Anne Mette Hoyer	12.4.
SAP Leonardo IOT Accelerators to drive faster ROI	Rakesh Gandhi	19.4.
Technology		
SAP Leonardo for Edge Computing	Merlin Yamssi	26.4.
IoT Services		
SAP Leonardo How to start with IoT	Axel Kuhle	10.5.



Agenda

Introduction - SAP Leonardo

SAP Leonardo IoT - Business Services (SAP IoT Application Enablement)

- Use Cases

- Thing Model

- Developer experience

Roadmap

Customer References

Resources

- Generic Information

- Developer Information

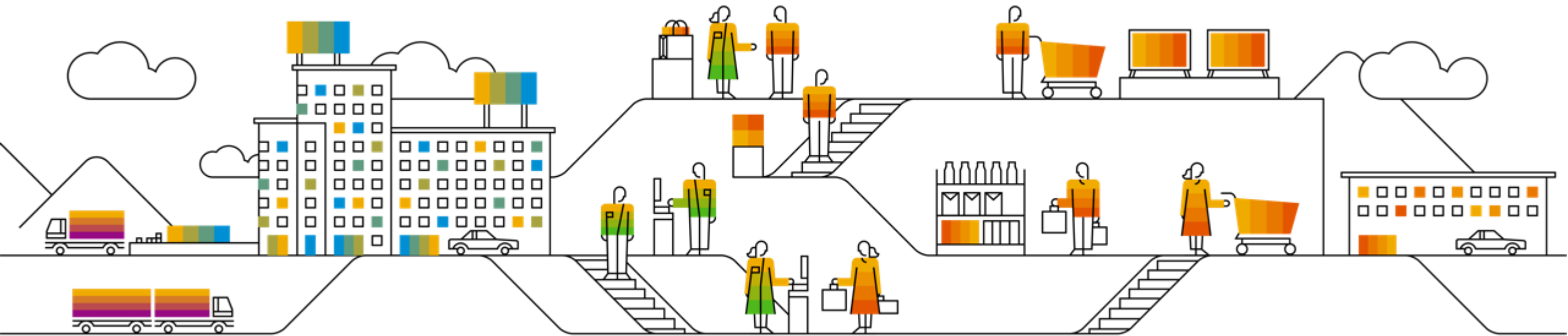
- Partner Information

Training & Knowledge Transfer

Starter Package

Q&As

Introduction – SAP Leonardo



SAP Leonardo Digital Innovation System

Design Led Innovation

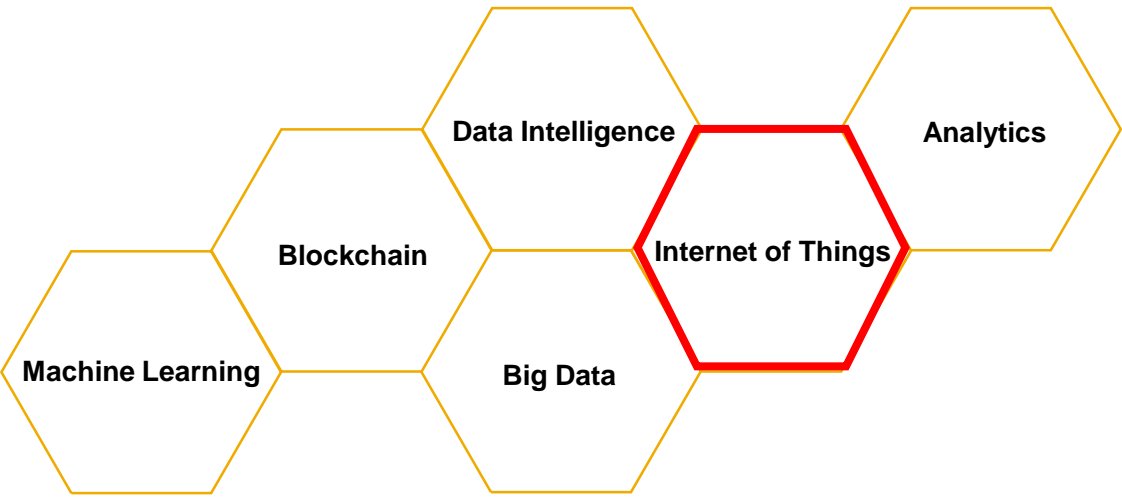
Solution Ideation
& Vision

Rapid
Prototyping

Integration
Blueprint

Business Case
Development

SAP Leonardo
Technologies



SAP Cloud Platform

Microservices | Open APIs | Flexible Runtimes | Integration

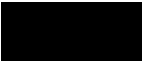
Data Management

SAP HANA | SAP Data Hub | SAP Vora | Other SAP | Open Source Storages |

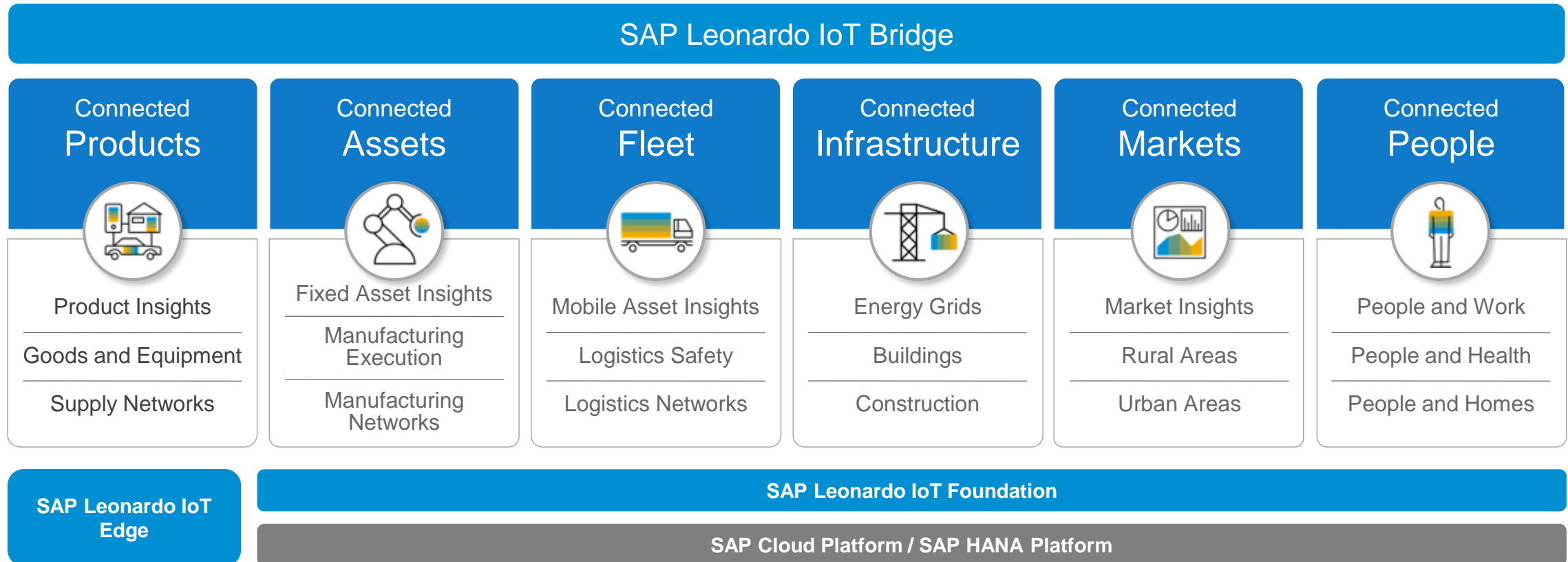
- AWS S3
- SWIFT
- Hadoop
- ...

Multi-Cloud Infrastructure

SAP

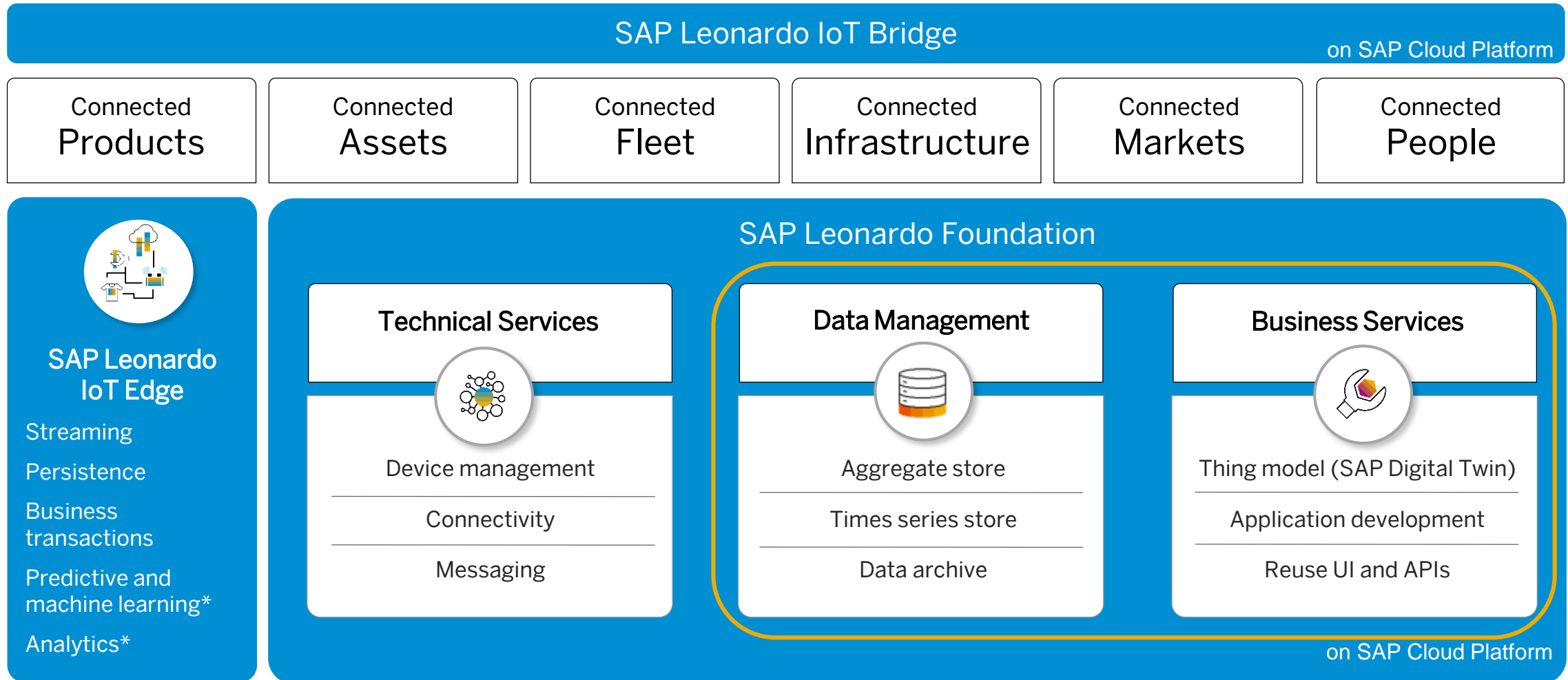


SAP Leonardo Internet of Things

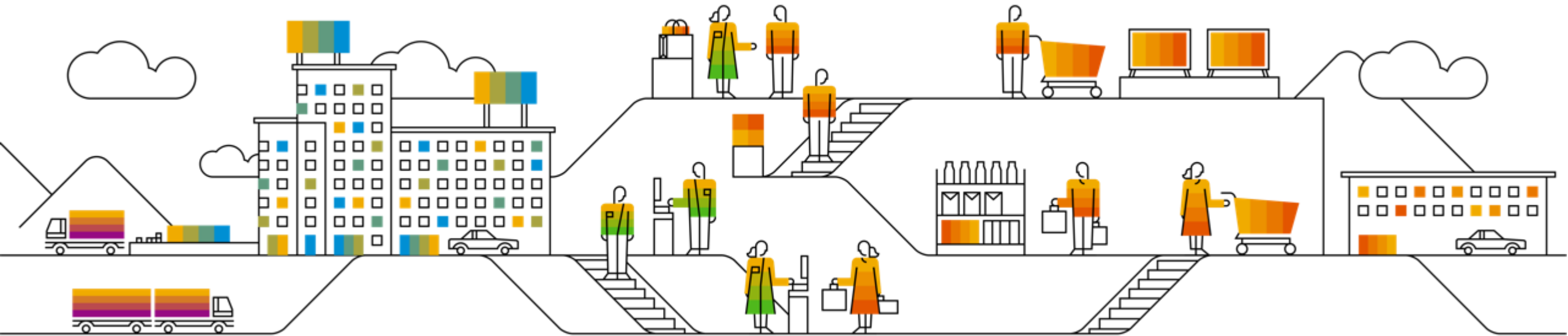


SAP Leonardo Internet of Things capabilities

Full stack of IoT solutions and technologies

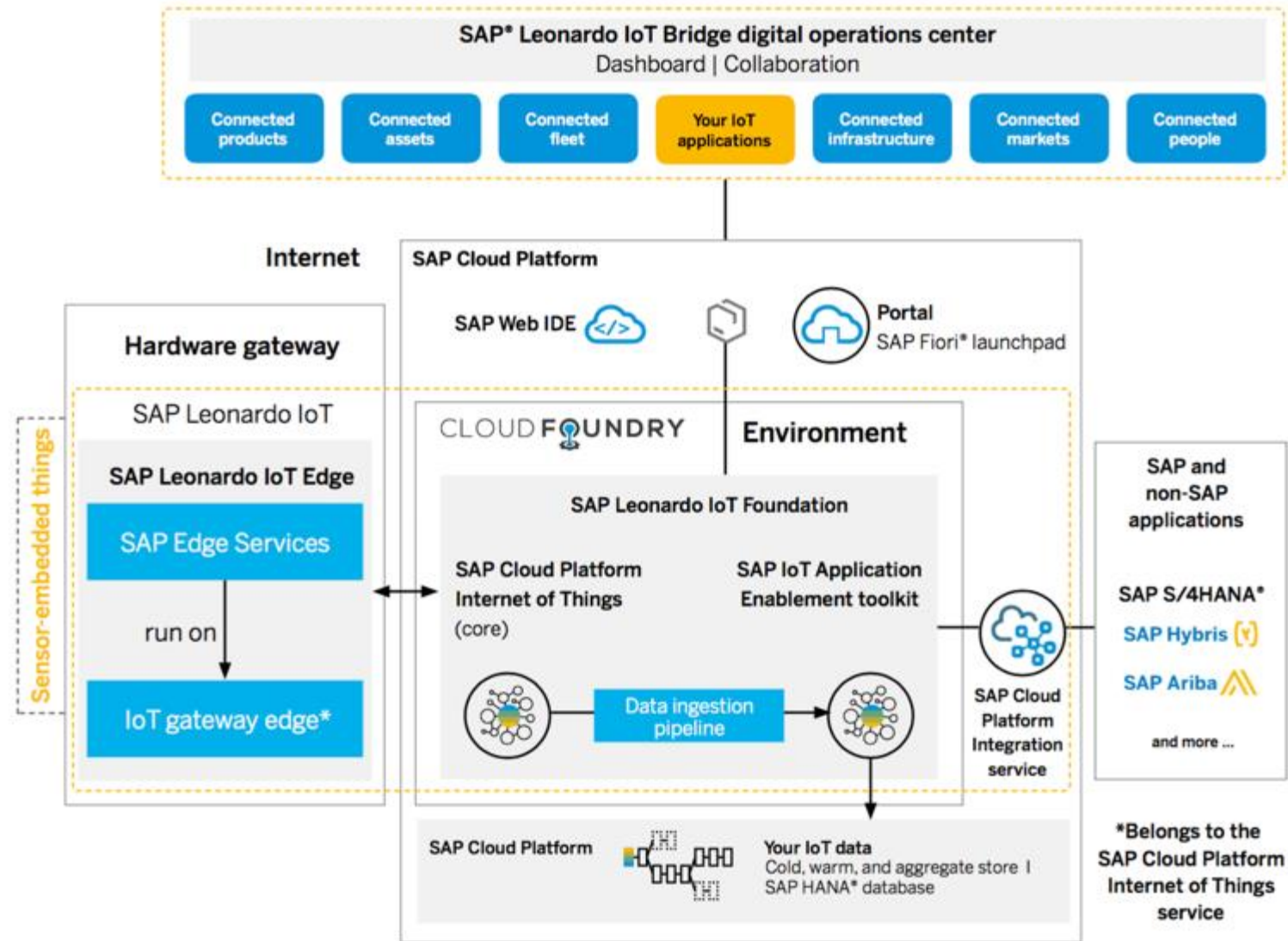


Introduction – SAP IoT Application Enablement



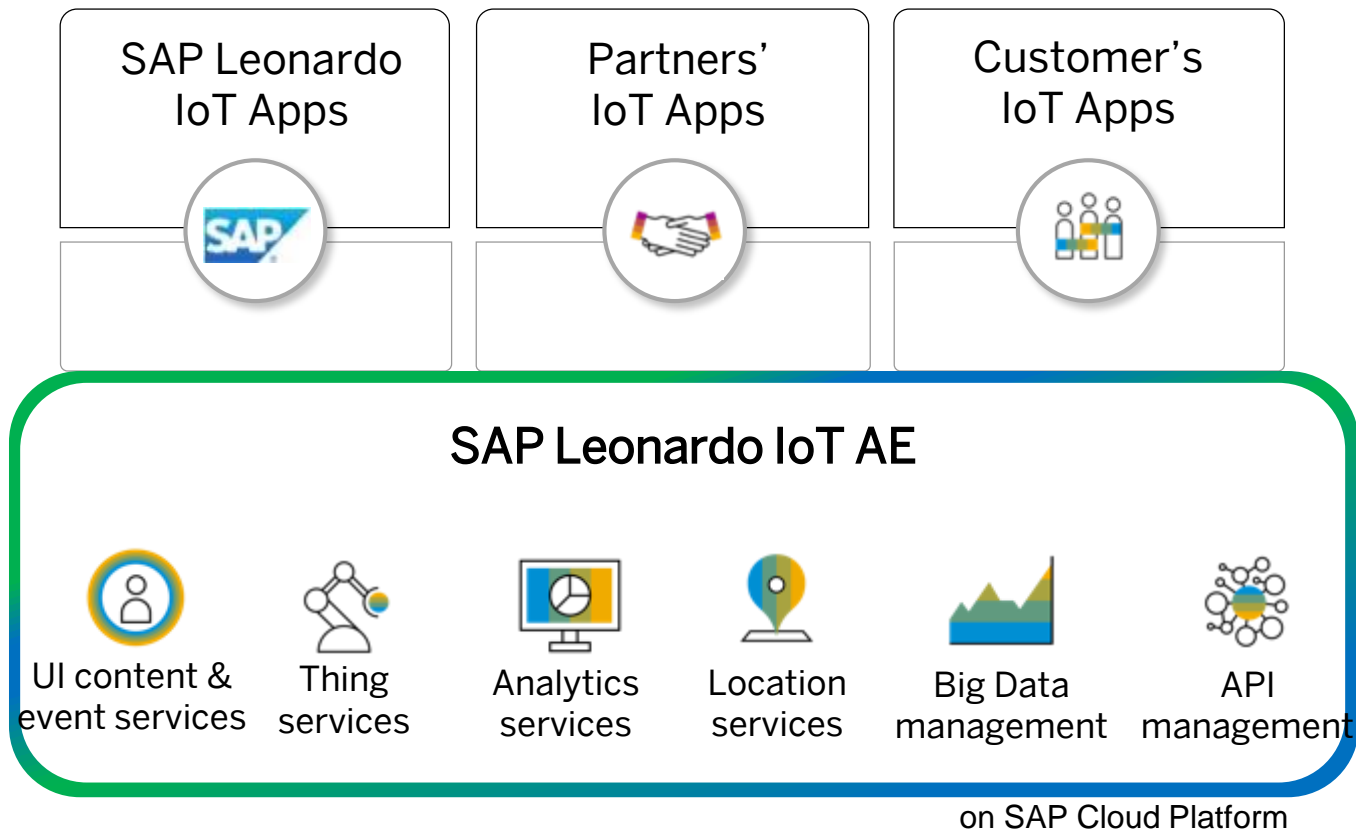
SAP IoT AE

Solution Architecture Overview



SAP Leonardo IoT AE enables an App-Economy for IoT

like iOS and Android in the mobile space



Develop, Deploy and use apps from various sources on the same data and same semantic structure



