

# SAP Cloud Platform IoT Services 4.0 (beta)

SIT Hannover, February 25 2017

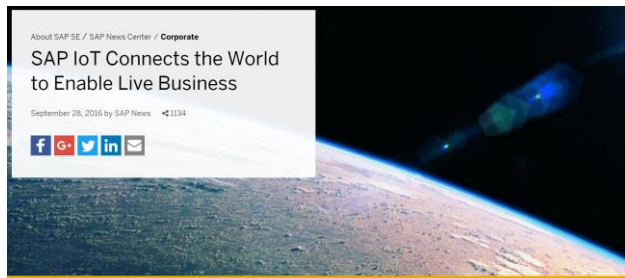
Fabian Lehmann, Sycor Group



# Overview

1. SAP Leonardo Overview
2. Roadmap
3. Architecture
4. Demo

## Recap: SAP announcements to invest into IoT and introduce Leonardo brand



**WALLDORF** — **SAP SE** (NYSE: SAP) today announced investment plans of €2 billion over five years to help business and government entities benefit from the proliferation of sensors, smart devices and Big Data that is transforming business with the Internet of Things (IoT).

*SAP Announces €2 Billion Investment Plan, New Innovations, Acquisitions and Network of SAP IoT Labs to Unlock Next Wave of Value from the Internet of Things*

SAP plans to accelerate innovation in its IoT solution portfolio, increase sales and marketing, scale service, support and co-innovation, and grow its ecosystem of partners and startups in the IoT market, which is estimated to reach €250 billion by 2020.



**WALLDORF** — **SAP SE** (NYSE: SAP) today announced a jump-start enablement program for its Internet of Things (IoT) innovation portfolio. The program is intended to help customers connect the emerging world of intelligent devices with people and processes to achieve tangible business outcomes.

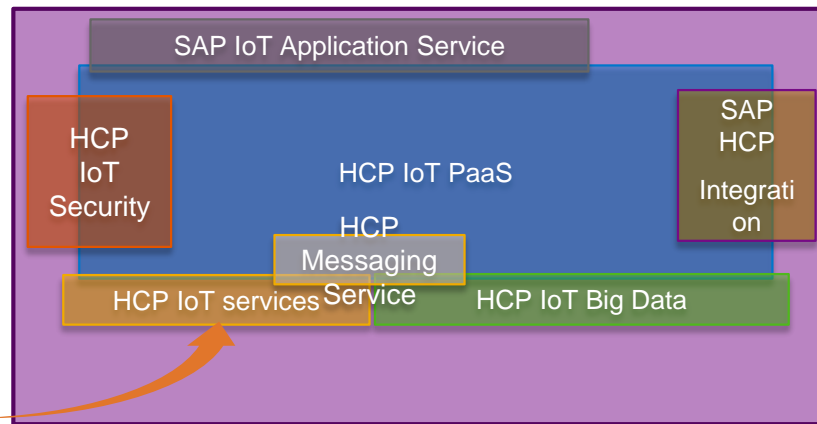
*Promotional Pricing and Consultative Services Will Help Customers Adopt Successful IoT Strategies; Global SAP Leonardo Event Announced for July 2017 in Frankfurt*

Following through on SAP's [recently announced commitment](#) to invest €2 billion in IoT over five years, the IoT portfolio combines adaptive applications, Big Data applications and connectivity in packaged solutions across line-of-business and industry use cases ranging from connected products, assets and infrastructure to vehicle fleets, markets and people.