Integration layer across different apps

Benefits of SAP Leonardo IoT Foundation

Best-in-class IoT Platform



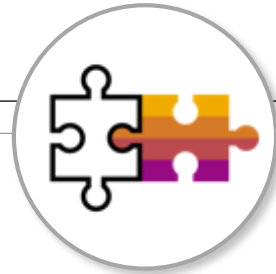
Edge Services

Technical Services

Data Management

Business Services

Integrated with Business Applications

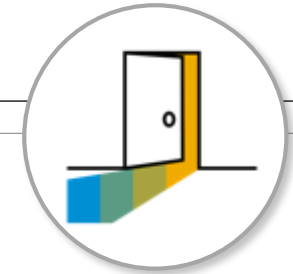


Automate business processes

Enable new business models

Improve customer interaction

Open Ecosystem

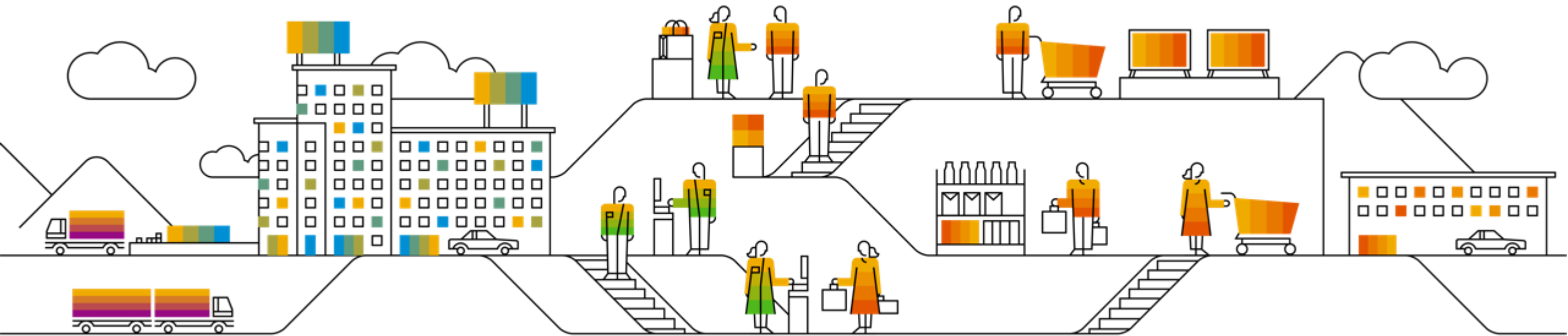


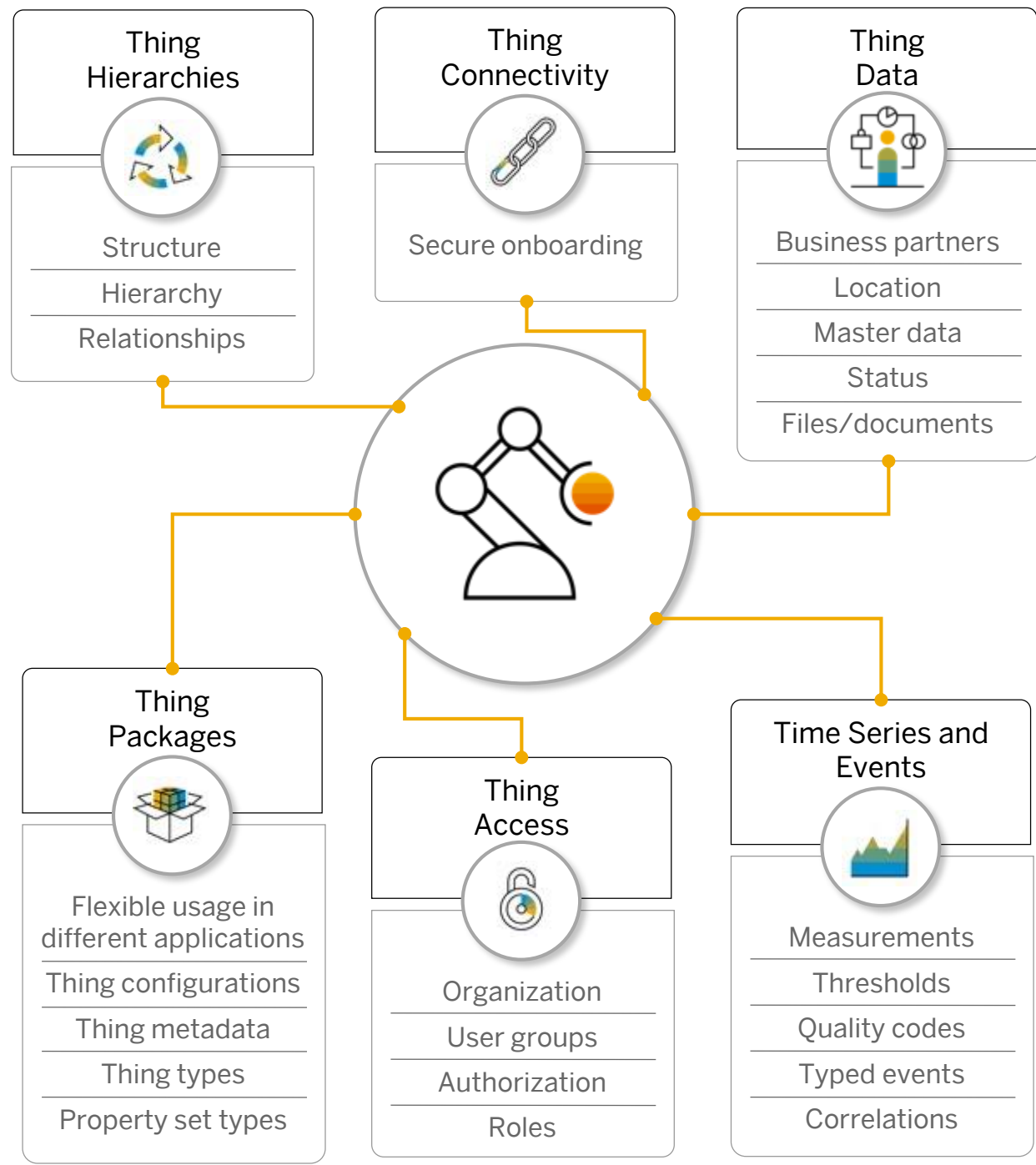
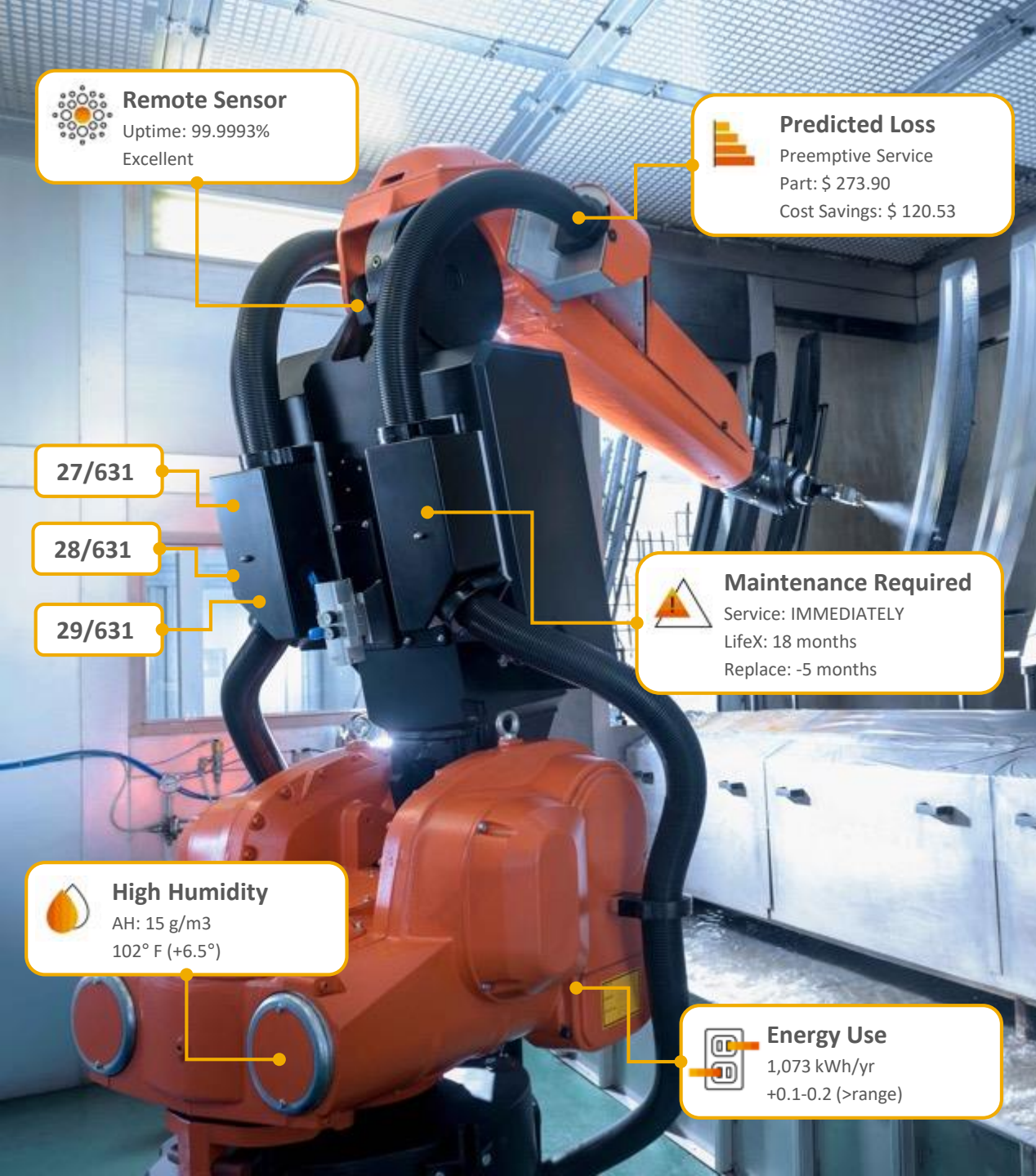
Multiple deployment options on different datacenters

Partner developed apps

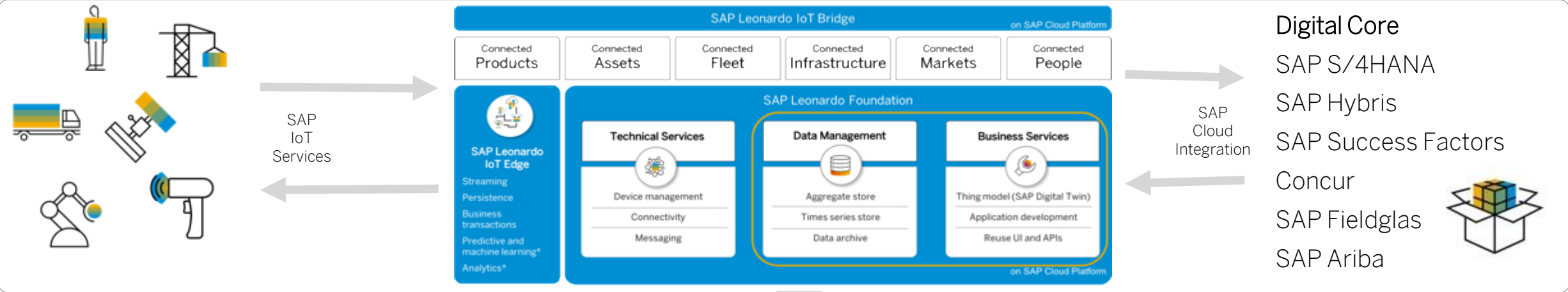
Build your own ecosystem

Use Cases





Integrated Business Applications



Digital Business Processes

- Analytics
- Automatic replenishment
- Predictive maintenance
- Asset optimization



Digital Customer Engagement

- Purchase recommendation
- Pay for Health Outcome
- Pay as You Drive

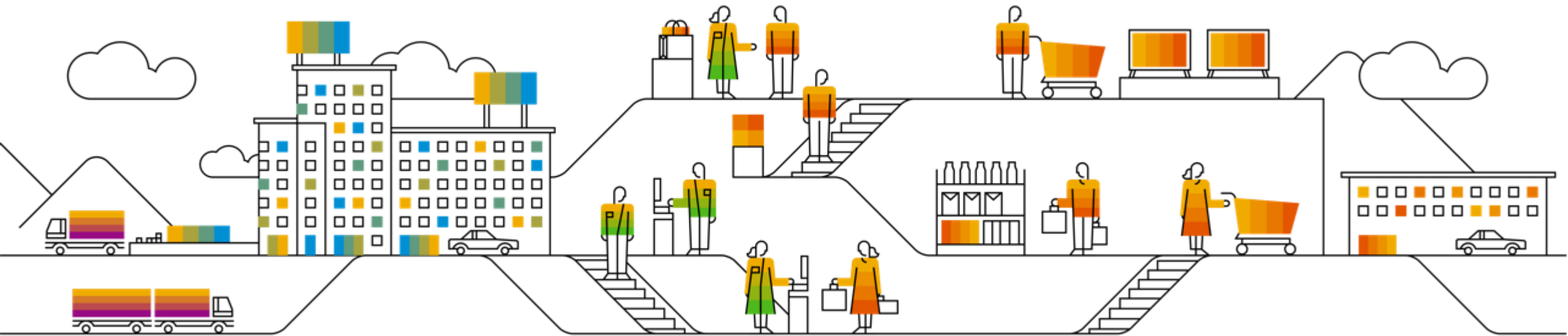


Digital Products

- Condition monitoring as a service
- Assets as service
- Tele-coaching

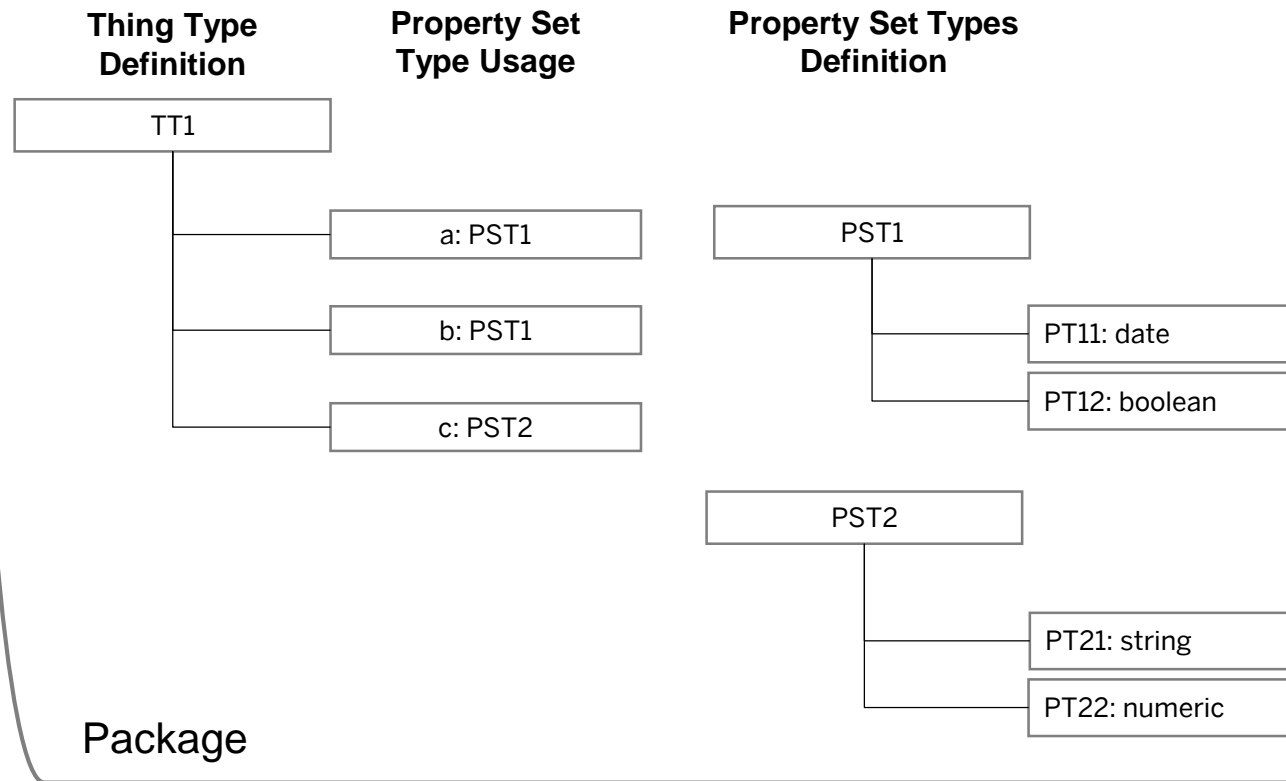


Thing Model

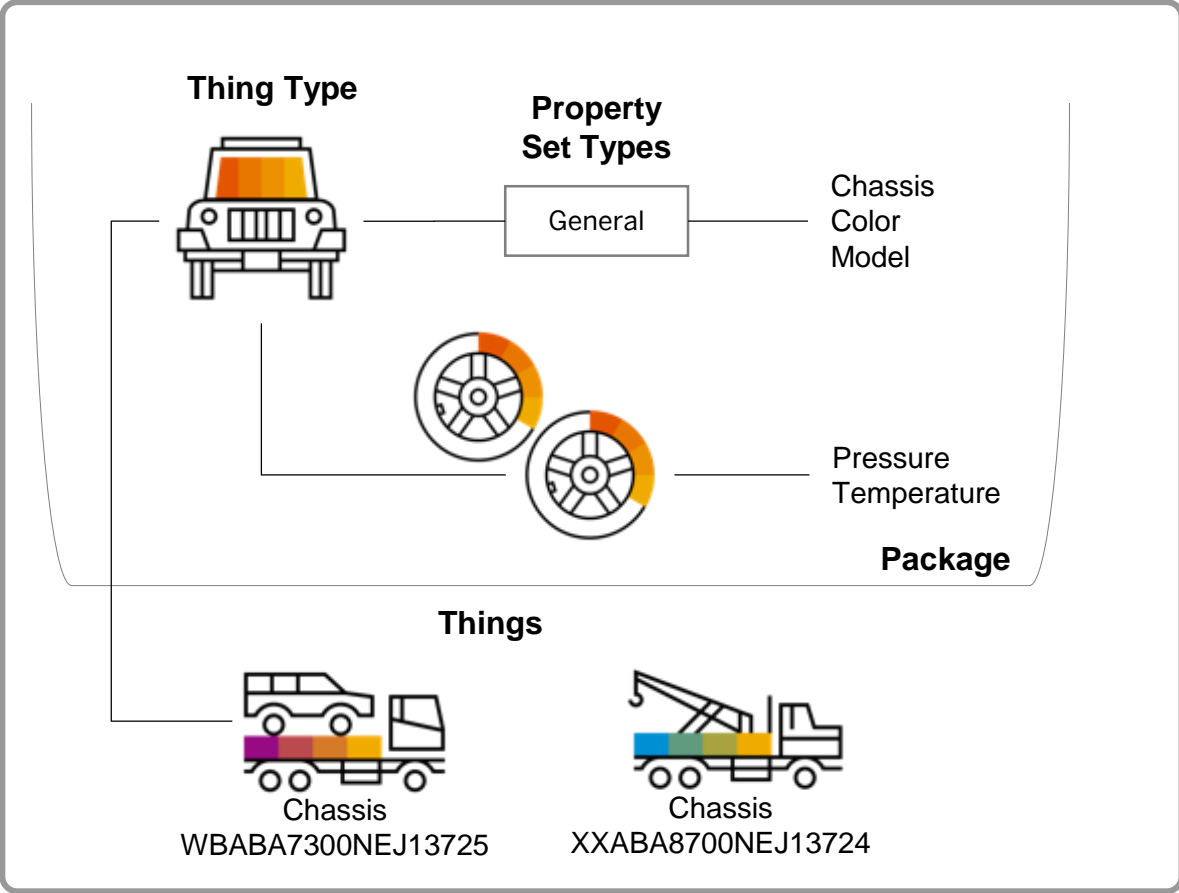


Modelling steps with an example

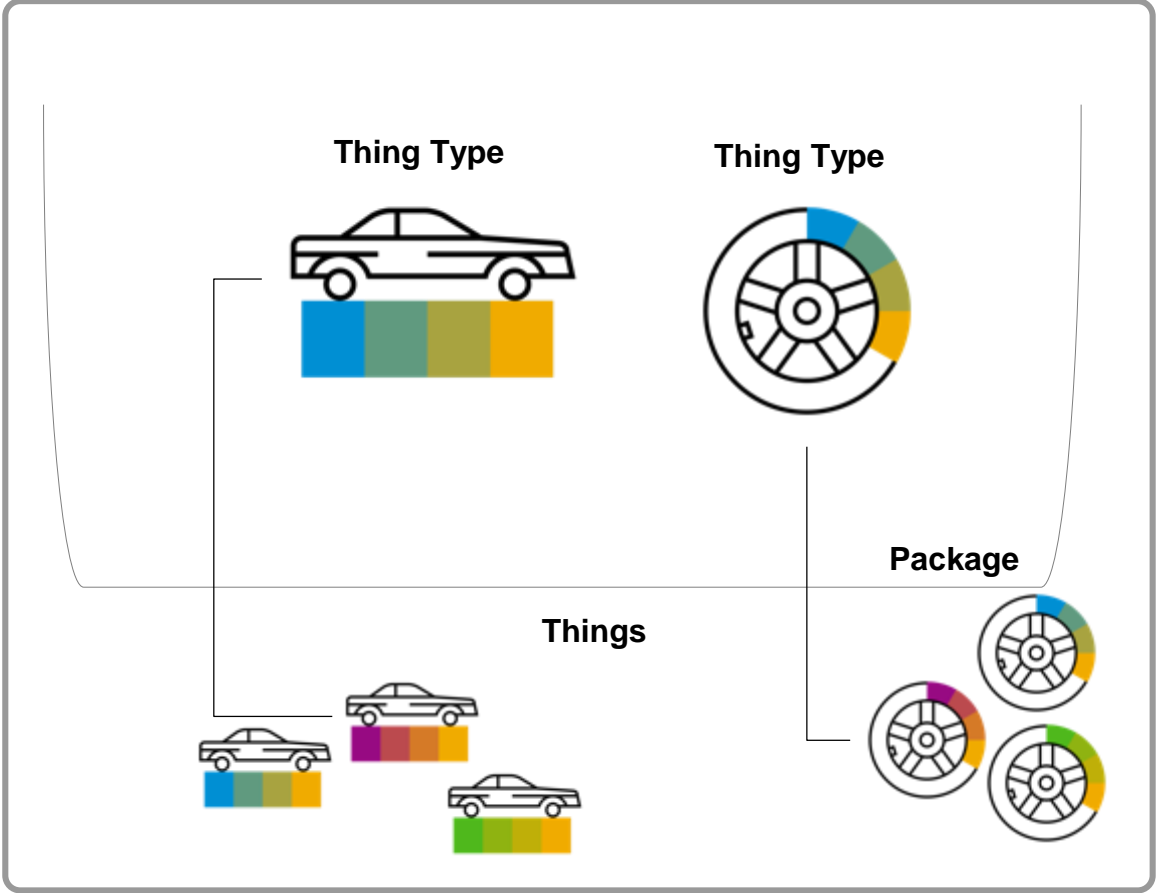
Package Definition



Example for different modeling options



Things returns all instances of tow trucks



Things returns all instances of cars and tires

Fine grained authorizations

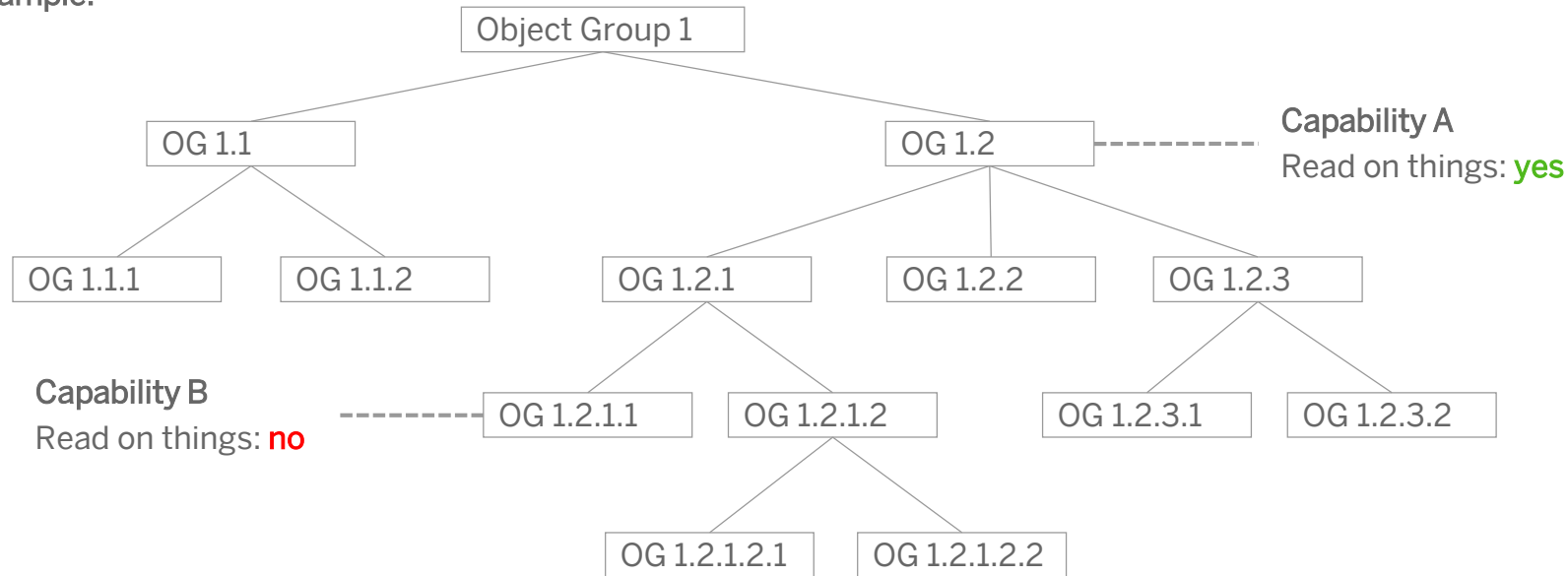
One root object group in a tenant

All object groups of a tenant in a hierarchy

All sub-object groups inherit authorizations

Cross-tenant instance sharing

Example:



Secure Data Access

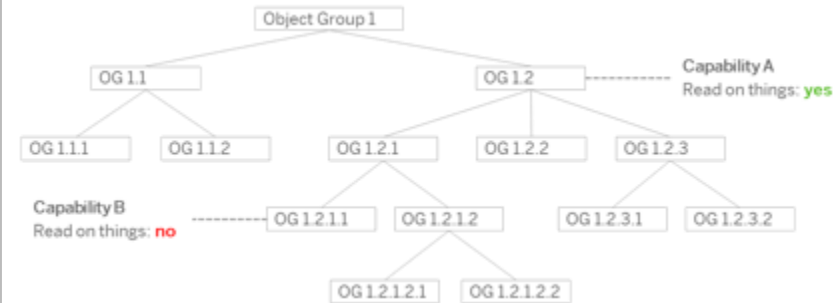
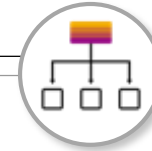
Functional and object-instance authorization

Functional Authorization



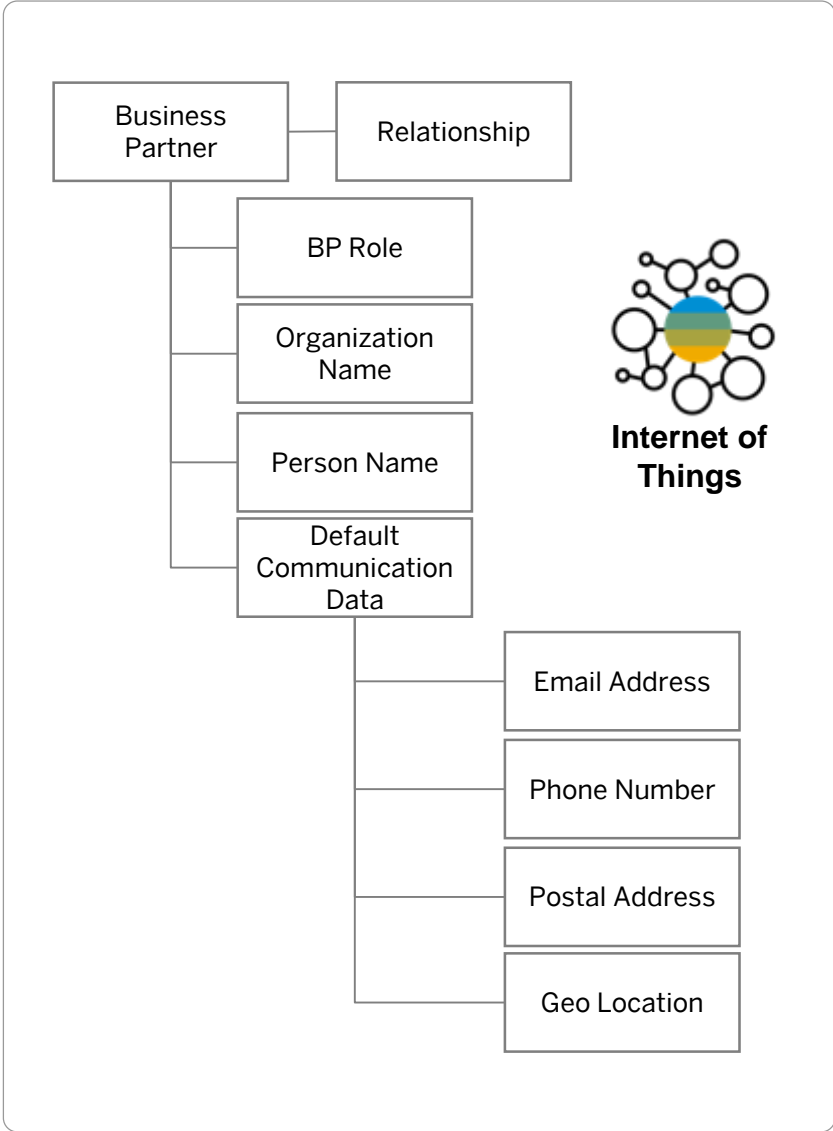
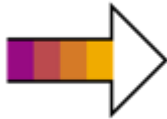
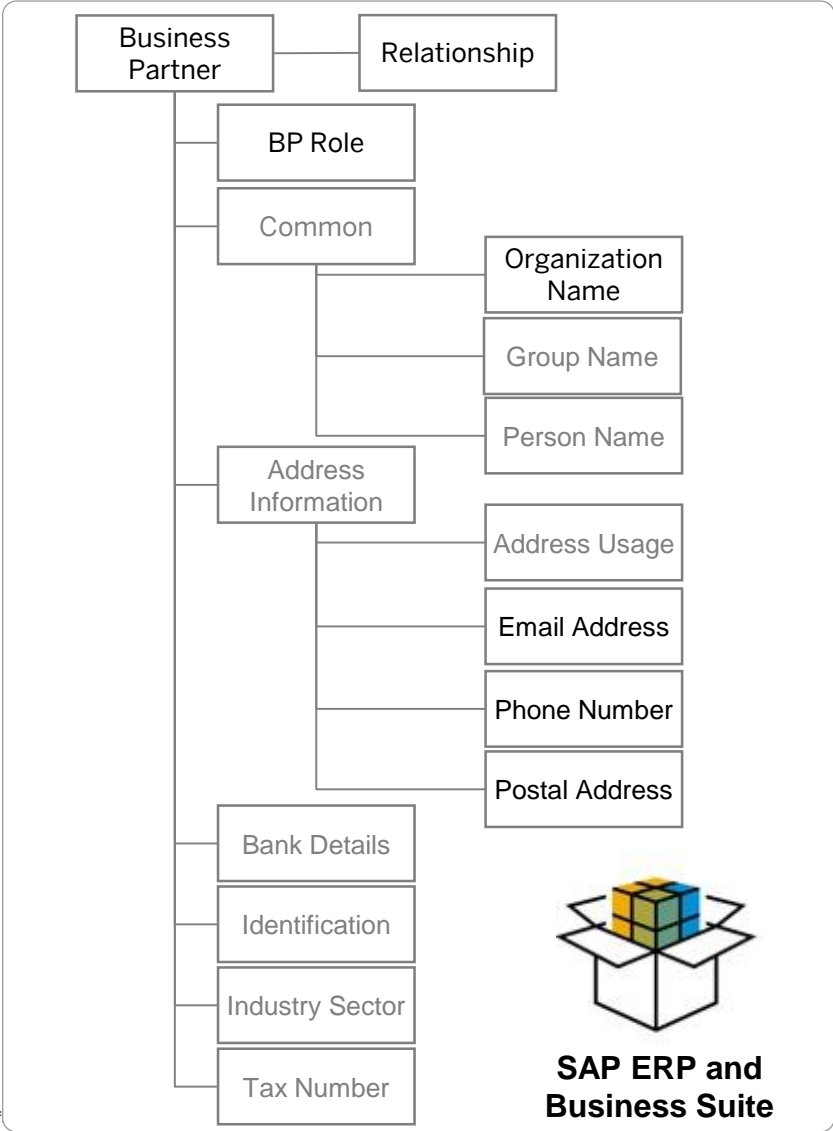
Assigned User Group
Assigned Role Collection

Object-Instance Authorization

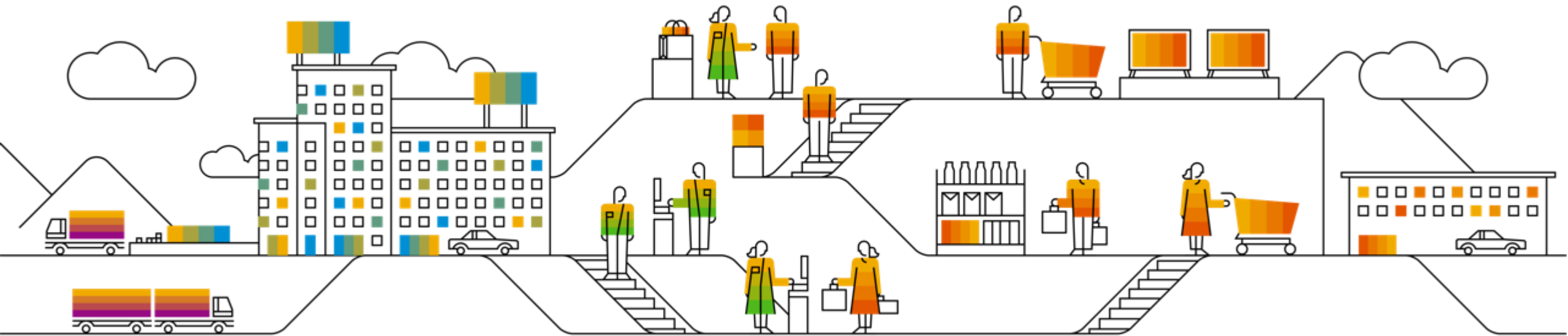


Business Partner Model

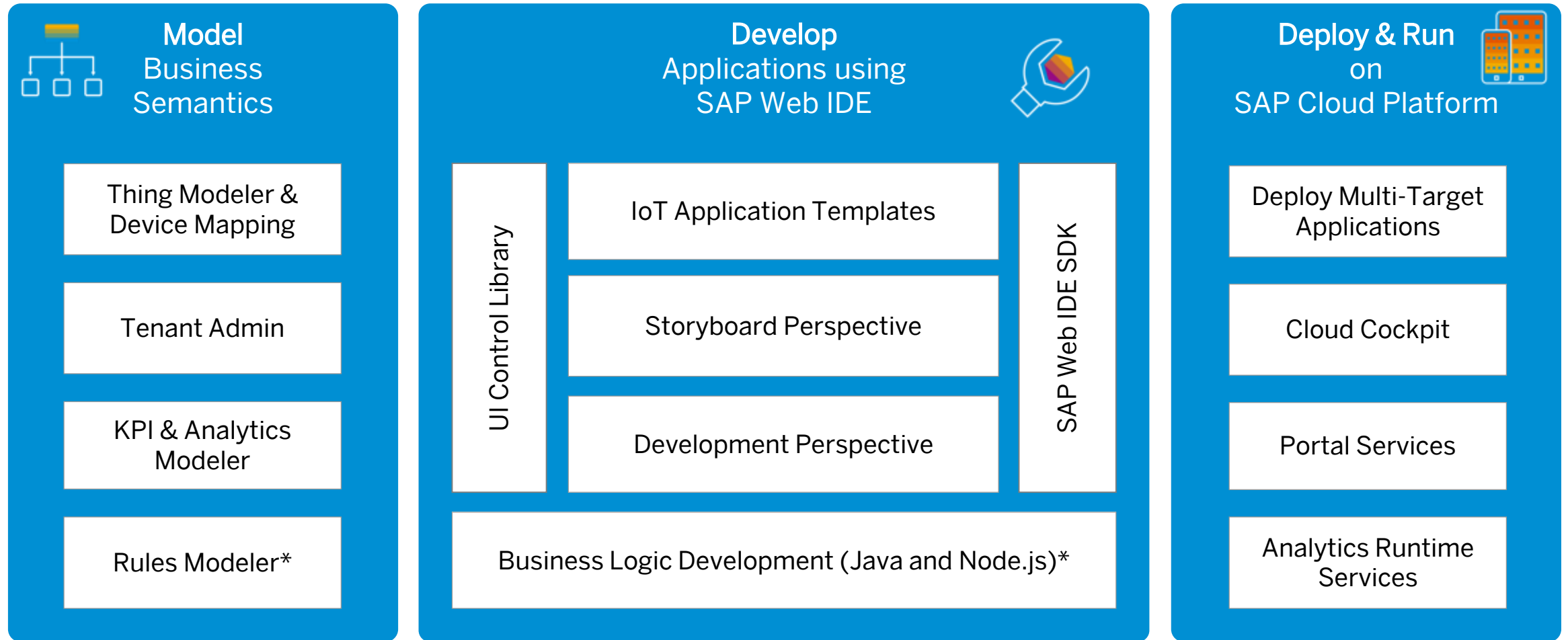
Master Data Governance versus IoT



Developer Experience



Developer Experience



SAP Web IDE

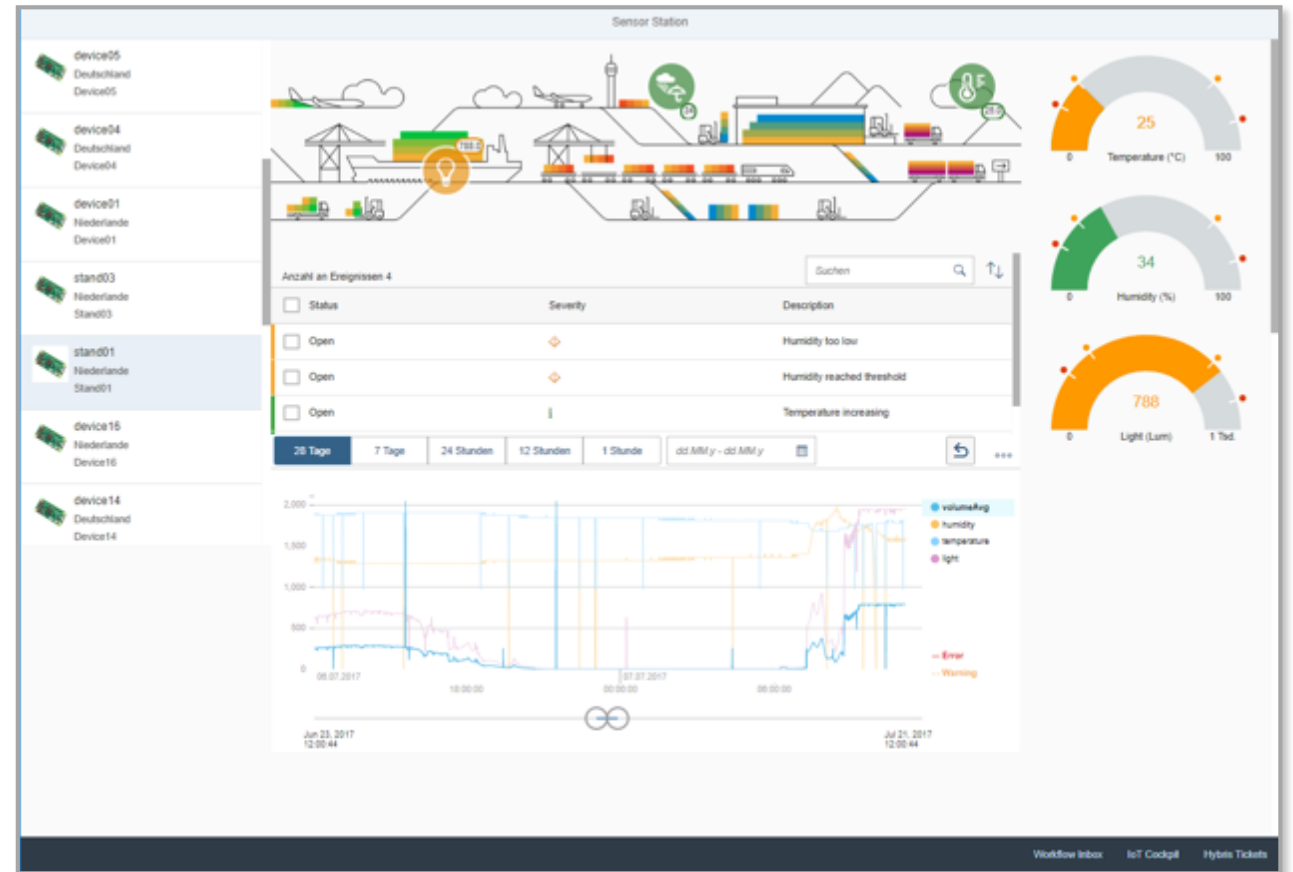
For full-stack multi-cloud application development

Rapid app development by professional developers (high control)

Supports SAP technologies (Fiori, IoT, big data, HANA, CDS, OData, ...) and open-source (JS, Node.js, Java)