# Recap - SAP's Acquisition of Plat.ONE

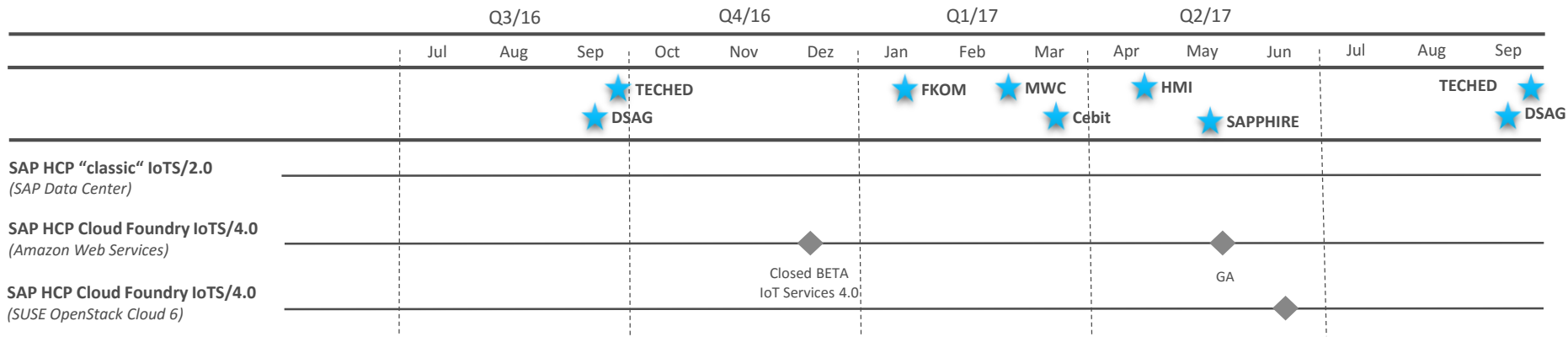
- Plat.ONE is an application enablement platform for IoT
- Plat.ONE is a GA product used by global customers
- Acquisition completed July 2016
- Plat.ONE will form a cornerstone of the SAP HANA Cloud Platform based IoT offering
- Plat.ONE in SAP HCP is available today to beta customers as SAP HCP IoT services 4.0

**PLAT.ONE**

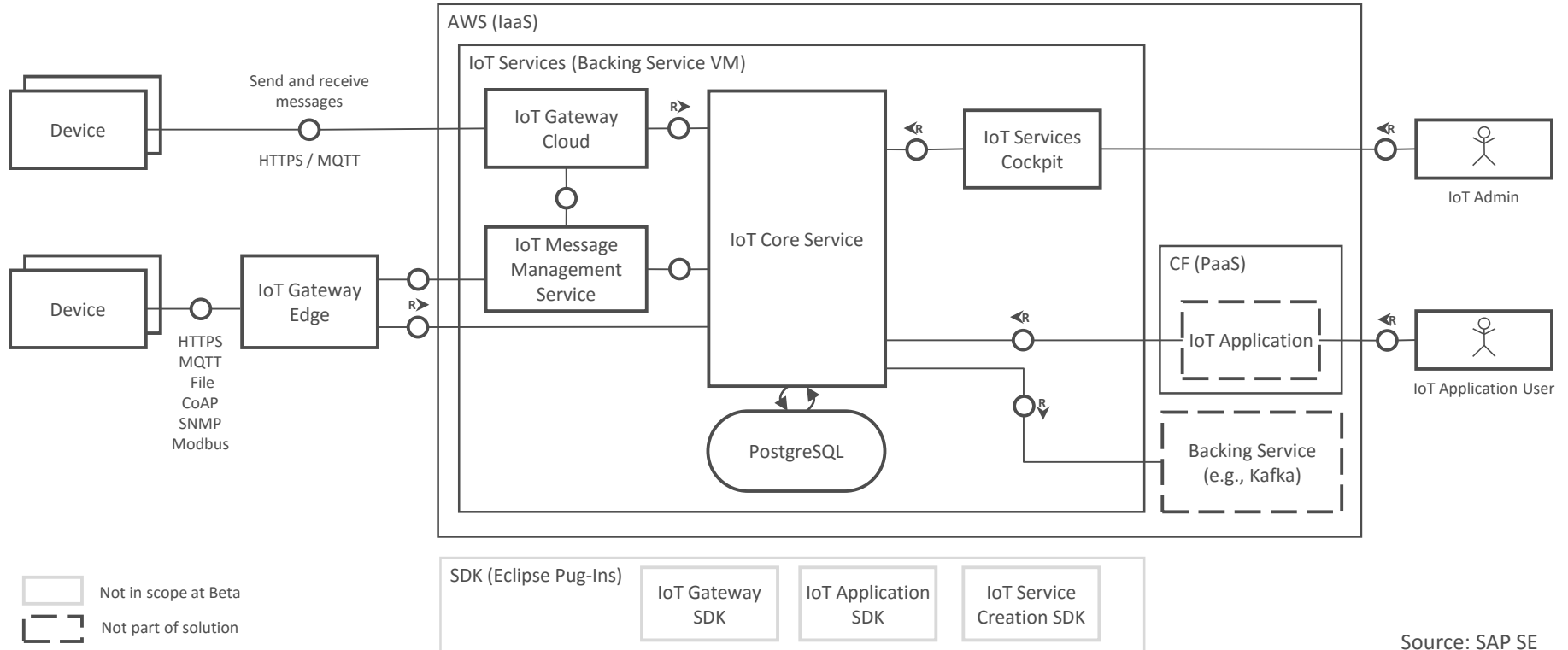


# SAP HANA Cloud Platform IoT services 4.0 Roadmap

- IoT services 4.0 based on Plat.ONE
- Product standard compliant **closed BETA** for SAP HCP IoT services 4.0 delivered on Dec. 6<sup>th</sup> 2016
- **GA** (integrated into SAP HCP Cockpit) planned for Sapphire 2017 (May 2017)
- Plat.ONE feature parity via collaboration with IoT Application Enablement team (application builder)