Full-stack (database to UI) design, development and deployment

Zero administration cloud-based tools

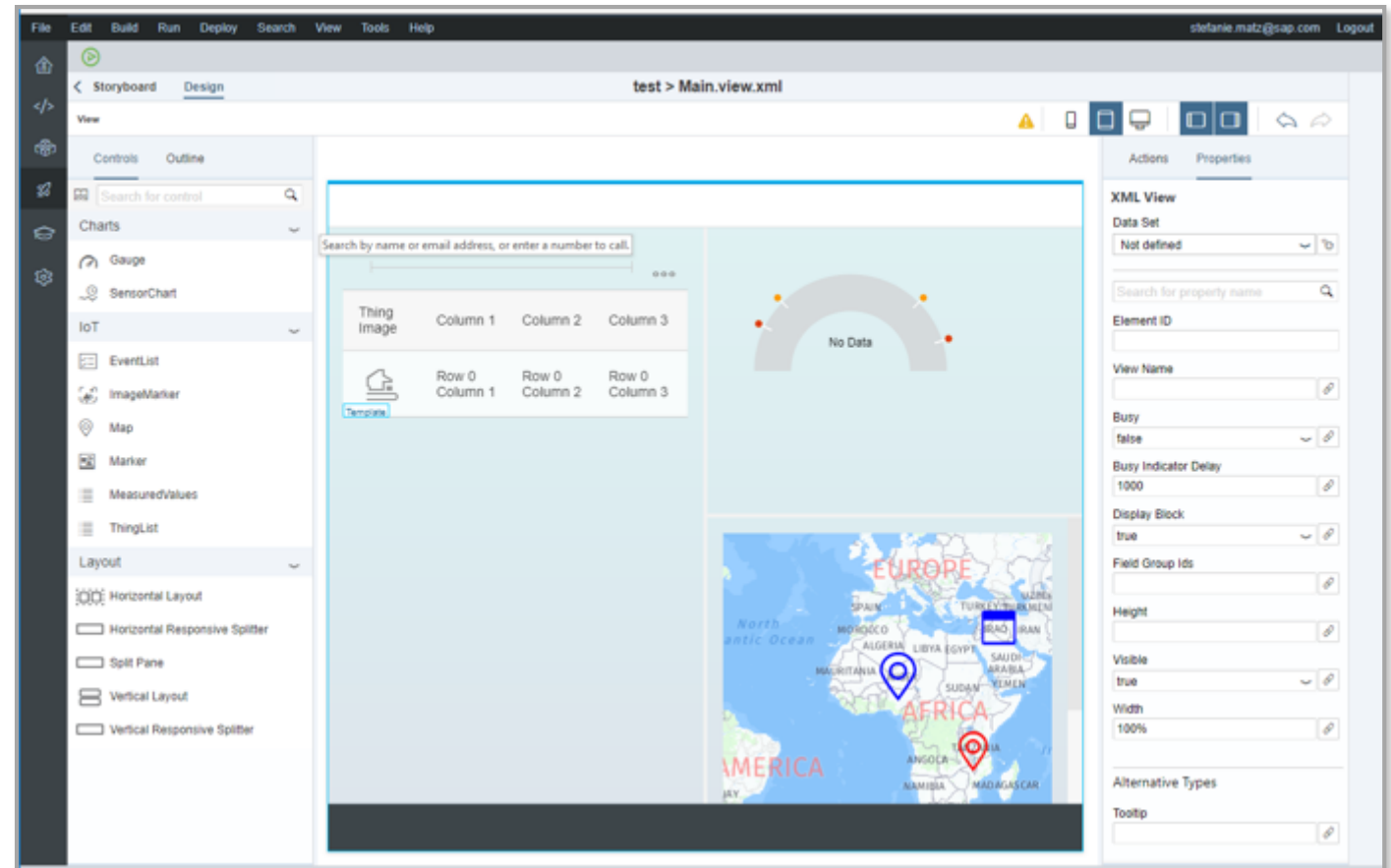


Code free application development

Storyboards for rapid development

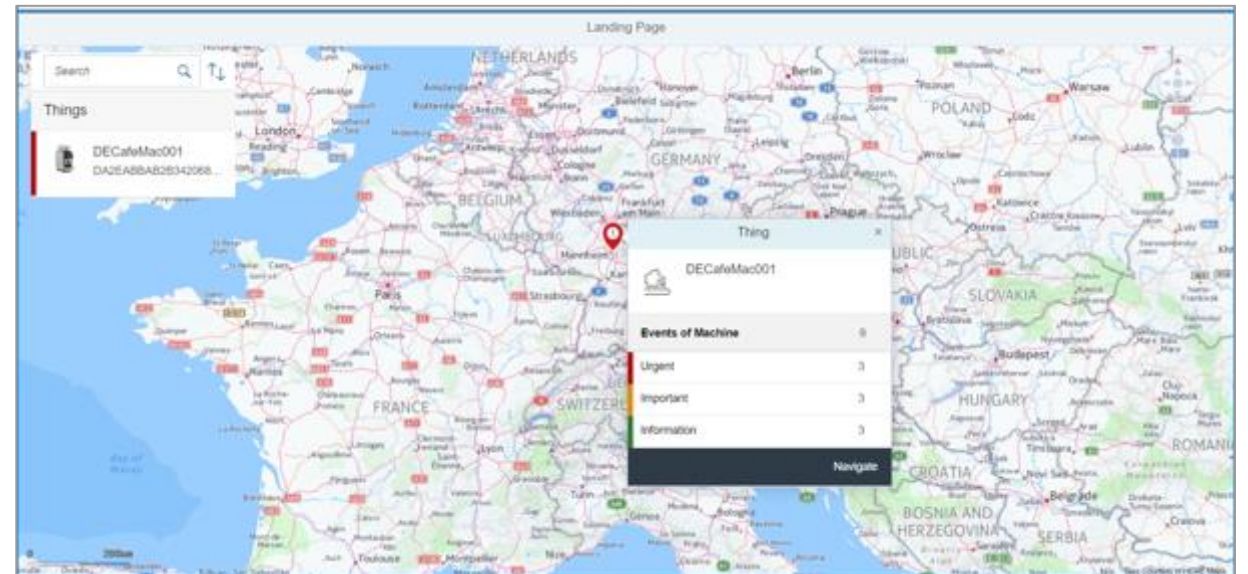
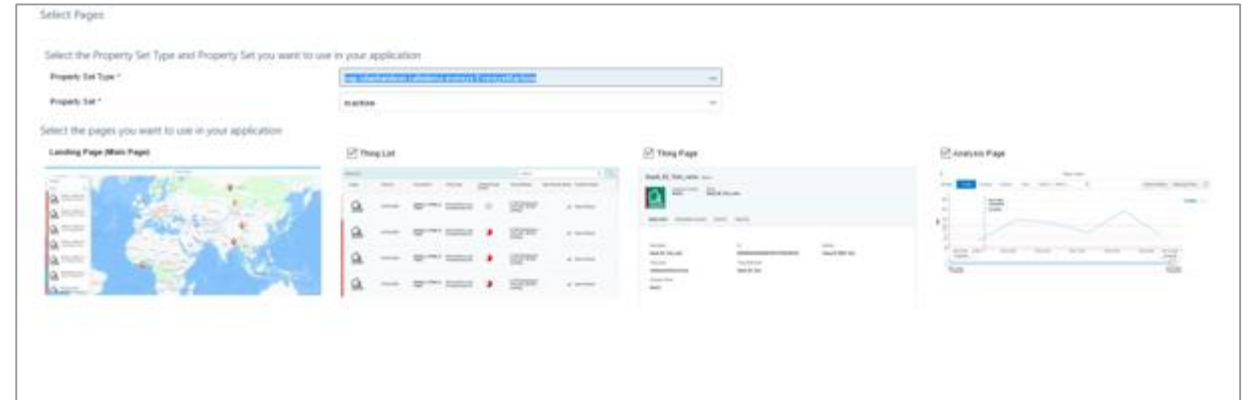
A new Rapid Development Perspective in the SAP Web IDE

- Freely definable page layout with horizontal and vertical sections
- Drag & Drop of Smart Controls with WYSIWYG capabilities
- UI control library for IoT including geo maps, thing lists, thing card, event lists, sensor charts and embedded analytics
- Data binding easily configured via a dialog
- Interaction configuration for events and actions via a dialog
- Live connection to data and live preview
- Deploy multi-target-applications on SAP Cloud Platform as Cloud Foundry App



IoT Application Template

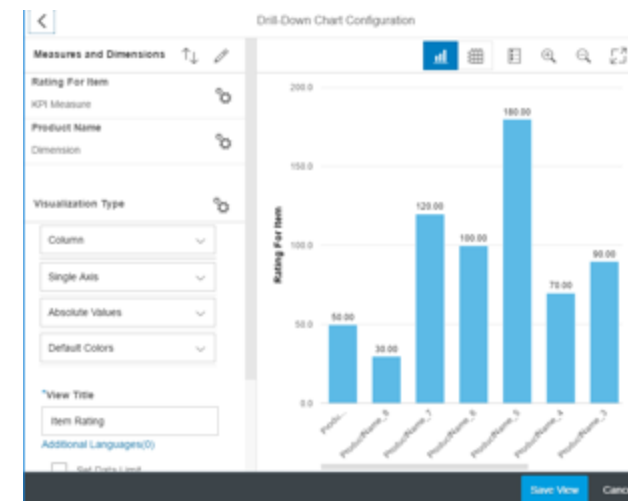
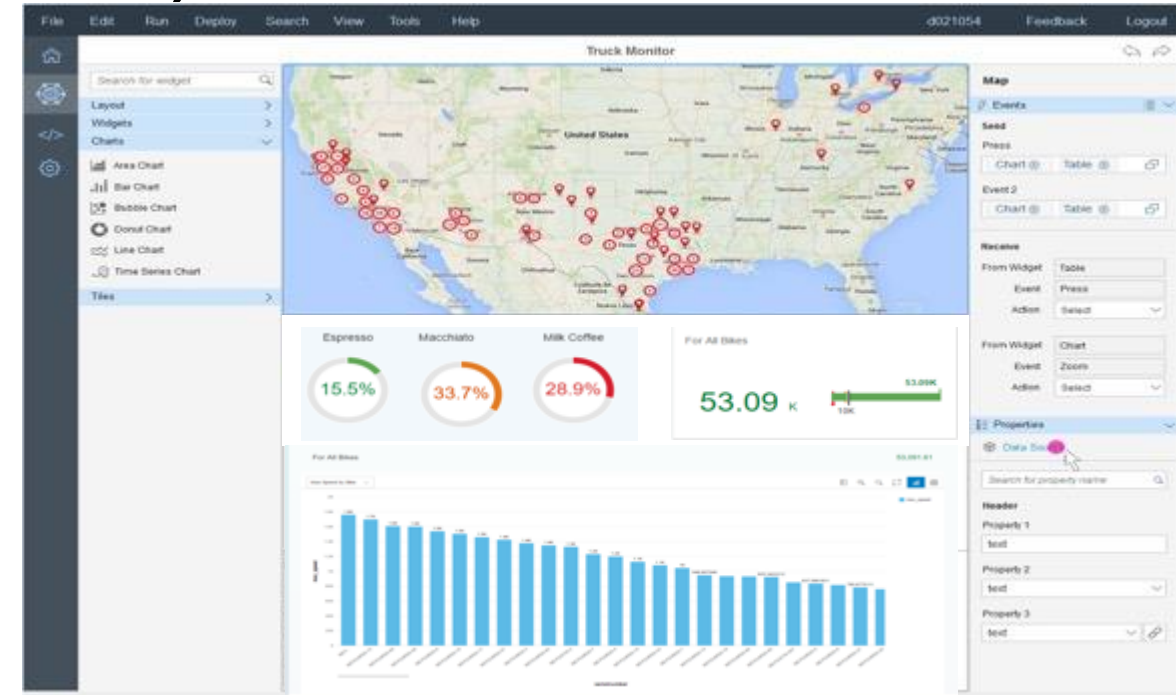
- **Wizard-based** approach for creating customized basic IoT applications
- **Code-free app** development with a zero learning curve
- Simple way to connect to the SAP backend services from IoT Application Enablement
- Template uses a **standard UI control library for IoT** including geo maps, thing lists, thing card, event lists, sensor charts and embedded analytics
- Live connection to data and **live preview**
- Generated app can be directly **deployed** or **customized** with UI controls in the UI5 development editor



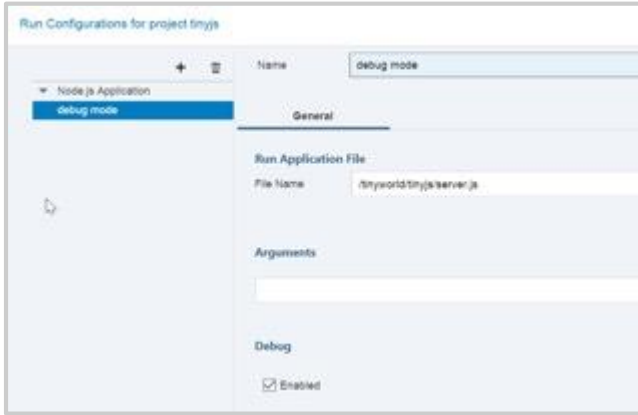
Embedded Analytics Controls (Smart Business)

Include embedded analytics controls in your application as KPI visualization or charts by drag & drop

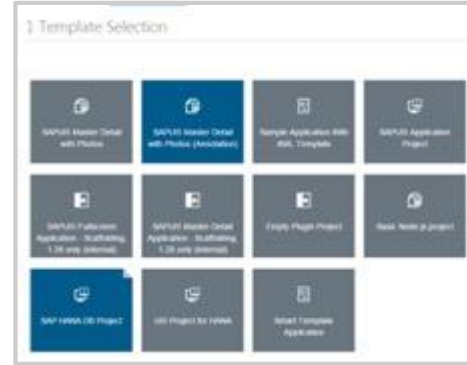
- Analytics Modeler Apps allow simply creation of analytical content for thing model time series data aggregations
- KPIs Tiles with a rich selection of different visualizations
 - Numeric Tile
 - Deviation Tile
 - Comparison Tile
 - Harvey Ball Tile
 - Donut Tile
 - ...
- KPI Chart as detailed drill down on measures and dimensions with multiple chart types
 - Bar
 - Column
 - Heat Map
 - Line
 - Geo Map
 - ...



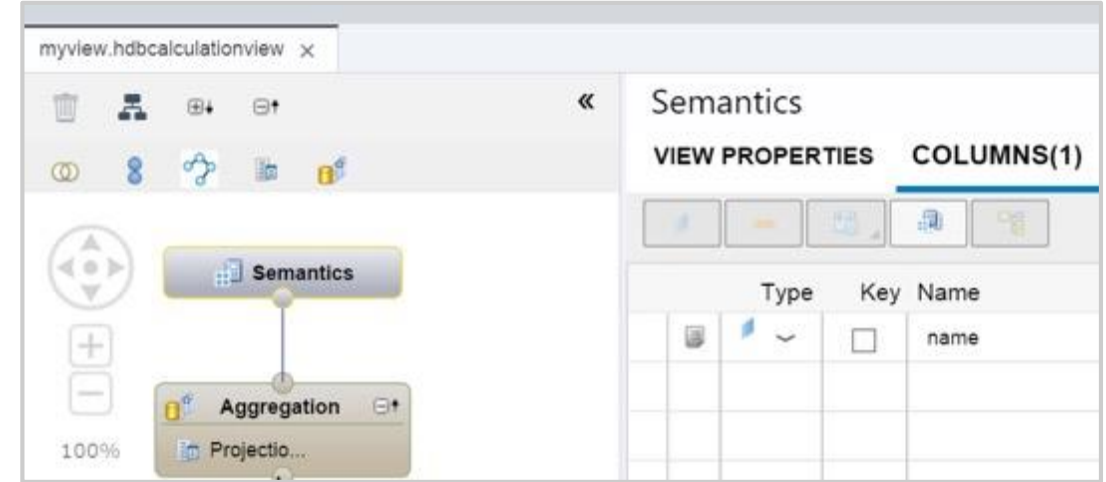
Make Your IoT Application Intelligent



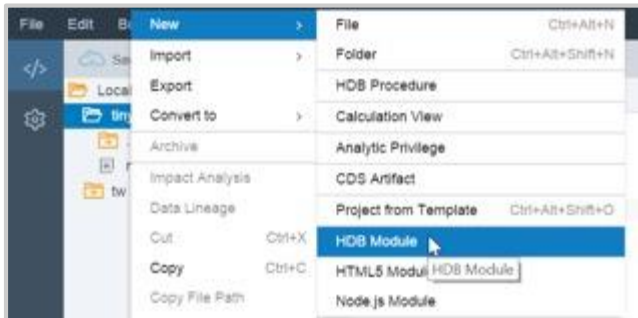
Configurations



Templates and wizards



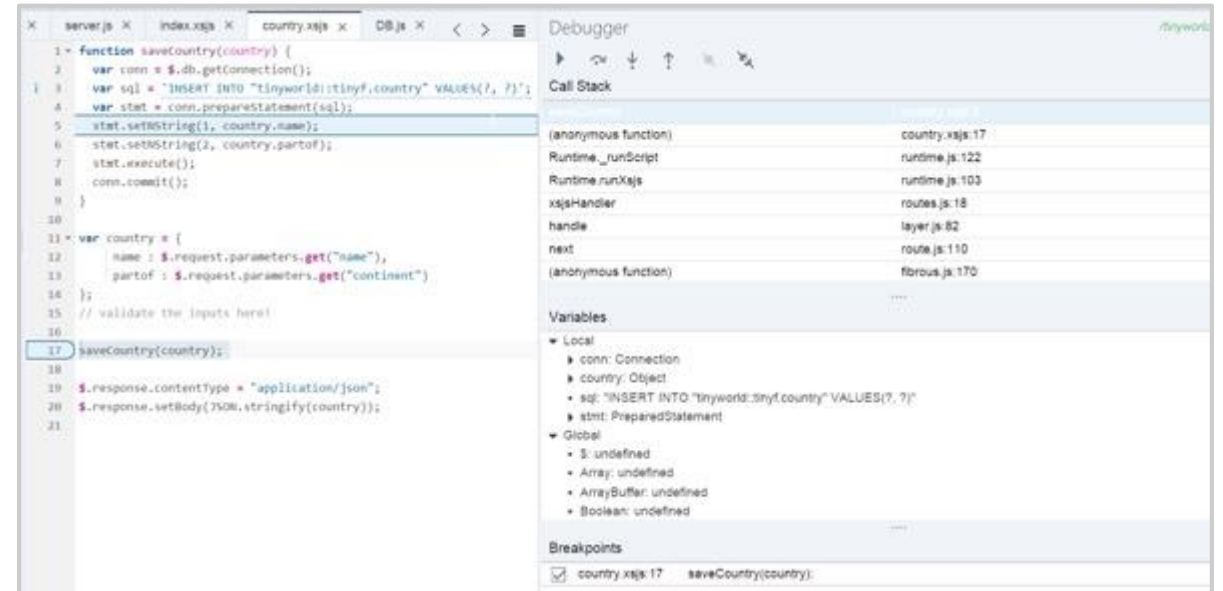
Visual tooling and WYSIWYG



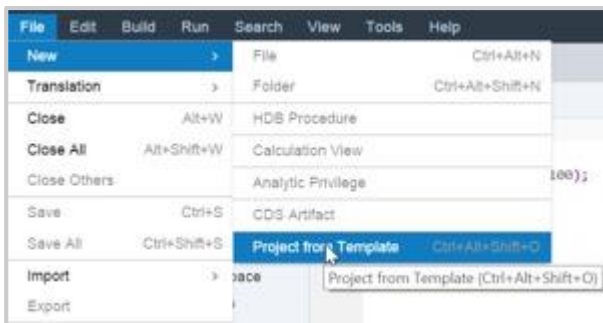
Extensible language support



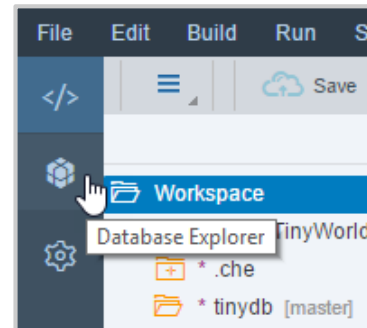
Git control and integration



Text editor and debugger



Project generators



Perspectives

Videos of the Rapid Deployment Perspective

Showing all functions and features

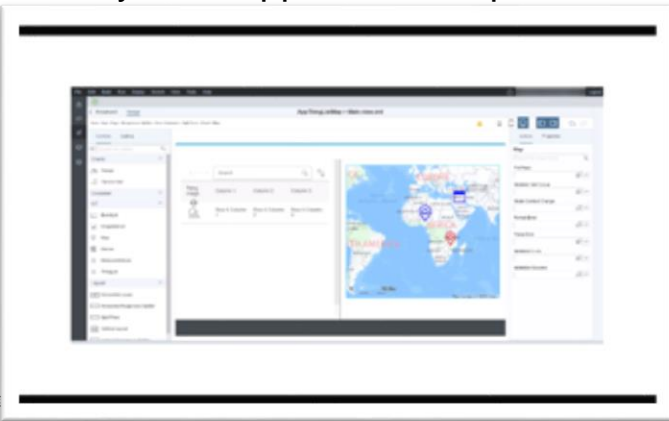


Overview on the Rapid Deployment Perspective [Link](#)



Part 1 – How to start building an IoT Application with the new Freestyle IoT Application template [Link](#)

Part 2 – How to build an IoT Application with the new Freestyle IoT Application template [Link](#)



Embedded Analytics

How can I use embedded analytics with the SAP Leonardo IoT Platform? [Link](#)

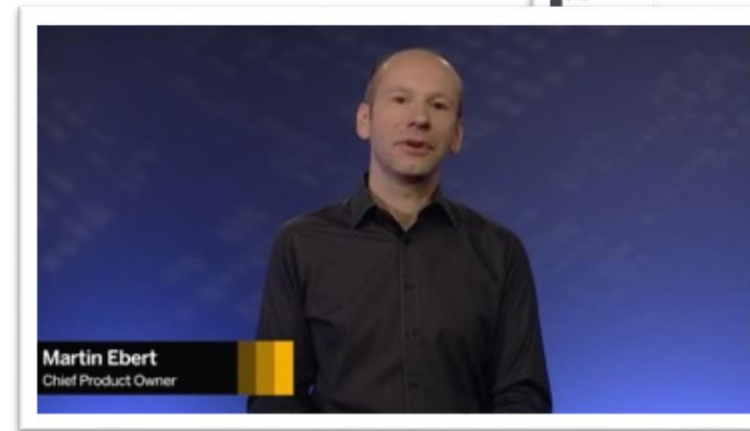
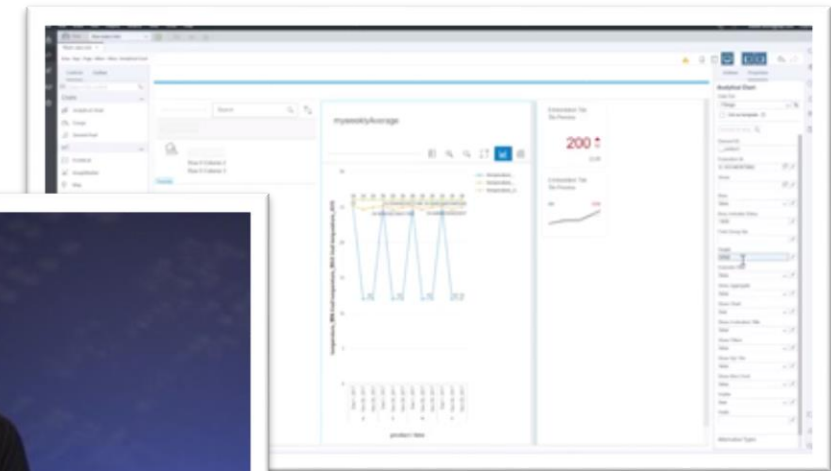
What are the prerequisites for using embedded analytics within my IoT application? [Link](#)

How do I model my “thing” for embedded analytics? [Link](#)

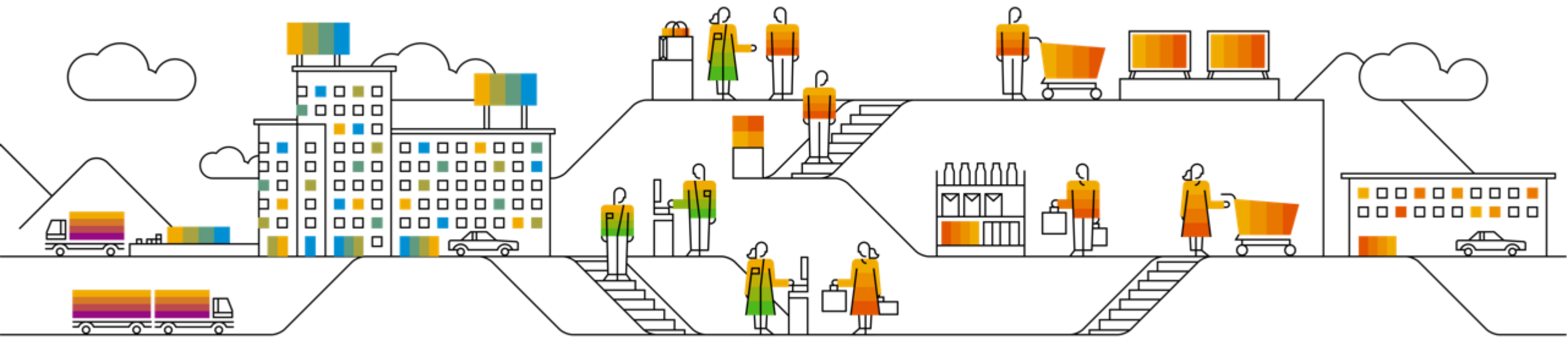
How do I define an evaluation to select data for my embedded analytics? [Link](#)

How can I configure analytical visualization with a WYSIWYG editor? [Link](#)

How do I rapidly build IoT applications with embedded analytics in the SAP Web IDE? [Link](#)

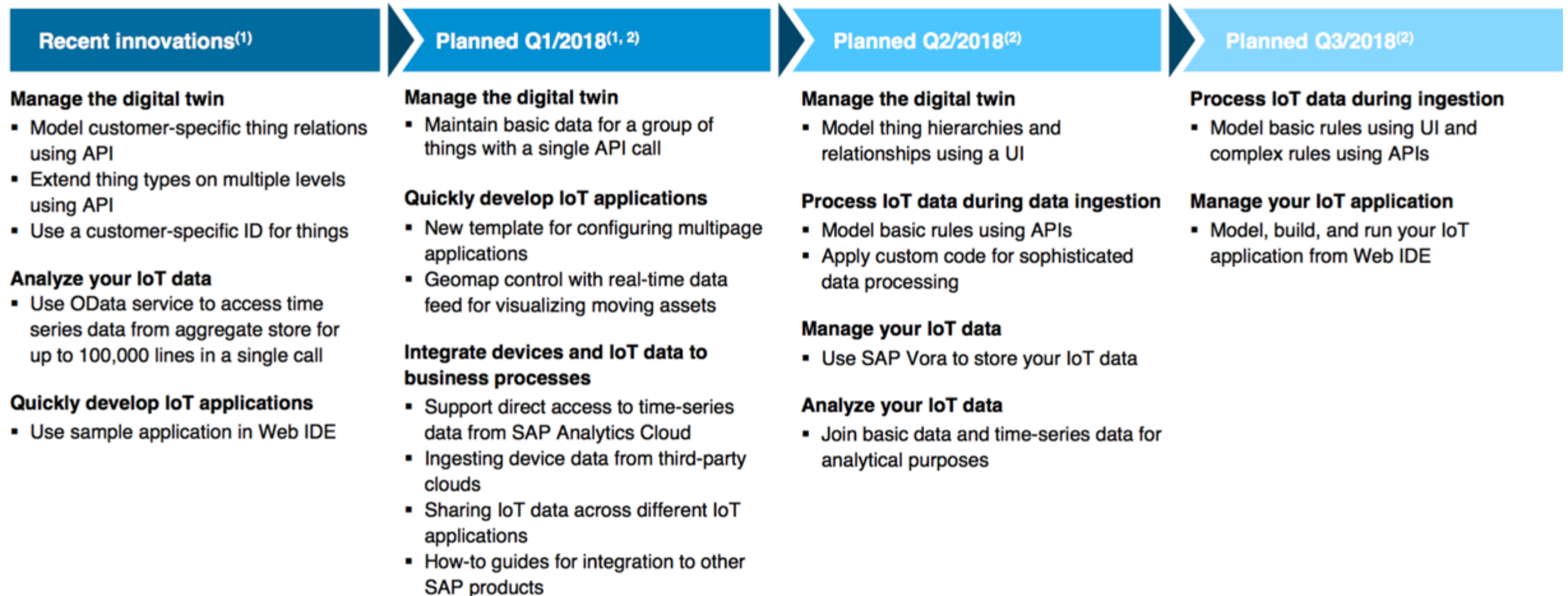


Roadmap



SAP IoT Application Enablement

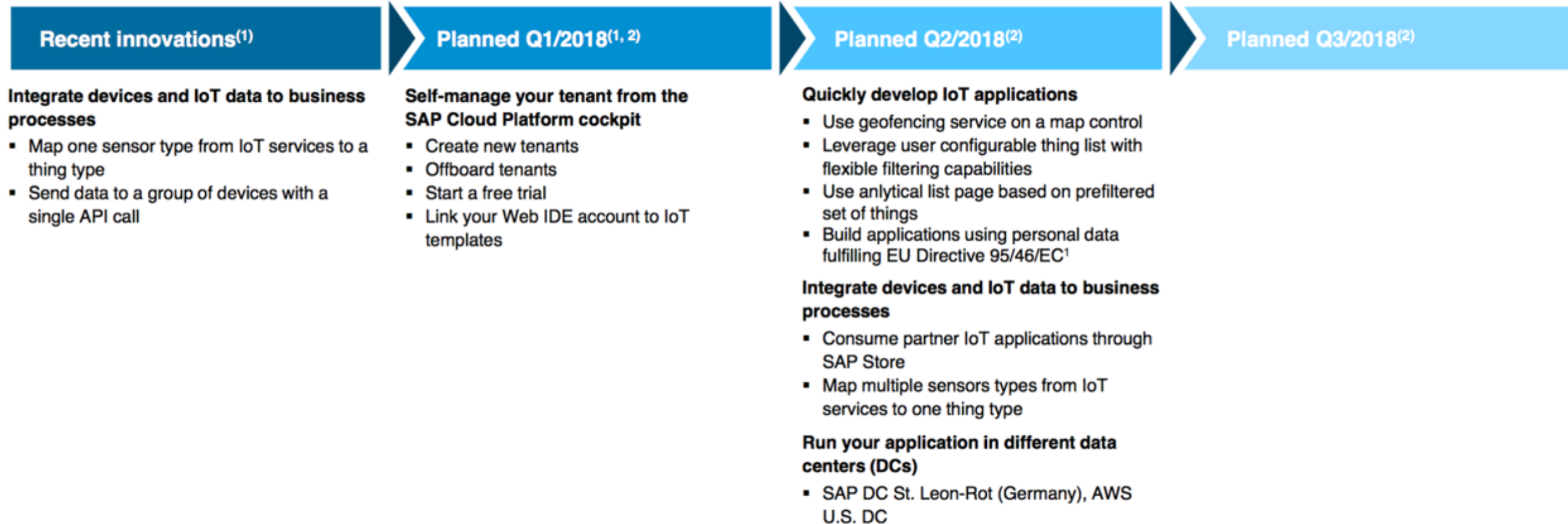
Product road map overview – key themes and capabilities (1/2)



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.

SAP IoT Application Enablement

Product road map overview – key themes and capabilities (2/2)



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.

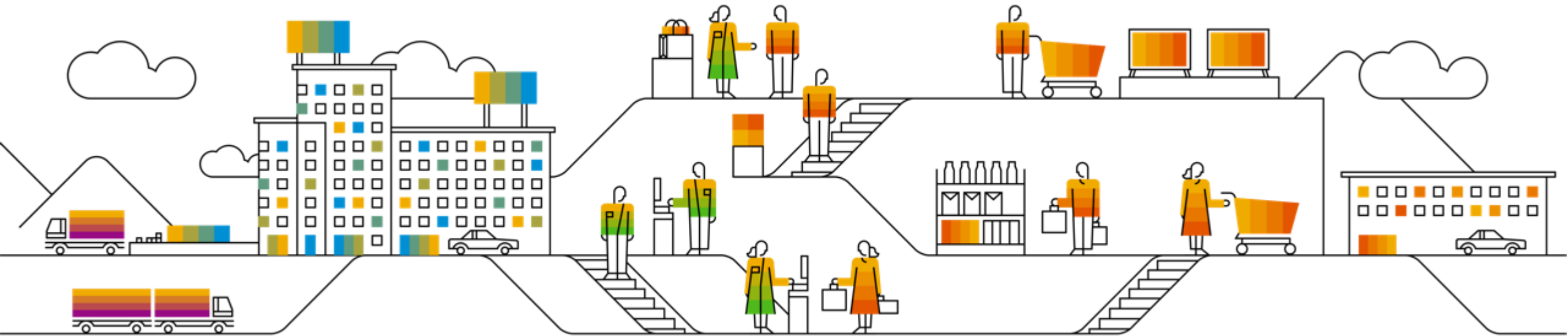
Roadmap

Find information on the IoT Roadmap

Details on SAP IoT Application Enablement



Customer References





Customer

Hilti is the leading company in designing leading-edge technology, software and services, which power the professional construction industry.



Use Case

With SAP Application Enablement HILTI differentiates by offering new digital services to its customers, e.g. give customer access to their tool specific data, like tool location, service details, tool usage, warranty status and repair history. Based on the insights of customers' usage patterns, HILTI was able to subsequently innovate new business models, like offering an integrated tool service request for repair order creation – all that integrated into HILTI's core business systems.



Benefits

Hilti enables their customers to realize real-time transparency on last-known locations of assets. Assets lost or stolen gets minimized by geo-fencing based alerts and notifications.

Based on real-life evidence HILTI is able to improve machine designs.

Continuous revenue streams from new services will be realized.

[How HILTI and SAP are focusing on construction's billion dollar problem](#)

[Leonardo Live Symposium](#)



Official Reference

How HILTI and SAP are focusing on construction's billion dollar problem

Hilti AG develops, manufactures, and markets products for the construction, building maintenance and mining industries, primarily to the professionals users. See how HILTI and SAP are focusing on solving construction's billion dollar problem with the help of SAP Leonardo Internet of Things (IoT) solutions.





Customer

Dormakaba, headquartered in Switzerland, has more than 16,000 employees in over 130 countries. The company is one of the top three players of access control and security solutions on the global market.



Use Case

Poksundo is a new subsidiary of Dormakaba that will create a digital offering for access control and time recording tightly integrated to SAP Success Factors Employee Central. The solution is based on SCP and the SAP Leonardo IoT Foundation. For the future Poksundo is even considering a consumption based 'pay per use' subscription model.



Benefits



Customer will benefit from a best-in-class solution, fully integrated into the HR backend.



Official Reference

[dormaka Group: How can companies digitize Their Security Systems?](#)

Poksundo | Dormakaba

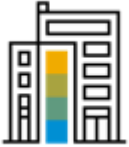
Business Transformation Study

When digitization transforms the market, enterprises may choose to wait and see what happens – or, like dormakaba, they can expand and optimize their portfolios. In collaboration with its daughter company Poksundo and SAP, dormakaba is developing innovative Cloud solutions for access control as well as time and device management.



[Link](#)





Customer

Kaiserwetter is an independent, internationally operating service provider for the management of wind and solar assets of energy companies and investors.



Use Case

Kaiserwetter supports stakeholders allocating their funds and financing capabilities toward renewable energy assets. To do this, Kaiserwetter established the digital platform ARISTOTELES which is based on the SAP Cloud Platform and SAP IoT Application Enablement. Based on this Kaiserwetter combines technical IoT data from wind parks and solar farms, with meteorological and financial data. Based on huge amount of data smart data analytics and predictive analytics capabilities are used to enable investors to sound investment decisions.



Benefits

The digital platform, ARISTOTELES Kaiserwetter helps to achieve the goals of the Paris climate agreement.

ARISTOTELES is designed to support the executive level of investment funds, private equity investors, financing banks, and supranational institutions, managing its renewable energy portfolios with the aim to maximize portfolio performance and to minimize investment risks.

With this Kaiserwetter created the digital infrastructure to unlock capital investing in renewable energies.



Official Reference



[Business Transformation Study](#)
[Video](#)

Kaiserwetter

Business Transformation Study

The possibilities of digitalization should support involved stakeholders allocating their funds and financing capabilities toward renewable energy assets. To do this, Kaiserwetter used the SAP® Leonardo digital innovation system and the SAP IoT Application Enablement toolkit to build its platform.





Customer

ifm is a leading sensor manufacturer with extraordinary quality and reliability and providing unequalled customer service



Use Case

ifm develops new business models by providing new cloud-based services to their customers. In future (go live spring 2018) ifm customers can connect their sensors directly to the cloud for sensor parametrization, firmware update and all kinds of advanced analytics based on the collected sensor data.



Benefits

Today, installation, parametrization and operation of sensor networks requires high amount of working hours onsite. The planned cloud services will reduce the time needed onsite significantly, hence reducing production costs for ifm customers or allow more precise monitoring, leading to improved product quality.



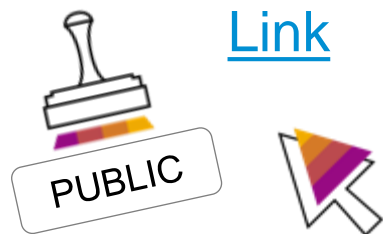
Reference

[Video: The high tech company, ifm develops cloud-based services on SAP Cloud Platform](#)

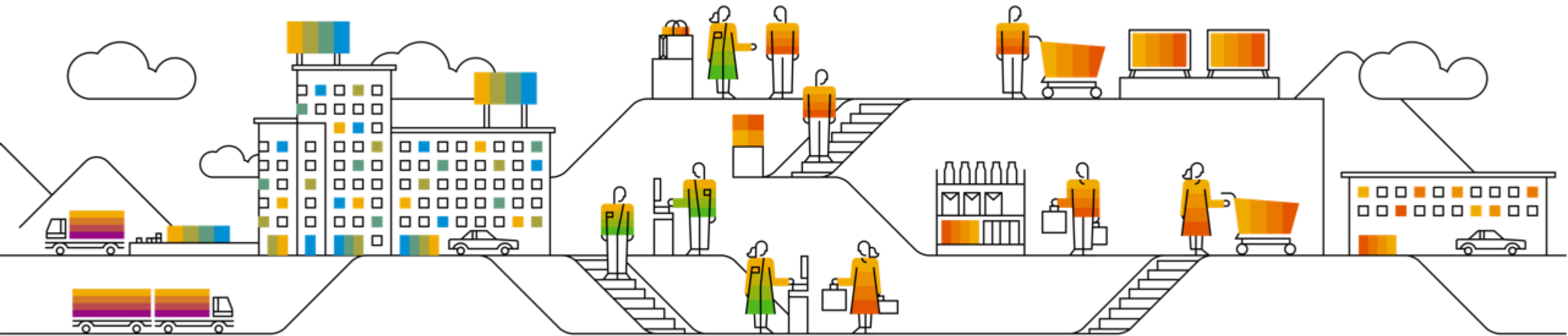


The high tech company, ifm develops cloud-based services on SAP Cloud Platform

ifm develops cloud-based services for improving their portfolio of sensor and gateway technology. See how ifm builds and runs their industry 4.0. projects on SAP Cloud Platform.



Explore More



SAP Enterprise Architecture Explorer

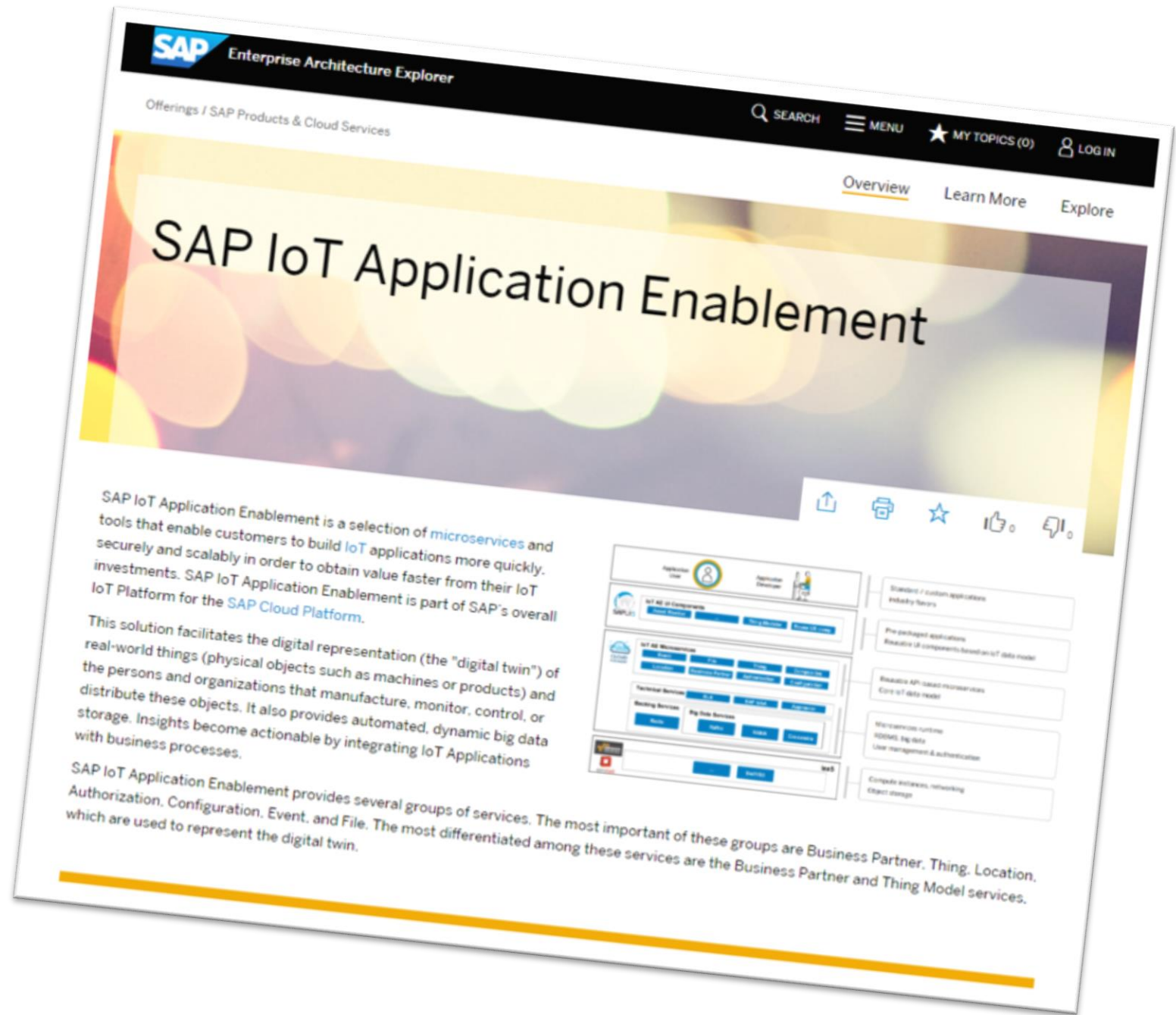
Find information on

- Top Features
- Screenshots and Illustrations
- Top Benefits
- Videos
- Frequently Asked Questions
- Documents
- Links



PUBLIC

[Link](#)



SAP Cloud Platform – IoT Application Enablement

A complete set of microservices designed to build powerful apps and leverage data storage to deliver real-time insights.