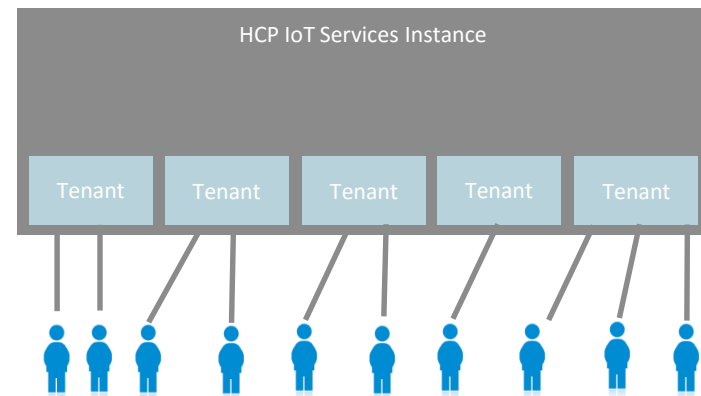
# IoT services 4.0 – Beta Architecture Overview



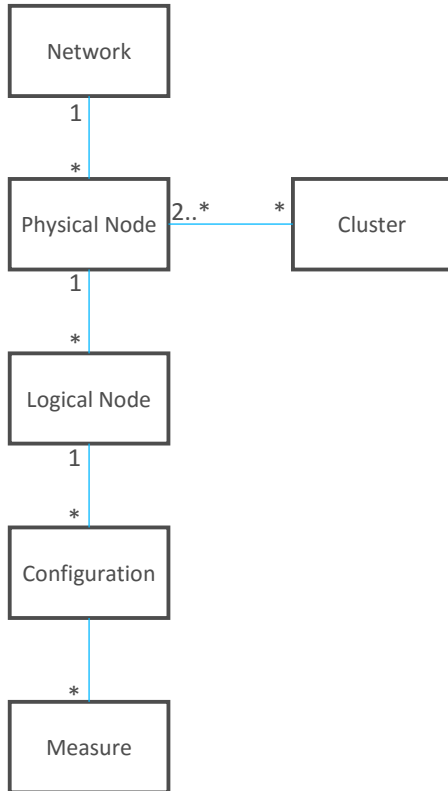
# SAP HANA Cloud Platform IoT services 4.0

## Multi-Tenancy (tenant of tenants)

- Resource and access control via tenants
  - Fine grained resource entitlement (network visibility)
  - Cascading administration
  - Dynamic resource sharing
- User Management
  - In-build user management
  - Roles: tenant owner, user



# IoT services 4.0 – Device Model



protocol specific network (one per IoT Gateway), e.g., [MQTT](#)

unique addressable entity (device), e.g., [drilling machine](#)

sensor or actuator of physical node, e.g., [temperature sensor](#)

*distinct message format (sensor) or description of command (actuator), e.g., [temperature](#)*

*instance of configuration with specific point of time (time series data), e.g., [temperature value + timestamp](#)*