- Apps tailored to IoT
- Utilize the Extensible Thing Model
- Generate and manage events
- Securely share data with partners



[Link](#)



IoT Whitepaper

SAP Leonardo Internet of Things: Business Outcomes in a Connected World

The Internet of Things (IoT) is often mentioned as a key enabler of digital transformation. The notion of embedding sensors in machines with connectivity to transmit data has evolved over the past decades. More recently, the costs of sensors and power consumption have dropped, while connectivity has grown ubiquitous and Internet protocols have proliferated. The result is that every “thing” – from industrial equipment to every imaginable consumer product – is now connected and sharing data.



PUBLIC



SAP IoT Application Enablement: In a model-driven approach supported by the SAP IoT Application Enablement toolkit, you can create a digital representation of a physical thing and build IoT applications, and the resulting service manages IoT data. This includes a time-series store, a configurable time-series archive, and an analytics service powered by SAP HANA for aggregates. SAP IoT Application Enablement supports:

- **Thing model:** The semantic and hierarchical thing model allows customers to create a digital representation of a physical thing. The offering comprises:
 - Thing registry, which contains and structures things
 - Thing shadow, which allows you to keep the physical and the digital world in sync
 - Event management, which is used to monitor and control changes in a thing's status as well as manage business partners
 - Thing authorization model, which is used to define business partners and grant role- and instance-specific access to data

- **Rapid application development:** Based on SAP Cloud Platform, templates from SAP Web IDE are provided to create IoT applications. You do this by selecting UI patterns, such as a map, a list of things, a thing info card, and so on, and connecting these UI elements with data sources using the SAP IoT Application Enablement toolkit. Additionally, a code-free development environment is available to let you freely define page layouts, with drag and drop of reusable UI controls, and define a live connection to data and a live preview. The generated code can be modified or enhanced to fit the customer use case. The integration with SAP Fiori* launchpad makes your application easily accessible to users.

- **Manage huge amounts of IoT data:** With SAP IoT Application Enablement, which provides automated, dynamic data tiering within its Big Data infrastructure, customers and partners can manage huge amounts of IoT data. A time-series store is provided as well as a configurable time-series archive.

<<

[Link](#)

>> 29 / 29 >

You Tube Video Series on SAP IoT Application Enablement



[What's the foundation of SAP's IoT Platform?](#) – The value of sensor data across the company and beyond and how SAP allows to uncover it

[How do I model my “Things” with SAP?](#) – Thing modeler, thing hierarchies, packages

[How to find, learn and try SAP's Thing API](#) – Documentation, API Hub, postman

[How to provide the right level of access to sensor data](#) – Functional and instance-based authorization

[The fastest way to build IoT Applications](#) – Web IDE, application builder, layout editor, data binding, linking controls, rapid prototyping

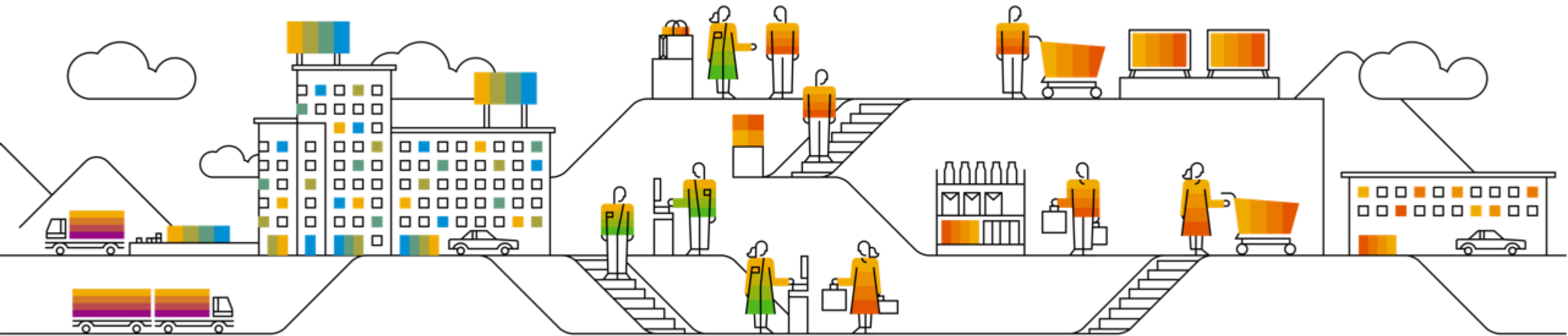
[Behind the Scenes – Big Data for IoT](#) – Hot, warm and cold store, retention period, aggregation levels



[Link](#)



Developer Information



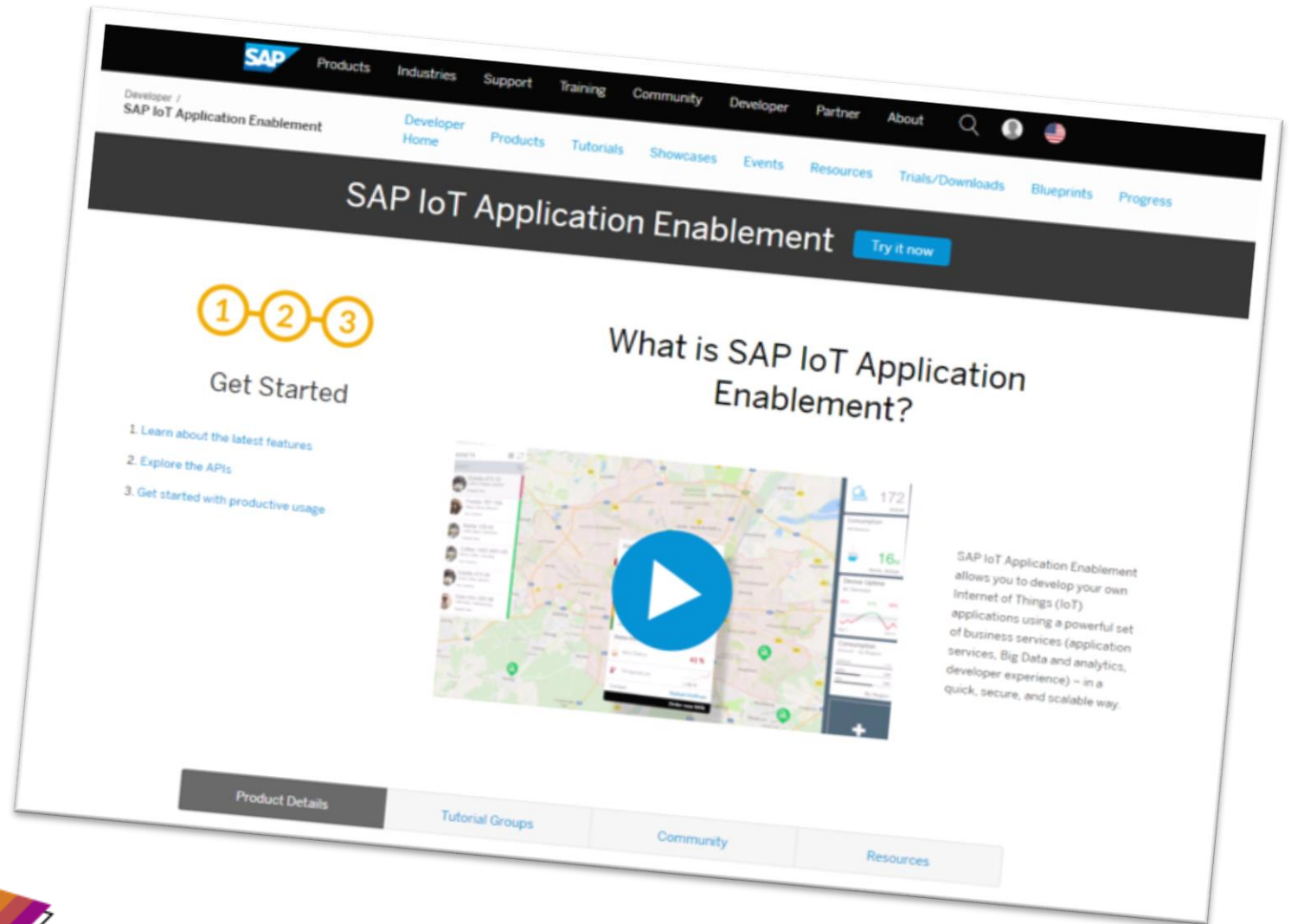
SAP IoT Application Enablement on SAP.com

SAP IoT Application Enablement allows you to develop your own Internet of Things (IoT) applications using a powerful set of business services (application services, Big Data and analytics, developer experience) – in a quick, secure, and scalable way. Get information on

- **Product Details**
- **Tutorial Groups**
- **Community Chats and Blogs**
- **Further resources**



[Link](#)



Free Trial

Build your first application with SAP IoT Application Enablement using your computer as an IoT device

In this tutorial group you will learn how to build your first application with SAP IoT Application Enablement using your computer as an IoT device. You will use Python script on the computer to collect resource usage data and send to SAP Cloud Platform as sensor data.



[Link](#)



SAP

SAP IoT Application Enablement

Free 30-Day Trial!

Access a free, fully functional system of SAP IoT Application Enablement and start developing your IoT application.

- Test-drive a fully functional system of SAP IoT Application Enablement today
- Build apps with templates tailored for IoT
- Organize data with Extensible Thing Model

Register for free!

Office location

First name

Last name

E-mail address

Company

Phone

Relationship to SAP

Contact Us

Opt-In

Would you like to receive additional SAP communications along with

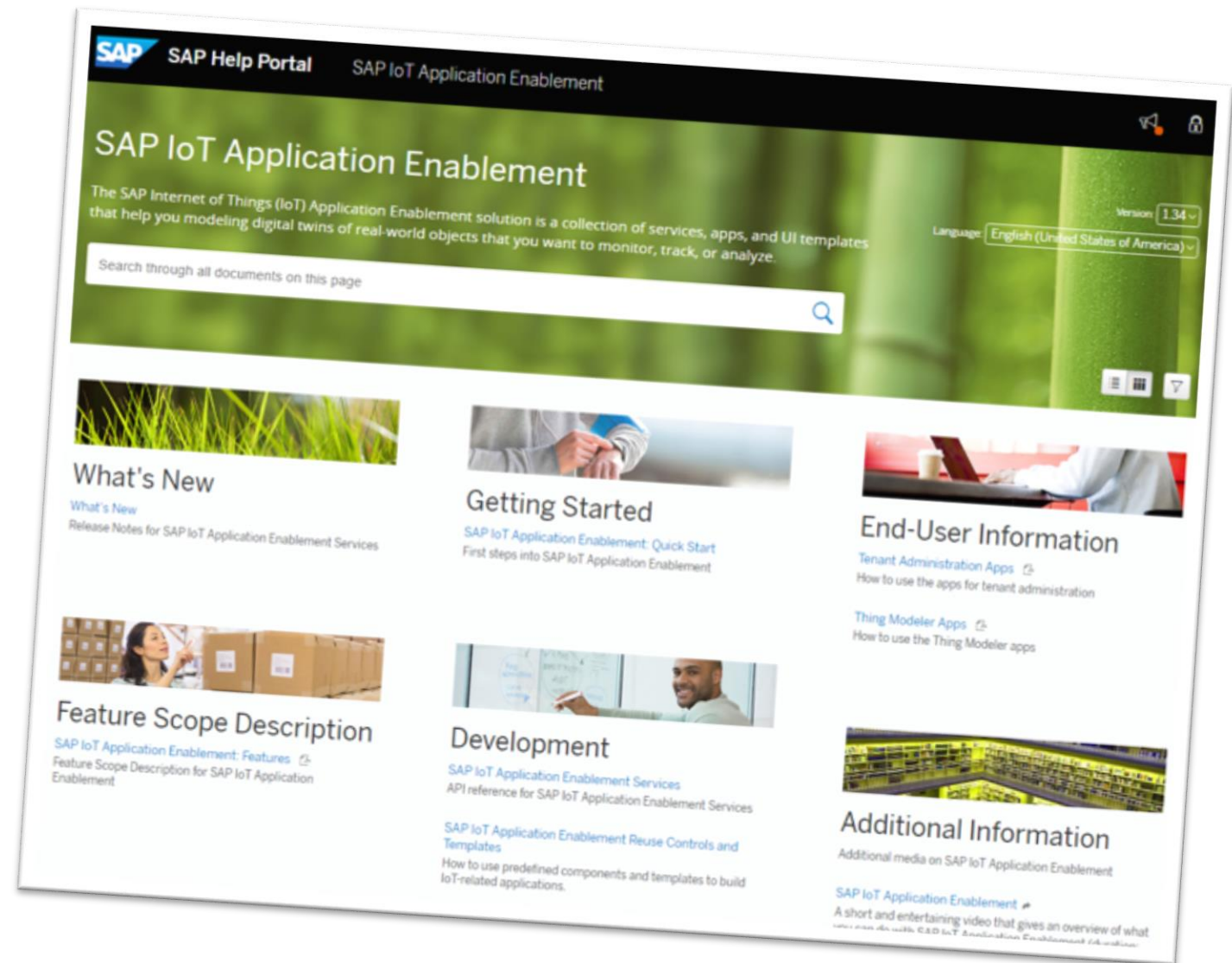
Help Portal

Find in depth information on

- What's new
- How to get started
- Feature scope description
- Development insights
- End user information
- etc.



[Link](#)

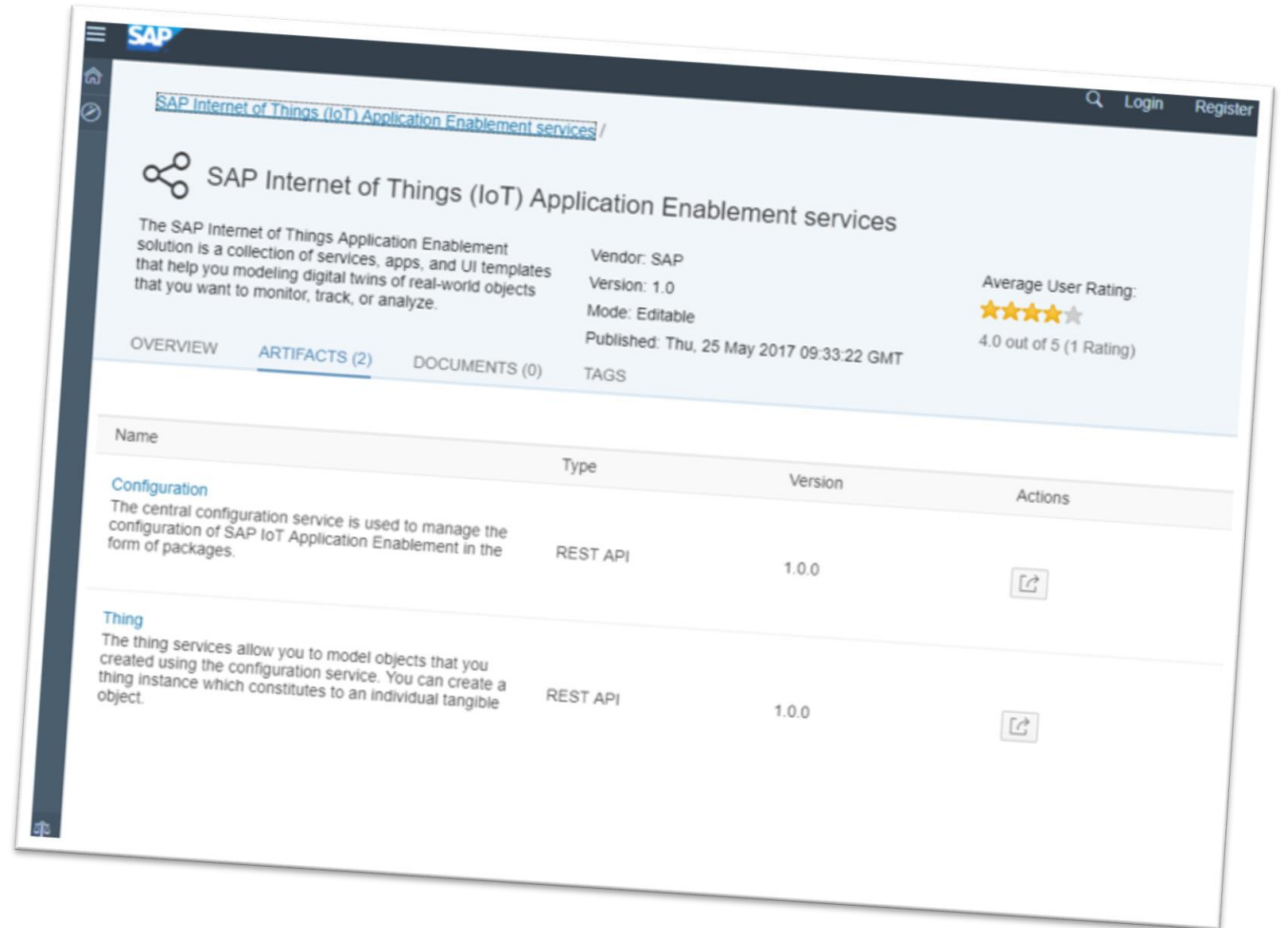


API Hub

The SAP Internet of Things Application Enablement solution is a collection of services, apps, and UI templates that help you modeling digital twins of real-world objects that you want to monitor, track, or analyze.



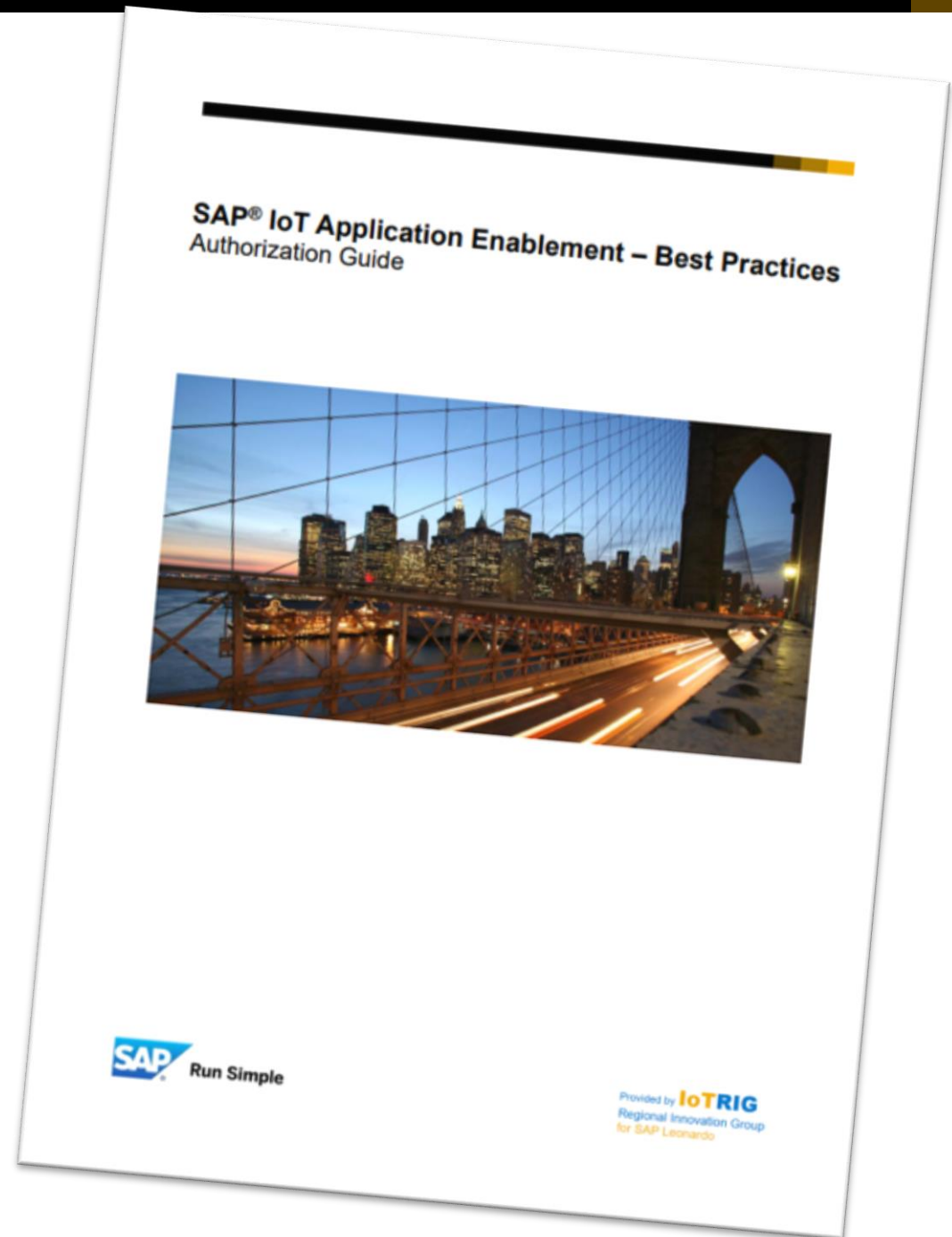
[Link](#)



Authorization Guide

SAP IoT Application Enablement – Best Practices Authorization Guide

Use this guide to set up authorization and authentication of the SAP IoT Application Enablement toolkit to meet your business needs with focus on SaaS.

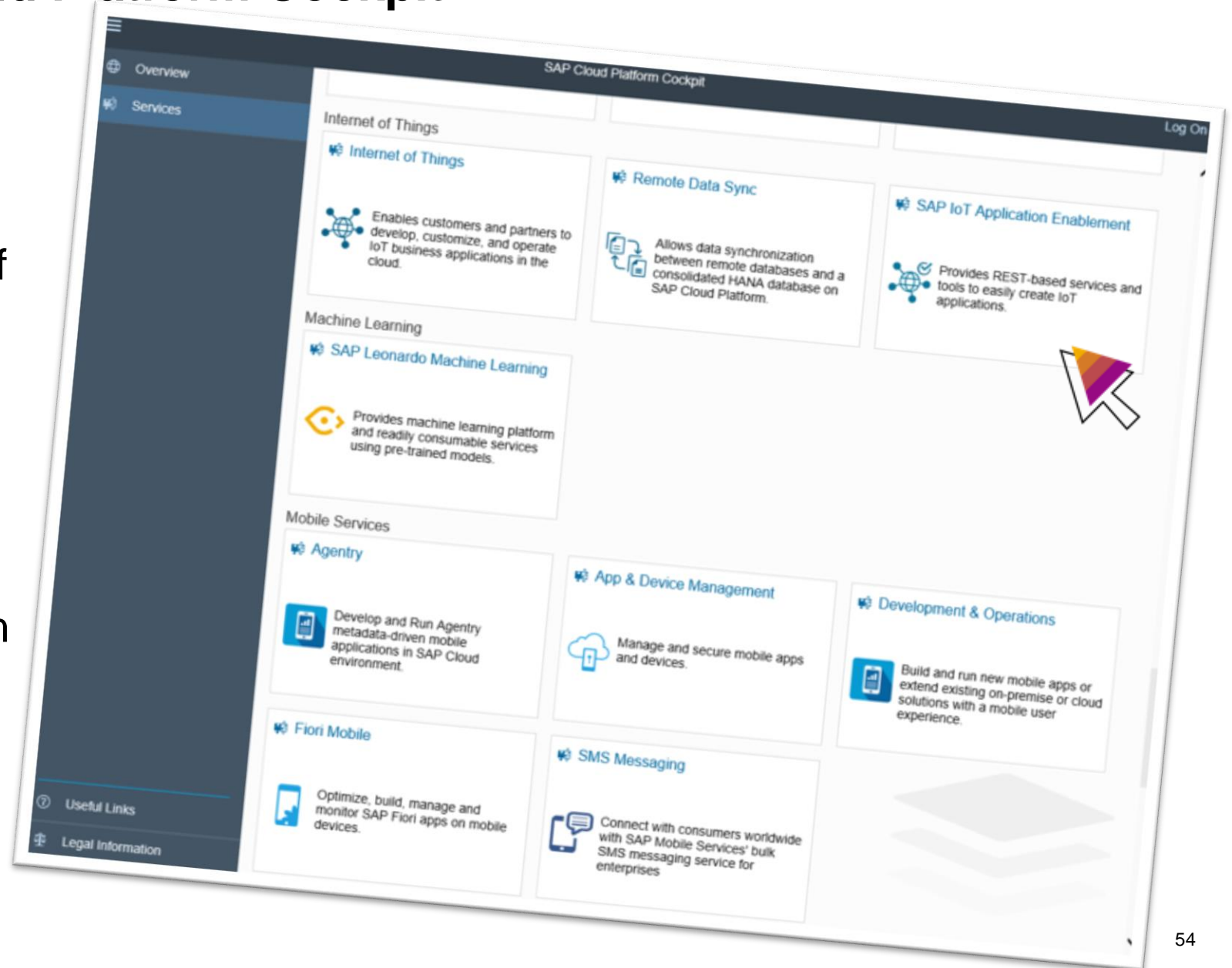


Trial Account on SAP Cloud Platform Cockpit

The central web-based user interface for administrators, providing access to a number of functions for configuring and managing applications and connecting them to services on the cloud platform. Use the cockpit to manage resources, services, security, monitor application metrics, and perform actions on cloud applications.



[Link](#)



IoT Community

Blogs

Read and publish blogs

[2017/07 Hands On @ Leonardo Live](#)

[2017/06 Code-free rapid application dev](#)

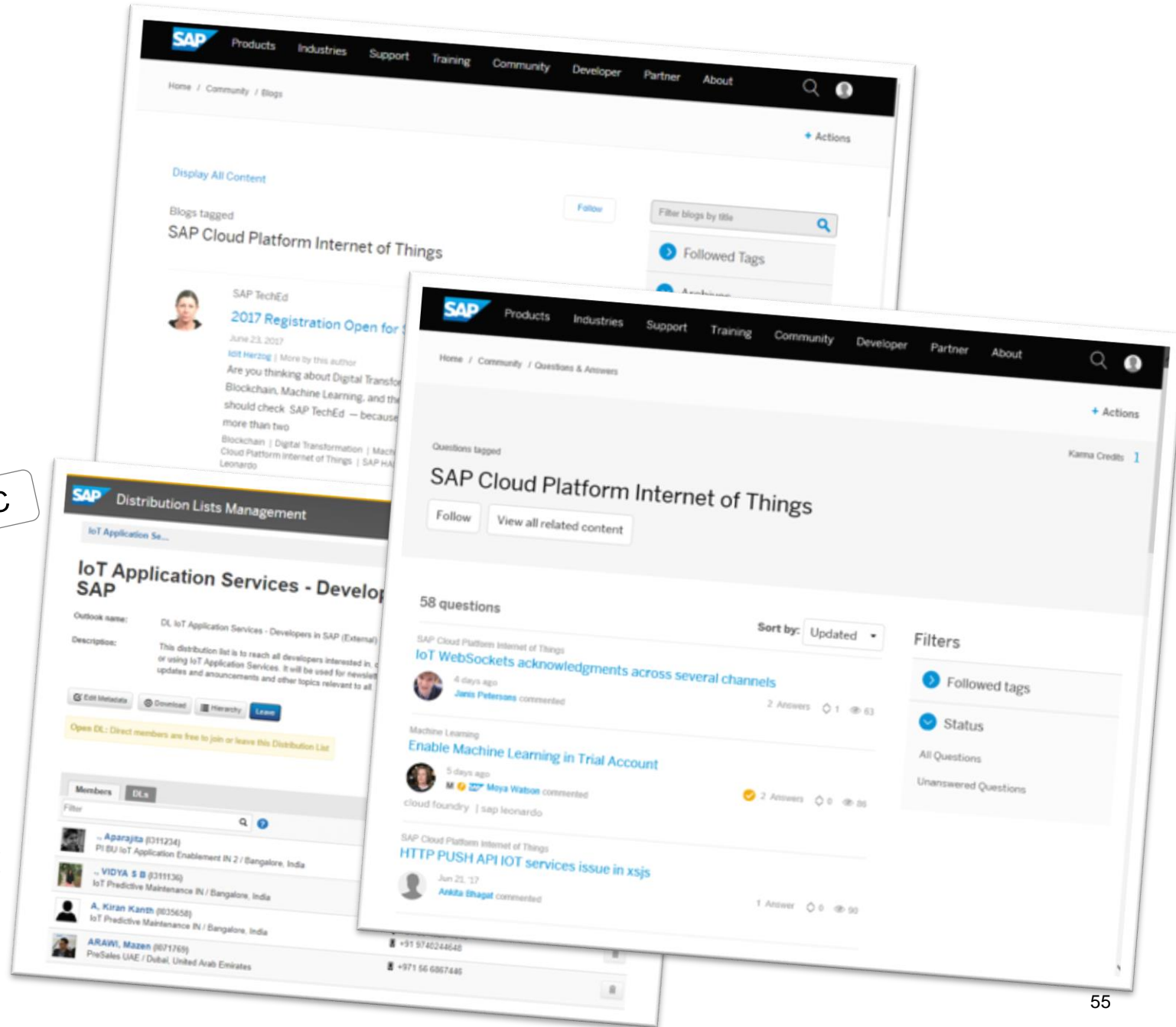
[2017/05 Availability of Web IDE multicloud \(generic\)](#)

Questions

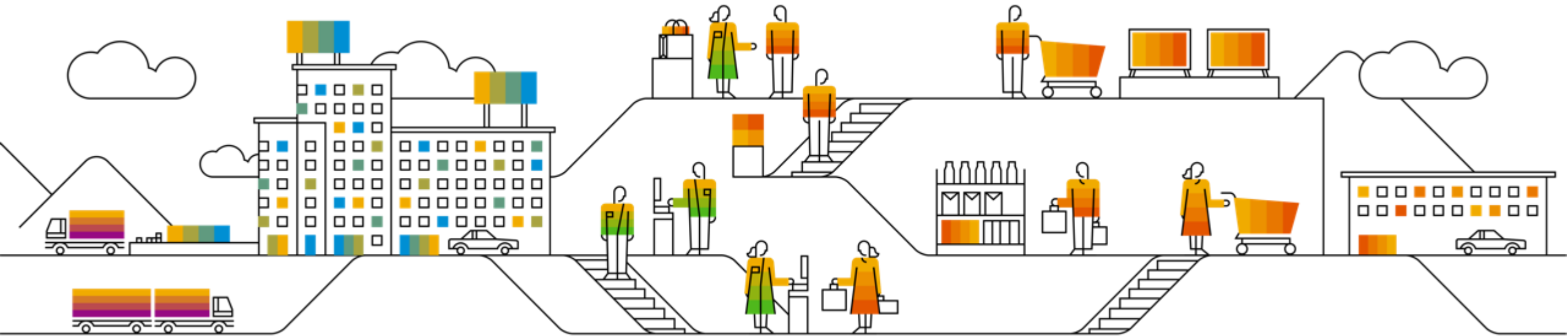
Post your questions or answer questions of other community members ([generic](#) IoT)

Internal Developer Community

DL for IoT Application Enablement



Partner Information



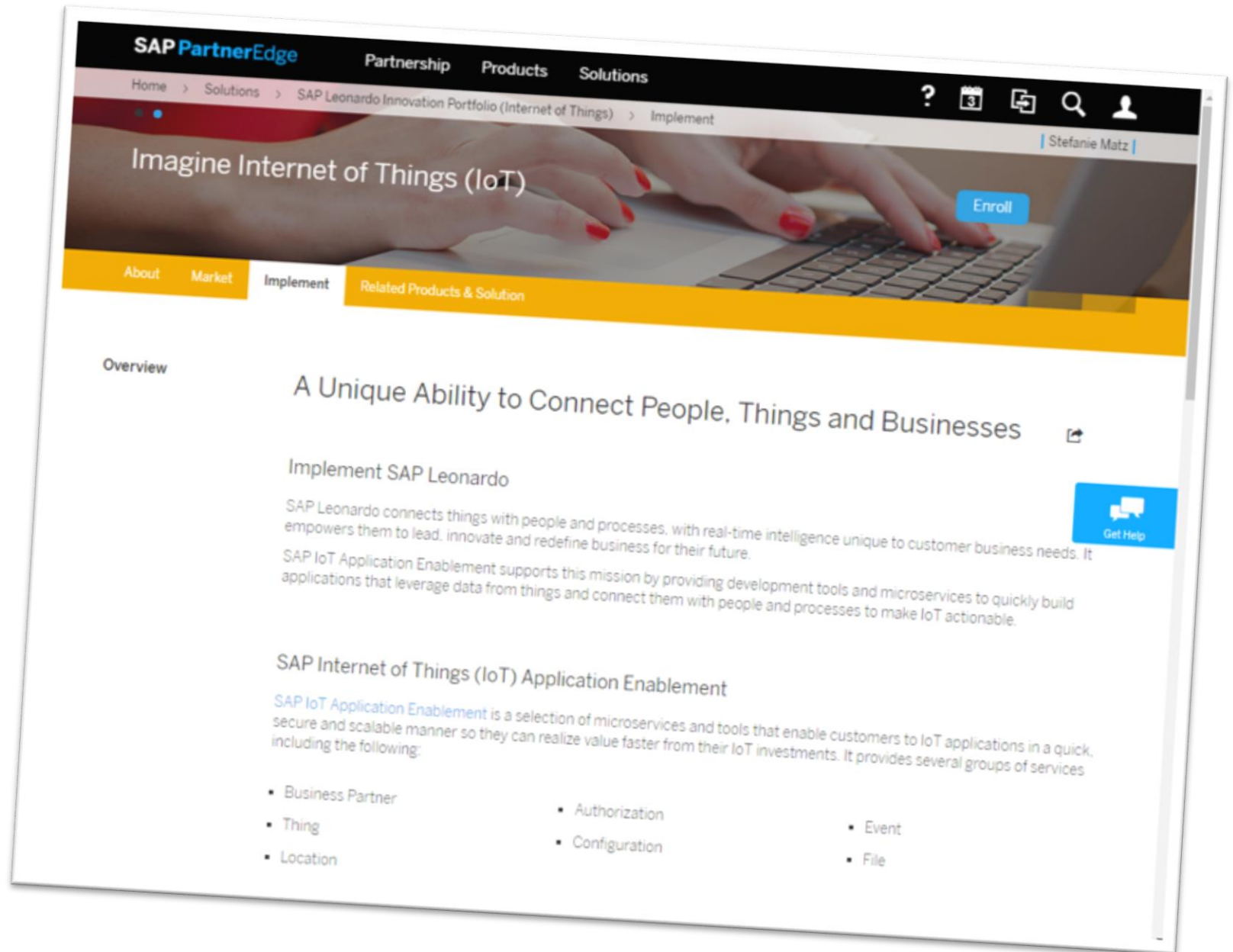
Partner Edge

Partner Edge Page with useful links to presentations, docu and test- and demo licenses, which includes

- 1 block of 100 mio. data streams
- Time Series Store: 10 Gb
- Time Series Archive: 40 Gb
- 7.500€ annual fee
- No productive use



[Link](#)



Partner Edge Knowledge Transfer Session

In this session you will see, how you can onboard a weather station to SAP IoT Application Enablement and consume its data. Therefor a digital twin of your hardware is created, the sensor is enabled to send data to SAP Cloud Platform and we will build an application using SAP Web IDE. Beside the hands-on part you'll also get an overview of the underlying architecture and principals of IoT application enablement.



[Link](#)



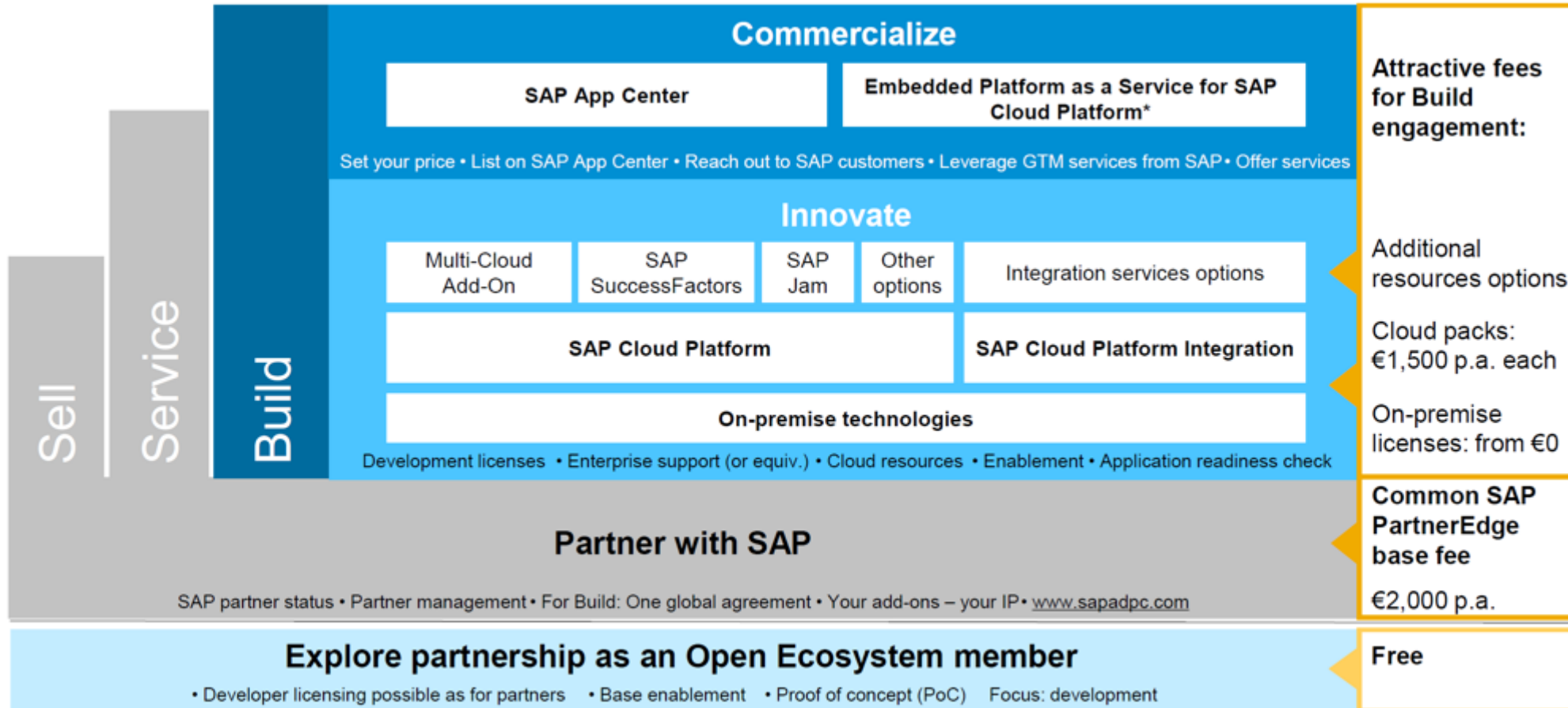
A screenshot of the SAP PartnerEdge website showing a session titled 'Replay: Hands-On with SAP IoT Application Enablement'. The page includes a description of the session, the time (16:00 GMT 2), and an agenda with six items: Introduction (5 min), Architecture (15 min), Thing modeler - create thing (15 min), Arduino IDE - enable your device (15 min), SAP Web IDE - create application (30 min), and Q&A (15 min). At the bottom, there are three expandable sections: 'Download this Session as Zip File' with a 'Download' button, 'Watch the Recorded Session' with a 'Watch' button, and 'Read the Presentation' with a 'Read' button. The SAP PartnerEdge logo and navigation links (Partnership, Products, Solutions) are at the top.