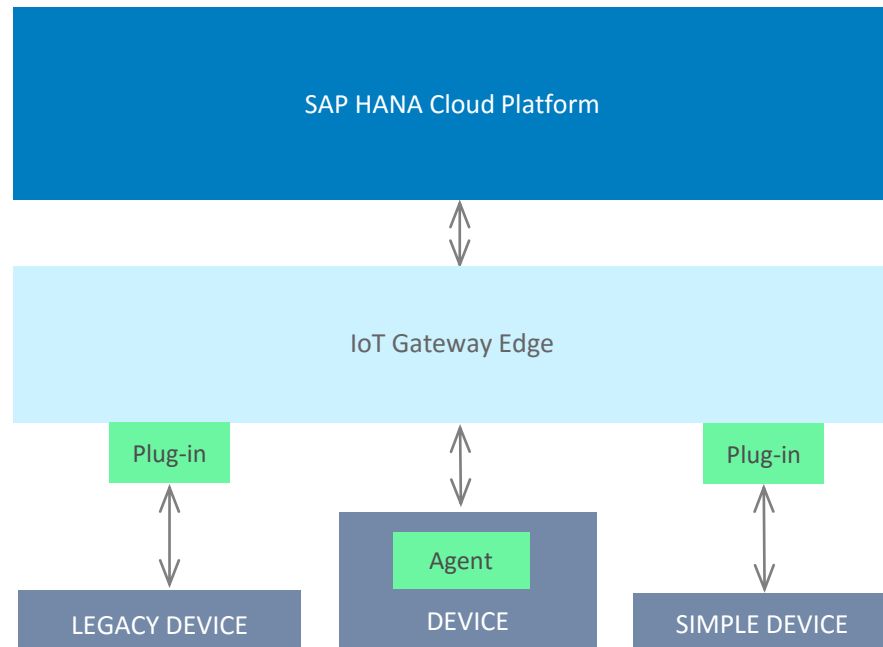


# SAP HCP IoT services 4.0 – Gateway Edge

## Device Management Capabilities

- Ability to distribute any logic at the edge near devices. This can include analytics or event driven rules processed locally.
- Device Data Transmission
  - Guaranteed Delivery Edge to Cloud.
  - Time Series Data Compression.
  - Buffering When Not Connected.
  - Scheduled / On-Demand / Batched Delivery.
- Remote Upgrades
  - Gateway / Plugin Software Upgrades.
  - Device Firmware Upgrades for Devices that support it.

- **Store-and-Forward for Remote Device Commands**



# SAP HANA Cloud Platform IoT services 4.0 – Beta

## Supported Protocols

### ■ IoT Gateway Edge

- MQTT
- HTTP REST
- File (binary, csv, xls, json)
- CoAP
- ModBus
- SNMP

### ■ In progress (license negotiation)

- LoRa (Orbiwise)\*
- SIGFOX\*
- Zigbee (w/o custom cluster)\*

### IoT Gateway Cloud & Edge

- MQTT
- HTTP REST

# SAP HCP, IoT services 4.0 (GA)

## Supported Protocols via IoT Gateway Plug-Ins

### Protocols

### Vendors

HTTP <sup>1</sup>	DDS	Agora Energy	Distech Controls	NaelBox	SimpleHomeNet
Zigbee	BACNET	Agulla	E-Senza	Netcomm Wireless	SITEC
XBee	LON	AnyDATA	Ekahau	NETVOX	SmarteoWater
ZWave	KNX	Arduino	Elster	NWAVE	SMARTEX
6lowPAN	Modbus	Asoka	EPISENSOR	Orbiwise	ST Micro
BT & BTLE	Profibus	ATIM	Eurotech	Packet Power	Sterela
WiFi & LPWiFi	Infibus	Axible	Honeywell	PARADOX	Telecom Design
IEEE 802.15.4	DLMS/COSEM	AXIS	Intenses	PIKKERTON	TELIT
MQTT <sup>1</sup>	KSAT (Viasat)	B&B Electronics	ITRON	Pulsar	TekPea
CoAP	PLC(*)	CalAmp	Kamstrup	Radiocrafts	TRIDIUM
TR069	OPC UA	Cisco	LIBELIUM	RaspberryPI	VIASAT
SNMP	OMA LWM2M(*)	CloudGate	Marvell	Schneider Electric	WAGO
HART & W-HART	Active Message	CPL	MeterSit	Semtech LoRa	Wi-NEXT
SIGFOX	SWAP(*)	Cradlepoint	MICRON	Sensinode	Worldsensing
Semtech LoRa	XMPP	Dell	Mobile Devices	SIERRA WIRELESS	XIRGO
NWAVE UnB	LoRa	DiGi	Morey Corp.	SIGFOX	
		Digicom			

Eclipse Plugin for New Protocols

Templates for USB, Serial, API, or Network Based

Live DEMO (hopefully it works)

# Some dates with a focus on SAP IoT

- SAP IoT Infoday (31.5)\*
- SAP HCI Infoday (21.6 or 28.6)\*



Many thanks for your attention!

# Me: Fabian Lehmann ;o)

Role: Solution Architect at Sycor Group, 18 year IT experience, 10 years SAP experience

Focus: SAP Integration Technologies, SAP Cloud Platform and SAP IoT

Passion: Technology addict try to share knowledge in the SAP Community and to drive innovation at my employer

My other live: Proud Husband, Dad of two and master of a dog.