SAP PartnerEdge – Build

Innovate and monetize your business solutions



[Blog](#) [Details](#)



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* bundling and embedding for other technologies and under negotiated terms available via separate OEM agreement

17

SAP PartnerEdge – Build

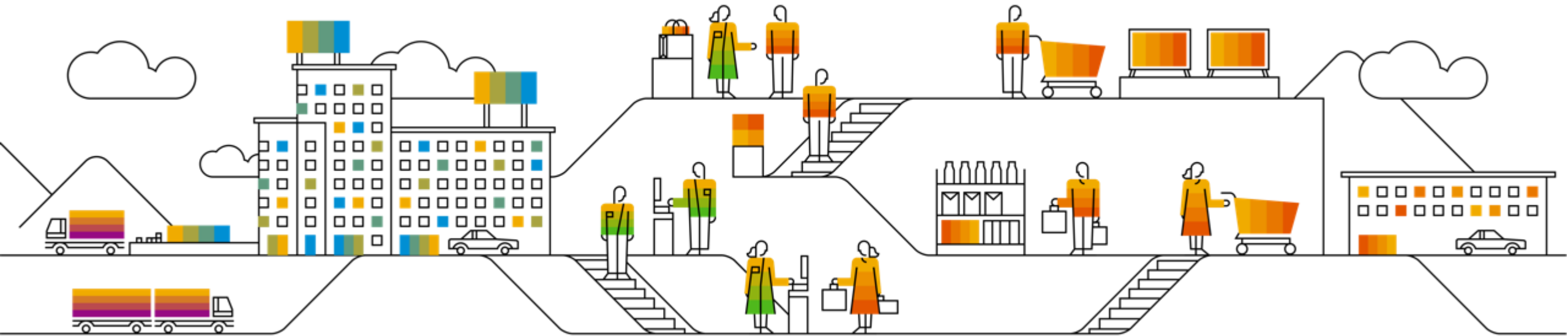
Order Additional Packs & Services for Existing Partners

License and ordering details are relevant for partners which signed the SAP PartnerEdge Build agreement before July 22nd otherwise please see [here](#).

An existing SAP PartnerEdge - Build partner can extend the innovation pack portfolio by ordering additional SAP services and resources.



Training and Knowledge Transfer



Learning Journey

Are you looking for the perfect place to start your learning journey for SAP IoT Application Enablement?
You're in the right place!

Learning Journeys are structured visual guides, designed to help you understand and navigate the path to become fully competent.



[Link](#)



The screenshot shows the SAP Help Portal interface for a Learning Journey. At the top, the SAP logo and 'SAP Help Portal' are visible. The breadcrumb trail reads 'Journey: SAP IoT Application Enablement on SAP Cloud Platform - for Developers'. The main title is 'SAP IoT Application Enablement on SAP Cloud Platform - for Developers', updated in Feb. 2018. Below the title, there are filters for 'Formats (5/5)' and a zoom slider set to 80%. The journey is divided into two main sections: 'Start with an overview' and 'Become fully competent'. The 'Start with an overview' section includes seven cards: 'SAP Cloud Platform - Internet of Things', 'Enterprise Architecture Explorer', 'What's the Foundation of the SAP's IoT Platform?', 'How Do I Model My "Things" with SAP?', 'The Fastest Way to Build IoT Applications', 'Behind the Scenes - Big Data for IoT', and 'How to Provide the Right Level of Access to Sensor Data'. The 'Become fully competent' section is partially visible at the bottom.

Onsite Training Offering in 2018

Dates:

- 15 Mar 2018 - 16 Mar 2018
- 27 Sep 2018 - 28 Sep 2018

Content:

- Typical IoT Application Use Cases (Predictive Maintenance, Device Tracking)
- Overview of Systems, Architecture, Project Outline and Operations for an IoT Application
- The Weather Station App – A Real world example used during the course
- Selecting Sensor, Device, Power and Communications Technology based on example
- Modeling your first Things based on an example
- Onboarding your first devices based on example
- Analyzing collected example data via apis and via tools
- Prototyping an application user interface based on example
- Integration with application data and other applications based on example
- Deploying and operating the application based on example
- Scaling and Phasing the roll-out

Release der Lösung: SAP IOT APPLICATION ENABLEMENT

Ziele

- The session is targeted at developers and other personell that are charged to build an IoT application. IoT applications allow a company to leverage real-world and real-time sensor data to optimize business processes or to create new services and business models. As the data collected from sensors is different from typical data used in business applications the approach needs to take this into account – the goal of the course is to allow a developer to build the sensor part and the rest of an IoT application from start to finish based on Leonardo Foundation, IoT Application Enablement and Cloud Platform from SAP.

Zielgruppe

- Developer
- Business Analyst
- Administrator
- Technology Consultant

Voraussetzungen

Erforderliches Wissen

- * Basic understanding of applications concepts like database, users, roles, services, programming languages

Kurs buchen

Filter anpassen (2)

Germany X Austria X

Switzerland X

Germany

Classroom: Walldorf

15 Mar 2018 - 16 Mar 2018

Kurszeiten >

Deutsch

SAP IOT APPLICATION ENABLEMENT

1,380.00 € (EUR)

In den Warenkorb legen

Auf meine Wunschliste setzen



[Link](#)



SAP Learning Hub

This Learning map provides you with an introduction to SAP IoT Application Enablement. You will get to know the key concepts and understand the capabilities of the solution, as well as how to build applications, enable IoT devices to use the Application Enablement Solution and last but not least act by making sensor data accessible.

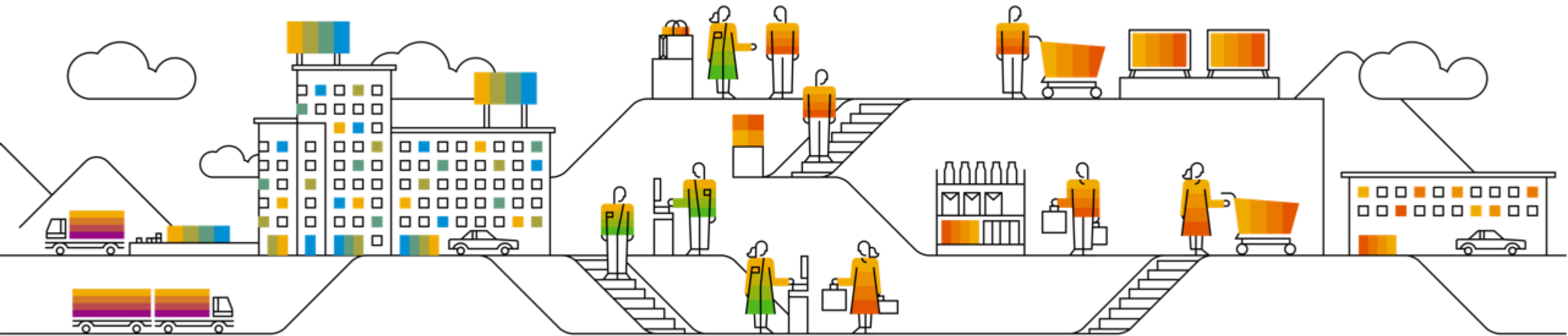
(Access to
Learning Hub
is required)



[Link](#)



Starter Package

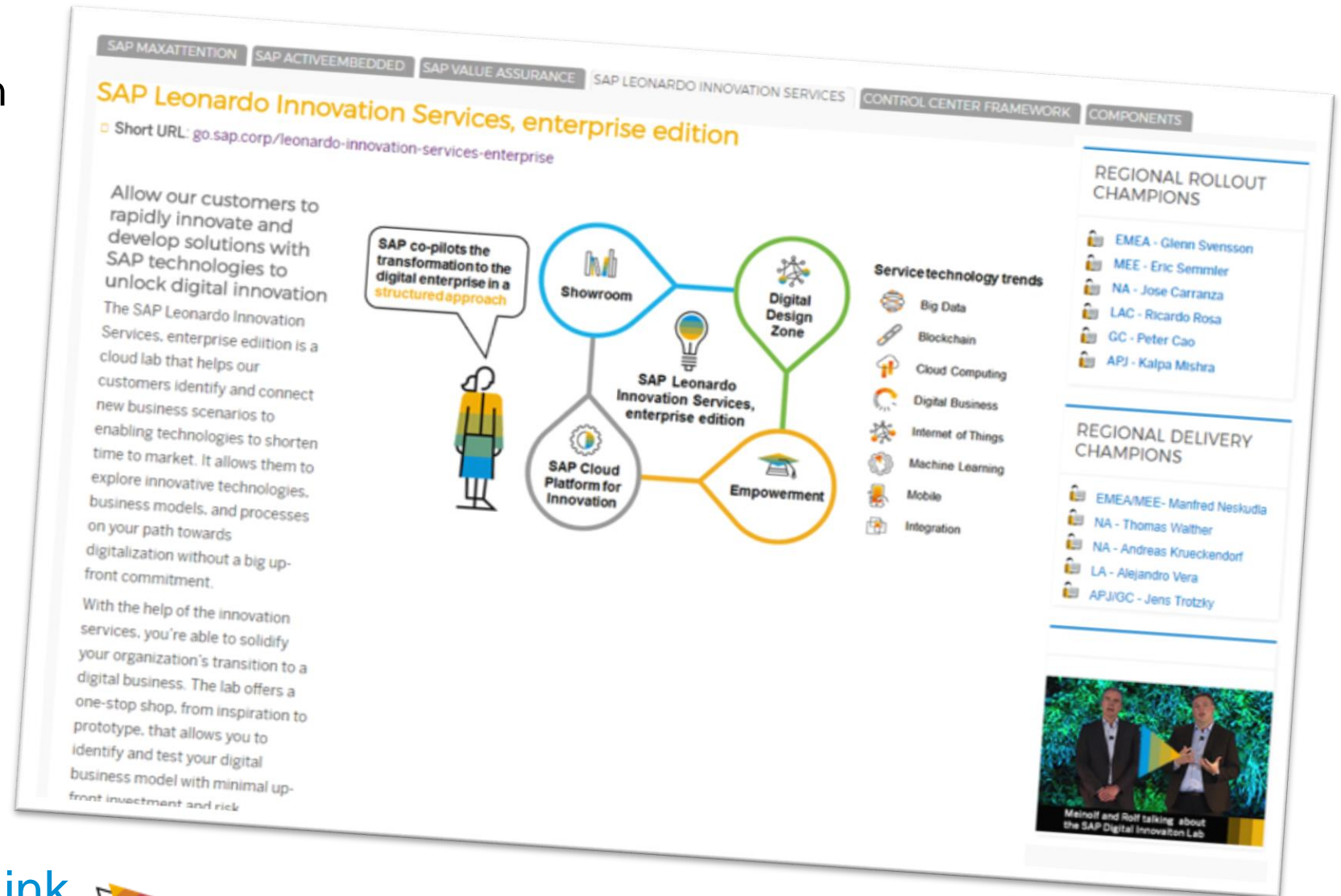


SAP Leonardo Innovation Service, enterprise edition

The SAP Leonardo Innovation Services, enterprise edition is a cloud lab that helps our **MaxAttention customers*** identify and connect new business scenarios to enabling technologies to shorten time to market. It allows them to explore innovative technologies, business models, and processes on your path towards digitalization without a big up-front commitment.



[Link](#)



SAP Leonardo Innovation Services, open innovation services

SAP Leonardo Innovation Services is a cloud lab that helps our customers* identify and connect new business scenarios to enabling technologies to shorten time to market. It allows them to explore innovative technologies, business models, and processes on your path towards digitalization without a big up-front commitment.



[Link](#)



The screenshot shows the SAP Leonardo Innovation Services, open innovation edition page. The breadcrumb trail at the top reads: DIGITAL BUSINESS SERVICES > OFFERINGS > ACCELERATORS > SAP LEONARDO INNOVATION SERVICES. The page title is "SAP Leonardo Innovation Services, open innovation edition" with a short URL: go.sap.corp/leonardo-innovation-services. The main headline states: "Allow our customers to rapidly innovate and develop solutions with SAP technologies to unlock digital innovation". The text describes the service as a cloud lab that helps customers identify and connect new business scenarios to enabling technologies to shorten time to market. It allows them to explore innovative technologies, business models, and processes on their path towards digitalization without a big up-front commitment. With the help of these services, customers will be able to solidify the organization's transition to a digital business. The lab offers a one-stop shop, from inspiration to prototype, that allows you to identify and test your digital business model with minimal up-front investment and risk. A diagram illustrates the transformation process: a person icon is connected to a speech bubble saying "SAP co-pilots the transformation to the digital enterprise in a structured approach". This leads to a central box labeled "SAP Leonardo Innovation Services, open innovation edition" which is connected to "SAP Cloud Platform for Innovation" and "Digital Design Zone". To the right, a list of "Service technology trends" includes: Big Data, Blockchain, Cloud Computing, Digital Business, Internet of Things, Machine Learning, Mobile, and Integration.

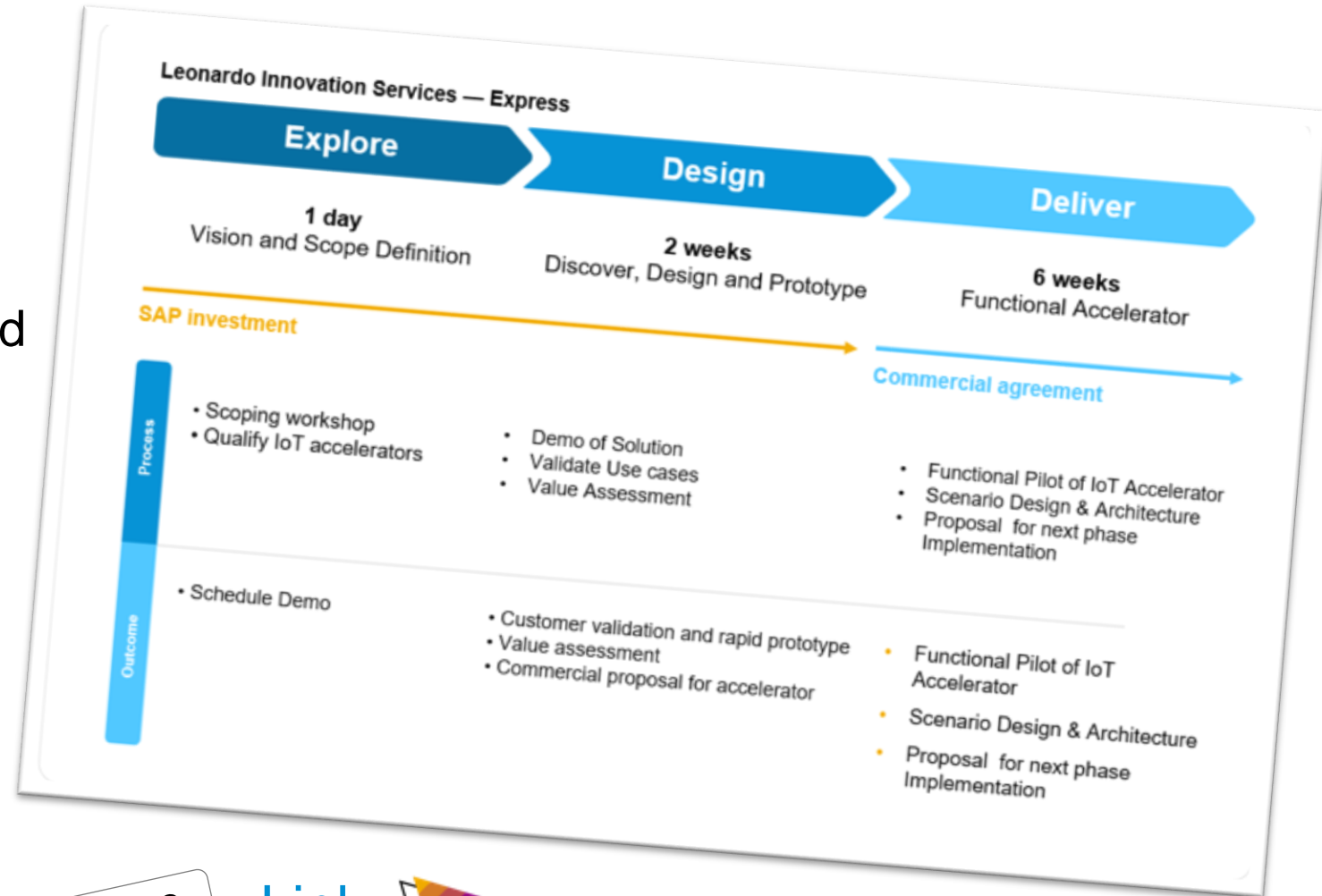
SAP Leonardo IoT Accelerator Packages

No matter your IoT vision, SAP Leonardo provides an open, flexible path to digital innovation. Find out how we can help you quickly build IoT solutions at a predictable price. SAP Leonardo IoT accelerator packages are available for the following standard cloud solutions:

1. SAP Predictive Maintenance and Service
2. SAP Asset Intelligence Network
3. SAP Connected Goods
4. SAP Global Track and Trace
5. SAP Distributed Manufacturing
6. SAP Vehicle Insights
7. SAP Digital Manufacturing Insights
8. Line of Business Asset Management
9. **IOT Foundation**
10. IOT Foundation and Edge Services

SAP Leonardo Accelerator Packages Provides

- Scope of Promotion
- Innovation Services

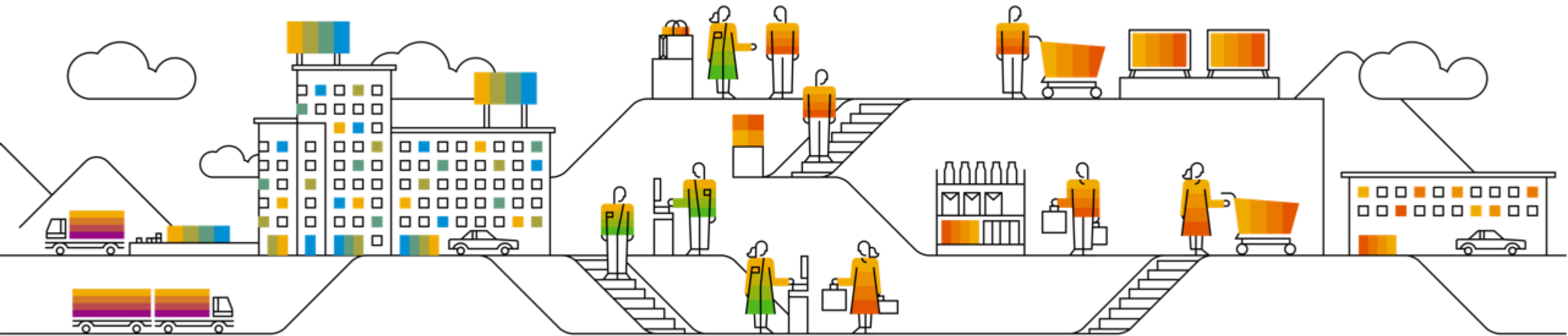


PUBLIC

[Link](#)



Summary



SAP Leonardo IoT Foundation Overview

Building your own IoT Application

The SAP Leonardo IoT Foundation is the only best-in class IoT platform that allows you to quickly build your own IoT application, to integrate IoT data into business processes and to define new business models. SAP Leonardo IoT Foundation is running on SAP Cloud Platform.

SAP Leonardo IoT Foundation Key Capabilities

- **Connect your device:** Scalable ingestion of IoT data, broad device connectivity, and large-scale device management.
- **Enable the „Digital Twin“:** Semantic Thing Model which brings basic business data and sensor data together in one integrated model. Run multiple apps from SAP and partners against the same model and data.
- **Make use of Big Data capabilities:** Automatically tiered data storage with high data throughput. Store aggregate sensor data in hot store with automatic data aging (warm/cold).
- **Build your own IoT application:** Application development tools drive scale and consistency and achieve value.

Business Challenges Addressed

Digital transformation of your company based on real-life data:

- Create new revenue streams and differentiate your physical products by developing digital services using IoT data
- Create new business models such as „Assets as a Service“ based on a tight integration of IoT data into your business processes
- Create an own ecosystem by developing applications on top of IoT data

Key Stakeholders

- Chief Innovation Officer, Chief Digital Officer
- CIO

Business Benefits

Exemplary business benefits of the SAP Leonardo IoT Foundation depending on individual use cases:

- New revenue streams originating from new digital services
- Improve competitive differentiation by establishing new business models
- Reduce unplanned downtime of equipment through condition monitoring
- Monetize equipment data by creating your own ecosystem
- See customer examples from [ifm](#) and [Kaiserwetter](#)

Bill of Material

- SAP IoT Services 4.0
- SAP IoT Application Enablement (Application Services, Time Series & Event Store, Time Series & Event Archive)
- Application Runtime on SAP Cloud Platform
- SAP Cloud Platform Web IDE
- **For Rules:**
 - SCP Workflow and Rules
 - SAP Cloud Platform Integration

Purchasing Options

- Subscriptions
- IoT Foundation Accelerators

Takeaways for planning your IoT solution



Think big

Have a vision



Start small

Select a viable use case with fast RoI (12-18 months)



Scale fast

Learn and scale in volume & functionality

Thank you.



Smitha Rayala

**SAP Leonardo IoT
Solution Management GTM &
Strategic Partnerships
SAP SE**

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